YANG Module Augmentation for Talker/ Listener Configuration

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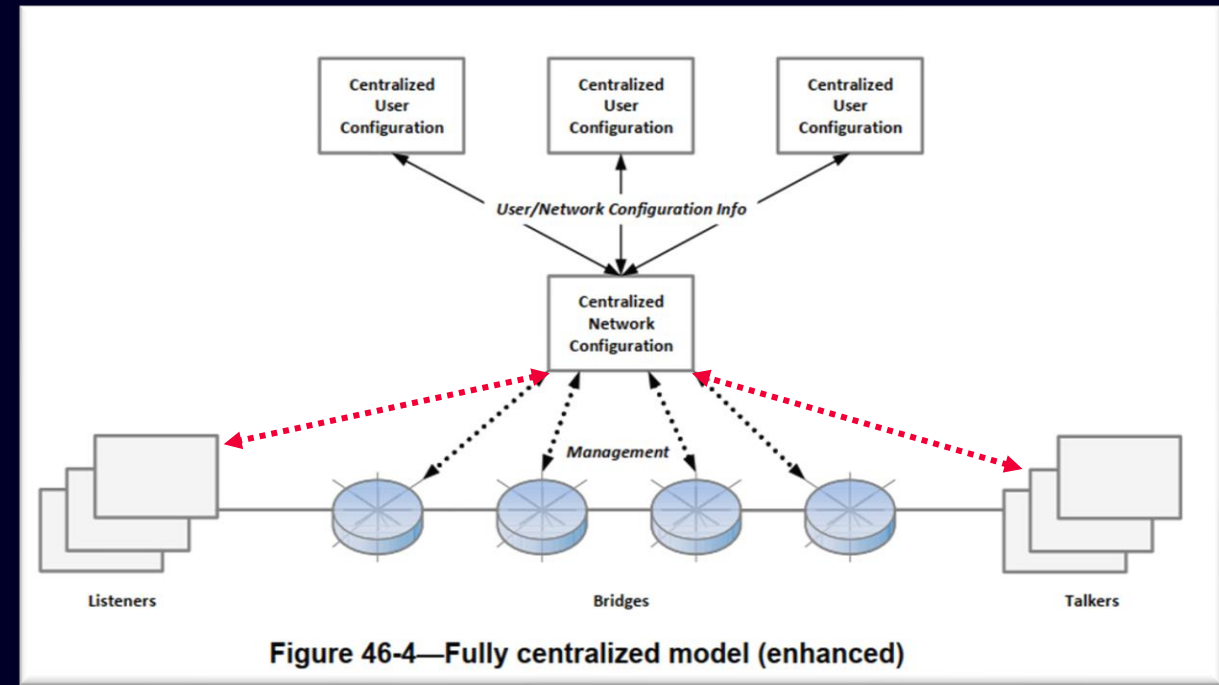
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Recap: CNC Configures Stream Talker/ Listener ETH IF

Use case: Dynamic stream request/ response

- Unexpected traffic behavior must be avoided to ensure resources are not overloaded
- CNC must enforce expected traffic configuration
  - Talker and listener configuration must be done by CNC
    - 802-1Qdj-d0-3-dis-v01 #77

Example

- Establishing a new stream requires changing time aware offset of already established streams
- Sequence of reconfiguration must be ensured by CNC
  - Else, unexpected traffic behavior
    - leading to e.g. buffer overflow

Figure 46-4—Fully centralized model (enhanced)

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Store Stream Configuration at Talker and Listeners

CNC configures Talkers and Listeners

- Need for a YANG module augmentation to store
  stream configuration data at talkers and listeners
- Complete UNI YANG module at talkers and listener is
  an overkill

Proposal

- Simpler module required
  - Using already defined (802.1Qcc) configuration
    objects

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Minimum Required Objects

Talker-of-streams (stream-id)

stream-id	46.2.3.1
stream-descriptor	
interval-numerator	46.2.3.5.1
interval-denominator	46.2.3.5.1
ieee802-mac-address	46.2.5.3.1
time-aware-offset	46.2.5.3.5

talker-of-streams (stream-id)		
string	stream-id;	// r-w
string	stream-description;	// r-w
uint32	interval-numerator;	// r-w
uint32	interval-denominator;	// r-w
group-ieee802-mac-addresses	ieee802-mac-addresses	// r-w
uint32	time-aware-offset	// r-w

