Strategic Roadmap

Issue: April 2023
More sustainable, less expensive buildings & infrastructure...

...through optimized decision-making & automation efficiencies...

...enabled by data fusion via open digital Standards & Services...

...created by the buildingSMART community.
### buildingSMART Strategic Roadmap – Vision

<table>
<thead>
<tr>
<th>PHASE</th>
<th>USE</th>
<th>IMPROVE</th>
<th>REINVENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>User Vision</td>
<td><strong>①</strong> Consistent data communication standards</td>
<td><strong>②</strong> Automated connectivity between applications</td>
<td><strong>③</strong> Ecosystem with seamless integrated decision support</td>
</tr>
<tr>
<td>Business Outcome</td>
<td>Improved data integration in design, construction and asset management reduces risk and rework, saving time and cost</td>
<td>Enhanced analysis allows better decision-making on design, construction and asset management trade-offs, improving time, cost and quality</td>
<td>Intelligent design, construction and asset management ecosystem allows optimisation of decision making across the asset lifecycle, improving time, cost and quality</td>
</tr>
<tr>
<td>External Audience</td>
<td>openBIM workflows enable rule-checking and interoperability between applications, helping data integration during design, construction, asset management &amp; decommissioning</td>
<td>Standards, services and software applications are connected, allowing design, construction and asset management predictions through automated simulations</td>
<td>An open and automated, seamless, intelligent ecosystem, allowing semi-automated design and decision-making, spanning different systems and all lifecycle phases</td>
</tr>
<tr>
<td>Internal Audience</td>
<td>Common data exchanges enable interoperability between applications, model federation and digital workflows (e.g. via rule checking)</td>
<td>Connected applications enable process automation, simulations, automated checking &amp; decision support (e.g. automated scheduling, lifecycle costings, code compliance, manufacturing engineering, energy modelling)</td>
<td>Integrated processes with linked data and predictive analytics enable support for intelligent digital twin ecosystems (e.g. automatic predictions of design/engineering changes through connected simulations)</td>
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</tbody>
</table>
buildingSMART Strategic Roadmap – Summary

1. **User Vision**
   - Consistent data communication standards
   - Drive Adoption of current standards

2. **bSI Mission**
   - Automated connectivity between applications
   - Deliver & Drive Adoption of enhancements to current standards

3. **Deployed Standards & Services**
   - Ecosystem with seamless integrated decision support
   - Design, Deliver & Drive Adoption of next generation standards

- Capability growth path
- Linking and Extendibility of Data Standards (bSDD, IDS)
- Interface Standards (APIs)
- Next generation Data Standards, with built-in modularity, extendibility & connectivity (IFC 5); Certification ecosystem

- Ecosystems of Digital Twins
- Automated Simulations
- Consistent data communication standards

**When**
- 2022
- 2023
- 2024
- 2025
- 2026
- 2027+

**Notes:**
1) dates refer to when a new Standard or Service will initially become available to the community, with community adoption occurring progressively thereafter based on user demand;
2) existing and previous Standards will continue to remain valid and be supported beyond the introduction of new Standards.

Current Data Standards (IFC, UCM, IDM); Professional Certification
BuildingSMART Strategic Roadmap – User Adoption Balance

Representation of relative levels of user adoption across industry

Open Standard adoption is not yet the norm across industry

The bulk of adoption uses historical Standards without advanced features

Use of improved Standards is low but will grow

- Open standards not in use
- Consistent data communication standards
- Automated connectivity between applications
- Ecosystem with seamless integrated decision support

2023, 2024, 2025, 2026, 2027+
The main effort across the buildingSMART community remains on the adoption of existing standards (education, advocacy, etc).

A growing effort is focused on finalizing & rolling out improvements to these standards.

A small portion of the community is designing & developing future generations of standards.

