YANG Augmentations for IEC/IEEE 60802

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v01

1   Objective

This contribution depicts the proposed augmentations to standard YANG modules for 60802 IA stations.

It is intended as a basis for discussion whether the right objects have been selected.

The result of this discussion is intended to be a basis for a further contribution with detailed augmentation information for the integration into the next 60802 draft.
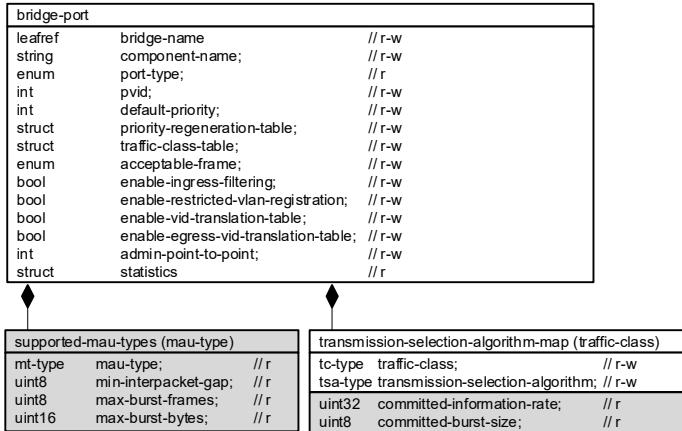
2   Proposed augmentations

This clause uses a UML-like representation of the management model.

Note: The diagrams contain only those YANG elements of the augmented management models that are mandatory for 60802.

2.1   ieee802-dot1q-bridge/bridge-port

The container "bridge-port", defined in module ieee802-dot1q-bridge, is proposed to be augmented in the following way:

```
bridge-port
leafref      bridge-name                           // r-w
string       component-name;                       // r-w
enum         port-type;                            // r
int          pvid;                                 // r-w
int          default-priority;                     // r-w
struct       priority-regeneration-table;          // r-w
struct       traffic-class-table;                  // r-w
enum         acceptable-frame;                     // r-w
bool         enable-ingress-filtering;             // r-w
bool         enable-restricted-vlan-registration;  // r-w
bool         enable-vid-translation-table;         // r-w
bool         enable-egress-vid-translation-table;  // r-w
int          admin-point-to-point;                 // r-w
struct       statistics                            // r
```

```
supported-mau-types (mau-type)
mt-type    mau-type;              // r
uint8      min-interpacket-gap;   // r
uint8      max-burst-frames;      // r
uint16     max-burst-bytes;       // r
```

```
transmission-selection-algorithm-map (traffic-class)
tc-type   traffic-class;                      // r-w
tsa-type  transmission-selection-algorithm;   // r-w
uint32    committed-information-rate;          // r
uint8     committed-burst-size;                // r
```

2.1.1   Added objects

2.1.1.1   mau-type

MAU Type according to RFC 4836, Clause 3.5.1

2.1.1.2   min-interpacket-gap

Type: uint8, access: config false, description: minimum gap between frames.

2.1.1.3   max-burst-frames

Type: uint8, access: config false, description: maximum number of frames per gating cycle.

2.1.1.4 max-burst-bytes

Type: uint8, access: config false, description: maximum number of octets per gating cycle.

### 2.1.1.5 committed-information-rate

Type: uint32, access: config false, description: bandwidth limit according to line speed.

2.1.1.6 committed-burst-size

Type: uint32, access: config false, description: burst size limit according to line speed.

