Raritan PX2 JSON-RPC API

Generated by Doxygen 1.8.3.1

Fri Jun 20 2014 19:01:32

Contents

Chapter 1

Rules and Mechanism for Mapping PX2/EMX-IDL to JSON-RPC

1.1 A) Scope

PX2/EMX devices provide a remote interface. The interface is a REST architecture and utilizes JSON-RPC version 2.0 for formatting messages sent to and received from the device. This document defines how formal PX2/EMX-IDL is mapped to JSON-RPC.

1.2 B) Mapping Rules

1.2.1 B)1 Type Mapping

IDL types are mapped to JSON value types as follows:

- boolean: true or false
- int: number
- long: number
- float: number
- double: number
- string: string
- time: int (containing number of seconds since the start of the Unix epoch: midnight UTC of January 1, 1970)
- vector: array
- map: object (array of objects, each containing two elements: 'key' contains the entry's key, 'value' contains the entry's value)
- structure: object (containing elements of pairs, structure's element name is mapped to pair's name, value to value respectively)
- object-reference: object (containing two elements: 'rid' element contains object identifier, 'type' element contains most derived interface type of object)

1.2.2 B)2 Interface version Mapping

Interface versions as specified in IDL-File (for example NumericSensor_1_0_1) are not mapped to the protocoll as such as interface identifiers are not directly part of any protocoll message. However interface version is part of the type information which is sent along with object references (see section B)1). Clients may use type information and hence version information to select a compatible proxy for a received object reference.

The interface changes between firmware releases are documented in the file `Changelog.txt`.

1.2.3 B)3 Method Mapping

IDL method are mapped to JSON-RPC calls as follows:

in JSON-RPC Request:

- method name: element 'method' of request object
- method in-parameters: element 'params' of request object, containing an object with elements where elements names correspond to in-parameter names and element values corresponds to in-parameter values
- method out-parameters: not mapped
- method return-parameter: not mapped

in JSON-RPC Response:

- method name: not mapped
- method in-parameters: not mapped
- method out-parameters: element 'result' of response object, containing an object with elements where element names correspond to out-parameter name and element values corresponds to out-parameter value
- method return-parameter: special element named '*ret*' of element 'result' of response object
- system errors / exceptions: element 'error' of response object

1.3 C) Call Execution

PX2/EMX-JSON-RPC uses HTTP-POST or HTTPS-POST requests. JSON-RPC request message is put into POST data, JSON-RPC response message is delivered with HTTP/HTTPS response.

URL of HTTP/HTTPS serves as object reference which uniquely identifies a particular resource that implements a particular IDL interface. There are well know references that must be used in initial request. All well known references are defined in file `Well-Known-URIs.txt`.

JSON-RPC responses may contain other object references (see B)1). Those references are never well known references but opaque references. The 'rid' element of the opaque references must be used as URI in further call directed to this resource.

1.4 D) Language Bindings and Examples

IDL definitions may be translated to so called language bindings, i.e. translations of the IDL and the JSON-RPC protocoll to concrete programming languages. Language bindings for Perl and Python are delivered along with this documentation. They are described in the sections hereafter. Additionally examples are given using command line tool curl.

Please note that the examples given are not specific to the product this API documentation was released for. Examples use APIs of PX2 or EMX. Nevertheless the principles of the API usage is identical for either product. For the very concrete API refer to the according pages of this document.

- Curl JSON-RPC Example
- Perl JSON-RPC Client Bindings
- Python JSON-RPC Client Binding

Chapter 2

Curl JSON-RPC Example

2.1 Mechanism

Curl is a cross-platform command line tool for getting or sending files using URL syntax. Using the tool a HTTP--POST request can be formulated that contains the JSON-RPC request. The response document is printed on the console of Curl. This is a direct way to check out particular objects and their methods.

Authentication data must be provided using options of curl or as part of the URL given to curl.

In case HTTPS is used as protocoll and the certificate installed on the device cannot be validated option '-k' must be provided. This will allow for insecure connections.

In order to direct the request to the desired object implementing a particular interface a well known resource identfier must be used as part of the URL. All well know URIs are defined in file `Well-Known-URIs.txt`. Note that the link points to a file which is specific for one product, EMX or PX.

2.2 Examples

- get device information of an EMX:

```
curl -skd '{ "jsonrpc": "2.0", "method": "getFullInfo", "id": 23 }' https://
      admin:raritan@10.0.42.2/model/pdu/0 | indent

{
  "jsonrpc": "2.0",
  "result":{
    "_ret_":{
      "nameplate":{
        "manufacturer": "Raritan",
        "model": "EMX2-888-v0",
        "partNumber": "emx2-888",
        "serialNumber": "PH81234567",
        "rating":{
          "voltage": "100-240V",
          "current": "0.7A",
          "frequency": "50/60Hz",
          "power":"70VA"
        },
        "imageFileURL":""
      },
      "ctrlBoardSerial": "PNW1691120",
      "hwRevision": "0x01",
      "fwRevision": "2.2.0.5-0",
      "macAddress":"fe:00:10:42:00:67"
    }
  },
  "id":23
}
```

- switch first outlet of a PX:

```
curl -skd '{ "jsonrpc": "2.0", "method": "setPowerState", "params": { "pstate": 1}, "id": 23 }'\
```

```
https://admin:raritan@192.168.7.67/model/pdu/0/outlet/0 | indent
```

```
{
  "jsonrpc": "2.0",
  "result":{
    "_ret_":0
  },
  "id":23
}
```

Chapter 3

Perl JSON-RPC Client Bindings

3.1 Synopsis

```
use Raritan::RPC;

my $agent = new Raritan::RPC::Agent('https://my-px2', 'admin', 'raritan');
my $pdu = $agent->createProxy('/model/pdu/0');
my $outlets = $pdu->getOutlets();
$outlets->[0]->cyclePowerState();
```

3.2 IDL-to-Perl Mapping

3.2.1 IDL Modules and Perl Package Names

All classes dealing with Raritan JSON-RPC communication are located in Perl packages starting with `Raritan::RPC`. All named sections in IDL files (`module`, `interface` and `enumeration`) provide a scope for their included identifiers and are added as further components to the Perl package name.

3.2.2 Pre-Requirements

Raritan's JSON-RPC Perl bindings require the following perl packages:

- LWP::Protocol::https
- LWP::UserAgent
- HTTP::Request::Common
- JSON
- JSON::RPC::Common::Marshal::HTTP
- Error
- Data::Dumper
- parent

3.2.2.1 Linux

In yum-based Linux distributions the following command will install the required packages:

```
yum install "perl(LWP::Protocol::https)" "perl(LWP::UserAgent)" \
"perl(HTTP::Request::Common)" "perl(JSON)" \
"perl(JSON::RPC::Common::Marshal::HTTP)" "perl(Error)" \
"perl(Data::Dumper)" "perl(parent)"
```

3.2.2.2 Windows

There are various Perl distributions available for Windows (see http://perl.org/get.html). The bindings were tested with ActiveState Perl (http://www.activestate.com/activeperl/downloads). After installing ActiveState Perl, the required modules can be installed with the following command:

```
ppm install LWP::Protocol::https LWP::UserAgent HTTP::Request::Common \
JSON JSON::RPC::Common::Marshal::HTTP Error Data::Dumper parent
```

3.2.3 Interfaces and Methods

IDL interfaces are mapped to Perl proxy classes which provide all methods defined by the IDL interface and its bases. Perl methods require the same number of scalar arguments as defined in the IDL signature. Simple types like integers, strings or enumerations are passed by scalar value; structures, vectors and maps are passed by reference. Output parameters are passed as references to a scalar variable which will be modified to point to the returned value. If the method is declared to have a non-void return type the Perl method will return a single scalar value.

Examples:

```
# no parameters, no return value
$firmware->reboot();

# two input parameters, integer return value
$ret = $user_manager->createAccount('newuser', 'newpassword');

# one output parameter, integer return value
$ret = $diagnostics->listTcpConnections(\$results);
```

3.2.4 Structures

IDL structures are mapped as scalar references to Perl hashes. Each element of the structure results in a hash entry whose key is the element identifier and whose value is a Perl scalar. When passing a structure to a method call addtional hash entries are ignored.

Example:

```
$ssh_settings = {
    'allowPasswordAuth'  => 1,
    'allowPublicKeyAuth' => 0
};
$security->setSSHSettings($ssh_settings);
```

3.2.5 Enumerations

Enumerated values are referenced by their fully-qualified name:

```
$ret = $outlet->setPowerState(Raritan::RPC::pdumodel::Outlet::PowerState::PS_ON);
```

3.2.6 Vectors

Vectors are mapped as scalar references to Perl lists. Each list entry must be a scalar.

```
$recipients = [ 'somebody@invalid.com', 'somebody.else@invalid.com' ];
$smtp->testConfiguration($cfg, $recipients);
```

3.2.7 Maps

Maps are mapped as scalar references to Perl hashes:

```
$priorities = {
    'important_client' => Raritan::RPC::webcam::Priority::VERY_HIGH,
    'other_client'     => Raritan::RPC::webcam::Priority::LOW
};
$ret = $webcam->setClientTypePriorities($priorities);
```

3.3 Exceptions

In case of error conditions during a proxy method call or the `createProxy` funtion exceptions will be thrown. They can be caught using the `try` statement from the `Perl::Error` module.

The following exceptions are defined:

- **Raritan::RPC::HttpException**

  An error occured during HTTP communication, e.g. in case the connection was refused or the authentication failed. Please check the agent URL, the resource ID and your authentication credentials.

- **Raritan::RPC::JsonRpcSyntaxException**

  The response from the server was not a valid JSON object. Please check the agent URL and the resource ID.

- **Raritan::RPC::JsonRpcErrorException**

  The method call failed. This should not happen under normal circumstances and indicates a problem on the device.

3.4 Raritan::RPC::Agent Method Reference

3.4.1 Constructor: new Raritan::RPC::Agent($url, $user, $password)

Creates a new agent.

Parameters:

- **$url** Base URL of the device
- **$user** User Name (optional)
- **$password** Password (optional)

3.4.2 set_auth_basic($user, $password)

This method enables HTTP basic authentication using username and password.

Parameters:

- **$user** User Name (optional)
- **$password** Password (optional)

3.4.3 set_auth_basic($token)

This method enables HTTP authentication using a session token. A session token can be obtained by calling the newSession method of the session.SessionManager interface.

Parameters:

- **$token** Session Token

3.4.4 timeout($seconds)

Returns and optionally sets the request timeout.

Parameters:

- **$seconds** New timeout in seconds (optional)

Returns:

- Previous timeout in seconds

3.4.5 createProxy($rid, $basetype)

Creates a new proxy object for the given resource id.

This method will query the type information for the specified resource ID and create a proxy object which provides all methods defined in the IDL definition.

When connecting to old firmware version (PX2 2.2 and earlier, EMX 2.0 and earlier) the type information of a resource ID cannot be queried. In this case the **$basetype** argument is required.

Parameters:

- **$rid** The resource ID, e.g. "/auth/user/admin"
- **$basetype** The base type, e.g. "usermgmt.User" (optional)

Returns:

- A new proxy object for the specified resource ID

3.4.6 set_verbose($verbose)

Enables request tracing. When verbose mode is enabled all JSON-RPC requests and responses will be echoed to the console.

Parameters:

- **$verbose** `true` to enable verbose mode

Chapter 4

Python JSON-RPC Client Binding

4.1 Examples

4.1.1 Getting device information of EMX:

- Code Snippet:

```
from raritan import rpc
from raritan.rpc import emdmodel

agent = rpc.Agent("https", "MyEMX", "admin", "raritan")
emx = emdmodel.Emd("/model/emd", agent)
mdata = e.getMetaData()
print mdata
```

- Output produced if there is no error:

```
emdmodel.Emd.MetaData:
    nameplate       = pdumodel.Nameplate:
      manufacturer = Raritan
      model        = EMX2-888-v0
      partNumber   = emx2-888
      serialNumber = PH81234567
      rating       = pdumodel.Nameplate.Rating:
        voltage   = 100-240V
        current   = 0.7A
        frequency = 50/60Hz
        power     = 70VA
      imageFileURL =
    ctrlBoardSerial = PNW1691120
    hwRevision      = 0x01
    fwRevision      = 2.2.0.5-0
    macAddress      = fe:00:10:42:00:67
```

4.1.2 Switch first outlet of PX:

- Code Snippet:

```
from raritan import rpc
from raritan.rpc import pdumodel

agent = rpc.Agent("https", "MyPX", "admin", "raritan")
pdu = pdumodel.Pdu("/model/pdu/0", agent)
outlets = pdu.getOutlets()
outlets[0].setPowerState(pdumodel.Outlet.PowerState.PS_OFF)
```

Note that the URIs given to the object proxies (such as "`/model/pdu/0`"), are well known references to static (i.e. they are always there) object instances implemented in the device. All well known references along with their interface are documented in file `Well-Known-URIs.txt` which comes along with the IDL files.

4.2 IDL-to-Python Mapping

4.2.1 Modules and Python Packages

All supporting and generated symbols are placed underneath common package `raritan.rpc`. IDL Modules are mapped to corresponding Python package within this common package. Import of all definitions within a module can be done via (for instance):

```
from raritan.rpc.pdumodel import *
```

4.2.2 Interfaces and Methods

IDL interfaces are mapped to Python classes which are defined in the **`init`**.py file of their according package. The python class implements a proxy that delegates calls to its IDL defined methods to the actual object implementation across the network.

The signature of the methods is slightly altered compared to the IDL signature. All `in` arguments are expected as arguments to the Python method in the same order as they appear in IDL. The return argument, if any, and all `out` arguments are returned as a Python tuple in the same order they appear in IDL. That means if there is a return argument defined it will appear as first element in the tuple, otherwise the first `out` argument is the first element in the tuple. If the IDL method has either only a return value or a single out argument, a single value is returned by the Python method without an embracing tuple.

4.2.3 Structures

IDL structures are mapped to Python classes which are, like all other definitions, defined in the **`init`**.py file of their according package. The class has all elements as defined in IDL. In addition there is a constructor with a signature that initializes all elements.

The following is an example for enabling a threshold in a sensor:

```
from raritan import rpc
from raritan.rpc import pdumodel, sensors

agent = rpc.Agent("https", "MyPX", "admin", "raritan")
outlet = emdmodel.Emd("/model/pdu/0/outlet/0", agent)
currentsens = outlet.getSensors().current
thresh = currentsens.getThresholds()
thresh.lowerWarning = 1.0
thresh.lowerWarningActive = true
currentsens.setThresholds(thresh)
```

4.2.4 Enumerations

An IDL enumeration is mapped to a concrete class which has an element for each enumerated value. That means access to a particular enumerated value is accomplished by naming the enumeration type and the enumerated value. Consider the following example for switching an outlet:

```
# pdumodel has been imported and outlet has been initialized before, see above

outlet.setPowerState(pdumodel.Outlet.PowerState.PS_OFF)
```

`PowerState` is an enumerated type defined in the `Outlet` interface. `PS_OFF` is a specific enumerated value defined in the `PowerState` enumeration.

4.2.5 Vectors

IDL vectors are mapped to Python lists. Consider the following example for looping over the list of all outlets of a Pdu and printing out informative data:

```
from raritan import rpc
from raritan.rpc import pdumodel

agent = rpc.Agent("https", "MyPX", "admin", "raritan")
pdu = pdumodel.Pdu("/model/pdu/0", agent)
outlets = pdu.getOutlets()
for outlet in outlets:
    print outlet.getMetaData()
```

4.2.6 Maps

IDL maps are mapped to Python dictionaries. Consider the following example for looping over all observed servers of the `servermon.ServerMonitor` and retrieving their entry id mapped to server entry structure which contains information and status:

```
from raritan import rpc
from raritan.rpc import servermon

agent = rpc.Agent("https", "MyEMX", "admin", "raritan")
srvmonitor = servermon.ServerMonitor("/servermon", agent);
servers = srvmonitor.listServers()
for srvid, srventry in servers.iteritems():
    print srvid, srventry.settings.host, srventry.status.reachable
```

4.2.7 Exceptions

Execptional errors conditions may occure because of communication problems or encoding/decoding problems or because of system errors that occure on the server while processing a request. Reporting of such error conditions is not part a regular IDL signature but port of the JSON-RPC protocoll.

The Python implementation of the JSON-RPC protocoll maps these error condtions to exception:

- **`raritan.rpc.HttpException`:** This exception is raised in case a communication error occured. Typical examples include an unreachable server or a failed authentication. The exception contains a descriptive text that gives more details on the error condition.

- **`raritan.rpc.JsonRpcErrorException`:** This exception is raised in case an error happened on the server side while processing the request. The device might be in an unexpected state. Also there might be a version mismatch between client and server, what means the communication contract between client and server as specified by IDL is broken. The exception contains a descriptive text that gives more details on the error condition.

- **`raritan.rpc.JsonRpcSyntaxException`:** This exception is raised in case demarshaling of a JSON message went wrong. This may indicate a version mismatch between client and server. The exception contains a descriptive text that gives more details on the error condition.

Consider the following example for catching a communication error:

```
from raritan import rpc
from raritan.rpc import emdmodel

try:
    agent = rpc.Agent("https", "MyEMX", "admin", "raritan")
    emx = emdmodel.Emd("/model/emd", agent)
    print "Getting EMD MetaData...",
    mdata = e.getMetaData()
    print "OK ->"
    print mdata
except rpc.HttpException, e:
    print "ERROR:", str(e)
```

Chapter 5

Namespace Index

5.1 Namespace List

Here is a list of all documented namespaces with brief descriptions:

Chapter 6

Hierarchical Index

6.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

Chapter 7

Class Index

7.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

Chapter 8

Namespace Documentation

8.1 assetmgrmodel Namespace Reference

Asset Management Model.

Classes

- interface AssetStrip_2_0_1

  Asset Management Strip interface.
- interface AssetStripConfig_1_0_1

  Asset Strip Config interface.
- interface AssetStripLogger_1_0_2

  Asset Strip Logger interface.

8.1.1 Detailed Description

Asset Management Model.

8.2 auth Namespace Reference

Local and Remote Authentication Management.

Namespaces

- namespace ldapsrv

  LDAP server interface.

Classes

- struct Policy

  Authentication policy.
- interface AuthManager

  Authentication manager interface.
- interface LdapManager_1_0_1

  LDAP server configuration interface.

- interface RadiusManager

  RADIUS server configuration interface.

Enumerations

- enum Type {
  LOCAL, RADIUS, KERBEROS, TACACS_PLUS,
  LDAP }

  Authentication type.

8.2.1 Detailed Description

Local and Remote Authentication Management.

8.2.2 Enumeration Type Documentation

8.2.2.1 enum auth::Type

Authentication type.

Enumerator

LOCAL local authentication

RADIUS authentication via radius server

KERBEROS authentication with kerberos tickets

TACACS_PLUS authentication via TACACS+

LDAP authentication via LDAP server

8.3 auth::ldapsrv Namespace Reference

LDAP server interface.

Classes

- struct ServerSettings

  Server settings.

Enumerations

- enum ServerType { ACTIVE_DIRECTORY, OPEN_LDAP }

  LDAP server type.

8.3.1 Detailed Description

LDAP server interface.

8.3.2 Enumeration Type Documentation

8.3.2.1 enum auth::ldapsrv::ServerType

LDAP server type.

Enumerator

ACTIVE_DIRECTORY Active directory.

OPEN_LDAP OpenLDAP.

8.4 bulkcfg Namespace Reference

Bulk Configuration.

Classes

- interface BulkConfiguration

  Bulk Configuration Interface.

8.4.1 Detailed Description

Bulk Configuration.

8.5 cascading Namespace Reference

Cascading.

Classes

- interface Cascading_1_0_1

  Cascading Interface.

8.5.1 Detailed Description

Cascading.

8.6 cert Namespace Reference

SSL Certificate Management.

Classes

- interface ServerSSLCert

  SSL certificate management interface.

8.6.1 Detailed Description

SSL Certificate Management.

8.7 cew Namespace Reference

Cisco EnergyWise.

Classes

- interface EnergyWiseManager
  EnergyWise manager.
- struct EnergyWiseSettings
  EnergyWise settings.

8.7.1 Detailed Description

Cisco EnergyWise.

8.8 datetime Namespace Reference

Device Date and Time Configuration.

Classes

- interface DateTime_2_0_0
  Date and time configuration methods.

8.8.1 Detailed Description

Device Date and Time Configuration.

8.9 devsettings Namespace Reference

Device Settings.

Classes

- interface Modbus
  Modbus service settings interface
- interface Smtp_1_0_1
  SMTP settings interface.
- interface Snmp_1_0_2
  SNMP agent settings interface.
- interface Zeroconf
  Zero-config service settings interface.

8.9.1 Detailed Description

Device Settings.

8.10 diag Namespace Reference

Diagnostics.

Classes

- interface DiagLogSettings

  Diagnostic log settings.

8.10.1 Detailed Description

Diagnostics.

8.11 event Namespace Reference

Event interface.

Classes

- interface AlarmManager

  AlarmManager interface.
- struct KeyValue

  Helper that is used wherever key/value pairs are required.
- struct Event

  Event has a type: a STATE event indicates that a boolean state has been changed, i.e.
- interface Engine

  There is a single event engine instance reachable by a well known reference.
- interface Consumer

  Consumer interface is for event consumers that want to be called back in case new events have occured.
- interface Channel_1_0_1

  Event Channel.
- interface Service_1_0_1

  Event Service.
- interface TimerEventManager_2_0_0

  TimerEventManager interface.

Variables

- valueobject UserEvent

  This UserEvent may be used as base valueobject for all concrete events that are triggered because of user interaction.
- string actIpAddr

  ip or device on which user is logged in

8.11.1 Detailed Description

Event interface.

8.11.2 Variable Documentation

8.11.2.1 valueobject event::UserEvent

This UserEvent may be used as base valueobject for all concrete events that are triggered because of user interaction.

user who triggered event

8.12 firmware Namespace Reference

Firmware Management

Classes

- struct UpdateHistoryEntry

  Firmware update history entry TODO: implement CR# 45668 on next interface change add comment field based on firmware tag "char tag[64];" to improve firmware update history entries without rootfs images
- struct ImageStatus

  Image upload/download status.
- struct ImageInfo_1_0_1

  Firmware image information
- interface Firmware_1_0_1

  Firmware management methods
- struct UpdateStatus

  Firmware update status
- interface FirmwareUpdateStatus

  Firmware update status interface.

Enumerations

- enum UpdateHistoryStatus { SUCCESSFUL, FAILED, INCOMPLETE }

  Firmware update history status
- enum ImageState {
  NONE, UPLOADING, UPLOAD_FAILED, DOWNLOADING,
  DOWNLOAD_FAILED, COMPLETE }

  Image upload/download state.
- enum UpdateFlags { CROSS_OEM, CROSS_HW, ALLOW_UNTRUSTED }

  Flags for startUpdate() method.

8.12.1 Detailed Description

Firmware Management

8.12.2 Enumeration Type Documentation

8.12.2.1 enum firmware::ImageState

Image upload/download state.

Enumerator

NONE No firmware image has been uploaded/downloaded.

UPLOADING A firmware image is currently being uploaded.

UPLOAD_FAILED There was a problem uploading an image to the device.

DOWNLOADING The device is downloading a firmware image from a URL.

DOWNLOAD_FAILED There was a problem downloading the image from a URL.

COMPLETE A complete image has been successfully uploaded/downloaded.

8.12.2.2 enum firmware::UpdateFlags

Flags for startUpdate() method.

Enumerator

CROSS_OEM Ignore version, product and OEM constraints.

CROSS_HW Ignore hardware constraints.

ALLOW_UNTRUSTED Allow untrusted firmwares.

8.12.2.3 enum firmware::UpdateHistoryStatus

Firmware update history status

Enumerator

SUCCESSFUL The update was successfully completed.

FAILED The update failed.

INCOMPLETE The update was not completed.

8.13 fitness Namespace Reference

Fitness Daemon

Classes

- interface Fitness

  Fitness Daemon interface

8.13.1 Detailed Description

Fitness Daemon

8.14 hmi Namespace Reference

Human Machine Interface.

Classes

- interface ExternalBeeper_1_0_1
  External Beeper interface.
- interface InternalBeeper
  Internal beeper interface.

8.14.1 Detailed Description

Human Machine Interface.

8.15 idl Namespace Reference

Basic IDL definitions.

Variables

- valueobject Event
  Common base for all events.

8.15.1 Detailed Description

Basic IDL definitions.

8.15.2 Variable Documentation

8.15.2.1 valueobject idl::Event

Initial value:

```
{
        Object source
```

Common base for all events.

IDL object that originated the event

8.16 jsonrpc Namespace Reference

Raritan JSON-RPC.

Classes

- interface NameService
  RPC Object Name Service.

8.16.1 Detailed Description

Raritan JSON-RPC.

8.17 lhx Namespace Reference

LHX.

Classes

- interface Support
  LHX Support Interface.

8.17.1 Detailed Description

LHX.

8.18 lhxmodel Namespace Reference

LHX Model.

Classes

- interface Lhx_3_2_1
  LHX Interface.
- interface Config_1_0_1
  LHX Configuration Interface.
- interface Parameter_2_0_1
  LHX Parameter Interface.
- interface Sensor_4_0_0
  LHX Sensor Interface.

8.18.1 Detailed Description

LHX Model.

8.19 logging Namespace Reference

Device Logging.

Classes

- interface DebugLog
  Device debug log interface.
- interface EventLog_1_0_1
  Device event log interface.
- struct LogEntry
  Device event.

Enumerations

- enum RangeDirection { FORWARD, BACKWARD }

  Range direction when fetching events.

Variables

- valueobject EventLogClearedEvent

  Event log cleared event.

8.19.1 Detailed Description

Device Logging.

8.19.2 Enumeration Type Documentation

8.19.2.1 enum logging::RangeDirection

Range direction when fetching events.

Enumerator

FORWARD Ascending serial numbers.

BACKWARD Descending serial numbers.

8.20 modelpush Namespace Reference

Model data push service.

Classes

- interface ModelPush

  Model push service settings interface.

8.20.1 Detailed Description

Model data push service.

8.21 net Namespace Reference

Network Configuration.

Classes

- interface Diagnostics

  Diagnostics interface.
- struct NetworkConfigIP

  Device IP configuration.

- struct IPv4RoutingEntry

  IPv4 Routing entry.
- struct NetworkConfigIPv4

  Device IPv4 configuration.
- struct NetworkConfigIPv6

  Device IPv6 configuration.
- struct IPv6RoutingEntry

  IPv6 Routing entry.
- struct NetworkActiveValuesIPv6

  Device IPv6 active values.
- struct ServiceConfig

  Network service configuration.
- struct LanLinkMode

  LAN interface link mode.
- struct InterfaceState_2_0_0

  LAN interface state.
- struct LanInterfaceSettings

  LAN interface settings.
- struct LanInterfaceParameters_2_0_0

  Current LAN interface parameters.
- struct EapSettings

  EAP authentication settings.
- struct WirelessInterfaceSettings

  Wireless interface settings.
- interface Net_2_0_2

  Network configuration interface.

Enumerations

- enum AutoConfigs { STATIC, DHCP, AUTO }

  Automatic network configuration protocols.
- enum LanSpeed { LAN_SPEED_AUTO, LAN_SPEED_10MBIT, LAN_SPEED_100MBIT, LAN_SPEED_1000MBIT, LAN_SPEED_UNKNOWN }

  LAN interface speed.
- enum LanDuplex { LAN_DUPLEX_AUTO, LAN_DUPLEX_HALF, LAN_DUPLEX_FULL, LAN_DUPLEX_UNKNOWN }

  LAN interface duplex mode.
- enum InterfaceMode_2_0_0 { IF_MODE_WIRED, IF_MODE_WIRELESS, IF_MODE_USB_DEVICE }

  LAN interface mode.
- enum AuthenticationMode { AUTH_NONE, AUTH_PSK, AUTH_EAP }

  WLAN authentication mode.
- enum EapOuterMethod { EAP_PEAP }

  EAP outer authentication method.
- enum EapInnerMethod { EAP_MSCHAPv2 }

  EAP inner authentication method.

8.21.1 Detailed Description

Network Configuration.

8.21.2 Enumeration Type Documentation

8.21.2.1 enum net::AuthenticationMode

WLAN authentication mode.

Enumerator

AUTH_NONE No authentication.

AUTH_PSK Pre-shared key authentication.

AUTH_EAP EAP authentication.

8.21.2.2 enum net::AutoConfigs

Automatic network configuration protocols.

Enumerator

STATIC No automatic configuration.

DHCP Use DHCP for automatic configuration (used for IPv4)

AUTO Use automatic configuration (used for IPv6)

8.21.2.3 enum net::EapInnerMethod

EAP inner authentication method.

Enumerator

EAP_MSCHAPv2 MSCHAPv2 authentication.

8.21.2.4 enum net::EapOuterMethod

EAP outer authentication method.

Enumerator

EAP_PEAP PEAP authentication.

8.21.2.5 enum net::InterfaceMode_2_0_0

LAN interface mode.

Enumerator

IF_MODE_WIRED Use wired network interface.

IF_MODE_WIRELESS Use wireless network interface.

IF_MODE_USB_DEVICE Use ethernet gadget on USB device port.

8.21.2.6 enum net::LanDuplex

LAN interface duplex mode.

Enumerator

LAN_DUPLEX_AUTO Use auto-negotiation to set duplex mode.

LAN_DUPLEX_HALF Half duplex.

LAN_DUPLEX_FULL Full duplex.

LAN_DUPLEX_UNKNOWN Unknown duplex mode.

8.21.2.7 enum net::LanSpeed

LAN interface speed.

Enumerator

LAN_SPEED_AUTO Use auto-negotiation to set speed.

LAN_SPEED_10MBIT 10 MBit/s

LAN_SPEED_100MBIT 100 MBit/s

LAN_SPEED_1000MBIT 1 GBit/s

LAN_SPEED_UNKNOWN Unknown speed.

8.22 pdumodel Namespace Reference

PDU Model.

Classes

- interface Ade

  Interface for ADE chips directly connected to main controller.
- interface Bcm

  Branch Circuit Monitor.
- struct CtrlStatistic

  Slave controller statistics.
- interface Controller_3_0_0

  Slave controller interface.
- interface EDevice

  Common base interface for any kind of electrical device that is used in the PDU model, such as inlets, OCPs and outlets.
- interface Inlet_1_2_6

  Inlet interface
- interface MemoryMapController_3_0_0

  Memory map controller.
- struct Rating

  Numerical usage ratings.
- struct Nameplate

  Component nameplate information.
- struct OutletStatistic

  Outlet statistics

- interface Outlet_1_5_6

  Outlet interface
- struct CircuitBreakerStatistic

  Overcurrent protector statistics.
- interface OverCurrentProtector_2_1_2

  Overcurrent protector interface.
- interface Pdu_3_0_0

  Main PDU interface.
- struct Pole_2_0_0

  An inlet or outlet pole.
- struct DoublePole_2_0_0

  for OCP
- struct ThrowPole

  A pole that can select one of multiple inputs.
- interface PowerQualitySensor_2_0_0

  Power quality sensor interface.
- interface ResidualCurrentStateSensor_2_0_0

  Residual current state sensor interface.
- interface TransferSwitch_3_1_1

  Transfer switch interface.
- interface Unit_2_0_1

  Unit interface.

Enumerations

- enum PowerLine { L1, L2, L3, NEUTRAL }

  Power line.

8.22.1 Detailed Description

PDU Model.

8.22.2 Enumeration Type Documentation

8.22.2.1 enum pdumodel::PowerLine

Power line.

Enumerator

L1 Line 1.

L2 Line 2.

L3 Line 3.

NEUTRAL Neutral.

8.23 peripheral Namespace Reference

Peripheral Devices.

Classes

- interface DeviceManager_2_0_0

  Peripheral Device Manager.
- struct PackageInfo_2_0_0

  Peripheral device package information.
- struct PosElement

  peripheral device position element, list forms position
- struct DeviceID_2_0_0

  peripheral device identification
- struct Address_2_0_0

  peripheral device position based address
- interface DeviceSlot_2_0_0

  Peripheral Device Slot.
- interface G2Production_2_0_0

Enumerations

- enum PortType { ONEWIRE_ONBOARD, ONEWIRE_DEV_PORT, ONEWIRE_HUB_PORT, ONEWIRE_CHAIN_POS }

  peripheral device port types

Variables

- valueobject Device_2_0_0

  A peripheral device is the collection of.
- vector< PosElement > position

  Position within 1-wire topo.
- string packageClass

  physical package identifier
- sensors Sensor_4_0_0 device

  device reference

8.23.1 Detailed Description

Peripheral Devices.

8.23.2 Enumeration Type Documentation

8.23.2.1 enum peripheral::PortType

peripheral device port types

Enumerator

ONEWIRE_ONBOARD a built in, inaccessible port

ONEWIRE_DEV_PORT a 1-wire port on the device

ONEWIRE_HUB_PORT a port on a Hub

ONEWIRE_CHAIN_POS a chain position

8.23.3 Variable Documentation

8.23.3.1 valueobject peripheral::Device_2_0_0

Initial value:

```
{
        DeviceID_2_0_0       deviceID
```

A peripheral device is the collection of.

- device identification
- device position
- a flag indicating actuator type
- device referencedevice identification

8.24 portsmodel Namespace Reference

Ports.

Classes

- interface Port_2_0_1
  Port interface.

8.24.1 Detailed Description

Ports.

8.25 production Namespace Reference

Methods used during production.

Classes

- interface Production
  Methods used during production.

8.25.1 Detailed Description

Methods used during production.

8.26 radius Namespace Reference

RADIUS server interface.

Classes

- struct ServerSettings

  Server settings.

Enumerations

- enum AuthType { PAP, CHAP }

  RADIUS auth type.

8.26.1 Detailed Description

RADIUS server interface.

8.26.2 Enumeration Type Documentation

8.26.2.1 enum radius::AuthType

RADIUS auth type.

Enumerator

PAP PAP.

CHAP CHAP.

8.27 res_mon Namespace Reference

Resource Monitor interface.

Classes

- struct Entry

  ResMon Entry.
- interface ResMon

  ResMon interface.

8.27.1 Detailed Description

Resource Monitor interface.

8.28 security Namespace Reference

Security Configuration

Classes

- struct IpfwRule

  IP packet filter rule.
- struct IpFw_2_0_0

  IP packet filter configuration.
- struct RoleAccessRule

  Role-based access rule.
- struct RoleAccessControl

  Role-based access control settings.
- struct PasswordSettings

  Password settings.
- struct SSHSettings

  SSH authentication settings.
- struct RestrictedServiceAgreement

  Restricted Service Agreement settings.
- interface Security_3_0_0

  Security configuration interface
- interface ServiceAuthorization

  Service Authorization Configuration.

Enumerations

- enum IpfwPolicy { ACCEPT, DROP, REJECT }

  IP packet filter policy.
- enum RoleAccessPolicy { ALLOW, DENY }

  Role-based access policy.

Variables

- valueobject PasswordSettingsChanged

  This Event is emitted after any of the password-settings has been changed.
- PasswordSettings **newSettings**

8.28.1 Detailed Description

Security Configuration

8.28.2 Enumeration Type Documentation

8.28.2.1 enum security::IpfwPolicy

IP packet filter policy.

Enumerator

ACCEPT Accept the packet.

DROP Silently discard the packet.

REJECT Discard packet, send error response.

8.28.2.2 enum security::RoleAccessPolicy

Role-based access policy.

Enumerator

ALLOW Access granted.

DENY Access denied.

8.29 sensors Namespace Reference

Sensors Model.

Classes

- interface AccumulatingNumericSensor_2_0_0

  A sensor which accumulates numeric readings (e.g.
- interface NumericSensor_4_0_0

  A sensor with numeric readings.
- interface Sensor_4_0_0

  Sensor interface
- interface Logger_2_1_2

  Sensor logger interface.
- interface StateSensor_4_0_0

  Sensor with discrete readings.
- interface Switch_2_0_0

  Switch is an actuator and an extension to StateSensor.

8.29.1 Detailed Description

Sensors Model.

8.30 serial Namespace Reference

Serial Ports.

Classes

- interface AnalogModem

  Interface for communication with an analog modem attached to a serial port.
- interface GsmModem_1_0_1

  Interface for communication with a GSM modem attached to a serial port.
- interface PortDispatcher_1_1_1

  Top-level interface of the serial port manager.
- interface SerialPort_2_0_0

  Interface describing a physical serial port and the devices which can be attached to it.

8.30.1 Detailed Description

Serial Ports.

8.31 servermon Namespace Reference

Server Monitor.

Classes

- interface ServerMonitor_2_0_0

  Server Monitor Interface.

8.31.1 Detailed Description

Server Monitor.

8.32 session Namespace Reference

Session Management

Classes

- struct Session

  Session information
- struct HistoryEntry

  Session history entry
- interface SessionManager

  Session manager interface

8.32.1 Detailed Description

Session Management

8.33 smartcard Namespace Reference

Card Reader.

Classes

- interface CardReader

  Card Reader Interface.
- interface CardReaderManager

  Card Reader Manager Interface.

8.33.1 Detailed Description

Card Reader. Card Reader Manager.

8.34 sys Namespace Reference

Low-Level system access methods.

Classes

- interface System

  System access methods.

8.34.1 Detailed Description

Low-Level system access methods.

8.35 test Namespace Reference

Test Interfaces.

Classes

- interface Display_1_0_1

  Type-independent display test interface.
- struct Result

  Convenience structure to return test or operation results.
- interface Control

  Interface to enter and exit special test modes.
- interface RS232Serial

  Test routines for full RS232 Serial Interface.
- interface FeatSerial

  test routines for Raritan Feature Serial interface (RS232 with some control lines and switched power) Require TestMode to be ON.
- interface AuxSerial

  test routines for Raritan Aux Serial interface (RS485 on pins 3 and 6 of RJ45) Require TestMode to be ON.
- interface Ethernet

  test routines for RJ45 Ethernet port This is low level interface using ethtool that does not persist any of the settings made (TODO: this interface may be combined with a 'decent' network interface.
- interface Unit_1_0_2

  Test interface for PDU components controlled by topofw.

8.35.1 Detailed Description

Test Interfaces. system test interfaces

8.36 um Namespace Reference

User Management.

Classes

- interface SnmpV3

  SNMPv3 interface.

8.36.1 Detailed Description

User Management.

8.37 usb Namespace Reference

USB Ports.

Classes

- struct UsbDevice

  USB device information.
- interface Usb

  USB interface.

8.37.1 Detailed Description

USB Ports.

8.38 usermgmt Namespace Reference

User Management

Classes

- interface Role

  Role management interface
- interface RoleManager

  Role manager interface.
- struct SnmpV3Settings

  SNMPv3 settings.
- struct AuxInfo

  Auxiliary user information.
- struct Preferences

  User preferences
- struct UserInfo

  User information
- struct UserCapabilities

User Capabilities Describe if certain operations can be performed for user.

- interface User_1_0_1

  User interface
- struct Account

  Account information
- interface UserManager_1_0_2

  User manager interface

Enumerations

- enum TemperatureEnum { DEG_C, DEG_F }

  Preferred display unit for temperature sensors.
- enum LengthEnum { METER, FEET }

  Preferred display unit for length measurements, e.g.
- enum PressureEnum { PASCAL, PSI }

  Preferred display unit for (air) pressure sensors.

Variables

- valueobject RoleEvent

  Base type of all account event.
- valueobject **RoleAdded**
- valueobject **RoleRemoved**
- valueobject **RoleChanged**
- Role Info **newSettings**
- valueobject AccountEvent

  Base type of all account event.
- valueobject AccountAdded

  This event is emitted after a new account with the provided username was added.
- valueobject AccountRemoved

  This event is emitted after the account with the provided username has been removed.
- valueobject PasswordChanged

  This event is emitted after the password for an account was changed.
- valueobject AccountChanged

  This event is emitted if the settings of an account as defined in usermgmt.UserInfo have changed (Note: we may add an indication what in the structure has changed or even split the event, if handling is difficult)

8.38.1 Detailed Description

User Management

8.38.2 Enumeration Type Documentation

8.38.2.1 enum usermgmt::LengthEnum

Preferred display unit for length measurements, e.g.

device altitude

Enumerator

METER Meters.

FEET Feet.

8.38.2.2 enum usermgmt::PressureEnum

Preferred display unit for (air) pressure sensors.

Enumerator

PASCAL Pascal.
PSI pound-force per square inch

8.38.2.3 enum usermgmt::TemperatureEnum

Preferred display unit for temperature sensors.

Enumerator

DEG_C Degrees Celsius.
DEG_F Degrees Fahrenheit.

8.38.3 Variable Documentation

8.38.3.1 valueobject usermgmt::AccountEvent

Base type of all account event.

id of user which was affected

8.39 webcam Namespace Reference

Webcam Management.

Classes

- interface StorageManager_1_0_1
  The storage manager interface.
- struct Format_2_0_0
  Format.
- struct Controls
  Controls.
- struct Location
  Location.
- struct ImageMetaData
  Image meta data.
- struct Image_2_0_0
  Image.
- struct Settings_2_0_0
  Webcam settings.
- struct Information_2_0_0
  Webcam information.
- interface Webcam_2_0_0
  The webcam interface.
- interface Channel
  The channel interface.
- interface WebcamManager_2_0_0
  The webcam manager interface.

Enumerations

- enum PixelFormat { MJPEG, JPEG, RGB, YUV }
  PixelFormat.
- enum PowerLineFrequency { **NOT_SUPPORTED**, **HZ50**, **HZ60**, **DISABLED** }
  PowerLineFrequency.
- enum Priority {
  VERY_LOW, LOW, NORMAL, HIGH,
  VERY_HIGH }
  Priority.

Variables

- valueobject WebcamEvent
  Base type of all webcam event.
- valueobject WebcamAddedEvent
  This event is emitted after a webcam was added.
- valueobject WebcamRemovedEvent
  This event is emitted after a webcam has been removed.
- valueobject WebcamSettingsChangedEvent
  This event is emitted after the settings of a webcam were changed.
- webcam Settings_2_0_0 oldSettings
  the old settings
- webcam Settings_2_0_0 newSettings
  the new settings

8.39.1 Detailed Description

Webcam Management.

8.39.2 Enumeration Type Documentation

8.39.2.1 enum webcam::PixelFormat

PixelFormat.

Enumerator

MJPEG Motion JPEG.
JPEG JPEG.
RGB RGB encoded.
YUV YUV encoded.

8.39.2.2 enum webcam::Priority

Priority.

Enumerator

VERY_LOW very low
LOW low
NORMAL normal
HIGH high
VERY_HIGH very high

8.39.3 Variable Documentation

8.39.3.1 valueobject webcam::WebcamEvent

Base type of all webcam event.

the webcam which was affected

8.39.3.2 valueobject webcam::WebcamSettingsChangedEvent

This event is emitted after the settings of a webcam were changed.

the user that caused the change

Chapter 9

Class Documentation

9.1 usermgmt::Account Struct Reference

Account information

```
import "UserManager.idl";
```

Public Attributes

- string name

  Account name
- UserInfo info

  User information

9.1.1 Detailed Description

Account information

The documentation for this struct was generated from the following file:

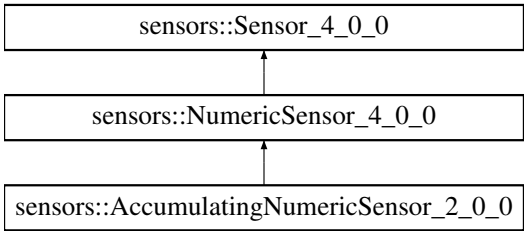
- pdu-json-rpc-api/idl/UserManager.idl

9.2 sensors::AccumulatingNumericSensor_2_0_0 Interface Reference

A sensor which accumulates numeric readings (e.g.

```
import "AccumulatingNumericSensor.idl";
```

Inheritance diagram for sensors::AccumulatingNumericSensor_2_0_0:



Public Member Functions

- void resetValue ()

  Resets the accumulated value of the sensor.

Public Attributes

- valueobject ResetEvent: event.UserEvent { NumericSensor_4_0_0.Reading oldReading

  Event: Accumulated value has been reset.
- NumericSensor_4_0_0 Reading newReading

  Value after reset.

Additional Inherited Members

9.2.1 Detailed Description

A sensor which accumulates numeric readings (e.g.

energy counter)

9.2.2 Member Data Documentation

9.2.2.1 valueobject sensors::AccumulatingNumericSensor_2_0_0::ResetEvent

Event: Accumulated value has been reset.

Value before reset

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/AccumulatingNumericSensor.idl

9.3 event::Engine::Action Struct Reference

An action is a tuple of 'id' (unique within the scope of this event engine), 'name' which is unique as well and used by the GUI as user readable identificator, 'isSystem' which denotes the action as system action, 'type' which defines what it is, and an argument vector that vary depending on type and which is passed to the action.

```
import "EventEngine.idl";
```

Public Attributes

- string id

  Action ID.
- string name

  User-defined name.
- boolean isSystem

  `true` *for system-defined actions*
- string type

  Action type.
- vector< KeyValue > arguments

  Action argument map.

9.3.1 Detailed Description

An action is a tuple of 'id' (unique within the scope of this event engine), 'name' which is unique as well and used by the GUI as user readable identificator, 'isSystem' which denotes the action as system action, 'type' which defines what it is, and an argument vector that vary depending on type and which is passed to the action.

The 'isSystem' flag is readonly and if set marks the action as not deletable.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/EventEngine.idl

9.4 webcam::StorageManager_1_0_1::Activity Struct Reference

Activity.

```
import "StorageManager.idl";
```

Public Attributes

- Webcam_2_0_0 webcam
  webcam object
- int interval
  capture interval
- int count
  nr of images to take
- int done
  nr of images taken

9.4.1 Detailed Description

Activity.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/StorageManager.idl

9.5 peripheral::Address_2_0_0 Struct Reference

peripheral device position based address

```
import "PeripheralDeviceSlot.idl";
```

Public Attributes

- vector< PosElement > position
  Position within 1-wire topo.
- sensors Sensor_4_0_0 TypeSpec type
  device's type spec
- boolean isActuator
  true if device is an actuator
- int channel
  Channel number.

9.5.1 Detailed Description

peripheral device position based address

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/PeripheralDeviceSlot.idl

9.6 pdumodel::Ade Interface Reference

Interface for ADE chips directly connected to main controller.

```
import "Ade.idl";
```

Classes

- struct MetaData

  ADE metadata.
- struct Sample

  Raw sample data for a single channel.

Public Types

- typedef map< string, long > RegisterMap

  Map of ADE register values.

Public Member Functions

- MetaData getMetaData ()

  Retrieve the ADE metadata.
- vector< Sample > getLatestSample ()

  Retrieve the latest raw samples.
- RegisterMap getCalibrationData ()

  Retrieve the values of all supported calibration registers.
- int setCalibrationData (in RegisterMap regs)

  Set new values for some or all calibration registers.

9.6.1 Detailed Description

Interface for ADE chips directly connected to main controller.

9.6.2 Member Function Documentation

9.6.2.1 RegisterMap pdumodel::Ade::getCalibrationData ( )

Retrieve the values of all supported calibration registers.

Returns

Map of calibration register values

9.6.2.2 vector<Sample> pdumodel::Ade::getLatestSample ( )

Retrieve the latest raw samples.

Returns

Vector of samples, one for each channel

9.6.2.3 MetaData pdumodel::Ade::getMetaData ( )

Retrieve the ADE metadata.

Returns

ADE metadata

9.6.2.4 int pdumodel::Ade::setCalibrationData (in RegisterMap *regs*)

Set new values for some or all calibration registers.

Note

This command is only available during manufacturing!

Parameters

regs	Map of new calibration register values

Returns

0 if OK
1 if any parameters are invalid
2 if the device is not in factory configuration mode

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/Ade.idl

9.7 event::AlarmManager::Alarm Struct Reference

Alarm structure.

```
import "AlarmManager.idl";
```

Public Attributes

- string id
  Alarm id.
- string name
  Alarm name.
- string actionId
  Corresponding action id.
- vector< Alert > alerts
  List of alerts.

9.7.1 Detailed Description

Alarm structure.

An alarm has a name, a reference to its action source and a list of all alerts which created the alarm.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/AlarmManager.idl

9.8 event::AlarmManager Interface Reference

AlarmManager interface.

```
import "AlarmManager.idl";
```

Classes

- struct Alarm

  Alarm structure.
- struct Alert

  Alert structure.

Public Member Functions

- int acknowledgeAlarm (in string alarmId)

  Acknowledges an alarm.
- vector< Alarm > listAlarms ()

  List alarms that need to be acknowledged.

Public Attributes

- constant int NO_ERROR = 0

  Error codes.
- constant int ERR_UNKNOWN_ALARM_ID = 1

  unknown alarmId
- constant int ERR_EXECUTING_ACTIONS = 2

  failure during executing actions
- valueobject AlarmAddedEvent: idl.Event { Alarm alarm

  New alarm added event.
- valueobject AlarmUpdatedEvent: idl.Event { Alarm alarm

  Alarm updated event.
- valueobject AlarmAcknowledgedEvent: idl.Event { string alarmId

  Existing alarm acknowledgement event.

9.8.1 Detailed Description

AlarmManager interface.

9.8.2 Member Function Documentation

9.8.2.1 int event::AlarmManager::acknowledgeAlarm (in string *alarmId*)

Acknowledges an alarm.

This stops notification sending and will remove the specified alarm from the alarm list.

Parameters

alarmId	alarm id

Returns

NO_ERROR if OK
ERR_UNKNOWN_ALARM_ID if alarmId is unknown
ERR_EXECUTING_ACTIONS if failure during executing acknowledgment actions

9.8.3 Member Data Documentation

9.8.3.1 valueobject event::AlarmManager::AlarmAcknowledgedEvent

Existing alarm acknowledgement event.

