Visibility of Media in Element Discussion

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Discussion questions for T10 SMC-3 Working Group

Background

- Volumes located in elements have attributes that move with the volume
- A method is needed to report the volume attributes for applications
- Current proposals for reporting element attributes address by element number
- SMC-3 working group has expressed a desire to have similar commands for all commands that report attributes

Address Volumes By Element?

- Commands to report element attributes address the elements by an element number
- The volumes reside in elements
- Addressing by element is the most similar
  - Similar to proposed commands for element attributes
  - Similar to existing Read Element Status
  - Natural for firmware implementation in medium changers

Issues with Element Based Addressing

- Attributes move with the media.
  - If element based addressing is used it must be updated frequently or tracked
- Applications reference media using 'Handles'
  - User applied names
  - User applied barcodes
  - Manufacturer or drive applied medium identifier
  - Application applied medium identifier
- Users reference media using 'Handles'
- Element number is only needed for physical access

Addressing By Volume Handle

- Most medium changers support handles for the volumes.
- Handles have varying levels of uniqueness.
  - Medium Identifier may be world wide unique
  - Barcode may be unique for a given medium changer
- A command that allows addressing volumes could report a set of attributes that are fixed for the volume.
- May be similar to commands for reporting element attributes but use different addressing mechanism.
  - Could support addressing by element or handle
  - Could allow two handles “Name” and “Nickname”

Similar to “Send Volume Tag”

- The closet other command in SMC-2 is the “Send Volume Tag” and “Request Volume Element Address” command pair
  - Elements are addressed by a barcode
  - Information about matching elements is returned in the Request Volume Element Address data
- The Send Volume Tag and Request Volume Element Address commands could be extended to report other attributes

Issues with extending Send Volume Tag

- Not at all similar to any known proposals for reporting element attributes
- Paired command requiring a "send" and "receive" is more complex to implement and use
- Request Volume Element Address return data uses existing "Read Element Status" pages
  - The existing RES pages are not sufficient to carry the information desired for this command
  - Return data format would need extensive modification or existing RES return data would need extended to carry additional attributes
- Working group has expressed a desire to not extend exsiting RES return data.

Questions

- Should a proposal for returning attributes of a volume allow addressing by a handle?
- If yes – should two handles be allowed in cases for a user friendly handle and a unique handle?
- Should the Send Volume Tag and Report Volume Element Address commands be extended or should a new command using page codes be proposed?
- If a new command is with volume handle addressing is proposed should it attempt to replace the SVT/RVEA command set?
  - "What element is this volume in" is an attribute of a volume


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