2.2   ieee802-dot1q-sched/gate-parameter-table

The container "gate-parameter-table", defined in grouping "sched-parameters" of module ieee802-dot1q-sched, is proposed to be augmented in the following way:

```
gate-parameter-table
bool              gate-enabled;                    // r-w
uint8             admin-gate-states;               // r-w
uint8             oper-gate-states;                // r
sgce-type       * admin-control-list;              // r-w
sgce-type       * oper-control-list;               // r
rational-type     admin-cycle-time;                // r-w
rational-type     oper-cycle-time;                 // r
ptp-time-type     admin-base-time;                 // r-w
ptp-time-type     oper-base-time;                  // r
uint32            tick-granularity;                // r
ptp-time-type     current-time;                    // r
bool              config-pending;                  // r
counter64         config-change-error;             // r
uint32            supported-list-max;              // r-w
rational-type     supported-cycle-max;             // r-w
uint32            max-gate-control-entries;        // r
```

```
mau-dependent (mau-type)
mt-type         mau-type;            // r
rational-type   max-cycle-time;      // r
rational-type   min-cycle-time;      // r
```

2.2.1   Added objects

2.2.1.1   max-gate-control-entries

Type: uint 32, access: config false, description: maximum number of gate control entries for each gate.

2.2.1.2   mau-type

See 2.1.1.1

2.2.1.3   max-cycle-time
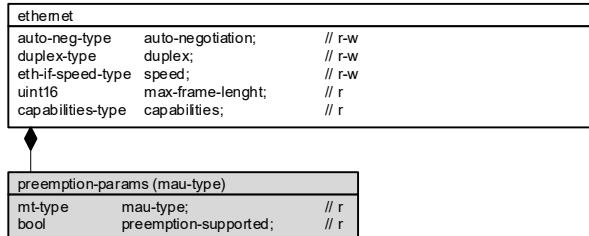
Type: rational-type, access: config false, description: maximum cycle time

2.2.1.4   min-cycle-time

Type: rational-type, access: config false, description: minimum cycle time

2.3   ieee802-ethernet-interface

The container "ethernet", defined in module ieee802-ethernet-interface, is proposed to be augmented in the following way:

```
ethernet
auto-neg-type      auto-negotiation;    // r-w
duplex-type        duplex;              // r-w
eth-if-speed-type  speed;               // r-w
uint16             max-frame-lenght;    // r
capabilities-type  capabilities;        // r
```

```
preemption-params (mau-type)
mt-type    mau-type;               // r
bool       preemption-supported;   // r
```

2.3.1   Added objects

2.3.1.1   mau-type

See 2.1.1.1

2.3.1.2   preemption-supported

Type: boolean, access: config false, description: maximum cycle time

2.4   ieee802-dot1ab-lldp

The container "lldp", defined in module ieee802-dot1ab-lldp, is proposed to be augmented in the following way:

lldp		
uint32	mesage-fast-tx;	// r-w
uint32	message-tx-hold-multiplier;	// r-w
uint32	message-tx-interval;	// r-w
uint32	reinit-delay;	// r-w
uint32	tx-credit-max;	// r-w
uint32	tx-fast-init;	// r-w
uint32	notification-interval;	// r-w
ieee-dot3-lldp-extension		
mt-type	mau-type;	// r
bool	preemption-supported;	// r
bool	preemption-enabled;	// r-w
uint8	preemption-min-add-frag-size;	// r

2.4.1   Added objects

2.4.1.1   mau-type

See 2.1.1.1

2.4.1.2   preemption-supported

Type: boolean, access: config-false, description: indicates that preemption is supported if true.

2.4.1.3   preemption-enabled
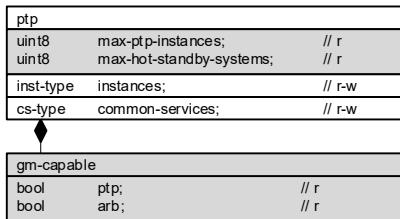
Type: boolean, access: config-true, description: indicates that preemption is activated if true.

2.4.1.4   preemption-min-add-frag-size
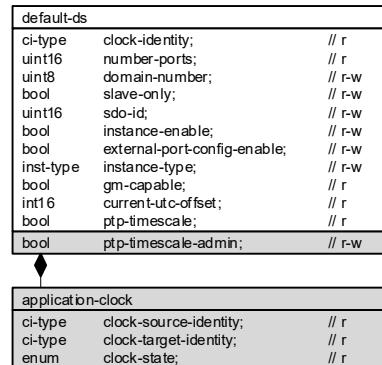
Type: uint8, access: config-false, description: minimum value for the add-frag-size preemption parameter.