Listener-of-streams (stream-id)

stream-id	46.2.3.1
stream-descriptor	
ieee802-mac-address	46.2.5.3.1

listener-of-streams (stream-id)		
string	stream-id;	// r-w
string	stream-description;	// r-w
group-ieee802-mac-addresses	ieee802-mac-addresses	// r-w

Based on existing 802.1Qcc objects

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Required (with optional) Objects

Talker-of-streams (stream-id)

stream-id	46.2.3.1
stream-descriptor	
interval-numerator	46.2.3.5.1
interval-denominator	46.2.3.5.1
max-frames-per-interval ?	46.2.3.5.2
max-frame-size ?	46.2.3.5.3
ieee802-mac-address	46.2.5.3.1
ieee802-vlan-tag ?	46.2.5.3.2
time-aware-offset	46.2.5.3.5

talker-of-streams (stream-id)

```
string                          stream-id;              // r-w
string                          stream-description;     // r-w
uint32                          interval-numerator;     // r-w
uint32                          interval-denominator;   // r-w
unt16                           max-frames-per-interval? // r-w
uint16                          max-frame-size?         // r-w
group-ieee802-mac-addresses     ieee802-mac-addresses   // r-w
group-ieee802-mac-addresses     ieee802-vlag-tag ?      // r-w
uint32                          time-aware-offset       // r-w
```
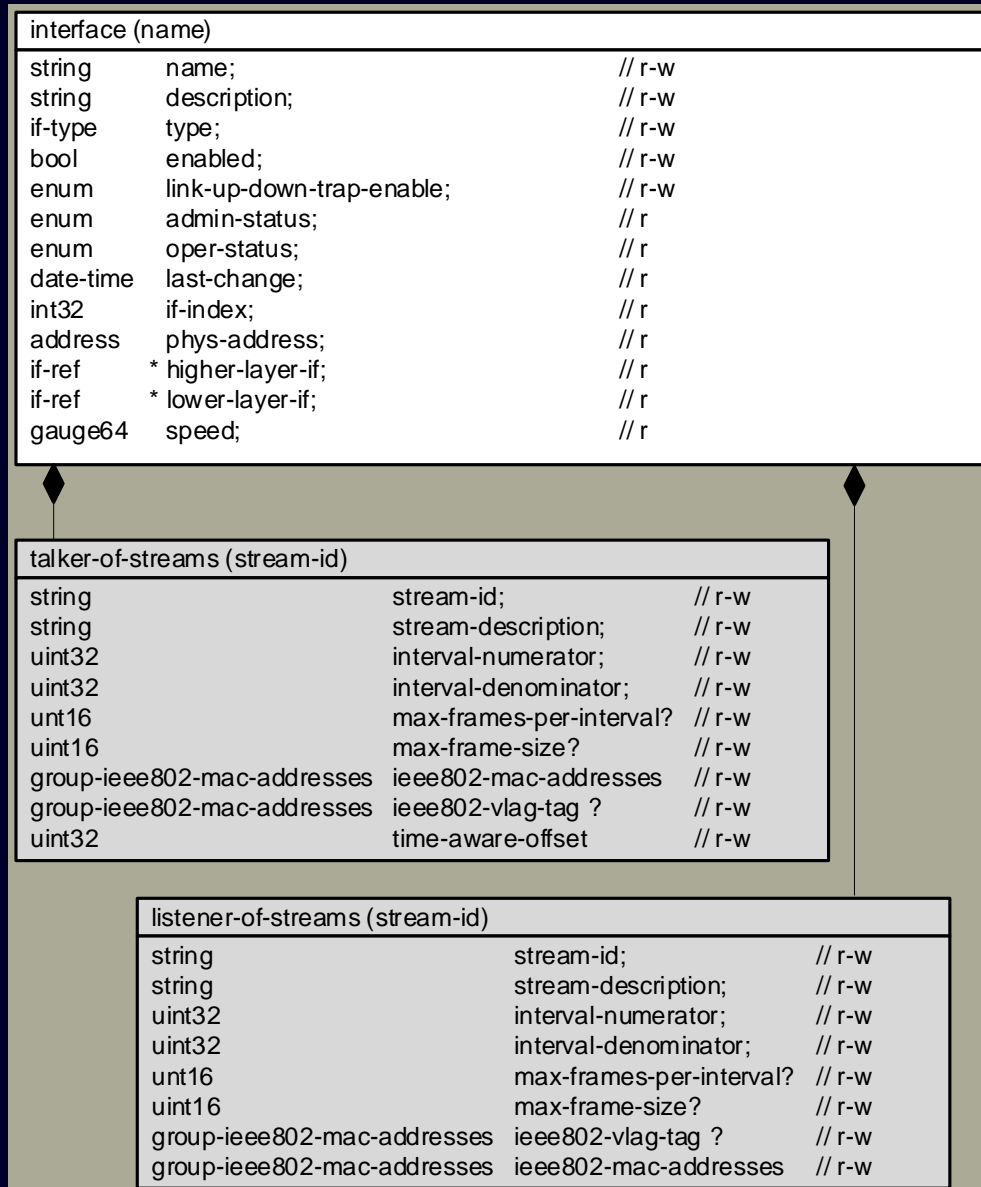
Based on existing 802.1Qcc objects

