Open Information Exchange Standards for the Integrated Digital Built Environment

Jim Plume, Carsten Rönsdorf and Scott Simmons
AIMS

- Identify achievements to date and issues where collaboration is needed
- Identify use cases
- Define the broader scope and broaden the collective understanding and support of the conceptual model giving due respect to the consensus already achieved
- Roadmap conclusions
• Ensure that for domains in which OGC and bSI standards overlap (have touch points) that the conceptual models are identical
• Thereby to ensure that data can be seamlessly translated from an OGC standard to a bSI standard and vice versa
• Thereby offering the users trust and continuity of data between geospatial and construction domain
Three levels of coordination

- **Management** (to meet 3 times p.a.). Include responsibility to develop business /operating models to suite joint initiatives.

- **Planning** (to meet 4 times p.a.) To be between the Principal leads of OGC and the Infrastructure Room Steering Committee of bSI with liaison with the Management level.

- **Development** (to meet 3/4 times p.a.) To be effected by working groups as appropriate under the guidance/direction of the Planning level.
## Governance – organisation structure

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<th>OGC</th>
<th>bSI</th>
<th>Documents</th>
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<td>1</td>
<td><strong>Executive</strong></td>
<td>M Reichardt</td>
<td>R Petrie</td>
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<td>2</td>
<td><strong>Planning committee leads</strong></td>
<td>B De Lathouwer</td>
<td>R Kelly</td>
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<td><strong>Planning committee members</strong></td>
<td>D Mackenzie</td>
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<td>S Simmons</td>
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<td>C Roensdorf</td>
<td>P Jackson</td>
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<td>3</td>
<td><strong>Project Development leads</strong></td>
<td>C Roensdorf</td>
<td>J Plume</td>
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[OGC logo]

[buildingSMART logo]
DESIRED OUTCOMES

• Agreed whitepaper / charter
• Draft roadmap
• Develop position on usage of semantic web technologies in linking geospatial and BIM data
• First cut / ideas about interoperability framework
Joint OGC / bSI White Paper

• Approved by OGC TC and bSI Standards Committee

• Work result from:

  • Nottingham Sep 2015 (pre-meeting)
  • London Nov 2016
  • Paris Apr 2017
IDBE vision

IDBE Vision

Provide clarity and education

Short Term Horizon

Implement and extend convergence (through use cases)

Medium Term Horizon

Long Term Horizon

Realise the Integrated Digital Built Environment

IDBE Steering

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Short term: provide clarity and education

• Maybe 1 year
• Greater level of understanding: Explain differences in approach / where we are at the moment
• Use cases in urgent demand of solving
  – Geotech
  – Survey
  – Urban Planning
Mid term: Implement and extend convergence

• Maybe 3 years
• Through use-cases
• Enable micro/macro simulation across a larger area: building to campus/precinct to regions/catchments
• Temporal: real time and history
• Pedestrian or uav flow through built environment: model and simulate this (wider than navigation; resource allocation and usage; thermal)
• Sensors/IoT
Long term: Realise the IDBE

• Maybe 5-10 years
• Data completely decoupled from tools
• Lots of tool support
• Holistic, integrated modular built environment approach and standard that is universally used
• Data market place with trusted data stores in place
Integration/interoperability

APPROACHES / FRAMEWORK (4 levels):

• Formalising and relating modelling techniques
• Joint conceptual model
• Linking of conceptual models
• Instance linking
The Integrated Digital Built Environment

- Environment Modelling
  - Top-Down approach
  - Data capture
  - Regional analysis
  - Scenario modelling
  - Forecasting

- Built Asset Modelling
  - Bottom-Up approach
  - Design modelling
  - Performance analysis
  - Simulation
  - Construction

- Geospatial Modelling
  - OGC: GML schema / W3C: RDF triples
  - Provides context

- Building Information Modelling
  - BSI: IFC schema, MVD & bSDD
  - Returns as-built data

- Precinct Information Modelling (PIM)
  - Planning, design, construction & operation of built assets

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Questions?

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