2.5 ieee1588-ptp / ieee-dot1as-ptp

The container "ptp", defined in module ieee1588-ptp, augmented by module ieee802-dot1as-ptp, is proposed to be augmented in the following way:

```
ptp
uint8       max-ptp-instances;          // r
uint8       max-hot-standby-systems;    // r
inst-type   instances;                  // r-w
cs-type     common-services;            // r-w

        ◆
gm-capable
bool        ptp;                        // r
bool        arb;                        // r
```

The container "default-ds", defined in module ieee1588-ptp, augmented by module ieee802-dot1as-ptp, is proposed to be augmented in the following way:

```
default-ds
ci-type     clock-identity;             // r
uint16      number-ports;               // r
uint8       domain-number;              // r-w
bool        slave-only;                 // r-w
uint16      sdo-id;                     // r-w
bool        instance-enable;            // r-w
bool        external-port-config-enable; // r-w
inst-type   instance-type;             // r-w
bool        gm-capable;                 // r
int16       current-utc-offset;         // r
bool        ptp-timescale;              // r
bool        ptp-timescale-admin;        // r-w

        ◆
application-clock
ci-type     clock-source-identity;      // r
ci-type     clock-target-identity;      // r
enum        clock-state;                // r
```

2.5.1 Added objects

2.5.1.1 max-ptp-instances

Type: uint8, access: config-false, description: maximum amount of ptp instances int this device.

2.5.1.2 max-hot-standby-systems

Type: uint8, access: config-false, description: maximum amount of hot-standby systems in this device.

2.5.1.3 gm-capable

Type: container, access: config-false, description: contains information about gm capablity.

2.5.1.4 ptp

Type: bool, access: config-false, description: device is gm capable for ptp timescale if true.

2.5.1.5 arb

Type: bool, access: config-false, description: device is gm capable for arb timescale if true.

2.5.1.6 ptp-timescale-admin

Type: bool, access: config-true, description: devices is configured to use ptp timescale if true.

2.5.1.7 application-clock/clock-source-identity

Type: clock-identity-type, access: config-false, description: clock identity of source clock.

2.5.1.8 application-clock/clock-target-identity

Type: clock-identity-type, access: config-false, description:clock identity of target clock.

2.5.1.9 application-clock/clock-state

Type: enumeration, access: config-false, description: state of clock statemachine (in-sync, out-of-sync).

2.6   ieee802-dot1cb-frer

The container "frer", defined in module ieee802-dot1cb-frer, is proposed to be augmented in the following way:

```
frer
sg-type   * sequence-generation;      // r-w
sr-type   * sequence-recovery;        // r-w
si-type   * sequence-identificaction; // r-w
st-type   * stram-split;              // r-w
bool        e2e-frer-supported;       // r
uint32      max-red-streams;          // r
```

2.6.1   Added objects

2.6.1.1   e2e-frer-supported

Type: boolean, access: config-false, description: device supports end-to end frer if true.

2.6.1.2   max-red-streams

Type: uint32, access: config-false, description: maximum amount of redundant streams.

3   New 60802 Module

For 60802 devices it is important to provide a service, that requires the station to ensure that writing a consistent 60802-compliant configuration results in a 60802-compliant device.

This function should be some kind of reset-to-factory for IA-stations to achieve a defined initial state for a 60802 configuration.

rpc: prepare-60802-config
input: -
output: bool   result;   // r

4   Questions

Are there more objects which should be augmented?

Are there too many objects in the proposal?

Should each augmentation for each module be a separate file? -> Proposal: yes

Should the "mau-types" be declared in a separate module? -> Proposal: yes

In which format should the augmentations be integrated in the 60802 draft?