Alarm id of acknowledged alarm

9.8.3.2 valueobject event::AlarmManager::AlarmAddedEvent

New alarm added event.

Newly added alarm

9.8.3.3 valueobject event::AlarmManager::AlarmUpdatedEvent

Alarm updated event.

Updated alarm

9.8.3.4 constant int event::AlarmManager::NO_ERROR = 0

Error codes.

operation successful, no error

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/AlarmManager.idl

9.9 event::AlarmManager::Alert Struct Reference

Alert structure.

```
import "AlarmManager.idl";
```

Public Attributes

- string eventCondition

  Event condition.
- string message

  Log message.
- time firstAppearance

  Date & time of first appearance.
- time lastAppearance

  Date & time of last appearance.
- int numberAlerts

  Number of alerts.

9.9.1 Detailed Description

Alert structure.

An alert contains the event id, the log message of the triggered alarm condition plus time and counter fields to express when and how often the alarm condition was triggered.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/AlarmManager.idl

9.10 lhxmodel::Lhx_3_2_1::AlertStatus Struct Reference

LHX alert status.

```
import "Lhx.idl";
```

Public Attributes

- vector< boolean > sensorFailure

  Sensor failure (broken or short circuit)
- vector< boolean > fanFailure

  Fan motor failure.
- vector< boolean > powerSupplyFailure

  Power supply failure.
- boolean thresholdAirOutlet

  The air outlet temperature threshold was crossed.
- boolean thresholdAirInlet

  The air inlet temperature threshold was crossed.
- boolean thresholdWaterInlet

  The water inlet temperature threshold was crossed.
- boolean doorOpened

  The door was opened.
- boolean maximumCoolingRequest

  Maximum cooling was requested.
- boolean emergencyCooling

  LHX is in emergency cooling mode.
- boolean waterLeak

  Water leakage was detected.

- boolean thresholdHumidity

  The humidity threshold was crossed.
- boolean externalWaterCoolingFailure

  An external water cooling failure occurred.
- boolean thresholdWaterOutlet

  The water outlet temperature threshold was crossed.
- boolean stBusError

  ST-Bus communication error.
- boolean condenserPumpFailure

  Condenser pump failure occurred.
- boolean baseElectronicsFailure

  Base electronics failure occurred.
- boolean voltageLow

  The battery voltage is low.

9.10.1 Detailed Description

LHX alert status.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Lhx.idl

9.11 serial::AnalogModem Interface Reference

Interface for communication with an analog modem attached to a serial port.

```
import "AnalogModem.idl";
```

Classes

- struct Settings

Public Member Functions

- Settings getSettings ()

  Get modem settings.
- int setSettings (in Settings settings)

  Set modem settings.

Public Attributes

- constant int SUCCESS = 0

  Error codes.
- constant int ERR_INVALID_VALUE = 1

  Invalid argument.
- valueobject DialInEvent: idl.Event { string number

  Dial-in event.
- valueobject CallReceivedEvent: DialInEvent { }

  An event that's emitted when a dial-in call was answered.
- valueobject CallEndedEvent: DialInEvent { boolean disconnectedRemotely

  An event that's emitted when a dial-in call was hung up.

9.11.1 Detailed Description

Interface for communication with an analog modem attached to a serial port.

9.11.2 Member Function Documentation

9.11.2.1 Settings serial::AnalogModem::getSettings ( )

Get modem settings.

Returns

– Current modem settings

9.11.2.2 int serial::AnalogModem::setSettings (in Settings *settings*)

Set modem settings.

Parameters

settings	– New settings

Returns

SUCCESS – on success
ERR_INVALID_VALUE – if any passed value was invalid

9.11.3 Member Data Documentation

9.11.3.1 valueobject serial::AnalogModem::CallEndedEvent

An event that's emitted when a dial-in call was hung up.

If true, the call was disconnected by the caller If false, the call was disconnected locally, e.g. due to a connection failure

9.11.3.2 valueobject serial::AnalogModem::DialInEvent

Dial-in event.

The caller's phone number

9.11.3.3 constant int serial::AnalogModem::SUCCESS = 0

Error codes.

No error

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/AnalogModem.idl

9.12 usermgmt::RoleManager::ArgumentDesc Struct Reference

Privilege Argument Description.

```
import "RoleManager.idl";
```

Public Attributes

- string name

  Argument name.
- string desc

  Argument description.

9.12.1 Detailed Description

Privilege Argument Description.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/RoleManager.idl

9.13 assetmgrmodel::AssetStrip_2_0_1 Interface Reference

Asset Management Strip interface.

```
import "AssetStrip.idl";
```

Classes

- struct DeviceInfo

  Static (type, version) information for an AssetStrip.
- struct RackUnitInfo

  Infos for a single rack unit.
- struct StripInfo

  Dynamic (may change with a connected strip) information for an AssetStrip.
- struct TagChangeInfo

  Information describing a tag change.
- struct TagInfo

  Information for a single tag.

Public Types

- enum State { DISCONNECTED, FIRMWARE_UPDATE, UNSUPPORTED, AVAILABLE }

  AssetStrip state
- enum StripType { SIMPLE, COMPOSITE }

  Type of the connected asset strip.
- enum TagType { SINGLE, EXTENSION, NONE }

  Type of an asset tag connected to a rack unit.
- enum CascadeState { CASCADE_ACTIVE, CASCADE_FIRMWARE_UPDATE }

  For composite asset strips CascadeState shows additional information about the state of the complete cascade.
- enum FirmwareUpdateState { UPDATE_STARTED, UPDATE_SUCCESSFUL, UPDATE_FAILED }

  Enumeration: State of firmware update.

Public Member Functions

- State getState ()

  Get the current state of the AssetStrip.
- DeviceInfo getDeviceInfo ()

  Get static (hardware and firmware) information.
- StripInfo getStripInfo ()

  Get dynamic (number of tags) information.
- int getRackUnitInfo (in int rackUnitNumber, out RackUnitInfo info)

  Get info with all settings of a rack unit at once.
- vector< RackUnitInfo > getAllRackUnitInfos ()

  Get infos with settings for all rack units.
- int getTag (in int rackUnitNumber, in int slotNumber, out TagInfo tagInfo)

  Get the asset tag for a rack unit.
- vector< TagInfo > getAllTags ()

  Get all asset tags of the strip.
- vector< TagInfo > getMainTags ()

  Get all asset tags on the main strip.
- int getExtensionTags (in int rackUnitNumber, out vector< TagInfo > tags)

  Get all asset tags on an extension.
- void triggerPowercycle (in boolean hard)

  Trigger a powercycle of either the whole asset strip port or the LED part power supply on the asset strip.

Public Attributes

- constant int NO_ERROR = 0

  Error codes.
- constant int ERR_INVALID_PARAM = 1

  Invalid parameter for an operation.
- constant int ERR_NO_SUCH_OBJECT = 2

  Requested object does not exist.
- constant int MAIN_STRIP_COLUMN = 0

  Constants.
- valueobject StripInfoChangedEvent: idl.Event { StripInfo oldInfo

  Event: Asset strip dynamic information has changed.
- StripInfo newInfo

  Information after change.
- valueobject StateChangedEvent: idl.Event { State oldState

  Event: Asset strip state has changed.
- State newState

  State after change.
- DeviceInfo deviceInfo

  `Information about connected strip, only valid`

  if newState is AVAILABLE
- valueobject RackUnitChangedEvent: event.UserEvent { int rackUnitNumber

  Event: A rack unit has changed.
- RackUnitInfo rackUnit

  New rack unit information.
- valueobject TagEvent: idl.Event { vector<TagChangeInfo> tags

  Event: A tag was added or removed.
- vector< TagInfo > allTags

New list of detected tags after change.

- valueobject TagAddedEvent: TagEvent { }

  Event: A tag was added.
- valueobject TagRemovedEvent: TagEvent { }

  Event: A tag was removed.
- valueobject FirmwareUpdateStateChangedEvent: idl.Event { FirmwareUpdateState state

  Event: Firmware update was started or has finished.
- valueobject BladeOverflowChangedEvent: idl.Event { boolean overflow

  Event: Tag overflow.
- valueobject OrientationChangedEvent: idl.Event { AssetStripConfig_1_0_1.Orientation oldOrientation

  Event: Detected strip orientation has changed.
- AssetStripConfig_1_0_1 Orientation newOrientation

  Strip orientation after change.
- valueobject CompositionChangedEvent: idl.Event { int oldComponentCount

  Event: Strip composition has changed.
- int newComponentCount

  Component count after change.

9.13.1 Detailed Description

Asset Management Strip interface.

9.13.2 Member Enumeration Documentation

9.13.2.1 enum assetmgrmodel::AssetStrip_2_0_1::CascadeState

For composite asset strips CascadeState shows additional information about the state of the complete cascade.

Enumerator

CASCADE_ACTIVE cascade is up and running

CASCADE_FIRMWARE_UPDATE a device in the cascade receives a firmware update

9.13.2.2 enum assetmgrmodel::AssetStrip_2_0_1::FirmwareUpdateState

Enumeration: State of firmware update.

Enumerator

UPDATE_STARTED Update is running.

UPDATE_SUCCESSFUL Update was completed successfully.

UPDATE_FAILED Update has failed.

9.13.2.3 enum assetmgrmodel::AssetStrip_2_0_1::State

AssetStrip state

Enumerator

DISCONNECTED No strip connected.

FIRMWARE_UPDATE Firmware update in progress.

UNSUPPORTED Connected asset strip is unsupported.

AVAILABLE Asset strip is up and running normally.

9.13.2.4 enum assetmgrmodel::AssetStrip_2_0_1::StripType

Type of the connected asset strip.

Enumerator

SIMPLE single, monolitic strip

COMPOSITE strip consisting of multiple cascaded strips

9.13.2.5 enum assetmgrmodel::AssetStrip_2_0_1::TagType

Type of an asset tag connected to a rack unit.

Enumerator

SINGLE single asset tag connected to main strip or an extension

EXTENSION blade server extension, only possible on the main strip

NONE no asset tag connected to main strip or an extension

9.13.3 Member Function Documentation

9.13.3.1 vector<RackUnitInfo> assetmgrmodel::AssetStrip_2_0_1::getAllRackUnitInfos ( )

Get infos with settings for all rack units.

Returns

Result: the rack unit infos with settings

9.13.3.2 vector<TagInfo> assetmgrmodel::AssetStrip_2_0_1::getAllTags ( )

Get all asset tags of the strip.

Please note that in case there is not a single tag connected to the strip the resulting list will be empty, only connected tag info structures are returned It is guaranteed that extensions on the main strip are returned before any tag on an extension itself.

Returns

Result: list asset tag infos

9.13.3.3 DeviceInfo assetmgrmodel::AssetStrip_2_0_1::getDeviceInfo ( )

Get static (hardware and firmware) information.

Returns

Result: hardware and firmware information

9.13.3.4 int assetmgrmodel::AssetStrip_2_0_1::getExtensionTags (in int *rackUnitNumber,* out vector< **TagInfo** > *tags*)

Get all asset tags on an extension.

Gets all tags on a single extension for a certain rack unit. List will be empty if there are no tags connected

Parameters

rackUnitNumber	rack unit to get the extension tags for, range 0..rackUnitCount-1
tags	Result: list asset tag infos

Returns

NO_ERROR on success
ERR_INVALID_PARAM rack unit count exceeded or rack unit does not contain an extension

9.13.3.5 vector<**TagInfo**> assetmgrmodel::AssetStrip_2_0_1::getMainTags ( )

Get all asset tags on the main strip.

Same as getAllTags, but only consider tags connected to the main asset strip and not on any connected extension. Extensions on the main strip themselves are returned.

Returns

Result: list asset tag infos

9.13.3.6 int assetmgrmodel::AssetStrip_2_0_1::getRackUnitInfo (in int *rackUnitNumber,* out **RackUnitInfo** *info*)

Get info with all settings of a rack unit at once.

Parameters

rackUnitNumber	rack unit to get the info for, range 0..rackUnitCount-1
info	Result: info for this rack unit

Returns

NO_ERROR on success
ERR_INVALID_PARAM rack unit count exceeded

9.13.3.7 **State** assetmgrmodel::AssetStrip_2_0_1::getState ( )

Get the current state of the AssetStrip.

Returns

State of the Asset Strip

9.13.3.8 **StripInfo** assetmgrmodel::AssetStrip_2_0_1::getStripInfo ( )

Get dynamic (number of tags) information.

Returns

Result: tag related information

9.13.3.9 int assetmgrmodel::AssetStrip_2_0_1::getTag (in int *rackUnitNumber,* in int *slotNumber,* out **TagInfo** *tagInfo*)

Get the asset tag for a rack unit.

Parameters

rackUnitNumber	rack unit to read the asset tag for, range 0..rackUnitCount-1
slotNumber	slot to read the asset tag for, 0 for the main strip, >0 for blades
tagInfo	Result: asset tag information

Returns

NO_ERROR on success
ERR_INVALID_PARAM rack unit count exceeded or colum not existing
ERR_NO_SUCH_OBJECT no tag connected to this rack unit

9.13.3.10 void assetmgrmodel::AssetStrip_2_0_1::triggerPowercycle (in boolean *hard*)

Trigger a powercycle of either the whole asset strip port or the LED part power supply on the asset strip.

Parameters

hard	true=whole port, false=LEDs only

9.13.4 Member Data Documentation

9.13.4.1 valueobject assetmgrmodel::AssetStrip_2_0_1::BladeOverflowChangedEvent

Event: Tag overflow.

```
Whether the strip is out of space
```

for new blade extension tags

9.13.4.2 valueobject assetmgrmodel::AssetStrip_2_0_1::CompositionChangedEvent

Event: Strip composition has changed.

Component count before change

9.13.4.3 valueobject assetmgrmodel::AssetStrip_2_0_1::FirmwareUpdateStateChangedEvent

Event: Firmware update was started or has finished.

Update state

9.13.4.4 constant int assetmgrmodel::AssetStrip_2_0_1::NO_ERROR = 0

Error codes.

Operation successful, no error

9.13.4.5 valueobject assetmgrmodel::AssetStrip_2_0_1::OrientationChangedEvent

Event: Detected strip orientation has changed.

Strip orientation before change

9.13.4.6 valueobject assetmgrmodel::AssetStrip_2_0_1::RackUnitChangedEvent

Event: A rack unit has changed.

Affected rack unit position

9.13.4.7 valueobject assetmgrmodel::AssetStrip_2_0_1::StateChangedEvent

Event: Asset strip state has changed.

State before change

9.13.4.8 valueobject assetmgrmodel::AssetStrip_2_0_1::StripInfoChangedEvent

Event: Asset strip dynamic information has changed.

Information before change

9.13.4.9 valueobject assetmgrmodel::AssetStrip_2_0_1::TagEvent

Event: A tag was added or removed.

Affected tags

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/AssetStrip.idl

9.14 assetmgrmodel::AssetStripConfig_1_0_1 Interface Reference

Asset Strip Config interface.

```
import "AssetStripConfig.idl";
```

Classes

- struct LEDColor

  The LED color in RGB format, 8 bit per channel.
- struct RackUnitSettings

  Settings for a single rack unit (LED state)
- struct StripSettings

  Settings for this Asset Strip.

Public Types

- enum ScanMode { SCANMODE_DISABLED, SCANMODE_BOTH }

  AssetStripConfig scan mode is active
- enum NumberingMode { TOP_DOWN, BOTTOM_UP }

  AssetStripConfig rack unit numbering mode
- enum Orientation { TOP_CONNECTOR, BOTTOM_CONNECTOR }

  AssetStripConfig orientation

- enum LEDOperationMode { LED_OPERATION_MANUAL, LED_OPERATION_AUTO }

  Operation mode for the LED of a single rack unit.
- enum LEDMode { LED_MODE_ON, LED_MODE_OFF, LED_MODE_BLINK_FAST, LED_MODE_BLINK_SLOW }

  Mode for the LED of a single rack unit.

Public Member Functions

- StripSettings getStripSettings ()

  Get the asset strip settings which are not rack unit specific.
- int setStripSettings (in StripSettings settings)

  Set the asset strip settings which are not rack unit specific.
- int getRackUnitSettings (in int rackUnitNumber, out RackUnitSettings settings)

  Get settings of a rack unit at once.
- vector< RackUnitSettings > getAllRackUnitSettings ()

  Get settings for all rack units.
- int setRackUnitSettings (in int rackUnitNumber, in RackUnitSettings settings)

  Set all settings of the specified rack unit at once.
- int setMultipleRackUnitSettings (in map< int, RackUnitSettings > settings)

  Set all settings of multiple rack units at once.

Public Attributes

- valueobject StripSettingsChangedEvent: event.UserEvent { StripSettings oldSettings

  Event: Asset strip settings were changed.
- StripSettings newSettings

  Settings after change.
- valueobject RackUnitSettingsChangedEvent: event.UserEvent { int rackUnitNumber

  Event: A rack unit's settings were changed.
- RackUnitSettings oldSettings

  Settings before change.
- RackUnitSettings newSettings

  Settings after change.

9.14.1 Detailed Description

Asset Strip Config interface.

9.14.2 Member Enumeration Documentation

9.14.2.1 enum assetmgrmodel::AssetStripConfig_1_0_1::LEDMode

Mode for the LED of a single rack unit.

Enumerator

LED_MODE_ON LED on.

LED_MODE_OFF LED off.

LED_MODE_BLINK_FAST LED is blinking (fast)

LED_MODE_BLINK_SLOW LED is blinking (slow)

9.14.2.2 enum assetmgrmodel::AssetStripConfig_1_0_1::LEDOperationMode

Operation mode for the LED of a single rack unit.

The LED may either be manually controlled or its color may be chosen automatically depending on whether an asset tag is connected or not. In automatic mode the LED is always on.

Enumerator

LED_OPERATION_MANUAL LED color and mode is manually controlled.

LED_OPERATION_AUTO LED color controlled automatically, LED always on.

9.14.2.3 enum assetmgrmodel::AssetStripConfig_1_0_1::NumberingMode

AssetStripConfig rack unit numbering mode

Indicates the way the rack unit numbers are defined. Basically this determines what number are 'written/printed' at a specific rack unit on the rack.

An additional numberingOffset may be specified in the settings if the numbering does not start at the default 1.

Enumerator

TOP_DOWN numbering goes from top to bottom, top is the smallest number

BOTTOM_UP numbering goes from bottom to top, bottom is the smallest number

9.14.2.4 enum assetmgrmodel::AssetStripConfig_1_0_1::Orientation

AssetStripConfig orientation

The asset strip may be mounted in a rack a) with its cable connector on top, growing top->bottom b) with its cable connector on bottom, growing bottom->top

This enumeration indicates the mounting option. It is detected automatically and writes to the setting are ignored.

Enumerator

TOP_CONNECTOR cable connector on top, strip growing top->bottom

BOTTOM_CONNECTOR cable connector on top, strip growing bottom->top

9.14.2.5 enum assetmgrmodel::AssetStripConfig_1_0_1::ScanMode

AssetStripConfig scan mode is active

This is a demonstration feature providing a 'running lights' kind of effect where not all LEDs are lit statically (depending on their mode) but only a few LED which change all the time.

Enumerator

SCANMODE_DISABLED LED scanmode is disabled, all LEDs are lit up statically.

SCANMODE_BOTH LED scanmode is enabled providing a 'running light' effect.

9.14.3 Member Function Documentation

9.14.3.1 vector<RackUnitSettings> assetmgrmodel::AssetStripConfig_1_0_1::getAllRackUnitSettings ( )

Get settings for all rack units.

Returns

Result: the rack unit settings

9.14.3.2 int assetmgrmodel::AssetStripConfig_1_0_1::getRackUnitSettings (in int *rackUnitNumber,* out **RackUnitSettings** *settings*)

Get settings of a rack unit at once.

Parameters

rackUnitNumber	rack unit to get the settings for, range 0..rackUnitCount-1
settings	settings for this rack unit

Returns

NO_ERROR on success
ERR_INVALID_PARAM rack unit count exceeded

9.14.3.3 **StripSettings** assetmgrmodel::AssetStripConfig_1_0_1::getStripSettings ( )

Get the asset strip settings which are not rack unit specific.

Returns

settings settings for this asset strip

9.14.3.4 int assetmgrmodel::AssetStripConfig_1_0_1::setMultipleRackUnitSettings (in map< int, **RackUnitSettings** > *settings*)

Set all settings of multiple rack units at once.

Parameters

settings	map of rack units and their settings

Returns

NO_ERROR on success
ERR_INVALID_PARAM one or more of the settings is invalid (rack unit count exceeded or color/mode not supported, rack unit count and setting count differ...)

9.14.3.5 int assetmgrmodel::AssetStripConfig_1_0_1::setRackUnitSettings (in int *rackUnitNumber,* in **RackUnitSettings** *settings*)

Set all settings of the specified rack unit at once.

The addressed rack unit is part of the parameter

Parameters

rackUnitNumber	rack unit to set the settings for, range 0..rackUnitCount-1
settings	settings for this rack unit

Returns

NO_ERROR on success
ERR_INVALID_PARAM one or more of the settings is invalid

9.14.3.6 int assetmgrmodel::AssetStripConfig_1_0_1::setStripSettings (in StripSettings *settings*)

Set the asset strip settings which are not rack unit specific.

Parameters

settings	Settings for this asset strip

Returns

NO_ERROR on success
ERR_INVALID_PARAM one or more of the settings is invalid

9.14.4 Member Data Documentation

9.14.4.1 valueobject assetmgrmodel::AssetStripConfig_1_0_1::RackUnitSettingsChangedEvent

Event: A rack unit's settings were changed.

Affected rack unit position

9.14.4.2 valueobject assetmgrmodel::AssetStripConfig_1_0_1::StripSettingsChangedEvent

Event: Asset strip settings were changed.

Settings before change

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/AssetStripConfig.idl

9.15 assetmgrmodel::AssetStripLogger_1_0_2 Interface Reference

Asset Strip Logger interface.

```
import "AssetStripLogger.idl";
```

Classes

- struct Info

  Log information structure.
- struct Record

  Log record structure.

Public Types

- enum RecordType { EMPTY, ASSET_TAG_CONNECTED, ASSET_TAG_DISCONNECTED, ASSET_STRIP_STATE_CHANGED }

  Log record type.

Public Member Functions

- Info getInfo ()

  Retrieve the log information.
- int getRecords (out vector< Record > records, in int id, in int count)

  Retrieve records from the log ring buffer.

Public Attributes

- constant int NO_ERROR = 0

  Error codes.
- constant int ERR_INVALID_PARAM = 1

  Invalid parameter.

9.15.1 Detailed Description

Asset Strip Logger interface.

9.15.2 Member Enumeration Documentation

9.15.2.1 enum assetmgrmodel::AssetStripLogger_1_0_2::RecordType

Log record type.

Enumerator

EMPTY The log record is empty.

ASSET_TAG_CONNECTED An asset tag has been connected.

ASSET_TAG_DISCONNECTED An asset tag has been disconnected.

ASSET_STRIP_STATE_CHANGED The state of the asset strip changed.

9.15.3 Member Function Documentation

9.15.3.1 Info assetmgrmodel::AssetStripLogger_1_0_2::getInfo ( )

Retrieve the log information.

Returns

Log information

9.15.3.2 int assetmgrmodel::AssetStripLogger_1_0_2::getRecords (out vector< Record > *records*, in int *id*, in int *count*)

Retrieve records from the log ring buffer.

This method is used to read one or more records from the log ring buffer. It is allowed to read unused entries. The record index will wrap to 0 when reading beyond the end of the log.

Parameters

records	Result: The requested log entries
id	Index of the first log index to read (0..capacity)
count	Number of records to read (1..capacity)

Returns

NO_ERROR on success
ERR_INVALID_PARAM if any parameter is out of range

9.15.4 Member Data Documentation

9.15.4.1 constant int assetmgrmodel::AssetStripLogger_1_0_2::NO_ERROR = 0

Error codes.

Operation successful, no error

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/AssetStripLogger.idl

9.16 auth::AuthManager Interface Reference

Authentication manager interface.

```
import "AuthManager.idl";
```

Public Member Functions

- Policy getPolicy ()

  Gets a policy.
- int setPolicy (in Policy p)

  Sets a policy.

Public Attributes

- constant int ERR_UNSUPPORTED_TYPE = 1

  Unsupported authentication type.

9.16.1 Detailed Description

Authentication manager interface.

9.16.2 Member Function Documentation

9.16.2.1 Policy auth::AuthManager::getPolicy ( )

Gets a policy.

Returns

a Policy object

9.16.2.2 int auth::AuthManager::setPolicy (in Policy *p*)

Sets a policy.

Returns

0 on success
1 in case authentication type is not supported

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/AuthManager.idl

9.17 usermgmt::AuxInfo Struct Reference

Auxiliary user information.

```
import "User.idl";
```

Public Attributes

- string fullname

  Full name.
- string telephone

  Telephone number.
- string eMail

  Email address.

9.17.1 Detailed Description

Auxiliary user information.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/User.idl

9.18 test::AuxSerial Interface Reference

test routines for Raritan Aux Serial interface (RS485 on pins 3 and 6 of RJ45) Require TestMode to be ON.

```
import "testrpc.idl";
```

Public Member Functions

- int getNumberOfPorts (out int numPorts)

  returns number of ports
- int testLoop (in int portNum, out string errstr)

  Performs a loop test with special test adapter.

Public Attributes

- constant int OK = 0
  No error.
- constant int ERR_NO_TEST_MODE = 1
  Not in test mode.
- constant int ERR_INVAL_PORT_NUM = 2
  Invalid port number.
- constant int ERR_TEST_FAILED = 3
  Test failed.

9.18.1 Detailed Description

test routines for Raritan Aux Serial interface (RS485 on pins 3 and 6 of RJ45) Require TestMode to be ON.

9.18.2 Member Function Documentation

9.18.2.1 int test::AuxSerial::getNumberOfPorts (out int *numPorts*)

returns number of ports

Returns

0 if OK
1 if not in test mode

9.18.2.2 int test::AuxSerial::testLoop (in int *portNum*, out string *errstr*)

Performs a loop test with special test adapter.

Returns

OK if OK
ERR_NO_TEST_MODE if not in test mode
ERR_INVAL_PORT_NUM if invalid port number
ERR_TEST_FAILED if test failed, errstr may be set

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/testrpc.idl

9.19 pdumodel::Bcm Interface Reference

Branch Circuit Monitor.

```
import "Bcm.idl";
```

Classes

- struct ChannelConfig
  Channel Configuration.
- struct PhaseConfig
  Phase Configuration.

Public Types

- enum LineConfig { UNCONNECTED, L1_N, L2_N, L3_N }

  Power Line Configuration.
- enum TransformerType { VOLTAGE, TURNSRATIO }

  Current Transformer Type.

Public Member Functions

- int getChannelCount ()

  Retrieve the BMC's channel count.
- vector< ChannelConfig > getChannelConfigs ()

  Retrieve the configuration for all channels.
- int setChannelConfig (in int channel, in ChannelConfig config)

  Set the configuration for one channel.

9.19.1 Detailed Description

Branch Circuit Monitor.

9.19.2 Member Enumeration Documentation

9.19.2.1 enum pdumodel::Bcm::LineConfig

Power Line Configuration.

Enumerator

UNCONNECTED Not connected.

L1_N L1-Neutral.

L2_N L2-Neutral.

L3_N L3-Neutral.

9.19.2.2 enum pdumodel::Bcm::TransformerType

Current Transformer Type.

Enumerator

VOLTAGE Voltage-type transformer.

TURNSRATIO Turns ratio transformer.

9.19.3 Member Function Documentation

9.19.3.1 vector<ChannelConfig> pdumodel::Bcm::getChannelConfigs ( )

Retrieve the configuration for all channels.

Returns

List of channel configurations

9.19.3.2 int pdumodel::Bcm::getChannelCount ( )

Retrieve the BMC's channel count.

Returns

Number of BCM channels

9.19.3.3 int pdumodel::Bcm::setChannelConfig (in int *channel,* in **ChannelConfig** *config*)

Set the configuration for one channel.

Parameters

channel	Channel number
config	New channel configuration

Returns

0 if OK
1 for invalid phase configuration
2 for invalid arguments

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/Bcm.idl

9.20 bulkcfg::BulkConfiguration Interface Reference

Bulk Configuration Interface.

```
import "BulkConfiguration.idl";
```

Public Types

- enum Status {
  UNKNOWN, UPLOAD_FAILED, RESTORE_PENDING, RESTORE_OK,
  RESTORE_FAILED }

  Status of the last bulk configuration restore operation.

Public Member Functions

- void getStatus (out Status status, out time timeStamp)

  Retrieve the status of the last bulk configuration restore operation.

9.20.1 Detailed Description

Bulk Configuration Interface.

9.20.2 Member Enumeration Documentation

9.20.2.1 enum bulkcfg::BulkConfiguration::Status

Status of the last bulk configuration restore operation.

Enumerator

UNKNOWN No bulk configuration was done yet.

UPLOAD_FAILED Uploading a bulk configuration failed.

RESTORE_PENDING Restore is pending.

RESTORE_OK Restoring bulk configuration successful.

RESTORE_FAILED Restoring bulk configuration failed.

9.20.3 Member Function Documentation

9.20.3.1 void bulkcfg::BulkConfiguration::getStatus (out Status *status*, out time *timeStamp*)

Retrieve the status of the last bulk configuration restore operation.

Parameters

status	Result: Bulk configuration restore status
timeStamp	Result: Time of last restore operation

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/BulkConfiguration.idl

9.21 lhxmodel::Lhx_3_2_1::Capabilities Struct Reference

LHX capabilities.

```
import "Lhx.idl";
```

Public Attributes

- AlertStatus **alerts**
- map< string, boolean > **features**

9.21.1 Detailed Description

LHX capabilities.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Lhx.idl

9.22 smartcard::CardReader::CardInformation Struct Reference

Card Information.

```
import "CardReader.idl";
```

Public Attributes

- string type
  card type
- string uid
  card id

9.22.1 Detailed Description

Card Information.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/CardReader.idl

9.23 smartcard::CardReader Interface Reference

Card Reader Interface.

```
import "CardReader.idl";
```

Classes

- struct CardInformation
  Card Information.
- struct MetaData
  Reader Metadata.

Public Member Functions

- MetaData getMetaData ()
  Retrieve reader metadata.
- int getCardInformation (out CardInformation cardInfo)
  Retrieve card information from reader.

Public Attributes

- constant int NO_ERROR = 0
  Error codes.
- constant int ERR_SLOT_EMPTY = 1
  no card present in reader
- valueobject CardEvent: idl.Event { CardInformation cardInfo
  Card base event.
- valueobject CardInsertedEvent: CardEvent {}
  Card inserted event.
- valueobject CardRemovedEvent: CardEvent {}
  Card removed event.

9.23.1 Detailed Description

Card Reader Interface.

9.23.2 Member Function Documentation

9.23.2.1 int smartcard::CardReader::getCardInformation (out CardInformation *cardInfo*)

Retrieve card information from reader.

Parameters

cardInfo	Card Information

Returns

NO_ERROR if OK
ERR_SLOT_EMPTY if reader sees no card

9.23.2.2 MetaData smartcard::CardReader::getMetaData ( )

Retrieve reader metadata.

Returns

metadata

9.23.3 Member Data Documentation

9.23.3.1 valueobject smartcard::CardReader::CardEvent

Card base event.

card info of affected card

9.23.3.2 constant int smartcard::CardReader::NO_ERROR = 0

Error codes.

operation successful, no error

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/CardReader.idl

9.24 smartcard::CardReaderManager Interface Reference

Card Reader Manager Interface.

```
import "CardReaderManager.idl";
```

Public Member Functions

- vector< CardReader > getCardReaders ()

  Retrieve the list of connected card readers.
- CardReader getCardReaderById (in string readerId)

  Get card reader for a specific id.

Public Attributes

- valueobject CardReaderEvent: idl.Event { CardReader cardReader

  Card Reader base event.
- valueobject CardReaderAttachedEvent: CardReaderEvent {}

  Card Reader attached event.
- valueobject CardReaderDetachedEvent: CardReaderEvent {}

  Card Reader detached event.

9.24.1 Detailed Description

Card Reader Manager Interface.

9.24.2 Member Function Documentation

9.24.2.1 CardReader smartcard::CardReaderManager::getCardReaderById (in string *readerId*)

Get card reader for a specific id.

Parameters

readerId	card reader id

Returns

Card Reader with given id or null

9.24.2.2 vector<CardReader> smartcard::CardReaderManager::getCardReaders ( )

Retrieve the list of connected card readers.

Returns

Card Readers list

9.24.3 Member Data Documentation

9.24.3.1 valueobject smartcard::CardReaderManager::CardReaderEvent

Card Reader base event.

affected card reader

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/CardReaderManager.idl

9.25 cascading::Cascading_1_0_1 Interface Reference

Cascading Interface.

```
import "Cascading.idl";
```

Classes

- struct ProtocolMapping

  Mapping from appl protocol id to name and transport protocol.

Public Types

- enum Type { USB_MULTI_IP, USB_SINGLE_IP_NAT }

  Cascading type.

Public Member Functions

- int setType (in Type type)

  Set the cascading type.
- int getType (out Type type)

  Get the cascading type.
- void getIndex (out int idx)

  Get the index of this unit in the cascade.
- void getMasterIpAddress (out string masterIpAddress)

  Get the IPv4 address of the master.
- void getMasterIpV6Address (out string masterIpV6Address)

  Get the IPv6 address of the master.
- void getProtocolMappings (out vector< ProtocolMapping > mappings)

  Get the application protocol id -> name/transport-proto mappings.

Public Attributes

- constant int ERR_NOT_AVAILABLE = 1

  Error codes.
- constant int **ERR_NOT_SUPPORTED_ON_SLAVE** = 2

9.25.1 Detailed Description

Cascading Interface.

9.25.2 Member Enumeration Documentation

9.25.2.1 enum cascading::Cascading_1_0_1::Type

Cascading type.

Enumerator

USB_MULTI_IP USB chain; one IP per device; transparent.

USB_SINGLE_IP_NAT USB chain; single IP; NAT(port-forwarding)

9.25.3 Member Function Documentation

9.25.3.1 void cascading::Cascading_1_0_1::getIndex (out int *idx*)

Get the index of this unit in the cascade.

Index 0 means this is the master unit. A cascading master is a unit with an active ethernet uplink and no active uplink on the USB-B connector.

Parameters

idx	- the index of this unit in the cascade

9.25.3.2 void cascading::Cascading_1_0_1::getMasterIpAddress (out string *masterIpAddress*)

Get the IPv4 address of the master.

If the address is not available an empty string is returned.

Parameters

masterIpAddress	- the IPv4 address of the master

9.25.3.3 void cascading::Cascading_1_0_1::getMasterIpV6Address (out string *masterIpV6Address*)

Get the IPv6 address of the master.

If the address is not available an empty string is returned.

Parameters

masterIpV6-Address	- the IPv6 address of the master

9.25.3.4 void cascading::Cascading_1_0_1::getProtocolMappings (out vector< **ProtocolMapping** > *mappings*)

Get the application protocol id -> name/transport-proto mappings.

Parameters

mappings	- the protocol id -> name/transport-proto mappings

9.25.3.5 int cascading::Cascading_1_0_1::getType (out **Type** *type*)

Get the cascading type.

A slave unit will return ERR_NOT_AVAILABLE when the master unit has not yet propagated the cascading type to the slaves. This behaviour is typically seen while the device is booting and network setup did not finish yet.

Parameters

type	- the cascading type

Returns

0 on success
ERR_NOT_AVAILABLE if not yet known

9.25.3.6 int cascading::Cascading_1_0_1::setType (in Type *type*)

Set the cascading type.

This operation is only supported on the cascading master. On slave units it will return ERR_NOT_SUPPORTED_ON_SLAVE. A cascading master is a unit with an active ethernet uplink and no active uplink on the USB-B connector.

Parameters

type	- the cascading type

Returns

0 on success
ERR_NOT_SUPPORTED_ON_SLAVE if this is a slave unit

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/Cascading.idl

9.26 cert::ServerSSLCert::CertInfo Struct Reference

Certificate information.

```
import "ServerSSLCert.idl";
```

Public Attributes

- CommonAttributes subject
  Subject attributes.
- CommonAttributes issuer
  Issuer attributes.
- string invalidBefore
  Begin of validity period.
- string invalidAfter
  End of validity period.
- string serialNumber
  Serial number.
- int keyLength
  Key length in bits.

9.26.1 Detailed Description

Certificate information.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/ServerSSLCert.idl

9.27 datetime::DateTime_2_0_0::Cfg Struct Reference

Device date and time configuration.

```
import "DateTime.idl";
```

Public Attributes

- ZoneCfg zoneCfg

  Time zone configuration.
- Protocol protocol

  Time synchronization protocol.
- time deviceTime

  Device date and time (local time)
- NtpCfg ntpCfg

  NTP server configuration.

9.27.1 Detailed Description

Device date and time configuration.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/DateTime.idl

9.28 webcam::Channel Interface Reference

The channel interface.

```
import "WebcamChannel.idl";
```

Public Member Functions

- string getClientType ()

  Retrieve the channel type.
- Webcam_2_0_0 getWebcam ()

  Retrieve the webcam.
- boolean isAvailable ()

  Determine whether the channel is available.
- void release ()

  Releases the channel to allow lower proritized clients to view an image otherwise the channel expires when it is unused (neither a image related method nor "isAvailable" is called) for 20 seconds.
- int captureImage (out Image_2_0_0 image)

  Retrieve a image.
- int triggerCapture (out string captureToken)

  Triggers the capture process to the temporary folder and returns a capture token to view them.

Public Attributes

- constant int NO_ERROR = 0

  Error codes.
- constant int ERR_NOT_AVAILABLE = 2

  Channel is not available.
- constant int ERR_NO_SUCH_OBJECT = 3

  Requested object does not exist.

9.28.1 Detailed Description

The channel interface.

9.28.2 Member Function Documentation

9.28.2.1 int webcam::Channel::captureImage (out Image_2_0_0 *image*)

Retrieve a image.

Parameters

image	Result: the image

Returns

NO_ERROR on success
ERR_NOT_AVAILABLE this channel is temporarily paused, because all view ports are currently used by higher prioritized events
ERR_NO_SUCH_OBJECT the viewed webcam was detached

9.28.2.2 string webcam::Channel::getClientType ( )

Retrieve the channel type.

Returns

the client type

9.28.2.3 Webcam_2_0_0 webcam::Channel::getWebcam ( )

Retrieve the webcam.

Returns

the webcam

9.28.2.4 boolean webcam::Channel::isAvailable ( )

Determine whether the channel is available.

A channel may become unavailable when higher prioritized viewers are active.

Returns

true if the channel is available, false otherwise

9.28.2.5 int webcam::Channel::triggerCapture (out string *captureToken*)

Triggers the capture process to the temporary folder and returns a capture token to view them.

The capture token is valid for 9 seconds and needs to be refreshed when, or even better before the old token expires.

Parameters

captureToken	Result: a new captureToken

Returns

NO_ERROR on success
ERR_NOT_AVAILABLE this channel is temporarily paused, because all view ports are currently used by higher prioritized events
ERR_NO_SUCH_OBJECT the viewed webcam was detached

9.28.3 Member Data Documentation

9.28.3.1 constant int webcam::Channel::NO_ERROR = 0

Error codes.

Operation successful, no error

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/WebcamChannel.idl

9.29 event::Channel_1_0_1 Interface Reference

Event Channel.

```
import "EventService.idl";
```

Classes

- struct EventSelect

  Structure to select an Event ∗.

Public Member Functions

- void demandEventType (in typecode type)

  Subscribe for events of a given type.
- void cancelEventType (in typecode type)

  Cancel the subscription for events of a given type.
- void demandEventTypes (in vector< typecode > types)

  Subscribe for multiple event types at once.
- void cancelEventTypes (in vector< typecode > types)

  Cancel subscription for events that are of any of given types.
- void demandEvent (in typecode type, in Object src)

  Subscribe for events that are of given type and emitted by a specific object instance.
- void cancelEvent (in typecode type, in Object src)

Cancel the subscription for events that are of given type and emitted by a specific object instance.

- void demandEvents (in vector< EventSelect > events)

  Subscribe for multiple specific events at once.
- void cancelEvents (in vector< EventSelect > events)

  Cancel the subscription for multiple specific events.
- void subscribe (in Consumer consumer)

  Subsribe for push notifications from EventService.
- int unsubscribe (in Consumer consumer)

  Unsubscribe from push notifications from EventService.
- boolean pollEvents (out vector< idl.Event > events)

  Poll for new events blockingly.
- boolean pollEventsNb (out vector< idl.Event > events)

  Poll for new events non-blockingly.

9.29.1 Detailed Description

Event Channel.

9.29.2 Member Function Documentation

9.29.2.1 void event::Channel_1_0_1::cancelEvent (in typecode *type*, in Object *src*)

Cancel the subscription for events that are of given type and emitted by a specific object instance.

Parameters

evttype	Event typecode
src	Event source instance

9.29.2.2 void event::Channel_1_0_1::cancelEvents (in vector< **EventSelect** > *events*)

Cancel the subscription for multiple specific events.

Parameters

events	List of typecodes to unsubscribe from

9.29.2.3 void event::Channel_1_0_1::cancelEventType (in typecode *type*)

Cancel the subscription for events of a given type.

Parameters

evttype	typecode of valueobject of demanded event

9.29.2.4 void event::Channel_1_0_1::cancelEventTypes (in vector< typecode > *types*)

Cancel subscription for events that are of any of given types.

Parameters

evttypes	List of event typecodes

9.29.2.5 void event::Channel_1_0_1::demandEvent (in typecode *type,* in Object *src*)

Subscribe for events that are of given type and emitted by a specific object instance.

Parameters

evttype	Event typecode
src	Event source instance

9.29.2.6 void event::Channel_1_0_1::demandEvents (in vector< **EventSelect** > *events*)

Subscribe for multiple specific events at once.

Parameters

events	List of typecodes to subscribe for

9.29.2.7 void event::Channel_1_0_1::demandEventType (in typecode *type*)

Subscribe for events of a given type.

Parameters

evttype	typecode of valueobject of demanded event

9.29.2.8 void event::Channel_1_0_1::demandEventTypes (in vector< typecode > *types*)

Subscribe for multiple event types at once.

Parameters

evttypes	List of event typecodes

9.29.2.9 boolean event::Channel_1_0_1::pollEvents (out vector< **idl.Event** > *events*)

Poll for new events blockingly.

This method will block in case the queue is empty. It will return as soon as at least one event is available, or after a maximum wait time of 30 seconds.

The method will not return more than an implementation-defined maximum number of events. The boolean return value indicates whether there are more events in the queue.

Parameters

events	List of new events

Returns

`true` if there are more events in the queue `false` if the queue is empty

9.29.2.10 boolean event::Channel_1_0_1::pollEventsNb (out vector< idl.Event > *events*)

Poll for new events non-blockingly.

The method will not return more than an implementation-defined maximum number of events. The boolean return value indicates whether there are more events in the queue.

Parameters

events	List of new events

Returns

`true` if there are more events in the queue `false` if the queue is empty

9.29.2.11 void event::Channel_1_0_1::subscribe (in Consumer *consumer*)

Subsribe for push notifications from EventService.

Parameters

consumer	interface on which subscriber is called back.

9.29.2.12 int event::Channel_1_0_1::unsubscribe (in Consumer *consumer*)

Unsubscribe from push notifications from EventService.

Parameters

consumer	interface which was used for the subscription.

Returns

0 if OK 1 if consumer is unknown to channel

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/EventService.idl

9.30 pdumodel::Bcm::ChannelConfig Struct Reference

Channel Configuration.

```
import "Bcm.idl";
```

Public Attributes

- int channel

  Channel number.
- string label

  Channel label.
- boolean is3Phase

  `true` *for three-phase channels*

- PhaseConfig lineA

  Line A phase config.
- PhaseConfig lineB

  Line B phase config (three-phase only)
- PhaseConfig lineC

  Line C phase config (three-phase only)

9.30.1 Detailed Description

Channel Configuration.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Bcm.idl

9.31 pdumodel::CircuitBreakerStatistic Struct Reference

Overcurrent protector statistics.

```
import "OverCurrentProtector.idl";
```

Public Attributes

- int tripCnt

  Trip count.

9.31.1 Detailed Description

Overcurrent protector statistics.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/OverCurrentProtector.idl

9.32 cert::ServerSSLCert::CommonAttributes Struct Reference

Certificate issuer or subject attributes.

```
import "ServerSSLCert.idl";
```

Public Attributes

- string country

  Country code.
- string stateOrProvince

  State or province.
- string locality

  Locality or city.
- string organization

  Organization.
- string organizationalUnit

Organizational Unit.

- string commonName

  Common Name.

- string emailAddress

  Email Address.

9.32.1 Detailed Description

Certificate issuer or subject attributes.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/ServerSSLCert.idl

9.33 lhxmodel::Config_1_0_1::ComSettings Struct Reference

LHX port communication settings.

```
import "LhxConfig.idl";
```

Public Attributes

- byte devAddr

  EMX/PX STBus address.

- byte lhxAddr

  LHX STBus address.

9.33.1 Detailed Description

LHX port communication settings.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/LhxConfig.idl

9.34 event::Engine::Condition Struct Reference

Condition is a logical combination of multiple events.

```
import "EventEngine.idl";
```

Public Types

- enum Op { AND, OR, XOR }

  logical operation to be applied over all conditions and event

- enum MatchType { ASSERTED, DEASSERTED, BOTH }

  the match type how to match the event assertion state

Public Attributes

- boolean negate

  Negate the result.
- Op operation

  Logical operation to be applied.
- MatchType matchType

  Match type.
- vector< string > eventId

  Event ID.
- vector< Condition > conditions

  List of subordinate conditions.

9.34.1 Detailed Description

Condition is a logical combination of multiple events.

Normally you should use STATE events in logical conditions. In case a TRIGGER event is part of a condition or logical operation it will per default be interpreted as deasserted. The TRIGGER will evaluate as asserted if that exact event was raised and is matched against the event rules. In some sense the 'assertion state' of the TRIGGER is true only at the moment the Event exists and set to false again once it passed.

9.34.2 Member Enumeration Documentation

9.34.2.1 enum event::Engine::Condition::MatchType

the match type how to match the event assertion state

Enumerator

ASSERTED Match if the event is asserted.

DEASSERTED Match if the event is deasserted.

BOTH Match both (for trigger events)

9.34.2.2 enum event::Engine::Condition::Op

logical operation to be applied over all conditions and event

Enumerator

AND Logical And.

OR Logical Or.

XOR Exclusive Or.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/EventEngine.idl

9.35 lhxmodel::Config_1_0_1 Interface Reference

LHX Configuration Interface.

```
import "LhxConfig.idl";
```

Classes

- struct ComSettings

  LHX port communication settings.

Public Member Functions

- ComSettings getComSettings ()

  Retrieve the LHX port communication settings.
- int setComSettings (in ComSettings settings)

  Change the LHX port communication settings.
- string getName ()

  Retrieve the LHX port name.
- int setName (in string name)

  Change the LHX port name.

Public Attributes

- constant int NO_ERROR = 0

  No error.
- constant int ERR_INVALID_PARAMS = 1

  Invalid parameters.
- valueobject ComSettingsChangedEvent: event.UserEvent { ComSettings oldSettings

  Event: LHX port communication settings have changed.
- ComSettings newSettings

  Settings after change.
- valueobject PortNameChangedEvent: event.UserEvent { string oldName

  Event: LHX port name has been changed.
- string newName

  Name after change.

9.35.1 Detailed Description

LHX Configuration Interface.

9.35.2 Member Function Documentation

9.35.2.1 ComSettings lhxmodel::Config_1_0_1::getComSettings ( )

Retrieve the LHX port communication settings.

Returns

LHX port communication settings

9.35.2.2 string lhxmodel::Config_1_0_1::getName ( )

Retrieve the LHX port name.

Returns

LHX port name

9.35.2.3 int lhxmodel::Config_1_0_1::setComSettings (in ComSettings *settings*)

Change the LHX port communication settings.

Parameters

settings	New LHX port communication settings

Returns

0 if OK
ERR_INVALID_PARAMS if any parameters are invalid

9.35.2.4 int lhxmodel::Config_1_0_1::setName (in string *name*)

Change the LHX port name.

Parameters

name	New LHX port name

Returns

0 if OK
ERR_INVALID_PARAMS if any parameters are invalid

9.35.3 Member Data Documentation

9.35.3.1 valueobject lhxmodel::Config_1_0_1::ComSettingsChangedEvent

Event: LHX port communication settings have changed.

Settings before change

9.35.3.2 valueobject lhxmodel::Config_1_0_1::PortNameChangedEvent

Event: LHX port name has been changed.

Name before change

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/LhxConfig.idl

9.36 modelpush::ModelPush::Configuration Struct Reference

Model push service configuration.

```
import "ModelPush.idl";
```

Public Attributes

- boolean enabled

  Enable the sensor log push service.

- int interval

  Push interval in seconds.
- string host

  Destination host.
- int port

  Destination HTTP port.
- string path

  Destination path.
- boolean useHttps

  `true` *to enable HTTPS*
- string caCert

  HTTPS CA certificate.
- boolean useAuth

  `true` *to use HTTP basic authentication*
- string username

  Authentication user name.
- string password

  Password; write-only, empty to leave unchanged.

