spatial compliance information exchange (scie)

E. William East, PE, PhD
buildingSMART Alliance Project Coordinator
scope of the army facilities

78,029 Paved Miles (3 times around earth)

Over 400 Boiler Plants

1.1 Billion Square Feet (40 Sq. Miles Under One Roof)

12.1 Million acres of wetlands (NJ, Conn, Delaware, RI)
scope of DoD facilities

577,000 structures

448 facility types

5,300 worldwide installations

$ 712B replacement value

$ 55B annual o&m budget

"the Army and the Navy had not verified the accuracy of about 39 percent and 59 percent, respectively, of their real property inventory records during the 5 years ending with fiscal year 2007"

Underfunding results in personnel shortfalls leading to lack of ability to inventory and project requirements to project budgets.
iai “early design project” (ar-5)
room function, adjacency, zoning
block and stacking diagrams
review by owner
**dd 1391**

- medical clinic example
  - 11 examination rooms
  - 3 treatment rooms
  - x-ray room
  - Administrative area
  - Service/support area
are “you” getting the building you bought?

- medical clinic example
  - 11 examination rooms
  - 3 treatment rooms
  - x-ray room
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information exchange via COBIE

research results documented in technical report (wbdg.org) includes o & m and ...

- asset management
  - functional classification
  - space measurement
  - zoning
  - blocking diagram

August 2007
cobie object model

Requirements for information exchange directly match IFC model.

difficulties?

• specification for information delivery

• insuring consistent nomenclature across domains

• implementation of cobie model view definition in commercial software
designers’ data

<table>
<thead>
<tr>
<th>Facility</th>
<th>Identification of facilities referenced in a file</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor</td>
<td>Description of vertical levels</td>
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<tr>
<td>Space</td>
<td>Spaces referenced in a project</td>
</tr>
<tr>
<td>System</td>
<td>Systems referenced in a project</td>
</tr>
<tr>
<td>Register</td>
<td>Material/equipment/etc. catalog (submittal register)</td>
</tr>
<tr>
<td>Component</td>
<td>Individually named materials and equipment</td>
</tr>
</tbody>
</table>
link to portfolio via. owner’s facility id

(ref: buildingSMART Alliance briefing)
space capabilities

OmniClass Table 13 “Spaces by Function”
space measurement

IFMA and BOMA requirements for spatial measurement have been harmonized as represented in:
ASTM E 1836-01 Standard Practice for Building Floor Area Measurements for Facility Management and ANSI standard being updated
Point of Contact: davis-gerald@icf-cebe.com

Interior Gross Area

Comprehensive measurement rules

(Ref: Reprt tp ASTM Subcommittee E-6.25, by Subcommittee E06.25 Whole Buildings and Facilities, used by permission of Gerald Davis, Chair)
GSA guide for space planning BIM

GSA lead the use of BIM in the federal government through it’s specification directly targeting architectural programming. GSA’s experience supported, in part, the creation of the buildingSMART Alliance that ultimately helped lead to this meeting.

<table>
<thead>
<tr>
<th>GSA Space Planning Guide</th>
<th>Spatial Compliance Information Exchange (SCIE)</th>
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<tbody>
<tr>
<td>GSA Space Categories</td>
<td>OmniClass Table 13</td>
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<tr>
<td>GSA Space Measurement standard</td>
<td>Harmonized BOMA/IFMA standard</td>
</tr>
<tr>
<td>GSA-specific zoning requirements</td>
<td>Contractually-based zone property set</td>
</tr>
<tr>
<td>GSA-specific occupant identification</td>
<td>Contractually-based space property set</td>
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scie implementation

designer submits scie in cobie file with “native” design deliverable

succinct scie specification feeds cobie needed downstream with no additional work.

maturity model of implementation allows vendors to quickly implement space-function portion now

some have included blocking diagram already but we did not include that in today’s results - future meeting will demonstrate zoning and block diagram.
please help us...

to make sure we correctly describe the project at each phase...
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