IN PLANE TERMS
Special Edition: Airport Information Model

How is your AIM?

To design or modify an airport terminal to function optimally, it’s necessary to first have a good understanding of how a terminal building works. An Airport Information Model, or AIM, is a computer-based virtual representation of an airport terminal building. It contains information about the physical structure of the terminal, the spaces within the terminal, the processes that occur within these spaces and the management of the operation and maintenance of the terminal building. The Airports of the Future Project (AoTF) is developing a state-of-the-art AIM, the first of its kind in Australia.

Your Problem

In order to run an airport building effectively you need to know what is happening in each space/room, how the physical infrastructure (equipment, services (i.e. air conditioning, plumbing) are operating and how to access things that need to be repaired. Additionally, you need to know how the other systems (security, people flows, concessions, etc) are interacting with the physical structure of the airport terminal.

The key problem is that no airport terminal has a fully configured AIM that meets all of these requirements. This leads to the question – how can an airport operator incrementally build an AIM, and maximize the return on investment for building it?

Our Solution

An appropriate approach to building an AIM for the operator of an existing airport terminal is to build it incrementally, focusing on those aspects that add value to existing processes before tackling the more ambitious goals. The AIM also integrates the deliverables of the other research aspects of the AoTF project, such as incident response and operations management, with current processes.

The effort to date has focused on capturing the information needs of those other research aspects that are most influential on the AIM database. This has progressed well and software implementations are now underway to validate the approaches and test the user interaction.

AIM specific work has focused on identifying how the implementation of an AIM-based approach using BIM (Building Information Modeling) can be implemented using the current BIM technologies that are rapidly replacing conventional 2D CAD. This involves examining different strategies for building a virtual representation of an airport terminal and liaising with groups that are developing open standards for interfacing facilities management systems with BIM and the handover processes at the end of construction processes.

The work on integrating BPMN (Business Process Network Modeling) with architectural space layout is also progressing. This will provide a mechanism for airport owners to assess the impact of proposed process changes on their facility and will provide a measure of the flexibility of design proposals.
What Next?

Since the AIM work provides a central data repository for the AoTF project, many of the AIM activities are weighted towards the end of the project. The current work that integrates with the security, identity management, incident response and business process modeling groups will continue, and develop into integrating all aspects of the AoTF project research.

After a process of assessing the most appropriate asset management software to support our research, the AoTF project has now begun work with Siemens Vantage software, working on integrating Facilities Management needs with the AIM. The goal here is to develop guidelines on how an existing airport authority can incrementally establish an AIM that meets their needs using existing processes as much as possible. Vantage will be used as an “exemplar” platform, but allowance will be made for using the same techniques to other asset management software.

Through the AIM, the real world benefits of the Airports of the Future research can be integrated in a holistic way and airports and providers can reap the far reaching benefits to their operations management, terminal design, passenger satisfaction, incident response, and of course, bottom line.

Want more information?

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