9.36.1 Detailed Description

Model push service configuration.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/ModelPush.idl

9.37 devsettings::Smtp_1_0_1::Configuration Struct Reference

SMTP server configuration.

```
import "Smtp.idl";
```

Public Attributes

- string host

  SMTP server host name or IP address.
- int port

  SMTP server port.
- string sender

  Sender email address.
- boolean useAuth

  SMTP server requires authentication.
- string username

  Authentication user name.
- string password

  Password; write-only, empty to leave unchanged.
- int retryCount

  Number of attempts at sending the email.
- int retryInterval

  Sending retry interval in minutes.

9.37.1 Detailed Description

SMTP server configuration.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Smtp.idl

9.38 devsettings::Snmp_1_0_2::Configuration Struct Reference

SNMP agent configuration.

```
import "Snmp.idl";
```

Public Attributes

- boolean v2enable
  SNMP v1 / 2c enabled.
- boolean v3enable
  SNMP v3 enabled.
- string readComm
  read community string
- string writeComm
  write community string
- string sysContact
  system contact
- string sysName
  system name
- string sysLocation
  system location

9.38.1 Detailed Description

SNMP agent configuration.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Snmp.idl

9.39 event::Consumer Interface Reference

Consumer interface is for event consumers that want to be called back in case new events have occured.

```
import "EventService.idl";
```

Public Member Functions

- void pushEvents (in vector< idl.Event > events)
  This method is called by EventService to notify Consumer about new events.

9.39.1 Detailed Description

Consumer interface is for event consumers that want to be called back in case new events have occured.

Subscription with this interface happens in Channel interface. Note that this interface cannot be used over transports that do not support callbacks.

9.39.2 Member Function Documentation

9.39.2.1 void event::Consumer::pushEvents (in vector< idl.Event > *events*)

This method is called by EventService to notify Consumer about new events.

Consumer is not supposed to block this function but return immidiately. Policy of how often and with how many events this method is called is up to the EventService Implementation.

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/EventService.idl

9.40 test::Control Interface Reference

Interface to enter and exit special test modes.

```
import "testrpc.idl";
```

Public Member Functions

- boolean isTestMode ()

  returns actual state of test mode
- void setTestMode (in boolean isTestModeOn)

  sets the unit in test mode which pulls away services dealing with feature ports, aux ports, 1wire ports

9.40.1 Detailed Description

Interface to enter and exit special test modes.

Some of the port tests require the unit to be set in dedicated test modes because special equipment is plugged into the ports which would confuse ordinary services observing those ports.

The documentation for this interface was generated from the following file:

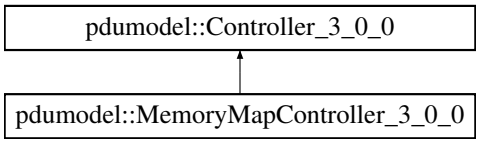
- pdu-json-rpc-api/idl/testrpc.idl

9.41 pdumodel::Controller_3_0_0 Interface Reference

Slave controller interface.

```
import "Controller.idl";
```

Inheritance diagram for pdumodel::Controller_3_0_0:



Classes

- struct MetaData

  Slave controller metadata.

Public Types

- enum Status {
  OK, COMMUNICATION_UNSTABLE, COMMUNICATION_FAILURE, UNKNOWN,
  INCOMPATIBLE }

  Communication status.
- enum Type { OUTLET_CTRL, INLET_CTRL, METER_CTRL }

  Slave controller type.

Public Member Functions

- Status getCommunicationStatus ()

  Retrieve the current status of communication with controller.
- CtrlStatistic getStatistics ()

  Retrieve statistics.
- MetaData getMetaData ()

  Retrieve the slave controller metadata.

Public Attributes

- valueobject StatusChangedEvent: idl.Event { Status oldStatus

  Event: Controller communication status has changed.
- Status newStatus

  Status after change.
- valueobject MetaDataChangedEvent: idl.Event { MetaData oldMetaData

  Event: Controller metadata has changed.
- MetaData newMetaData

  Metadata after change.

9.41.1 Detailed Description

Slave controller interface.

9.41.2 Member Enumeration Documentation

9.41.2.1 enum pdumodel::Controller_3_0_0::Status

Communication status.

Enumerator

OK Communication with controller is known to be working.

COMMUNICATION_UNSTABLE Controller can be communicated with sporadically.

COMMUNICATION_FAILURE Controller can't be communicated with.

UNKNOWN Communication status is unknown, e.g. after startup.

INCOMPATIBLE The characteristics of the controller don't meet the expectations.

9.41.2.2 enum pdumodel::Controller_3_0_0::Type

Slave controller type.

Enumerator

OUTLET_CTRL Outlet controller

INLET_CTRL Inlet controller

METER_CTRL General metering controller

9.41.3 Member Function Documentation

9.41.3.1 Status pdumodel::Controller_3_0_0::getCommunicationStatus ( )

Retrieve the current status of communication with controller.

Returns

communication status

9.41.3.2 MetaData pdumodel::Controller_3_0_0::getMetaData ( )

Retrieve the slave controller metadata.

Returns

Controller metadata

9.41.3.3 CtrlStatistic pdumodel::Controller_3_0_0::getStatistics ( )

Retrieve statistics.

Returns

statistics of Controller

9.41.4 Member Data Documentation

9.41.4.1 valueobject pdumodel::Controller_3_0_0::MetaDataChangedEvent

Event: Controller metadata has changed.

Metadata before change

9.41.4.2 valueobject pdumodel::Controller_3_0_0::StatusChangedEvent

Event: Controller communication status has changed.

Status before change

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/Controller.idl

9.42 webcam::Controls Struct Reference

Controls.

```
import "Webcam.idl";
```

Public Attributes

- int brightness
  brightness
- int contrast
  contrast
- int saturation
  saturation
- int gain
  gain
- int gamma
  gamma
- PowerLineFrequency powerLineFrequency
  power line frequency (50Hz, 60Hz or disabled)

9.42.1 Detailed Description

Controls.

All int values are normed to a range of 1 to 1000 0 means "auto" if available, -1 means not supported by the webcam

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Webcam.idl

9.43 pdumodel::CtrlStatistic Struct Reference

Slave controller statistics.

```
import "Controller.idl";
```

Public Attributes

- int masterCSumErrCnt
  Master CRC error counter.
- int slaveCSumErrCnt
  Slave CRC error counter.
- int timeoutCnt
  Master timeout counter.
- int resetCnt
  Controller reset counter.
- int emResetCnt
  Energy meter reset counter.

9.43.1 Detailed Description

Slave controller statistics.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Controller.idl

9.44 fitness::Fitness::DataEntry Struct Reference

An entry in the reliability database.

```
import "Fitness.idl";
```

Public Attributes

- string id
  unique id of the entry
- int value
  normalized value
- int maxValue
  maximum possible normalized value
- int worstValue
  worst normalized value seen yet
- int thresholdValue
  normalized threshold value
- long rawValue
  raw value
- int flags
  flags (see above)

9.44.1 Detailed Description

An entry in the reliability database.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Fitness.idl

9.45 datetime::DateTime_2_0_0 Interface Reference

Date and time configuration methods.

```
import "DateTime.idl";
```

Classes

- struct Cfg

  Device date and time configuration.
- struct NtpCfg

  NTP server configuration.
- struct ZoneCfg

  Time zone configuration.
- struct ZoneInfo

  Time zone information.

Public Types

- enum Protocol { STATIC, NTP }

  Time synchronization protocol.

Public Member Functions

- void getZoneInfos (out vector< ZoneInfo > zoneInfos, in boolean useOlson)

  List all supported time zones.
- boolean checkNtpServer (in string ntpServer)

  Check if a specified NTP server is usable.
- void getCfg (out Cfg cfg)

  Retrieve the device date and time configuration.
- int setCfg (in Cfg cfg)

  Set the device date and time configuration.
- void getTime (in boolean useOlson, out ZoneInfo zone, out boolean dstEnabled, out int utcOffset, out time currentTime)

  Retrieve the current device date and time.

9.45.1 Detailed Description

Date and time configuration methods.

9.45.2 Member Enumeration Documentation

9.45.2.1 enum datetime::DateTime_2_0_0::Protocol

Time synchronization protocol.

Enumerator

STATIC Device time is configured locally.

NTP Device time is synchronized via NTP.

9.45.3 Member Function Documentation

9.45.3.1 boolean datetime::DateTime_2_0_0::checkNtpServer (in string *ntpServer*)

Check if a specified NTP server is usable.

Parameters

ntpServer	NTP server to be checked

Returns

`true` if the NTP server is usable

9.45.3.2 void datetime::DateTime_2_0_0::getCfg (out **Cfg** *cfg*)

Retrieve the device date and time configuration.

Parameters

cfg	Result: Current date and time configration

9.45.3.3 void datetime::DateTime_2_0_0::getTime (in boolean *useOlson,* out **ZoneInfo** *zone,* out boolean *dstEnabled,* out int *utcOffset,* out time *currentTime*)

Retrieve the current device date and time.

Parameters

useOlson	Use Olson zoneinfo name
zone	Result: Active time zone
dstEnabled	if false, the time zone DST flag is not used
utcOffset	Result: Offset (in minutes) between local time and UTC
currentTime	Result: Device date and time

9.45.3.4 void datetime::DateTime_2_0_0::getZoneInfos (out vector< **ZoneInfo** > *zoneInfos,* in boolean *useOlson*)

List all supported time zones.

Parameters

zoneInfos	Result: List of time zones
useOlson	Use Olson zoneinfo names

9.45.3.5 int datetime::DateTime_2_0_0::setCfg (in **Cfg** *cfg*)

Set the device date and time configuration.

Depending on the value of the *protocol* field either *deviceTime* or *ntpCfg* will be used from the *cfg* parameter.

Parameters

cfg	New date and time configuration.

Returns

0 if OK
1 if the configuration is invalid

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/DateTime.idl

9.46 logging::DebugLog Interface Reference

Device debug log interface.

```
import "DebugLog.idl";
```

Public Member Functions

- void clear ()

  Clear the debug log.
- int getFirstId ()

  Get the id of the first debug log entry.
- int getLastId ()

  Get the id of the last debug log entry.
- void getEntries (out vector< LogEntry > entries, in int refId, in int count, in RangeDirection direction)

  Fetch entries from the debug log.

9.46.1 Detailed Description

Device debug log interface.

9.46.2 Member Function Documentation

9.46.2.1 void logging::DebugLog::getEntries (out vector< LogEntry > *entries*, in int *refId*, in int *count*, in RangeDirection *direction*)

Fetch entries from the debug log.

Parameters

entries	Result: List of log entries
refId	First log id to fetch
count	Number of entries to fetch
direction	Range direction

9.46.2.2 int logging::DebugLog::getFirstId ( )

Get the id of the first debug log entry.

Returns

Id of first log entry

9.46.2.3 int logging::DebugLog::getLastId ( )

Get the id of the last debug log entry.

Returns

Id of last log entry.

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/DebugLog.idl

9.47 portsmodel::Port_2_0_1::DetectionMode Struct Reference

Port detection mode.

```
import "Port.idl";
```

Public Attributes

- DetectionType type

  detection type: auto or pinned
- string pinnedDeviceType

  contains specific device type in pinned mode, not used for auto

9.47.1 Detailed Description

Port detection mode.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Port.idl

9.48 peripheral::DeviceID_2_0_0 Struct Reference

peripheral device identification

```
import "PeripheralDeviceSlot.idl";
```

Public Attributes

- string serial

  Serial number.
- sensors Sensor_4_0_0 TypeSpec type

  device's type spec
- boolean isActuator

  true if device is an actuator
- int channel

  Channel number.

9.48.1 Detailed Description

peripheral device identification

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/PeripheralDeviceSlot.idl

9.49 assetmgrmodel::AssetStrip_2_0_1::DeviceInfo Struct Reference

Static (type, version) information for an AssetStrip.

```
import "AssetStrip.idl";
```

Public Attributes

- int deviceId

  Device type (indicated a certain hardware)
- int hardwareId

  Hardware ID, revision.
- int protocolVersion

  Protocol version the strip is supporting.
- int bootVersion

  Bootcode software version.
- int appVersion

  Application code software version.
- boolean orientationSensAvailable

  Indicates whether the strip has an orientation sensor.
- boolean isCascadable

  The asset strip type.
- boolean rackUnitCountConfigurable

  Rack unit count has to be configured, i.e. is not auto detected.

9.49.1 Detailed Description

Static (type, version) information for an AssetStrip.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/AssetStrip.idl

9.50 peripheral::DeviceManager_2_0_0 Interface Reference

Peripheral Device Manager.

```
import "PeripheralDeviceManager.idl";
```

Classes

- struct DeviceTypeInfo

  Peripheral device type info.
- struct MetaData

  Peripheral DeviceManager's metadata.
- struct Settings

  peripheral DeviceManager's s settings
- struct Statistics

  Peripheral device statistics.

Public Types

- enum ZCoordMode { RACKUNITS, FREEFORM }

  Z Coordinate Mode identifier.
- enum DeviceFirmwareUpdateState { UPDATE_STARTED, UPDATE_SUCCESSFUL, UPDATE_FAILED }

  Enumeration: State of device firmware update.

Public Member Functions

- vector< DeviceSlot_2_0_0 > getDeviceSlots ()

  Get the list of peripheral device slots.
- DeviceSlot_2_0_0 getDeviceSlot (in int idx)

  Get a DeviceSlot by its index.
- vector< Device_2_0_0 > getDiscoveredDevices ()

  Get the list of currently attached peripheral devices.
- vector< PackageInfo_2_0_0 > getDiscoveredPackageInfos ()

  Get the list of currently attached peripheral device packages.
- Settings getSettings ()

  Retrieve the peripheral DeviceManager's settings.
- int setSettings (in Settings settings)

  Change the peripheral DeviceManager's settings.
- MetaData getMetaData ()

  Retreive the Peripheral DeviceManager's metadata.
- vector< DeviceTypeInfo > getDeviceTypeInfos ()

  Get the list of all peripheral device type infos.
- Statistics getStatistics ()

  Retrieve statistics.

Public Attributes

- constant int ERR_INVALID_PARAMS = 1

  Invalid parameters.
- valueobject SettingsChangedEvent: event.UserEvent { Settings oldSettings

  Event: Peripheral device manager's settings have been changed.
- Settings newSettings

  Settings after change.
- valueobject DeviceEvent: idl.Event { Device_2_0_0 device

  Event: A peripheral device was added or removed.
- vector< Device_2_0_0 > allDevices

New list of discovered devices after change.

- valueobject DeviceAddedEvent: DeviceEvent { }

  Event: A peripheral device was added.
- valueobject DeviceRemovedEvent: DeviceEvent { }

  Event: A peripheral device was removed.
- valueobject UnknownDeviceAttachedEvent: idl.Event { string romCode

  Event: An unknown device was attached.
- vector< PosElement > position

  Device position in the chain.
- valueobject DeviceFirmwareUpdateStateChangedEvent: idl.Event { string oldVersion

  Event: Firmware update on a device was started or has finished.
- string newVersion

  Firmware version to be updated to.
- string serial

  Serial number of device.
- DeviceFirmwareUpdateState state

  Update state.
- valueobject PackageEvent: idl.Event { PackageInfo_2_0_0 packageInfo

  Event: A peripheral device package was added or removed.
- vector< PackageInfo_2_0_0 > allPackages

  New list of discovered packages after change.
- valueobject PackageAddedEvent: PackageEvent { }

  Event: A peripheral device package was added.
- valueobject PackageRemovedEvent: PackageEvent { }

  Event: A peripheral device package was removed.

9.50.1 Detailed Description

Peripheral Device Manager.

9.50.2 Member Enumeration Documentation

9.50.2.1 enum peripheral::DeviceManager_2_0_0::DeviceFirmwareUpdateState

Enumeration: State of device firmware update.

Enumerator

UPDATE_STARTED Update is running.

UPDATE_SUCCESSFUL Update has finished successfully.

UPDATE_FAILED Update has failed.

9.50.2.2 enum peripheral::DeviceManager_2_0_0::ZCoordMode

Z Coordinate Mode identifier.

Enumerator

RACKUNITS Z coordinate of slot settings is in rack units.

FREEFORM Z coordinate of slot settings is free form text.

9.50.3 Member Function Documentation

9.50.3.1 DeviceSlot_2_0_0 peripheral::DeviceManager_2_0_0::getDeviceSlot (in int *idx*)

Get a DeviceSlot by its index.

Parameters

idx	index of the slot to get

Returns

the requested slot

9.50.3.2 vector<DeviceSlot_2_0_0> peripheral::DeviceManager_2_0_0::getDeviceSlots ( )

Get the list of peripheral device slots.

Returns

List of peripheral device slots

9.50.3.3 vector<DeviceTypeInfo> peripheral::DeviceManager_2_0_0::getDeviceTypeInfos ( )

Get the list of all peripheral device type infos.

Returns

List of all peripheral device type infos

9.50.3.4 vector<Device_2_0_0> peripheral::DeviceManager_2_0_0::getDiscoveredDevices ( )

Get the list of currently attached peripheral devices.

Returns

List of all discovered peripheral devices

9.50.3.5 vector<PackageInfo_2_0_0> peripheral::DeviceManager_2_0_0::getDiscoveredPackageInfos ( )

Get the list of currently attached peripheral device packages.

Returns

List of all discovered peripheral device packages

9.50.3.6 MetaData peripheral::DeviceManager_2_0_0::getMetaData ( )

Retreive the Peripheral DeviceManager's metadata.

Returns

Peripheral DeviceManager's metadata

9.50.3.7 Settings peripheral::DeviceManager_2_0_0::getSettings ( )

Retrieve the peripheral DeviceManager's settings.

Returns

peripheral DeviceManager's settings

9.50.3.8 Statistics peripheral::DeviceManager_2_0_0::getStatistics ( )

Retrieve statistics.

Returns

peripheral device statistics

9.50.3.9 int peripheral::DeviceManager_2_0_0::setSettings (in Settings *settings*)

Change the peripheral DeviceManager's settings.

Parameters

settings	New peripheral DeviceManager's settings

Returns

0 if OK
ERR_INVALID_PARAMS if any parameters are invalid

9.50.4 Member Data Documentation

9.50.4.1 valueobject peripheral::DeviceManager_2_0_0::DeviceEvent

Event: A peripheral device was added or removed.

Affected device

9.50.4.2 valueobject peripheral::DeviceManager_2_0_0::DeviceFirmwareUpdateStateChangedEvent

Event: Firmware update on a device was started or has finished.

Firmware version before update

9.50.4.3 valueobject peripheral::DeviceManager_2_0_0::PackageEvent

Event: A peripheral device package was added or removed.

Information about affected package

9.50.4.4 valueobject peripheral::DeviceManager_2_0_0::SettingsChangedEvent

Event: Peripheral device manager's settings have been changed.

Settings before change

9.50.4.5 valueobject peripheral::DeviceManager_2_0_0::UnknownDeviceAttachedEvent

Event: An unknown device was attached.

Device ROM code

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/PeripheralDeviceManager.idl

9.51 peripheral::DeviceSlot_2_0_0 Interface Reference

Peripheral Device Slot.

```
import "PeripheralDeviceSlot.idl";
```

Classes

- struct Location
  user writeable location
- struct Settings
  user configurable slot attributes

Public Member Functions

- Device_2_0_0 getDevice ()
  Returns the actual device reference.
- int assign (in DeviceID_2_0_0 devid)
  Associate this slot with a given (old or detected new) peripheral device.
- int assignAddress (in string packageClass, in Address_2_0_0 address)
  Associate this slot with an addressable (new) peripheral device.
- int unassign ()
  Break the association for this slot.
- Settings getSettings ()
  Retrieve the user-defined settings.
- int setSettings (in Settings settings)
  Change the slot settings.

Public Attributes

- constant int ERR_INVALID_PARAMS = 1
  Invalid parameters.
- constant int ERR_NOT_SUPPORTED = 2
  Operation not supported.
- constant int CHANNEL_INVALID = -1
  Device has no channels.
- valueobject DeviceChangedEvent: idl.Event { Device_2_0_0 oldDevice
  Event: The device attached to this slot has changed.
- Device_2_0_0 newDevice
  Device after change.
- valueobject SettingsChangedEvent: event.UserEvent { Settings oldSettings
  Event: The slot settings have been changed.
- Settings newSettings
  Settings after change.

9.51.1 Detailed Description

Peripheral Device Slot.

9.51.2 Member Function Documentation

9.51.2.1 int peripheral::DeviceSlot_2_0_0::assign (in DeviceID_2_0_0 *devid*)

Associate this slot with a given (old or detected new) peripheral device.

Parameters

devid	peripheral device identification

Returns

0 if OK
ERR_INVALID_PARAMS if devid is unknown or invalid

9.51.2.2 int peripheral::DeviceSlot_2_0_0::assignAddress (in string *packageClass,* in Address_2_0_0 *address*)

Associate this slot with an addressable (new) peripheral device.

Parameters

address	peripheral device address

Returns

0 if OK
ERR_INVALID_PARAMS if address is invalid

9.51.2.3 Device_2_0_0 peripheral::DeviceSlot_2_0_0::getDevice ( )

Returns the actual device reference.

The reference becomes invalid due to assign/unassign method call. This conditions is also flagged by EVT_KEY_-DEVICE_CHANGED event

9.51.2.4 Settings peripheral::DeviceSlot_2_0_0::getSettings ( )

Retrieve the user-defined settings.

Returns

Slot settings

9.51.2.5 int peripheral::DeviceSlot_2_0_0::setSettings (in Settings *settings*)

Change the slot settings.

Parameters

settings	New slot settings

Returns

0 if OK
ERR_INVALID_PARAMS if any parameters are invalid

9.51.2.6 int peripheral::DeviceSlot_2_0_0::unassign ( )

Break the association for this slot.

Returns

0 if OK
ERR_NOT_SUPPORTED if operation is not supported this is the case for sensors with complete position information

9.51.3 Member Data Documentation

9.51.3.1 valueobject peripheral::DeviceSlot_2_0_0::DeviceChangedEvent

Event: The device attached to this slot has changed.

Device before change

9.51.3.2 valueobject peripheral::DeviceSlot_2_0_0::SettingsChangedEvent

Event: The slot settings have been changed.

Settings before change

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/PeripheralDeviceSlot.idl

9.52 peripheral::DeviceManager_2_0_0::DeviceTypeInfo Struct Reference

Peripheral device type info.

```
import "PeripheralDeviceManager.idl";
```

Public Attributes

- sensors Sensor_4_0_0 TypeSpec type
  Device (sensor) type.
- boolean isActuator
  Is actuator or not.
- string identifier
  Device type identifier.
- string name
  Device type display name.
- sensors NumericSensor_4_0_0 Range defaultRange
  Default sensor range (numeric sensors only)
- int defaultDecDigits
  Default sensor precision (numeric sensors only)

9.52.1 Detailed Description

Peripheral device type info.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/PeripheralDeviceManager.idl

9.53 diag::DiagLogSettings Interface Reference

Diagnostic log settings.

```
import "DiagLogSettings.idl";
```

Classes

- struct LogLevelEntry

  An entry containing a context name and its associated context.

Public Types

- enum LogLevel {
  LOG_LEVEL_NONE, LOG_LEVEL_ERR, LOG_LEVEL_WARN, LOG_LEVEL_INFO,
  LOG_LEVEL_DEBUG, LOG_LEVEL_TRACE }

  Log levels.

Public Member Functions

- void resetLogLevelsForAllCtxNames ()

  Reset log levels of all contexts to default.
- vector< LogLevelEntry > getLogLevelsForAllCtxNames ()

  Get log levels of all contexts.
- int setLogLevelForAllCtxNames (in LogLevel logLevel)

  Set the log level for all contexts at once.
- int getLogLevelByCtxName (in string ctxName, out LogLevel logLevel)

  Get the log level for a specific context.
- int setLogLevelByCtxName (in string ctxName, in LogLevel logLevel)

  Set the log level for a specific context.

Public Attributes

- constant int ERR_NONE = 0

  no error
- constant int ERR_UNKNOWN_LOG_CONTEXT_NAME = 1

  unknown log context
- constant int ERR_UNKNOWN_LOG_LEVEL = 2

  unknown log level

9.53.1 Detailed Description

Diagnostic log settings.

9.53.2 Member Enumeration Documentation

9.53.2.1 enum diag::DiagLogSettings::LogLevel

Log levels.

Enumerator

LOG_LEVEL_NONE no log messages

LOG_LEVEL_ERR errors

LOG_LEVEL_WARN warnings + errors

LOG_LEVEL_INFO info + warnings + errors

LOG_LEVEL_DEBUG debug + info + warnings + errors

LOG_LEVEL_TRACE trace + debug + info + warnings + errors

9.53.3 Member Function Documentation

9.53.3.1 int diag::DiagLogSettings::getLogLevelByCtxName (in string *ctxName*, out LogLevel *logLevel*)

Get the log level for a specific context.

Parameters

ctxName	- context name
logLevel	- result: log level

Returns

ERR_NONE on success
ERR_UNKNOWN_LOG_CONTEXT_NAME if the context is unknown
ERR_UNKNOWN_LOG_LEVEL if log level cannot be mapped to JSON

9.53.3.2 vector<LogLevelEntry> diag::DiagLogSettings::getLogLevelsForAllCtxNames ( )

Get log levels of all contexts.

Returns

vector of LogLevelEntry structures

9.53.3.3 int diag::DiagLogSettings::setLogLevelByCtxName (in string *ctxName*, in LogLevel *logLevel*)

Set the log level for a specific context.

Parameters

ctxName	- context name
logLevel	- log level

Returns

ERR_NONE on success
ERR_UNKNOWN_LOG_CONTEXT_NAME if the context is unknown
ERR_UNKNOWN_LOG_LEVEL if log level is unknown

9.53.3.4 int diag::DiagLogSettings::setLogLevelForAllCtxNames (in LogLevel *logLevel*)

Set the log level for all contexts at once.

Parameters

logLevel	- log level

Returns

ERR_NONE on success
ERR_UNKNOWN_LOG_LEVEL if log level is unknown

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/DiagLogSettings.idl

9.54 net::Diagnostics Interface Reference

Diagnostics interface.

```
import "Diagnostics.idl";
```

Public Member Functions

- int ping (in string hostName, in int count, out vector< string > results)

  Ping a network host (send out ICMP echo requests)
- int traceRoute (in string hostName, in int timeout, in boolean useIcmp, out vector< string > results)

  Get the route packet trace to a network host.
- int listTcpConnections (out vector< string > results)

  List the currently active TCP connections (netstat -ta) (lists both listening as well as established connections)

Public Attributes

- constant int NO_ERROR = 0

  No error.
- constant int ERR_INVALID_PARAM = 1

  Invalid parameters.
- constant int ERR_EXEC_FAIL = 2

  Error during execution.
- constant int ERR_TIMEOUT = 3

  Timeout.
- constant int ERR_RESOLVE_FAIL = 4

  Name resolution failure.

9.54.1 Detailed Description

Diagnostics interface.

9.54.2 Member Function Documentation

9.54.2.1 int net::Diagnostics::listTcpConnections (out vector< string > *results*)

List the currently active TCP connections (netstat -ta) (lists both listening as well as established connections)

Returns

NO_ERROR if netstat was successful
ERR_EXEC_FAIL if there was an error during netstat execution

9.54.2.2 int net::Diagnostics::ping (in string *hostName,* in int *count,* out vector< string > *results*)

Ping a network host (send out ICMP echo requests)

Parameters

hostName	host that should be pinged
count	number of echo requests that should be sent (up to 20)
results	output of the ping command

Returns

NO_ERROR if ping command was successful
ERR_INVALID_PARAM if any parameters were invalid
ERR_EXEC_FAIL if there was an error during ping execution
ERR_RESOLVE_FAIL if the host name could not be resolved

9.54.2.3 int net::Diagnostics::traceRoute (in string *hostName,* in int *timeout,* in boolean *useIcmp,* out vector< string > *results*)

Get the route packet trace to a network host.

Parameters

hostName	destination host to track
timeout	Timeout (in seconds) to wait for traceroute results (up to 900)
useIcmp	use ICMP packets instead of UDP packets
results	trace output

Returns

NO_ERROR if traceroute was successful
ERR_INVALID_PARAM if any parameters were invalid
ERR_EXEC_FAIL if there was an error during traceroute execution
ERR_TIMEOUT if traceroute didn't finish before timeout elapsed
ERR_RESOLVE_FAIL if the host name could not be resolved

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/Diagnostics.idl

9.55 test::Display_1_0_1 Interface Reference

Type-independent display test interface.

```
import "TestDisplay.idl";
```

Classes

- struct Info
  Collected display meta information.

Public Types

- enum Orientation { NORMAL, FLIPPED, LEFT, RIGHT }
  Display orientation.
- enum TestStatus { TEST_IDLE, TEST_BUSY, TEST_PASSED, TEST_FAILED }
  Status of interactive test.

Public Member Functions

- Info getInfo ()
  Retrieve display's meta information.
- void testSequence (in int cycleTime_ms)
  Execute a test sequence that is a bit more elaborate than just on and off all.
- void enterTestMode ()
  Start an interactive test on units which support it.
- TestStatus getTestStatus ()
  Get the current status of the interactive test.

9.55.1 Detailed Description

Type-independent display test interface.

9.55.2 Member Enumeration Documentation

9.55.2.1 enum test::Display_1_0_1::Orientation

Display orientation.

Enumerator

NORMAL Normal orientation.
FLIPPED Upside-down.
LEFT Left side down.
RIGHT Right side down.

9.55.2.2 enum test::Display_1_0_1::TestStatus

Status of interactive test.

Enumerator

TEST_IDLE Test has not been started.
TEST_BUSY Test is in progress.
TEST_PASSED The test finished successfully.
TEST_FAILED The test failed.

9.55.3 Member Function Documentation

9.55.3.1 Info test::Display_1_0_1::getInfo ( )

Retrieve display's meta information.

Returns

Display information

9.55.3.2 TestStatus test::Display_1_0_1::getTestStatus ( )

Get the current status of the interactive test.

Returns

Test status

9.55.3.3 void test::Display_1_0_1::testSequence (in int *cycleTime_ms*)

Execute a test sequence that is a bit more elaborate than just on and off all.

Parameters

cycleTime_ms	Delay between state changes in ms

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/TestDisplay.idl

9.56 pdumodel::DoublePole_2_0_0 Struct Reference

for OCP

```
import "Pole.idl";
```

Public Attributes

- string label
  Pole label
- PowerLine line
  Power line.
- int inNodeId
  Upstream (inlet-side) circuit node id.
- int outNodeId
  Downstream (outlet-side) circuit node id.
- sensors NumericSensor_4_0_0 voltage
  RMS voltage sensor, L-L.
- sensors NumericSensor_4_0_0 voltageLN
  RMS voltage sensor, L-N.
- sensors NumericSensor_4_0_0 current
  RMS current sensor.

- sensors NumericSensor_4_0_0 peakCurrent

  Peak current sensor.
- sensors NumericSensor_4_0_0 activePower

  Active power sensor.
- sensors NumericSensor_4_0_0 apparentPower

  Apparent power sensor.
- sensors NumericSensor_4_0_0 powerFactor

  Power factor sensor.
- sensors NumericSensor_4_0_0 activeEnergy

  Active energy sensor.
- sensors NumericSensor_4_0_0 apparentEnergy

  Apparent energy sensor.

9.56.1 Detailed Description

for OCP

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Pole.idl

9.57 net::EapSettings Struct Reference

EAP authentication settings.

```
import "Net.idl";
```

Public Attributes

- string identity

  EAP identity.
- string password

  EAP password.
- EapOuterMethod outerMethod

  Outer authentication method.
- EapInnerMethod innerMethod

  Inner authentication method.
- string caCertificate

  CA certificate.

9.57.1 Detailed Description

EAP authentication settings.

The documentation for this struct was generated from the following file:

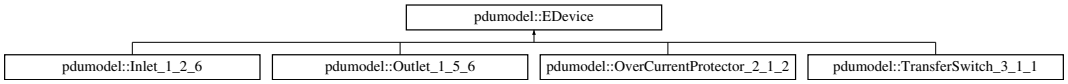
- pdu-json-rpc-api/idl/Net.idl

9.58 pdumodel::EDevice Interface Reference

Common base interface for any kind of electrical device that is used in the PDU model, such as inlets, OCPs and outlets.

```
import "EDevice.idl";
```

Inheritance diagram for pdumodel::EDevice:



Public Member Functions

- vector< EDevice > getParents ()

  Get the list of devices that provide energy to this device.

- vector< EDevice > getChildren ()

  Get the list of devices that are directly fed by this device.

9.58.1 Detailed Description

Common base interface for any kind of electrical device that is used in the PDU model, such as inlets, OCPs and outlets.

EDevices form a hierarchy of parent-child relationships. An EDevice is defined to be the parent of another if it "provides energy" to the latter. E.g. an inlet could be the parent of a number of OCPs, wires or outlets.

An EDevice can have multiple parents, e.g. in case of transfer switches which select power from multiple sources.

9.58.2 Member Function Documentation

9.58.2.1 vector<EDevice> pdumodel::EDevice::getChildren ( )

Get the list of devices that are directly fed by this device.

Returns

List of child devices

9.58.2.2 vector<EDevice> pdumodel::EDevice::getParents ( )

Get the list of devices that provide energy to this device.

Returns

List of parent devices

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/EDevice.idl

9.59 cew::EnergyWiseManager Interface Reference

EnergyWise manager.

```
import "EnergyWiseManager.idl";
```

Public Member Functions

- EnergyWiseSettings getSettings ()
  Retrieve EnergyWiseSettings.
- int setSettings (in EnergyWiseSettings settings)
  Set settings (domain level)

9.59.1 Detailed Description

EnergyWise manager.

9.59.2 Member Function Documentation

9.59.2.1 EnergyWiseSettings cew::EnergyWiseManager::getSettings ( )

Retrieve EnergyWiseSettings.

Returns

EnergyWiseSettings

9.59.2.2 int cew::EnergyWiseManager::setSettings (in EnergyWiseSettings *settings*)

Set settings (domain level)

Returns

0 if OK
1 if invalid param

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/EnergyWiseManager.idl

9.60 cew::EnergyWiseSettings Struct Reference

EnergyWise settings.

```
import "EnergyWiseSettings.idl";
```

Public Attributes

- boolean enabled
  Enabled.
- string domainName
  Domain name.

- string secret

  Secret.
- int port

  Port.
- int pollingInterval

  Polling interval.

9.60.1 Detailed Description

EnergyWise settings.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/EnergyWiseSettings.idl

9.61 event::Engine Interface Reference

There is a single event engine instance reachable by a well known reference.

```
import "EventEngine.idl";
```

Classes

- struct Action

  An action is a tuple of 'id' (unique within the scope of this event engine), 'name' which is unique as well and used by the GUI as user readable identificator, 'isSystem' which denotes the action as system action, 'type' which defines what it is, and an argument vector that vary depending on type and which is passed to the action.
- struct Condition

  Condition is a logical combination of multiple events.
- struct EventDesc

  An event descriptor.
- struct Rule

  A Rule binds an action to a condition.

Public Member Functions

- int listEventDescs (in vector< string > eventIdPrefix, out vector< EventDesc > eventDescs)

  Query existing event descriptors.
- vector< string > listActionTypes ()

  List all available action types.
- int addAction (in Action action, out string actionId)

  Add a new action.
- int modifyAction (in Action action)

  Modify an action.
- int deleteAction (in string actionId)

  Remove an action.
- vector< Action > listActions ()

  List all actions currently know to this event engine.
- int triggerAction (in string actionId, out string errMsg, in vector< KeyValue > context)

  Trigger an action.
- int addRule (in Rule rule, out string ruleId)

Add a new rule.

- int modifyRule (in Rule rule)

  Modify a rule.

- int enableRule (in string ruleId)

  Enable a rule.

- int disableRule (in string ruleId)

  Disable a rule.

- int deleteRule (in string ruleId)

  Delete a rule.

- vector< Rule > listRules ()

  List all rules.

- int deliverEvent (in Event event)

  Deliver an event.

- int rearmRule (in string ruleId)

  Rearm an event rule that is active.

9.61.1 Detailed Description

There is a single event engine instance reachable by a well known reference.

9.61.2 Member Function Documentation

9.61.2.1 int event::Engine::addAction (in Action *action*, out string *actionId*)

Add a new action.

The id and isSystem fields are ignored. The actions's id field is allocated automatically and returned in the actionId parameter.

Returns

0 if OK
1 if the name of the new action already exists
2 if generating the action id failed
3 if the maximum number of actions have been created

9.61.2.2 int event::Engine::addRule (in Rule *rule*, out string *ruleId*)

Add a new rule.

The id, hasMatched and isSystem fields are ignored. The rule's id field is allocated automatically and returned in the the ruleId parameter.

Returns

0 if OK
1 if the name of the new rule already exists
2 if generating the rule id failed
3 if the rule condition contains an invalid event id
4 if the maximum number of rules have been created
5 if the maximum number of actions per rule is exceeded

9.61.2.3 int event::Engine::deleteAction (in string *actionId*)

Remove an action.

Returns

0 if OK
1 if id is unknown
2 if the action is not deletable

9.61.2.4 int event::Engine::deleteRule (in string *ruleId*)

Delete a rule.

Returns

0 if OK
1 if ruleId is unknown
2 if the rule is not deletable

9.61.2.5 int event::Engine::deliverEvent (in Event *event*)

Deliver an event.

Returns

0 if OK
1 if event is unknown

9.61.2.6 int event::Engine::disableRule (in string *ruleId*)

Disable a rule.

A disabled rule will be ignored when processing events.

Returns

0 if OK
1 if ruleId is unknown

9.61.2.7 int event::Engine::enableRule (in string *ruleId*)

Enable a rule.

An enabled rule will be evaluated when processing events.

Returns

0 if OK
1 if id is unknown

9.61.2.8 vector<string> event::Engine::listActionTypes ( )

List all available action types.

The action type is intentionally defined generically so that implementation can be extensible without changing interface.

9.61.2.9 int event::Engine::listEventDescs (in vector< string > *eventIdPrefix*, out vector< **EventDesc** > *eventDescs*)

Query existing event descriptors.

Returns

0 if OK
1 if id was not found

9.61.2.10 vector<**Rule**> event::Engine::listRules ( )

List all rules.

Question: will number of rules be small enough to list them all in a single operation. A single Rule may be quite large... See below for alternative interface using iterator.

9.61.2.11 int event::Engine::modifyAction (in **Action** *action*)

Modify an action.

Returns

0 if OK
1 if the name of the new action already exists
2 if the action id does not exist

9.61.2.12 int event::Engine::modifyRule (in **Rule** *rule*)

Modify a rule.

The hasMatched and isSystem fields are ignored.

Returns

0 if OK
1 if the name of the new rule already exists
2 if the rule id does not exist
3 if the rule condition contains an invalid event id
4 if the maximum number of actions per rule is exceeded

9.61.2.13 int event::Engine::rearmRule (in string *ruleId*)

Rearm an event rule that is active.

Once a Rule triggers its actions it is done once. If the condition of the rules becomes false and back again true, no action will be performed unless the rule is rearmed. Rules may be auto-rearmed what means whenever the rule's conditions changes from false to true actions are triggered over and again.

Returns

0 if OK
1 if the rule is unknown
2 if the rule is not enabled

9.61.2.14 int event::Engine::triggerAction (in string *actionId,* out string *errMsg,* in vector< KeyValue > *context*)

Trigger an action.

This is mainly used for test and debugging. The operation will block until the action has been performed or an error occurred. In the latter case errMsg will contain an error message. The context is passed to the actions.

NOTE: Currently this function doesn't block!

Returns

0 if OK
1 if id is unknown
2 if no actor was found for the action
3 if performing the action failed, errmsg will be set

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/EventEngine.idl

9.62 res_mon::Entry Struct Reference

ResMon Entry.

```
import "ResMon.idl";
```

Public Types

- enum Type {
  GLOBAL_CPU_USAGE, GLOBAL_FREE_MEM, GLOBAL_PROC_COUNT, FS_FREE_SPACE,
  FS_FREE_INODES, PROC_CPU_USAGE, PROC_VM_SIZE, PROC_FREE_FILE_DESC,
  PROC_LIFE_TIME, PROC_COUNT }

  Type of this ResMon Entry.

Public Attributes

- Type type

  Type of this ResMon Entry.
- string name

  ResMon Entry name.
- long value

  ResMon Entry value.

9.62.1 Detailed Description

ResMon Entry.

9.62.2 Member Enumeration Documentation

9.62.2.1 enum res_mon::Entry::Type

Type of this ResMon Entry.

Enumerator

GLOBAL_CPU_USAGE global cpu usage
GLOBAL_FREE_MEM global free memory
GLOBAL_PROC_COUNT global process count
FS_FREE_SPACE free filesystem space
FS_FREE_INODES free filesystem inodes
PROC_CPU_USAGE process cpu usage
PROC_VM_SIZE process virtual mem size
PROC_FREE_FILE_DESC process free file descriptors
PROC_LIFE_TIME process life time
PROC_COUNT process count

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/ResMon.idl

9.63 fitness::Fitness::ErrorLogEntry Struct Reference

An entry in the reliability error log.

```
import "Fitness.idl";
```

Public Attributes

- string id
  id of the associated data entry
- int value
  normalized value
- int thresholdValue
  normalized threshold value
- long rawValue
  raw value
- int powerOnHours
  power on hours when error occured
- time timeStampUTC
  UTC time stamp when error occured.

9.63.1 Detailed Description

An entry in the reliability error log.

An error log entry is made when the normalized value of a data entry drops below the normalized threshold value.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Fitness.idl

9.64 test::Ethernet Interface Reference

test routines for RJ45 Ethernet port This is low level interface using ethtool that does not persist any of the settings made (TODO: this interface may be combined with a 'decent' network interface.

```
import "testrpc.idl";
```

Public Types

- enum Speed { SPD_10, SPD_100, SPD_1000 }

  Ethernet Speed.
- enum Duplex { DPX_HALF, DPX_FULL }

  Ethernet Duplex Mode.

Public Member Functions

- vector< string > getDevices ()

  returns a a list of valid network interface devices
- int setParameters (in string device, in Speed speed, in Duplex duplex, in boolean isAutoNeg)

  transiently sets the interface to the desired parameters

9.64.1 Detailed Description

test routines for RJ45 Ethernet port This is low level interface using ethtool that does not persist any of the settings made (TODO: this interface may be combined with a 'decent' network interface.

Currently the network interface is dedicated to special use cases)

9.64.2 Member Enumeration Documentation

9.64.2.1 enum test::Ethernet::Duplex

Ethernet Duplex Mode.

Enumerator

DPX_HALF Half Duplex.

DPX_FULL Full Duplex.

9.64.2.2 enum test::Ethernet::Speed

Ethernet Speed.

Enumerator

SPD_10 10 Mbit/s

SPD_100 100 Mbit/s

SPD_1000 1 Gbit/s

9.64.3 Member Function Documentation

9.64.3.1 int test::Ethernet::setParameters (in string *device,* in Speed *speed,* in Duplex *duplex,* in boolean *isAutoNeg*)

transiently sets the interface to the desired parameters

Returns

0 if OK
1 if invalid param
2 if system error executing operation

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/testrpc.idl

9.65 event::Event Struct Reference

Event has a type: a STATE event indicates that a boolean state has been changed, i.e.

```
import "EventEngine.idl";
```

Public Types

- enum Type { STATE, TRIGGER }
  Event type.

Public Attributes

- Type type
  Event type.
- vector< string > id
  Event id vector.
- boolean asserted
  Assertion value.
- time timeStamp
  Timestamp.
- vector< KeyValue > context
  Context map.

9.65.1 Detailed Description

Event has a type: a STATE event indicates that a boolean state has been changed, i.e.

asserted or deasserted a TRIGGER event is one that has no state assigned. conceptually it is asserted and deasserted at once. The id has multiple components that form a path into a hierarchy. The value ("asserted") indicates whether the state has become true (assertion) or false (deassertion). For events of type TRIGGER this will be true always.

9.65.2 Member Enumeration Documentation

9.65.2.1 enum event::Event::Type

Event type.

Enumerator

STATE State event.

TRIGGER Trigger event.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/EventEngine.idl

9.66 event::Engine::EventDesc Struct Reference

An event descriptor.

```
import "EventEngine.idl";
```

Public Types

- enum Type { NODE, DYN_NODE, LEAF }
  Event descriptor type.

Public Attributes

- Type eventDescType
  Event descriptor type.
- Event Type eventType
  Event type.
- string dynNodeContext
  Dynamic node context.
- string idComp
  Event ID component.
- string name
  User-defined name.
- vector< EventDesc > entries
  Child nodes.

9.66.1 Detailed Description

An event descriptor.

In case eventDescType is LEAF then the descriptor refers to a 'real' event. In this case eventType is set and the entries vector is empty. Otherwise eventType is a don't care and the entries vector contains sub-entries. In case eventDescType is DYN_NODE then the dynNodeContext contains a key which is used to generate a dynamic node.

9.66.2 Member Enumeration Documentation

9.66.2.1 enum event::Engine::EventDesc::Type

Event descriptor type.

Enumerator

NODE Intermediate node.

DYN_NODE Dynamic node.

LEAF Leaf node.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/EventEngine.idl

9.67 logging::EventLog_1_0_1 Interface Reference

Device event log interface.

```
import "EventLog.idl";
```

Public Member Functions

- void clear ()

  Clear the event log.
- int getFirstId ()

  Get the first available event id.
- int getLastId ()

  Get the last available event id.
- void getEntries (out vector< LogEntry > entries, in int refId, in int count, in RangeDirection direction)

  Fetch entries from the event log.
- void getFilteredEntries (out vector< LogEntry > entries, in int refId, in int count, in RangeDirection direction, in vector< string > eventClasses)

  Fetch entries of certain event classes from the event log.

9.67.1 Detailed Description

Device event log interface.

9.67.2 Member Function Documentation

9.67.2.1 void logging::EventLog_1_0_1::getEntries (out vector< LogEntry > *entries,* in int *refId,* in int *count,* in RangeDirection *direction*)

Fetch entries from the event log.

Parameters

entries	Result: List of events
refId	First event id to fetch
count	Number of events to fetch
direction	Range direction

9.67.2.2 void logging::EventLog_1_0_1::getFilteredEntries (out vector< LogEntry > *entries,* in int *refId,* in int *count,* in RangeDirection *direction,* in vector< string > *eventClasses*)

Fetch entries of certain event classes from the event log.

Parameters

entries	Result: List of events
refId	First event id to fetch
count	Number of events to fetch
direction	Range direction
eventClasses	Event classes to filter for If empty, the method behaves the same way as getEntries().

9.67.2.3 int logging::EventLog_1_0_1::getFirstId ( )

Get the first available event id.

Returns

Event serial number

9.67.2.4 int logging::EventLog_1_0_1::getLastId ( )

Get the last available event id.

Returns

Event serial number

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/EventLog.idl

9.68 event::Channel_1_0_1::EventSelect Struct Reference

Structure to select an Event *.

```
import "EventService.idl";
```

Public Attributes

- typecode **type**
- Object **src**

9.68.1 Detailed Description

Structure to select an Event *.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/EventService.idl

9.69 hmi::ExternalBeeper_1_0_1 Interface Reference

External Beeper interface.

```
import "ExternalBeeper.idl";
```

Public Types

- enum State { **OFF**, **ON**, **ALARMING** }

  Beeper state.

Public Member Functions

- State getState ()

  Get current beeper state.
- void alarm ()

  Start beeper alarm.
- void on ()

  Turn beeper on.
- void off ()

  Turn beeper off.

Public Attributes

- valueobject StateChangedEvent: idl.Event { State oldState

  Event: beeper state has changed.
- State **newState**

9.69.1 Detailed Description

External Beeper interface.

9.69.2 Member Function Documentation

9.69.2.1 void hmi::ExternalBeeper_1_0_1::alarm ( )

Start beeper alarm.

Starts and repeats an alarm sequence of beeper on and beeper off. The sequence will be infinitely repeated until "off" is called.

9.69.2.2 void hmi::ExternalBeeper_1_0_1::off ( )

Turn beeper off.

Disables beeper sound and also stops beeper alarm.

9.69.2.3 void hmi::ExternalBeeper_1_0_1::on ( )

Turn beeper on.

Enables the beeper sound.

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/ExternalBeeper.idl

9.70 test::FeatSerial Interface Reference

test routines for Raritan Feature Serial interface (RS232 with some control lines and switched power) Require Test-Mode to be ON.

```
import "testrpc.idl";
```

Public Member Functions

- int getNumberOfPorts (out int numPorts)

  returns number of ports
- int setPower (in int portNum, in boolean hasPower)

  Switches Power supplied to the port Observable with special test adapter Power->LED.
- int testLoopTxRx (in int portNum, out string errstr)

  Performs a loop test with special test adapter TX->RX.
- int testLoopDtrDcd (in int portNum, out string errstr)

  Performs a loop test with special test adapter DTR->DCD.

Public Attributes

- constant int OK = 0

  No error.
- constant int ERR_NO_TEST_MODE = 1

  Not in test mode.
- constant int ERR_INVAL_PORT_NUM = 2

  Invalid port number.
- constant int ERR_TEST_FAILED = 3

  Test failed.

9.70.1 Detailed Description

test routines for Raritan Feature Serial interface (RS232 with some control lines and switched power) Require Test-Mode to be ON.

9.70.2 Member Function Documentation

9.70.2.1 int test::FeatSerial::getNumberOfPorts (out int *numPorts*)

returns number of ports

Returns

0 if OK
1 if not in test mode

9.70.2.2 int test::FeatSerial::setPower (in int *portNum,* in boolean *hasPower*)

Switches Power supplied to the port Observable with special test adapter Power->LED.

Returns

OK if OK
ERR_NO_TEST_MODE if not in test mode
ERR_INVAL_PORT_NUM if invalid port number

9.70.2.3 int test::FeatSerial::testLoopDtrDcd (in int *portNum,* out string *errstr*)

Performs a loop test with special test adapter DTR->DCD.

