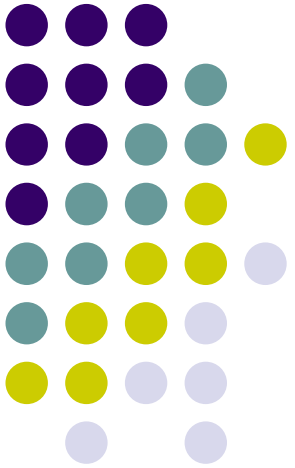
CI-NET/C-CADECシンポジウム2009 パネルディスカッション-2

BIM/IFCに関する国際動向



有限責任中間法人　IAI日本
技術統合委員長　溝口直樹

ホームページ: http://www.iai-japan.jp/

International Alliance for Interoperability Japan Chapter

発注者によるBIM/IFC要求の動向

- アメリカ
  - GSA（連邦調達庁）
  - 2007年度予算のプロジェクトからBIM/IFC提出
  - USCG（沿岸警備隊）・USACE（陸軍工兵隊）・NASA等が同様な動き
- デンマーク
  - 公共工事分野
  - 2007年1月からBIMの採用・IFCを要求
- フィンランド
  - 大手不動産管理Senate Properties社
  - 2007年10月からBIMの採用・IFCを要求
- ノルウェー（建設局）
  - 建築確認分野（ゾーニング計画審査）にIFCとGIS活用を展開中
  - ノルウェー版e-PlanCheck計画
- シンガポール（建設局）
  - 2002年に建築確認の完全電子化
  - IFCによる自動建築確認Webポータル(e-PlanCheck)展開を準備中

北米におけるBIM/IFC関連の動向

- National BIM Standard (NBIMS)
- Open Geospatial Consortium (OGC)
- Construction to Operations Building Information Exchange (COBIE)
- General Services Administration (GSA) IFC-BIM Mandate
- US Army Corps of Engineers – IFC-BIM Roadmap
- ISO 16739– 15926 Harmonization
- BIM Storm
- Industry project – IFC for Structural Engineering
- Omniclass and IFD
- International Code Council (ICC) – SmartCodes
- McGraw-Hill SmartMarket Report

Courtesy Deke Smith

米国と北欧3国との協定

- 米国連邦調達庁 (GSA)の公共建築サービス部門 (PBS)は、BIMソフトウェア／システムのためのオープンスタンダードをサポートすることを目的として、
北欧3国の政府系機関と協定を結んだ（2008年1月）
- フィンランド（Senate Properties）
- デンマーク（Danish Enterprise and Construction Authority）
- ノルウェー（Directorate of Public Construction and Property）
- GSAは各国の機関と協力して、関係者間の相互運用と、シームレスで正確なデータ交換を推進する

米国と北欧3国の協定書

Washington, DC
January 17, 2008

Public Statement

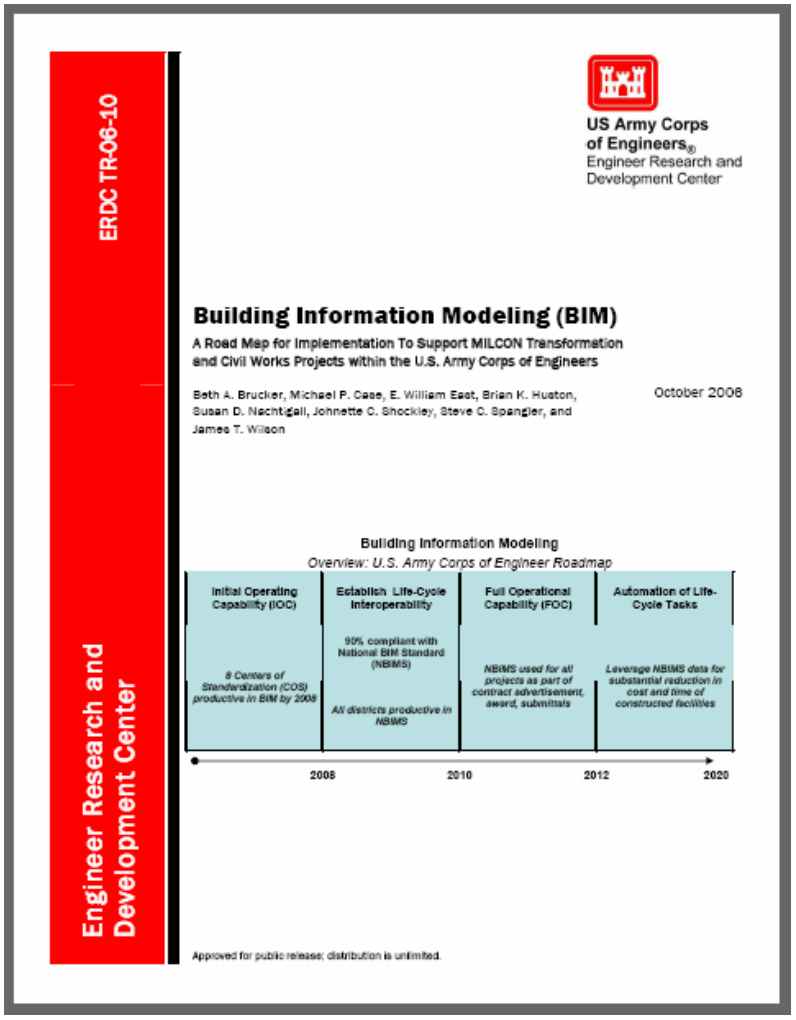
STATEMENT OF INTENTION TO SUPPORT BUILDING INFORMATION MODELING WITH OPEN STANDARDS

