INTRODUCTION

Senate Properties
• A working environment partner for the state administration
• We help our customers work smarter
• Our vision is that the Finnish state is a pioneer in new ways of working and working environments
• We have about 55,000 occupants in 9,000 buildings

Esa Halmetoja
• Senior specialist of digitalization of Facility Maintenance and Operations since 2016
• Development manager 2009 – 2016
• Specialist of electricity 2003 – 2009
• A long-line electrician since 1978
SENATE’S BIM HISTORY

• 1999 ➔ First experiences of BIM
• 2001 ➔ Several BIM research and piloting projects
• 2005 ➔ Directive ”Formal requirements for digital documents”
• 2007 ➔ Over 2 M€ construction projects BIM modelling according to IFC –standard
• 2012 ➔ Common BIM Requirements of Finland is based on Senate’s previous directive (YTV2012 – COBIM2012)
TODAY

• All planning disciplines make models over 1 M€ projects
• Outsourced technical BIM development to BuildingSMART Finland
• Close cooperation with EU BIM Task Group
• BIMs are used as a base of new renovating projects
• Systematic maintenance (update/upgrade) has started in 2018
OUR BIM VISION

As-built model
Operations and Maintenance Model OMM
Conditions Data Model CDM "digital twin"

DESIGNING AND CONSTRUCTING
MAINTENANCE AND FAULT CORRECTION
USE AND SERVICES
The Conditions Data Model is a platform based on building information model (BIM) (= "digital twin")
- Active data receives location from BIM (= “smart data”)
- Space user gets real-time information on indoor conditions and an opportunity to send feedback and service requests
- Property service operator has access to all digital information in the building
- The CDM is the first significant platform economy solution in the Finnish property services business

The conditions data model supporting building information models in facility management
THE CONCEPTUAL ARCHITECTURE OF CDM

Owner-operator

Occupants

Property services

Workplace services

IT-solutions (QR-server, CMMS, CAFM, EMS)

Building service systems (HVAC), BAS, and sensors

BIM/IFC (BIMserver)

PoT Ontology

Product API

Broker API

Context API

Identity API

Message API

Calendar API
CDM USER INTERFACES

Occupants’ UI

Field crew’s UI
CURRENT AND FUTURE USE CASES OF CDM

Visualisation
- Monitoring of indoor conditions comprehensively and space by space
- Presenting user feedback
- Finding the status of a service request
- Monitoring energy consumption of a building
- Monitoring devices on/off status
- Monitoring occupancy of negotiation rooms
- Identifying and finding spaces and rooms
- Shoving personnel presence (Availability)
CURRENT AND FUTURE USE CASES OF CDM

Technical analysing
• Evaluate of the correctness of adjustments for building service systems’
• Detect causes and consequences of service requests
• Identify of factors affecting energy consumption
• Collect and analyse user feedback
• Identify user satisfaction factors

Service management
• Control of room reservations
• Monitor use of desk and space
• Manage of catering
• Manage of IT equipment support
SCOPE

Main goal:
• Managing IAQ using BIM, user feedback and field data

Short-term plan:
• Eight buildings for 2,000 people at the end of 2019
• Expanding to 100 buildings for 25,000 people over four years

Targets (1-4-10):
• One (1) per cent higher performance of office work
• Four (4) per cent savings in maintenance costs
• Ten (10) per cent higher user satisfaction

Economic significance:
• Savings of EUR 6 million per year for the Finnish State
  (100 buildings and 25,000 users)
THANK YOU!

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