

EXAMPLE – AD HOC

This document contains an example of how the Ad hoc technique works for defect detection of the diagram with embedded defects of the Mobile Media Software Product Line (SPL) component diagram.

1. Mobile Media Software Product Line

Mobile Media (MM) is an SPL composed of applications (products) that manipulate music, videos and photos for mobile devices such as smartphones and tablets. Provides support for managing (creating, deleting, viewing, executing and sending) different types of media (Young, 2005; Geraldi and OliveiraJr, 2017).

Part of the description of the Mobile Media use cases was taken from the work of Choma (2017) and are presented as follow:

UC1: Log in

Category: mandatory

Description: User enters login and password and the system validates the data.

UC2: Send Media

Category: optional

Description: User selects and sends a certain media to another device.

UC3: Manage Album

Category: mandatory

Description: User performs general control of album entries. It encompasses the operations of creating, deleting and listing albums.

UC4: Manage Media

Category: mandatory

Description: User performs general control of media records. It encompasses the operations of creating, deleting and listing records.

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UC5: Manage Favourite Media

Category: optional

Description: User performs control of favorite media. It encompasses the operations of setting favorite media and listing favorite media.

UC6: Play Media

Category: mandatory

Description: User execute a media according to the possibilities of the product.

UC7: Add Media to Album

Category: mandatory

Description: User selects a media and links it to a certain album stored in the system.

UC8: Link Media with Address Book Entry

Category: optional

Description: User links media to a particular contact so that it plays when there is a call from that contact.

UC9: View/Hear Media from Incoming Caller

Category: optional

Description: When receiving a call, the system plays the media linked to the contact.

UC10: Label Files

Category: optional

Description: User inserts a label for a certain media, which can be video, photo or music.

2. Component Diagram

In Figure 1, the component diagram for Mobile Media is presented with defects incorporated. Use Ad hoc checklist for inspect this diagram for defect detection.

