

## 2007 Annual Report

### **Board of Direction**

#### **Executive Committee:**

Thomas Gay ([thomas.gay@fmglobal.com](mailto:thomas.gay@fmglobal.com))  
Dave Conover ([DConover@iccsafe.org](mailto:DConover@iccsafe.org))  
John Cross ([Cross@aisc.org](mailto:Cross@aisc.org))  
David Hammond ([David.M.Hammond@uscg.mil](mailto:David.M.Hammond@uscg.mil))  
(All other BOD members are listed on web site)

#### **Executive Director:**

Deke Smith ([deke@dksic.net](mailto:deke@dksic.net))

#### **Technical Coordinator:**

Deke Smith, Acting ([deke@dksic.net](mailto:deke@dksic.net))

### **Overview**

- In 2007 the Board of Directors of the National Institute of Building Sciences (NIBS) established the "buildingSMART alliance" to provide and promote methods for the integration of all facility life-cycle processes that embody the planning, construction, operation, occupancy and disposal of the built environment through the dynamic and interoperable exchange, use and retention of digital representation, and the functional characteristics of accurate and useful information.
- The buildingSMART alliance is a program of NIBS and builds on such pre-existing NIBS programs as the North American Chapter of the International Alliance for Interoperability (IAI/NA), the Facilities Information Council (FIC), the National Building Information Model Standard (NBIMS) Project Committee, the U.S. National CAD Standard, the Facility Maintenance and Operations Committee's Construction Operations Building Information Exchange (COBIE) initiative, and AGCxml, a cooperative project with the Associated General Contractors of America.
- The buildingSMART alliance is a membership-based program of NIBS that is open to any person, corporation, agency or other entity, public or private, engaged directly or indirectly in activities supporting the purpose of the Alliance.
- In 2006 the NIBS board created a task group, chaired by Jose Teran, to develop the buildingSMART alliance. The task group created an interim Board of Direction at the kick-off meeting on July 11-12, 2007. The interim board is chaired by Tom Gay and now meets monthly after spending much of 2007 meeting weekly.
- Deke Smith was hired in March in a part time position to act as the executive director of the buildingSMART alliance.
- Peter Smeallie, former interim executive director of the IAI/NA, ([smeallie@verizon.net](mailto:smeallie@verizon.net)) has been hired in a part time contract position to support marketing and membership efforts.
- A new Technical Committee for North America was formed, and Deke Smith has been appointed as the acting Technical Coordinator.

### **Membership**

- The Alliance is a membership-based organization with individual, corporate and government agency memberships, as well as sponsorship categories. Most IAI/NA members have transitioned to Alliance memberships.
- At the end of the year, just after the general call for members, the Alliance comprised 57 members (more than doubling its total in the last four months) for a total of \$216,700 in membership dues.
- The Alliance will seek to be as inclusive as possible to ensure full involvement from the construction industry. As we identify the players involved, marketing efforts will progress to

encourage them to join. During 2008, we will establish a cut-off date whereby only members in good standing will receive certain benefits.

- We anticipate that the buildingSMART alliance Conference, Journal of Building Information Management, and Web site and new marketing materials will boost awareness and therefore membership.
- We will have members from the individual level through corporate level to include local and federal members as well as associations. Sponsors will be encouraged and will ultimately provide the primary funding stream. A student membership also exists.

### **Alliance Activities**

- National buildingSMART alliance Conference at the Washington, DC Convention Center, December 13, 2007. 250 participants as part of 2007 EcoBuild / AEC-ST conference. Included a NIBS/building SMART exhibit booth visited by scores of delegates.
- The National Building Information Modeling Standard (NBIMS), a project of the FIC, was released: NBIMS version 1, part 1 (<http://www.facilityinformationcouncil.org/bim/publications.php>).
- The first edition of the *Journal of Building Information Modeling* was issued in December.
- A web site was launched at [www.buildingsmartalliance.org](http://www.buildingsmartalliance.org) to provide information about the Alliance, including its programs and projects.
- A membership brochure was developed and distributed at various meetings and conferences. Active marketing and membership solicitation initiatives were launched.
- Tom Gay and David Hammond represented the U.S. at the International Alliance for Interoperability meeting in April in London, England and in November in Brisbane, Australia.

