

The buildingSMART International Process

THE DEFINITION OF HOW BUILDINGSMART INTERNATIONAL
INITIATES AND DELIVERS SOLUTIONS & STANDARDS FOR
DIGITAL WORKFLOWS IN THE BUILT ASSET INDUSTRY

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Version release record

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6.4	Richard Kelly	2016 03 31	Inclusion of: <ul style="list-style-type: none"> • the SCTE & Technical Governance • the Room Steering Committee election procedure • Addition of Standards Development and Pre Standards Process • PAS Process • Description of Pre-initiate within Initiation phase. • Appendix A to describe governance of funding release from Program to Projects • Appendix B PAS application form
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			<ul style="list-style-type: none">• Steering committee election process• Liaison with CEN & ISO• Achievement of bSI web enabled presence Elimination of draft standard maturity phase
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The buildingSMART International Process

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1.0 Standing

buildingSMART International has created three formal committees in its company Byelaws to establish and maintain its Solutions and Standards Program. These Committees are the Standards Committee, the Standards Committee Executive and the Standards Committee Technical Executive. The terms of reference for these committees are detailed in the Byelaws. The Standards Committee has overall responsibility for the buildingSMART Process. This document is created and owned by the Standards Committee and details the formal process (the “buildingSMART Process”) for the operation of the Solutions and Standards Program.

2.0 Introduction

This document describes the buildingSMART International (bSI) Process for identifying, creating and deploying digital solutions and standards to enable the built asset industry to perform better.

It is intended as a vehicle to help buildingSMART International (bSI) identify and articulate in the required level of detail the business processes that are required to provide the necessary clarity and rigor to bSI’s activities.

It is understood that it is likely that this document and the processes described within it will need to be regularly updated and developed as the community requirements grow and become better defined.

The organization and business processes are designed to support the desired outcomes of;

Being the standards body of reference for the digital built environment

Having vibrant chapters

a quality marque in demand world-wide.

And recognizes the key conditions for success of:

Easy Access

Working together and with others

Rigor and transparency

Building momentum and broadening engagement.

Whilst providing a robust environment which engenders trust.

In order to achieve these goals the following specific features are being developed:

- Core business processes that are 'Web enabled'.
- This means; that information about the processes and the process itself will be accessible through the web, that the processes themselves will operate within web environments / portals accessible to the relevant community, that communications and voting will be web based.
- bSI Solutions & Standards Summits augment the process(es) but will not be the primary venue where business is transacted.
- Reporting and communication requirements are specified in the bSI Process

The bSI Process ensures clear and transparent ways of working that encourage international consensus to be achieved in the development of the standard or solution and that the output is of high quality and worthy of the buildingSMART brand that is trusted throughout the World.

The onus is placed on projects and working groups to reach out and consult with appropriate and relevant parties to stimulate the feedback required and achieve appropriate consensus. Projects and their governing Rooms shall keep records of the consensus building activity which should be presented as support to Standards Committee submissions.

The consensus tests are progressive throughout this stage gate process and the requirements for endorsement to pass each gateway are set out in this document.

The Standards Committee (SC) will be asked to vote on whether consensus has been achieved and whether the bSI Process has been followed therefore it is important to present this evidence to them.

[The criteria for SC review are specified in **Addendum 4**]

The bSI Process is delivered through three buildingSMART Programs; User, Solutions & Standards and Compliance.

The high-level phases of the bSI Process are: Needs Identification, Solution Development and Deployment.

The User Program defines the need, The Solutions & Standards Program delivers the response to the need, The Compliance Program ensures that the output is fit for purpose.

Quality *assurance* is built into the process by using techniques that deliver right first time output. Assurance measures include; vendor engagement, expert panel input, SCTE review. Quality *control* is provided at stage gates in the process. Control measures include; Standards Committee voting, Expert panel reviews, the Compliance Program.

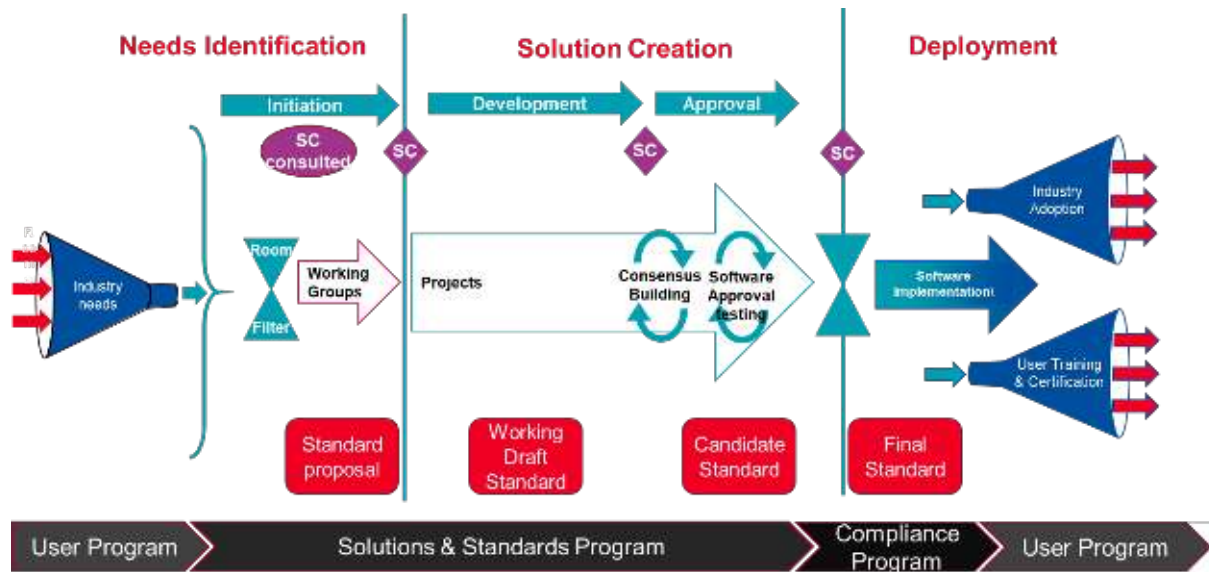
bSI will publish publicly the outputs of the process when they are at the Candidate Standard stage. Although at this stage they are not yet an International Standard, the act of publishing will socialize the work with the wider community and give more opportunity for engagement with the consensus building process.

The output of the process will be published as a bSI Final Standard only when the Standards Committee are satisfied that the full process has been completed.

bSI Standard phases of Maturity

As Standard in development passes through the bSI Process (using a project as a vehicle) it has several phases of maturity. These are: Standard Proposal, Working Draft Standard, Candidate Standard and Final Standard.