Returns

OK if OK
ERR_NO_TEST_MODE if not in test mode
ERR_INVAL_PORT_NUM if invalid port number
ERR_TEST_FAILED if test failed, errstr may be set

9.70.2.4 int test::FeatSerial::testLoopTxRx (in int *portNum,* out string *errstr*)

Performs a loop test with special test adapter TX->RX.

Returns

OK if OK
ERR_NO_TEST_MODE if not in test mode
ERR_INVAL_PORT_NUM if invalid port number
ERR_TEST_FAILED if test failed, errstr may be set

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/testrpc.idl

9.71 firmware::Firmware_1_0_1 Interface Reference

Firmware management methods

```
import "Firmware.idl";
```

Public Member Functions

- void reboot ()
  Reboot the device.
- void factoryReset ()
  Reset the device configuration to factory defaults.
- string getVersion ()
  Returns the currently installed firmware version.
- vector< UpdateHistoryEntry > getUpdateHistory ()
  Fetch the firmware update history.
- boolean updateAvailable (out boolean failedCheck, out time lastChecked, out string version, out string url)
  Check whether a newer firmware version is available.
- void enableOnlineCheck (in boolean enable)
  Enable the nightly online update checks.
- boolean onlineCheckEnabled ()
  Check whether the nightly online update checks are enabled.
- void performOnlineCheck ()
  Perform an online update check.
- boolean downloadImage (in string url)
  Download a firmware update from a given URL.
- void cancelDownload ()

Cancel the running download of a firmware image.

- ImageStatus getImageStatus ()

  Get the current firmware image upload/download status.

- void discardImage ()

  Discard the currently uploaded firmware image, cancel the update.

- boolean getImageInfo (out ImageInfo_1_0_1 info)

  Return information about a currently uploaded firmware image.

- void startUpdate (in vector< UpdateFlags > flags)

  Launch the firmware update process.

9.71.1 Detailed Description

Firmware management methods

9.71.2 Member Function Documentation

9.71.2.1 boolean firmware::Firmware_1_0_1::downloadImage (in string *url*)

Download a firmware update from a given URL.

This function instructs the device to download a firmware update image from the specified URL.

Returns

`true` if the download was successful, `false` otherwise.

9.71.2.2 void firmware::Firmware_1_0_1::enableOnlineCheck (in boolean *enable*)

Enable the nightly online update checks.

If this feature is enabled the device will automatically check whether a firmware update is available every night between 2:00 and 3:00 am.

Parameters

enable	Enable the automatic online update check

9.71.2.3 boolean firmware::Firmware_1_0_1::getImageInfo (out ImageInfo_1_0_1 *info*)

Return information about a currently uploaded firmware image.

Parameters

info	Firmware image information

Returns

`true` if a firmware image is uploaded, `false` otherwise.

9.71.2.4 ImageStatus firmware::Firmware_1_0_1::getImageStatus ( )

Get the current firmware image upload/download status.

Returns

Image status structure.

9.71.2.5 vector<UpdateHistoryEntry> firmware::Firmware_1_0_1::getUpdateHistory ( )

Fetch the firmware update history.

Returns

Vector of firmware update history entries

9.71.2.6 string firmware::Firmware_1_0_1::getVersion ( )

Returns the currently installed firmware version.

Returns

Firmware version

9.71.2.7 boolean firmware::Firmware_1_0_1::onlineCheckEnabled ( )

Check whether the nightly online update checks are enabled.

Returns

`true` if online update checks are enabled, `false` otherwise.

9.71.2.8 void firmware::Firmware_1_0_1::performOnlineCheck ( )

Perform an online update check.

This function instructs the device to contact the Raritan web site to check whether a newer firmware version is available. The result of the check (if successful) can be queried using updateAvailable().

9.71.2.9 void firmware::Firmware_1_0_1::reboot ( )

Reboot the device.

This function will fail if a firmware update is in progress.

9.71.2.10 void firmware::Firmware_1_0_1::startUpdate (in vector< UpdateFlags > *flags*)

Launch the firmware update process.

The device will stop handling RPC requests shortly after this method has been successfully called. The client should poll the fwupdate_progress.cgi page to monitor the update progress.

Parameters

flags	List of firmware update flags; may be empty

9.71.2.11 boolean firmware::Firmware_1_0_1::updateAvailable (out boolean *failedCheck,* out time *lastChecked,* out string *version,* out string *url*)

Check whether a newer firmware version is available.

This function does not perform the actual online check, but just returns the result of the last successful check. Use performOnlineCheck() or enable the automatic nightly checks to perform an online check.

Parameters

failedCheck	`true` if an online check attempt failed since the last successful one
lastChecked	Timestamp of last successful update check, negative means "never"
version	The new firmware version (if available)
url	The new firmware download URL (if available)

Returns

`true` if a newer firmware version is available, `false` otherwise.

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/Firmware.idl

9.72 peripheral::PackageInfo_2_0_0::FirmwareInfo Struct Reference

Classes

- struct Version

Public Attributes

- time compileDate

  Date of firmware compilation.
- Version version

  Firmware version (0.0 if not applicable)
- time updateDate

  Date of device firmware update.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/PeripheralDevicePackage.idl

9.73 peripheral::G2Production_2_0_0::FirmwareInfo Struct Reference

Public Attributes

- int **crc**
- string **compiler**
- int **compilerVersion**
- string **compileDate**
- int **version**
- int **subVersion**
- int **configurationId**

- string **updateDate**

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/PeripheralG2Production.idl

9.74 firmware::FirmwareUpdateStatus Interface Reference

Firmware update status interface.

```
import "FirmwareUpdateStatus.idl";
```

Public Member Functions

- UpdateStatus getStatus ()

  Returns the device's firmware update status.

9.74.1 Detailed Description

Firmware update status interface.

Unlike all other sysrpc methods this function is implemented by a CGI script which is available even during a firmware update. The URL for this interface is /cgi-bin/fwupdate_progress.cgi.

9.74.2 Member Function Documentation

9.74.2.1 UpdateStatus firmware::FirmwareUpdateStatus::getStatus ( )

Returns the device's firmware update status.

Returns

Update status structure

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/FirmwareUpdateStatus.idl

9.75 fitness::Fitness Interface Reference

Fitness Daemon interface

```
import "Fitness.idl";
```

Classes

- struct DataEntry

  An entry in the reliability database.
- struct ErrorLogEntry

  An entry in the reliability error log.

Public Member Functions

- vector< DataEntry > getDataEntries ()

  Returns the fitness data entries.
- void getErrorLogIndexRange (out int firstIndex, out int entryCount)

  Returns the error log index range.
- vector< ErrorLogEntry > getErrorLogEntries (in int startIndex, in int count)

  Returns the error log.

Public Attributes

- constant int FLAG_VALUE_INVALID = 0x1

  The value/worstValue/rawValue is invalid (e.g.
- constant int FLAG_VALUE_OLD = 0x2

  The value/rawValue is out-dated.
- constant int FLAG_ENTRY_CRITICAL = 0x4

  Violating the threshold is a critical event.

9.75.1 Detailed Description

Fitness Daemon interface

9.75.2 Member Function Documentation

9.75.2.1 vector<DataEntry> fitness::Fitness::getDataEntries ( )

Returns the fitness data entries.

The count of entries depends on the device. For example a PDU each slave board currently has 3 entries + 2 entries per relay. The data is updated only once or twice a minute.

Returns

– the vector with the fitness data entries

9.75.2.2 vector<ErrorLogEntry> fitness::Fitness::getErrorLogEntries (in int *startIndex*, in int *count*)

Returns the error log.

If the startIndex is smaller than the first index in the log than the count of returned entries is smaller (or even 0) as well.

Parameters

startIndex	– the index of the first entry to return
count	– the count of entries starting from the startIndex

Returns

– the vector with the error log entries

9.75.2.3 void fitness::Fitness::getErrorLogIndexRange (out int *firstIndex*, out int *entryCount*)

Returns the error log index range.

Parameters

firstIndex	– the first valid index
entryCount	– the count of entries in the error log

9.75.3 Member Data Documentation

9.75.3.1 constant int fitness::Fitness::FLAG_ENTRY_CRITICAL = 0x4

Violating the threshold is a critical event.

9.75.3.2 constant int fitness::Fitness::FLAG_VALUE_INVALID = 0x1

The value/worstValue/rawValue is invalid (e.g.

not initialized).

9.75.3.3 constant int fitness::Fitness::FLAG_VALUE_OLD = 0x2

The value/rawValue is out-dated.

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/Fitness.idl

9.76 webcam::Format_2_0_0 Struct Reference

Format.

```
import "Webcam.idl";
```

Public Attributes

- int width
  image width
- int height
  image height
- PixelFormat pixelFormat
  pixel format

9.76.1 Detailed Description

Format.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Webcam.idl

9.77 peripheral::G2Production_2_0_0 Interface Reference

Classes

- struct FirmwareInfo

Public Types

- enum ConfigurationSpace { HARDWARE, FUNCTION, FIRMWARE, RESERVED }
- enum ResetMethod { BROWNOUT, WATCHDOG }

Public Member Functions

- int updateFirmware (in string romcode)

  Update G2 peripheral firmware with binary pereviously uploaded using fwupload_g2pdev.cgi script.
- int **updateFirmwarePos** (in vector< PosElement > position)
- int getFirmwareInfo (in string romcode, out FirmwareInfo info)

  Read G2 peripheral device firmware information.
- int **getFirmwareInfoPos** (in vector< PosElement > position, out FirmwareInfo info)
- int readConfigurationSpace (in string romcode, in ConfigurationSpace cs, out vector< byte > cfg)

  Read the configuration space of a G2 peripheral device.
- int **readConfigurationSpacePos** (in vector< PosElement > position, in ConfigurationSpace cs, out vector< byte > cfg)
- int eraseConfigurationSpace (in string romcode, in ConfigurationSpace cs)

  Erase the configuration space of a G2 peripheral device.
- int **eraseConfigurationSpacePos** (in vector< PosElement > position, in ConfigurationSpace cs)
- int writeConfigurationSpace (in string romcode, in ConfigurationSpace cs, in vector< byte > cfg)

  Write a complete configuration space of a G2 peripheral device.
- int **writeConfigurationSpacePos** (in vector< PosElement > position, in ConfigurationSpace cs, in vector< byte > cfg)
- int readRegisters (in string romcode, in int address, in int count, out vector< byte > data)

  Read the registers of a G2 peripheral device.
- int **readRegistersPos** (in vector< PosElement > position, in int address, in int count, out vector< byte > data)
- int writeRegisters (in string romcode, in int address, in vector< byte > data)

  Write the registers of a G2 peripheral device.
- int **writeRegistersPos** (in vector< PosElement > position, in int address, in vector< byte > data)
- int writeRegisterBits (in string romcode, in int address, in byte mask, in byte bits)

  Set single (masked) bits of a G2 peripheral device register.
- int **writeRegisterBitsPos** (in vector< PosElement > position, in int address, in byte mask, in byte bits)
- int reset (in string romcode, in ResetMethod method)

  Reset a G2 peripheral device.
- int **resetPos** (in vector< PosElement > position, in ResetMethod method)

Public Attributes

- constant int **ERR_INVALID_PARAMS** = 1
- constant int **ERR_NO_CONFIG_MODE** = 2
- constant int **ERR_NO_DEVICE** = 3
- constant int **ERR_NO_FIRMWARE_FILE** = 4
- constant int **ERR_FIRMWARE_INVALID** = 5
- constant int **ERR_PROTECTED** = 6
- constant int **ERR_UPDATE_IN_PROGRESS** = 7

9.77.1 Member Enumeration Documentation

9.77.1.1 enum peripheral::G2Production_2_0_0::ConfigurationSpace

Enumerator

HARDWARE HW-specific configuration data.

FUNCTION Function-specific configuration data.

FIRMWARE Firmware-specific configuration data.

RESERVED Reserved, Development only.

9.77.1.2 enum peripheral::G2Production_2_0_0::ResetMethod

Enumerator

BROWNOUT reset triggered instantly by firmware

WATCHDOG sensor is halted until watchdog triggers reset

9.77.2 Member Function Documentation

9.77.2.1 int peripheral::G2Production_2_0_0::eraseConfigurationSpace (in string *romcode,* in ConfigurationSpace *cs*)

Erase the configuration space of a G2 peripheral device.

Parameters

romcode	1-wire rom code for device identification, can be left empty if only one device connected
cs	the configuration space identifier

Returns

0 if OK
ERR_NO_CONFIG_MODE if the device is not in factory configuration mode
ERR_NO_DEVICE no device present or wrong romcode

9.77.2.2 int peripheral::G2Production_2_0_0::getFirmwareInfo (in string *romcode,* out FirmwareInfo *info*)

Read G2 peripheral device firmware information.

Parameters

romcode	1-wire rom code for device identification, can be left empty if only one device connected
info	the firmware information

Returns

0 if OK
ERR_NO_DEVICE no device present or wrong romcode
ERR_FIRMWARE_INVALID if firmware information invalid
ERR_UPDATE_IN_PROGRESS if firmware update is in progress

9.77.2.3 int peripheral::G2Production_2_0_0::readConfigurationSpace (in string *romcode,* in **ConfigurationSpace** *cs,* out vector< byte > *cfg*)

Read the configuration space of a G2 peripheral device.

Parameters

romcode	1-wire rom code for device identification, can be left empty if only one device connected
cs	the configuration space identifier

Returns

0 if OK
ERR_NO_CONFIG_MODE if the device is not in factory configuration mode
ERR_NO_DEVICE no device present or wrong romcode

9.77.2.4 int peripheral::G2Production_2_0_0::readRegisters (in string *romcode,* in int *address,* in int *count,* out vector< byte > *data*)

Read the registers of a G2 peripheral device.

Parameters

romcode	1-wire rom code for device identification, can be left empty if only one device connected
address	the address of (first) register to read from
count	the number of registers to read
data	the register data being read out

Returns

0 if OK
ERR_NO_CONFIG_MODE if the device is not in factory configuration mode
ERR_NO_DEVICE no device present or wrong romcode
ERR_INVALID_PARAMS if address or count ouf of bounds

9.77.2.5 int peripheral::G2Production_2_0_0::reset (in string *romcode,* in **ResetMethod** *method*)

Reset a G2 peripheral device.

Parameters

romcode	1-wire rom code for device identification, can be left empty if only one device connected
method	the reset method to be executed

Returns

0 if OK
ERR_NO_DEVICE no device present or wrong romcode

9.77.2.6 int peripheral::G2Production_2_0_0::updateFirmware (in string *romcode*)

Update G2 peripheral firmware with binary pereviously uploaded using fwupload_g2pdev.cgi script.

Parameters

romcode	1-wire rom code for device identification, can be left empty if only one device connected

Returns

0 if OK
ERR_NO_CONFIG_MODE if the device is not in factory configuration mode
ERR_NO_DEVICE no device present or wrong romcode
ERR_NO_FIRMWARE_FILE if no previously uploaded firmware file is present
ERR_FIRMWARE_INVALID if previously uploaded firmware file is invalid
ERR_UPDATE_IN_PROGRESS if firmware update is already in progress

9.77.2.7 int peripheral::G2Production_2_0_0::writeConfigurationSpace (in string *romcode,* in **ConfigurationSpace** *cs,* in vector< byte > *cfg*)

Write a complete configuration space of a G2 peripheral device.

Parameters

romcode	1-wire rom code for device identification, can be left empty if only one device connected
cs	the configuration space identifier
cfg	the configuration bytes

Returns

0 if OK
ERR_NO_CONFIG_MODE if the device is not in factory configuration mode
ERR_NO_DEVICE no device present or wrong romcode
ERR_PROTECTED if configuration space is not writeable

9.77.2.8 int peripheral::G2Production_2_0_0::writeRegisterBits (in string *romcode,* in int *address,* in byte *mask,* in byte *bits*)

Set single (masked) bits of a G2 peripheral device register.

Parameters

romcode	1-wire rom code for device identification, can be left empty if only one device connected
address	the address of register to set bits of
mask	the bitmask to apply (set bit: 1, don't set bit 0)
bits	the bit vailues to set

Returns

0 if OK
ERR_NO_CONFIG_MODE if the device is not in factory configuration mode
ERR_NO_DEVICE no device present or wrong romcode
ERR_INVALID_PARAMS if address or count ouf of bounds
ERR_PROTECTED if registers are not writeable

9.77.2.9 int peripheral::G2Production_2_0_0::writeRegisters (in string *romcode*, in int *address*, in vector< byte > *data*)

Write the registers of a G2 peripheral device.

Parameters

romcode	1-wire rom code for device identification, can be left empty if only one device connected
address	the address of (first) register to write to
data	the register data to be writen

Returns

0 if OK
ERR_NO_CONFIG_MODE if the device is not in factory configuration mode
ERR_NO_DEVICE no device present or wrong romcode
ERR_INVALID_PARAMS if address or count ouf of bounds
ERR_PROTECTED if registers are not writeable

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/PeripheralG2Production.idl

9.78 serial::GsmModem_1_0_1 Interface Reference

Interface for communication with a GSM modem attached to a serial port.

```
import "GsmModem.idl";
```

Classes

- struct Information
  Structure holding information about the modem and the SIM card.
- struct Settings
  Structure for holding settings of the GSM modem and its SIM card.

Public Types

- enum SimSecurityStatus { UNLOCKED, WAITFORPIN, WAITFORPUK, UNKNOWN }
  Possible security states the sim card can be in at a given time.

Public Member Functions

- Settings getSettings ()
  Get modem settings.
- int setSettings (in Settings settings)
  Set modem settings.
- int sendSms (in string recipient, in string text)
  Send out a SMS message.
- int sendTestSms (in string recipient, in Settings testSettings)
  Send out a test SMS message.
- int getInformation (out Information info)
  Retrieve low-level information about the modem and the SIM card.

- int getInformationWithPin (in string pin, out Information info)

  Retrieve low-level information about the modem and the SIM card.
- int getSimSecurityStatus (out SimSecurityStatus simStatus)

  Retrieve security status of the SIM card.
- int unlockSimCard (in string puk, in string newPin)

  Unlock SIM card with PUK and set new PIN if the SIM card is in security status WAITFORPUK.

Public Attributes

- constant int SUCCESS = 0

  Error codes.
- constant int ERR_INVALID_VALUE = 1

  Invalid argument.
- constant int ERR_WRONG_PIN = 2

  The PIN is incorrect or missing.
- constant int ERR_SMS_SEND_FAILED = 3

  SMS delivery failed.
- constant int ERR_COMMUNICATION_FAILURE = 4

  Communication with the modem failed.
- constant int ERR_SIM_LOCKED = 5

  The SIM card is locked and waits for the PUK.
- constant int ERR_WRONG_SIM_STATUS = 6

  The SIM card doesn't wait for the PUK.
- constant int ERR_WRONG_PUK = 7

  The PUK is incorrect or missing.
- valueobject SimSecurityStatusChangedEvent: idl.Event { SimSecurityStatus newSimStatus

  Sim card security status changed event.
- valueobject SimPinUpdatedEvent: idl.Event { string newPin

  Sim pin updated event.

9.78.1 Detailed Description

Interface for communication with a GSM modem attached to a serial port.

9.78.2 Member Enumeration Documentation

9.78.2.1 enum serial::GsmModem_1_0_1::SimSecurityStatus

Possible security states the sim card can be in at a given time.

Enumerator

UNLOCKED SIM card is unlocked.

WAITFORPIN PIN must be entered to unlock the SIM card.

WAITFORPUK PUK and new PIN must be entered to unlock the SIM card.

UNKNOWN Unkown security status.

9.78.3 Member Function Documentation

9.78.3.1 int serial::GsmModem_1_0_1::getInformation (out Information *info*)

Retrieve low-level information about the modem and the SIM card.

Parameters

info	– structure holding the returned information

Returns

SUCCESS – on success
ERR_WRONG_PIN – if the used PIN is incorrect or missing
ERR_SIM_LOCKED – if the SIM card is locked and waits for the PUK
ERR_COMMUNICATION_FAILURE – if communication with the modem failed

9.78.3.2 int serial::GsmModem_1_0_1::getInformationWithPin (in string *pin*, out Information *info*)

Retrieve low-level information about the modem and the SIM card.

```
Like #getInformation, but allows providing a PIN not stored in the settings
```

Parameters

pin	– PIN to use for authentication
info	– structure holding the returned information

Returns

SUCCESS – on success
ERR_WRONG_PIN – if the used PIN is incorrect or missing
ERR_SIM_LOCKED – if the SIM card is locked and waits for the PUK
ERR_COMMUNICATION_FAILURE – if communication with the modem failed

9.78.3.3 Settings serial::GsmModem_1_0_1::getSettings ( )

Get modem settings.

Returns

– Current modem settings

9.78.3.4 int serial::GsmModem_1_0_1::getSimSecurityStatus (out SimSecurityStatus *simStatus*)

Retrieve security status of the SIM card.

Parameters

simStatus	– SIM card security status

Returns

SUCCESS – on success
ERR_COMMUNICATION_FAILURE – if communication with the modem failed

9.78.3.5 int serial::GsmModem_1_0_1::sendSms (in string *recipient,* in string *text*)

Send out a SMS message.

Parameters

recipient	– Phone number of the message recipient in ITU-T E.164 format
text	– Message text (will be sent in multiple messages if longer than 160 characters)

Returns

SUCCESS – on success
ERR_WRONG_PIN – if the PIN currently stored in the settings is incorrect or missing
ERR_SMS_SEND_FAILED – if the delivery of the SMS to the network failed
ERR_SIM_LOCKED – if the SIM card is locked and waits for the PUK
ERR_COMMUNICATION_FAILURE – if communication with the modem failed

9.78.3.6 int serial::GsmModem_1_0_1::sendTestSms (in string *recipient,* in Settings *testSettings*)

Send out a test SMS message.

The message will be sent to the selected recipient with the text 'SMS Test'.

Parameters

recipient	– Phone number of the message recipient in ITU-T E.164 format
testSettings	– Modem settings to be used temporarily during testing

Returns

SUCCESS – on success
ERR_WRONG_PIN – if the PIN currently stored in the settings is incorrect or missing
ERR_SMS_SEND_FAILED – if the delivery of the SMS to the network failed
ERR_SIM_LOCKED – if the SIM card is locked and waits for the PUK
ERR_COMMUNICATION_FAILURE – if communication with the modem failed

9.78.3.7 int serial::GsmModem_1_0_1::setSettings (in Settings *settings*)

Set modem settings.

Parameters

settings	– New settings

Returns

SUCCESS – on success
ERR_INVALID_VALUE – if any passed value was invalid

9.78.3.8 int serial::GsmModem_1_0_1::unlockSimCard (in string *puk,* in string *newPin*)

Unlock SIM card with PUK and set new PIN if the SIM card is in security status WAITFORPUK.

```
The new PIN is automatically saved in the settings.
```

Parameters

puk	– PUK to use for authentication
newPin	– new PIN to use for future authentication

Returns

SUCCESS – on success
ERR_WRONG_SIM_STATUS – if the SIM card doesn't wait for the PUK
ERR_WRONG_PUK – if the used PUK is incorrect or missing
ERR_COMMUNICATION_FAILURE – if communication with the modem failed

9.78.4 Member Data Documentation

9.78.4.1 valueobject serial::GsmModem_1_0_1::SimPinUpdatedEvent

Sim pin updated event.

new PIN for SIM card after Unlock

9.78.4.2 valueobject serial::GsmModem_1_0_1::SimSecurityStatusChangedEvent

Sim card security status changed event.

new SIM card security status

9.78.4.3 constant int serial::GsmModem_1_0_1::SUCCESS = 0

Error codes.

No error

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/GsmModem.idl

9.79 peripheral::PackageInfo_2_0_0::HardwareInfo Struct Reference

Public Attributes

- string serial
  serial number
- string packageClass
  serial number prefix for current packages
- string model
  like 'DPX-CC2' or 'DX-D2C6'
- int minDowngradeVersion
  minimum downgrade version (or -1)

- string revision

  hardware revision

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/PeripheralDevicePackage.idl

9.80 session::HistoryEntry Struct Reference

Session history entry

```
import "SessionManager.idl";
```

Public Attributes

- time creationTime

  Session creation timestamp.
- string remoteIp

  Session IP address.
- string clientType

  Session client type.

9.80.1 Detailed Description

Session history entry

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/SessionManager.idl

9.81 webcam::Image_2_0_0 Struct Reference

Image.

```
import "Webcam.idl";
```

Public Attributes

- ImageMetaData meta

  image meta data
- string data

  base64 encoded image data

9.81.1 Detailed Description

Image.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Webcam.idl

9.82 firmware::ImageInfo_1_0_1 Struct Reference

Firmware image information

```
import "Firmware.idl";
```

Public Attributes

- boolean valid

  The file is a valid firmware image.
- string version

  Firmware image version
- string min_required_version

  Minimum running firmware version for image.
- string min_downgrade_version

  Minimum image version for running firmware.
- string product

  Product name.
- string platform

  Platform name.
- string oem

  OEM name.
- string hwid_whitelist

  Hardware ID whitelist.
- string hwid_blacklist

  Hardware ID blacklist.
- boolean compatible

  `true` *if the image is compatible with this device*
- boolean signature_present

  `true` *if the image is signed*
- string signed_by

  Signature issuer.
- boolean signature_good

  `true` *if the signature is valid*
- string certified_by

  Key certificate issuer.
- boolean certificate_good

  `true` *if the key certificate is valid*
- boolean model_list_present

  `true` *if the image includes a supported models list*
- boolean model_supported

  `true` *if the model is found on the support list*

9.82.1 Detailed Description

Firmware image information

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Firmware.idl

9.83 webcam::ImageMetaData Struct Reference

Image meta data.

```
import "Webcam.idl";
```

Public Attributes

- Format_2_0_0 format

  image format information
- long timestamp

  image timestamp
- Location location

  source webcam location

9.83.1 Detailed Description

Image meta data.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Webcam.idl

9.84 firmware::ImageStatus Struct Reference

Image upload/download status.

```
import "Firmware.idl";
```

Public Attributes

- ImageState state

  Image upload/download state.
- string error_message

  Error message; empty if there was no error.
- time time_started

  Timestamp of the last state change (if available)
- int size_total

  Total size of the image (if available)
- int size_done

  Progress of the running upload or download (if available)

9.84.1 Detailed Description

Image upload/download status.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Firmware.idl

9.85 webcam::StorageManager_1_0_1::ImageStorageMetaData Struct Reference

StorageMetaData.

```
import "StorageManager.idl";
```

Public Attributes

- ImageMetaData imageMeta
  image related meta data
- int fileSize
  image file size in bytes
- StorageMetaData storageMeta
  store related meta data

9.85.1 Detailed Description

StorageMetaData.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/StorageManager.idl

9.86 assetmgrmodel::AssetStripLogger_1_0_2::Info Struct Reference

Log information structure.

```
import "AssetStripLogger.idl";
```

Public Attributes

- int capacity
  Maximum number of entries in the record ring buffer.
- int oldestRecord
  Pointer to the oldest log entry; -1 if the log is empty.
- int newestRecord
  Pointer to the newest log entry; -1 if the log is empty.
- int totalEventCount
  Total number of events logged.

9.86.1 Detailed Description

Log information structure.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/AssetStripLogger.idl

9.87 usermgmt::Role::Info Struct Reference

Role information

```
import "Role.idl";
```

Public Attributes

- string description

  Free-form description.
- boolean locked

  `true` *if the role cannot be deleted*
- vector< Privilege > privileges

  List of privileges for this role.

9.87.1 Detailed Description

Role information

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Role.idl

9.88 usermgmt::RoleManager::Info Struct Reference

Full role manager information.

```
import "RoleManager.idl";
```

Public Attributes

- vector< PrivilegeDesc > privileges

  List of supported privileges.
- vector< RoleAccount > roles

  List of active roles.

9.88.1 Detailed Description

Full role manager information.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/RoleManager.idl

9.89 cert::ServerSSLCert::Info Struct Reference

Certificate manager information.

```
import "ServerSSLCert.idl";
```

Public Attributes

- boolean havePendingReq

  `true` *if a CSR is pending*
- boolean havePendingCert

  `true` *if an uploaded certificate is pending activation*
- ReqInfo pendingReqInfo

Information about pending CSR.

- CertInfo pendingCertInfo

  Information about pending certificate.

- CertInfo activeCertInfo

  Information about active certificate.

- int maxSignDays

  Maximum number of days a self signed certificate will be valid.

9.89.1 Detailed Description

Certificate manager information.

9.89.2 Member Data Documentation

9.89.2.1 int cert::ServerSSLCert::Info::maxSignDays

Maximum number of days a self signed certificate will be valid.

Necessary because openssl $<$ 1.0 does not handle time overflows.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/ServerSSLCert.idl

9.90 test::Display_1_0_1::Info Struct Reference

Collected display meta information.

```
import "TestDisplay.idl";
```

Public Attributes

- string type

  Display type.

- string address

  Display address.

- map$<$ string, string $>$ options

  Display options.

- Orientation orientation

  Display orientation.

9.90.1 Detailed Description

Collected display meta information.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/TestDisplay.idl

9.91 serial::GsmModem_1_0_1::Information Struct Reference

Structure holding information about the modem and the SIM card.

```
import "GsmModem.idl";
```

Public Attributes

- string imei
  IMEI of the modem.
- string imsi
  IMSI of the SIM card.
- string manufacturer
  modem manufacturer string
- string model
  modem model string
- string revision
  modem revision string
- string ownNumber
  own phone number in ITU-T E.164 format
- string simSmsc
  SMS center number stored on SIM card.
- string networkName
  Name of the currently used network (PLMN)
- string serviceProviderName
  Name of the service provider (SPN)
- int receptionLevel
  `reception level in dBm`
  0 means unknown, -1 means no reception

9.91.1 Detailed Description

Structure holding information about the modem and the SIM card.

Any of the fields may be empty if the information can not be retrieved.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/GsmModem.idl

9.92 webcam::Information_2_0_0 Struct Reference

Webcam information.

```
import "Webcam.idl";
```

Public Attributes

- string id
  port and camera specific ID string
- vector< Format_2_0_0 > supportedFormats
  supported image formats

9.92.1 Detailed Description

Webcam information.

The documentation for this struct was generated from the following file:

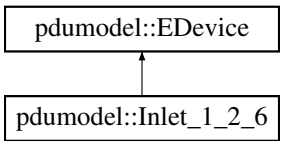
- pdu-json-rpc-api/idl/Webcam.idl

9.93 pdumodel::Inlet_1_2_6 Interface Reference

Inlet interface

```
import "Inlet.idl";
```

Inheritance diagram for pdumodel::Inlet_1_2_6:



Classes

- struct MetaData

  Inlet metadata
- struct Sensors

  Inlet sensors
- struct Settings

  Inlet settings

Public Member Functions

- MetaData getMetaData ()

  Retrieve the inlet metadata.
- Sensors getSensors ()

  Get the inlet sensors.
- vector< Pole_2_0_0 > getPoles ()

  Get the list of inlet poles.
- Settings getSettings ()

  Retrieve the inlet settings.
- int setSettings (in Settings settings)

  Change the inlet settings.
- void setEnabled (in boolean enabled)

  Enable/disable PDU operation for this inlet.
- boolean isEnabled ()

  Test whether PDU operation is enabled for this inlet.

Public Attributes

- valueobject SettingsChangedEvent: event.UserEvent { Settings oldSettings
  Event: Inlet settings have been changed.
- Settings newSettings
  Settings after change.
- valueobject EnableStateChangedEvent: event.UserEvent { boolean enabled
  Event: Inlet has been enabled or disabled.

9.93.1 Detailed Description

Inlet interface

9.93.2 Member Function Documentation

9.93.2.1 MetaData pdumodel::Inlet_1_2_6::getMetaData ( )

Retrieve the inlet metadata.

Returns

Inlet metadata

9.93.2.2 vector<Pole_2_0_0> pdumodel::Inlet_1_2_6::getPoles ( )

Get the list of inlet poles.

Returns

List of inlet poles

9.93.2.3 Sensors pdumodel::Inlet_1_2_6::getSensors ( )

Get the inlet sensors.

Returns

Inlet sensors

9.93.2.4 Settings pdumodel::Inlet_1_2_6::getSettings ( )

Retrieve the inlet settings.

Returns

Inlet settings

9.93.2.5 boolean pdumodel::Inlet_1_2_6::isEnabled ( )

Test whether PDU operation is enabled for this inlet.

Returns

`true` if PDU operation is enabled

9.93.2.6 void pdumodel::Inlet_1_2_6::setEnabled (in boolean *enabled*)

Enable/disable PDU operation for this inlet.

When PDU operation is disabled the sensors for this inlet and all children will no longer be updated, and outlet switching is no longer allowed. This can be useful for multi-inlet units if one inlet is temporarily expected to be powered down.

Parameters

enabled	`true` to enable PDU operation

9.93.2.7 int pdumodel::Inlet_1_2_6::setSettings (in Settings *settings*)

Change the inlet settings.

Parameters

settings	New inlet settings

Returns

0 if OK
1 if any parameters are invalid

9.93.3 Member Data Documentation

9.93.3.1 valueobject pdumodel::Inlet_1_2_6::EnableStateChangedEvent

Event: Inlet has been enabled or disabled.

New enable state

9.93.3.2 valueobject pdumodel::Inlet_1_2_6::SettingsChangedEvent

Event: Inlet settings have been changed.

Settings before change

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/Inlet.idl

9.94 net::InterfaceState_2_0_0 Struct Reference

LAN interface state.

```
import "Net.idl";
```

Public Attributes

- InterfaceMode_2_0_0 mode
  Wired or wireless interface configured?
- InterfaceMode_2_0_0 activeMode
  Currently used interface type.

- boolean wirelessSupported

  if a wireless interface is available

9.94.1 Detailed Description

LAN interface state.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Net.idl

9.95 hmi::InternalBeeper Interface Reference

Internal beeper interface.

```
import "InternalBeeper.idl";
```

Public Types

- enum State { OFF, ON_NOTIFICATION, ON_ACTIVATION }

  Activation state.

Public Member Functions

- void mute (in boolean muted)

  Mute beeper, turn of all internal alarm notifications.
- boolean isMuted ()

  Check whether beeper is currently muted.
- void activate (in boolean on, in string reason, in int timeout)

  Activate the beeper for a given time.
- State getState (out string reason)

  Retrieve the current beeper activation state.

Public Attributes

- valueobject MuteChangedEvent: event.UserEvent { boolean muted

  Event: The beeper has been muted or unmuted.
- valueobject StateChangedEvent: idl.Event { State state

  Event: The beeper activation status has changed.
- string reason

  Activation reason.

9.95.1 Detailed Description

Internal beeper interface.

9.95.2 Member Enumeration Documentation

9.95.2.1 enum hmi::InternalBeeper::State

Activation state.

Enumerator

OFF Beeper is currently off.

ON_NOTIFICATION Beeper is currently active due to an internal alarm notification.

ON_ACTIVATION Beeper is currently active due to an external activation.

9.95.3 Member Function Documentation

9.95.3.1 void hmi::InternalBeeper::activate (in boolean *on,* in string *reason,* in int *timeout*)

Activate the beeper for a given time.

Parameters

activate	Whether to turn on or off the beeper
reason	Description of the reason to turn on the beeper (only valid whtn turning on the beeper)
timeout	Activation timeout in seconds (only valid when turning on the beeper)

9.95.3.2 State hmi::InternalBeeper::getState (out string *reason*)

Retrieve the current beeper activation state.

Parameters

reason	Return value for activation reason if the beeper is currently active

Returns

The current beeper state

9.95.3.3 boolean hmi::InternalBeeper::isMuted ( )

Check whether beeper is currently muted.

Returns

`true` if muted, `false` if not

9.95.3.4 void hmi::InternalBeeper::mute (in boolean *muted*)

Mute beeper, turn of all internal alarm notifications.

Parameters

mute	`true` to mute beeper, `false` for normal mode

9.95.4 Member Data Documentation

9.95.4.1 valueobject hmi::InternalBeeper::StateChangedEvent

Event: The beeper activation status has changed.

The current beeper state

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/InternalBeeper.idl

9.96 security::IpFw_2_0_0 Struct Reference

IP packet filter configuration.

```
import "Security.idl";
```

Public Attributes

- boolean enabled

  `true` to enable packet filtering
- IpfwPolicy defaultPolicyIn

  The default policy for inbound traffic in case no rule matches.
- IpfwPolicy defaultPolicyOut

  The default policy for outbound traffic in case no rule matches.
- vector< IpfwRule > ruleSetIn

  Ordered list of inbound firewall rules.
- vector< IpfwRule > ruleSetOut

  Ordered list of outbound firewall rules.

9.96.1 Detailed Description

IP packet filter configuration.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Security.idl

9.97 security::IpfwRule Struct Reference

IP packet filter rule.

```
import "Security.idl";
```

Public Attributes

- string ipMask

  Remote IP and network mask.
- IpfwPolicy policy

  Filter policy.

9.97.1 Detailed Description

IP packet filter rule.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Security.idl

9.98 net::IPv4RoutingEntry Struct Reference

IPv4 Routing entry.

```
import "Net.idl";
```

Public Attributes

- string dest
  Destination address.
- string nexthop
  Next hop address / Router.
- string intf
  Network interface.

9.98.1 Detailed Description

IPv4 Routing entry.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Net.idl

9.99 net::IPv6RoutingEntry Struct Reference

IPv6 Routing entry.

```
import "Net.idl";
```

Public Attributes

- string dest
  Destination address.
- string nexthop
  Next hop address.
- string intf
  Network interface.

9.99.1 Detailed Description

IPv6 Routing entry.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Net.idl

9.100 event::KeyValue Struct Reference

Helper that is used wherever key/value pairs are required.

```
import "EventEngine.idl";
```

Public Attributes

- string key
  Key.
- string value
  Value.

9.100.1 Detailed Description

Helper that is used wherever key/value pairs are required.

Note

This interface was designed before IDL maps were supported.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/EventEngine.idl

9.101 net::LanInterfaceParameters_2_0_0 Struct Reference

Current LAN interface parameters.

```
import "Net.idl";
```

Public Attributes

- LanSpeed speed
  Current speed.
- LanDuplex duplex
  Current duplex mode.
- boolean autonegotiation
  `true` *if auto-negotiation is enabled*
- boolean link
  `true` *if a link is detected*
- vector< LanLinkMode > supportedModes
  Supported link modes.

9.101.1 Detailed Description

Current LAN interface parameters.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Net.idl

9.102 net::LanInterfaceSettings Struct Reference

LAN interface settings.

```
import "Net.idl";
```

Public Attributes

- LanSpeed speed

  Speed.
- LanDuplex duplex

  Duplex mode.

9.102.1 Detailed Description

LAN interface settings.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Net.idl

9.103 net::LanLinkMode Struct Reference

LAN interface link mode.

```
import "Net.idl";
```

Public Attributes

- LanSpeed speed

  Interface speed.
- LanDuplex duplex

  Interface duplex mode.

9.103.1 Detailed Description

LAN interface link mode.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Net.idl

9.104 auth::LdapManager_1_0_1 Interface Reference

LDAP server configuration interface.

```
import "LdapManager.idl";
```

Public Member Functions

- vector< ldapsrv.ServerSettings > getLdapServers ()

  Get a list of LDAP server settings.
- int setLdapServers (in vector< ldapsrv.ServerSettings > serverList)

  Sets a list of LDAP servers.
- int testLdapServer (in string username, in string password, in ldapsrv.ServerSettings settings)

  Tests an LDAP server configuration.

Public Attributes

- constant int ERR_CYCLIC_DEP = 1

  Cyclic dependency in server list.
- constant int ERR_INVALID_CFG = 2

  The server configuration is invalid.
- constant int ERR_SERVER_UNSPECIFIED = 1

  Unspecified error.
- constant int ERR_SERVER_UNREACHABLE = 3

  LDAP server could not be contacted.
- constant int ERR_AUTHENTICATION_FAILED = 4

  User could not be authenticated.
- constant int ERR_NO_ROLES = 5

  No roles are defined for the user.
- constant int ERR_NO_KNOWN_ROLES = 6

  No known rules are defined for the user.

9.104.1 Detailed Description

LDAP server configuration interface.

9.104.2 Member Function Documentation

9.104.2.1 vector<ldapsrv.ServerSettings> auth::LdapManager_1_0_1::getLdapServers ( )

Get a list of LDAP server settings.

Returns

list of ldapsrv.ServerSettings

9.104.2.2 int auth::LdapManager_1_0_1::setLdapServers (in vector< ldapsrv.ServerSettings > *serverList*)

Sets a list of LDAP servers.

Any existing LDAP Server configuration will be cleared / overwritten.

Returns

0 on success
`ERR_CYCLIC_DEP` in case of cyclic dependency
`ERR_INVALID_CFG` in case of invalid configuration

9.104.2.3 int auth::LdapManager_1_0_1::testLdapServer (in string *username,* in string *password,* in ldapsrv.ServerSettings *settings*)

Tests an LDAP server configuration.

Returns

0 on success
`ERR_SERVER_UNSPECIFIED` an unspecified error occurred
`ERR_INVALID_CFG` LDAP server configuration is invalid (reused from setLdapServers)
`ERR_SERVER_UNREACHABLE` LDAP server could not be contacted
`ERR_AUTHENTICATION_FAILED` user could not be authenticated
`ERR_NO_ROLES` no roles are defined for the user
`ERR_NO_KNOWN_ROLES` no known roles are defined for the user

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/LdapManager.idl

9.105 assetmgrmodel::AssetStripConfig_1_0_1::LEDColor Struct Reference

The LED color in RGB format, 8 bit per channel.

```
import "AssetStripConfig.idl";
```

Public Attributes

- int r
  red channel of the LED
- int g
  green channel of the LED
- int b
  blue channel of the LED

9.105.1 Detailed Description

The LED color in RGB format, 8 bit per channel.

Supported range is 0-255

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/AssetStripConfig.idl

9.106 pdumodel::Outlet_1_5_6::LedState Struct Reference

Outlet LED state

```
import "Outlet.idl";
```

Public Attributes

- boolean red

`true` *if the red LED is enabled*

- boolean green

  `true` *if the green LED is enabled*

- boolean blinking

  `true` *if the LED is blinking*

9.106.1 Detailed Description

Outlet LED state

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Outlet.idl

9.107 lhxmodel::Lhx_3_2_1 Interface Reference

LHX Interface.

```
import "Lhx.idl";
```

Classes

- struct AlertStatus

  LHX alert status.

- struct Capabilities

  LHX capabilities.

- struct MetaData

  LHX metadata.

- struct OpState

  LHX operational state.

- struct ParamCfg

  Configuration parameter characteristics.

- struct Settings

  LHX settings.

Public Member Functions

- Capabilities getCapabilities ()

  Retrieve the LHX capabilities (static).

- MetaData getMetaData ()

  Retrieve the LHX metadata.

- Settings getSettings ()

  Retrieve the LHX settings.

- int setSettings (in Settings settings)

  Change the LHX settings.

- vector< Sensor_4_0_0 > getSensors ()

  Get LHX sensors.

- OpState getOpState ()

  Get LHX operational state.

- int setPowerState (in sensors.Sensor_4_0_0.OnOffState state)

Switch powerstate of LHX.

- vector< Parameter_2_0_1 > getParameters ()

  Get parameter list.

- vector< Parameter_2_0_1 > getActualValues ()

  Get actual value list.

- int setMaximumCoolingRequest (in boolean requested)

  Request maximum cooling.

- int acknowledgeAlertStatus ()

  Acknowledge alert status.

Public Attributes

- constant int ERR_INVALID_PARAMS = 1

  Invalid parameters.

- constant int ERR_NOT_SUPPORTED = 2

  Not supported.

- valueobject OpStateChangedEvent: idl.Event { OpState oldState

  Event: LHX operational status has changed.

- OpState newState

  Status after change.

- valueobject SettingsChangedEvent: event.UserEvent { Settings oldSettings

  Event: LHX settings have changed.

- Settings newSettings

  Settings after change.

9.107.1 Detailed Description

LHX Interface.

9.107.2 Member Function Documentation

9.107.2.1 int lhxmodel::Lhx_3_2_1::acknowledgeAlertStatus ( )

Acknowledge alert status.

Returns

0 if OK
ERR_NOT_SUPPORTED if operation is not supported

9.107.2.2 MetaData lhxmodel::Lhx_3_2_1::getMetaData ( )

Retrieve the LHX metadata.

Returns

LHX metadata

9.107.2.3 Settings lhxmodel::Lhx_3_2_1::getSettings ( )

Retrieve the LHX settings.

Returns

LHX settings

9.107.2.4 int lhxmodel::Lhx_3_2_1::setMaximumCoolingRequest (in boolean *requested*)

Request maximum cooling.

Parameters

requested	true if request maximum cooling false if request normal operation

Returns

0 if OK
ERR_NOT_SUPPORTED if operation is not supported

9.107.2.5 int lhxmodel::Lhx_3_2_1::setPowerState (in sensors.Sensor_4_0_0.OnOffState *state*)

Switch powerstate of LHX.

Parameters

state	on or off

Returns

0 if OK
ERR_NOT_SUPPORTED if operation is not supported

9.107.2.6 int lhxmodel::Lhx_3_2_1::setSettings (in Settings *settings*)

Change the LHX settings.

Parameters

settings	New LHX settings

Returns

0 if OK
ERR_INVALID_PARAMS if any parameters are invalid

9.107.3 Member Data Documentation

9.107.3.1 valueobject lhxmodel::Lhx_3_2_1::OpStateChangedEvent

Event: LHX operational status has changed.

Status before change

9.107.3.2 valueobject lhxmodel::Lhx_3_2_1::SettingsChangedEvent

Event: LHX settings have changed.

Settings before change

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/Lhx.idl

9.108 webcam::Location Struct Reference

Location.

```
import "Webcam.idl";
```

Public Attributes

- string name

  location name
- string x

  x
- string y

  y
- string z

  z

9.108.1 Detailed Description

Location.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Webcam.idl

9.109 peripheral::DeviceSlot_2_0_0::Location Struct Reference

user writeable location

```
import "PeripheralDeviceSlot.idl";
```

Public Attributes

- string x

  X coordinate.
- string y

  Y coordinate.
- string z

  Z coordinate (semantics depends on ZCoordMode)

9.109.1 Detailed Description

user writeable location

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/PeripheralDeviceSlot.idl

9.110 logging::LogEntry Struct Reference

Device event.

```
import "Log.idl";
```

Public Attributes

- int id
  Serial number.
- time timestamp
  Event time stamp.
- string eventClass
  Event class code.
- string message
  Event message.

9.110.1 Detailed Description

Device event.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Log.idl

9.111 sensors::Logger_2_1_2 Interface Reference

Sensor logger interface.

```
import "SensorLogger.idl";
```

Classes

- struct LogRow
  One full log row.
- struct Record
  Sensor log record.
- struct SensorSet
  Set of logged sensors.
- struct Settings
  Sensor logger settings.
- struct TimedRecord
  Sensor log record with timestamp.

Public Member Functions

- Settings getSettings ()

  Retrieve the sensor logger settings.
- int setSettings (in boolean isEnabled, in int samplesPerRecord)

  Change the sensor logger settings.
- int getTimeStamps (out vector< time > timestamps, in int recid, in int count)

  Retrieve a set of log record timestamps.
- int getSensorRecords (out vector< Record > recs, in sensors.Sensor_4_0_0 sensor, in int recid, in int count)

  Retrieve log records for a given sensor.
- int getPeripheralDeviceRecords (out vector< Record > recs, in peripheral.DeviceSlot_2_0_0 slot, in int recid, in int count)

  Retrieve log records for an peripheral device slot.
- int getSensorTimedRecords (out vector< TimedRecord > recs, in sensors.Sensor_4_0_0 sensor, in int recid, in int count)

  Retrieve log records with timestamps for a given sensor.
- int getPeripheralDeviceTimedRecords (out vector< TimedRecord > recs, in peripheral.DeviceSlot_2_0_0 slot, in int recid, in int count)

  Retrieve log records with timestamps for an peripheral device slot.
- SensorSet getLoggedSensors ()

  Retrieve the set of logged sensors.
- int setLoggedSensors (in SensorSet sensors)

  Change the set of logged sensors.
- void enableAllSensors ()

  Enable logging for all PDU sensors.
- void disableAllSensors ()

  Disable logging for all PDU sensors.
- time getSensorSetTimestamp ()

  Get the time of the last sensor set modification.
- int getLogRow (out LogRow row, in int recid)

  Get one full log row.

Public Attributes

- valueobject SettingsChangedEvent: event.UserEvent { Settings oldSettings

  Event: Sensor logger settings have been changed.
- Settings newSettings

  Settings after change.
- valueobject LoggedSensorsChangedEvent: event.UserEvent { SensorSet oldSensors

  Event: Set of logged sensors has been changed.
- SensorSet newSensors

  Sensor set after change.
- constant int STATE_UNAVAILABLE = 0

  Sensor state in log record.
- constant int STATE_OPEN = 1

  Circuit breaker open.
- constant int STATE_CLOSE = 2

  Circuit breaker closed.
- constant int STATE_BELOW_LOWER_CRITICAL = 3

  Numeric sensor below lower critical threshold.