Background

Government clients of the AEC/FM (Architecture, Engineering, Construction, and Facilities Management) sector have an interest in the continuous advancement of productivity, efficiency, and quality in the AEC/FM industry, leading to a better built environment for end users, clients, and stakeholders.

We believe that sharing AEC/FM-related information throughout the life cycle (scoping, planning, design, tendering, procurement, construction, operation, maintenance, refurbishment, and disposal) of capital facilities globally and across all disciplines and technical applications, is key to achieving this goal.

米国陸軍工兵隊のRoadmap



Goal 1: Establish Metrics To Use for Measuring Process Improvement

Goal 2: Establish Initial Operating BIM Capability No Later than **2008**

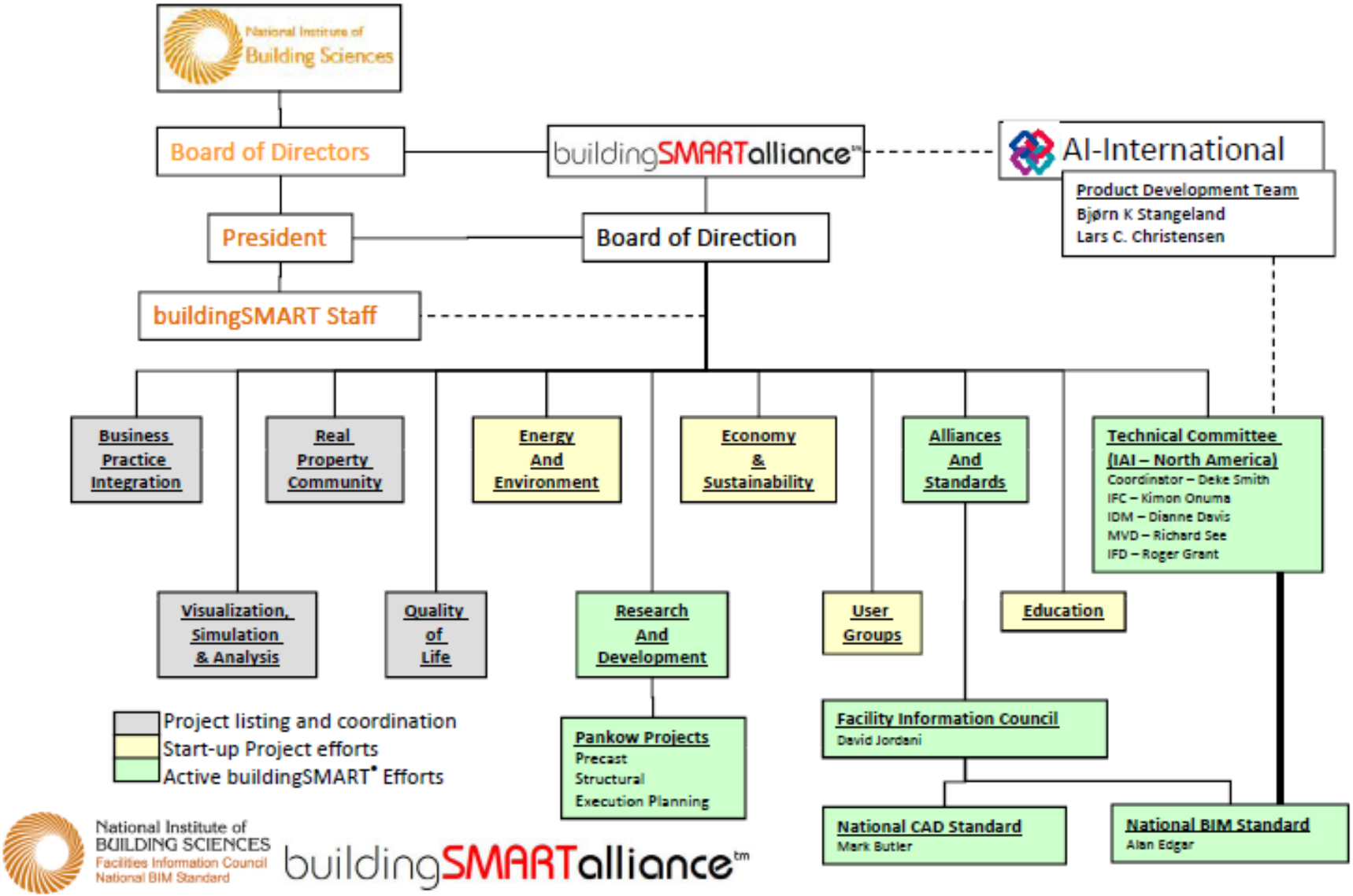
Goal 3: Establish Facility Life-Cycle Interoperability No Later than **2010**

