

YANG for IEC/IEEE 60802 Constrained Devices

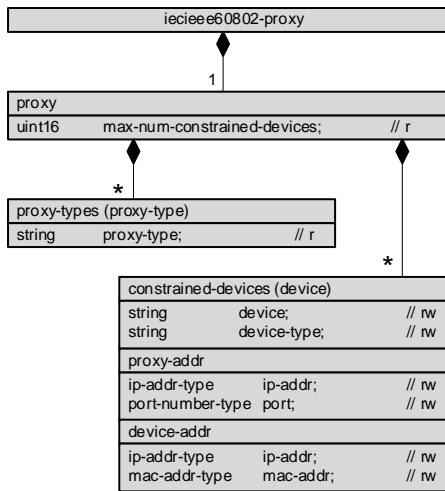
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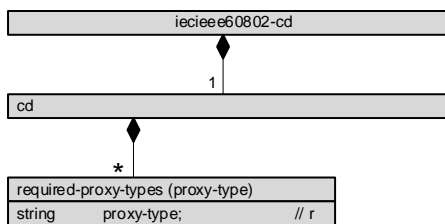
Proposal for integration of YANG for constrained devices

1 Add the following UML-like diagram to clause 6.4.10.5:

1.1 Module iecieeee60802-proxy



1.2 Module iecieeee60802-cd



2 Add the following YANG modules to table 20:

- `iecieeee60802-proxy.yang` - This module contains configuration and capability information for IEC/IEEE 60802 proxy stations
- `iecieeee60802-cd.yang` - This module contains capability information for IEC/IEEE 60802 constrained devices

3 Add the following YANG trees to clause 6.4.10.7:

3.1 Module `iecieeee60802-proxy`

```
module: iecieeee60802-proxy
  +--rw proxy!
    +--ro max-num-constrained-devices?  uint16
    +--ro proxy-types* [proxy-type]
    | +--ro proxy-type  string
    +--rw constrained-devices* [device]
      +--rw device  string
      +--rw device-type?  string
      +--rw proxy-addr
        | +--rw ip-addr?  inet:ip-address
        | +--rw port?  inet:port-number
      +--rw device-addr
        +--rw ip-addr?  inet:ip-address
        +--rw mac-addr?  ieee:mac-address
```

3.2 Module `iecieeee60802-cd`

```
module: iecieeee60802-cd
  +--rw cd!
    +--ro required-proxy-types* [proxy-type]
    +--ro proxy-type  string
```

4 Add the following YANG modules to clause 6.4.10.8:

4.1 Module `iecieeee60802-proxy`

```
module iecieeee60802-proxy {
  yang-version 1.1;
  namespace "urn:ieee:std:60802:yang:iecieeee60802-proxy";
  prefix pr;

  import ieee802-types {
    prefix ieee;
  }
  import ietf-inet-types {
    prefix inet;
  }

  organization
    "IEEE 802.1 Working Group and IEC subcommittee 65C:
    Industrial networks, of IEC technical committee 65:
    Industrial-process measurement, control and automation";
  contact
    "WG-URL: http://ieee802.org/1/
    WG-EMail: stds-802-1-1@ieee.org

    Contact: IEEE 802.1 Working Group Chair
    Postal: C/O IEEE 802.1 Working Group
    IEEE Standards Association
    445 Hoes Lane
    Piscataway, NJ 08854
    USA

    E-mail: stds-802-1-chairs@ieee.org";
  description
    "Configuration and capability information for IEC/IEEE 60802 proxy
    stations as specified in IEC/IEEE 60802.

    Copyright (C) IEC/IEEE (2025).
    This version of this YANG module is part of IEC/IEEE 60802;
    see the standard itself for full legal notices.";
```

```
revision 2024-12-13 {
  description
    "Published as part of IEC/IEEE 60802-2025.
    The following reference statement identifies each referenced
    IEEE Standard as updated by applicable amendments.";
  reference
    "IEC/IEEE 60802 TSN profile for industrial automation:
    IEC/IEEE 60802-2025.
    IEEE Std 802.1Q Bridges and Bridged Networks:
    IEEE Std 802.1Q-2022, IEEE Std 802.1Qcz-2023,
    IEEE Std 802.1Qcw-2023, IEEE Std 802.1Qdj-2024,
    IEEE Std 802.1Qdx-2024, IEEE Std 802.1Qdy-2024.";
}

container proxy {
  presence "The presence of this container indicates that this IA station
  provides proxy functionality for constrained devices";
  description
    "This container provides information about a
    60802 IA station with proxy functionality.";
  reference
    "IEC/IEEE 60802 - YANG Data Model";
  leaf max-num-constrained-devices {
    type uint16;
    config false;
    description
      "The value indicates how many constrained devices can be handled by
      this proxy component.";
    reference
      "?? of IEC/IEEE 60802";
  }
  list proxy-types {
    key "proxy-type";
    config false;
    description
      "Supported proxy types";
    leaf proxy-type {
      type string;
      config false;
      description
        "Type of constrained devices handled by this proxy.";
      reference
        "?? of IEC/IEEE 60802";
    }
  }
}
list constrained-devices {
  key "device";
  description
    "List of constrained-devices that are connected to this proxy";
  leaf device {
    type string;
    description
      "The identification of the constrained device.";
    reference
      "?? of IEC/IEEE 60802";
  }
  leaf device-type {
    type string;
    description
      "The type of the constrained device.";
    reference
      "?? of IEC/IEEE 60802";
  }
}
```

```
}
container proxy-addr {
  leaf ip-addr {
    type inet:ip-address;
    description
      "The ip-address of the constrained device.";
    reference
      "?? of IEC/IEEE 60802";
  }
  leaf port {
    type inet:port-number;
    description
      "The port-number of the constrained device.";
    reference
      "?? of IEC/IEEE 60802";
  }
}
container device-addr {
  leaf ip-addr {
    type inet:ip-address;
    description
      "The ip-address of the constrained device.";
    reference
      "?? of IEC/IEEE 60802";
  }
  leaf mac-addr {
    type ieee:mac-address;
    description
      "The mac-address of the constrained device.";
    reference
      "?? of IEC/IEEE 60802";
  }
}
}
}
```