- constant int STATE_BELOW_LOWER_WARNING = 4

  Numeric sensor below lower warning threshold.
- constant int STATE_NORMAL = 5

  Numeric sensor in normal range; normal operation.
- constant int STATE_ABOVE_UPPER_WARNING = 6

  Numeric sensor above upper warning threshold.
- constant int STATE_ABOVE_UPPER_CRITICAL = 7

  Numeric sensor above upper critical threshold.
- constant int STATE_ON = 8

  Power state on.
- constant int STATE_OFF = 9

  Power state off.
- constant int STATE_ALARMED = 10

  Alarmed.
- constant int STATE_OK = 11

  OK.
- constant int STATE_MARGINAL = 12

  Marginal.
- constant int STATE_FAIL = 13

  Fail.
- constant int STATE_YES = 14

  Yes.
- constant int STATE_NO = 15

  No.
- constant int STATE_STANDBY = 16

  Standby operation.
- constant int STATE_ONE = 17

  First source active.
- constant int STATE_TWO = 18

  Second source active.
- constant int STATE_IN_SYNC = 19

  Phases are in sync.
- constant int STATE_OUT_OF_SYNC = 20

  Phases are out of sync.
- constant int STATE_FAULT = 21

  Fault.
- constant int STATE_SELF_TEST = 22

  Sensor is currently testing itself.
- constant int STATE_I1_OPEN_FAULT = 23

  Inlet 1 switch open fault.
- constant int STATE_I1_SHORT_FAULT = 24

  Inlet 1 switch short fault.
- constant int STATE_I2_OPEN_FAULT = 25

  Inlet 2 switch open fault.
- constant int STATE_I2_SHORT_FAULT = 26

  Inlet 2 switch short fault.
- constant int STATE_WARNING = 27

  Warning.
- constant int STATE_CRITICAL = 28

  Critical.

9.111.1 Detailed Description

Sensor logger interface.

This is a very specific interface to fullfill the the sensor logging requirements as specified by SNMP-MIB. That is reason why sensor logging is not specified along with a sensor but with this special service.

9.111.2 Member Function Documentation

9.111.2.1 SensorSet sensors::Logger_2_1_2::getLoggedSensors ( )

Retrieve the set of logged sensors.

Returns

Set of logged sensors

9.111.2.2 int sensors::Logger_2_1_2::getLogRow (out LogRow *row*, in int *recid*)

Get one full log row.

Parameters

row	Result: Log row
recid	Record id

Returns

0 if OK
1 if the record id is invalid

9.111.2.3 int sensors::Logger_2_1_2::getPeripheralDeviceRecords (out vector< Record > *recs*, in peripheral.DeviceSlot_2_0_0 *slot*, in int *recid*, in int *count*)

Retrieve log records for an peripheral device slot.

Parameters

recs	Result: Sensor log records
slot	Peripheral device slot reference
recid	First record id
count	Number of records

Returns

0 if OK
1 if any record id is invalid

9.111.2.4 int sensors::Logger_2_1_2::getPeripheralDeviceTimedRecords (out vector< TimedRecord > *recs*, in peripheral.DeviceSlot_2_0_0 *slot*, in int *recid*, in int *count*)

Retrieve log records with timestamps for an peripheral device slot.

Parameters

recs	Result: Sensor log records
slot	Peripheral device slot reference
recid	First record id
count	Number of records

Returns

0 if OK
1 if any record id is invalid

9.111.2.5 int sensors::Logger_2_1_2::getSensorRecords (out vector< Record > *recs,* in sensors.Sensor_4_0_0 *sensor,* in int *recid,* in int *count*)

Retrieve log records for a given sensor.

Parameters

recs	Result: Sensor log records
sensor	Sensor reference
recid	First record id
count	Number of records

Returns

0 if OK
1 if any record id is invalid

9.111.2.6 time sensors::Logger_2_1_2::getSensorSetTimestamp ( )

Get the time of the last sensor set modification.

This can be used by clients which keep a cached copy of the sensor set to determine whether that copy is still up-to-date.

Returns

Sensor set time stamp

9.111.2.7 int sensors::Logger_2_1_2::getSensorTimedRecords (out vector< TimedRecord > *recs,* in sensors.Sensor_4_0_0 *sensor,* in int *recid,* in int *count*)

Retrieve log records with timestamps for a given sensor.

Parameters

recs	Result: Sensor log records
sensor	Sensor reference
recid	First record id
count	Number of records

Returns

0 if OK
1 if any record id is invalid

9.111.2.8 Settings sensors::Logger_2_1_2::getSettings ( )

Retrieve the sensor logger settings.

Returns

Sensor logger settings

9.111.2.9 int sensors::Logger_2_1_2::getTimeStamps (out vector< time > *timestamps,* in int *recid,* in int *count*)

Retrieve a set of log record timestamps.

Parameters

timestamps	Result: Log record timestamps
recid	First record id
count	Number of records

Returns

0 if OK
1 if any record id is invalid

9.111.2.10 int sensors::Logger_2_1_2::setLoggedSensors (in SensorSet *sensors*)

Change the set of logged sensors.

Parameters

sensors	New set of sensors

Returns

0 if OK
1 if any sensor in the list is unknown

9.111.2.11 int sensors::Logger_2_1_2::setSettings (in boolean *isEnabled,* in int *samplesPerRecord*)

Change the sensor logger settings.

Parameters

isEnabled	`true` to enable sensor logging
samplesPer-Record	Number of samples per log record

Returns

0 if OK
1 if any parameters are invalid

9.111.3 Member Data Documentation

9.111.3.1 valueobject sensors::Logger_2_1_2::LoggedSensorsChangedEvent

Event: Set of logged sensors has been changed.

Sensor set before change

9.111.3.2 valueobject sensors::Logger_2_1_2::SettingsChangedEvent

Event: Sensor logger settings have been changed.

Settings before change

9.111.3.3 constant int sensors::Logger_2_1_2::STATE_UNAVAILABLE = 0

Sensor state in log record.

Unavailable

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/SensorLogger.idl

9.112 diag::DiagLogSettings::LogLevelEntry Struct Reference

An entry containing a context name and its associated context.

```
import "DiagLogSettings.idl";
```

Public Attributes

- string ctxName
  log context name
- LogLevel logLevel
  log level

9.112.1 Detailed Description

An entry containing a context name and its associated context.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/DiagLogSettings.idl

9.113 sensors::Logger_2_1_2::LogRow Struct Reference

One full log row.

```
import "SensorLogger.idl";
```

Public Attributes

- time sensorSetTimestamp

  Time of last sensor set modification.
- time timestamp

  Log row time stamp.
- vector< Record > sensorRecords

  Sensor records; same order as in SensorSet::sensors.
- vector< Record > peripheralDeviceRecords

  Peripheral device records; same order as in SensorSet::slots.

9.113.1 Detailed Description

One full log row.

The documentation for this struct was generated from the following file:

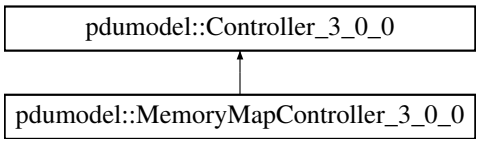
- pdu-json-rpc-api/idl/SensorLogger.idl

9.114 pdumodel::MemoryMapController_3_0_0 Interface Reference

Memory map controller.

```
import "MemoryMapController.idl";
```

Inheritance diagram for pdumodel::MemoryMapController_3_0_0:



Public Member Functions

- int readMemory (in int address, in int size, out vector< byte > memory)

  Read a given number of bytes from an address.
- int writeMemory (in int address, in vector< byte > memory)

  Write bytes to an address.

Additional Inherited Members

9.114.1 Detailed Description

Memory map controller.

9.114.2 Member Function Documentation

9.114.2.1 int pdumodel::MemoryMapController_3_0_0::readMemory (in int *address*, in int *size*, out vector< byte > *memory*)

Read a given number of bytes from an address.

Parameters

address	The address to read
size	The number of bytes to read
memory	The vector with the read bytes

Returns

0 if OK
an error code otherwise

9.114.2.2 int pdumodel::MemoryMapController_3_0_0::writeMemory (in int *address*, in vector< byte > *memory*)

Write bytes to an address.

Parameters

address	The address to write
memory	The vector with the bytes to write

Returns

0 if OK
an error code otherwise

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/MemoryMapController.idl

9.115 sensors::NumericSensor_4_0_0::MetaData Struct Reference

Numeric sensor metadata.

```
import "NumericSensor.idl";
```

Public Attributes

- Sensor_4_0_0 TypeSpec type
  Sensor type, reading type and unit.
- int decdigits
  Number of significant decimal digits.
- float accuracy
  Sensor accuracy in percent.
- float resolution
  Sensor resolution.
- float tolerance
  Sensor tolerance.
- float noiseThreshold
  Sensor noise threshold.
- Range range
  Range of possible sensor readings.
- ThresholdCapabilities thresholdCaps
  Threshold capabilities.

9.115.1 Detailed Description

Numeric sensor metadata.

9.115.2 Member Data Documentation

9.115.2.1 float sensors::NumericSensor_4_0_0::MetaData::accuracy

Sensor accuracy in percent.

How close in percent measurement is to actual value. This value has an implicit precision of 2, i.e. the double value must be rounded for 2 decimal digits before use. For example a reading of 10.0 and an accuracy of 0.2 means the actual reading value is 10.0 +/- 0.2%.

A value of 0 means unused.

9.115.2.2 int sensors::NumericSensor_4_0_0::MetaData::decdigits

Number of significant decimal digits.

Indicates how many digits should be displayed to the right of the decimal point. I.e. double values must be rounded with this precision.

9.115.2.3 float sensors::NumericSensor_4_0_0::MetaData::noiseThreshold

Sensor noise threshold.

Threshold under which sensor measurements will be ignored. Sensor measurements below that value will be reported at the lower bound of the sensor range.

9.115.2.4 Range sensors::NumericSensor_4_0_0::MetaData::range

Range of possible sensor readings.

Range values are rounded with with decimal digits.

9.115.2.5 float sensors::NumericSensor_4_0_0::MetaData::resolution

Sensor resolution.

Minimum difference between any two measured values. Must be rounded with decimal digits.

9.115.2.6 float sensors::NumericSensor_4_0_0::MetaData::tolerance

Sensor tolerance.

Tolerance is given in +/- counts of the reading value. It indicates a constant magnitude possible error in the quantization of an analog input to the sensor. Rounded with decimal digits + 1.

A value of 0 means unused.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/NumericSensor.idl

9.116 pdumodel::Unit_2_0_1::MetaData Struct Reference

Unit metadata

```
import "Unit.idl";
```

Public Attributes

- boolean hasOrientationSensor

  `true` *if a tilt sensor is present*
- vector< Orientation > supportedDisplayOrientations

  Supported display orientations.

9.116.1 Detailed Description

Unit metadata

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Unit.idl

9.117 pdumodel::Outlet_1_5_6::MetaData Struct Reference

Outlet metadata

```
import "Outlet.idl";
```

Public Attributes

- string label

  Outlet label
- string receptacleType

  Receptacle type.
- Nameplate namePlate

  Nameplate information
- Rating rating

  Numerical usage ratings.
- boolean isSwitchable

  `true` *if the outlet is switchable*
- boolean isLatching

  `true` *if the outlet is able to keep its state after power loss*
- int maxRelayCycleCnt

  Maximum relay cycle count.

9.117.1 Detailed Description

Outlet metadata

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Outlet.idl

9.118 pdumodel::OverCurrentProtector_2_1_2::MetaData Struct Reference

Overcurrent protector metadata.

```
import "OverCurrentProtector.idl";
```

Public Attributes

- string label
  OCP label.
- Nameplate namePlate
  Nameplate information
- Rating rating
  Numerical usage ratings.
- Type type
  OCP type.
- int maxTripCnt
  Maximum trip count.

9.118.1 Detailed Description

Overcurrent protector metadata.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/OverCurrentProtector.idl

9.119 pdumodel::Controller_3_0_0::MetaData Struct Reference

Slave controller metadata.

```
import "Controller.idl";
```

Public Attributes

- Type type
  Controller type
- string address
  Slave address.
- int magic
  Magic code.
- boolean versionAvailable
  `true` *if version information and serial number is available*
- int fwAppVersion
  Firmware application version; 0 if unavailable.
- int fwBootVersion
  Firmware bootloader version; 0 if unavailable.
- int hwVersion
  Hardware version; 0 if unavailable.
- string serial
  Serial number; empty if unavailable.

- boolean haveResetCnt
  `true` *if controller reset counter is available*
- boolean haveEmResetCnt
  `true` *if energy meter reset counter is available*

9.119.1 Detailed Description

Slave controller metadata.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Controller.idl

9.120 pdumodel::Pdu_3_0_0::MetaData Struct Reference

PDU metadata.

```
import "Pdu.idl";
```

Public Attributes

- Nameplate nameplate
  Nameplate information
- string ctrlBoardSerial
  Main controller serial number.
- string hwRevision
  Hardware revision.
- string fwRevision
  Firmware revision.
- string macAddress
  MAC address.
- boolean hasSwitchableOutlets
  `true` *if at least one outlet is switchable*
- boolean hasMeteredOutlets
  `true` *if at least one outlet is metered*
- boolean hasLatchingOutletRelays
  `true` *if at least one outlet has a latching relay*
- boolean isInlineMeter
  `true` *if all inlets have exactly one outlet*

9.120.1 Detailed Description

PDU metadata.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Pdu.idl

9.121 pdumodel::Inlet_1_2_6::MetaData Struct Reference

Inlet metadata

```
import "Inlet.idl";
```

Public Attributes

- string label

  Inlet label
- string plugType

  Plug type.
- Nameplate namePlate

  Nameplate information
- Rating rating

  Numerical usage ratings.

9.121.1 Detailed Description

Inlet metadata

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Inlet.idl

9.122 peripheral::DeviceManager_2_0_0::MetaData Struct Reference

Peripheral DeviceManager's metadata.

```
import "PeripheralDeviceManager.idl";
```

Public Attributes

- int oneWirePortCount

  Number of 1-wire ports.
- int onboardDeviceCount

  Number of onboard peripheral devices.

9.122.1 Detailed Description

Peripheral DeviceManager's metadata.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/PeripheralDeviceManager.idl

9.123 lhxmodel::Lhx_3_2_1::MetaData Struct Reference

LHX metadata.

```
import "Lhx.idl";
```

Public Attributes

- string model

  The LHX model (e.g. "LHX 20")
- string version

The LHX firmware version, empty if not available.

- ParamCfg setpointWaterValveCfg

  Water valve configuration characteristics.
- ParamCfg setpointVentilatorsCfg

  Ventilators configuration characteristics.
- ParamCfg defaultFanSpeedCfg

  Default fan speed configuration characteristics.

9.123.1 Detailed Description

LHX metadata.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Lhx.idl

9.124 lhxmodel::Parameter_2_0_1::MetaData Struct Reference

Parameter Metadata.

```
import "LhxParameter.idl";
```

Public Attributes

- Unit unit

  Parameter unit.
- string id

  Parameter ID.
- double defaultValue

  Default value.
- double min

  Minimum value.
- double max

  Maximum value.
- boolean read_only

  `true` *for read-only parameters*
- int decDigits

  Number of decimal digits.

9.124.1 Detailed Description

Parameter Metadata.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/LhxParameter.idl

9.125 lhxmodel::Sensor_4_0_0::MetaData Struct Reference

Sensor's self describing data.

```
import "LhxSensor.idl";
```

Public Attributes

- sensors Sensor_4_0_0 TypeSpec type
  Sensor type, reading type and unit.
- int numDecDigits
  Number of significant decimal digits.
- double numRangeMin
  Smallest possible Numeric Reading Value.
- double numRangeMax
  Largest possible Numeric Reading Value.
- double numThresholdMin
  Smallest possible Numeric Reading Threshold Value.
- double numThresholdMax
  Largest possible Numeric Reading Threshold Value.
- string label
  The sensor label.
- string id
  Descriptive ID of sensor containing label.

9.125.1 Detailed Description

Sensor's self describing data.

9.125.2 Member Data Documentation

9.125.2.1 int lhxmodel::Sensor_4_0_0::MetaData::numDecDigits

Number of significant decimal digits.

Indicates how many digits should be displayed to the right of the decimal point. I.e. double values must be rounded with this precision.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/LhxSensor.idl

9.126 pdumodel::Ade::MetaData Struct Reference

ADE metadata.

```
import "Ade.idl";
```

Public Attributes

- string adeType
  ADE chip model.
- int channels
  Number of channels.
- double currentDivider
  Divider for converting raw readings to Amperes.
- double voltageDivider
  Divider for converting raw readings to Volts.
- double energyDivider
  Divider for converting raw readings to Wh/VAh.

9.126.1 Detailed Description

ADE metadata.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Ade.idl

9.127 smartcard::CardReader::MetaData Struct Reference

Reader Metadata.

```
import "CardReader.idl";
```

Public Attributes

- string manufacturer

  manufacturer
- string product

  product
- string serialNumber

  serial number

9.127.1 Detailed Description

Reader Metadata.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/CardReader.idl

9.128 pdumodel::TransferSwitch_3_1_1::MetaData Struct Reference

Transfer switch metadata.

```
import "TransferSwitch.idl";
```

Public Attributes

- string label

  Transfer switch label.
- Nameplate namePlate

  Nameplate information
- Rating rating

  Numerical usage ratings.
- Type type

  Transfer switch type.
- int sourceCount

  Number of sources.

9.128.1 Detailed Description

Transfer switch metadata.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/TransferSwitch.idl

9.129 devsettings::Modbus Interface Reference

Modbus service settings interface

```
import "Modbus.idl";
```

Classes

- struct Settings
  Modbus service settings
- struct TcpSettings
  Modbus/TCP settings.

Public Member Functions

- Settings getSettings ()
  Retrieve the Modbus service settings.
- void setSettings (in Settings settings)
  Set the Modbus service settings.

9.129.1 Detailed Description

Modbus service settings interface

9.129.2 Member Function Documentation

9.129.2.1 Settings devsettings::Modbus::getSettings ( )

Retrieve the Modbus service settings.

Returns

Modbus service settings

9.129.2.2 void devsettings::Modbus::setSettings (in Settings *settings*)

Set the Modbus service settings.

Parameters

settings	New settings

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/Modbus.idl

9.130 modelpush::ModelPush Interface Reference

Model push service settings interface.

```
import "ModelPush.idl";
```

Classes

- struct Configuration

  Model push service configuration.

Public Member Functions

- Configuration getConfiguration ()

  Retrieve the model push service configuration.
- int setConfiguration (in Configuration cfg)

  Set the model push service configuration.

Public Attributes

- constant int ERR_INVALID_PARAMS = 1

  Invalid parameters.

9.130.1 Detailed Description

Model push service settings interface.

9.130.2 Member Function Documentation

9.130.2.1 Configuration modelpush::ModelPush::getConfiguration ( )

Retrieve the model push service configuration.

Returns

Model push service configuration

9.130.2.2 int modelpush::ModelPush::setConfiguration (in Configuration *cfg*)

Set the model push service configuration.

Parameters

cfg	New model push service configuration

Returns

0 if OK
1 if any parameters are invalid

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/ModelPush.idl

9.131 pdumodel::Nameplate Struct Reference

Component nameplate information.

```
import "Nameplate.idl";
```

Classes

- struct Rating

  Component ratings.

Public Attributes

- string manufacturer

  Component manufacturer.
- string model

  Component model.
- string partNumber

  Part number.
- string serialNumber

  Serial number.
- Rating rating

  Ratings.
- string imageFileURL

  URL to component image.

9.131.1 Detailed Description

Component nameplate information.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Nameplate.idl

9.132 jsonrpc::NameService Interface Reference

RPC Object Name Service.

```
import "NameService.idl";
```

Public Member Functions

- Object lookup (in string name)

  Find an RPC object by its resource ID or well-known name.

9.132.1 Detailed Description

RPC Object Name Service.

9.132.2 Member Function Documentation

9.132.2.1 Object jsonrpc::NameService::lookup (in string *name*)

Find an RPC object by its resource ID or well-known name.

Parameters

name	Resource id or well-known name

Returns

Object reference; `nil` if the name can't be resolved

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/NameService.idl

9.133 net::Net_2_0_2 Interface Reference

Network configuration interface.

```
import "Net.idl";
```

Public Member Functions

- int setNetworkConfigIP (in NetworkConfigIP cfg)

  Set common IP parameters.
- void getNetworkConfigIP (out NetworkConfigIP cfg)

  Retrieve the common IP parameters.
- int setNetworkConfigIPv4 (in NetworkConfigIPv4 cfg4)

  Set the IPv4 configuration.
- void getNetworkConfigIPv4 (out NetworkConfigIPv4 cfg4, out NetworkConfigIPv4 cfg4current)

  Retrieve the IPv4 configuration.
- void **getNetworkConfigRoutesIPv4** (out vector< IPv4RoutingEntry > static_routes, out vector< IPv4RoutingEntry > active_routes)
- int **setNetworkConfigRoutesIPv4** (in vector< IPv4RoutingEntry > static_routes)
- void **getNetworkConfigRoutesIPv6** (out vector< IPv6RoutingEntry > static_routes, out vector< IPv6RoutingEntry > active_routes)
- int **setNetworkConfigRoutesIPv6** (in vector< IPv6RoutingEntry > static_routes)
- int setNetworkConfigIPv6 (in NetworkConfigIPv6 cfg6)

  Set the IPv6 configuration.
- void getNetworkConfigIPv6 (out NetworkConfigIPv6 cfg6, out NetworkActiveValuesIPv6 ipv6current)

  Retrieve the IPv6 configuration.
- int setNetworkConfigServices (in vector< ServiceConfig > services)

  Change the network service configuration.
- void getNetworkConfigServices (out vector< ServiceConfig > services)

  Retrieve the network service configuration.

- void getNetworkConfigInterface (out InterfaceState_2_0_0 state, out LanInterfaceSettings lan, out LanInterfaceParameters_2_0_0 lancurrent, out WirelessInterfaceSettings wlan)

  Retrieve the current LAN interface configuration.
- void getMACs (out InterfaceState_2_0_0 state, out string ethmac, out string wlanmac)

  Get MAC-Addresses of lan interfaces.
- int setNetworkConfigLan (in LanInterfaceSettings lancfg)

  Set the LAN interface configuration, enable wired networking.
- int setNetworkConfigWLan (in WirelessInterfaceSettings wlancfg)

  Set the wireless configuration, enable wireless networking.
- int getBridgeSlaveCount ()

  Get the number of slave units that are directly sharing this unit's network connection.

Public Attributes

- constant int ERR_INVALID_PARAMS = 1

  Invalid parameters.

9.133.1 Detailed Description

Network configuration interface.

9.133.2 Member Function Documentation

9.133.2.1 int net::Net_2_0_2::getBridgeSlaveCount ( )

Get the number of slave units that are directly sharing this unit's network connection.

Returns

Number of slaves directly connected to this unit.

9.133.2.2 void net::Net_2_0_2::getMACs (out InterfaceState_2_0_0 *state,* out string *ethmac,* out string *wlanmac*)

Get MAC-Addresses of lan interfaces.

If wlan is not enabled or present, wlanmac may be set to empty string

9.133.2.3 void net::Net_2_0_2::getNetworkConfigInterface (out InterfaceState_2_0_0 *state,* out LanInterfaceSettings *lan,* out LanInterfaceParameters_2_0_0 *lancurrent,* out WirelessInterfaceSettings *wlan*)

Retrieve the current LAN interface configuration.

Parameters

state	Result: Wired or wireless interface?
lan	Result: Wired interface settings
lancurrent	Result: Current wired interface parameters
wlan	Result: Wireless interface settings

9.133.2.4 void net::Net_2_0_2::getNetworkConfigIP (out NetworkConfigIP *cfg*)

Retrieve the common IP parameters.

Parameters

cfg	Result: Configured IP settings

9.133.2.5 void net::Net_2_0_2::getNetworkConfigIPv4 (out NetworkConfigIPv4 *cfg4,* out NetworkConfigIPv4 *cfg4current*)

Retrieve the IPv4 configuration.

Parameters

cfg4	Result: Configured IPv4 settings
cfg4current	Result: Active values (e.g. in case of DHCP)

9.133.2.6 void net::Net_2_0_2::getNetworkConfigIPv6 (out NetworkConfigIPv6 *cfg6,* out NetworkActiveValuesIPv6 *ipv6current*)

Retrieve the IPv6 configuration.

Parameters

cfg6	Result: Configured IPv6 settings
ipv6current	Result: Active values (e.g. in case of DHCP, stateless config)

9.133.2.7 void net::Net_2_0_2::getNetworkConfigServices (out vector< ServiceConfig > *services*)

Retrieve the network service configuration.

Parameters

services	List of all supported network services

9.133.2.8 int net::Net_2_0_2::setNetworkConfigIP (in NetworkConfigIP *cfg*)

Set common IP parameters.

Parameters

cfg	New IP settings

Returns

0 if OK
1 if any parameters were invalid

9.133.2.9 int net::Net_2_0_2::setNetworkConfigIPv4 (in NetworkConfigIPv4 *cfg4*)

Set the IPv4 configuration.

Parameters

cfg4	New IPv4 settings

Returns

0 if OK
1 if any parameters were invalid

9.133.2.10 int net::Net_2_0_2::setNetworkConfigIPv6 (in **NetworkConfigIPv6** *cfg6*)

Set the IPv6 configuration.

Parameters

cfg6	New IPv6 settings

Returns

0 if OK
1 if any parameters were invalid

9.133.2.11 int net::Net_2_0_2::setNetworkConfigLan (in **LanInterfaceSettings** *lancfg*)

Set the LAN interface configuration, enable wired networking.

Parameters

lancfg	New LAN interface settings

Returns

0 if OK
1 if any parameters were invalid

9.133.2.12 int net::Net_2_0_2::setNetworkConfigServices (in vector< **ServiceConfig** > *services*)

Change the network service configuration.

This call changes the configuration of one or more network services identified by name. Other services are not affected. The resulting configuration of all enabled services must be consistent, i.e. there must be not port collisions.

Parameters

services	List of network services to be changed

Returns

0 if OK
1 if any parameters were invalid

9.133.2.13 int net::Net_2_0_2::setNetworkConfigWLan (in **WirelessInterfaceSettings** *wlancfg*)

Set the wireless configuration, enable wireless networking.

Parameters

wlancfg	New wireless interface settings

Returns

0 if OK
1 if any parameters were invalid

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/Net.idl

9.134 net::NetworkActiveValuesIPv6 Struct Reference

Device IPv6 active values.

```
import "Net.idl";
```

Public Attributes

- boolean enabled
  IPv6 enabled.
- AutoConfigs autocfg
  Automatic configuration protocol.
- vector< string > ipaddrs
  List of active IPv6 addresses / Prefix Length.
- vector< IPv6RoutingEntry > routes
  List of active IPv6 routes.
- boolean ra_managed
  Managed flag set in RAs.
- boolean ra_otherconf
  Otherconf flag set in RAs.
- vector< string > dns_suffixes
  List of DNS domain suffixes.
- string dns_ip_1
  Primary nameserver IP.
- string dns_ip_2
  Secondary nameserver IP.

9.134.1 Detailed Description

Device IPv6 active values.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Net.idl

9.135 net::NetworkConfigIP Struct Reference

Device IP configuration.

```
import "Net.idl";
```

Public Attributes

- boolean gai_prefer_ipv6

  getaddrinfo prefers IPv6 addresses

9.135.1 Detailed Description

Device IP configuration.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Net.idl

9.136 net::NetworkConfigIPv4 Struct Reference

Device IPv4 configuration.

```
import "Net.idl";
```

Public Attributes

- boolean enabled

  IPv4 enabled.
- AutoConfigs autocfg

  Automatic configuration protocol.
- string ipaddr

  Device IP address.
- string netmask

  Network mask.
- string gateway

  Gateway IP address.
- string hostname

  Device hostname.
- vector< string > dns_suffixes

  List of DNS domain suffixes.
- boolean override_dns

  Override nameserver information from DHCP.
- string dns_ip_1

  Primary nameserver IP.
- string dns_ip_2

  Secondary nameserver IP.
- string domain_name

  Domain name.

9.136.1 Detailed Description

Device IPv4 configuration.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Net.idl

9.137 net::NetworkConfigIPv6 Struct Reference

Device IPv6 configuration.

```
import "Net.idl";
```

Public Attributes

- boolean enabled
  IPv6 enabled.
- AutoConfigs autocfg
  Automatic configuration protocol.
- string ipaddr
  Device IPv6 address / Prefix Length.
- string gateway
  Gateway IP address.
- string hostname
  Device hostname.
- vector< string > dns_suffixes
  List of DNS domain suffixes.
- boolean override_dns
  Override nameserver information from DHCP.
- string dns_ip_1
  Primary nameserver IP.
- string dns_ip_2
  Secondary nameserver IP.
- string domain_name
  Domain name.

9.137.1 Detailed Description

Device IPv6 configuration.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Net.idl

9.138 datetime::DateTime_2_0_0::NtpCfg Struct Reference

NTP server configuration.

```
import "DateTime.idl";
```

Public Attributes

- boolean forceStatic
  Enforce use of static NTP servers.
- string server1
  Primary NTP server.
- string server2
  Secondary NTP server.

9.138.1 Detailed Description

NTP server configuration.

The documentation for this struct was generated from the following file:

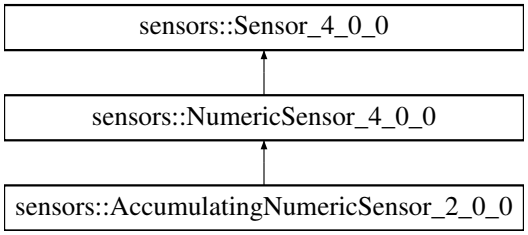
- pdu-json-rpc-api/idl/DateTime.idl

9.139 sensors::NumericSensor_4_0_0 Interface Reference

A sensor with numeric readings.

```
import "NumericSensor.idl";
```

Inheritance diagram for sensors::NumericSensor_4_0_0:



Classes

- struct MetaData

  Numeric sensor metadata.
- struct Range

  Range of possible sensor readings.
- struct Reading

  Numeric sensor reading.
- struct ThresholdCapabilities

  Threshold capabilities.
- struct Thresholds

  Numeric sensor thresholds.

Public Member Functions

- MetaData getMetaData ()

  Retrieve the sensor metadata.
- Thresholds getDefaultThresholds ()

  Retrieve the sensor default thresholds.
- Thresholds getThresholds ()

  Retrieve the active thresholds.
- int setThresholds (in Thresholds thresh)

  Change the active thresholds.
- Reading getReading ()

  Get the sensor reading.

Public Attributes

- constant int THRESHOLD_OUT_OF_RANGE = 1

  The threshold exceedes the sensor range.
- constant int THRESHOLD_INVALID = 2

  The threshold constraints are not met.
- constant int THRESHOLD_NOT_SUPPORTED = 3

  The sensor does not support setting this threshold.
- valueobject ReadingChangedEvent: idl.Event { Reading newReading

  Event: Numeric sensor reading has changed.
- valueobject StateChangedEvent: idl.Event { Reading oldReading

  Event: Sensor state has changed.
- Reading newReading

  Reading after state change.
- valueobject MetaDataChangedEvent: idl.Event { MetaData oldMetaData

  Event: Sensor metadata has changed.
- MetaData newMetaData

  Metadata after change.
- valueobject ThresholdsChangedEvent: event.UserEvent { Thresholds oldThresholds

  Event: Sensor thresholds have changed.
- Thresholds newThresholds

  Threshold set after change.

Additional Inherited Members

9.139.1 Detailed Description

A sensor with numeric readings.

9.139.2 Member Function Documentation

9.139.2.1 Thresholds sensors::NumericSensor_4_0_0::getDefaultThresholds ( )

Retrieve the sensor default thresholds.

Returns

Set of default thresholds

9.139.2.2 MetaData sensors::NumericSensor_4_0_0::getMetaData ( )

Retrieve the sensor metadata.

Returns

Sensor metadata

9.139.2.3 Reading sensors::NumericSensor_4_0_0::getReading ( )

Get the sensor reading.

Returns

Sensor reading

9.139.2.4 Thresholds sensors::NumericSensor_4_0_0::getThresholds ( )

Retrieve the active thresholds.

Returns

Set of active thresholds

9.139.2.5 int sensors::NumericSensor_4_0_0::setThresholds (in Thresholds *thresh*)

Change the active thresholds.

Parameters

thresh	New set of thresholds

Returns

0 if OK
THRESHOLD_OUT_OF_RANGE if any threshold is out of range
THRESHOLD_INVALID if thresholds don't meet the requirements
THRESHOLD_NOT_SUPPORTED if threshold is not supported

9.139.3 Member Data Documentation

9.139.3.1 valueobject sensors::NumericSensor_4_0_0::MetaDataChangedEvent

Event: Sensor metadata has changed.

Metadata before change

9.139.3.2 valueobject sensors::NumericSensor_4_0_0::ReadingChangedEvent

Event: Numeric sensor reading has changed.

New numeric sensor reading

9.139.3.3 valueobject sensors::NumericSensor_4_0_0::StateChangedEvent

Event: Sensor state has changed.

Reading before state change

9.139.3.4 valueobject sensors::NumericSensor_4_0_0::ThresholdsChangedEvent

Event: Sensor thresholds have changed.

Threshold set before change

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/NumericSensor.idl

9.140 lhxmodel::Sensor_4_0_0::NumThresholds Struct Reference

Numerical sensor thresholds.

```
import "LhxSensor.idl";
```

Public Attributes

- boolean lowerCriticalIsEnabled

  Lower critical threshold enabled.
- double lowerCritical

  Lower critical threshold value.
- boolean lowerWarningIsEnabled

  Lower warning threshold enabled.
- double lowerWarning

  Lower warning threshold value.
- boolean upperWarningIsEnabled

  Upper warning threshold enabled.
- double upperWarning

  Upper warning threshold value.
- boolean upperCriticalIsEnabled

  Upper critical threshold enabled.
- double upperCritical

  Upper critical threshold value.
- double hysteresis

  Deassertion hysteresis.

9.140.1 Detailed Description

Numerical sensor thresholds.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/LhxSensor.idl

9.141 lhxmodel::Lhx_3_2_1::OpState Struct Reference

LHX operational state.

```
import "Lhx.idl";
```

Public Attributes

- boolean on

  LHX is switched on.
- AlertStatus alertStatus

  Alert status of LHX controller.
- int operatingHoursLhx

  Operating hours of Varistar LHX.
- vector< int > operatingHoursFan

  Operating hours of Fans.

9.141.1 Detailed Description

LHX operational state.

The documentation for this struct was generated from the following file:

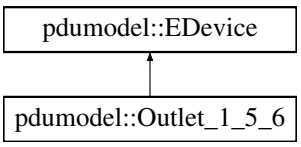
- pdu-json-rpc-api/idl/Lhx.idl

9.142 pdumodel::Outlet_1_5_6 Interface Reference

Outlet interface

```
import "Outlet.idl";
```

Inheritance diagram for pdumodel::Outlet_1_5_6:



Classes

- struct LedState
  Outlet LED state
- struct MetaData
  Outlet metadata
- struct Sensors
  Outlet sensors
- struct Settings
  Outlet settings
- struct State
  Outlet state

Public Types

- enum PowerState { PS_OFF, PS_ON }
  Outlet power state.
- enum StartupState { SS_ON, SS_OFF, SS_LASTKNOWN, SS_PDUDEF }
  Outlet power state on device startup

Public Member Functions

- MetaData getMetaData ()
  Retrieve the outlet metadata.
- Sensors getSensors ()
  Get the outlet sensors.
- State getState ()
  Retrieve the outlet state.
- int setPowerState (in PowerState pstate)
  Switch the outlet.

- int cyclePowerState ()
  Power-cycle the outlet.
- Settings getSettings ()
  Retrieve the outlet settings.
- int setSettings (in Settings settings)
  Change the outlet settings.
- void getIOP (out Inlet_1_2_6 i, out OverCurrentProtector_2_1_2 o, out vector< Pole_2_0_0 > p)
  Get inlet, overcurrent protector and poles.
- Controller_3_0_0 getController ()
  Get the controller for this outlet.
- int unstick ()
  Trigger an attempt to un-stick sticking relay contacts.

Public Attributes

- constant int ERR_OUTLET_NOT_SWITCHABLE = 1
  Outlet is not switchable.
- constant int ERR_LOAD_SHEDDING_ACTIVE = 2
  Load-shedding is enabled.
- constant int ERR_OUTLET_DISABLED = 3
  Outlet is disabled.
- constant int ERR_OUTLET_NOT_OFF = 4
  Outlet is on or in power-cylce; unstick not possible.
- constant int ERR_INVALID_PARAM = 1
  Invalid parameters.
- valueobject PowerControlEvent: event.UserEvent { PowerState state
  Event: Power control was initiated.
- boolean cycle
  Whether the outlet was cycled.
- valueobject StateChangedEvent: idl.Event { State oldState
  Event: Outlet state has changed.
- State newState
  State after change.
- valueobject SettingsChangedEvent: event.UserEvent { Settings oldSettings
  Event: Outlet settings have been changed.
- Settings newSettings
  Settings after change.

9.142.1 Detailed Description

Outlet interface

9.142.2 Member Enumeration Documentation

9.142.2.1 enum pdumodel::Outlet_1_5_6::PowerState

Outlet power state.

Used both for switching and representing the current state

Enumerator

PS_OFF Switch off / Power is off.

PS_ON Switch on / Power is on.

9.142.2.2 enum pdumodel::Outlet_1_5_6::StartupState

Outlet power state on device startup

Enumerator

SS_ON Outlet will be switched on

SS_OFF Outlet will be switched off

SS_LASTKNOWN Last known power state will be restored.

SS_PDUDEF Use default state as defined in PDU settings.

9.142.3 Member Function Documentation

9.142.3.1 int pdumodel::Outlet_1_5_6::cyclePowerState ( )

Power-cycle the outlet.

Returns

0 if OK
1 if the outlet is not switchable
2 if switching is not possible due to load shedding
3 if the outlet is disabled

9.142.3.2 Controller_3_0_0 pdumodel::Outlet_1_5_6::getController ( )

Get the controller for this outlet.

Returns

Slave controller reference

9.142.3.3 void pdumodel::Outlet_1_5_6::getIOP (out Inlet_1_2_6 *i*, out OverCurrentProtector_2_1_2 *o*, out vector< Pole_2_0_0 > *p*)

Get inlet, overcurrent protector and poles.

Parameters

i	Result: Inlet reference
o	Result: Overcurrent protector reference
p	Result: List of poles

9.142.3.4 MetaData pdumodel::Outlet_1_5_6::getMetaData ( )

Retrieve the outlet metadata.

Returns

Outlet metadata

9.142.3.5 Sensors pdumodel::Outlet_1_5_6::getSensors ( )

Get the outlet sensors.

Returns

Outlet sensors

9.142.3.6 Settings pdumodel::Outlet_1_5_6::getSettings ( )

Retrieve the outlet settings.

Returns

Outlet settings

9.142.3.7 State pdumodel::Outlet_1_5_6::getState ( )

Retrieve the outlet state.

Returns

Outlet state

9.142.3.8 int pdumodel::Outlet_1_5_6::setPowerState (in PowerState *pstate*)

Switch the outlet.

Parameters

pstate	New power state

Returns

0 if OK
1 if the outlet is not switchable
2 if switching is not possible due to load shedding
3 if the outlet is disabled

9.142.3.9 int pdumodel::Outlet_1_5_6::setSettings (in Settings *settings*)

Change the outlet settings.

Parameters

settings	New outlet settings

Returns

0 if OK
1 if any parameters are invalid

9.142.3.10 int pdumodel::Outlet_1_5_6::unstick ( )

Trigger an attempt to un-stick sticking relay contacts.

Tries repairing relay contacts that are sticked together due to wear by switching the relay in a certain pattern. Prior to running this method, the outlet must be in 'off' state to acknowledge that loads were disconnected.

Returns

0 if unsticking was triggered successfully
1 if outlet is not switchable
3 if the outlet is disabled
4 if relay is in a power cycle or on

9.142.4 Member Data Documentation

9.142.4.1 valueobject pdumodel::Outlet_1_5_6::PowerControlEvent

Event: Power control was initiated.

State the outlet was switched to (if cycle is false)

9.142.4.2 valueobject pdumodel::Outlet_1_5_6::SettingsChangedEvent

Event: Outlet settings have been changed.

Settings before change

9.142.4.3 valueobject pdumodel::Outlet_1_5_6::StateChangedEvent

Event: Outlet state has changed.

State before change

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/Outlet.idl

9.143 pdumodel::Pdu_3_0_0::OutletSequenceState Struct Reference

Outlet sequencing status

```
import "Pdu.idl";
```

Public Attributes

- boolean sequenceRunning

  `true` if an outlet sequence is currently running
- int nextOutletToSwitch

  Number (zero-based) of the next outlet in the sequence.
- int timeUntilNextSwitch

  Time in milliseconds before the next outlet is switched.
- int outletsRemaining

  Number of outlets remaining in the sequence.

9.143.1 Detailed Description

Outlet sequencing status

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Pdu.idl

9.144 pdumodel::OutletStatistic Struct Reference

Outlet statistics

```
import "Outlet.idl";
```

Public Attributes

- int relayCycleCnt

  Relay switch count.
- int relayFailCnt

  Relay failure count.

9.144.1 Detailed Description

Outlet statistics

The documentation for this struct was generated from the following file:

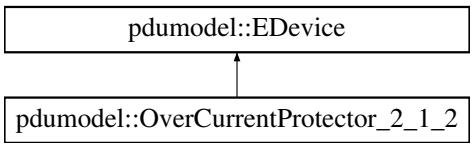
- pdu-json-rpc-api/idl/Outlet.idl

9.145 pdumodel::OverCurrentProtector_2_1_2 Interface Reference

Overcurrent protector interface.

```
import "OverCurrentProtector.idl";
```

Inheritance diagram for pdumodel::OverCurrentProtector_2_1_2:



Classes

- struct MetaData

  Overcurrent protector metadata.
- struct Sensors

  Overcurrent protector sensors.
- struct Settings

  Overcurrent protector settings.

Public Types

- enum Type {
  BREAKER_1POLE, BREAKER_2POLE, BREAKER_3POLE, FUSE,
  FUSE_PAIR, RCBO_2POLE, RCBO_3POLE, RCBO_4POLE }

  Overcurrent protector type.

Public Member Functions

- MetaData getMetaData ()

  Retrieve the OCP metadata.
- Sensors getSensors ()

  Get the OCP sensors.
- vector< DoublePole_2_0_0 > getPoles ()

  Get the list of OCP poles.
- Inlet_1_2_6 getInlet ()

  Get the inlet this OCP is connected to.
- OverCurrentProtector_2_1_2 getOCP ()

  Get parent OCP - next OCP going towards inlet (for cascaded OCPs).
- Settings getSettings ()

  Retrieve the OCP settings.
- int setSettings (in Settings settings)

  Change the OCP settings.

Public Attributes

- valueobject SettingsChangedEvent: event.UserEvent { Settings oldSettings

  Event: Overcurrent protector settings have been changed.
- Settings newSettings

  Settings after change.

9.145.1 Detailed Description

Overcurrent protector interface.

9.145.2 Member Enumeration Documentation

9.145.2.1 enum pdumodel::OverCurrentProtector_2_1_2::Type

Overcurrent protector type.

Enumerator

BREAKER_1POLE Single-pole circuit breaker.

BREAKER_2POLE Two-pole circuit breaker.

BREAKER_3POLE Three-pole circuit breaker.

FUSE Fuse.

FUSE_PAIR Fuse Pair.

RCBO_2POLE Two-pole residual-current device including overcurrent protection.

RCBO_3POLE Three-pole residual-current device including overcurrent protection.

RCBO_4POLE Four-pole residual-current device including overcurrent protection.

9.145.3 Member Function Documentation

9.145.3.1 Inlet_1_2_6 pdumodel::OverCurrentProtector_2_1_2::getInlet ( )

Get the inlet this OCP is connected to.

Returns

inlet

9.145.3.2 MetaData pdumodel::OverCurrentProtector_2_1_2::getMetaData ( )

Retrieve the OCP metadata.

Returns

OCP metadata

9.145.3.3 OverCurrentProtector_2_1_2 pdumodel::OverCurrentProtector_2_1_2::getOCP ( )

Get parent OCP - next OCP going towards inlet (for cascaded OCPs).

Returns

OCP or null

9.145.3.4 vector<DoublePole_2_0_0> pdumodel::OverCurrentProtector_2_1_2::getPoles ( )

Get the list of OCP poles.

Returns

List of OCP poles

9.145.3.5 Sensors pdumodel::OverCurrentProtector_2_1_2::getSensors ( )

Get the OCP sensors.

Returns

OCP sensors

9.145.3.6 Settings pdumodel::OverCurrentProtector_2_1_2::getSettings ( )

Retrieve the OCP settings.

Returns

OCP settings

9.145.3.7 int pdumodel::OverCurrentProtector_2_1_2::setSettings (in Settings *settings*)

Change the OCP settings.

Parameters

settings	New OCP settings

Returns

0 if OK
1 if any parameters are invalid

9.145.4 Member Data Documentation

9.145.4.1 valueobject pdumodel::OverCurrentProtector_2_1_2::SettingsChangedEvent

Event: Overcurrent protector settings have been changed.

Settings before change

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/OverCurrentProtector.idl

9.146 peripheral::PackageInfo_2_0_0 Struct Reference

Peripheral device package information.

```
import "PeripheralDevicePackage.idl";
```

Classes

- struct FirmwareInfo
- struct HardwareInfo

Public Types

- enum State { NORMAL, FW_UPDATE, INTERNAL_ERROR, CONFIG_ERROR }

Public Attributes

- State state
  The peripheral device package operational state.
- vector< PosElement > position
  Position within 1-wire topo.
- HardwareInfo hwInfo
  Device package hardware specific information.
- FirmwareInfo fwInfo
  Device package firmware specific information.

9.146.1 Detailed Description

Peripheral device package information.

9.146.2 Member Enumeration Documentation

9.146.2.1 enum peripheral::PackageInfo_2_0_0::State

Enumerator

NORMAL Device package is in normal operation.

FW_UPDATE Device package's firmware is being updated.

INTERNAL_ERROR Device package's internal error flag is set.

CONFIG_ERROR Device package's internal configuration is invalid.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/PeripheralDevicePackage.idl

9.147 lhxmodel::Lhx_3_2_1::ParamCfg Struct Reference

Configuration parameter characteristics.

```
import "Lhx.idl";
```

Public Attributes

- double min
  Minimum value.
- double max
  Maximum value.
- int decdigits
  Number of significant decimal digits.

9.147.1 Detailed Description

Configuration parameter characteristics.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Lhx.idl

9.148 lhxmodel::Parameter_2_0_1 Interface Reference

LHX Parameter Interface.

```
import "LhxParameter.idl";
```

Classes

- struct MetaData
  Parameter Metadata.
- struct Status
  Parameter Status.
- struct Value
  Parameter Value.

Public Types

- enum Unit {
  NONE, NUMBER, BINARY, TEMP_ABS,
  TEMP_REL, BAR, PASCAL, SIEMENS,
  METER, VOLT, AMPERE, HOURS,
  MINUTES, SECONDS, TIME, METERS_PER_SECOND,
  NEWTON, GRAMMS, HUMIDITY_REL, HERTZ,
  OHM, PERCENT, LITERS_PER_MINUTE, LITERS_PER_HOUR }

  Parameter Unit.

Public Member Functions

- MetaData getMetaData ()

  Retrieve the parameter metadata.
- Value getValue ()

  Retrieve the parameter value.
- int getRawValue ()

  Retrieve the parameter raw value.
- int setRawValue (in int rawValue, in boolean validateRange)

  Change the parameter value.

Public Attributes

- constant int ERR_INVALID_PARAMS = 1

  Invalid parameters.
- constant int ERR_READ_ONLY = 2

  Attempt to write a read-only parameter.
- valueobject MetaDataChangedEvent: idl.Event { MetaData oldMetaData

  Event: Parameter metadata has been changed.
- MetaData newMetaData

  Metadata after change.
- valueobject ValueChangedEvent: idl.Event { Value newValue

  Event: Parameter value has changed.

9.148.1 Detailed Description

LHX Parameter Interface.

9.148.2 Member Enumeration Documentation

9.148.2.1 enum lhxmodel::Parameter_2_0_1::Unit

Parameter Unit.

Enumerator

NONE No unit.

NUMBER Number.

BINARY Binary.

TEMP_ABS Absolute temperature.

TEMP_REL Relative temperature.

BAR Bar.

PASCAL Pascal.

SIEMENS Siemens.

METER Meter.

VOLT Volt.

AMPERE Ampere.

HOURS Hours.

MINUTES Minutes.

SECONDS Seconds.

TIME Time.

METERS_PER_SECOND Meters/second.

NEWTON Newton.

GRAMMS Gramms.

HUMIDITY_REL Relative humidity.

HERTZ Hertz.

OHM Ohm.

PERCENT Percent.

LITERS_PER_MINUTE Liters/minute.

LITERS_PER_HOUR Liters/hour.

9.148.3 Member Function Documentation

9.148.3.1 MetaData lhxmodel::Parameter_2_0_1::getMetaData ( )

Retrieve the parameter metadata.

Returns

Parameter metadata

9.148.3.2 int lhxmodel::Parameter_2_0_1::getRawValue ( )

Retrieve the parameter raw value.

Returns

Raw value

9.148.3.3 Value lhxmodel::Parameter_2_0_1::getValue ( )

Retrieve the parameter value.

Returns

Parameter value

9.148.3.4 int lhxmodel::Parameter_2_0_1::setRawValue (in int *rawValue,* in boolean *validateRange*)

Change the parameter value.

Parameters

rawValue	New value
validateRange	validate value against parameter range

Returns

0 if OK
ERR_INVALID_PARAMS if any parameter value is invalid
ERR_READ_ONLY if attempting to write read only parameter

9.148.4 Member Data Documentation

9.148.4.1 valueobject lhxmodel::Parameter_2_0_1::MetaDataChangedEvent

Event: Parameter metadata has been changed.

Metadata before change

9.148.4.2 valueobject lhxmodel::Parameter_2_0_1::ValueChangedEvent

Event: Parameter value has changed.

