

5.5 Media changer components

5.6.1 Components overview

Media changer components are members of a superset of the media changer address space used by media changer elements, which is separate and distinct from the physical address space of a SCSI-3 service delivery subsystem. The term component is used throughout this standard to refer to one member of the media changer component address space. Within a media changer, the component addresses represent physical locations and mechanisms, or physical or abstract sets of such objects.

[Note: does the address range need to be a superset or is there room in the existing address range?]

Each component is an instance of one of five component classes:

- a) element component;
- b) portal component;
- c) magazine component;
- d) door component; or
- e) module component.

A component may contain other components (see 5.6.2).

Each component class has the attribute of availability, which may take one of the following values:

- a) online;
- b) in transition to online;
- c) in transition to a state other than online;
- d) offline;
- e) open; or
- f) absent.

The value of the availability attribute of any component may change from time to time. The value of the availability attribute does not guarantee the success or failure of any given command.

The online attribute value indicates that a component is available for normal media changer operation. Any other value indicates that a component is not in such a state.

The offline attribute value indicates that a component is physically available for media changer operation, but is currently designated as not for use.

The open attribute value indicates that a component is not available for normal media changer operation because the component has been made available for direct operator interaction.

The absent attribute value indicates that a component is not physically available for normal media changer operation because it has been removed, or is not present in the current configuration.

5.6.2 Media changer organization graph

[Note that I used the NIST terminology for graphs here, I'm not sure if there's a different/better standards body that defines such things.]

The organization of components is described by a rooted directed acyclic graph, in which the vertices are components, and the edges represent the property of containment. A component contains another component if a path exists from the former to the latter. A component directly contains another component if an edge exists from the former to the latter. A component is a container component if it contains other components.

The root of the graph must be a module component, which should represent the media changer as a whole, and which must contain all other components. Element components must not contain other components. The graph may otherwise have any acyclic structure.

5.6.3 Element component

An element component is exactly one media changer element, and the component address must be the same as the element address as the component address space is a superset of the element address space. An element component must not be a container component.

5.6.4 Portal component

A portal should represent a device that controls operator access to import/export elements, and should contain those import/export element components with access controlled by that device. All element components contained by a portal component must be import/export elements.

5.6.4 Magazine component

A magazine should represent a set of elements designed to be physically manipulated as a unit. All element components contained by a magazine must be storage elements or import/export elements.

5.6.4 Door component

A door should represent a device that controls operator access to all or part of a media changer. A door component should contain those components that may only have an availability attribute of online if the represented device is in the normal position for media changer operation.

5.6.4 Module component

A module may represent any physical object or location in a media changer, or any collection of such objects including the media changer as a whole.

[Note: a section about component status maintenance requirements is appropriate here, once a command to query component information is added. We should also consider what additional attributes should be return by such a command – perhaps a text string, a subclass identifier, and a serial number.]