1 Functionality

- Continuous update of contextual parts of the knowledge representation based on changes in the environment:
- Selection of the ideal presentation device in the case of content item presentation, based on the current state of the contextual part of the knowledge representation
- Adaptation of device states on the contextual level, e.g., lights management at the position of the user.

2 Technical Description

The Context Management Module provides the functionalities and performs the operations to be the intermediator between the device perspective of the Device Management Module and the situational perspective of the Situation Management Module as described in the following:

1. The module continuously listens for device messages that require the adaptation of the contextual part of the knowledge representation. For instance, the user’s position is adjusted when a sensor at a specific position reports the user’s movement.
2. Since some adjustments of the environment do not involve the situational perspective on the whole scenario, e.g., the state of the lights at the user’s position, the module also automatically adjusts these aspects.
3. At last, the module also provides the functionality to determine the best playback device for a specific content item from the contextual perspective regarding, e.g., available at the position of the user and format compatibility.

The adjustment of the contextual part of the knowledge representation as well as the adaptation of the physical environment from the contextual perspective is a requirement for the situation management.

3 Inter-Module Communication

Listens on messages from the Device Management Module and provides a service interface for the retrieval of playback device suggestions for a given content item.

4 Strengths of Module

- Reduction of complexity of situational management in the intelligent environment by adding a contextual abstraction layer between device perspective and situation-based management
- Role as intermediator enables Situation Management Module to decide on the KR adjusted by the Context Management Module.