See also section 2.4



The bSI Process is supported by a robustly defined organization and web based platform technology which allows information on all aspects to be tracked. This is described in **Addendum 2 – Technology Platforms**.

The links between Process, Organization, Technology & Information (POTI) underpin the strength of the bSI Process.

1.1 bSI Programs – overview

1.1.1 User program

The User program reaches out to the worldwide community to ascertain their requirements. These requirements feed the Solutions & Standards Program's Roadmaps and the projects that emanate from these provide outcomes that the User Program needs.

The main avenue for the User Program into bSI is through the Chapter Calls, and the elected Room Steering Committees.

The bSI International Awards, gather and showcase best practice examples of the application of the Standards & Solutions Program outputs.

1.1.2 Solutions & Standards Program

The Solutions & Standards Program covers the part of the bSI Process where tangible output is created through the vehicle of project management. The phases are:

- Stage 1: Initiation
- Stage 2 : Development
- Stage 3: Approval

The governance of these phases is described in greater detail in this document.

1.1.3 Compliance Program

The Compliance Program is concerned with the deployment of bSI Standards and Solutions in the community. It offers certification of software that has been developed to conform with bSI Standards and it also provides a qualification route for individuals who wish to be proficient in the arena of open digital workflow.

1.1.4 Scope of buildingSMART Standards

buildingSMART standards cover wide range of process and information capabilities unique to the built environment industry, including:

- An industry-specific data model schema - Industry Foundation Classes [IFC]
- A methodology for defining and documenting business processes and data requirements - Information Delivery Manual [IDM]
- Data model exchange specifications - Model View Definitions [MVD]
- Model-based, software-independent communication protocols - BIM Collaboration Format [BCF]
- A standard library of general definitions of BIM objects and their attributes - buildingSMART Data Dictionary [bSDD]

The list continues to grow as stakeholders in the industry work together to identify opportunities to be more efficient and create greater value by applying standard processes and technologies where needed.

More information can be [found here](#).

2.0 General policies

2.1 Intellectual property rights (IPR)

Individuals and organizations working on bSI activities, grant bSI a non-exclusive, royalty-free, perpetual, irrevocable, sub-licensable, transferrable and worldwide license to use any and all (without limitation) materials, know-how, expertise, information, data, tools, schema, applications, software (including all source code) and any other content (including all intellectual property protecting the same) made available by them to bSI, and to perform all acts that would otherwise infringe the same, in connection with the bSI community and otherwise in the course of bSI's business (as carried on from time to time). Such license shall be granted without any payment or other consideration, contingent or otherwise, whether now or in the future, to the organization or individual.

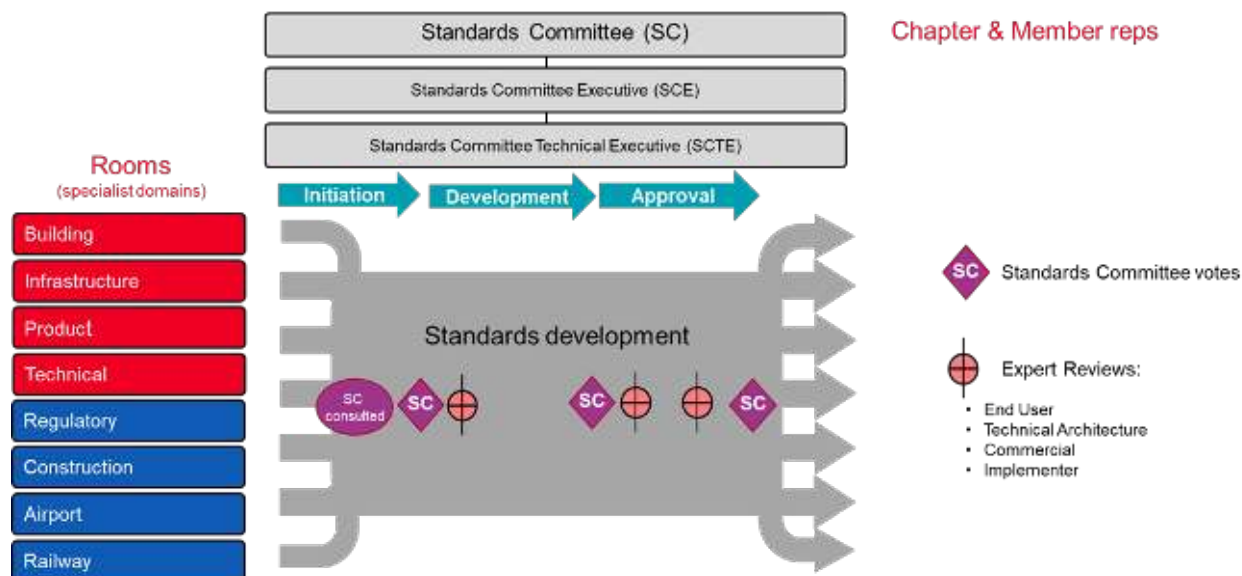
2.2 Governance Overview

The governance of bSI Process is overseen by the Standards Committee, the Standards Committee Executive, the Standards Committee Technical Executive and the Room Steering Committees in accordance with the Byelaws.

[For full details of the governance bodies responsibilities and operating policies see **Addendum1 - Organisation**].

The Solutions & Standards Program contains specialist forums, called Rooms, which own the projects that pass through the bSI Process. Rooms may also manage specialist Groups for undertaking activities which may include research and concept proposals, development work, implementation support activities, tools development and publication, test-bed activities, and service definition and support. Any services to be provided will report directly to the bSI Management Office.

Coordination between these governance bodies is through the Solutions & Standards Program Leader who is in the bSI Management Office (bSI MO).



All activities which contribute to the development and implementation of open interoperable capability and standards are potential activities of Rooms.

However, Rooms may only carry out activities which are detailed in their Charter.

Those activities which are intended to lead to the development of bSI Solutions & Standards MUST follow the bSI Process.

Project, Program & Portfolio definitions

For clarity, the bSI Process adopts the following definitions from the Association for Project Management Body of Knowledge

A **project** is a unique, transient endeavor undertaken to achieve a desired outcome

A **program** is a group of related projects, which may include related business-as-usual activities, that together achieve a beneficial change of strategic nature for an organization

A **portfolio** is a grouping of projects, programs and other activities carried out under the sponsorship of an organization

2.3 Chapter & Member rights and responsibilities

For reference see [Chapter Agreements](#) and [Member Agreements](#) on www.buildingsmart.org.