New parameter value

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/LhxParameter.idl

9.149 security::PasswordSettings Struct Reference

Password settings.

```
import "Security.idl";
```

Public Attributes

- boolean enableAging

  `true` *to enable password aging*
- int agingInterval

  Aging interval.
- boolean enableStrongReq

  `true` *to enable strong password requirements*
- int minPwLength

  Minimum password length.
- int maxPwLength

  Maximum password length.
- boolean enforceLower

  Passwords must contain at least one lower case character.
- boolean enforceUpper

Passwords must contain at least one upper case character.

- boolean enforceNumeric

  Passwords must contain at least one numeric character.

- boolean enforceSpecial

  Passwords must contain at least one special character.

- int pwHistoryDepth

  Number of entries in password history.

9.149.1 Detailed Description

Password settings.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Security.idl

9.150 pdumodel::Pdu_3_0_0 Interface Reference

Main PDU interface.

```
import "Pdu.idl";
```

Classes

- struct MetaData

  PDU metadata.

- struct OutletSequenceState

  Outlet sequencing status

- struct Sensors

  PDU sensors.

- struct Settings

  PDU settings.

- struct Statistic

  PDU statistics.

Public Types

- enum StartupState { SS_ON, SS_OFF, SS_LASTKNOWN }

  Outlet power state on device startup

Public Member Functions

- Nameplate getNameplate ()

  Retrieve the PDU nameplate information.

- MetaData getMetaData ()

  Retrieve the PDU metadata.

- Sensors getSensors ()

  Retrieve the PDU sensors.

- sensors Logger_2_1_2 getSensorLogger ()

  Get the sensor logger.

- vector< Controller_3_0_0 > getControllers ()

  Get the list of slave controllers.
- vector< Outlet_1_5_6 > getOutlets ()

  Get the list of outlets.
- vector
  < OverCurrentProtector_2_1_2 > getOverCurrentProtectors ()

  Get the list of overcurrent protectors.
- vector< Inlet_1_2_6 > getInlets ()

  Get the list of inlets.
- vector< TransferSwitch_3_1_1 > getTransferSwitches ()

  Returns list of Transfer Switches.
- peripheral DeviceManager_2_0_0 getPeripheralDeviceManager ()

  Get the peripheral device manager.
- hmi InternalBeeper getBeeper ()

  Get the built-in beeper, if there is any.
- Settings getSettings ()

  Retrieve the PDU settings.
- boolean isLoadSheddingActive ()

  Retrieve the current load shedding state.
- int setSettings (in Settings settings)

  Change the PDU settings.
- void setLoadSheddingActive (in boolean active)

  Enable or disable load shedding.
- vector< portsmodel.Port_2_0_1 > getFeaturePorts ()

  Get all feature ports of this device.
- int enterRS485ConfigModeAndAssignCtrlBoardAddress (in int addr)

  Enter RS485 config mode and assign an address to a relay board.
- int enterRS485ConfigModeAndAssignSCBoardAddress (in int deviceId, in int addr)

  Enter RS485 config mode and assign an address to a slave controller device with a given device ID.
- int leaveRS485ConfigMode ()

  Leave RS485 config mode.
- int setAllOutletPowerStates (in Outlet_1_5_6.PowerState pstate)

  Switch all outlets.
- int setMultipleOutletPowerStates (in vector< int > outletNumbers, in Outlet_1_5_6.PowerState state, in boolean respectSequence)

  Switch multiple outlets.
- int cycleAllOutletPowerStates ()

  Power-cycle all outlets.
- int cycleMultipleOutletPowerStates (in vector< int > outletNumbers, in boolean respectSequence)

  Power-cycle multiple outlets.
- Statistic getStatistic ()

  Retrieve PDU statistics.
- OutletSequenceState getOutletSequenceState ()

  Retrieve the current outlet sequencing status.
- void cancelOutletSequence ()

  Stop a currently running outlet sequence.

Public Attributes

- constant int ERR_INVALID_PARAM = 1

  Invalid parameters.
- valueobject SettingsChangedEvent: event.UserEvent { Settings oldSettings

  Event: PDU settings have been changed.
- Settings newSettings

  Settings after change.
- valueobject LoadSheddingModeChangedEvent: event.UserEvent { boolean enabled

  Event: Load shedding mode was enabled or disabled.
- valueobject OutletSequenceStateChangedEvent: idl.Event { OutletSequenceState newState

  Event: Outlet sequencing state has changed.

9.150.1 Detailed Description

Main PDU interface.

9.150.2 Member Enumeration Documentation

9.150.2.1 enum pdumodel::Pdu_3_0_0::StartupState

Outlet power state on device startup

Enumerator

SS_ON Outlet will be switched on

SS_OFF Outlet will be switched off

SS_LASTKNOWN Restore last known power state.

9.150.3 Member Function Documentation

9.150.3.1 int pdumodel::Pdu_3_0_0::cycleAllOutletPowerStates ( )

Power-cycle all outlets.

Returns

0 if OK
1 if an outlet sequence is currently running

9.150.3.2 int pdumodel::Pdu_3_0_0::cycleMultipleOutletPowerStates (in vector< int > *outletNumbers*, in boolean *respectSequence*)

Power-cycle multiple outlets.

Parameters

outletNumbers	List of outlet numbers (zero-based)
respect-Sequence	`true` to switch in defined sequence order

Returns

0 if OK
1 if outlet sequence is currently running

9.150.3.3 int pdumodel::Pdu_3_0_0::enterRS485ConfigModeAndAssignCtrlBoardAddress (in int *addr*)

Enter RS485 config mode and assign an address to a relay board.

Warning

This is dangerous! Do not use except for manufacturing.

Parameters

addr	New relay board address

Returns

0 if OK
1 if any parameters are invalid

9.150.3.4 int pdumodel::Pdu_3_0_0::enterRS485ConfigModeAndAssignSCBoardAddress (in int *deviceId,* in int *addr*)

Enter RS485 config mode and assign an address to a slave controller device with a given device ID.

Warning

This is dangerous! Do not use except for manufacturing.

Parameters

deviceId	Device id of the slave controller board which is supposed to get the address
addr	New relay board address

Returns

0 if OK
1 if any parameters are invalid

9.150.3.5 hmi InternalBeeper pdumodel::Pdu_3_0_0::getBeeper ( )

Get the built-in beeper, if there is any.

Returns

Beeper interface

9.150.3.6 vector<Controller_3_0_0> pdumodel::Pdu_3_0_0::getControllers ( )

Get the list of slave controllers.

Returns

List of slave controllers

9.150.3.7 vector<portsmodel.Port_2_0_1> pdumodel::Pdu_3_0_0::getFeaturePorts ( )

Get all feature ports of this device.

This returns an entry for all feature ports, no matter whether something is connected or not. A device with n feature ports will return n entries here.

Returns

List of all Feature Ports

9.150.3.8 vector<Inlet_1_2_6> pdumodel::Pdu_3_0_0::getInlets ( )

Get the list of inlets.

Returns

List of inlets, indexed by their number (zero-based)

9.150.3.9 MetaData pdumodel::Pdu_3_0_0::getMetaData ( )

Retrieve the PDU metadata.

Returns

PDU metadata

9.150.3.10 Nameplate pdumodel::Pdu_3_0_0::getNameplate ( )

Retrieve the PDU nameplate information.

Returns

Nameplate information

9.150.3.11 vector<Outlet_1_5_6> pdumodel::Pdu_3_0_0::getOutlets ( )

Get the list of outlets.

Returns

List of outlets, indexed by their number (zero-based)

9.150.3.12 OutletSequenceState pdumodel::Pdu_3_0_0::getOutletSequenceState ( )

Retrieve the current outlet sequencing status.

Returns

Sequencing status

9.150.3.13 vector<OverCurrentProtector_2_1_2> pdumodel::Pdu_3_0_0::getOverCurrentProtectors ( )

Get the list of overcurrent protectors.

Returns

List of OCPs, indexed by their number (zero-based)

9.150.3.14 peripheral DeviceManager_2_0_0 pdumodel::Pdu_3_0_0::getPeripheralDeviceManager ( )

Get the peripheral device manager.

Returns

Peripheral device manager

9.150.3.15 sensors Logger_2_1_2 pdumodel::Pdu_3_0_0::getSensorLogger ( )

Get the sensor logger.

Returns

Sensor logger reference

9.150.3.16 Sensors pdumodel::Pdu_3_0_0::getSensors ( )

Retrieve the PDU sensors.

Returns

PDU sensors

9.150.3.17 Settings pdumodel::Pdu_3_0_0::getSettings ( )

Retrieve the PDU settings.

Returns

PDU settings

9.150.3.18 Statistic pdumodel::Pdu_3_0_0::getStatistic ( )

Retrieve PDU statistics.

Returns

PDU statistics

9.150.3.19 vector<TransferSwitch_3_1_1> pdumodel::Pdu_3_0_0::getTransferSwitches ( )

Returns list of Transfer Switches.

This list may be empty.

9.150.3.20 boolean pdumodel::Pdu_3_0_0::isLoadSheddingActive ( )

Retrieve the current load shedding state.

Returns

`true` if load shedding is currently enabled

9.150.3.21 int pdumodel::Pdu_3_0_0::leaveRS485ConfigMode ( )

Leave RS485 config mode.

Returns

0 if OK

9.150.3.22 int pdumodel::Pdu_3_0_0::setAllOutletPowerStates (in **Outlet_1_5_6.PowerState** *pstate*)

Switch all outlets.

Parameters

pstate	New power state for all outlets

Returns

0 if OK
1 if an outlet sequence is currently running

9.150.3.23 void pdumodel::Pdu_3_0_0::setLoadSheddingActive (in boolean *active*)

Enable or disable load shedding.

Parameters

active	`true` to enable, `false` to disable load shedding

9.150.3.24 int pdumodel::Pdu_3_0_0::setMultipleOutletPowerStates (in vector< int > *outletNumbers,* in **Outlet_1_5_6.PowerState** *state,* in boolean *respectSequence*)

Switch multiple outlets.

Parameters

outletNumbers	List of outlet numbers (zero-based)
state	New power state for all outlets in list
respectSequence	`true` to switch in defined sequence order

Returns

0 if OK
1 if an outlet sequence is currently running

9.150.3.25 int pdumodel::Pdu_3_0_0::setSettings (in Settings *settings*)

Change the PDU settings.

Parameters

settings	New PDU settings

Returns

0 if OK
1 if any parameters are invalid

9.150.4 Member Data Documentation

9.150.4.1 valueobject pdumodel::Pdu_3_0_0::LoadSheddingModeChangedEvent

Event: Load shedding mode was enabled or disabled.

Whether load shedding mode is enabled after the change

9.150.4.2 valueobject pdumodel::Pdu_3_0_0::OutletSequenceStateChangedEvent

Event: Outlet sequencing state has changed.

New sequencing state

9.150.4.3 valueobject pdumodel::Pdu_3_0_0::SettingsChangedEvent

Event: PDU settings have been changed.

Settings before change

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/Pdu.idl

9.151 pdumodel::Bcm::PhaseConfig Struct Reference

Phase Configuration.

```
import "Bcm.idl";
```

Public Attributes

- LineConfig lineConfig
  Power line configuration.
- TransformerType ctType
  Current transformer type.
- int fsCurrent
  Full-scale current (voltage-type transformer)
- int fsVoltage
  Full-scale voltage (voltage-type transformer)
- int turnsRatio

Turns ratio (turns ratio transformer)

- int burdenResistor

  Burden resistor (turns ratio transformer)

9.151.1 Detailed Description

Phase Configuration.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Bcm.idl

9.152 pdumodel::Pole_2_0_0 Struct Reference

An inlet or outlet pole.

```
import "Pole.idl";
```

Public Attributes

- string label

  Pole label

- PowerLine line

  Power line.

- int nodeId

  Circuit node id.

- sensors NumericSensor_4_0_0 voltage

  RMS voltage sensor, L-L.

- sensors NumericSensor_4_0_0 voltageLN

  RMS voltage sensor, L-N.

- sensors NumericSensor_4_0_0 current

  RMS current sensor.

- sensors NumericSensor_4_0_0 peakCurrent

  Peak current sensor.

- sensors NumericSensor_4_0_0 activePower

  Active power sensor.

- sensors NumericSensor_4_0_0 apparentPower

  Apparent power sensor.

- sensors NumericSensor_4_0_0 powerFactor

  Power factor sensor.

- sensors NumericSensor_4_0_0 activeEnergy

  Active energy sensor.

- sensors NumericSensor_4_0_0 apparentEnergy

  Apparent energy sensor.

9.152.1 Detailed Description

An inlet or outlet pole.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Pole.idl

9.153 auth::Policy Struct Reference

Authentication policy.

```
import "AuthManager.idl";
```

Public Attributes

- auth Type type
  Authentication type.
- boolean useLocalIfRemoteFailed
  Fall back to local authentication if remote authentication fails.

9.153.1 Detailed Description

Authentication policy.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/AuthManager.idl

9.154 portsmodel::Port_2_0_1 Interface Reference

Port interface.

```
import "Port.idl";
```

Classes

- struct DetectionMode
  Port detection mode.
- struct Properties
  Port properties.

Public Types

- enum DetectionType { AUTO, PINNED, DISABLED }
  Port detection type.

Public Member Functions

- Properties getProperties ()
  Get the current properties of the port.
- void setName (in string name)
  NOT USED RIGHT NOW!
- int setDetectionMode (in DetectionMode mode)
  Set the detection mode for the port.
- vector< string > getDetectableDevices ()
  Get all detectable devices of this port.
- Object getDevice ()
  Get the connected device of the port.

- Object getDeviceConfig (in string deviceType)

  Get device type specific configuration interface.

Public Attributes

- constant int NO_ERROR = 0

  Error codes.
- constant int ERR_INVALID_PARAM = 1

  invalid parameter for an operation
- constant int ERR_DEVICE_BUSY = 2

  operation fails because connected device is busy
- valueobject PropertiesChangedEvent: idl.Event { Properties oldProperties

  Event: The port properties have changed.
- Properties newProperties

  Properties after change.
- valueobject DeviceChangedEvent: idl.Event { Object oldDevice

  Event: The device connected to the port has changed.
- Object newDevice

  Connected device after change.

9.154.1 Detailed Description

Port interface.

9.154.2 Member Enumeration Documentation

9.154.2.1 enum portsmodel::Port_2_0_1::DetectionType

Port detection type.

Enumerator

AUTO auto detection of connected devices

PINNED port is pinned to a specific device type

DISABLED port is disabled and will not detect any device connected

9.154.3 Member Function Documentation

9.154.3.1 vector<string> portsmodel::Port_2_0_1::getDetectableDevices ( )

Get all detectable devices of this port.

Returns

List of all registered detectable Devices

9.154.3.2 Object portsmodel::Port_2_0_1::getDevice ( )

Get the connected device of the port.

Returns

Device connected to Port

9.154.3.3 Object portsmodel::Port_2_0_1::getDeviceConfig (in string *deviceType*)

Get device type specific configuration interface.

Parameters

deviceType	Device type to get configuration interface for

Returns

Device configuration interface

9.154.3.4 Properties portsmodel::Port_2_0_1::getProperties ( )

Get the current properties of the port.

Returns

Properties of the Port

9.154.3.5 int portsmodel::Port_2_0_1::setDetectionMode (in DetectionMode *mode*)

Set the detection mode for the port.

Parameters

mode	new detection mode

Returns

NO_ERROR on success
ERR_INVALID_PARAM invalid parameter
ERR_DEVICE_BUSY device busy (e.g. Asset Strip Firmware Update)

9.154.3.6 void portsmodel::Port_2_0_1::setName (in string *name*)

NOT USED RIGHT NOW!

Set the port name

Parameters

name	new port name

9.154.4 Member Data Documentation

9.154.4.1 valueobject portsmodel::Port_2_0_1::DeviceChangedEvent

Event: The device connected to the port has changed.

Connected device before change

9.154.4.2 constant int portsmodel::Port_2_0_1::NO_ERROR = 0

Error codes.

operation successful, no error

9.154.4.3 valueobject portsmodel::Port_2_0_1::PropertiesChangedEvent

Event: The port properties have changed.

Properties before change

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/Port.idl

9.155 serial::PortDispatcher_1_1_1 Interface Reference

Top-level interface of the serial port manager.

```
import "PortDispatcher.idl";
```

Public Member Functions

- map< string, SerialPort_2_0_0 > getPorts ()

  Get serial ports.

9.155.1 Detailed Description

Top-level interface of the serial port manager.

9.155.2 Member Function Documentation

9.155.2.1 map<string, SerialPort_2_0_0> serial::PortDispatcher_1_1_1::getPorts ( )

Get serial ports.

Returns a map of serial ports that are both

- available on the device
- monitored by the system

The mapping is 'symbolic port name' -> 'port instance'.

Returns

– A map with available port instances

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/PortDispatcher.idl

9.156 peripheral::PosElement Struct Reference

peripheral device position element, list forms position

```
import "PeripheralDeviceSlot.idl";
```

Public Attributes

- PortType portType
  type of the element
- string port
  value of the element, a label

9.156.1 Detailed Description

peripheral device position element, list forms position

The documentation for this struct was generated from the following file:

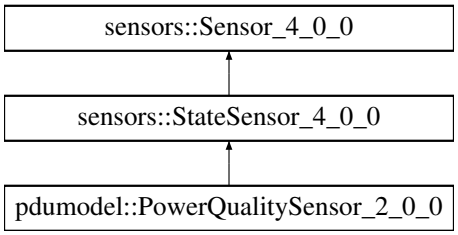
- pdu-json-rpc-api/idl/PeripheralDeviceSlot.idl

9.157 pdumodel::PowerQualitySensor_2_0_0 Interface Reference

Power quality sensor interface.

```
import "PowerQualitySensor.idl";
```

Inheritance diagram for pdumodel::PowerQualitySensor_2_0_0:



Public Attributes

- constant int STATE_NORMAL = 0
  Power quality is normal.
- constant int STATE_WARNING = 1
  Power quality is warning.
- constant int STATE_CRITICAL = 2
  Power quality is critical.

Additional Inherited Members

9.157.1 Detailed Description

Power quality sensor interface.

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/PowerQualitySensor.idl

9.158 usermgmt::Preferences Struct Reference

User preferences

```
import "User.idl";
```

Public Attributes

- TemperatureEnum temperatureUnit
  Display unit for temperature sensors.
- LengthEnum lengthUnit
  Display unit for length measurements.
- PressureEnum pressureUnit
  Display unit for pressure sensors.

9.158.1 Detailed Description

User preferences

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/User.idl

9.159 usermgmt::Role::Privilege Struct Reference

A granted privilege.

```
import "Role.idl";
```

Public Attributes

- string name
  Privilege name.
- vector< string > args
  Privilege arguments.

9.159.1 Detailed Description

A granted privilege.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Role.idl

9.160 usermgmt::RoleManager::PrivilegeDesc Struct Reference

Privilege Description.

```
import "RoleManager.idl";
```

Public Attributes

- string name

  Privilege name.
- string desc

  Privilege description.
- vector< ArgumentDesc > args

  List of supported arguments.

9.160.1 Detailed Description

Privilege Description.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/RoleManager.idl

9.161 production::Production Interface Reference

Methods used during production.

```
import "Production.idl";
```

Public Member Functions

- int enterFactoryConfigMode (in string password)

  Enter factory configuration mode.
- void leaveFactoryConfigMode ()

  Leave factory configuration mode.
- boolean isFactoryConfigModeEnabled ()

  Check whether device is in factory configuration mode.

9.161.1 Detailed Description

Methods used during production.

9.161.2 Member Function Documentation

9.161.2.1 int production::Production::enterFactoryConfigMode (in string *password*)

Enter factory configuration mode.

This mode unlocks several features which should only be available during production, e.g. the RS485 address assignment or sensor calibration. Factory configuration mode will be enabled until the next reboot or until leaveFactoryConfigMode is called.

Parameters

password	Password required to enter factory config mdoe.

Returns

0 if OK
1 if the password is wrong

9.161.2.2 boolean production::Production::isFactoryConfigModeEnabled ( )

Check whether device is in factory configuration mode.

Returns

`true` if factory configuration mode is enabled

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/Production.idl

9.162 portsmodel::Port_2_0_1::Properties Struct Reference

Port properties.

```
import "Port.idl";
```

Public Attributes

- string name

  user defineable name - NOT USED RIGHT NOW!
- string label

  label on device
- DetectionMode mode

  detection mode
- string detectedDeviceType

  detected device type or empty if nothing connected
- string detectedDeviceName

  detected device name or empty if nothing connected

9.162.1 Detailed Description

Port properties.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Port.idl

9.163 cascading::Cascading_1_0_1::ProtocolMapping Struct Reference

Mapping from appl protocol id to name and transport protocol.

```
import "Cascading.idl";
```

Public Attributes

- int **appProtoId**
- string **appProtoName**
- string **transportProtoName**

9.163.1 Detailed Description

Mapping from appl protocol id to name and transport protocol.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Cascading.idl

9.164 assetmgrmodel::AssetStrip_2_0_1::RackUnitInfo Struct Reference

Infos for a single rack unit.

```
import "AssetStrip.idl";
```

Public Attributes

- int rackUnitNumber

  rack unit for the settings, range 0..rackUnitCount-1
- int rackUnitPosition

  resulting rack unit position (display number)
- TagType type

  type of the asset tag (single, extension, none or unknown)
- int size

  blade extension size (4,8,16), 1 for single tags or 0 if nothing connected
- AssetStripConfig_1_0_1
  RackUnitSettings settings

  settings for a single rack unit

9.164.1 Detailed Description

Infos for a single rack unit.

In case no asset strip is connected, type defaults to single and size defaults to 1

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/AssetStrip.idl

9.165 assetmgrmodel::AssetStripConfig_1_0_1::RackUnitSettings Struct Reference

Settings for a single rack unit (LED state)

```
import "AssetStripConfig.idl";
```

Public Attributes

- LEDOperationMode opmode

  Operation mode for this rack unit.
- LEDMode mode

  LED mode (on,off,blinking)
- LEDColor color

  Color of the LED at this rack unit.
- string name

  user defined name (up to 64 alphanumeric characters)

9.165.1 Detailed Description

Settings for a single rack unit (LED state)

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/AssetStripConfig.idl

9.166 auth::RadiusManager Interface Reference

RADIUS server configuration interface.

```
import "RadiusManager.idl";
```

Public Member Functions

- vector< radius.ServerSettings > getRadiusServers ()

  Get a list of RADIUS server settings.
- int setRadiusServers (in vector< radius.ServerSettings > serverList)

  Sets a list of RADIUS servers.
- int testRadiusServer (in string username, in string password, in radius.ServerSettings settings)

  Tests an RADIUS server configuration.

Public Attributes

- constant int ERR_INVALID_CFG = 1

  The server configuration is invalid.
- constant int ERR_SERVER_UNSPECIFIED = 2

  Unspecified error.
- constant int ERR_INVALID_SHARED_SECRET = 3

  The shared secret is invalid.
- constant int ERR_SERVER_UNREACHABLE = 4

  RADIUS server could not be contacted.
- constant int ERR_AUTHENTICATION_FAILED = 5

  User could not be authenticated.
- constant int ERR_NO_ROLES = 6

  No roles are defined for the user.
- constant int ERR_NO_KNOWN_ROLES = 7

  No known rules are defined for the user.

9.166.1 Detailed Description

RADIUS server configuration interface.

9.166.2 Member Function Documentation

9.166.2.1 vector<radius.ServerSettings> auth::RadiusManager::getRadiusServers ( )

Get a list of RADIUS server settings.

Returns

list of radius.ServerSettings

9.166.2.2 int auth::RadiusManager::setRadiusServers (in vector< radius.ServerSettings > *serverList*)

Sets a list of RADIUS servers.

Any existing RADIUS Server configuration will be cleared / overwritten.

Returns

0 on success
`ERR_INVALID_CFG` in case of invalid configuration

9.166.2.3 int auth::RadiusManager::testRadiusServer (in string *username,* in string *password,* in radius.ServerSettings *settings*)

Tests an RADIUS server configuration.

Returns

0 on success
`ERR_SERVER_UNSPECIFIED` an unspecified error occurred
`ERR_INVALID_CFG` RADIUS server configuration is invalid (reused from setRadiusServers)
`ERR_INVALID_SHARED_SECRET` the shared secret is invalid
`ERR_SERVER_UNREACHABLE` RADIUS server could not be contacted
`ERR_AUTHENTICATION_FAILED` user could not be authenticated
`ERR_NO_ROLES` no roles are defined for the user
`ERR_NO_KNOWN_ROLES` no known roles are defined for the user

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/RadiusManager.idl

9.167 event::TimerEventManager_2_0_0::Range Struct Reference

Range structure.

```
import "TimerEventManager.idl";
```

Public Attributes

- int start

  Start time.
- int end

  End time.
- int step

  Step.

9.167.1 Detailed Description

Range structure.

A range defines a time between start and end point in time. If start and end point are the same it is a specific point in time and no range. Step defines the repeating interval in time. Step of 1 is default and matches all values in range.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/TimerEventManager.idl

9.168 sensors::NumericSensor_4_0_0::Range Struct Reference

Range of possible sensor readings.

```
import "NumericSensor.idl";
```

Public Attributes

- double lower

  Minimum reading.
- double upper

  Maximum reading.

9.168.1 Detailed Description

Range of possible sensor readings.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/NumericSensor.idl

9.169 pdumodel::Rating Struct Reference

Numerical usage ratings.

```
import "Nameplate.idl";
```

Public Attributes

- int current

  Maximum current in Amperes.

- int minVoltage

  Minimum voltage in Volts.
- int maxVoltage

  Maximum voltage in Volts.

9.169.1 Detailed Description

Numerical usage ratings.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Nameplate.idl

9.170 pdumodel::Nameplate::Rating Struct Reference

Component ratings.

```
import "Nameplate.idl";
```

Public Attributes

- string voltage

  Voltage rating.
- string current

  Current rating.
- string frequency

  Frequency rating.
- string power

  Power rating.

9.170.1 Detailed Description

Component ratings.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Nameplate.idl

9.171 sensors::NumericSensor_4_0_0::Reading Struct Reference

Numeric sensor reading.

```
import "NumericSensor.idl";
```

Classes

- struct Status

  Numeric sensor status.

Public Attributes

- time timestamp

  Timestamp of last sample.
- boolean available

  `true` *if the sensor is available*
- Status status

  Numeric sensor status.
- boolean valid

  `true` *if the sensor reading is valid*
- double value

  Numeric sensor reading.

9.171.1 Detailed Description

Numeric sensor reading.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/NumericSensor.idl

9.172 lhxmodel::Sensor_4_0_0::Reading Struct Reference

Sensor reading.

```
import "LhxSensor.idl";
```

Public Attributes

- time timestamp

  Time of sample.
- int state

  discrete reading or state
- double value

  numeric reading value
- boolean isValid

  numeric value is valid or NAN

9.172.1 Detailed Description

Sensor reading.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/LhxSensor.idl

9.173 sensors::Logger_2_1_2::Record Struct Reference

Sensor log record.

```
import "SensorLogger.idl";
```

Public Attributes

- boolean available

  Sensor was available for at least one sample.
- int takenValidSamples

  Number of samples with a valid reading/state.
- int state

  Sensor state.
- double minValue

  Minimum sensor reading.
- double avgValue

  Average sensor reading.
- double maxValue

  Maximum sensor reading.

9.173.1 Detailed Description

Sensor log record.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/SensorLogger.idl

9.174 assetmgrmodel::AssetStripLogger_1_0_2::Record Struct Reference

Log record structure.

```
import "AssetStripLogger.idl";
```

Public Attributes

- time timestamp

  Time of log entry creation.
- RecordType type

  Entry type.
- int assetStripNumber

  Asset strip number (0-based), -1 if unknown.
- int rackUnitNumber

  Rack unit number (0-based), -1 if unknown.
- int rackUnitPosition

  Rack unit position, -1 if unknown.
- int slotNumber

  Blade extension slot number, -1 if unknown, 0 is main strip, >0 is blade.
- string tagId

  The ID of the asset management tag, empty if unknown.
- string parentBladeId

  ID of the parent blade extension tag in case slotNumber>0, empty otherwise.
- AssetStrip_2_0_1 State state

  Asset strip state.

9.174.1 Detailed Description

Log record structure.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/AssetStripLogger.idl

9.175 cert::ServerSSLCert::ReqInfo Struct Reference

Certificate signing request information.

```
import "ServerSSLCert.idl";
```

Public Attributes

- CommonAttributes subject

  Certificate subject attributes.
- int keyLength

  Key length in bits.

9.175.1 Detailed Description

Certificate signing request information.

The documentation for this struct was generated from the following file:

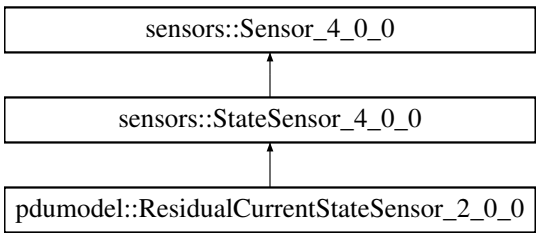
- pdu-json-rpc-api/idl/ServerSSLCert.idl

9.176 pdumodel::ResidualCurrentStateSensor_2_0_0 Interface Reference

Residual current state sensor interface.

```
import "ResidualCurrentStateSensor.idl";
```

Inheritance diagram for pdumodel::ResidualCurrentStateSensor_2_0_0:



Public Member Functions

- int startSelfTest ()

  Start a self test of the residual current monitor.

Public Attributes

- constant int STATE_NORMAL = 0

  Possible sensor state values.
- constant int STATE_WARNING = 1

  Residual current sensor detected overcurrent.
- constant int STATE_CRITICAL = 2

  Residual current sensor detected overcurrent.
- constant int STATE_SELFTEST = 3

  Residual current sensor currently conducts a self test.
- constant int STATE_FAILURE = 4

  Residual current sensor is unavailable or self test failed.

Additional Inherited Members

9.176.1 Detailed Description

Residual current state sensor interface.

9.176.2 Member Function Documentation

9.176.2.1 int pdumodel::ResidualCurrentStateSensor_2_0_0::startSelfTest ( )

Start a self test of the residual current monitor.

Returns

0 if OK
1 if no residual current monitor is present
2 if a self test is already running

9.176.3 Member Data Documentation

9.176.3.1 constant int pdumodel::ResidualCurrentStateSensor_2_0_0::STATE_NORMAL = 0

Possible sensor state values.

Residual current sensor is operating normally

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/ResidualCurrentStateSensor.idl

9.177 res_mon::ResMon Interface Reference

ResMon interface.

```
import "ResMon.idl";
```

Public Member Functions

- void getDataEntries (out vector< Entry > entries)

  Retrieve ResMon data Entry array.

9.177.1 Detailed Description

ResMon interface.

9.177.2 Member Function Documentation

9.177.2.1 void res_mon::ResMon::getDataEntries (out vector< Entry > *entries*)

Retrieve ResMon data Entry array.

Parameters

entries	Result: List of data events

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/ResMon.idl

9.178 security::RestrictedServiceAgreement Struct Reference

Restricted Service Agreement settings.

```
import "Security.idl";
```

Public Attributes

- boolean enabled

  Enforce Restricted Service Agreement.
- string banner

  Restricted Service Agreement Banner.

9.178.1 Detailed Description

Restricted Service Agreement settings.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Security.idl

9.179 test::Result Struct Reference

Convenience structure to return test or operation results.

```
import "testrpc.idl";
```

Public Attributes

- int code

  Result code.
- string errtext

  Descriptive error string.

9.179.1 Detailed Description

Convenience structure to return test or operation results.

- There is a result code Typically 0 means OK 1 means Test Error 2 means Invalid Parameter However indivdual test may redefine or extend this definition
- There is a descriptive error string, which is empty in case test went OK

This structure is not neccessarily used for all operations but only for those where it comes in handy

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/testrpc.idl

9.180 usermgmt::Role Interface Reference

Role management interface

```
import "Role.idl";
```

Classes

- struct Info
  Role information
- struct Privilege
  A granted privilege.

Public Member Functions

- Info getInfo ()
  Retrieve role information.
- int updateFull (in Info info)
  Change role settings.

Public Attributes

- constant int ERR_INVALID_VALUE = 1
  Invalid arguments.

9.180.1 Detailed Description

Role management interface

9.180.2 Member Function Documentation

9.180.2.1 Info usermgmt::Role::getInfo ( )

Retrieve role information.

Returns

role info

9.180.2.2 int usermgmt::Role::updateFull (in Info *info*)

Change role settings.

Parameters

info	New role information

Returns

0 if OK
1 if the role information is invalid

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/Role.idl

9.181 security::RoleAccessControl Struct Reference

Role-based access control settings.

```
import "Security.idl";
```

Public Attributes

- boolean enabled

  `true` to enable role-based access control
- RoleAccessPolicy defaultPolicy

  Default policy.
- vector< RoleAccessRule > rules

  List of access rules.

9.181.1 Detailed Description

Role-based access control settings.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Security.idl

9.182 security::RoleAccessRule Struct Reference

Role-based access rule.

```
import "Security.idl";
```

Public Attributes

- string startIp

  Start of IP range.
- string endIp

  End of IP range.

- int roleId
  Role id.
- RoleAccessPolicy policy
  Access policy.

9.182.1 Detailed Description

Role-based access rule.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Security.idl

9.183 usermgmt::RoleManager::RoleAccount Struct Reference

Role information.

```
import "RoleManager.idl";
```

Public Attributes

- int id
  Unique role id.
- string name
  Role name.
- Role Info info
  Role information.

9.183.1 Detailed Description

Role information.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/RoleManager.idl

9.184 usermgmt::RoleManager Interface Reference

Role manager interface.

```
import "RoleManager.idl";
```

Classes

- struct ArgumentDesc
  Privilege Argument Description.
- struct Info
  Full role manager information.
- struct PrivilegeDesc
  Privilege Description.
- struct RoleAccount
  Role information.

Public Member Functions

- int createRoleFull (in string name, in Role.Info info)

  Create new role with full information.
- int deleteRole (in string name)

  Delete a role.
- vector< string > getAllRoleNames ()

  Retrieve a list of role names.
- vector< RoleAccount > getAllRoles ()

  Retrieve a list of active roles.
- vector< PrivilegeDesc > getAllPrivileges ()

  Retrieve a list of supported privileges.
- Info getInfo ()

  Retrieve full role manager information.

Public Attributes

- constant int ERR_ROLE_ALREADY_EXISTS = 1

  A role with that name already exists.
- constant int ERR_MAX_ROLES_REACHED = 2

  Maximum number of roles reached.
- constant int ERR_INVALID_VALUE = 3

  Invalid arguments.
- constant int ERR_ROLE_DOESNT_EXIST = 1

  The role does not exist.
- constant int ERR_ROLE_NOT_DELETABLE = 2

  The role cannot be deleted.

9.184.1 Detailed Description

Role manager interface.

9.184.2 Member Function Documentation

9.184.2.1 int usermgmt::RoleManager::createRoleFull (in string *name*, in Role.Info *info*)

Create new role with full information.

Parameters

name	New role name
info	New role information

Returns

0 if OK
1 if a role with that name already exists
2 if the maximum number of roles is reached
3 if the role information is invalid

9.184.2.2 int usermgmt::RoleManager::deleteRole (in string *name*)

Delete a role.

Parameters

name	Name of the role to delete

Returns

0 if OK
1 if a role with the given name does not exist
2 if the role cannot be deleted

9.184.2.3 vector<PrivilegeDesc> usermgmt::RoleManager::getAllPrivileges ( )

Retrieve a list of supported privileges.

Returns

List of privilege names

9.184.2.4 vector<string> usermgmt::RoleManager::getAllRoleNames ( )

Retrieve a list of role names.

Returns

List of role names

9.184.2.5 vector<RoleAccount> usermgmt::RoleManager::getAllRoles ( )

Retrieve a list of active roles.

Returns

List of active roles

9.184.2.6 Info usermgmt::RoleManager::getInfo ( )

Retrieve full role manager information.

Returns

Role manager information

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/RoleManager.idl

9.185 test::RS232Serial Interface Reference

Test routines for full RS232 Serial Interface.

```
import "testrpc.idl";
```

Public Member Functions

- vector< string > getDeviceFiles ()

  returns list of valid device files for the test
- Result testLoop1 (in string devfile)

  loop test with adapter 1 DTR->DSR, RTS->CTS
- Result testLoop2 (in string devfile)

  loop test with adapter 2 DTR->DCD, RTS->RI

9.185.1 Detailed Description

Test routines for full RS232 Serial Interface.

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/testrpc.idl

9.186 event::Engine::Rule Struct Reference

A Rule binds an action to a condition.

```
import "EventEngine.idl";
```

Public Attributes

- string id

  Rule ID.
- string name

  User-defined name.
- boolean isSystem

  `true` *for system-defined rules*
- boolean isEnabled

  `true` *if the rule is enabled*
- boolean isAutoRearm

  `true` *for auto-rearming rules*
- boolean hasMatched

  `true` *if the rule has matched since being armed*
- Condition condition

  Trigger condition.
- vector< string > actionIds

  List of action IDs.
- vector< KeyValue > arguments

  Argument map.

9.186.1 Detailed Description

A Rule binds an action to a condition.

The 'id' is an unique identification within the scope of this event engine. The 'name' is unique as well and used by the GUI as user readable identificator. The flag 'isAutoRearm' determines whether actions are triggered again after condition reoccurres. The 'hasMatched' flag is true if the condition was true once and the rule is not rearmed

yet. The 'isSystem' flag is readonly and if set marks the action as not deletable. The 'actionIds' are the actions to perform if the rule evaluates to true. The arguments are passed to the actions.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/EventEngine.idl

9.187 pdumodel::Ade::Sample Struct Reference

Raw sample data for a single channel.

```
import "Ade.idl";
```

Public Attributes

- long vrms
  RMS voltage.
- long irms
  RMS current.
- long watt
  Active power.
- long va
  Apparent power.
- long wh
  Active energy (for this sample)
- long vah
  Apparent energy (for this sample)

9.187.1 Detailed Description

Raw sample data for a single channel.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Ade.idl

9.188 event::TimerEventManager_2_0_0::Schedule Struct Reference

Schedule structure.

```
import "TimerEventManager.idl";
```

Public Attributes

- boolean enabled
  Whether the timer event is enabled.
- vector< Range > minute
  Ranges for minute.
- vector< Range > hour
  Ranges for hour.
- vector< Range > dayOfMonth

Ranges for day of month.

- vector< Range > month

  Ranges for month.

- vector< Range > dayOfWeek

  Ranges for day of week.

9.188.1 Detailed Description

Schedule structure.

An empty vector means a match for all values. The values range of every field depends on the meaning of the field. For minutes 0-59 is possible, for hour 0-24 and for day of month 0-31. For month and day of weeks the definitions above should be used.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/TimerEventManager.idl

9.189 security::Security_3_0_0 Interface Reference

Security configuration interface

```
import "Security.idl";
```

Classes

- struct Settings

  Security configuration This structure is deprecated and will be removed in V3.0, use concrete getters and setters instead!

Public Member Functions

- Settings getSettings ()

  Retrieve the security configuration.

- int setSettings (in Settings settings)

  Set the security configuration.

- void setHttpRedirSettings (in boolean http2httpsRedir)

  Enable or disable HTTP-to-HTTPS redirection.

- int setIpFwSettings (in IpFw_2_0_0 ipFw)

  Set the IP packet filter configuration.

- int setIpV6FwSettings (in IpFw_2_0_0 ipV6Fw)

  Set the IPv6 packet filter configuration.

- int setRoleAccessControlSettings (in RoleAccessControl settings)

  Change the role-based access control settings.

- int setRoleAccessControlSettingsV6 (in RoleAccessControl settings)

  Change the role-based access control settings for IPv6.

- int setBlockSettings (in int blockTimeout, in int maxFailedLogins)

  Change the user blocking settings.

- int setPwSettings (in PasswordSettings pwSettings)

  Change the password settings.

- int setIdleTimeoutSettings (in int idleTimeout)

  Change the session idle timeout.

- void setSingleLoginLimitation (in boolean singleLogin)

  Enable or disable single login limitation.
- int getIdleTimeoutSettings ()

  Retrieve the current idle timeout.
- boolean getHttpRedirSettings ()

  Retrieve the current state of the HTTP-to-HTTPS redirection.
- void getBlockSettings (out int blockTimeout, out int maxFailedLogins)

  Retrieve the current user blocking settings.
- SSHSettings getSSHSettings ()

  Retrieve the current SSH settings.
- void setSSHSettings (in SSHSettings settings)

  Change the SSH settings.
- RestrictedServiceAgreement getRestrictedServiceAgreement ()

  Retrieve the current Restricted Service Agreement settings.
- int setRestrictedServiceAgreement (in RestrictedServiceAgreement settings)

  Change the Restricted Service Agreement settings.
- vector< string > getSupportedFrontPanelPrivileges ()

  Retrieve a list of supported privileges for the front panel.
- int setFrontPanelPrivileges (in vector< string > privileges)

  Set the privileges for the front panel.
- vector< string > getFrontPanelPrivileges ()

  Retrieve the list of active front panel privileges.

Public Attributes

- constant int ERR_INVALID_VALUE = 1

  Invalid arguments.

9.189.1 Detailed Description

Security configuration interface

9.189.2 Member Function Documentation

9.189.2.1 void security::Security_3_0_0::getBlockSettings (out int *blockTimeout,* out int *maxFailedLogins*)

Retrieve the current user blocking settings.

Returns

blockTimeout The block timeout in minutes
maxFailedLogins The maximum failure count

9.189.2.2 vector<string> security::Security_3_0_0::getFrontPanelPrivileges ( )

Retrieve the list of active front panel privileges.

Returns

List of privilege names

9.189.2.3 boolean security::Security_3_0_0::getHttpRedirSettings ( )

Retrieve the current state of the HTTP-to-HTTPS redirection.

Returns

`true` if the HTTP-to-HTTPS redirection is enabled

9.189.2.4 int security::Security_3_0_0::getIdleTimeoutSettings ( )

Retrieve the current idle timeout.

Returns

Idle timeout in minutes

9.189.2.5 RestrictedServiceAgreement security::Security_3_0_0::getRestrictedServiceAgreement ( )

Retrieve the current Restricted Service Agreement settings.

Returns

Restricted Service Agreement settings

9.189.2.6 Settings security::Security_3_0_0::getSettings ( )

Retrieve the security configuration.

This method is depreacted and will be removed in V3.0, use concrete getter instead!

Returns

Security configuration

9.189.2.7 SSHSettings security::Security_3_0_0::getSSHSettings ( )

Retrieve the current SSH settings.

Returns

SSH settings

9.189.2.8 vector<string> security::Security_3_0_0::getSupportedFrontPanelPrivileges ( )

Retrieve a list of supported privileges for the front panel.

Returns

List of privilege names

9.189.2.9 int security::Security_3_0_0::setBlockSettings (in int *blockTimeout,* in int *maxFailedLogins*)

Change the user blocking settings.

Parameters

blockTimeout	User blocking timeout in minutes
maxFailedLogins	Maximum number of failed logins

Returns

0 on success
ERR_INVALID_VALUE if any argument was invalid

9.189.2.10 int security::Security_3_0_0::setFrontPanelPrivileges (in vector< string > *privileges*)

Set the privileges for the front panel.

Returns

0 on success
ERR_INVALID_VALUE if any argument was invalid

9.189.2.11 void security::Security_3_0_0::setHttpRedirSettings (in boolean *http2httpsRedir*)

Enable or disable HTTP-to-HTTPS redirection.

Parameters

http2httpsRedir	`true` to enable the redirection

9.189.2.12 int security::Security_3_0_0::setIdleTimeoutSettings (in int *idleTimeout*)

Change the session idle timeout.

Parameters

idleTimeout	New idle timeout in minutes

Returns

0 on success
ERR_INVALID_VALUE if any argument was invalid

9.189.2.13 int security::Security_3_0_0::setIpFwSettings (in IpFw_2_0_0 *ipFw*)

Set the IP packet filter configuration.

Parameters

ipFw	New packet filter settings

Returns

0 on success
ERR_INVALID_VALUE if any argument was invalid

9.189.2.14 int security::Security_3_0_0::setIpV6FwSettings (in IpFw_2_0_0 *ipV6Fw*)

Set the IPv6 packet filter configuration.

Parameters

ipV6Fw	New packet filter settings

Returns

0 on success
ERR_INVALID_VALUE if any argument was invalid

9.189.2.15 int security::Security_3_0_0::setPwSettings (in PasswordSettings *pwSettings*)

Change the password settings.

Parameters

pwSettings	New settings

Returns

0 on success
ERR_INVALID_VALUE if any argument was invalid

9.189.2.16 int security::Security_3_0_0::setRestrictedServiceAgreement (in RestrictedServiceAgreement *settings*)

Change the Restricted Service Agreement settings.

Parameters

settings	New settings

Returns

0 on success
ERR_INVALID_VALUE if any argument was invalid

9.189.2.17 int security::Security_3_0_0::setRoleAccessControlSettings (in RoleAccessControl *settings*)

Change the role-based access control settings.

Parameters

settings	New settings

Returns

0 on success
ERR_INVALID_VALUE if any argument was invalid

9.189.2.18 int security::Security_3_0_0::setRoleAccessControlSettingsV6 (in RoleAccessControl *settings*)

Change the role-based access control settings for IPv6.

Parameters

settings	New settings

Returns

0 on success
ERR_INVALID_VALUE if any argument was invalid

9.189.2.19 int security::Security_3_0_0::setSettings (in Settings *settings*)

Set the security configuration.

This method is depreacted and will be removed in V3.0, use concrete setter instead!

Parameters

settings	New security settings

Returns

0 on success
ERR_INVALID_VALUE if any argument was invalid

9.189.2.20 void security::Security_3_0_0::setSingleLoginLimitation (in boolean *singleLogin*)

Enable or disable single login limitation.

Parameters

singleLogin	`true` to enable single login limitation

9.189.2.21 void security::Security_3_0_0::setSSHSettings (in SSHSettings *settings*)

Change the SSH settings.

Parameters

settings	New settings

The documentation for this interface was generated from the following file:

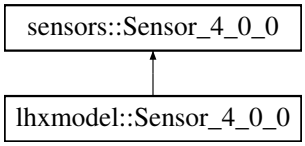
- pdu-json-rpc-api/idl/Security.idl

9.190 lhxmodel::Sensor_4_0_0 Interface Reference

LHX Sensor Interface.

```
import "LhxSensor.idl";
```

Inheritance diagram for lhxmodel::Sensor_4_0_0:



Classes

- struct MetaData

  Sensor's self describing data.
- struct NumThresholds

  Numerical sensor thresholds.
- struct Reading

  Sensor reading.

Public Member Functions

- MetaData getMetaData ()

  Retrieve the LHX metadata.
- NumThresholds getThresholds ()

  Retrieve Numeric Thresholds.
- int setThresholds (in NumThresholds thresholds)

  Set Numeric Thresholds.
- Reading getReading ()

  Retrieve sensors reading.

Public Attributes

- constant int STATE_NOT_AVAILABLE = -1

  Communication to sensor lost.
- constant int STATE_CLOSED = 0

  Closed.
- constant int STATE_OPEN = 1

  Open.
- constant int STATE_NUM_NORMAL = 0

  Numerical sensor in normal range.
- constant int STATE_NUM_ABOVE_UPPER_CRITICAL = 1

  Above upper critical threshold.
- constant int STATE_NUM_ABOVE_UPPER_WARNING = 2

  Above upper warning threshold.
- constant int STATE_NUM_BELOW_LOWER_WARNING = 3

  Below lower warning threshold.
- constant int STATE_NUM_BELOW_LOWER_CRITICAL = 4

  Below lower critical threshold.
- valueobject ThresholdsChangedEvent: event.UserEvent { NumThresholds oldThresholds

  Event: Sensor thresholds have been changed.
- NumThresholds newThresholds

  Thresholds after change.

- valueobject StateChangedEvent: idl.Event { Reading oldReading

  Event: Sensor state has changed.
- Reading newReading

  Reading after change.
- valueobject ReadingChangedEvent: idl.Event { Reading newReading

  Event: Sensor numeric reading has changed.
- constant int ERR_INVALID_PARAM = 1

  Invalid parameters.
- constant int ERR_NOT_SUPPORTED = 2

  Not supported.

Additional Inherited Members

9.190.1 Detailed Description

LHX Sensor Interface.

9.190.2 Member Function Documentation

9.190.2.1 MetaData lhxmodel::Sensor_4_0_0::getMetaData ( )

Retrieve the LHX metadata.

Returns

metadata

9.190.2.2 Reading lhxmodel::Sensor_4_0_0::getReading ( )

Retrieve sensors reading.

Returns

reading

9.190.2.3 NumThresholds lhxmodel::Sensor_4_0_0::getThresholds ( )

Retrieve Numeric Thresholds.

Returns

sensor thresholds

9.190.2.4 int lhxmodel::Sensor_4_0_0::setThresholds (in NumThresholds *thresholds*)

Set Numeric Thresholds.

Returns

0 if OK
ERR_INVALID_PARAM if any parameters are invalid

9.190.3 Member Data Documentation

9.190.3.1 valueobject lhxmodel::Sensor_4_0_0::ReadingChangedEvent

Event: Sensor numeric reading has changed.

New reading

9.190.3.2 valueobject lhxmodel::Sensor_4_0_0::StateChangedEvent

Event: Sensor state has changed.

Reading before change

9.190.3.3 valueobject lhxmodel::Sensor_4_0_0::ThresholdsChangedEvent

Event: Sensor thresholds have been changed.