4.2 Module `iecieeee60802-cd`

```
module iecieeee60802-cd {
  yang-version 1.1;
  namespace "urn:ieee:std:60802:yang:iecieeee60802-cd";
  prefix cd;

  organization
    "IEEE 802.1 Working Group and IEC subcommittee 65C:
    Industrial networks, of IEC technical committee 65:
    Industrial-process measurement, control and automation";
  contact
    "WG-URL: http://ieee802.org/1/
    WG-EMail: stds-802-1-1@ieee.org

    Contact: IEEE 802.1 Working Group Chair
    Postal: C/O IEEE 802.1 Working Group
    IEEE Standards Association
    445 Hoes Lane
    Piscataway, NJ 08854
    USA

    E-mail: stds-802-1-chairs@ieee.org";
  description
    "Capability information for IEC/IEEE 60802 constrained devices as
    specified in IEC/IEEE 60802.
```

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This version of this YANG module is part of IEC/IEEE 60802;
see the standard itself for full legal notices.";

```
revision 2024-12-13 {
  description
    "Published as part of IEC/IEEE 60802-2025.
    The following reference statement identifies each referenced
    IEEE Standard as updated by applicable amendments.";
  reference
    "IEC/IEEE 60802 TSN profile for industrial automation:
    IEC/IEEE 60802-2025.
    IEEE Std 802.1Q Bridges and Bridged Networks:
    IEEE Std 802.1Q-2022, IEEE Std 802.1Qcz-2023,
    IEEE Std 802.1Qcw-2023, IEEE Std 802.1Qdj-2024,
    IEEE Std 802.1Qdx-2024, IEEE Std 802.1Qdy-2024.";
}

container cd {
  presence "The presence of this container indicates that an IA station
  is a constrained devices that requires a proxy device";
  description
    "This container provides information about a
    60802 constrained device.";
  reference
    "IEC/IEEE 60802 - YANG Data Model";
  list required-proxy-types {
    key "proxy-type";
    config false;
    description
      "Required proxy types";
    leaf proxy-type {
      type string;
      config false;
      description
        "Type of proxy that this constrained devices requires.";
      reference
        "?? of IEC/IEEE 60802";
    }
  }
}
}
```

5 Add the following nodes the the YANG selection in clause 6.4.9.2.5.11:

5.1 Module `iecieeee60802-proxy`

```
[c] /iecieeee60802-proxy/proxy/max-num-constrained-devices
[c] /iecieeee60802-proxy/proxy/proxy-types
[o] /iecieeee60802-proxy/proxy/constrained-devices
```

5.2 Module `iecieeee60802-cd`

```
[c] /iecieeee60802-cd/cd/required-proxy-types
```