Overview of 05-235 SAS 2.0 Allow Zoning Extensions to Leave Expanders

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Motivation

- 05-144r3 Restricts Zoning Enhancements to Expanders
  - BROADCAST Frame, SGID Field of OPEN ADDRESS Frame and Zoning SMP Commands do not leave Expanders

- Future Initiators may be able to take advantage of this information
  - For Example, Reduce the Number of SMP Commands Required after a Broadcast is Received
Zone Aware Devices

- Any Device with an SMP Target can be Zone Aware
- Zone Aware bit Set to 1 in Report General (byte 10 bit 5)
- Trusted Devices must be Zone Aware but some Zone Aware devices may not be trusted
- Shall support Configure and Report Zone Permission functions and BROADCAST Frame
  - New fields of Open Address Frame may be ignored
  - Other new SMP Commands may be unsupported
- Supervising Expander Shall Send Configure Zone Permission to ALL Zone Aware devices
If a Broadcast or Open Address Frame is Received on an Untrusted Phy

- SGID In the Frame is Replaced by SGID Assigned to the Phy
- Maintains Trusted/Untrusted Relationship
If Drive 2 on Left (red) is Removed – Current Proposal
- Broadcast FRAME with SGID 2 Generated
- Initiator Receives Broadcast Primitive
- Expanders Fully Rediscovered by Initiator

If Drive 2 on Left (red) is Removed – 05-235r1 Proposal
- Broadcast FRAME with SGID 2 Generated
- Initiator Receives Broadcast Frame
- Only EX 2 Needs to be Rediscovered
- Discovery time reduced
- Lower SMP Traffic

Numbers in Drives are Group IDs
Broadcast Example – Group Changed

- If Drive 2 on Left (red) is Moved to Group 3 – Current Proposal
  - Broadcast FRAME with SGID 127 Generated
  - Initiator Receives Broadcast Primitive
  - Expanders Fully Rediscovered by Initiator

- If Drive 2 on Left (red) is Moved to Group 3 – 05-235r1 Proposal
  - Broadcast FRAME with SGID 127 Generated
  - Initiator Receives Broadcast Frame
  - Expanders Fully Rediscovered by Initiator

Numbers in Drives are Group IDs
Zone Aware Does Not Change Basic Zoning Function

Allows Future Non-Expander Devices to Participate in Zoning

Does Not Change Trusted/Untrusted Model