FIATECH
ADVANCING TECHNOLOGY TO BUILD THE WORLD

PCA Semantic Days

Oslo, Norway

June 7, 2011

Ray Topping, PE
FIATECH Director

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# FIATECH 2010 ANNUAL REPORT
PUBLISHED FOR FIATECH ANNUAL CONFERENCE

2010 Annual Report
Building on 10 Years of Outstanding Progress

FIATECH

Available on
FIATECH website
http://fiatech.org/

10 Years of Achievement and Value Contribution

Message from Board Chair

Message from Director

FIATECH Vision, Mission and Operating Approach

Members and Partners

Membership Benefits

2010 Highlights
- Projects Delivery and Development
- Information Exchange and Knowledge Networking
- Awards Program
- Industry Outreach
- Global Activities

Interoperability

Board of Directors

FIATECH Organization and Staff

Financial Statement
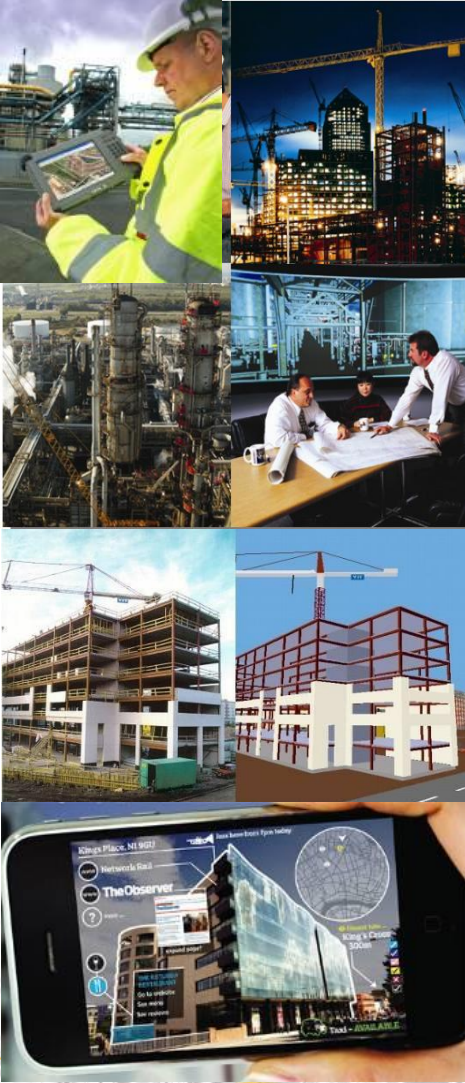
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TOPICS

- FIATECH At a Glance

- FIATECH Projects

- Advancing Technology

- Interoperability

- FIATECH Strategic Direction

- Feedback and Discussion

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FIATECH AT A GLANCE

FIATECH - Advance Highest Business Value in Capital Projects Life Cycle through New & Emerging Technologies

- **Mission**
  - Provide global leadership in identifying and accelerating the *development, demonstration and deployment* of new, emerging and innovative technologies to deliver the highest business value throughout the life cycle of capital projects.

- **Guide: Capital Projects Technology Roadmap**
  - Industry-wide, global research agenda (not just FIATECH)

- **Approach**
  - Partnerships
  - Technology Exchange – conference and members meeting
  - Information Forums – webinars and social networking
  - Projects

"FIATECH is the place where you learn about emerging and advanced practices in capital projects and can have open dialogue on how to implement them in your company." - global EPC firm

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FIATECH - an Industry Led Organization

PARTNERSHIPS

- AIA Building Connections
- Advisory Research Group (ARC)
- buildingSMART Alliance
- Careerbuilder.com
- Center for Integrated Facility Engineering (CIFE) at Stanford University
- Construction Industry Institute (CII)
- Construction Opportunities in Mobile IT (COMIT)
- Construction Users Round Table (CURT)
- Continental Automated Building Association (CABA)
- Hydraulic Institute (HI)
- International Code Council (ICC)

- International Council for Research and Innovation in Building and Construction (CIB)
- Korean Institute of Construction & Transportation Technology Evaluation & Planning (KICTEP)
- National Academy of Construction (NAC)
- National Center for Manufacturing Sciences (NCMS)
- National Institute for Standards & Technology (NIST)
- Office of Science and Technology Policy
- POSC Caesar Association
- Process Industry Practices (PIP)
- RFID Journal