Goal 4: Achieve Full Operational Capability Using NBIMS Based e-Commerce No Later than **2012**

Goal 5: Use NBIMS in Asset Management and O&M of Facilities no Later than **2012**

https://cadbim.usace.army.mil/Myfiles/1/ERDC_TR-06-10.pdf

buildingSMART alliance（北米）



JBIM
Fall 2008

Journal of Building Information Modeling
An official publication of the National BIM Standard (NBIMS) and the National Institute of Building Sciences (NIBS)

buildingSMARTalliance™

The BIM Balancing Act: Tilt the Scales in Your Favor

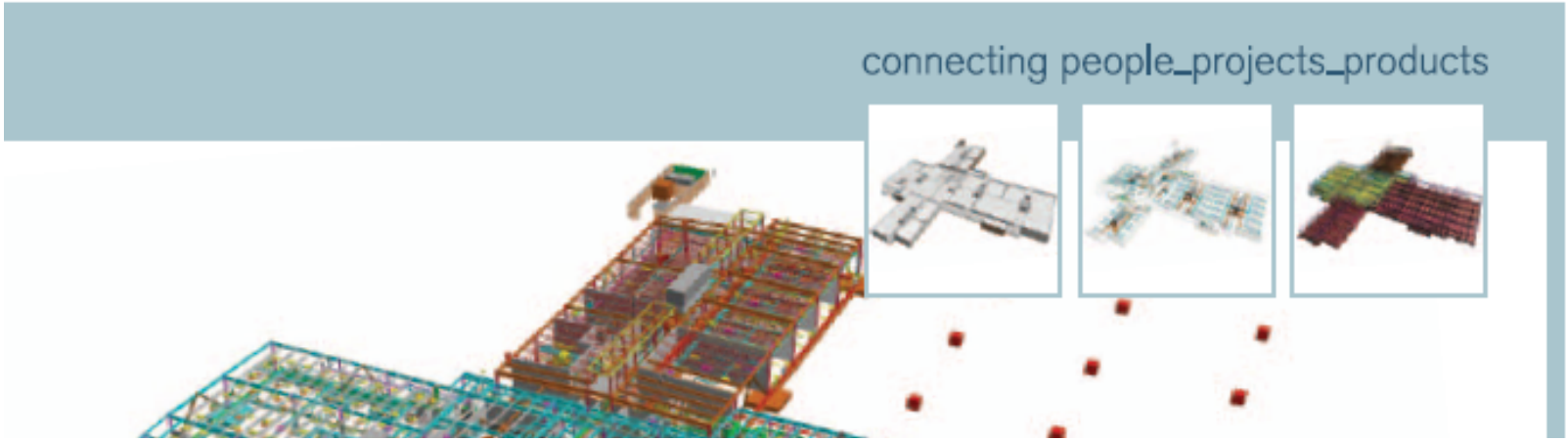