### **Presentations in 2007**

- National Streamlining Conference, "Benefits of Cooperation," February 2007.
- Emerging Technology Summit IV, "AEC/CAD/BIM: The User Perspective," March 2007.
- Bechtel PFE Conference, "The Expanding Role of BIM in Construction and the National BIM Standard," March 2007.
- FIATECH Annual Technology Conference & Showcase, "Building Information Models: A Strategy for the Real Property Industry," March 2007.
- National Academy of Sciences, Federal Facilities Council (FFC), "NBIMS/buildingSMART and the FFC: Coordinating Federal Implementation," April 2007.
- International Alliance for Interoperability, International Council London, "buildingSMART alliance," April 2007.
- AEC-S+T, National BIM Conference, Multiple Sessions, May 2007.
- JSEM, "BIM and Beyond: USCG Case Studies from Mission to Management," with Dianne Davis, Kimon Onuma, Jim Watson, Dave Hammond; May 2007.
- 6th Annual Federal Environmental Symposium, "buildingSMART Alliance and National BIM Standard," June 2007.
- AEC Technology Strategies 2007, "Building Information Modeling: Supporting the Infrastructure," June 2007.

- International Construction Information Society, “Change We Must-Building Information Modeling,” June 2007.
- Construction Specifications Institute, “Change We Must,” June 2007.
- McGraw-Hill Change/AIA California Chapter Conference, “Change We Must,” June 2007.
- APPA Convention, “Virtual Data Integration Using BIM, TCO and AIM,” July 2007.
- MicroDesk Presentation at the Finish Embassy, “Building Success,” July 2007.
- General Services Administration, “BIM and Integrated Practice Industry Update,” July 2007.
- Society of Military Engineers/IFMA, “FM Best Practices: Sustaining BIM,” September 2007.
- DMJM H&N, “buildingSMART 2020,” September 2007.
- FIATECH, “Harmonizing ISO 15926 & ISO/PAS 16739,” September 2007.
- Japan Institute of Architecture, Tokyo, “buildingSMART alliance and BIM,” October 2007.
- Construction Management Association of America Convention, “Implementing BIM as a Comprehensive Collaboration Tool for Success.” October 2007.
- Integrated Design: “Introduction to buildingSMART alliance,” November 2007.
- Grunley Construction, “BIM Today and Tomorrow,” November 2007.
- Minneapolis BIM Breakfast Club, “buildingSMART alliance Introduction,” November 2007.
- AIA TAP Conference, “buildingSMART alliance Introduction,” December 2007.
- AIA Building Connections, “buildingSMART alliance Introduction,” December 2007.
- National building SMART Alliance Convention; one full day of presentations integrated with other sessions related to NBIMS, WBDG, FMOCC, NCS and other efforts; December 2007.
- NECA Webinar, “Introduction to BIM and NBIMS,” December 2007.

## ***Technical Activities***

### **buildingSMART alliance™ Technical Committees (IAI-NA)**

#### **1. IFC Technical Subcommittee**

- Cross platform communications of IFC objects. Rationale: to facilitate use of IDM, and MVD in an application neutral context and the extension of schemas and IFC profiles for standardization.
- Packaging of information and exchanges between disparate software applications on the web.
- Rationale: to facilitate more practical development of transportable model views between applications via standardized service interface.
- Extension of coordinate reference systems for AEC applications using existing interface services and encodings as applied to building identifiers, object properties, metadata, and

their respective geometries. Rationale: extend beyond the local coordinate system of single building models.

## 2. IDM Technical Subcommittee

- IDM activities in the U.S. are accelerating in many areas, but each one is being done in a slightly different manner leading to the need for harmonization after the fact.
- Many colleagues are working on a uniform way to create IDM's that are localized and standardized in a way that aligns with International IDM methodologies. To this end, we are working closely with CSI on the OmniClass system to make it supportive of BIM as a product and process.
- A committee has been created internal to CSI to support this activity and it will work closely with the IFD effort.
- Web and BPMS are being constructed to help systematize the activity as a future forward way of scaling the User requirement activity.
- Dianne Davis, Kimon Onuma, Roger Grant, Charles Eastman, and others are part of this activity.

## 3. MVD Technical Subcommittee

- **Integrated BIM Standard Development Process, Tools, and Templates**
  - Development in collaboration with Virtual Building Labs in Finland, buildingSMART Norway, and AEC3.
  - Began in an attempt to integrate the methodologies and tools for IDM (Information Delivery Manual) and MVD (Model View Definition).
  - Then grew to include BIM data validation process and tools for use in building projects -- by end users.
  - Data validation seen as the 'third leg in the stool' that makes IFC BIMS relevant, useful, and even important to building projects.
  - Integrated process from requirements definition through to routine use in projects.
  - Should eliminate today's uncertainties in relying on IFC in projects.
  - Intent is to use this process in developing the U.S. National BIM Standard (below)
- **US National BIM Standard**
  - Work in 2007 centered on forming the NBIMS committees and on definition of the processes to be used to involve the US building industry, to define the standard, and to assess industry consensus on the standard.
  - V2 development will begin 2008; the scope is expected to include BIM use in early design and at facilities information handover to operations.
- **SMARTcodes Project**
  - Project led and funded by the International Code Council (ICC).
  - Project participants include AEC3, Digital Alchemy, Battelle Northwest, and several ICC member building departments across the U.S.
  - Project goals center on enabling a broad range of software applications to improve understanding, use, and conformance assessment of the ICC building codes that will ultimately result in safer and higher quality buildings in ICC member jurisdictions.
  - Enabling technologies include tools for creating computer interpretable versions of the ICC codes, for identifying code sections that apply to a given project, and for automated BIM conformance assessment (i.e., automated code checking).
  - Proof of concept phase complete using the International Energy Conservation Code (IECC).
  - Online demonstrations site established in October 2007.
  - Production development phase began in October 2007.
  - BIM authoring vendors currently involved include Autodesk, Bentley, and Graphisoft.
  - Pilot projects scheduled to begin in spring 2008.
- **CIFE Course Content on BIM use in Construction**
  - CIFE is the Center for Integrated Facilities Engineering (Stanford University).
  - Current version focused on BIM-driven quantity takeoff and cost estimating.