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FIATECH - TECHNOLOGY & INFORMATION EXCHANGE AND KNOWLEDGE NETWORKING

- **2010 Annual Conference and Technology Showcase**
  - Approximately 300 conference attendees with 25 exhibitors
  - Outstanding Program which received tremendous positive feedback
  - Strong positive message in the industry media
- **Technology Tuesday Webinars**
  - 23 Webinars in 2010
  - Reaching over 2000 participants
  - Archived to podcasts in media library with over 10,000 downloads
- **Annual Members Meeting**
  - Members only, active participation in working program

- **Industry Outreach and Partnerships**
  - Participation in leading industry organizations
- **FIATECH Awards Program**
  - Recognized STAR Awards and CETI Awards Programs
    - (Superior Technical Achievement, and Celebrating Engineering & Technology)
- **Social Networks**
  - Linked-In, Twitter and Facebook
- **Web Site Information**
  - Technology, Projects, Connections expanding with wiki

__Feedback from attendees at 2010 Annual Conference and Technology Showcase__
"Awesome" ~ EPM Sr. Project Coordinator, Woodside Energy
"The keynote speaker, Gentry Lee, was incredible and inspiring. One of the most amazing presentations that I have heard."….EPC Member
"Worth the money…very educational…cutting-edge and pertinent topics… good industry player info…" ~ Director, Zachry Holdings
"Provides a one-stop shop to understand what is going on in the industry" ~ Director of Application Delivery, Kaiser Permanente

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TECH TUESDAY WEBINAR PODCASTS

http://itunes.apple.com/us/podcast/fiatech-video-presentation/id327972463

CAPITAL PROJECTS TECHNOLOGY ROADMAP

- A **_cooperative effort_** of associations, consortia, government agencies, and industry, working together to accelerate the deployment of emerging and new technologies that will revolutionize the capabilities of the capital projects industry

- Led by FIATECH and **_open to all_** stakeholders who are committed to the future success of the capital projects industry

- Presents a **_vision_** for the capital projects industry and a strategy and plan for achieving that vision

- Representatives from all areas of the industry have come together to create this work

- This is their vision, and their **_foundation_** for investment in the future

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WE HAVE 181 GUESTS ONLINE
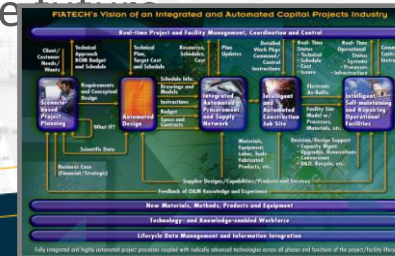
Active Projects

Design

Specification Automation

Collaborating with a Neutral 3D Model

Managing Material Libraries and Catalogs

Supplier Information Exchange with Design to Support Construction

IRING Tools Interfacing Project

Procurement & Materials Management

Capital Projects Materials Handling Methods & Practices

Construction

RFID Valve Tagging Case Study

Leveraging Passive RFID

RFID Access Control System International Case Studies

Real-Time Field Reporting using Smart Devices

Operations & Maintenance

Operational Facility Roadmap Directory

3D EDE ALARA Planning Tool

Projects Management

Replicable Buildings & Digital Signature

EPLAN/BIM

Automated Code Plan Checking Tool Proof of Concept

New Materials & Methods

Advancing Asset Knowledge through the use of Augmented Reality Technologies

Technologies of Tomorrow

Knowledge-enabled Workforce

User Acceptance of Mobile IT

ISO 15926 Primer

Information Management

Engineered Equipment Life Cycle Application Tools (EELCAT)

Joint Operational Reference Data for ISO 15926 (JORD)

Accelerating Deployment of ISO 15926

Product Lifecycle Management XML (PLM XML)

Data Requirements for New Nuclear Power Plant (NNPP) Construction

ISO15926 Project Information

FIATECH 2011 PROJECTS

Projects Continued from 2010:

1. Specification Automation
2. Collaborating with a Neutral 3D Model
3. Managing Material Libraries and Catalogs
4. Supplier Information Exchange with Design to Support Construction
5. RFID Valve Tagging Case Study
6. Leveraging Passive RFID
7. RFID Access Control System International Case Studies

8. Operational Facility Roadmap Directory
9. 3D EDE ALARA Planning Tool
10. Replicable Buildings & Digital Signatures
11. EPLAN/BIM
12. User Acceptance of Mobile IT
13. ISO 15926 Primer
14. Engineered Equipment Life Cycle Application Tools (EELCAT)
15. Joint Operational Reference Data for ISO15926 (JORD)

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FIATECH 2011 PROJECTS

New 2011 Projects:

1. iRING Tools Interfacing Project (IIP)
2. Real-Time Filed Reporting using Smart Devices
3. Automated Code Plan Checking Tool Proof of Concept
4. Advancing Asset Knowledge through the use of Augmented Reality
5. Technologies of Tomorrow
6. Product Lifecycle Management XML (PLM XML)
7. Data Requirements for New Nuclear Power Plant (NNPP) Construction
8. ISO 15926 project Information Flow (PIF)

TECHNOLOGY IMPLEMENTATION

Figure 1. Gartner's Hype Cycle

From Rhetoric to Reality
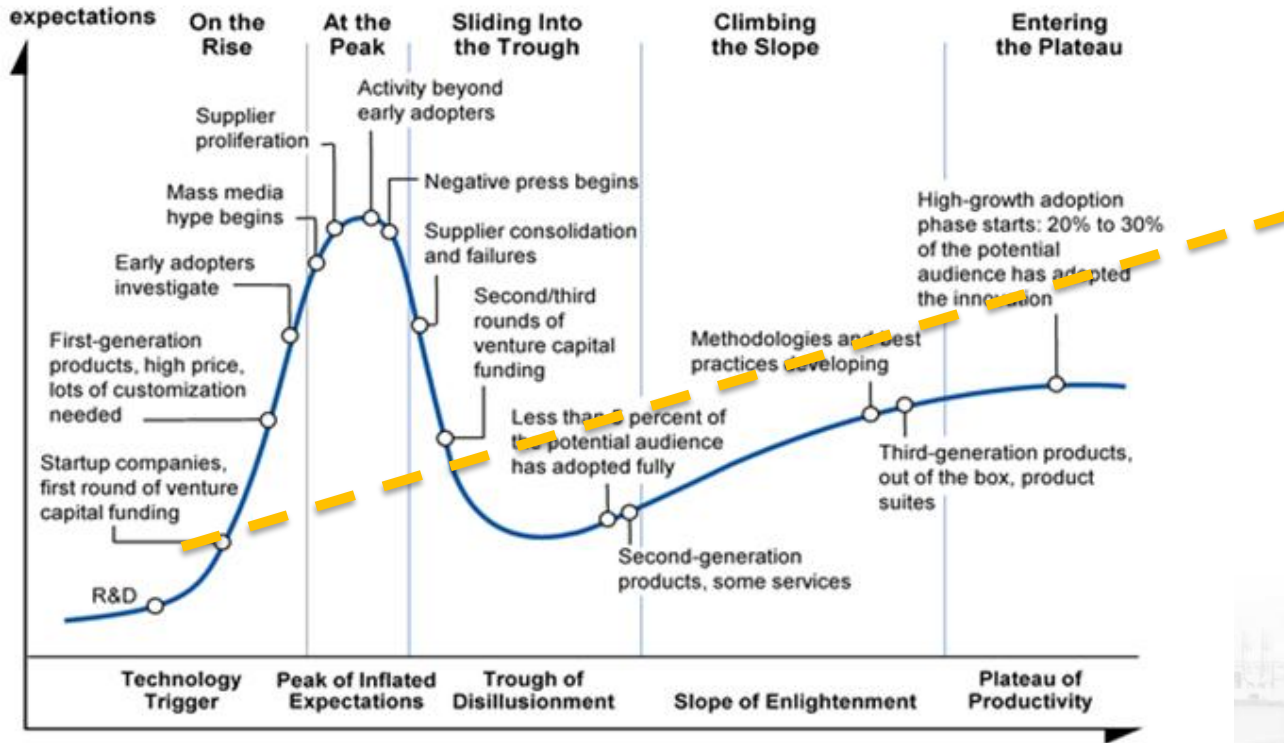
Source: Gartner (August 2010)

