

## 5.6 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.

Each component is an instance of one of the following component classes:

- a) element component;
- b) portal component;
- c) medium magazine component;
- d) robotics component;
- e) door component; or
- f) 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

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 shall be a module component, which should represent the media changer as a whole, and which shall contain all other components. Element components shall 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 shall be the same as the element address, as the component address space is a superset of the element address space. An element component shall not be a container component.

#### **5.6.4 Portal component**

A portal component 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 shall be import/export elements.

#### **5.6.5 Medium magazine component**

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

#### **5.6.6 Robotics component**

A robotics component should represent a device or set of devices that physically process a MOVE MEDIUM command. All element components contained by a robotics component should be medium transport elements, or elements of another type that physically change position in response to a MOVE MEDIUM command.

#### **5.6.7 Door component**

A door component should represent a device that controls operator access to all or part of a media changer. A door component should contain those components to which it physically provides access. A door component may contain any type of element component.

#### **5.6.8 Module component**

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

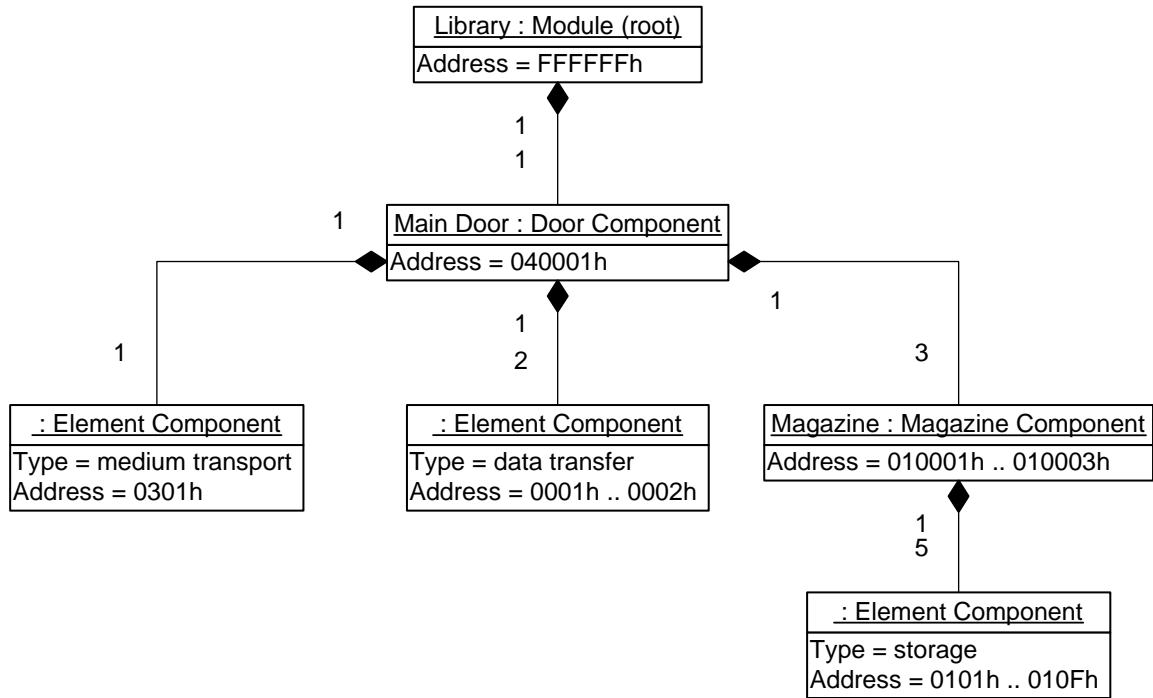
*[Note: a section about component status maintenance requirements is appropriate here, once a command to query component information is added. We should also consider what additional attributes should be returned by such a command – perhaps a text string, a subclass identifier, and a serial number.]*

### 5.6.10 Examples

The following examples illustrate media changer organization graphs using UML diagrams.