Where there are specific rights they are mentioned in the text relating to key bodies and eligible persons in this bSI Process document. A summary of these rights follows.

Eligible Persons:

The eligibility of persons to participate in various bodies within the standards process depends on the body and the membership status of the organisation or chapter to be represented by the person. The rules governing eligibility are set out here:

- Nominated Contact Persons: Each Chapter / Organizational Member must nominate a primary contact person. This will normally be the Managing Director, General Secretary or Business Manager depending on the Chapter's governance arrangements. Similarly, each Member must nominate a primary contact person.
- Chapter and Member representatives: must be appointed in accordance with the relevant local rules or delegated powers and communicated by the primary contact person for that Chapter or Member.

Chapters

Chapter Status	Chapter Rights		
	International Council Votes	Standards Committee Votes	Rooms Steering Committee
Full	1	2	1
Developing		1	1
In formation			

Members

Membership Benefits	Standard	Multinational	Strategic
Organization logo on the bSI website	✓	✓	✓
Organization description on the bSI website	✓	✓	✓
Access to exclusive membership portal on ShareFile	✓	✓	✓
Link to your company's website	✓	✓	✓
Promote your company news through the RSS feed	✓	✓	✓
Project participation	✓	✓	✓
Room steering committee participation	✓	✓	✓
Standards committee voting rights	✓	✓	✓
buildingSMART membership to a Chapter of choice	✓	✓	✓
buildingSMART membership of up to five Chapters		✓	✓
One webinar per year for your company		✓	✓
Provide blog content on the buildingSMART website		✓	✓
Use of bSI approved case studies		✓	✓
Logo and description on the homepage			✓
Two free passes per Summit			✓
Company logo on the monthly newsletter			✓
Participation at SAC (strategic advisory council) meetings			✓
Enhanced standards committee voting rights			✓

Participation Criteria

- Rooms are open fora and as such there are no eligibility criteria for persons wishing to attend and observe the activities of any room.
- Participation in a Room Steering Committees and room decisions is only open to representatives from Chapters and Members.
- Group and project participation is only open to representatives of Chapters and Members.
- Expert Review Panels have no eligibility criteria and may comprise other persons provided they have the recommendation of the eligible representatives.

2.4 Maturity Definitions

2.4.1 Standards Status Definitions:

The following definitions shall be used to indicate the maturity of a standard within the bSI
bSI Standards Proposal (SP) – An outline standard or topic area where a proposal is being made to develop a formal standard. bSI Working Draft Standard (WD) – The general description for the Working Drafts of a project consortia. bSI Draft Standard (DS) - First formal version of the standard which is sent to the standards committee executive for assessment.

bSI Candidate Standard (CS) – A standard which has received SCE endorsement and is out for public consultation prior to being sent to the Standards Committee for a vote,

bSI Final Standard (FS) – Final Standard for publication

2.4.2 Technical Report Status Definitions:

The following definitions shall be used to indicate the maturity of a Technical Report within bSI

bSI Working Draft Technical Report (Working Draft TR) – A Technical Report Work proposal which has been circulated to the SCE and advised to the SC.

bSI Recommended Technical Report (Recommended TR) – A report from a third party Relevant Project or a Development or Implementation activity which has been reviewed and endorsed by a Room.

bSI Final Technical Report (Final TR) – A Recommended Technical Report which has been circulated to and received endorsement from the Standards Committee

3.0 Project Execution

The generic term for an endeavor that is being managed through the bSI Process is an activity. Once that activity has a proposal more clearly defined with intended; outputs, milestones, resource identification, funding identification then it is more specifically known as a project.

A project may deliver a variety of different outcomes, not just international standards.

3.1 Varieties of buildingSMART Activities

User needs and initiatives to develop bSI Solutions & Standards can arise in different ways, enter the buildingSMART process with different levels of definition and have different scope.

Once a body has started an activity within the bSI process, it is required that they follow that the process to achieve a bSI recognised outcome. The development of the activity in the bSI Process is subject to bSI's Intellectual Property rules.

3.2 Types of Activity

Activities may result in one of three general types of output from the bSI Process;

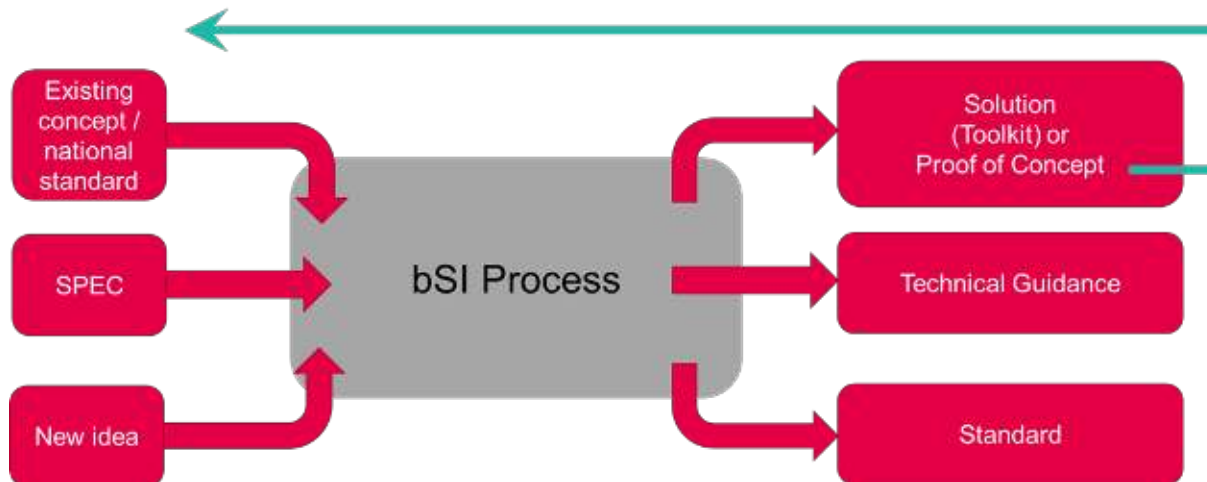
- bSI Final Standard
- bSI Technical Report
- bSI General Activity, such as a new program or an open tool or service
- Proof of concept which may then go back through the bSI Process to deliver one of the three outputs above

There are different levels for project to enter the buildingSMART Process and several scenarios by which a proposal might originate.

Proposals might be for:

- a wholly new concept delivered from start to end
- an existing concept or national standard to be elevated as a bSI output
 - User needs and initiatives have risen and started outside the buildingSMART Process, and certain deliverables have already been produced (IDM, MVD etc). This is then proposed to buildingSMART by a Chapter, Room to go through the buildingSMART Process to achieve international consensus around the products and aim to be Final Standard.
- Publicly available specification (bSI SPEC).
 - A body of work that buildingSMART International has published as being of interest to the wider community but which is not yet a standard.