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Required (with optional) Objects

Listener-of-streams (stream-id)

stream-id	46.2.3.1
stream-descriptor	
interval-numerator ?	46.2.3.5.1
interval-denominator ?	46.2.3.5.1
max-frames-per-interval ?	46.2.3.5.2
max-frame-size ?	46.2.3.5.3
ieee802-mac-address	46.2.5.3.1
ieee802-vlan-tag ?	46.2.5.3.2

listener-of-streams (stream-id)

string	stream-id;	// r-w
string	stream-description;	// r-w
uint32	interval-numerator;	// r-w
uint32	interval-denominator;	// r-w
unt16	max-frames-per-interval?	// r-w
uint16	max-frame-size?	// r-w
group-ieee802-mac-addresses	ieee802-vlag-tag ?	// r-w
group-ieee802-mac-addresses	ieee802-mac-addresses	// r-w

Based on existing 802.1Qcc objects

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Augmentation of ietf-interfaces:interface

interface (name)

string	name;	// r-w
string	description;	// r-w
if-type	type;	// r-w
bool	enabled;	// r-w
enum	link-up-down-trap-enable;	// r-w
enum	admin-status;	// r
enum	oper-status;	// r
date-time	last-change;	// r
int32	if-index;	// r
address	phys-address;	// r
if-ref	* higher-layer-if;	// r
if-ref	* lower-layer-if;	// r
gauge64	speed;	// r

talker-of-streams (stream-id)

string	stream-id;	// r-w
string	stream-description;	// r-w
uint32	interval-numerator;	// r-w
uint32	interval-denominator;	// r-w
unt16	max-frames-per-interval?	// r-w
uint16	max-frame-size?	// r-w
group-ieee802-mac-addresses	ieee802-mac-addresses	// r-w
group-ieee802-mac-addresses	ieee802-vlag-tag ?	// r-w
uint32	time-aware-offset	// r-w

listener-of-streams (stream-id)