McGraw_Hill CONSTRUCTION

SmartMarket Report

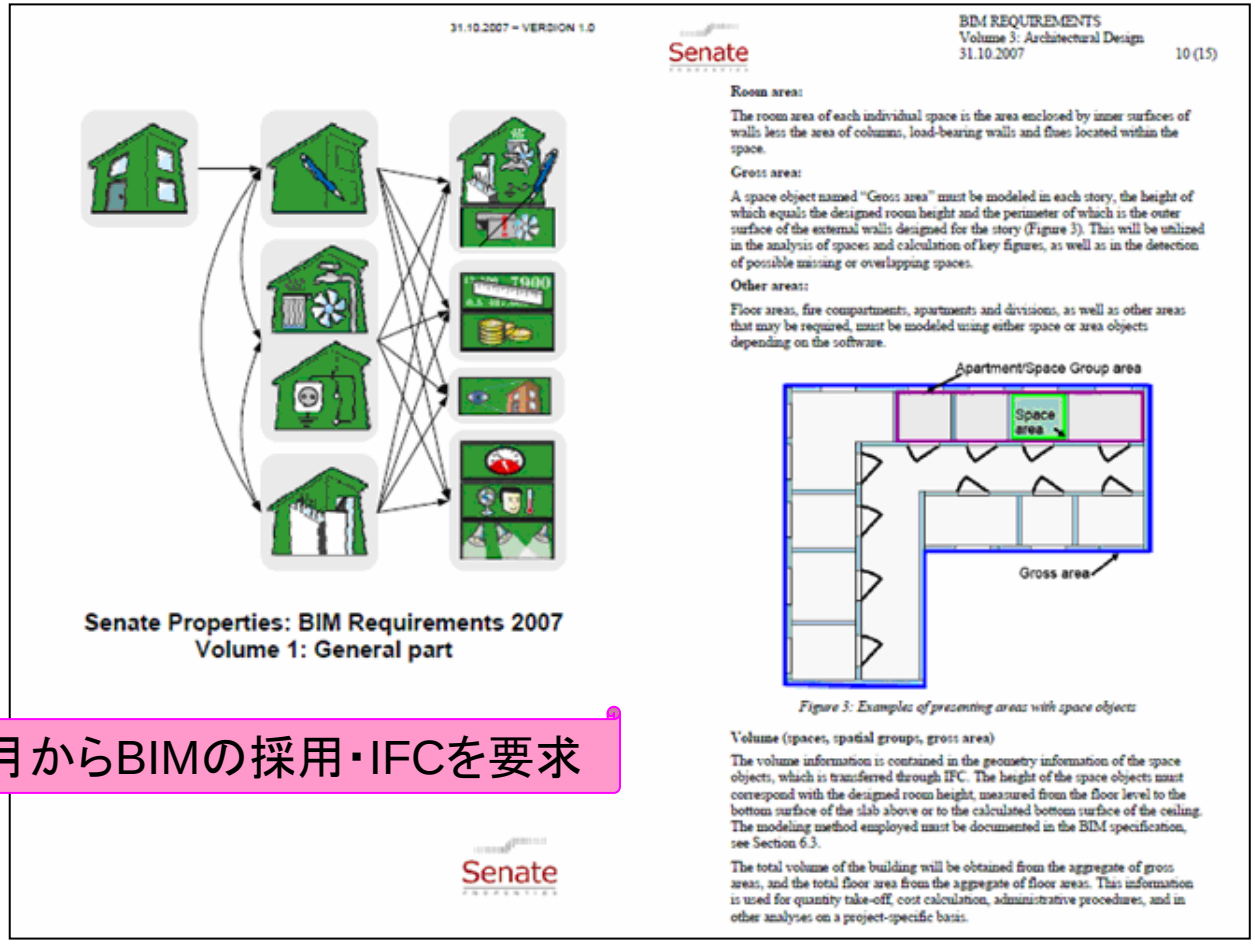
Design & Construction Intelligence

Building Information Modeling (BIM)

Transforming Design and Construction to Achieve Greater Industry Productivity



フィンランドSenate Properties社



31.10.2007 – VERSION 1.0

Senate

BIM REQUIREMENTS
Volume 3: Architectural Design
31.10.2007 10 (15)

Room area:

The room area of each individual space is the area enclosed by inner surfaces of walls less the area of columns, load-bearing walls and flues located within the space.