1. Consistent data communication standards
2. Automated connectivity between applications
3. Ecosystem with seamless integrated decision support

2023  2024  2025  2026  2027+
# buildingSMART Strategic Roadmap – Standards & Services

## Deployment Timeframe

<table>
<thead>
<tr>
<th>Year</th>
<th>Vision</th>
<th>bSI Mission</th>
<th>Standards &amp; Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>2022</td>
<td>Deliver consistent data communication standards</td>
<td>Drive adoption by making IFC easier &amp; more reliable to use</td>
<td>Normalise IFC 4.x versions; MVD Policy; review UCM Service strategy; provide IFC validation service; create standard implementation levels for vendors</td>
</tr>
<tr>
<td>2023</td>
<td>Allow linking &amp; extending of data standards</td>
<td>Create linked data services &amp; a standard to define data requirements</td>
<td>Rethink IFC Software Certification; Professional Certification 1.1 (create clarity on terminology &amp; mission, introduction of levels &amp; profiles)</td>
</tr>
<tr>
<td>2024</td>
<td>Automate the connection between (online) software applications</td>
<td>Create a set of standard 'Application Programming Interfaces' (APIs)</td>
<td>Creation of Information Delivery Specification (IDS) standard; deployment of buildingSMART Data Dictionary (bSDD) as linked data platform</td>
</tr>
<tr>
<td>2025</td>
<td></td>
<td></td>
<td>Professional Certification 2.0 (how to setup your ecosystem to automate workflows, with framework of levels and profiles &amp; full integration of bSI standards &amp; solutions IFC, IDS &amp; bSDD); metrics for software support of IFC to provide capabilities insights; bSDD data verification</td>
</tr>
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</table>

## Standards & Services

- **Current Data Standards**
  - Deliver consistent data communication standards
  - Drive adoption by making IFC easier & more reliable to use

- **Linking and Extendibility of Data Standards**
  - Allow linking & extending of data standards
  - Create linked data services & a standard to define data requirements

- **Interface Standards**
  - Automate the connection between (online) software applications
  - Create a set of standard 'Application Programming Interfaces' (APIs)

- **Professional Certification 2.0**
  - (how to setup your ecosystem to automate workflows, with framework of levels and profiles & full integration of bSI standards & solutions IFC, IDS & bSDD); metrics for software support of IFC to provide capabilities insights; bSDD data verification

- **Integrated set of APIs for different use-cases**
  - (Foundation API, Document API, BCF API, Properties API, Dictionary API)

- **Software Certification for API support**
  - Process Certification 0.1 (Accelerated Projects (guidelines) / Company Certification)
# buildingSMART Strategic Roadmap – Standards & Services

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<thead>
<tr>
<th>Vision</th>
<th>bSI Mission</th>
<th>Standards &amp; Services</th>
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</thead>
<tbody>
<tr>
<td>Next generation Data Standards</td>
<td>Make IFC leaner &amp; lower the threshold for use</td>
<td>IFC 5 (with integrated modularisation, extendibility &amp; APIs)</td>
</tr>
<tr>
<td>Automated Simulations</td>
<td>Allow linking &amp; orchestration of simulations, with aggregated results</td>
<td>Professional Certification 3.0 (how to build &amp; manage Digital Twins); Process Certification 0.2 (Accelerated Projects (guidelines) / Company Certification)</td>
</tr>
<tr>
<td>Ecosystems of Digital Twins</td>
<td>To explore</td>
<td>To explore – potentially hosting a registry of (online) services, advancing result classification, advanced APIs &amp; more</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Process Certification 1.0 (Accelerated Projects (guidelines) / Company Certification)</td>
</tr>
</tbody>
</table>

**Deployment Timeframe**

- **2025**
- **2026**
- **2027**
- **2028+**
Thank you

Main Website: www.buildingSMART.org

Professional Certification: https://education.buildingsmart.org/

Software Certification: https://www.buildingsmart.org/compliance/software-certification/

Forum: https://forums.buildingsmart.org/

bSDD: https://www.buildingsmart.org/users/services/buildingsmart-data-dictionary/

Knowledge Base: https://www.buildingsmart.org/users/user-guides/

https://www.linkedin.com/company/6431763

https://twitter.com/buildingSMARTIn

https://www.youtube.com/@buildingSMARTInternational