The pace at which these requirements pass through the bSI Process might differ (normally dependant on the resources available to the project) but the route to delivery is broadly the same.



3.4 Scope and deliverables

Projects can have different scopes and deliver a variety of outcomes.

It is expected that many of the bSI outcomes will be international standards but there is also a need for the publication of Technical Reports and tools to enable digital requirements transfer and proofs of concepts which might lead to further activities.

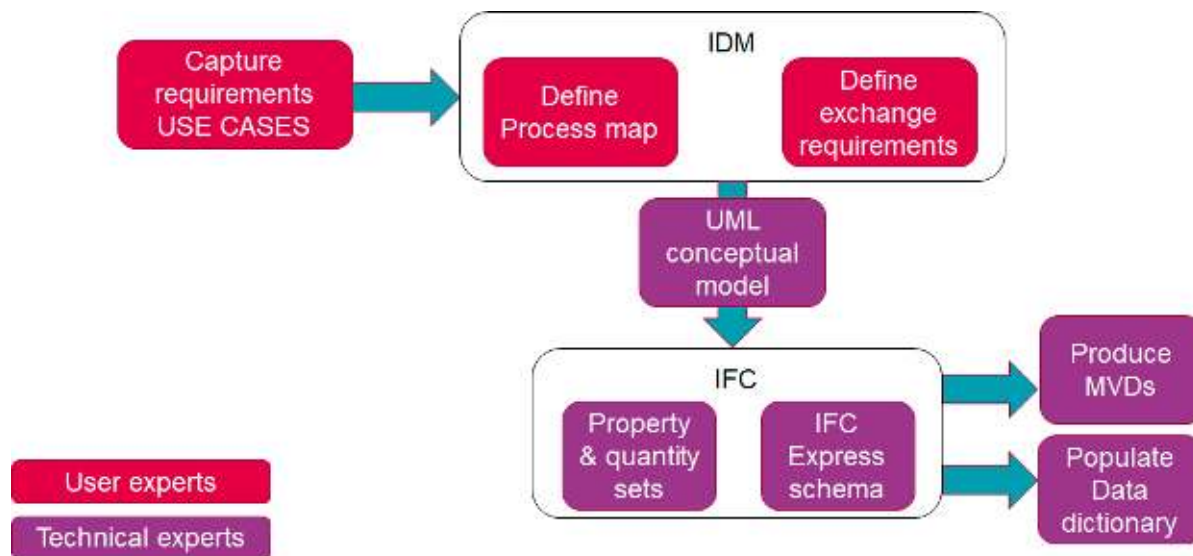
Even when it is a Standard that is to be delivered there is a variety of outputs possible including the scope of the bSI standard types to be included.

The project outputs and scope should be clearly defined. Such outputs should clearly differentiate between elements which are to become formal standards (the specifications themselves) and additional implementation deliverables required to facilitate the successful deployment of the specifications. Both need to be addressed.

For specifications based on the IFC Schema, projects should refer to the Technical Room for guidance. Typically, projects can/are expected to deliver a range of outputs covering the following elements:

- Use case definition & exchange requirements
- Process mapping definitions (IDM) or equivalent
- MVD related to a defined IDM
- Property sets & quantity sets
- IFC Extension
- bSDD IFC Domain Content update
- BCF use
- Software validation test requirements

The key steps to delivering a full bSI Standard are displayed below.



At the outset of the Project the Detailed Project Plan will detail which elements of the bSI suite of standards, shown in the figure above, will be delivered or whether it is one of the other types of output such as Technical Report, Solution or Proof of Concept.

Detailed Project Plans may specify phases of delivery although it is always preferred that the intention is to achieve a full bSI Final Standard or Final Technical Report release.

3.5 Project execution

In addition to the process described in this document detailed guidance has been developed setting out suggested work methodologies for large IFC Schema extension projects. This is available in the form of a *draft Technical Report* from the Rail Room at the time of writing.

3.6 Schema release strategy

The Detailed Project Plan will be evaluated by the SCTE against bSI's Schema Release strategy (prepared by the Technical Room). The SCTE will determine the appropriate release references.

3.6 Software Vendor engagement

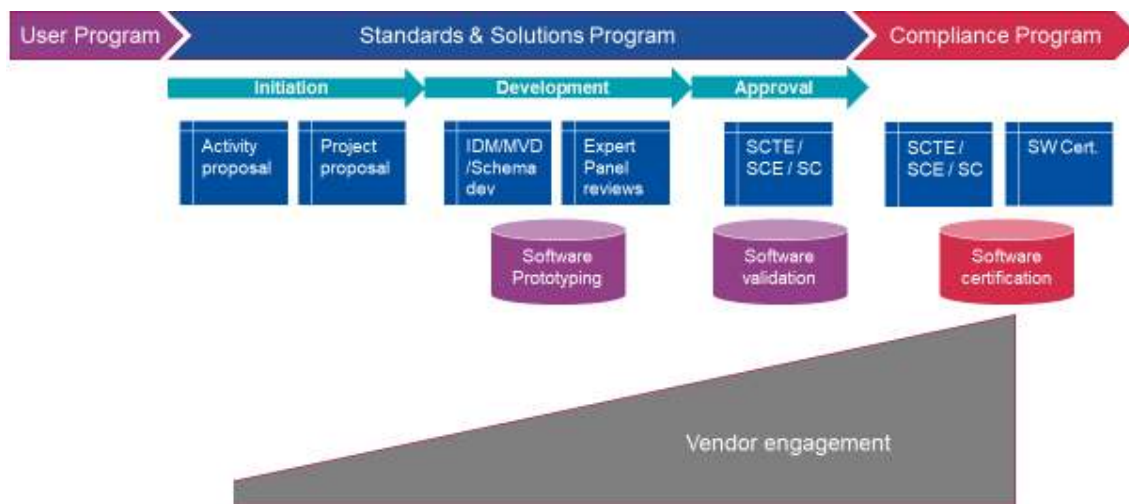
At the Approval phase, Candidate Standard stage when appropriate the software validation will be completed. The software testing and vendor engagement will be carried out from the early stages of the bSI Process.

Software vendors need to be engaged at the earliest stages of a standard or solution development so that they have a view of the intent, contribute to the creation and can begin resource planning.

This will assist with ensuring right first-time output and a rapid deployment to market once the standard is published.