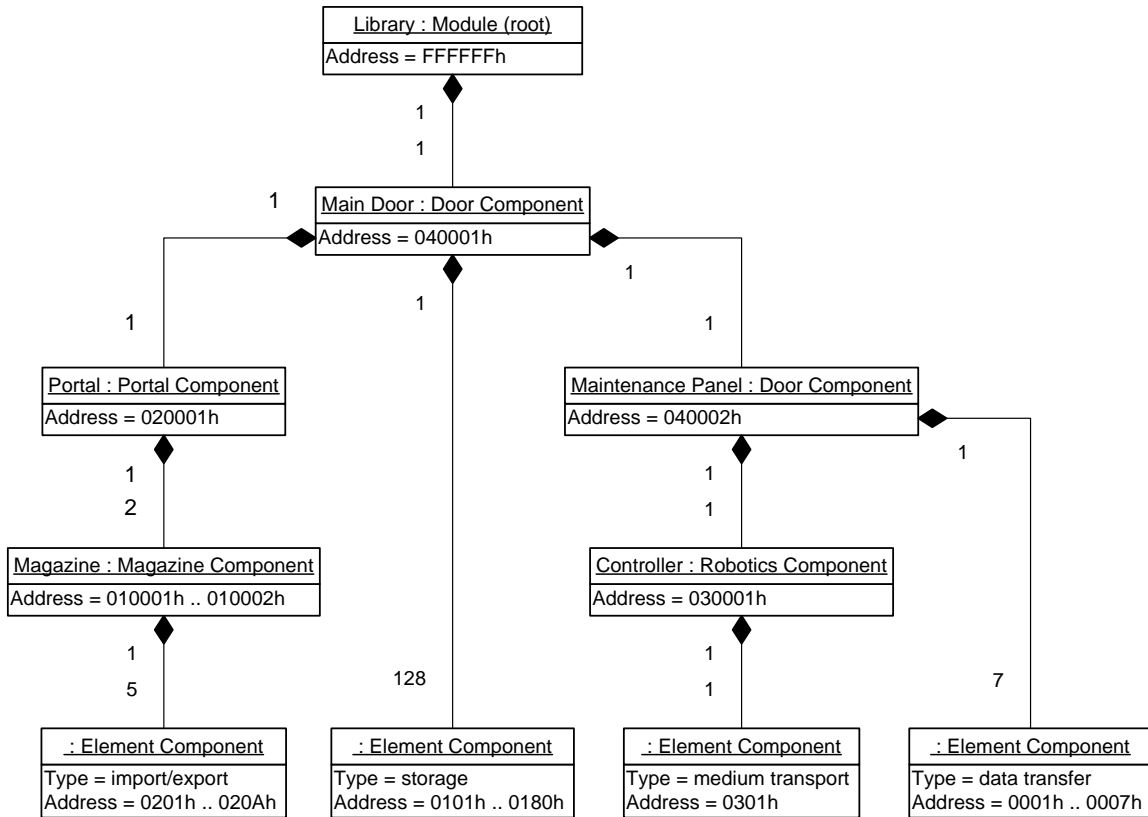
#### 5.6.10.1 A simple library

The following diagram illustrates a library with 1 medium transport element, 15 storage elements arranged in 3 removable magazines, 2 data transfer elements, and no import/export elements. A single door provides operator and maintenance access for this library.



### 5.6.10.2 A library with a portal

The following diagram illustrates a library with 1 medium transport element, 128 storage elements, 7 data transfer elements, and 10 import/export elements arranged in 2 removable magazines. A door provides operator access, and a removable panel provides additional maintenance access for this library.



### 5.6.10.2 A modular library

The following diagram illustrates a library composed of 2 distinct chassis, joined by a mechanism to pass cartridges from one chassis to another, allowing the library to present just 1 medium transport element. Each chassis contains 2 data transfer elements and 2 removable magazines each with 12 slots. Each magazine is behind a separate door. One magazine has 3 slots configured as import/export elements, with the remaining 45 slots configured as storage elements.

Component addresses have been removed from this diagram to reduce visual clutter.