Gross area:

A space object named "Gross area" must be modeled in each story, the height of which equals the designed room height and the perimeter of which is the outer surface of the external walls designed for the story (Figure 3). This will be utilized in the analysis of spaces and calculation of key figures, as well as in the detection of possible missing or overlapping spaces.

Other areas:

Floor areas, fire compartments, apartments and divisions, as well as other areas that may be required, must be modeled using either space or area objects depending on the software.

Figure 3: Examples of presenting areas with space objects

Volume (spaces, spatial groups, gross area)

The volume information is contained in the geometry information of the space objects, which is transferred through IFC. The height of the space objects must correspond with the designed room height, measured from the floor level to the bottom surface of the slab above or to the calculated bottom surface of the ceiling. The modeling method employed must be documented in the BIM specification, see Section 6.3.

The total volume of the building will be obtained from the aggregate of gross areas, and the total floor area from the aggregate of floor areas. This information is used for quantity take-off, cost calculation, administrative procedures, and in other analyses on a project-specific basis.

Senate Properties: BIM Requirements 2007
Volume 1: General part

Senate

2007年10月からBIMの採用・IFCを要求

Senate Properties社から出ている英語版の**BIMガイドライン**

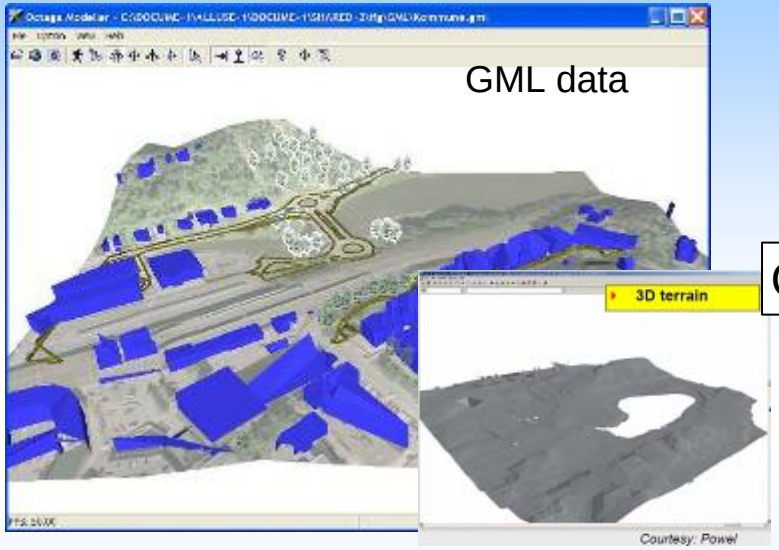
デンマーク政府のDigital Construction

2007年1月からBIMの採用・IFCを要求

Digital Constructionプロジェクトから出ている英語版のガイドライン

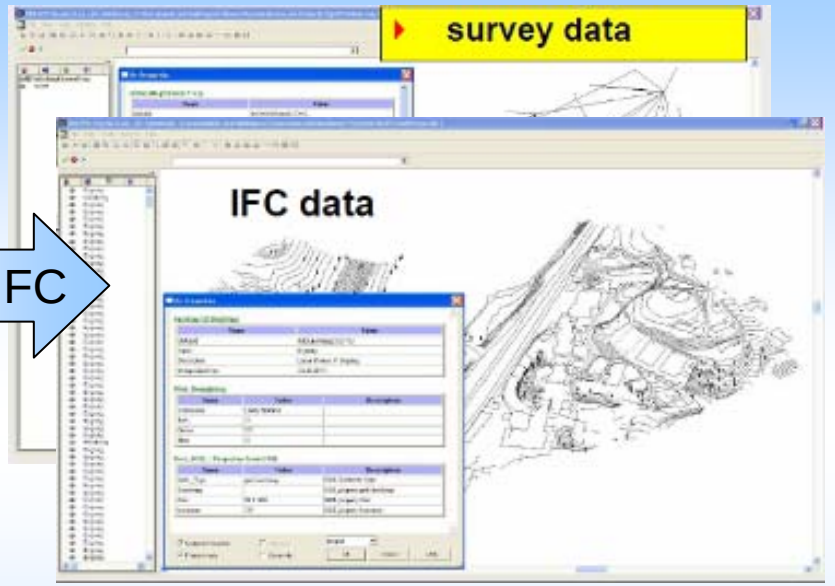
ノルウェー電子政府プロジェクト BYGGSOK