Figure 1: Component Diagram for SPL Mobile Media - Original Version

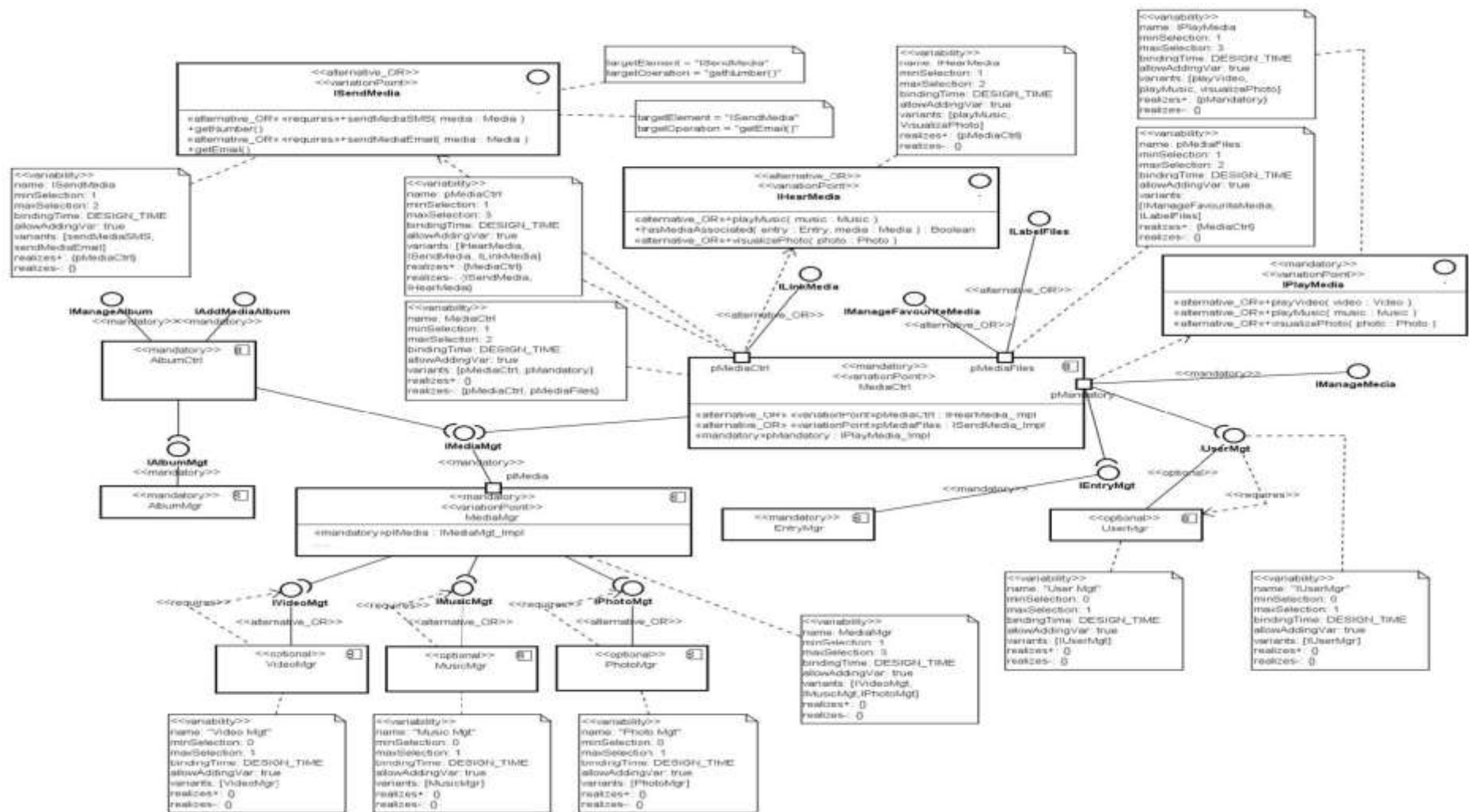
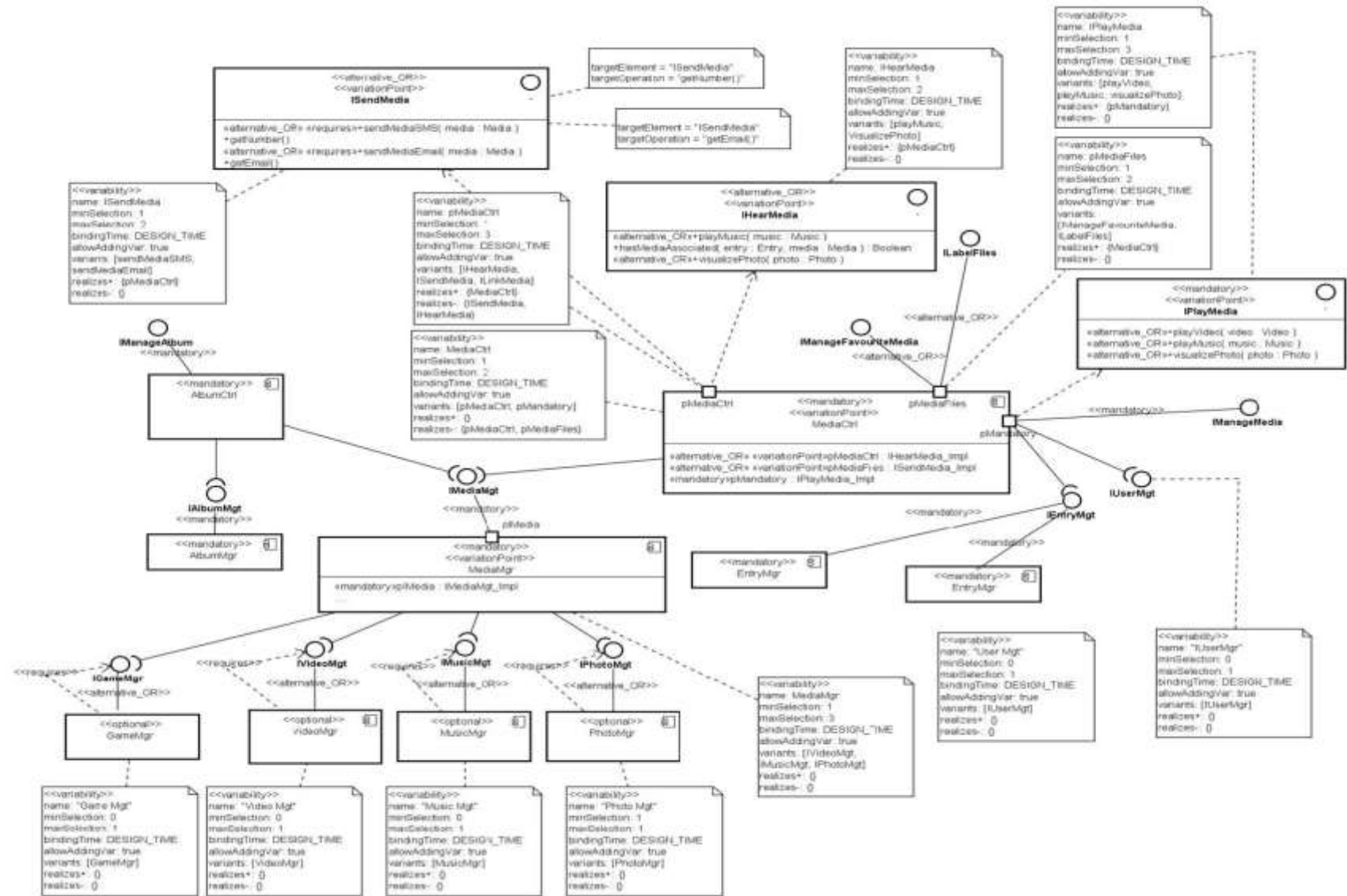


Figure 2: Component Diagram for SPL Mobile Media – with defect



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The defects identified are:

- The EntryMgr component is duplicated;
- The IUserMgt interface requires the presence of the UserMgr component and it was not specified in the diagram.
- The MediaMgr component only has 2 variants when it should have 3.
- The pMediaCtrl port should have 2 associated variants, but the ILinkMedia variant was not specified in the diagram.
- The PhotoMgr component was specified with minSelection=1 when, as it is an optional component, it should have a value of 0.
- The IGameMgr interface cannot be selected according to the variants defined in the variants set
- Required components UserMgr and IaddMediaAlbum not specified in diagram
- The IGameMgr interface and the GameMgr component were specified in addition to the LPS domain