The Detailed Project Plan shall describe how the vendors will be engaged with a view to identifying which vendors will be the ones who carry out the Software validation at the Approval phase of the project.

The process to engage Software Vendors will be established by building SMART International. A proposal is prepared for review and expresses a level of detail to deliver the intention in the figures below.

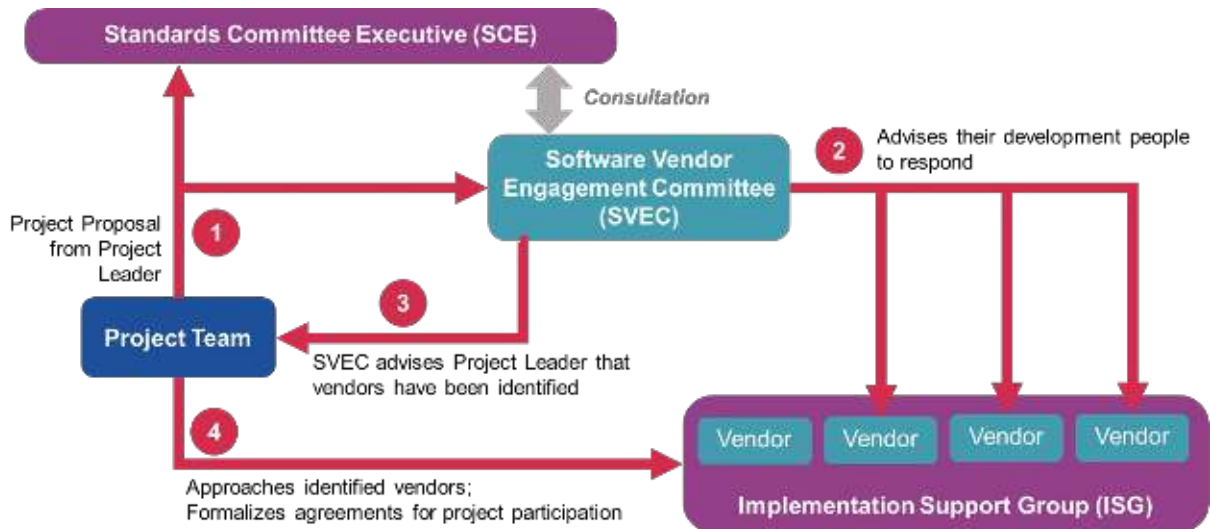


A Software Vendors Engagement Committee (SVEC) will be established comprising of senior personnel from the Software Vendor membership base.

The process for engagement is:

1. Project Manager submits the Detailed Project Plan to the SCE and the SVEC at the same time
2. The SVEC assesses the proposal document and uses their industry knowledge to identify software vendors that are most likely to be interested. The SVEC approaches these companies and enquires as to their interest. The seniority of the SVEC should provide assurance to the vendors that the proposal is sincere and worth investing time and resource in.
3. The SVEC advises the Project Manager which vendors would be willing to participate in the development of the Standard Proposal

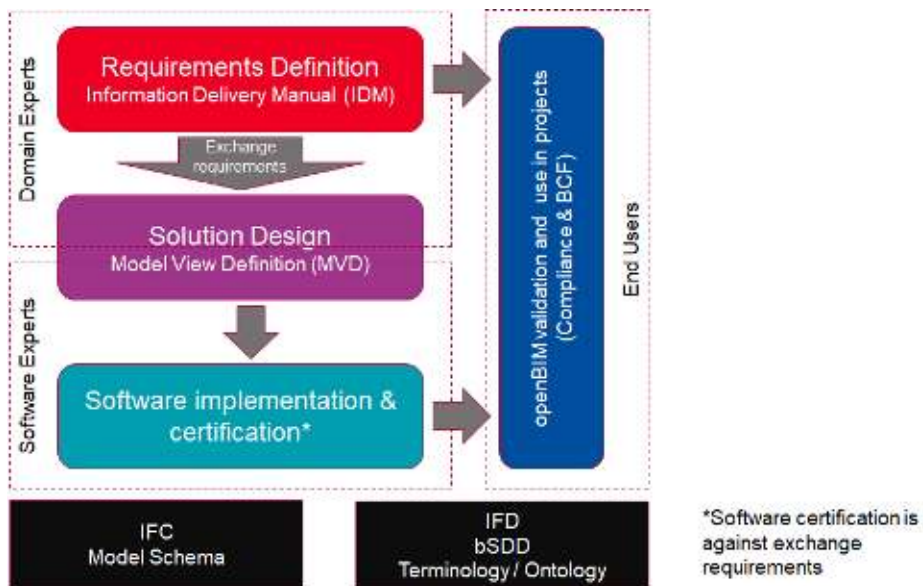
4. The Project Manager approaches the interested vendors and formalises their engagement to develop trial software during the standard development phase.



The IFC schema testing process is being defined (late 2019) and will be added to this document once fully defined.

bSI Candidate Standards, bSI Final Standards and bSI Technical Reports are published at buildingSMART Internationals library: <https://www.buildingsmart.org/standards/bsi-standards/standards-library/>

The model below illustrates the five basic bSI Standard types and how they relate to the User and Software community



3.7 Activity Funding

Activities are funded through sponsor support and this can be either monetary or work in kind or a combination of both.

Sponsors agree to a consortium agreement between all the contributing parties and bSI which may be a simple memorandum of understanding (MOU) for smaller activities.

This details the level and type of sponsorship being committed. As the activity becomes a more defined project plan, the agreement is updated to reflect the funding against specified milestones.

Sponsorship can either be on the bSI balance sheet or not. It is preferred that sponsors make the funding payments to bSI MO so that the bSI Operations Director is accountable for the control of these funds.

[See **Addendum 3 - Project Delivery Governance**, section 6.0 for full details]

4.0 Solutions & Standards Voting

4.1 Notification and voting requirements

The voting and notification rules governing the advancement of standards up the maturity scale are as follows:

From	To	Voting & Notification
bSI Standards Proposal	bSI Working Draft Standard	SCE supports proposal. Simple majority of SC members vote positively with no major objections. and at least three Chapters or Members commit to take part and nominate experts.
bSI Working Draft Standard	bSI Candidate Standard	Project Steering Committee agree that the project's work plan is complete and that the consensus requirements have been met. Also agree that there is a plan for software validation. Simple majority of SC members vote positively

		with no major objections or opposition. SCE in favor.
bSI Candidate Standard	bSI Final Standard	International consensus requirements demonstrated. Software validation completed satisfactorily. Majority in SCE will allow it to be forwarded to SC for vote. Circulation to SC 8 weeks. 65% of SC members in favor. Not more than 10% of total votes cast are negative.