GIS
地理的情報システム



GML -> IFC

IFC
建築設計システム

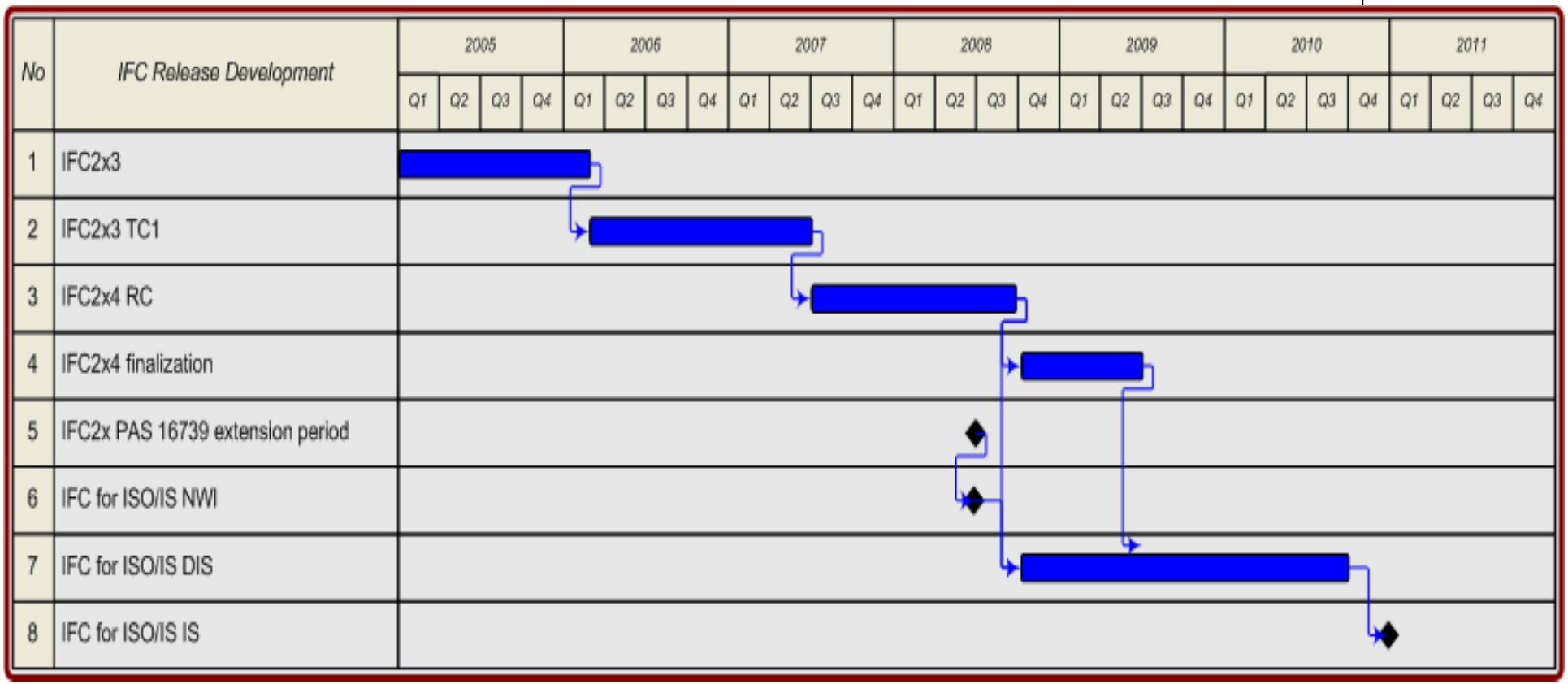


IFC -> GML

GIS: Geographic Information Systems
GML: Geography Markup Languate（GIS用のXML標準）

By courtesy of IAI Norway, Powel & AEC3

IFCの国際標準化ロードマップ

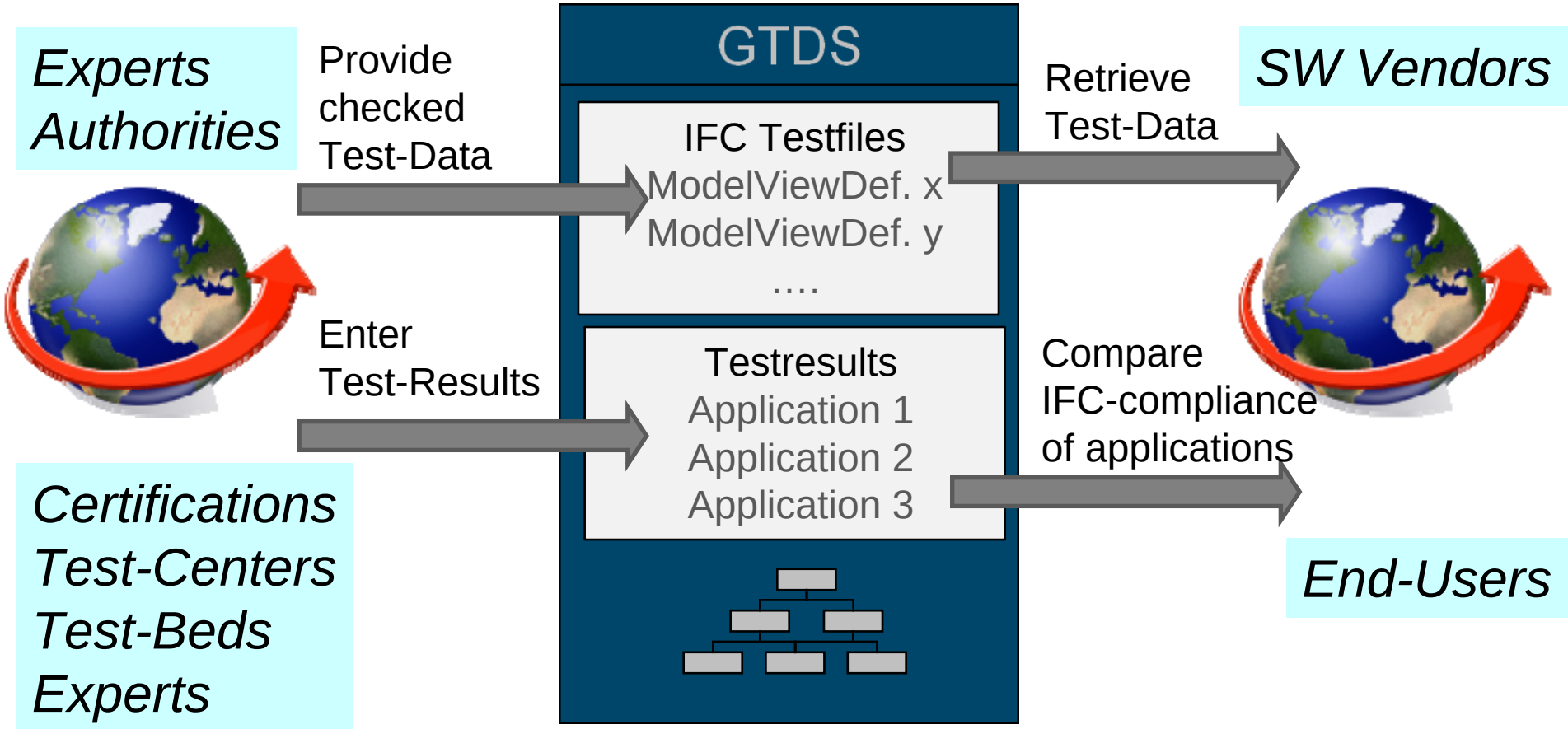


2010～2011年にIS（International Standard）！

IFCのソフトウェア認証（現在）

- 1st Step
  - 250のテストケースから試験
- 2nd Step
  - 実プロジェクトのデータでテスト
  - End-userにフィードバック
- 認証の詳細は．．．
  - http://www.iai.hm.edu/how-to-implement-ifc/certification

IFCのソフトウェア認証（今後）

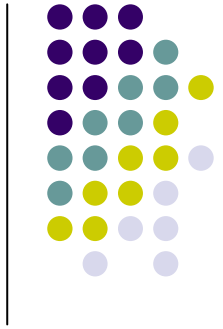


GTDS - Global Testing Documentation Server

Supported by

Build Live Tokyo !

http://bltokyo2009.seesaa.net/



おわり

- 有限責任中間法人　IAI日本
  - ホームページ: http://www.iai-japan.jp/
  - 有限責任中間法人IAI日本事務局
    〒102-0083　東京都千代田区麹町5-3-3　麹町KSスクエア8F
    TEL : 03-3222-8930　　FAX : 03-3222-8892
    E-Mail : info@iai-japan.jp