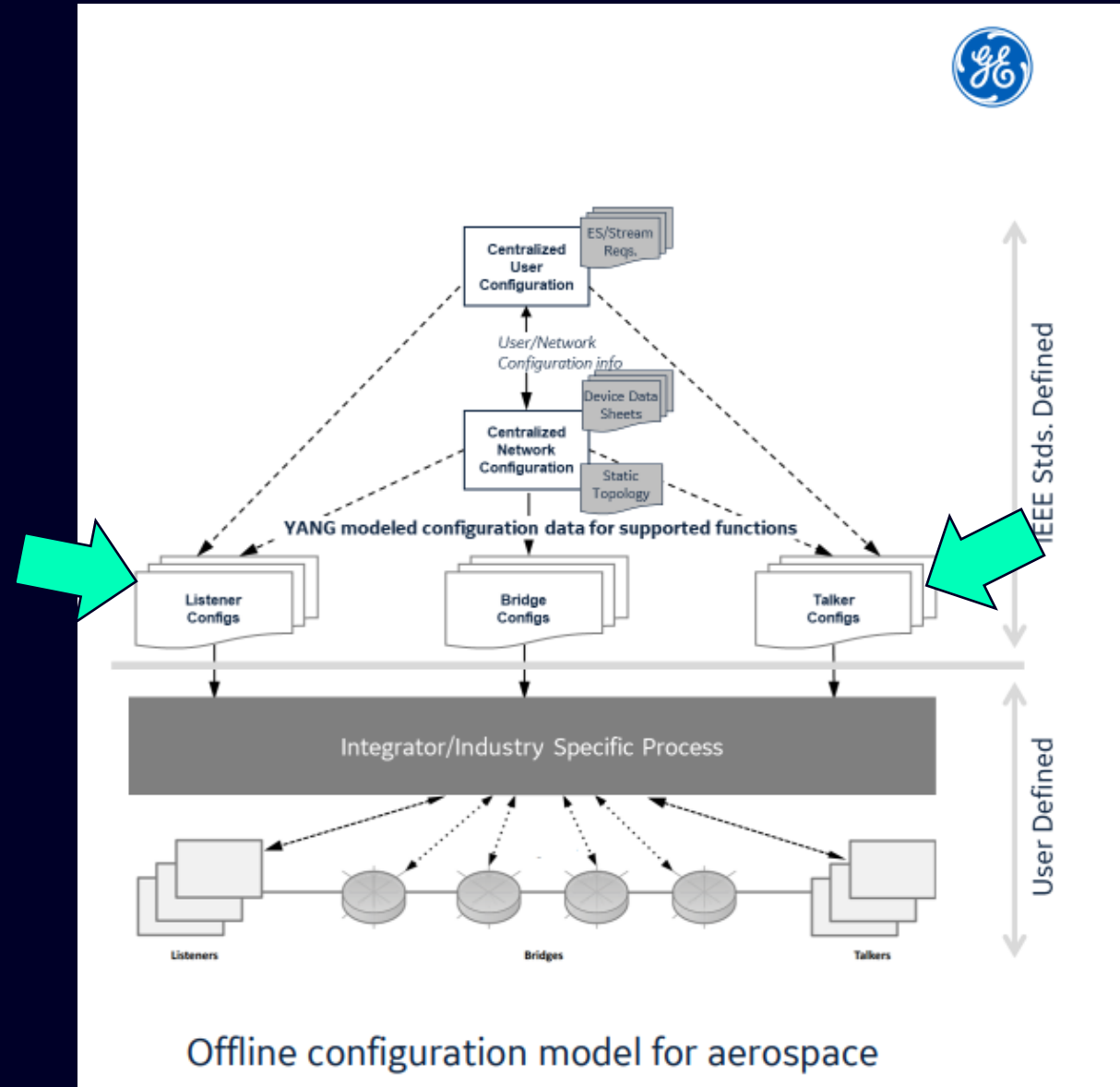|		
string	stream-id;	// r-w
string	stream-description;	// r-w
uint32	interval-numerator;	// r-w
uint32	interval-denominator;	// r-w
unt16	max-frames-per-interval?	// r-w
uint16	max-frame-size?	// r-w
group-ieee802-mac-addresses	ieee802-vlag-tag ?	// r-w
group-ieee802-mac-addresses	ieee802-mac-addresses	// r-w

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Application on Static Use Cases

Static use case

- File based configuration of Talkers and Listeners

The proposed module augmentation

- provides clean format to model the configuration of Talkers and Listeners
  - See slide 8 of dp-markham-end-station-YANG-Config-0922-v03.pdf

Extracted from dp-markham-end-station-YANG-Config-0922-v03.pdf

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Further questions?

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