See section 2.3 for voting entitlement

5.0 THE bSI PROCESS - DETAILED DESCRIPTION

This process description addresses each of the three main phases (Needs Identification, Solutions Creation and Deployment) in turn. The initiation requirements, outputs, review expectations and detailed process steps are described for each main phase sequentially.

5.1 STAGE 1 - NEEDS IDENTIFICATION

5.1.1 INITIATION

5.1.1.1 Requirements and Responsibilities

The proper development of a Standard Proposal requires the following steps to be taken.

5.1.1.2 Starting a new activity

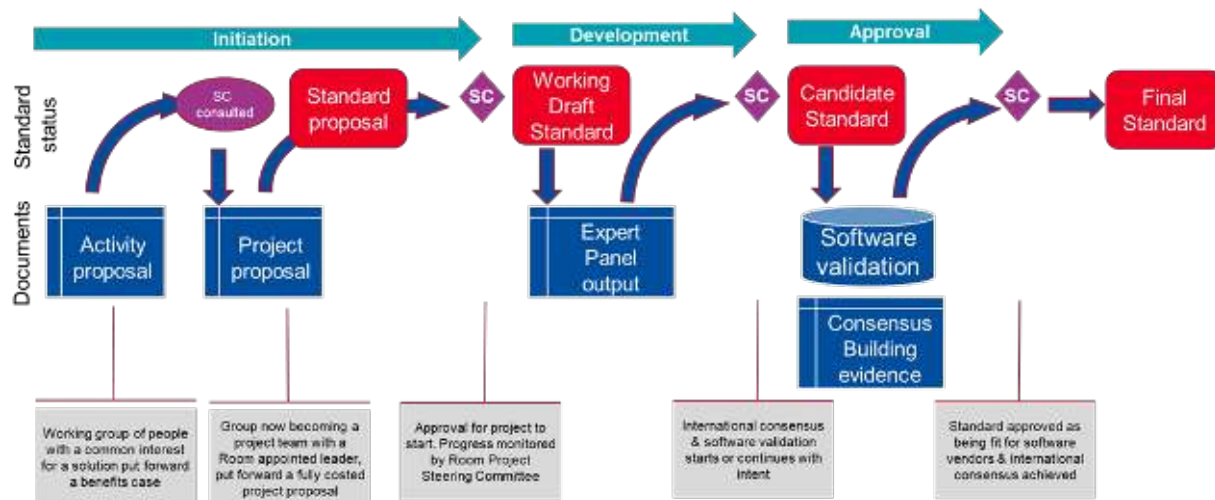
Anyone in the buildingSMART User community can initiate a new activity in buildingSMART International. They can be proposed by Chapters, Members, Rooms or third parties.

The proposal might be because they have identified a need for a new solution or there is work already underway on a national initiative that they believe would be of international relevance.

It is anticipated that activities will normally be supported by a focused working group, although in exceptional cases (such as a newly formed room) it may be accepted that the room will act as the project working group.

The working group in the first instance will complete an Activity Proposal and submit it to buildingSMART International Management Office (bSI MO) to open the discussion about the proposal.

The Activity Proposal addresses the opportunities, needs and objectives of the activity.



The Solutions & Standards Program Leader (within the bSI MO) will direct the proposal to the most appropriate Room. The Room Steering Committee will engage with the initiator and assess whether the proposal is in line with bSI's goals and has sufficient interest to be worth progressing.

The Room Steering Committee will ask the SCE (through the Program Leader) to pass the Activity Proposal to the Standards Committee (SC) for consultation

Once the activity proposal has received a review by the SC, permission is given to the initiator to prepare a Detailed Project Plan.

Note: Activity Proposal and Detailed Project Plan documents should not be confused with Standard Proposal. The latter is a definition of the Standard in development's phase of maturity as it passes through the bSI Process.

Proponents are recommended to use the bSI [Activity Proposal Template](#) & the [Detailed Project Plan Template](#) whenever possible.

The requirements and responsibilities of projects during the three project stages are described in **Addendum – Project Delivery Governance**

5.1.2 Output and documentation

The output of the **Initiation Phase** is a clearly defined bSI Detailed Project Plan which describes the intention to deliver one of three things; bSI Final Standard, bSI Final Technical Report or a bSI Solution.

This is known as the **Standard Proposal, Technical Report Proposal or General Activity Proposal**

This is documented with a business case which describes opportunity and industry needs.

For a detailed description of the **bSI Detailed Project Plan** required content, see **Addendum 3 – Project Delivery Governance**

5.1.3 Review Requirements

A **bSI Standards Proposal** must at least contain the following for it to be formally approved:

- At least one member organization and one chapter.
- at least [1] project sponsor in order to support industry need the bSI Solutions & Standards Proposal requires.
- Definition of the standard specification and implementation deliverables the project will deliver. If the project is proposing an IFC extension the Detailed Project Plan should describe a work package on MVDs for software testing as described in section 3.6.
- a description of the Expert panel review process, if Experts are not known at this stage the proposal can ask the SCE to propose Experts

5.1.4 Process

Room Steering Committee – review the **bSI Solutions & Standards Proposal** to ensure it is well supported in in the community and will support user needs in industry. This review includes a preliminary check on SC review requirements and the committee should aid in fund raising and finding member organizations or chapters to be involved.

If more project sponsors are required, the Room has the responsibility to put project sponsors forward.

SCE – Reviews the **bSI Standards Proposal** whether it is well aligned with the buildingSMART Mission and is mature enough to go up for Standards Committee voting. They also ensure that there is not overlap between other projects within the buildingSMART community and that is well aligned with standards development in other organizations (such as OGC) and validate the ISO / CEN alignment status.

SCTE – The Standards Committee Technical Executive support the SCE to; Advise on the technical aspects of any activity that is following the process, especially to review the output of the project Expert panels. Ensure technical harmonisation across all activities and to arbitrate between competing domain use case requirements to ensure the bSI overall standards are coherent amongst themselves. The SCTE is also responsible for reviewing technical queries and keeping a transparent record of key decision. Project are therefore required to provide the SCTE with appropriate documentation.

SC – Is consulted regarding the **Activity Proposal** and votes on whether the **Detailed Project Plan** meets the criteria for entering the development phase by passing from Standard Proposal to Working Draft Standard. SC Members are expected to distribute the Activity Proposal within their Organization or Chapter and seek input from related individuals. A core purpose of this consultation is to raise awareness of the activity, invite additional participation and optimise the proposed scope of the activity. Comments from the SC are to be feed back to the bSI MO via the voting tool.