Thresholds before change

The documentation for this interface was generated from the following file:

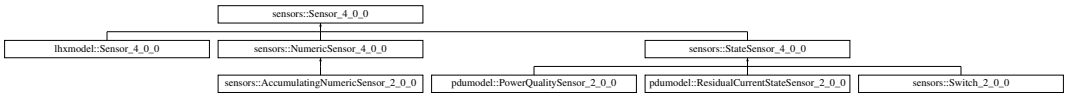
- pdu-json-rpc-api/idl/LhxSensor.idl

9.191 sensors::Sensor_4_0_0 Interface Reference

Sensor interface

```
import "Sensor.idl";
```

Inheritance diagram for sensors::Sensor_4_0_0:



Classes

- struct TypeSpec

  Complete sensor type specification.

Public Types

- enum OnOffState { OFF, ON }

  DISCRETE_ON_OFF Sensor State.

Public Member Functions

- TypeSpec getTypeSpec ()

  Retrieve the sensor type specification.
- int setType (in int type, in int unit)

  Set sensor type and unit.

Public Attributes

- constant int ERR_NOT_SUPPORTED = 1

  The operation is not supported.
- constant int NUMERIC = 0

  Sensor reading type
- constant int **DISCRETE_ON_OFF** = 1
- constant int **DISCRETE_MULTI** = 2
- constant int UNSPECIFIED = 0

  Sensor type
- constant int **VOLTAGE** = 1
- constant int **CURRENT** = 2
- constant int **UNBALANCE_CURRENT** = 3
- constant int **POWER** = 4
- constant int **POWER_FACTOR** = 5
- constant int **ENERGY** = 6
- constant int **FREQUENCY** = 7
- constant int **TEMPERATURE** = 8
- constant int **HUMIDITY** = 9
- constant int **AIR_FLOW** = 10
- constant int **AIR_PRESSURE** = 11
- constant int **CONTACT_CLOSURE** = 12
- constant int **ON_OFF_SENSOR** = 13
- constant int **TRIP_SENSOR** = 14
- constant int **VIBRATION** = 15
- constant int **WATER_LEAK** = 16
- constant int **SMOKE_DETECTOR** = 17
- constant int **TOTAL_HARMONIC_DISTORTION** = 18
- constant int **MASS** = 19
- constant int **ELECTRICAL_RESISTANCE** = 20
- constant int **FLUX** = 21
- constant int **LUMINOUS_INTENSITY** = 22
- constant int **ACCELERATION** = 23
- constant int **MAGNETIC_FLUX_DENSITY** = 24
- constant int **ELECTRIC_FIELD_STRENGTH** = 25
- constant int **MAGNETIC_FIELD_STRENGTH** = 26
- constant int **ANGLE** = 27
- constant int **SELECTION** = 28
- constant int **FAULT_STATE** = 29
- constant int **POWER_QUALITY** = 30
- constant int **ROTATIONAL_SPEED** = 31
- constant int **LUMINOUS_ENERGY** = 32
- constant int **LUMINOUS_FLUX** = 33
- constant int **ILLUMINANCE** = 34
- constant int **LUMINOUS_EMITTANCE** = 35
- constant int **MOTION** = 36
- constant int **OCCUPANCY** = 37
- constant int **TAMPER** = 38
- constant int **DRY_CONTACT** = 39
- constant int **POWERED_DRY_CONTACT** = 40
- constant int NONE = 0

  Sensor unit
- constant int **VOLT** = 1
- constant int **AMPERE** = 2

- constant int **WATT** = 3
- constant int **VOLT_AMP** = 4
- constant int **WATT_HOUR** = 5
- constant int **VOLT_AMP_HOUR** = 6
- constant int **DEGREE_CELSIUS** = 7
- constant int **HZ** = 8
- constant int **PERCENT** = 9
- constant int **METER_PER_SEC** = 10
- constant int **PASCAL** = 11
- constant int **G** = 12
- constant int **RPM** = 13
- constant int **METER** = 14
- constant int **HOUR** = 15
- constant int **MINUTE** = 16
- constant int **SECOND** = 17
- constant int **VOLT_AMP_REACTIVE** = 18
- constant int **VOLT_AMP_REACTIVE_HOUR** = 19
- constant int **GRAM** = 20
- constant int **OHM** = 21
- constant int **LITERS_PER_HOUR** = 22
- constant int **CANDELA** = 23
- constant int **METER_PER_SQARE_SEC** = 24
- constant int **TESLA** = 25
- constant int **VOLT_PER_METER** = 26
- constant int **VOLT_PER_AMPERE** = 27
- constant int **DEGREE** = 28
- constant int **DEGREE_FAHRENHEIT** = 29
- constant int **KELVIN** = 30
- constant int **JOULE** = 31
- constant int **COULOMB** = 32
- constant int **NIT** = 33
- constant int **LUMEN** = 34
- constant int **LUMEN_SECOND** = 35
- constant int **LUX** = 36
- constant int **PSI** = 37
- constant int **NEWTON** = 38
- constant int **FOOT** = 39
- constant int **FOOT_PER_SEC** = 40
- constant int **CUBIC_METER** = 41
- constant int **RADIANT** = 42
- constant int **STERADIANT** = 43
- constant int **HENRY** = 44
- constant int **FARAD** = 45
- constant int **MOL** = 46
- constant int **BECQUEREL** = 47
- constant int **GRAY** = 48
- constant int **SIEVERT** = 49
- constant int **G_PER_CUBIC_METER** = 50
- valueobject TypeSpecChangedEvent: idl.Event { TypeSpec oldTypeSpec

  Event: The type specification of the sensor changed.
- TypeSpec newTypeSpec

  Type specification after change.

9.191.1 Detailed Description

Sensor interface

9.191.2 Member Enumeration Documentation

9.191.2.1 enum sensors::Sensor_4_0_0::OnOffState

DISCRETE_ON_OFF Sensor State.

Enumerator

OFF off

ON on

9.191.3 Member Function Documentation

9.191.3.1 TypeSpec sensors::Sensor_4_0_0::getTypeSpec ( )

Retrieve the sensor type specification.

Returns

Type specification

9.191.3.2 int sensors::Sensor_4_0_0::setType (in int *type*, in int *unit*)

Set sensor type and unit.

Parameters

type	the sensor type to set
unit	the sensor unit to set

Returns

ERR_NOT_SUPPORTED or 0

9.191.4 Member Data Documentation

9.191.4.1 valueobject sensors::Sensor_4_0_0::TypeSpecChangedEvent

Event: The type specification of the sensor changed.

Type specification before change

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/Sensor.idl

9.192 pdumodel::OverCurrentProtector_2_1_2::Sensors Struct Reference

Overcurrent protector sensors.

```
import "OverCurrentProtector.idl";
```

Public Attributes

- sensors StateSensor_4_0_0 trip

  Trip sensor.
- sensors NumericSensor_4_0_0 current

  RMS current sensor.
- sensors NumericSensor_4_0_0 peakCurrent

  Peak current sensor.

9.192.1 Detailed Description

Overcurrent protector sensors.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/OverCurrentProtector.idl

9.193 pdumodel::Pdu_3_0_0::Sensors Struct Reference

PDU sensors.

```
import "Pdu.idl";
```

Public Attributes

- vector< sensors.StateSensor_4_0_0 > powerSupplyStatus

  Power supply fault status.
- sensors NumericSensor_4_0_0 activePower

  Active power sensor.
- sensors NumericSensor_4_0_0 activeEnergy

  Active energy sensor.

9.193.1 Detailed Description

PDU sensors.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Pdu.idl

9.194 pdumodel::Inlet_1_2_6::Sensors Struct Reference

Inlet sensors

```
import "Inlet.idl";
```

Public Attributes

- sensors NumericSensor_4_0_0 voltage

  RMS voltage sensor.
- sensors NumericSensor_4_0_0 current

RMS current sensor.

- sensors NumericSensor_4_0_0 peakCurrent

  Peak current sensor.
- sensors NumericSensor_4_0_0 residualCurrent

  Residual current sensor.
- sensors NumericSensor_4_0_0 activePower

  Active power sensor.
- sensors NumericSensor_4_0_0 apparentPower

  Apparent power sensor.
- sensors NumericSensor_4_0_0 powerFactor

  Power factor sensor.
- sensors NumericSensor_4_0_0 activeEnergy

  Active energy sensor.
- sensors NumericSensor_4_0_0 apparentEnergy

  Apparent energy sensor.
- sensors NumericSensor_4_0_0 unbalancedCurrent

  Current unbalance sensor.
- sensors NumericSensor_4_0_0 lineFrequency

  Line AC frequency sensor.
- sensors NumericSensor_4_0_0 phaseAngle

  Phase angle sensor.
- sensors StateSensor_4_0_0 powerQuality

  Power quality sensor.
- sensors StateSensor_4_0_0 surgeProtectorStatus

  Surge protector status sensor.
- ResidualCurrentStateSensor_2_0_0 residualCurrentStatus

  Residual current monitor state sensor.

9.194.1 Detailed Description

Inlet sensors

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Inlet.idl

9.195 pdumodel::TransferSwitch_3_1_1::Sensors Struct Reference

Transfer switch sensors.

```
import "TransferSwitch.idl";
```

Public Attributes

- sensors StateSensor_4_0_0 selectedSource

  Selected source sensor.
- sensors StateSensor_4_0_0 operationalState

  Operational state sensor (off, normal, standby)
- sensors NumericSensor_4_0_0 sourceVoltagePhaseSyncAngle

  Maximum phase difference between two sources.
- sensors StateSensor_4_0_0 overloadAlarm

Overload alarm.

- sensors StateSensor_4_0_0 phaseSyncAlarm

  Source phases out of sync.

- sensors StateSensor_4_0_0 switchFault

  Switch fault (ok, open, short)

9.195.1 Detailed Description

Transfer switch sensors.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/TransferSwitch.idl

9.196 pdumodel::Outlet_1_5_6::Sensors Struct Reference

Outlet sensors

```
import "Outlet.idl";
```

Public Attributes

- sensors NumericSensor_4_0_0 voltage

  RMS voltage sensor.

- sensors NumericSensor_4_0_0 current

  RMS current sensor.

- sensors NumericSensor_4_0_0 peakCurrent

  Peak current sensor.

- sensors NumericSensor_4_0_0 maximumCurrent

  Maximum current sensor.

- sensors NumericSensor_4_0_0 unbalancedCurrent

  Current unbalance sensor.

- sensors NumericSensor_4_0_0 activePower

  Active power sensor.

- sensors NumericSensor_4_0_0 apparentPower

  Apparent power sensor.

- sensors NumericSensor_4_0_0 powerFactor

  Power factor sensor.

- sensors NumericSensor_4_0_0 activeEnergy

  Active energy sensor.

- sensors NumericSensor_4_0_0 apparentEnergy

  Apparent energy sensor.

- sensors NumericSensor_4_0_0 phaseAngle

  Phase angle sensor.

- sensors NumericSensor_4_0_0 lineFrequency

  AC line frequency sensor.

- sensors StateSensor_4_0_0 outletState

  Outlet power state sensor

9.196.1 Detailed Description

Outlet sensors

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Outlet.idl

9.197 sensors::Logger_2_1_2::SensorSet Struct Reference

Set of logged sensors.

```
import "SensorLogger.idl";
```

Public Attributes

- vector< sensors.Sensor_4_0_0 > sensors

  List of numeric or state sensors.
- vector < peripheral.DeviceSlot_2_0_0 > slots

  List of peripheral device slots.

9.197.1 Detailed Description

Set of logged sensors.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/SensorLogger.idl

9.198 serial::SerialPort_2_0_0 Interface Reference

Interface describing a physical serial port and the devices which can be attached to it.

```
import "SerialPort.idl";
```

Classes

- struct Settings

  Port settings.
- struct State

  Structure holding information about the current state of the port.

Public Types

- enum PortState { CONSOLE, ANALOGMODEM, GSMMODEM }

  Possible states the port can be in at a given time.
- enum BaudRate {
  BR1200, BR2400, BR4800, BR9600,
  BR19200, BR38400, BR57600, BR115200 }

  Possible baud rates.

Public Member Functions

- Settings getSettings ()

  Get current settings.
- int setSettings (in Settings settings)

  Set settings.
- State getState ()

  Get current port state.
- Object getModem ()

  Get modem connected to port.

Public Attributes

- constant int SUCCESS = 0

  Error codes.
- constant int ERR_INVALID_VALUE = 1

  Invalid arguments.
- valueobject ModemEvent: idl.Event { Object modem

  Event emitted when the modem connection state changes.
- valueobject ModemAddedEvent: ModemEvent { }

  Event emitted when a modem is connected.
- valueobject ModemRemovedEvent: ModemEvent { }

  Event emitted when a modem is disconnected.

9.198.1 Detailed Description

Interface describing a physical serial port and the devices which can be attached to it.

9.198.2 Member Enumeration Documentation

9.198.2.1 enum serial::SerialPort_2_0_0::BaudRate

Possible baud rates.

Enumerator

BR1200 1.200 kbit/s

BR2400 2.400 kbit/s

BR4800 4.800 kbit/s

BR9600 9.600 kbit/s

BR19200 19.200 kbit/s

BR38400 38.400 kbit/s

BR57600 57.600 kbit/s

BR115200 115.200 kbit/s

9.198.2.2 enum serial::SerialPort_2_0_0::PortState

Possible states the port can be in at a given time.

Enumerator

CONSOLE No modem is attached, the console application is running on the port.

ANALOGMODEM An analog modem is attached to the port.

GSMMODEM A GSM modem is attached to the port.

9.198.3 Member Function Documentation

9.198.3.1 Object serial::SerialPort_2_0_0::getModem ( )

Get modem connected to port.

Returns

– an instance of the connected modem (either AnalogModem or GsmModem)

9.198.3.2 Settings serial::SerialPort_2_0_0::getSettings ( )

Get current settings.

Returns

– Settings

9.198.3.3 State serial::SerialPort_2_0_0::getState ( )

Get current port state.

Returns

– Port state

9.198.3.4 int serial::SerialPort_2_0_0::setSettings (in Settings *settings*)

Set settings.

Parameters

settings	– new settings

Returns

SUCCESS – on success
ERR_INVALID_VALUE – if any passed value was invalid

9.198.4 Member Data Documentation

9.198.4.1 valueobject serial::SerialPort_2_0_0::ModemEvent

Event emitted when the modem connection state changes.

Either a AnalogModem or a GsmModem

9.198.4.2 constant int serial::SerialPort_2_0_0::SUCCESS = 0

Error codes.

No error

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/SerialPort.idl

9.199 servermon::ServerMonitor_2_0_0::Server Struct Reference

Server Entry.

```
import "ServerMonitor.idl";
```

Public Attributes

- ServerSettings settings

  Server settings.
- ServerStatus status

  Server status.

9.199.1 Detailed Description

Server Entry.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/ServerMonitor.idl

9.200 servermon::ServerMonitor_2_0_0 Interface Reference

Server Monitor Interface.

```
import "ServerMonitor.idl";
```

Classes

- struct Server

  Server Entry.
- struct ServerSettings

  Server Reachability Settings.
- struct ServerStatus

  Server Reachability Status.

Public Types

- enum ServerReachability { WAITING, REACHABLE, UNREACHABLE, ERROR }

  Server Reachability State.

Public Member Functions

- int addServer (out int id, in ServerSettings settings)

  Add a new server entry.
- int modifyServer (in int id, in ServerSettings settings)

  Modify an existing server entry.
- int deleteServer (in int id)

  Delete a server entry.
- int getServer (out Server server, in int id)

  Retrieve a server entry (settings and status).
- map< int, Server > listServers ()

  Retrieve a list of server entries (settings and status).

Public Attributes

- constant int ERR_NO_SUCH_ID = 1

  No such ID.
- constant int ERR_INVALID_SETTINGS = 2

  Invalid settings.
- constant int ERR_DUPLICATE_HOSTNAME = 3

  Duplicate hostname.
- constant int ERR_MAX_SERVERS_REACHED = 4

  Maximum number of server entries.

9.200.1 Detailed Description

Server Monitor Interface.

9.200.2 Member Enumeration Documentation

9.200.2.1 enum servermon::ServerMonitor_2_0_0::ServerReachability

Server Reachability State.

Enumerator

WAITING Waiting for reliable connection.

REACHABLE Server is up and running.

UNREACHABLE No response from server.

ERROR Error pinging server (e.g. DNS lookup failure)

9.200.3 Member Function Documentation

9.200.3.1 int servermon::ServerMonitor_2_0_0::addServer (out int *id,* in ServerSettings *settings*)

Add a new server entry.

Parameters

id	New entry id, automatically assigned
settings	New server settings

Returns

0 if OK
2 if the settings are invalid
3 if an entry for the given hostname exists
4 if the maximum number of servers is reached

9.200.3.2 int servermon::ServerMonitor_2_0_0::deleteServer (in int *id*)

Delete a server entry.

Parameters

id	Entry id

Returns

0 if OK
1 if the entry does not exist

9.200.3.3 int servermon::ServerMonitor_2_0_0::getServer (out Server *server,* in int *id*)

Retrieve a server entry (settings and status).

Parameters

server	Server settings and status
id	Entry id

Returns

0 if OK
1 if the entry does not exist

9.200.3.4 map<int, Server> servermon::ServerMonitor_2_0_0::listServers ( )

Retrieve a list of server entries (settings and status).

Returns

Server list

9.200.3.5 int servermon::ServerMonitor_2_0_0::modifyServer (in int *id,* in ServerSettings *settings*)

Modify an existing server entry.

Parameters

id	Entry id
settings	New settings

Returns

0 if OK
1 if the entry does not exist
2 if the settings are invalid
3 if an entry for the given hostname exists

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/ServerMonitor.idl

9.201 auth::ldapsrv::ServerSettings Struct Reference

Server settings.

```
import "LdapServerSettings.idl";
```

Public Attributes

- string id
  Entry ID.
- string primaryServer
  IP or name of primary server.
- string secondaryServer
  IP or name of secondary server.
- string adoptSettingsId
  Use settings from LDAP server with <ID>
- ServerType type
  Type of LDAP server.
- int port
  Server port.
- int sslPort
  SSL port.
- boolean useSSL
  Use SSL.
- boolean forceTrustedCert
  Enforce trusted certificates.
- string certificate
  Certificates.
- string adsDomain
  ADS domain.
- boolean useAnonymousBind
  use anonymous bind

- string bindDN
  Bind DN.
- string bindPwd
  Bind password.
- string searchBaseDN
  Base DN for search.
- string loginNameAttr
  Login name attribute.
- string userEntryObjClass
  User entry object class.
- string userSearchFilter
  User search subfilter.

9.201.1 Detailed Description

Server settings.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/LdapServerSettings.idl

9.202 radius::ServerSettings Struct Reference

Server settings.

```
import "RadiusServerSettings.idl";
```

Public Attributes

- string id
  Entry ID.
- string server
  IP or name of the radius servers.
- string **sharedSecret**
- int **udpAuthPort**
- int **udpAccountPort**
- int **timeout**
- int **retries**
- AuthType **authType**

9.202.1 Detailed Description

Server settings.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/RadiusServerSettings.idl

9.203 servermon::ServerMonitor_2_0_0::ServerSettings Struct Reference

Server Reachability Settings.

```
import "ServerMonitor.idl";
```

Public Attributes

- string host

  Server hostname/IP address.
- boolean enabled

  Pinging enabled.
- int pingInterval

  Wait time after successful ping.
- int retryInterval

  Wait time after unsuccessful ping.
- int activationCount

  Minimum number of successful pings to enable feature.
- int failureCount

  Number of unsuccessful pings to consider server down.
- int resumeDelay

  Wait time before resuming pinging.
- int resumeCount

  Number of resumes before going back to WAITING state.

9.203.1 Detailed Description

Server Reachability Settings.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/ServerMonitor.idl

9.204 cert::ServerSSLCert Interface Reference

SSL certificate management interface.

```
import "ServerSSLCert.idl";
```

Classes

- struct CertInfo

  Certificate information.
- struct CommonAttributes

  Certificate issuer or subject attributes.
- struct Info

  Certificate manager information.
- struct ReqInfo

  Certificate signing request information.

Public Member Functions

- int generateUnsignedKeyPair (in ReqInfo reqInfo, in string challenge)

  Generate an unsigned key pair.
- int generateSelfSignedKeyPair (in ReqInfo reqInfo, in int days)

  Generate a self-signed key pair.
- void deletePending ()

Remove a pending certificate signing request or certificate.

- void getInfo (out Info info)

  Retrieve certificate manager information.

- int installPendingKeyPair ()

  Activate a pending key pair.

9.204.1 Detailed Description

SSL certificate management interface.

9.204.2 Member Function Documentation

9.204.2.1 int cert::ServerSSLCert::generateSelfSignedKeyPair (in ReqInfo *reqInfo,* in int *days*)

Generate a self-signed key pair.

Parameters

reqInfo	Certificate signing request information
days	Number of days the certificate will be valid

Returns

0 if OK
1 if the requested key length is invalid
2 if there is already a pending CSR
3 if the key generation failed

9.204.2.2 int cert::ServerSSLCert::generateUnsignedKeyPair (in ReqInfo *reqInfo,* in string *challenge*)

Generate an unsigned key pair.

Parameters

reqInfo	Certificate signing request information
challenge	Challenge password

Returns

0 if OK
1 if the requested key length is invalid
2 if there is already a pending CSR
3 if the key generation failed

9.204.2.3 void cert::ServerSSLCert::getInfo (out Info *info*)

Retrieve certificate manager information.

Parameters

info	Result: Certificate manager information

9.204.2.4 int cert::ServerSSLCert::installPendingKeyPair ( )

Activate a pending key pair.

Returns

0 if OK
1 if no key is pending
2 if no certificate is pending
3 if the certificate format is invalid
4 if the certificate does not match the key

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/ServerSSLCert.idl

9.205 servermon::ServerMonitor_2_0_0::ServerStatus Struct Reference

Server Reachability Status.

```
import "ServerMonitor.idl";
```

Public Attributes

- ServerReachability reachable
  Reachability state.
- time lastRequest
  Timestamp of last request sent.
- time lastResponse
  Timestamp of last response received.
- int requests
  Number of requests sent.
- int responses
  Number of responses received.
- int failures
  Number of consecutive failed pings.
- int resumes
  Number of resumes.

9.205.1 Detailed Description

Server Reachability Status.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/ServerMonitor.idl

9.206 event::Service_1_0_1 Interface Reference

Event Service.

```
import "EventService.idl";
```

Public Member Functions

- Channel_1_0_1 createChannel ()

  Create a new event channel.
- int destroyChannel (in Channel_1_0_1 channel)

  Destroy an event channel.
- void pushEvent (in idl.Event event)

  Push an Event into the service and to all existing receiver channels.
- void pushEvents (in vector< idl.Event > events)

  Push a vector of Events into the service and to all existing receiver channels.

Public Attributes

- constant int **INVALID_CHANNEL** = 1

9.206.1 Detailed Description

Event Service.

9.206.2 Member Function Documentation

9.206.2.1 Channel_1_0_1 event::Service_1_0_1::createChannel ( )

Create a new event channel.

Returns

New event channel reference or nil if all channels have been used

9.206.2.2 int event::Service_1_0_1::destroyChannel (in Channel_1_0_1 *channel*)

Destroy an event channel.

Parameters

channel	Event channel reference

Returns

0 if OK
INVALID_CHANNEL if channel is not implemented by this Service

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/EventService.idl

9.207 security::ServiceAuthorization Interface Reference

Service Authorization Configuration.

```
import "ServiceAuthorization.idl";
```

Public Member Functions

- int setPassword (in string service, in string password)

  Change a certain service password.

Public Attributes

- constant int ERR_PASSWORD_INVALID = 1

  Invalid password.

9.207.1 Detailed Description

Service Authorization Configuration.

9.207.2 Member Function Documentation

9.207.2.1 int security::ServiceAuthorization::setPassword (in string *service,* in string *password*)

Change a certain service password.

Parameters

service	The service to set the password for
password	The new password

Returns

0 if ok
ERR_PASSWORD_INVALID if new password cannot be applied

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/ServiceAuthorization.idl

9.208 net::ServiceConfig Struct Reference

Network service configuration.

```
import "Net.idl";
```

Public Attributes

- string service

  Service name.

- boolean enable

  `true` *if the service is enabled*

- int port

  Service TCP port.

9.208.1 Detailed Description

Network service configuration.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Net.idl

9.209 session::Session Struct Reference

Session information

```
import "SessionManager.idl";
```

Public Attributes

- string token

  Session token to be used for authentication
- string username

  Name of user owning the session.
- string remoteIp

  Session IP address.
- string clientType

  Client type.
- time creationTime

  Session creation timestamp.
- int timeout

  Session timeout in seconds.
- int idle

  Session idle time in seconds.
- int userIdle

  User idle time in seconds.

9.209.1 Detailed Description

Session information

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/SessionManager.idl

9.210 session::SessionManager Interface Reference

Session manager interface

```
import "SessionManager.idl";
```

Public Types

- enum CloseReason { CLOSE_REASON_LOGOUT, CLOSE_REASON_TIMEOUT, CLOSE_REASON_BROWSER_CLOSED, CLOSE_REASON_FORCED_DISCONNECT }

  Session close reasons

Public Member Functions

- int newSession (out Session session)

  Open a new session.
- Session getSession (in string token)

  Retrieve information about session identified by token.
- Session getCurrentSession ()

  Retrieve current session information.
- vector< Session > getSessions ()

  Retrieve all open sessions.
- void closeSession (in string token, in CloseReason reason)

  Close a session identified by its token.
- void closeCurrentSession (in CloseReason reason)

  Close the current session.
- void touchSession (in string token)

  Reset a session's idle timer.
- void touchCurrentSession (in boolean userActivity)

  Reset the current session's idle timer.
- vector< HistoryEntry > getSessionHistory ()

  Get previous session data for the current user.

Public Attributes

- constant int ERR_ACTIVE_SESSION_EXCLUSIVE_FOR_USER = 1

  Session creation denied due to single login limitation.

9.210.1 Detailed Description

Session manager interface

Session manager allows clients to announce a user session, i.e. consecutive activity that is related to each other, and make use of session services. Depending on transport protocoll an established session allows simplified authentication using the session token. For instance, for HTTP transport implementation sessiontoken can be written into HTTP Header while other authentication schemes may be omitted (for details, see transport mapping documentation). Each session has a defined timeout and an idle timer. A session is deleted once idle time is equal or greater than session timeout. Idle timer is implicitely touched by transport implementation whenever a call arrives that can be mapped to a particular session. In addition a client may decide to call touchCurrentSession with userActivity flag set to true. In this case userIdle attribute of session is reset to 0. This has purely informational character and will not cause any further action of session manager. It may be used to determine user activity under the assumptions that clients may do frequent background calls without actual user activity.

9.210.2 Member Enumeration Documentation

9.210.2.1 enum session::SessionManager::CloseReason

Session close reasons

Enumerator

CLOSE_REASON_LOGOUT Regular logout.

CLOSE_REASON_TIMEOUT Session timed out.

CLOSE_REASON_BROWSER_CLOSED Browser window was closed.

CLOSE_REASON_FORCED_DISCONNECT Session was forcibly closed.

9.210.3 Member Function Documentation

9.210.3.1 void session::SessionManager::closeCurrentSession (in CloseReason *reason*)

Close the current session.

This call must be authenticated using a session token.

Parameters

reason	close reason

9.210.3.2 void session::SessionManager::closeSession (in string *token,* in CloseReason *reason*)

Close a session identified by its token.

Parameters

token	Session token
reason	close reason

9.210.3.3 Session session::SessionManager::getCurrentSession ( )

Retrieve current session information.

This call must be authenticated using a session token.

Returns

Session information

9.210.3.4 Session session::SessionManager::getSession (in string *token*)

Retrieve information about session identified by token.

Parameters

token	Session token

Returns

Session information

9.210.3.5 vector<HistoryEntry> session::SessionManager::getSessionHistory ( )

Get previous session data for the current user.

Returns

History data, sorted from newer to older sessions

9.210.3.6 vector<Session> session::SessionManager::getSessions ( )

Retrieve all open sessions.

Returns

List of sessions

9.210.3.7 int session::SessionManager::newSession (out Session *session*)

Open a new session.

This function will create a new session for the authenticated user. Upon success it will return a session token which can be used to authenticate future requests.

Parameters

session	Session information

Returns

0 if OK
1 if session creation was denied due to single login limitation

9.210.3.8 void session::SessionManager::touchCurrentSession (in boolean *userActivity*)

Reset the current session's idle timer.

Parameters

userActivity	Indicates that the session is touched due to user activity.

If userActivity is not set, this is internally a NOP since any RPC call will implicitely touch the session. This call must be authenticated using a session token.

9.210.3.9 void session::SessionManager::touchSession (in string *token*)

Reset a session's idle timer.

Parameters

token	Session token

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/SessionManager.idl

9.211 security::Security_3_0_0::Settings Struct Reference

Security configuration This structure is deprecated and will be removed in V3.0, use concrete getters and setters instead!

```
import "Security.idl";
```

Public Attributes

- boolean http2httpsRedir

  `true` *to enable HTTP-to-HTTPS redirection*

- int userBlockTimeout

  User blocking timeout in minutes.
- int userMaxFailedLogins

  Maximum number of failed logins before blocking a user.
- IpFw_2_0_0 ipFw

  IP packet filter configuration.
- IpFw_2_0_0 ipV6Fw

  IPv6 packet filter configuration.
- RoleAccessControl roleAccessControl

  Role-based access control settings.
- RoleAccessControl roleAccessControlV6

  Role-based access control settings for IPv6.
- PasswordSettings pwSettings

  Password settings.
- int idleTimeout

  Session idle timeout in minutes.
- boolean singleLogin

  `true` *to enable single login limitation*
- SSHSettings sshSettings

  SSH authentication settings.

9.211.1 Detailed Description

Security configuration This structure is deprecated and will be removed in V3.0, use concrete getters and setters instead!

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Security.idl

9.212 devsettings::Zeroconf::Settings Struct Reference

Zero-configservice settings.

```
import "Zeroconf.idl";
```

Public Attributes

- boolean mdnsEnabled

  Enable zero-config advertising via mDNS for device.

9.212.1 Detailed Description

Zero-configservice settings.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Zeroconf.idl

9.213 lhxmodel::Lhx_3_2_1::Settings Struct Reference

LHX settings.

```
import "Lhx.idl";
```

Public Attributes

- double setpointWaterValve

  setpoint temperature, default 20deg C
- double setpointVentilators

  setpoint temperature, default 3deg C / Pa
- double defaultFanSpeed

  fanspeed for 'normal' operation, default 80%

9.213.1 Detailed Description

LHX settings.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Lhx.idl

9.214 serial::GsmModem_1_0_1::Settings Struct Reference

Structure for holding settings of the GSM modem and its SIM card.

```
import "GsmModem.idl";
```

Public Attributes

- string pin

  PIN of the SIM card.
- string smsc

  ```
  Custom SMS center number (in ITU-T E.164 format),
  ```

  leave empty to use number stored on SIM card

9.214.1 Detailed Description

Structure for holding settings of the GSM modem and its SIM card.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/GsmModem.idl

9.215 pdumodel::Pdu_3_0_0::Settings Struct Reference

PDU settings.

```
import "Pdu.idl";
```

Public Attributes

- string name

  User-defined name.
- StartupState startupState

  Default outlet state on device startup; can be overriden per outlet.
- int cycleDelay

  Default power-cycle interval in seconds; can be overriden per outlet.
- int inRushGuardDelay

  Minimum delay in milliseconds between switching two outlets on.
- vector< int > outletPowerStateSequence

  The order in which multiple outlets should be switched.
- int powerOnDelay

  Delay in seconds before restoring outlet states after device startup.
- boolean latchingRelays

  If true, relays keep their state during power-cycling.

9.215.1 Detailed Description

PDU settings.

9.215.2 Member Data Documentation

9.215.2.1 vector<int> pdumodel::Pdu_3_0_0::Settings::outletPowerStateSequence

The order in which multiple outlets should be switched.

Format: List of outlet numbers (zero-based), empty for default.

Affects the following functions:

- `setAllOutletPowerStates`
- `cycleAllOutletPowerStates`
- `setMultipleOutletPowerStates`
- `cycleMultipleOutletPowerStates`

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Pdu.idl

9.216 pdumodel::OverCurrentProtector_2_1_2::Settings Struct Reference

Overcurrent protector settings.

```
import "OverCurrentProtector.idl";
```

Public Attributes

- string name

  User-defined name.

9.216.1 Detailed Description

Overcurrent protector settings.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/OverCurrentProtector.idl

9.217 serial::AnalogModem::Settings Struct Reference

Public Attributes

- boolean dialInEnabled

  Whether dial-in to device is enabled.
- int ringsUntilAnswer

  Number of rings until incoming call is answered.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/AnalogModem.idl

9.218 devsettings::Modbus::Settings Struct Reference

Modbus service settings

```
import "Modbus.idl";
```

Public Attributes

- TcpSettings tcp

  Modbus/TCP settings

9.218.1 Detailed Description

Modbus service settings

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Modbus.idl

9.219 pdumodel::Outlet_1_5_6::Settings Struct Reference

Outlet settings

```
import "Outlet.idl";
```

Public Attributes

- string name

  User-defined name.
- StartupState startupState

Power state on device startup.

- boolean usePduCycleDelay

  `true` *to use power-cycle delay as defined in PDU settings*

- int cycleDelay

  Outlet-specific power-cycle delay

- boolean nonCritical

  `true` *if outlet is non-critical (for load shedding)*

- int sequenceDelay

  Delay in ms after this outlet when switching multiple outlets on.

9.219.1 Detailed Description

Outlet settings

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Outlet.idl

9.220 peripheral::DeviceSlot_2_0_0::Settings Struct Reference

user configurable slot attributes

```
import "PeripheralDeviceSlot.idl";
```

Public Attributes

- string name

  User-defined name.

- string description

  User-defined description.

- Location location

  user-defined device location

- boolean useDefaultThresholds

  use default thresholds

- map< string, string > properties

  sensor specific settings

9.220.1 Detailed Description

user configurable slot attributes

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/PeripheralDeviceSlot.idl

9.221 sensors::Logger_2_1_2::Settings Struct Reference

Sensor logger settings.

```
import "SensorLogger.idl";
```

Public Attributes

- boolean isEnabled

  `true` if sensor logging is enabled
- int samplePeriod

  Sensor scan interval in milliseconds.
- int samplesPerRecord

  Number of samples per log record.
- int oldestRecId

  Id of oldest record in ring buffer.
- int newestRecId

  Id of newest record in ring buffer.
- int logCapacity

  Number of log records in ring buffer.

9.221.1 Detailed Description

Sensor logger settings.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/SensorLogger.idl

9.222 peripheral::DeviceManager_2_0_0::Settings Struct Reference

peripheral DeviceManager's s settings

```
import "PeripheralDeviceManager.idl";
```

Public Attributes

- ZCoordMode zCoordMode

  Z coordinate semantics.
- boolean autoManageNewDevices

  Automatically manage newly detected devices.
- float deviceAltitude

  Altitude of device in meters.
- int presenceDetectionTimeout

  Timeout for presence detection (sec)
- map< string, sensors.NumericSensor_4_0_0.Thresholds > defaultThresholdsMap

  Default thresholds by peripheral device type.

9.222.1 Detailed Description

peripheral DeviceManager's s settings

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/PeripheralDeviceManager.idl

9.223 pdumodel::Unit_2_0_1::Settings Struct Reference

Unit settings

```
import "Unit.idl";
```

Public Attributes

- boolean buzzerMuted

  `true` *if the buzzer is muted*
- boolean autoDisplayOrientation

  `true` *for automatic orientation control*
- Orientation displayOrientation

  `Manually` *configured orientation*

9.223.1 Detailed Description

Unit settings

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Unit.idl

9.224 pdumodel::TransferSwitch_3_1_1::Settings Struct Reference

Transfer switch settings.

```
import "TransferSwitch.idl";
```

Public Attributes

- string name

  User-defined name.
- int preferredSource

  Preferred inlet.
- boolean autoRetransfer

  Enable automatic retransfer if power on active inlet is restored.
- boolean noAutoRetransferIfPhaseFault

  Don't automatically retransfer if inlet phases are out of sync.
- int autoRetransferWaitTime

  Time (in s) to delay retransfer after power restoration.
- boolean manualTransferEnabled

  Enable state of 'manual transfer' front panel button.

9.224.1 Detailed Description

Transfer switch settings.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/TransferSwitch.idl

9.225 pdumodel::Inlet_1_2_6::Settings Struct Reference

Inlet settings

```
import "Inlet.idl";
```

Public Attributes

- string name

  User-defined name.

9.225.1 Detailed Description

Inlet settings

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Inlet.idl

9.226 serial::SerialPort_2_0_0::Settings Struct Reference

Port settings.

```
import "SerialPort.idl";
```

Public Attributes

- BaudRate consoleBaudRate

  Baud rate to be used for running the console application.
- BaudRate modemBaudRate

  Baud rate to be used for communicating with an attached modem.

9.226.1 Detailed Description

Port settings.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/SerialPort.idl

9.227 webcam::Settings_2_0_0 Struct Reference

Webcam settings.

```
import "Webcam.idl";
```

Public Attributes

- Format_2_0_0 format

  currently selected image format
- Controls controls

image settings like brightness, contrast, gain, ...

- string name

  webcam name

- Location location

  webcam location

- int refreshInterval

  in ms, toggle "video" and "static image" mode

9.227.1 Detailed Description

Webcam settings.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Webcam.idl

9.228 devsettings::Smtp_1_0_1 Interface Reference

SMTP settings interface.

```
import "Smtp.idl";
```

Classes

- struct Configuration

  SMTP server configuration.

- struct TestResult

  Result of SMTP configuration test.

Public Member Functions

- Configuration getConfiguration ()

  Retrieve the SMTP server configuration.

- int setConfiguration (in Configuration cfg)

  Set the SMTP server configuration.

- TestResult testConfiguration (in Configuration cfg, in vector< string > recipients)

  Test an SMTP server configuration.

Public Attributes

- constant int ERR_INVALID_PARAMS = 1

  Invalid parameters.

9.228.1 Detailed Description

SMTP settings interface.

9.228.2 Member Function Documentation

9.228.2.1 Configuration devsettings::Smtp_1_0_1::getConfiguration ( )

Retrieve the SMTP server configuration.

Returns

SMTP server configuration

9.228.2.2 int devsettings::Smtp_1_0_1::setConfiguration (in Configuration *cfg*)

Set the SMTP server configuration.

Parameters

cfg	New SMTP server settings

Returns

0 if OK
1 if any parameters are invalid

9.228.2.3 TestResult devsettings::Smtp_1_0_1::testConfiguration (in Configuration *cfg,* in vector< string > *recipients*)

Test an SMTP server configuration.

The active server configuration is not changed.

Parameters

cfg	SMTP server settings to test
recipients	Recipient email addresses

Returns

Result of configuration test

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/Smtp.idl

9.229 devsettings::Snmp_1_0_2 Interface Reference

SNMP agent settings interface.

```
import "Snmp.idl";
```

Classes

- struct Configuration

  SNMP agent configuration.

Public Member Functions

- Configuration getConfiguration ()

  Retrieve the SNMP agent configuration.
- int setConfiguration (in Configuration cfg)

  Set the SNMP agent configuration.
- string getV3EngineId ()

  Retrieve the SNMP V3 Engine ID.

Public Attributes

- constant int ERR_INVALID_PARAMS = 1

  Invalid parameters.
- valueobject ConfigurationChangedEvent: idl.Event { string userName

  user who triggered event
- string ipAddr

  ip or device on which user is logged in
- Configuration oldConfig

  old configuration
- Configuration newConfig

  new configuration

9.229.1 Detailed Description

SNMP agent settings interface.

9.229.2 Member Function Documentation

9.229.2.1 Configuration devsettings::Snmp_1_0_2::getConfiguration ( )

Retrieve the SNMP agent configuration.

Returns

SNMP agent configuration

9.229.2.2 string devsettings::Snmp_1_0_2::getV3EngineId ( )

Retrieve the SNMP V3 Engine ID.

Returns

SNMP V3 Engine ID

9.229.2.3 int devsettings::Snmp_1_0_2::setConfiguration (in Configuration *cfg*)

Set the SNMP agent configuration.

Parameters

cfg	New SNMP agent settings

Returns

0 if OK
1 if any parameters are invalid

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/Snmp.idl

9.230 um::SnmpV3 Interface Reference

SNMPv3 interface.

```
import "SnmpV3.idl";
```

Public Types

- enum SecurityLevel { NO_AUTH_NO_PRIV, AUTH_NO_PRIV, AUTH_PRIV }

  SNMP v3 security level.
- enum AuthProtocol { MD5, SHA1 }

  SNMP v3 authentication protocol.
- enum PrivProtocol { DES, AES128 }

  SNMP v3 privacy protocol.

9.230.1 Detailed Description

SNMPv3 interface.

9.230.2 Member Enumeration Documentation

9.230.2.1 enum um::SnmpV3::AuthProtocol

SNMP v3 authentication protocol.

Enumerator

MD5 Use MD5 for authentication.

SHA1 Use SHA1 for authentication.

9.230.2.2 enum um::SnmpV3::PrivProtocol

SNMP v3 privacy protocol.

Enumerator

DES Use DES encryption for privacy.

AES128 Use AES encryption for privacy.

9.230.2.3 enum um::SnmpV3::SecurityLevel

SNMP v3 security level.

Enumerator

NO_AUTH_NO_PRIV No authentication and no privacy protocol.

AUTH_NO_PRIV Use authentication but no privacy protocol.

AUTH_PRIV Use both, authentication and privacy protocol.

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/SnmpV3.idl

9.231 usermgmt::SnmpV3Settings Struct Reference

SNMPv3 settings.

```
import "User.idl";
```

Public Attributes

- boolean enabled

  SNMPv3 enabled.
- um SnmpV3 SecurityLevel secLevel

  Security level.
- um SnmpV3 AuthProtocol authProtocol

  Authentication protocol.
- boolean usePasswordAsAuthPassphrase

  Use account password for SNMPv3 authentication.
- boolean haveAuthPassphrase

  Authentication passphrase present.
- string authPassphrase

  Authentication passphrase; cannot be read back.
- um SnmpV3 PrivProtocol privProtocol

  Privacy protocol.
- boolean useAuthPassphraseAsPrivPassphrase

  Use authentication passphrase as privacy passphrase.
- boolean havePrivPassphrase

  Privacy passphrase present.
- string privPassphrase

  Privacy passphrase; cannot be read back.

9.231.1 Detailed Description

SNMPv3 settings.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/User.idl

9.232 security::SSHSettings Struct Reference

SSH authentication settings.

```
import "Security.idl";
```

Public Attributes

- boolean allowPasswordAuth

  Allow password authentication.
- boolean allowPublicKeyAuth

  Allow public key authentication.

9.232.1 Detailed Description

SSH authentication settings.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Security.idl

9.233 serial::SerialPort_2_0_0::State Struct Reference

Structure holding information about the current state of the port.

```
import "SerialPort.idl";
```

Public Attributes

- PortState state

  Current connection state.
- string deviceName

  Name of the device currently connected.

9.233.1 Detailed Description

Structure holding information about the current state of the port.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/SerialPort.idl

9.234 pdumodel::Outlet_1_5_6::State Struct Reference

Outlet state

```
import "Outlet.idl";
```

Public Attributes

- boolean available

  powerState is available
- PowerState powerState

  ```
  Current power state of outlet
  ```

  (represented by the control state of the relay, which was set by the last command sent to it)
- boolean switchOnInProgress

  ```
  \c true if the outlet is pending to be switched on
  ```

  after the sequencing delay has passed.
- boolean cycleInProgress

  `if` *a power-cycle is in progress.*
- LedState ledState

  LED state.
- time lastPowerStateChange

  Time of last power state change.

9.234.1 Detailed Description

Outlet state

9.234.2 Member Data Documentation

9.234.2.1 boolean pdumodel::Outlet_1_5_6::State::cycleInProgress

`if` a power-cycle is in progress.

The outlet will be switched on after the cycle delay has passed.

9.234.2.2 boolean pdumodel::Outlet_1_5_6::State::switchOnInProgress

```
\c true if the outlet is pending to be switched on
```

after the sequencing delay has passed.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Outlet.idl

9.235 sensors::StateSensor_4_0_0::State Struct Reference

Sensor state.

```
import "StateSensor.idl";
```

Public Attributes

- time timestamp

  Timestamp of last sample.
- boolean available

  `true` *if the sensor is available*
- int value

  Discrete sensor value; intrepretation depends on the type of sensor.

9.235.1 Detailed Description

Sensor state.

The documentation for this struct was generated from the following file:

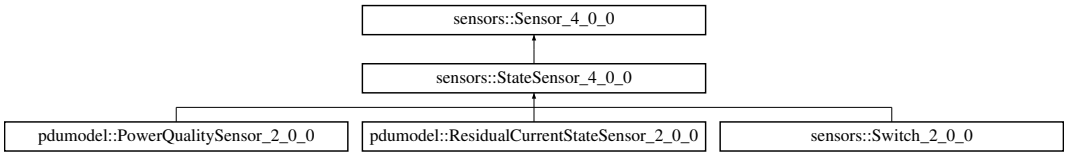
- pdu-json-rpc-api/idl/StateSensor.idl

9.236 sensors::StateSensor_4_0_0 Interface Reference

Sensor with discrete readings.

```
import "StateSensor.idl";
```

Inheritance diagram for sensors::StateSensor_4_0_0:



Classes

- struct State

  Sensor state.

Public Member Functions

- State getState ()

  Get the sensor state.

Public Attributes

- valueobject **StateChangedEvent**: idl.Event { State oldState
- State **newState**

Additional Inherited Members

9.236.1 Detailed Description

Sensor with discrete readings.

9.236.2 Member Function Documentation

9.236.2.1 State sensors::StateSensor_4_0_0::getState ( )

Get the sensor state.

Returns

Sensor state

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/StateSensor.idl

9.237 pdumodel::Pdu_3_0_0::Statistic Struct Reference

PDU statistics.

```
import "Pdu.idl";
```

Public Attributes

- vector< CircuitBreakerStatistic > cbStats

  Circuit breaker statistics.
- vector< CtrlStatistic > ctrlStats

  Slave controller statistics.
- vector< OutletStatistic > outletStats

  Outlet statistics
- peripheral DeviceManager_2_0_0
  Statistics peripheralStats

  Peripheral device statistics.

9.237.1 Detailed Description

PDU statistics.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Pdu.idl

9.238 pdumodel::TransferSwitch_3_1_1::Statistics Struct Reference

Transfer switch statistics.

```
import "TransferSwitch.idl";
```

Public Attributes

- int transferCount

  Number of transfers since device startup.
- int powerFailDetectTime

  Detection time in us for the last inlet power failure.
- int relayOpenTime

  Time in us until all relays have opened during the last transfer.
- int totalTransferTime

  Total time in us for last transfer.

9.238.1 Detailed Description

Transfer switch statistics.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/TransferSwitch.idl

9.239 peripheral::DeviceManager_2_0_0::Statistics Struct Reference

Peripheral device statistics.

```
import "PeripheralDeviceManager.idl";
```

Public Attributes

- int cSumErrCnt

  CRC / checksum error counter.

9.239.1 Detailed Description

Peripheral device statistics.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/PeripheralDeviceManager.idl

9.240 sensors::NumericSensor_4_0_0::Reading::Status Struct Reference

Numeric sensor status.

```
import "NumericSensor.idl";
```

Public Attributes

- boolean aboveUpperCritical

  Reading is above upper critical threshold.
- boolean aboveUpperWarning

  Reading is above upper warning threshold.
- boolean belowLowerWarning

  Reading is below lower warning threshold.
- boolean belowLowerCritical

  Reading is below lower critical threshold.

9.240.1 Detailed Description

Numeric sensor status.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/NumericSensor.idl

9.241 lhxmodel::Parameter_2_0_1::Status Struct Reference

Parameter Status.

```
import "LhxParameter.idl";
```

Public Attributes

- boolean switchedOn
  LHX On / Off.
- boolean active
  Active.
- boolean overflow
  Overflow.
- boolean underflow
  Underflow.
- boolean valid
  Valid.

9.241.1 Detailed Description

Parameter Status.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/LhxParameter.idl

9.242 webcam::StorageManager_1_0_1::StorageImage Struct Reference

StorageImage.

```
import "StorageManager.idl";
```

Public Attributes

- Image_2_0_0 image
  image object
- StorageMetaData metaData
  meta data

9.242.1 Detailed Description

StorageImage.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/StorageManager.idl

9.243 webcam::StorageManager_1_0_1::StorageInformation Struct Reference

Information.

```
import "StorageManager.idl";
```

Public Attributes

- StorageStatus status
  storage status
- int capacity
  over-all nr of storable images
- int used
  nr of stored images
- vector< WebcamStorageInfo > webcamStorageInfo
  List of storage information for each webcam.

9.243.1 Detailed Description

Information.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/StorageManager.idl

9.244 webcam::StorageManager_1_0_1 Interface Reference

The storage manager interface.

```
import "StorageManager.idl";
```

Classes

- struct Activity
  Activity.
- struct ImageStorageMetaData
  StorageMetaData.
- struct StorageImage
  StorageImage.
- struct StorageInformation
  Information.
- struct StorageMetaData
  StorageMetaData.
- struct StorageSettings
  Settings.
- struct WebcamStorageInfo
  Webcam Storage Info.

Public Types

- enum StorageType { LOCAL, FTP, CIFS, NFS }
  StorageType.
- enum Direction { ASCENDING, DESCENDING }
  Direction.
- enum StorageStatus { INITIALIZING, READY }
  StorageStatus.

