FRER Member Stream Identification for Aerospace Profile

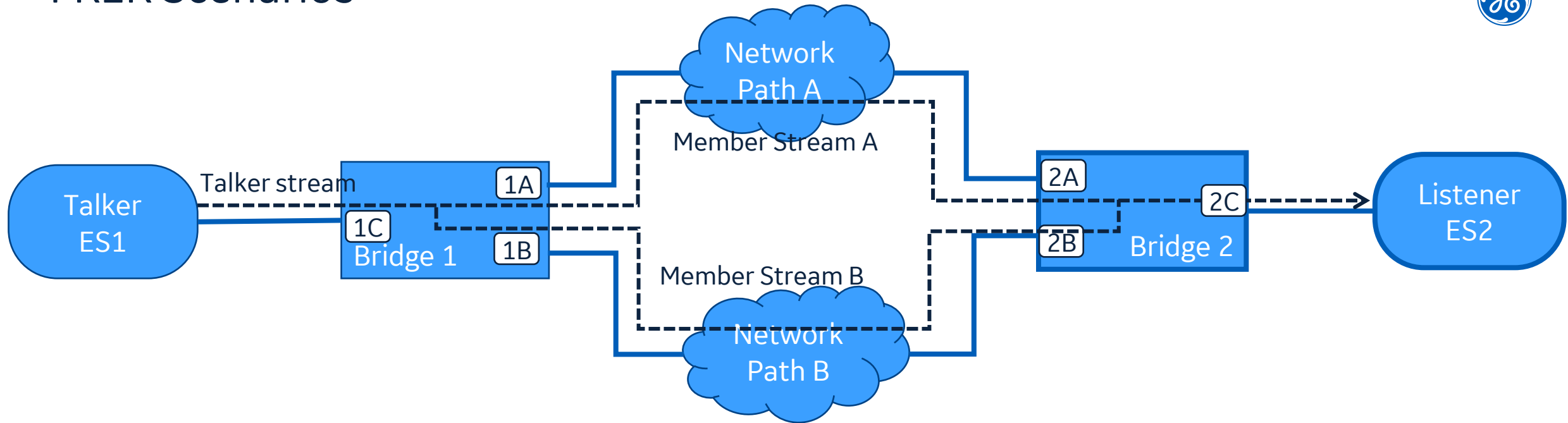Abdul Jabbar

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Objective

- ***Present observations on FRER interoperability***

- ***Open Group discussion***

- ***Proposal on guidance/conformance statements in aerospace profile***

FRER Member Streams - Observations

- IEEE Std 802.1CB provides flexibility in deployment as it breaks out the FRER functions and allows flexible positioning of the functions:
  - Sequencing
  - Stream Splitting
  - Individual Recovery
  - Sequence Encode/Decode
  - Stream Identification

- On the wire identification of the member streams is not well defined. The value of VLAN ID in member streams "seems" to be flexible

- One of the common deployments of FRER is in the form of a bridged end station, wherein the end station is FRER-unaware talker and the bridge acts as a FRER proxy. The required functions for this proxy component are not defined.

- Result: Interoperability issues between devices. In particular:
  - Use of same or distinct VLAN ID on member streams
  - Handling of untagged streams through a FRER relay that does the sequencing, splitting, and encoding
  - Handling of tagged streams through a FRER relay that does the sequencing, splitting, and encoding
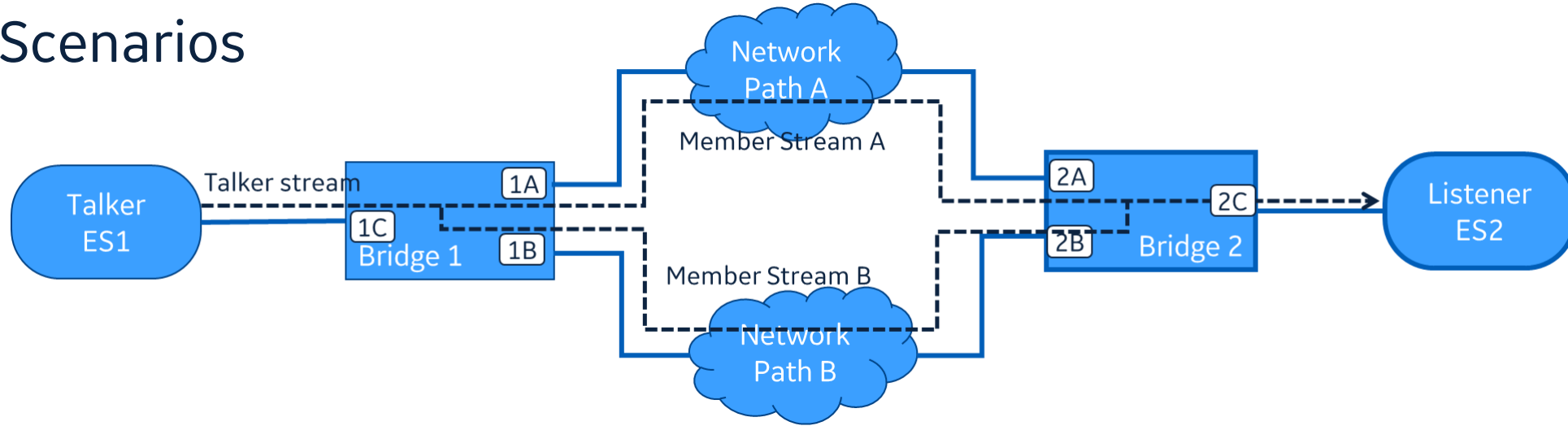
- Illustrative examples to follow

FRER Scenarios

Options that are leading to interoperability issues in the market:

1. Can member streams A and B use same VLAN ID? (identical streams).
   - If so, Bridge 2 shall be able to recover (identify and sequence recovery) from two identical member streams
2. If the talker stream already had a VLAN tag, can member streams A & B be double tagged (QinQ)
   - If so, Bridge 2 shall be able to do sequence recovery on double tagged member streams
3. If the talker stream is untagged, can member streams A& B be tagged or untagged with just R-Tag??

FRER Scenarios

Source Talker Stream From ES1 to Bridge 1	Tagging and VLAN ID of member stream A (egress of port 1A)	Tagging and VLAN ID of member stream B (egress of port 1B)	Notes
Tagged with VLAN ID-*X*	Tagged with VLAN ID – A	Tagged with VLAN ID - B	
Untagged			

Proposal

- Impose additional requirements on DP conformant components to ensure FRER interoperability

  - Support of active MAC/VLAN stream identification function

  - Requirements on VLAN ID for member streams