

Information Update Process for BIM Models (Building Information Models)

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1 Motivation & Problem Statement

- Integrate building information with live data from various sources
- Inability to: Collect, Share, Access

Other Database

Building Information

BIM Models

2 Research Approach

- Exploring information flow during the information life cycle for buildings

	Design	Construction	Operation
Information Creation	A/M/E - Building Plans - Details - Sections..	Onsite Eng. - As-built plans - Updated details	FM - New installed devices - Real-time data
Comply with IFC	Y - Revit files (RVT, RFA, RTE) - Other BIM Apps - AutoCad (DWF, DWG) - Other CAD apps - pdf, excel, word files	N - Revit files (RVT, RFA, RTE) - Other BIM Apps - AutoCad (DWF, DWG) - Other CAD apps - pdf, excel, word files	N - AutoCad (DWF, DWG) - BIM Federated model
Information Update	A/M/E - Revised Plans - Details - Sections..	Onsite Eng. - Paper - AutoCad files	FM - Paper - Reports

3 Initial Proposed Solution

- Storing Building information and live data from various sources in and open database comply with construction industry standards

Existing Standards in Construction Industry

- Industry Foundation Classes for data sharing IFC-ISO 16739
- Information Delivery Manual IDM-ISO 29481
- Framework for the Development of built environment classification IFC-ISO 12006

Storing Building Specifications

Building Information Sources

- Updated Info. (Captured Videos)
- Updated Info. (Captured Images)
- List of spaces (A/E/M Plans)
- Library of Objects (A/E/M Details)
- Updated Info. (Laser Scans)

Interface to Extract Useful Information

4 Expected Result

- An application to collect live data from various sources and integrate them with the existing BIM models

Functionality

- Create BIM model (F1: Create an IFC file)
- Accuracy Check of BIM model (F2: Search detected objs. in IFC)
- Update BIM model (F3: Insert detected objs. IFC)

Database

Object Recognition App

Photos