Public Member Functions

- vector< StorageType > getSupportedStorageTypes ()

  Get supported storage types.
- StorageInformation getInformation ()

  get storage information
- StorageSettings getSettings ()

  get storage settings
- int setSettings (in StorageSettings settings)

  set storage settings
- int addImage (in Webcam_2_0_0 webcam, in Image_2_0_0 image, out long index)

  add an image to the storage
- int removeImages (in Webcam_2_0_0 webcam, in long start, in int count, in Direction direction)

  remove an image of the storage
- int getMetaData (in Webcam_2_0_0 webcam, in long start, in int count, in Direction direction, out vector< ImageStorageMetaData > meta)

  get meta data of images from storage
- int getImages (in Webcam_2_0_0 webcam, in long start, in int count, in Direction direction, out vector< StorageImage > image)

  retrieve images from the storage
- vector< Activity > getActivities ()

  get all running activities
- int startActivity (in Webcam_2_0_0 webcam, in int count, in int interval)

  start a capture activity
- int stopActivity (in Webcam_2_0_0 webcam)

  stop a capture activity

Public Attributes

- constant int NO_ERROR = 0

  Error codes.
- constant int ERR_INVALID_PARAM = 1

  Invalid parameter for an operation.
- constant int ERR_INIT_IN_PROGRESS = 2

  Storage information is going to be initialized.
- constant int ERR_ALREADY_RUNNING = 3

  The activity is already running.
- constant int ERR_TOO_LARGE = 4

  The requested result is too large.

9.244.1 Detailed Description

The storage manager interface.

9.244.2 Member Enumeration Documentation

9.244.2.1 enum webcam::StorageManager_1_0_1::Direction

Direction.

Enumerator

ASCENDING ascending

DESCENDING descending

9.244.2.2 enum webcam::StorageManager_1_0_1::StorageStatus

StorageStatus.

Enumerator

INITIALIZING Initializing is in progress,.

READY Storage is ready for usage.

9.244.2.3 enum webcam::StorageManager_1_0_1::StorageType

StorageType.

Enumerator

LOCAL Local.

FTP FTP.

CIFS CIFS.

NFS NFS.

9.244.3 Member Function Documentation

9.244.3.1 int webcam::StorageManager_1_0_1::addImage (in Webcam_2_0_0 *webcam,* in Image_2_0_0 *image,* out long *index*)

add an image to the storage

Parameters

webcam	image source webcam
image	image
index	index of the added image

Returns

NO_ERROR on success

9.244.3.2 vector<Activity> webcam::StorageManager_1_0_1::getActivities ( )

get all running activities

Returns

list of running activities

9.244.3.3 int webcam::StorageManager_1_0_1::getImages (in Webcam_2_0_0 *webcam*, in long *start*, in int *count*, in Direction *direction*, out vector< StorageImage > *image*)

retrieve images from the storage

Parameters

webcam	image source webcam
start	start index
count	number of images
direction	index counting direction
image	result: list of storage images

Returns

NO_ERROR on success
ERR_TOO_LARGE too many images requested

9.244.3.4 StorageInformation webcam::StorageManager_1_0_1::getInformation ( )

get storage information

Returns

StorageInformation

9.244.3.5 int webcam::StorageManager_1_0_1::getMetaData (in Webcam_2_0_0 *webcam*, in long *start*, in int *count*, in Direction *direction*, out vector< ImageStorageMetaData > *meta*)

get meta data of images from storage

Parameters

webcam	image source webcam
start	start index
count	number of images
direction	index counting direction
meta	result: list of storage meta data

Returns

NO_ERROR on success
ERR_TOO_LARGE too many information requested

9.244.3.6 StorageSettings webcam::StorageManager_1_0_1::getSettings ( )

get storage settings

Returns

StorageSettings

9.244.3.7 vector<StorageType> webcam::StorageManager_1_0_1::getSupportedStorageTypes ( )

Get supported storage types.

Returns

a list of supported storage types

9.244.3.8 int webcam::StorageManager_1_0_1::removeImages (in Webcam_2_0_0 *webcam,* in long *start,* in int *count,* in Direction *direction*)

remove an image of the storage

Parameters

webcam	image source webcam
start	start index
count	number of images
direction	index counting direction

Returns

NO_ERROR on success

9.244.3.9 int webcam::StorageManager_1_0_1::setSettings (in StorageSettings *settings*)

set storage settings

Parameters

settings	settings structure

Returns

NO_ERROR on success
ERR_INVALID_PARAM invalid settings

9.244.3.10 int webcam::StorageManager_1_0_1::startActivity (in Webcam_2_0_0 *webcam,* in int *count,* in int *interval*)

start a capture activity

Parameters

webcam	webcam
count	number of images to store, zero is interpreted as infinite
interval	interval in ms

Returns

NO_ERROR on success
ERR_INVALID_PARAM webcam not found

9.244.3.11 int webcam::StorageManager_1_0_1::stopActivity (in Webcam_2_0_0 *webcam*)

stop a capture activity

Parameters

webcam	webcam

Returns

NO_ERROR on success
ERR_INVALID_PARAM no matching activity found

9.244.4 Member Data Documentation

9.244.4.1 constant int webcam::StorageManager_1_0_1::NO_ERROR = 0

Error codes.

Operation successful, no error

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/StorageManager.idl

9.245 webcam::StorageManager_1_0_1::StorageMetaData Struct Reference

StorageMetaData.

```
import "StorageManager.idl";
```

Public Attributes

- long index

  current image index
- Webcam_2_0_0 webcam

  source webcam

9.245.1 Detailed Description

StorageMetaData.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/StorageManager.idl

9.246 webcam::StorageManager_1_0_1::StorageSettings Struct Reference

Settings.

```
import "StorageManager.idl";
```

Public Attributes

- StorageType type
  storage type
- int capacity
  nr of storable images, must ont be greater than the over-all totalCapacity
- string server
  server ip (empty/ignored for LOCAL storage type)
- string username
  username (empty/ignored for LOCAL storage type)
- string password
  password (empty/ignored for LOCAL storage type)

9.246.1 Detailed Description

Settings.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/StorageManager.idl

9.247 assetmgrmodel::AssetStrip_2_0_1::StripInfo Struct Reference

Dynamic (may change with a connected strip) information for an AssetStrip.

```
import "AssetStrip.idl";
```

Public Attributes

- int maxMainTagCount
  Maximum number of tags supported on the main strip.
- int maxBladeTagCount
  Maximum number of tags supported on blade extensions.
- int mainTagCount
  Current number of tags on the main asset strip.
- int bladeTagCount
  Current number of tags on all blade extensions.
- boolean bladeOverflow
  Out of space for new blade extension tags, read-only.
- int rackUnitCount
  Rack unit count, i.e. number of tags connectable.
- int componentCount
  Number of components.
- CascadeState cascadeState
  State of the cascade (only for composite strips)

9.247.1 Detailed Description

Dynamic (may change with a connected strip) information for an AssetStrip.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/AssetStrip.idl

9.248 assetmgrmodel::AssetStripConfig_1_0_1::StripSettings Struct Reference

Settings for this Asset Strip.

```
import "AssetStripConfig.idl";
```

Public Attributes

- int rackUnitCount

  rack unit count, number of rack units (range: 8..64)
- string name

  user defined name (up to 64 alphanumeric characters)
- ScanMode scanMode

  LED scan (demo) mode.
- LEDColor defaultColorConnected

  auto color for rack units with an asset tag connected
- LEDColor defaultColorDisconnected

  auto color for rack units without an asset tag connected
- NumberingMode numberingMode

  rack unit numbering mode (top down, bottom up)
- int numberingOffset

  rack unit numbering starting offset (default is 1)
- Orientation orientation

  orientation. If orientationSensAvailable, writes are ignored

9.248.1 Detailed Description

Settings for this Asset Strip.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/AssetStripConfig.idl

9.249 lhx::Support Interface Reference

LHX Support Interface.

```
import "LhxSupport.idl";
```

Public Member Functions

- void setEnabled (in boolean enabled)

  Set the enabled state for LHX Support feature.
- boolean isEnabled ()

  Determine the enabled state of LHX Support feature.

9.249.1 Detailed Description

LHX Support Interface.

9.249.2 Member Function Documentation

9.249.2.1 boolean lhx::Support::isEnabled ( )

Determine the enabled state of LHX Support feature.

Returns

true feature enabled
false feature disabled or unknown

9.249.2.2 void lhx::Support::setEnabled (in boolean *enabled*)

Set the enabled state for LHX Support feature.

Parameters

enabled	the feature state

The documentation for this interface was generated from the following file:

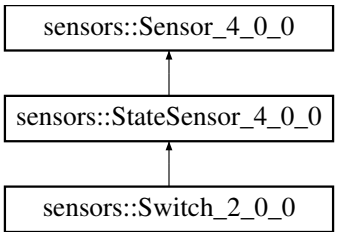
- pdu-json-rpc-api/idl/LhxSupport.idl

9.250 sensors::Switch_2_0_0 Interface Reference

Switch is an actuator and an extension to StateSensor.

```
import "Switch.idl";
```

Inheritance diagram for sensors::Switch_2_0_0:



Public Member Functions

- int setState (in int newState)

  This method outputs the given value.

Public Attributes

- constant int **ERR_INVALID_PARAMETER** = 1
- constant int **ERR_NOT_AVAILABLE** = 2

Additional Inherited Members

9.250.1 Detailed Description

Switch is an actuator and an extension to StateSensor.

An actuator actively outputs its state. In case of a Dry-Contact, for instance, the switch may output ON or OFF. Because Switch is a StateSensor it is also possible to query the actual state of the Switch. The type of switch is determined by the sensor's TypeSpec

9.250.2 Member Function Documentation

9.250.2.1 int sensors::Switch_2_0_0::setState (in int *newState*)

This method outputs the given value.

The int input value is the counterpart of the value returned by StateSensor's getState method. Valid values are determined by the StateSensor's TypeSpec

Parameters

newState	the new state the switch shall switch to

Returns

0 if OK
ERR_INVALID_PARAMETER if invalid parameter
ERR_NOT_AVAILABLE if unable to set new state

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/Switch.idl

9.251 sys::System Interface Reference

System access methods.

```
import "System.idl";
```

Public Member Functions

- boolean isDaemonRunning (in string name)

  Check whether a daemon process is running.
- void restartDaemon (in string name)

  Restart a daemon process.

9.251.1 Detailed Description

System access methods.

9.251.2 Member Function Documentation

9.251.2.1 boolean sys::System::isDaemonRunning (in string *name*)

Check whether a daemon process is running.

Parameters

name	Daemon name

Returns

`true` if the daemon process is running

9.251.2.2 void sys::System::restartDaemon (in string *name*)

Restart a daemon process.

Parameters

name	Daemon name

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/System.idl

9.252 assetmgrmodel::AssetStrip_2_0_1::TagChangeInfo Struct Reference

Information describing a tag change.

```
import "AssetStrip.idl";
```

Public Attributes

- TagInfo tag

  Tag which was attached or detached.
- RackUnitInfo info

  Rack unit the tag was/is connected to.
- string parentBladeTagId

  `Asset tag ID of the parent blade tag,`

  empty if the tag is not an extension tag
- int slotPosition

  `Blade slot position of the tag,`

  0 if the tag is not an extension tag

9.252.1 Detailed Description

Information describing a tag change.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/AssetStrip.idl

9.253 assetmgrmodel::AssetStrip_2_0_1::TagInfo Struct Reference

Information for a single tag.

```
import "AssetStrip.idl";
```

Public Attributes

- int rackUnitNumber
  The rack unit this tag is connected to, range 0..rackUnitCount-1.
- int slotNumber
  Blade slot this tag is connected to, 0 is the main strip, >0 for blades.
- string familyDesc
  Tag family description, indicating different tag hardware.
- string rawId
  The asset tag ID (6 byte hexadecimal string 'AABBCCDDEEFF')

9.253.1 Detailed Description

Information for a single tag.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/AssetStrip.idl

9.254 devsettings::Modbus::TcpSettings Struct Reference

Modbus/TCP settings.

```
import "Modbus.idl";
```

Public Attributes

- boolean readonly
  Disallow write requests.

9.254.1 Detailed Description

Modbus/TCP settings.

Note

Port number and enabled flag are configured using net::Net::setNetworkConfigServices.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Modbus.idl

9.255 devsettings::Smtp_1_0_1::TestResult Struct Reference

Result of SMTP configuration test.

```
import "Smtp.idl";
```

Public Attributes

- int status
  Status code; 0 if OK.
- string message
  Status message.

9.255.1 Detailed Description

Result of SMTP configuration test.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Smtp.idl

9.256 sensors::NumericSensor_4_0_0::ThresholdCapabilities Struct Reference

Threshold capabilities.

```
import "NumericSensor.idl";
```

Public Attributes

- boolean hasUpperCritical

  Sensor has upper critical threshold.
- boolean hasUpperWarning

  Sensor has upper warning threshold.
- boolean hasLowerWarning

  Sensor has lower warning threshold.
- boolean hasLowerCritical

  Sensor has lower critical threshold.

9.256.1 Detailed Description

Threshold capabilities.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/NumericSensor.idl

9.257 sensors::NumericSensor_4_0_0::Thresholds Struct Reference

Numeric sensor thresholds.

```
import "NumericSensor.idl";
```

Public Attributes

- boolean upperCriticalActive

  `true` *if the upper critical threshold is enabled*
- double upperCritical

  Upper critical threshold.
- boolean upperWarningActive

  `true` *if the upper warning threshold is enabled*
- double upperWarning

  Upper warning threshold.
- boolean lowerWarningActive

  `true` *if the lower warning threshold is enabled*

- double lowerWarning

  Lower warning threshold.
- boolean lowerCriticalActive

  `true` *if the lower critical threshold is enabled*
- double lowerCritical

  Lower critical threshold.
- int assertionTimeout

  Assertion timeout in samples.
- float deassertionHysteresis

  Deassertion hysteresis.

9.257.1 Detailed Description

Numeric sensor thresholds.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/NumericSensor.idl

9.258 pdumodel::ThrowPole Struct Reference

A pole that can select one of multiple inputs.

```
import "Pole.idl";
```

Public Attributes

- string label

  Pole label
- PowerLine line

  Power line.
- vector< int > inNodeIds

  Upstream node ids.
- int outNodeId

  Downstream node id.

9.258.1 Detailed Description

A pole that can select one of multiple inputs.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Pole.idl

9.259 sensors::Logger_2_1_2::TimedRecord Struct Reference

Sensor log record with timestamp.

```
import "SensorLogger.idl";
```

Public Attributes

- time timestamp
  Timestamp.
- Record record
  Log record.

9.259.1 Detailed Description

Sensor log record with timestamp.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/SensorLogger.idl

9.260 event::TimerEventManager_2_0_0::TimerEvent Struct Reference

TimerEvent structure.

```
import "TimerEventManager.idl";
```

Public Attributes

- vector< string > eventId
  Event ID.
- Schedule executionTime
  Schedule for execution time.

9.260.1 Detailed Description

TimerEvent structure.

A TimerEvent can be used in the event engine to run actions at a specified time. The 'eventId' is an unique identification of every timer event. The 'executionTime' contains the schedule for the execution time.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/TimerEventManager.idl

9.261 event::TimerEventManager_2_0_0 Interface Reference

TimerEventManager interface.

```
import "TimerEventManager.idl";
```

Classes

- struct Range
  Range structure.
- struct Schedule
  Schedule structure.
- struct TimerEvent
  TimerEvent structure.

Public Member Functions

- int addTimerEvent (in Schedule schedule, out vector< string > eventId)

  Add a new timer event.
- int modifyTimerEvent (in vector< string > eventId, in Schedule schedule)

  Modify a timer event.
- int deleteTimerEvent (in vector< string > eventId)

  Delete a timer event.
- vector< TimerEvent > listTimerEvents ()

  List all timer events.

Public Attributes

- constant int NO_ERROR = 0

  Error codes.
- constant int ERR_INVALID_SCHEDULE = 1

  failure in schedule
- constant int ERR_UNKNOWN_EVENT_ID = 2

  unknown eventId
- constant int ERR_CREATE_EVENT_ID_FAILED = 3

  creating eventId failed
- constant int ERR_MAX_TIMERS_CREATED = 4

  max number of timers have been created
- constant int JAN = 1

  Schedule defines and structures.
- constant int FEB = 2

  February.
- constant int MAR = 3

  March.
- constant int APR = 4

  April.
- constant int MAY = 5

  May.
- constant int JUN = 6

  June.
- constant int JUL = 7

  July.
- constant int AUG = 8

  August.
- constant int SEP = 9

  September.
- constant int OCT = 10

  October.
- constant int NOV = 11

  November.
- constant int DEC = 12

  December.
- constant int SUN = 0

  Days of week.
- constant int MON = 1

  Monday.

- constant int TUE = 2

  Tuesday.
- constant int WED = 3

  Wednesday.
- constant int THU = 4

  Thursday.
- constant int FRI = 5

  Friday.
- constant int SAT = 6

  Saturday.

9.261.1 Detailed Description

TimerEventManager interface.

9.261.2 Member Function Documentation

9.261.2.1 int event::TimerEventManager_2_0_0::addTimerEvent (in Schedule *schedule,* out vector< string > *eventId*)

Add a new timer event.

The timer event id field is allocated automatically and returned in the timerEventId parameter.

Parameters

schedule	schedule for timer
eventId	created event id

Returns

NO_ERROR if OK
ERR_INVALID_SCHEDULE if schedule is invalid
ERR_CREATE_EVENT_ID_FAILED if generating the eventId failed
ERR_MAX_TIMERS_CREATED if max timer count already created

9.261.2.2 int event::TimerEventManager_2_0_0::deleteTimerEvent (in vector< string > *eventId*)

Delete a timer event.

Parameters

eventId	event id

Returns

NO_ERROR if OK
ERR_UNKNOWN_EVENT_ID if eventId is unknown

9.261.2.3 int event::TimerEventManager_2_0_0::modifyTimerEvent (in vector< string > *eventId,* in Schedule *schedule*)

Modify a timer event.

Parameters

eventId	event id
schedule	new schedule for timer

Returns

NO_ERROR if OK
ERR_INVALID_SCHEDULE if schedule is invalid
ERR_UNKNOWN_EVENT_ID if eventId is unknown

9.261.3 Member Data Documentation

9.261.3.1 constant int event::TimerEventManager_2_0_0::JAN = 1

Schedule defines and structures.

The goal of the following declarations is to express crontab entries in a structured way. Months January

9.261.3.2 constant int event::TimerEventManager_2_0_0::NO_ERROR = 0

Error codes.

operation successful, no error

9.261.3.3 constant int event::TimerEventManager_2_0_0::SUN = 0

Days of week.

Sunday

The documentation for this interface was generated from the following file:

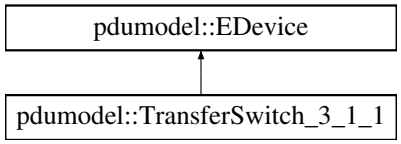
- pdu-json-rpc-api/idl/TimerEventManager.idl

9.262 pdumodel::TransferSwitch_3_1_1 Interface Reference

Transfer switch interface.

```
import "TransferSwitch.idl";
```

Inheritance diagram for pdumodel::TransferSwitch_3_1_1:



Classes

- struct MetaData

  Transfer switch metadata.
- struct Sensors

  Transfer switch sensors.

- struct Settings

  Transfer switch settings.
- struct Statistics

  Transfer switch statistics.
- struct WaveformSample

  Sample of voltage and current waveform.

Public Types

- enum Type { STS, ATS, HTS }

  Transfer switch type.
- enum TransferReason {
  REASON_UNKNOWN, REASON_STARTUP, REASON_MANUAL_TRANSFER, REASON_AUTO_RETRANSFER,
  REASON_POWER_FAILURE, REASON_POWER_QUALITY, REASON_OVERLOAD, REASON_OVERHEAT,
  REASON_INTERNAL_FAILURE }

Public Member Functions

- MetaData getMetaData ()

  Retrieve the transfer switch metadata.
- Sensors getSensors ()

  Get the transfer switch sensors.
- vector< ThrowPole > getPoles ()

  Get the list of transfer switch poles.
- Settings getSettings ()

  Retrieve the transfer switch settings.
- int setSettings (in Settings settings)

  Change the transfer switch settings.
- Statistics getStatistics ()

  Retrieve the transfer switch statistics.
- int transferToSource (in int source, in boolean faultOverride)

  Select the active inlet.
- TransferReason getLastTransferReason ()

  Get the reason for the last transfer.
- vector< WaveformSample > getLastTransferWaveform ()

  Get the voltage and current waveforms during the last transfer.

Public Attributes

- constant int ERR_INVALID_PARAM = 1

  Invalid parameters.
- constant int ERR_SWITCH_PREVENTED = 2

  Switching failed due to an alarm that may be overridden.
- constant int ERR_SWITCH_FAILED = 3

  Switching failed, no override possible.
- constant int OPERATIONAL_STATE_OFF = 0

  Both inlets are off.
- constant int OPERATIONAL_STATE_NORMAL = 1

  Active inlet equals preferred inlet.

- constant int OPERATIONAL_STATE_STANDBY = 2

  Active inlet and preferred inlet are different.
- constant int SWITCH_FAULT_I1_SHORT = 1

  Inlet 1 switch is permanently closed.
- constant int SWITCH_FAULT_I1_OPEN = 2

  Inlet 1 switch is permanently open.
- constant int SWITCH_FAULT_I2_SHORT = 4

  Inlet 2 switch is permanently closed.
- constant int SWITCH_FAULT_I2_OPEN = 8

  Inlet 2 switch is permanently open.
- valueobject SettingsChangedEvent: event.UserEvent { Settings oldSettings

  Event: Transfer switch settings have been changed.
- Settings newSettings

  Settings after change.

9.262.1 Detailed Description

Transfer switch interface.

9.262.2 Member Enumeration Documentation

9.262.2.1 enum pdumodel::TransferSwitch_3_1_1::TransferReason

Enumerator

REASON_UNKNOWN Transfer reason unknown.

REASON_STARTUP Startup or return to normal conditions.

REASON_MANUAL_TRANSFER Manual transfer.

REASON_AUTO_RETRANSFER Automatic retransfer.

REASON_POWER_FAILURE Previous inlet power failed.

REASON_POWER_QUALITY New inlet provided better power quality.

REASON_OVERLOAD Switched off due to overload alarm.

REASON_OVERHEAT Switched off due to overheat alarm.

REASON_INTERNAL_FAILURE Transferred because of hardware failure (e.g. switch fault)

9.262.2.2 enum pdumodel::TransferSwitch_3_1_1::Type

Transfer switch type.

Enumerator

STS Static transfer switch (using SCRs as switch technology)

ATS Asynchronous transfer switch (using relays)

HTS Hybrid transfer switch (relays plus SCRs)

9.262.3 Member Function Documentation

9.262.3.1 TransferReason pdumodel::TransferSwitch_3_1_1::getLastTransferReason ( )

Get the reason for the last transfer.

Returns

Last transfer reason

9.262.3.2 vector<WaveformSample> pdumodel::TransferSwitch_3_1_1::getLastTransferWaveform ( )

Get the voltage and current waveforms during the last transfer.

Note

The interval between two samples is 1/4800 s. This is subject to change in future updates.

Returns

Waveform samples

9.262.3.3 MetaData pdumodel::TransferSwitch_3_1_1::getMetaData ( )

Retrieve the transfer switch metadata.

Returns

Transfer switch metadata

9.262.3.4 vector<ThrowPole> pdumodel::TransferSwitch_3_1_1::getPoles ( )

Get the list of transfer switch poles.

Returns

List of poles

9.262.3.5 Sensors pdumodel::TransferSwitch_3_1_1::getSensors ( )

Get the transfer switch sensors.

Returns

Transfer switch sensors

9.262.3.6 Settings pdumodel::TransferSwitch_3_1_1::getSettings ( )

Retrieve the transfer switch settings.

Returns

Transfer switch settings

9.262.3.7 Statistics pdumodel::TransferSwitch_3_1_1::getStatistics ( )

Retrieve the transfer switch statistics.

Returns

Transfer switch statistics

9.262.3.8 int pdumodel::TransferSwitch_3_1_1::setSettings (in Settings *settings*)

Change the transfer switch settings.

Returns

0 if OK
1 if any parameters are invalid

9.262.3.9 int pdumodel::TransferSwitch_3_1_1::transferToSource (in int *source,* in boolean *faultOverride*)

Select the active inlet.

If the new inlet is available, it will become both active and preferred.

Parameters

source	New active inlet index
faultOverride	Force switch even if the phase sync angle between the inputs is too large

Returns

0 if OK
ERR_INVALID_PARAM if the selected source is invalid
ERR_SWITCH_PREVENTED if switching failed due to an alarm that may be overridden
ERR_SWITCH_FAILED if switching failed and no override is possible

9.262.4 Member Data Documentation

9.262.4.1 valueobject pdumodel::TransferSwitch_3_1_1::SettingsChangedEvent

Event: Transfer switch settings have been changed.

Settings before change

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/TransferSwitch.idl

9.263 sensors::Sensor_4_0_0::TypeSpec Struct Reference

Complete sensor type specification.

```
import "Sensor.idl";
```

Public Attributes

- int readingtype

Sensor reading type

- int type

  Sensor type

- int unit

  Sensor unit

9.263.1 Detailed Description

Complete sensor type specification.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Sensor.idl

9.264 test::Unit_1_0_2 Interface Reference

Test interface for PDU components controlled by topofw.

```
import "TestUnit.idl";
```

Public Member Functions

- vector< Display_1_0_1 > getDisplays ()

  Retrieve all Displays attached to the unit.

- vector< boolean > getButtonStates ()

  Retrieve state of all buttons attached to the unit.

- void setBuzzer (in boolean isOn)

  Force on the buzzer.

- void resetAllSlaveControllers ()

  Reset all slave controllers via RS485 break condition.

- void triggerSlaveControllerWatchdog (in int rs485Addr)

  Trigger watchdog of a selected slave controller.

9.264.1 Detailed Description

Test interface for PDU components controlled by topofw.

9.264.2 Member Function Documentation

9.264.2.1 vector<boolean> test::Unit_1_0_2::getButtonStates ( )

Retrieve state of all buttons attached to the unit.

Note that semantics of the buttons is not defined by this interface, although it is garanteed that the order in which states are returned will not change.

Returns

List of button states (`true` if pressed)

9.264.2.2 vector<Display_1_0_1> test::Unit_1_0_2::getDisplays ( )

Retrieve all Displays attached to the unit.

Returns

List of displays

9.264.2.3 void test::Unit_1_0_2::setBuzzer (in boolean *isOn*)

Force on the buzzer.

Parameters

isOn	`true` to force buzzer on, `false` for normal mode

9.264.2.4 void test::Unit_1_0_2::triggerSlaveControllerWatchdog (in int *rs485Addr*)

Trigger watchdog of a selected slave controller.

Parameters

rs485Addr	RS485 address of the slave to trigger the watchdog for.

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/TestUnit.idl

9.265 pdumodel::Unit_2_0_1 Interface Reference

Unit interface.

```
import "Unit.idl";
```

Classes

- struct MetaData
  Unit metadata
- struct Settings
  Unit settings

Public Types

- enum Orientation { NORMAL, FLIPPED }
  Display orientation.

Public Member Functions

- MetaData getMetaData ()
  Retrieve the unit metadata.
- Settings getSettings ()

Retrieve the unit settings.

- int setSettings (in Settings settings)

  Change the unit settings.

- void identify (in int seconds)

  Display something distictive to identify the unit.

- void muteBuzzer (in boolean mute)

  Mute buzzer, turn of all audible alarms.

- Orientation getDisplayOrientation ()

  Retrieve the current orientation of the display.

Public Attributes

- constant int ERR_INVALID_PARAM = 1

  Invalid parameters.

- valueobject IdentificationStartedEvent: event.UserEvent { int duration

  Event: Unit identification requested.

9.265.1 Detailed Description

Unit interface.

9.265.2 Member Enumeration Documentation

9.265.2.1 enum pdumodel::Unit_2_0_1::Orientation

Display orientation.

Enumerator

NORMAL Normal orientation.

FLIPPED Upside-down.

9.265.3 Member Function Documentation

9.265.3.1 Orientation pdumodel::Unit_2_0_1::getDisplayOrientation ( )

Retrieve the current orientation of the display.

Returns

Display orientation.

9.265.3.2 MetaData pdumodel::Unit_2_0_1::getMetaData ( )

Retrieve the unit metadata.

Returns

Unit metadata

9.265.3.3 Settings pdumodel::Unit_2_0_1::getSettings ( )

Retrieve the unit settings.

Returns

Unit settings

9.265.3.4 void pdumodel::Unit_2_0_1::identify (in int *seconds*)

Display something distictive to identify the unit.

Parameters

seconds	Number of seconds to display the identify string

9.265.3.5 void pdumodel::Unit_2_0_1::muteBuzzer (in boolean *mute*)

Mute buzzer, turn of all audible alarms.

Parameters

mute	`true` to mute buzzer, `false` for normal mode

9.265.3.6 int pdumodel::Unit_2_0_1::setSettings (in Settings *settings*)

Change the unit settings.

Parameters

settings	New unit settings

Returns

0 if OK
ERR_INVALID_PARAM if any parameters are invalid

9.265.4 Member Data Documentation

9.265.4.1 valueobject pdumodel::Unit_2_0_1::IdentificationStartedEvent

Event: Unit identification requested.

Number of seconds the identification should be displayed

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/Unit.idl

9.266 firmware::UpdateHistoryEntry Struct Reference

Firmware update history entry TODO: implement CR# 45668 on next interface change add comment field based on firmware tag "char tag[64];" to improve firmware update history entries without rootfs images

```
import "Firmware.idl";
```

Public Attributes

- time timestamp

  Timestamp when the update was started.
- string oldVersion

  Previous firmware version.
- string imageVersion

  Firmware version of update image.
- string imageMD5

  MD5 hash of update image.
- UpdateHistoryStatus status

  Update status.

9.266.1 Detailed Description

Firmware update history entry TODO: implement CR# 45668 on next interface change add comment field based on firmware tag "char tag[64];" to improve firmware update history entries without rootfs images

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Firmware.idl

9.267 firmware::UpdateStatus Struct Reference

Firmware update status

```
import "FirmwareUpdateStatus.idl";
```

Public Attributes

- string state

  Current state of firmware update: NONE, INIT, PREP, SIMULATE, UPDATE, SUCCESS or FAIL.
- int elapsed

  Seconds since start of update, 0 if not available.
- int estimated

  Estimated total time for update, 0 if not available.
- string error_message

  Error message; empty if there was no error.

9.267.1 Detailed Description

Firmware update status

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/FirmwareUpdateStatus.idl

9.268 usb::Usb Interface Reference

USB interface.

```
import "Usb.idl";
```

Public Member Functions

- void getDevices (out vector< UsbDevice > usbDevices)
  Get a list of USB devices connected to the host port.

9.268.1 Detailed Description

USB interface.

9.268.2 Member Function Documentation

9.268.2.1 void usb::Usb::getDevices (out vector< UsbDevice > *usbDevices*)

Get a list of USB devices connected to the host port.

Parameters

usbDevices	Result: List of discovered devices

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/Usb.idl

9.269 usb::UsbDevice Struct Reference

USB device information.

```
import "Usb.idl";
```

Public Attributes

- int bus
  Bus number.
- int device
  Device address.
- int vendorId
  Vendor ID.
- int productId
  Product ID.

9.269.1 Detailed Description

USB device information.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Usb.idl

9.270 usermgmt::User_1_0_1 Interface Reference

User interface

```
import "User.idl";
```

Public Member Functions

- UserInfo getInfo ()

  Get user information.
- int setAccountPassword (in string password)

  Set the account password.
- int updateAccountFull (in string password, in UserInfo info)

  Update user information.
- void getInfoAndPrivileges (out UserInfo info, out vector< Role.Privilege > privileges)

  Get information and a list of granted privileges for a user.
- int setPreferences (in Preferences prefs)

  Sets the user preferences.
- UserCapabilities getCapabilities ()

  Gets the user capabilities.

Public Attributes

- constant int ERR_PASSWORD_UNCHANGED = 1

  The new password must differ from the old password.
- constant int ERR_PASSWORD_EMPTY = 2

  The password must not be empty.
- constant int ERR_PASSWORD_TOO_SHORT = 3

  The password is too short.
- constant int ERR_PASSWORD_TOO_LONG = 4

  The password is too long.
- constant int ERR_PASSWORD_CTRL_CHARS = 5

  The password must not contain control characters.
- constant int ERR_PASSWORD_NEED_LOWER = 6

  The password must contain at least one lower-case character.
- constant int ERR_PASSWORD_NEED_UPPER = 7

  The password must contain at least one upper-case character.
- constant int ERR_PASSWORD_NEED_NUMERIC = 8

  The password must contain at least one numeric character.
- constant int ERR_PASSWORD_NEED_SPECIAL = 9

  The password must contain at least one special character.
- constant int ERR_PASSWORD_IN_HISTORY = 10

  The password is already in the password history.
- constant int ERR_PASSWORD_TOO_SHORT_FOR_SNMP = 11

  The password is too short to be used as SNMPv3 passphrase.
- constant int ERR_INVALID_ARGUMENT = 12

  Invalid arguments.

9.270.1 Detailed Description

User interface

9.270.2 Member Function Documentation

9.270.2.1 UserCapabilities usermgmt::User_1_0_1::getCapabilities ( )

Gets the user capabilities.

Returns

capabilities

9.270.2.2 UserInfo usermgmt::User_1_0_1::getInfo ( )

Get user information.

Returns

User information

9.270.2.3 void usermgmt::User_1_0_1::getInfoAndPrivileges (out UserInfo *info,* out vector< Role.Privilege > *privileges*)

Get information and a list of granted privileges for a user.

Parameters

info	User information
privileges	List of granted privileges

9.270.2.4 int usermgmt::User_1_0_1::setAccountPassword (in string *password*)

Set the account password.

Parameters

password	The new password

Returns

0 OK
1 The new password has to differ from old password.
2 The password must not be empty.
3 The password is too short.
4 The password is too long.
5 The password must not contain control characters.
6 The password has to contain at least one lower case character.
7 The password has to contain at least one upper case character.
8 The password has to contain at least one numeric character.
9 The password has to contain at least one printable special character.
10 The password already is in history.
11 SNMPv3 USM is activated for the user and the password shall be used as auth passphrase. For this case, the password is too short (must be at least 8 characters).

9.270.2.5 int usermgmt::User_1_0_1::setPreferences (in Preferences *prefs*)

Sets the user preferences.

Parameters

prefs	User Preferences

Returns

0 OK
ERR_INVALID_ARGUMENT An argument is invalid or out of range

9.270.2.6 int usermgmt::User_1_0_1::updateAccountFull (in string *password*, in UserInfo *info*)

Update user information.

Parameters

password	The new password; empty to leave unchanged
info	The new user information

Returns

0 OK
1 The new password has to differ from old password.
3 The password is too short.
4 The password is too long.
5 The password must not contain control characters.
6 The password has to contain at least one lower case character.
7 The password has to contain at least one upper case character.
8 The password has to contain at least one numeric character.
9 The password has to contain at least one printable special character.
10 The password already is in history.
11 SNMPv3 USM is activated for the user and the password shall be used as auth passphrase. For this case, the password is too short (must be at least 8 characters).
12 An argument is invalid or out of range

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/User.idl

9.271 usermgmt::UserCapabilities Struct Reference

User Capabilities Describe if certain operations can be performed for user.

```
import "User.idl";
```

Public Attributes

- boolean canSetPassword

  User password is modifyable.
- boolean canSetPreferences

  User preferences are modifyable.

9.271.1 Detailed Description

User Capabilities Describe if certain operations can be performed for user.

May require according privileges.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/User.idl

9.272 usermgmt::UserInfo Struct Reference

User information

```
import "User.idl";
```

Public Attributes

- boolean enabled

  `true` if the account is enabled
- boolean locked

  `true` if the account cannot be deleted
- boolean blocked

  `true` if the account is blocked due to failed logins
- boolean needPasswordChange

  `true` to force a password change on the next login
- AuxInfo auxInfo

  Auxiliary user information.
- SnmpV3Settings snmpV3Settings

  SNMPv3 settings.
- string sshPublicKey

  Public key for SSH access.
- Preferences preferences

  User preferences
- vector< int > roleIds

  List of role ids for this account.

9.272.1 Detailed Description

User information

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/User.idl

9.273 usermgmt::UserManager_1_0_2 Interface Reference

User manager interface

```
import "UserManager.idl";
```

Public Member Functions

- vector< string > getAccountNames ()

  Get a list of account names available on the system.
- int createAccount (in string username, in string password)

  Create a new account.
- int deleteAccount (in string username)

  Deletes an account.
- vector< Account > getAllAccounts ()

  Get information about all available user accounts.
- int createAccountFull (in string username, in string password, in UserInfo info)

  Create a new account with defined settings.
- vector< Account > getAccountsByRole (in string roleName)

  Get a list of accounts that have a given role.
- Preferences getDefaultPreferences ()

  Get default user preferences.
- int setDefaultPreferences (in Preferences prefs)

  Set default user preferences.

Public Attributes

- constant int ERR_USER_DOESNT_EXIST = 1

  A user with the given name does not exist.
- constant int ERR_USER_NOT_DELETABLE = 2

  The user is not deletable.
- constant int ERR_USER_ALREADY_EXISTS = 1

  A user with the given name already exists.
- constant int ERR_MAX_USERS_REACHED = 2

  Maximum number of users reached.
- constant int ERR_PASSWORD_TOO_SHORT_FOR_SNMP = 3

  The password is too short to be used as SNMPv3 passphrase.
- constant int ERR_INVALID_VALUE = 4

  Invalid arguments.
- constant int ERR_PASSWORD_EMPTY = 5

  The password must not be empty.
- constant int ERR_PASSWORD_TOO_SHORT = 6

  The password is too short.
- constant int ERR_PASSWORD_TOO_LONG = 7

  The password is too long.
- constant int ERR_PASSWORD_CTRL_CHARS = 8

  The password must not contain control characters.
- constant int ERR_PASSWORD_NEED_LOWER = 9

  The password must contain at least one lower-case character.
- constant int ERR_PASSWORD_NEED_UPPER = 10

  The password must contain at least one upper-case character.
- constant int ERR_PASSWORD_NEED_NUMERIC = 11

  The password must contain at least one numeric character.
- constant int ERR_PASSWORD_NEED_SPECIAL = 12

  The password must contain at least one special character.

9.273.1 Detailed Description

User manager interface

9.273.2 Member Function Documentation

9.273.2.1 int usermgmt::UserManager_1_0_2::createAccount (in string *username,* in string *password*)

Create a new account.

Parameters

username	New user name
password	New password

Returns

0 if OK
1 if a user with the given name already exists
2 if the maximum number of users is reached
3 SNMPv3 USM is activated for the user and the password shall be used as auth passphrase. For this case, the password is too short (must be at least 8 characters).
4 if user name is invalid
5 The password must not be empty.
6 The password is too short.
7 The password is too long.
8 The password must not contain control characters.
9 The password has to contain at least one lower case character.
10 The password has to contain at least one upper case character.
11 The password has to contain at least one numeric character.
12 The password has to contain at least one printable special character.

9.273.2.2 int usermgmt::UserManager_1_0_2::createAccountFull (in string *username,* in string *password,* in UserInfo *info*)

Create a new account with defined settings.

Parameters

username	New user name
password	New password
info	New user information

Returns

0 if OK
1 if a user with the given name already exists
2 if the maximum number of users is reached
3 SNMPv3 USM is activated for the user and the password shall be used as auth passphrase. For this case, the password is too short (must be at least 8 characters).
4 if any value except password is invalid
5 The password must not be empty.
6 The password is too short.
7 The password is too long.
8 The password must not contain control characters.
9 The password has to contain at least one lower case character.
10 The password has to contain at least one upper case character.

11 The password has to contain at least one numeric character.
12 The password has to contain at least one printable special character.

9.273.2.3 int usermgmt::UserManager_1_0_2::deleteAccount (in string *username*)

Deletes an account.

Parameters

username	Name of user to delete

Returns

0 if OK
1 if a user with the given name does not exist
2 if the user cannot be deleted

9.273.2.4 vector<string> usermgmt::UserManager_1_0_2::getAccountNames ( )

Get a list of account names available on the system.

Returns

List of account names

9.273.2.5 vector<Account> usermgmt::UserManager_1_0_2::getAccountsByRole (in string *roleName*)

Get a list of accounts that have a given role.

Parameters

roleName	Role name

Returns

List of accounts

9.273.2.6 vector<Account> usermgmt::UserManager_1_0_2::getAllAccounts ( )

Get information about all available user accounts.

Returns

List of accounts

9.273.2.7 Preferences usermgmt::UserManager_1_0_2::getDefaultPreferences ( )

Get default user preferences.

Returns

Default user preferences.

9.273.2.8 int usermgmt::UserManager_1_0_2::setDefaultPreferences (in Preferences *prefs*)

Set default user preferences.

Parameters

prefs	Default user preferences.

Returns

0 if OK

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/UserManager.idl

9.274 lhxmodel::Parameter_2_0_1::Value Struct Reference

Parameter Value.

```
import "LhxParameter.idl";
```

Public Attributes

- time timestamp

  Timestamp of last sample.
- Status status

  The state of the parameter.
- double value

  The value of the parameter.

9.274.1 Detailed Description

Parameter Value.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/LhxParameter.idl

9.275 peripheral::PackageInfo_2_0_0::FirmwareInfo::Version Struct Reference

Public Attributes

- int **majorNumber**
- int **minorNumber**

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/PeripheralDevicePackage.idl

9.276 pdumodel::TransferSwitch_3_1_1::WaveformSample Struct Reference

Sample of voltage and current waveform.

```
import "TransferSwitch.idl";
```

Public Attributes

- double voltage
  Voltage sample in Volts.
- double current
  Current sample in Amperes.

9.276.1 Detailed Description

Sample of voltage and current waveform.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/TransferSwitch.idl

9.277 webcam::Webcam_2_0_0 Interface Reference

The webcam interface.

```
import "Webcam.idl";
```

Public Member Functions

- Information_2_0_0 getInformation ()
  Retrieve information of a specific webcam.
- Settings_2_0_0 getSettings ()
  Retrieve settings of a specific webcam.
- int setSettings (in Settings_2_0_0 settings)
  Change settings of a specific webcam.
- int setControls (in Controls controls)
  Apply webcam control settings without storing them.
- Controls getControlDefaults ()
  Retrieve the default value of the controls.

9.277.1 Detailed Description

The webcam interface.

9.277.2 Member Function Documentation

9.277.2.1 Controls webcam::Webcam_2_0_0::getControlDefaults ( )

Retrieve the default value of the controls.

Returns

Controls

9.277.2.2 Information_2_0_0 webcam::Webcam_2_0_0::getInformation ( )

Retrieve information of a specific webcam.

Returns

Information

9.277.2.3 Settings_2_0_0 webcam::Webcam_2_0_0::getSettings ( )

Retrieve settings of a specific webcam.

Returns

Settings

9.277.2.4 int webcam::Webcam_2_0_0::setControls (in Controls *controls*)

Apply webcam control settings without storing them.

Parameters

controls	Control settings

Returns

0 if success

9.277.2.5 int webcam::Webcam_2_0_0::setSettings (in Settings_2_0_0 *settings*)

Change settings of a specific webcam.

Parameters

settings	New webcam settings

Returns

0 if success

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/Webcam.idl

9.278 webcam::WebcamManager_2_0_0 Interface Reference

The webcam manager interface.

```
import "WebcamManager.idl";
```

Public Member Functions

- vector< Webcam_2_0_0 > getWebcams ()

Retrieve all connected webcams.

- int getChannel (in Webcam_2_0_0 webcam, in string clientType, out Channel channel)

  Returns an existing channel that is currently viewing the given webcam or creates one If the client type is unknown it's added to the list of client types.
- vector< Channel > getChannels ()

  Returns all channels.
- int removeClientType (in string clientType)

  Remove a client type.
- vector< string > getClientTypes ()

  Get all known client types.
- map< string, Priority > getClientTypePriorities ()

  Get the priority of all known client types.
- int setClientTypePriorities (in map< string, Priority > priorities)

  Set the priority of a client type.
- map< string, Priority > getWebcamPriorities ()

  Get the priority of a webcam.
- int setWebcamPriorities (in map< string, Priority > priorities)

  Set the priority of a webcam.

Public Attributes

- constant int NO_ERROR = 0

  Error codes.
- constant int ERR_INVALID_PARAM = 1

  Invalid parameter for an operation.

9.278.1 Detailed Description

The webcam manager interface.

9.278.2 Member Function Documentation

9.278.2.1 int webcam::WebcamManager_2_0_0::getChannel (in Webcam_2_0_0 *webcam,* in string *clientType,* out Channel *channel*)

Returns an existing channel that is currently viewing the given webcam or creates one If the client type is unknown it's added to the list of client types.

Note: When a new channel is created the priority of the given webcam and channel type is summed up. The result is used to determine the used overall priority.

Parameters

webcam	webcam
clientType	the channel client type -> getClientTypes()
channel	Result: The channel

Returns

NO_ERROR on success
ERR_INVALID_PARAM one of the parameters is invalid

9.278.2.2 vector<Channel> webcam::WebcamManager_2_0_0::getChannels ( )

Returns all channels.

Note: you need to release every unneeded channel

Returns

List of all channels

9.278.2.3 map<string, Priority> webcam::WebcamManager_2_0_0::getClientTypePriorities ( )

Get the priority of all known client types.

Returns

a hash map with the key "event type ID" and the value "priority"

9.278.2.4 vector<string> webcam::WebcamManager_2_0_0::getClientTypes ( )

Get all known client types.

Returns

List of all client types

9.278.2.5 map<string, Priority> webcam::WebcamManager_2_0_0::getWebcamPriorities ( )

Get the priority of a webcam.

Returns

a hash map with the key "webcam ID" and the value "priority"

9.278.2.6 vector<Webcam_2_0_0> webcam::WebcamManager_2_0_0::getWebcams ( )

Retrieve all connected webcams.

Returns

List of webcams

9.278.2.7 int webcam::WebcamManager_2_0_0::removeClientType (in string *clientType*)

Remove a client type.

Parameters

clientType	client type

Returns

NO_ERROR on success
ERR_INVALID_PARAM one of the parameters is invalid

9.278.2.8 int webcam::WebcamManager_2_0_0::setClientTypePriorities (in map< string, Priority > *priorities*)

Set the priority of a client type.

Parameters

priorities	a hash map with the key "event type ID" and the value "priority"

Returns

NO_ERROR on success
ERR_INVALID_PARAM one of the parameters is invalid

9.278.2.9 int webcam::WebcamManager_2_0_0::setWebcamPriorities (in map< string, Priority > *priorities*)

Set the priority of a webcam.

Parameters

priorities	a hash map with the key "webcam ID" and the value "priority"

Returns

NO_ERROR on success
ERR_INVALID_PARAM one of the parameters is invalid

9.278.3 Member Data Documentation

9.278.3.1 constant int webcam::WebcamManager_2_0_0::NO_ERROR = 0

Error codes.

Operation successful, no error

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/WebcamManager.idl

9.279 webcam::StorageManager_1_0_1::WebcamStorageInfo Struct Reference

Webcam Storage Info.

```
import "StorageManager.idl";
```

Public Attributes

- Webcam_2_0_0 webcam
  webcam object
- long newestIndex

newest know index

- long oldestIndex

  oldest know index

- int count

  nr of stored images from this webcam

9.279.1 Detailed Description

Webcam Storage Info.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/StorageManager.idl

9.280 net::WirelessInterfaceSettings Struct Reference

Wireless interface settings.

```
import "Net.idl";
```

Public Attributes

- string ssid

  SSID.

- AuthenticationMode authentication

  Authentication mode.

- string psk

  Pre-shared key (for PSK authentication)

- EapSettings eap

  EAP settings (for EAP authentication)

- string bssid

  BSSID, leave empty for automatic access point selection.

9.280.1 Detailed Description

Wireless interface settings.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/Net.idl

9.281 devsettings::Zeroconf Interface Reference

Zero-config service settings interface.

```
import "Zeroconf.idl";
```

Classes

- struct Settings

  Zero-configservice settings.

Public Member Functions

- Settings getSettings ()

  Retrieve the service settings.
- void setSettings (in Settings settings)

  Set the service settings.

Public Attributes

- valueobject SettingsChangedEvent: idl.Event { Settings oldSettings

  old settings
- Settings newSettings

  new settings

9.281.1 Detailed Description

Zero-config service settings interface.

9.281.2 Member Function Documentation

9.281.2.1 Settings devsettings::Zeroconf::getSettings ( )

Retrieve the service settings.

Returns

Zero-config service settings

9.281.2.2 void devsettings::Zeroconf::setSettings (in Settings *settings*)

Set the service settings.

Parameters

settings	New settings

The documentation for this interface was generated from the following file:

- pdu-json-rpc-api/idl/Zeroconf.idl

9.282 datetime::DateTime_2_0_0::ZoneCfg Struct Reference

Time zone configuration.

```
import "DateTime.idl";
```

Public Attributes

- int id

  Selected time zone id.
- string name

Selected time zone name.

- boolean enableAutoDST

  Enable automatic DST adjustment.

9.282.1 Detailed Description

Time zone configuration.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/DateTime.idl

9.283 datetime::DateTime_2_0_0::ZoneInfo Struct Reference

Time zone information.

```
import "DateTime.idl";
```

Public Attributes

- int id

  Time zone id.

- string name

  Time zone name.

- boolean hasDSTInfo

  `true` *if the time zone uses DST*

9.283.1 Detailed Description

Time zone information.

The documentation for this struct was generated from the following file:

- pdu-json-rpc-api/idl/DateTime.idl

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