- Will be expanded to include scheduling, bid management, scheduling, and procurement.
- **GSA BIM Program**
  - Currently in requirements definition phase for extending required information on building elements for use in GSA design and preconstruction phase analyses.
  - Analysis processes being considered include assessment of building design performance relative to goals or requirements for spatial program, energy usage, human circulation, security, and construction schedule.

#### 4. IFDLibrary – Roger Grant

- The IFDLibrary Partners was formed a year ago at the IAI meeting in Washington, D.C. Since that time, we have held workshops in the Netherlands and Norway. The first workshop was focused on both technical and business planning. The second workshop was more heavily focused on business planning. We are planning a third workshop in Calgary in January 2008 and are also tentatively planning a fourth workshop which we would like to hold in conjunction with buildingSMART North America in March. We are hoping that this workshop might include some public participation and perhaps also include a workshop on IDM similar to the IAI meeting held in Portugal last year.
- On the technical front, an API to the IFDLibrary has been released and is available at [www.ifd-library.org](http://www.ifd-library.org). In addition to the API, Norway has developed an application for putting terms into the IFD (PropertyLizer) that is now in its second release. In preparing the application, a .net toolkit was developed and pending a few modifications will be available to other developers soon. Using the ICC SmartCodes project as a pilot, CSI is working with Richard See and the PropertyLizer developer, HolteByggSafe, on a tool which we hope to have available early in 2007, for creating and managing terminology sets in North America. One of the additional requirements we are working to support is the classification of terms using OminClass. In addition, EPM, vendors for Express and hosts of the IFDLibrary server, are developing applications for browsing the IFD and adding terms. STABU is also working on a browsing and content management application. A primary focus of the Partners is to make these applications available to support operations and projects.
- On the business front, we are working on plans to make the IFDLibrary a self-sustaining operation that can be a reliable shared data dictionary for the building industry; in each country where we are currently operating; between the countries we are currently operating in; and in the future into additional countries. To that end, we have developed a Draft Business Plan that is in limited circulation for comment. The plan addresses what services we envision the IFDLibrary to provide and how we expect to operate and fund the enterprise. One of our first acts has been to seek recognition as a Group within IAI to provide a place to hold the shared assets of the IFDLibrary and an infrastructure for connection to IFC and IDM processes. We believe that IFD along with IFC and IDM form the basis for open platform independent interoperability in the building industry. It is our goal to wrap up the initial phase of planning at our next workshop in January.

#### Additional Efforts

- AEC XML: Progress continues in the Associated General Contractors (AGC) project. NIBS was contracted to provide XML coding for AGC's suite of standard paper forms. Thomas Liebich and several other IAI participants are subcontracted to perform this work, which will be known as AGCXML. This work will be part of AECXML and allows the creation of several necessary documents on the procedure of creating AEC XML.
- COBIE: Construction Operations Building Information Exchange (COBIE) initiative, coordinated with NIBS' Facility Maintenance and Operations Committee, is actively pursuing FM needs and is serving this important need.
- OGC: A new test bed (AECOO) is being planned to look at IFC interfaces to cost engineering, energy and project management as it relates to RFIs.
- NBIMS: The Facilities Information Council remains active. NBIMS is now closely aligned with the buildingSMART alliance. NBIMS is heavily represented by buildingSMART alliance members.

The committee completed part 1 of version 1 of NBIMS (National BIM Standard) and opened it on March 13, 2007 to industry review. The final report was released for publication in December 2007. This activity essentially executes the IDM, MVD and IDF Library process in North America. Alan Edgar is chair of NBIMS and Dave Jordani is chair of FIC.

- Additional projects which are part of the buildingSMART alliance include:
  - Architectural Precast;
  - Automated Code Compliance Checking (AC3);
  - Construction to Operations Building Information Exchange (COBIE);
  - Early Design Information Exchange (ED); and
  - Structural Steel Information Exchange.