The SC votes on projects that are delivering General Activities or Technical Reports using the same criteria.

[The criteria for SC voting are explained in **Addendum 4 – SC Review Requirements**]

They should consider:

- that it is relevant for being developed into an international standard that will support digital workflows for the built asset industry
- Is it truly of international relevance?
- Is there a plan for establishing international consensus, which includes; Expert Panels and software engagement
- the opportunity for people in their chapter or organization to be involved

When the bSI Proposal has been reviewed through these steps it is ready to proceed in to the next stage - **Solution Creation** which consists of the phases **Development** and **Approval**

5.2 STAGE 2 - SOLUTION CREATION

5.2.1 DEVELOPMENT

5.2.1.1 *Requirements and Responsibilities*

When the **Standard Proposal** is approved by the Standards Committee, the project proceeds to the Development Stage and is known as a **Working Draft Standard**.

For a Working Draft Standard to be eligible for endorsement as a Candidate Standard the following criteria must be achieved:

Project Manager and their team are responsible for the execution of the projects to achieve the time, cost and outcome expectations.

Standards may not proceed to the Approval Stage if there are material disputes between project participants or any outstanding financial issues.

Demonstrate with documented records the Consensus Engagement achieved for the standard which shall normally include:

- Documented action on expert reviews /comments
- Strong consensus between the project and the Expert Review panel

- Endorsement from relevant Support or Working Groups in accordance with the project plan
- The governing Room Steering Committee is properly kept up to date and no sustained opposition
- The extent of Public Consultation required at this stage shall be determined in consultation with the governing Room Steering Committee.

Demonstrate that there is a plan for software validation which includes documented agreements with # or more software vendors in accordance with the software engagement process (see above)

The Project Manager is responsible to keep the **Room Project Steering Committee (RPSC)** updated and will report to this **RPSC** on a monthly basis.

[The reporting routines are described in **Addendum 3 – Project Governance**]

The **RPSC** is responsible to ensure that the project follows the buildingSMART Process, supporting the values of buildingSMART and help the project unlock issues and support its progression.

5.2.1.2 Expert Panel Review Process

During the development phase, the project will present and review its progress and outcomes to an Expert Panel.

Expert Review

- Expert Review Panels must comprise members with no affiliation to the project team considered able to review project deliverables from viewpoint such as domain expertise, end users of software, commercial interests, technical architecture or implementation.
- Expert Panel meet regularly depending on nature of project, the deliverable schedules. Expert Panels are expected to review deliverables prior to the meeting, participate in the meeting, and provide feedback or regional or national or organization input (e.g. classifications, regulations, other standards).
- The output from the Expert panel will be presented to the SCTE. A template is provided for the Expert panel to summarise their work

5.2.1.3 Consensus Building

During the **Development Stage**, bSI expects appropriate reviews to be undertaken in the areas of User and Commercial Requirements, Technical Architecture and Implementation Requirements to support the overall objectives of consensus and coherency.

The Project Manager is responsible to establish these reviews

The extent of Public Consultation required at this stage shall be determined in consultation with the Room Steering Committee and project stakeholders.

5.2.1.4 International consensus output

Once consensus building is completed the **bSI Working Draft Standard** is submitted to the Standards Committee (through the SCE by the Room Steering Committee) for endorsement as a **bSI Candidate Standard**. Once endorsed it will be published on the bSI Website for information.

5.2.1.5 Output and Documentation

- Strong consensus between the project and the Expert Panel, which includes Documented actions Expert review and comments
- SCTE endorsement of the Expert panel outputs
- Validation with software, documented with testing
- Endorsement by the Standards Committee that the project is fit to be a bSI Candidate Standard

5.2.1.6 Review Requirements

Room Project Steering Committee – approve the deliverables of the project according to the agreed scope in the **bSI Standard Proposal** and request the **Room Steering Committee** endorse it and start the approval process.

Room Steering Committee – review the deliverable (standard or other like report), and that the consensus requirements have been met, endorse it and **start approval process**. The Room Steering Committee should assist and support in this and ensure liaison with the appropriate resources in the community (Technical, MSG, ISG etc).

SCTE – endorses the output of the project Expert panels and that any harmonization issues have been addressed

SCE – Consensus requirements met, no serious opposition to suitability for validation testing and publication as Candidate Standard

SC – Consensus requirements met, no serious opposition to suitability for validation testing and publication as Candidate Standard. Give reasons for a negative vote.

The SC votes on projects that are delivering General Activities or Technical Reports using the same criteria.

[The criteria for SC voting are explained in **Addendum 4 – SC Review Requirements**]

5.2.2 APPROVAL

5.2.2.1 Requirements and Responsibilities

For a Candidate Standard to be eligible for endorsement as a Final Standard the following criteria must be achieved:

Demonstrate, with documented records the **Consensus Engagement** achieved for the standard which shall normally include:

- Strong consensus between the project and the Expert Review panel
- Endorsement from Support or Coordination Working Groups in accordance with the project plan
- Sponsor Room or Working properly kept up to date and no sustained opposition
- Public consultation inclusive of 8 weeks circulation to SC complete and issues addressed.
- Statement of impact on existing standards, such as a summary of the new content and a table of changes to any already published standards

Demonstrate that software validation has taken place in accordance with the software validation process (described in 3.6)

The Project Team should not be dissolved until a positive vote has been received on the Candidate Standard and it has become a Final Standard. This ensures that the Project Team in the Room is still able to update the Candidate Standard according to SCE and SC feedback.

bSI Candidate Standards may not proceed to approval as Final Standards if there are any outstanding commercial matters.

5.2.2.2 Consensus

The project should aim to achieve a good documented consensus around the deliverables.

In the final approval stage, this will be tested by the Standards Committee by a public consultation

5.2.2.3 Software Testing

Before a Standard can be published as a bSI Final Standard it has to undergo software approval validation.

To ensure the Standards in development are going to be suitable for software vendors to adopt the project will include software validation as part of the Solution Creation / Approval phase of the bSI Process.

5.2.2.4 Output and Documentation

The final output will be classified as one of the following

- bSI Final Standard
- bSI Technical Report
- General Activity solution

The deliverables will be published in the Standards, Reports & Tools Library on www.buildingsmart.org with links to the component parts of the overall output which will reside on the most appropriate of bSI's web based platforms.

More explanation of this is in **Addendum 2 – Technology platforms**

5.2.2.5 Review Requirements

- **Room Project Steering Committee** – approve the deliverables of the project according to the agreed scope in the **bSI Standard Proposal** and request the **Room Steering Committee** endorse it and start the approval process.
- **Room Steering Committee** – review the deliverable (standard or other like report), and that the consensus requirements have been met, endorse it and **start approval process**. The Room Steering Committee should assist and support in this and ensure liaison with the appropriate resources in the community (Technical, MSG, ISG etc).
- **SCTE** – endorses the output of the project Expert panels
- **SCE** – Consensus requirements met, software validation completed satisfactorily
- **SC** – Consensus requirements met, software validation completed satisfactorily 65% in favor, no more than 10% against publication as a bSI Final Standard.
- The SC votes on projects that are delivering General Activities or Technical Reports using the same criteria.
- [The criteria for SC voting are explained in **Addendum 4 – SC Review Requirements**]

5.5 STAGE 3 – DEPLOYMENT

The definition of the Deployment Phase is to follow.

6.0 bSI Publicly Available SPECification (SPEC)

A document that can be produced by any organization that wants to standardize best practice on a specific subject but is not yet ready to proceed with producing it as a bSI Standard. The SPEC invites comments but unlike the final bSI Standard, it does not necessarily reach consensus.

Creation of a SPEC precedes the Standards Process and is therefore not subject to SC endorsement.

The SCE act as Sponsor of the SPEC and the SCE will decide if an article of work is suitable to be accepted as a bSI SPEC. i.e it must be relevant to bSI's business work.

There are certain conditions that the SCE must take into consideration;

The work being proposed as a SPEC must:

- be free of Intellectual Property Rights (IPR) restrictions
- not be in conflict with other bSI Standards unless it is clear that it is a continuous improvement development.

bSI Chapters and Members may produce a bSI SPEC. Third Parties may also produce a bSI SPEC but a fee will be payable to bSI.

The cost of production of the SPEC and translation into English, is at the authoring organization's expense.

Application to produce a bSI SPEC will be made to the SCE.

The SPEC shall be reviewed by the SCE every 3 years to decide whether to confirm it as a SPEC for a following 3 year period or require it to enter the Standards Process for progression to bSI Standard or to be withdrawn.

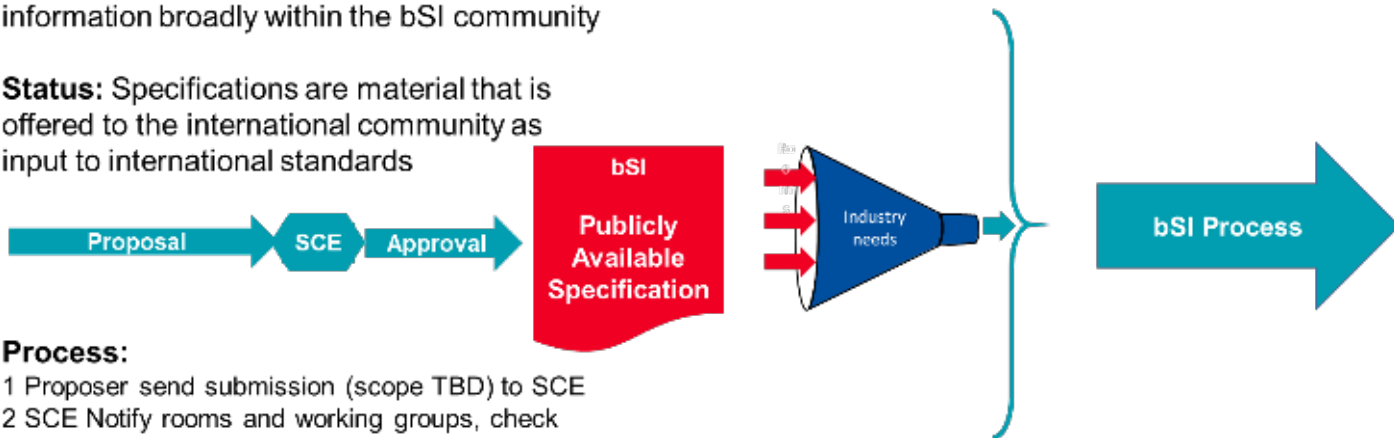
After six years the SPEC will either proceed to bSI Standard or be withdrawn.

The SPEC Process is:

1. An organization wishes to present their work as a bSI SPEC and approaches the SCE with the SPEC application template completed (see Appendix B).
2. The SCE reviews the application and notifies Rooms and Working Groups.
3. The SCE checks relevance to bSI activities, conflicts and publication issues.
4. The SCE decides whether it meets the criteria to be considered as a bSI SPEC.
5. The authoring organisation is informed of the SCE decision.
6. If the SCE agree to the creation of the SPEC then the authoring organisation provide the documentation in accordance with the Application for bSI SPEC template (see Appendix B, stage 2). This will be written in English and produced at the authoring organizations cost. The documentation may be provided as HTML with a URL but will also be provided as a pdf.
7. The SCE review the draft SPEC and notify relevant Rooms and Working Groups. A further assessment is made of relevance and conflict with bSI activities.
8. The SCE make a decision.
9. If the SCE agree that the SPEC is adequately produced, bSI will publish the SPEC on www.buildingsmart.org and the bSI Intranet.
10. The authoring organisation will be told of the SCE decision and it will be stipulated that the SPEC will be reviewed by the SCE on the three year anniversary of publication.
11. If the SCE is reviewing the SPEC on the six year anniversary the authoring organisation will be told that it must start the process for conversion into a bSI Final Standard or be withdrawn.

Purpose: To allow sharing of relevant information broadly within the bSI community

Status: Specifications are material that is offered to the international community as input to international standards



Process:

- 1 Proposer send submission (scope TBD) to SCE
- 2 SCE Notify rooms and working groups, check relevance to bSI activities, conflicts and publication issues if any
- 3 SCE Approve publication

7.0 Relationship with ISO & CEN

bSI will aim to introduce work that it wishes and expects should lead to an ISO Standard as early as possible into the ISO process. The latest stage at which bSI is expected to initiate a New Work Item in ISO is when appropriate work reaches bSI Candidate Standard status.

The venue and dominant governance and management authority shall be at and through bSI's meeting and process until bSI formally declares a body of work ready to be finalised as an ISO Standard. (ISO DIS below).

ISO and bSI will each provide their own administrative resource to facilitate the engagement of their respective communities / processes. Until such time as bSI 'passes the baton' ISO shall be passive.

The current IFC domain extension work is intended to go forward to ISO however bSI expect substantial further harmonisation and implementation readiness work before it will be ready to become a formal ISO Standard

See further details: <https://www.iso.org/developing-standards.html>

The bSI Process



The ISO Process