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FIATECH - ADVANCING INTEROPERABILITY THROUGH PROJECTS AND COLLABORATION

- Develop and implement projects, advancing interoperability across the Roadmap

- Automating Equipment Information Exchange (AEX) applications

- Advance interoperability with the regulatory process

- Advancing procurement and operations

- Capital Facilities Information Handover Guidelines

- Information technology, LCDM

FIATECH'S LEADERSHIP FOR ADVANCING INTEROPERABILITY ENCOURAGES INDUSTRY CROSS-POLLINATION

- Promotes ISO-15926 open standards and interoperability
  - iRING: open source software applications and utilities
  - Joint collaborative FIATECH, POSC Caesar projects
  - Proteus: intelligent P&ID exchange, 3D intelligent model conversions
- Promotes BIM, IFCs, CIS/2, VRML, OMNI open standards and interoperability
  - ePlan checking tool
  - Enhancing State Construction Dept. Use of BIM data
  - BIM for precast concrete (joint collaboration with NIBS)
  - Mapping between ISO15926 and BIM-IFC with the results available globally

ADVANCING INTEROPERABILITY AROUND IT

☑ Life Cycle Data Management

Reduce life cycle cost and delivery time by building tools to integrate dispara[te] technologies and business processes across life cycle.

- ➢ Engineering Information Reuse Benchmarking Best Practices Report
- ➢ Benchmarking Best Practices: Re-Use of Information Study Presentation
- ➢ Benefits and Barriers to Engineering Information Reuse
- ➢ [LCDM Benefits Catalogue](#)
- ➢ LDCM Benefits Presentation Slide Template
- ➢ LDCM Benefits Calculation Workbook
- ➢ Information Flow Map Presentation
- ➢ O&M Information Needs Survey Report
- ➢ Guidelines & Drivers for Achieving Plant Life Cycle Data Management

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FIATECH INTEROPERABILITY VISION PAPER OUTLINE & BOARD FOCUS GROUP

Outline

1. What Interoperability Means

2. Interoperability Today (BIM, ISO 15926, data handover)

3. Opportunity & Value (case studies, examples)

4. Industry Vision for Interoperability

5. Call for Action

Board Focus Group

Jerry Gipson

Bill Murphy

Zuhair Haddad

Peter Blake

Patrick Holcomb

Derek Middlemas

Buddy Cleveland

Ray Topping

Nicole Testa Boston

Advancing & Enabling Interoperability

INTEROPERABILITY - *both information management and processes systems and tools*

Interoperable information management *is the ability to manage and communicate electronic data among all project stakeholders (e.g. owners, consultants, clients, contractors, suppliers) across a projects planning, design, procurement, construction, operations, and project management phases.*

Interoperable processes systems and tools *provide the ability for all project stakeholders to work collaboratively across all project delivery and operating phases with processes, systems and tools that allow common management, coordination and tracking.**
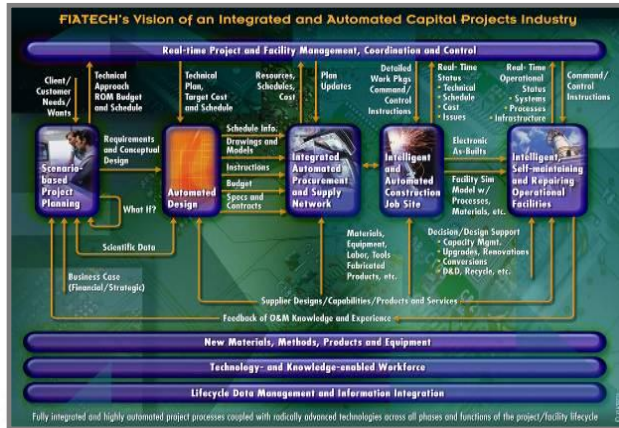
*Adapted NIST, Cost Analysis Inadequate Interoperability in U.S. Capital Facilities, 2004.

INTEROPERABILITY INITIATIVES – 2011 & BEYOND

- Development of FIATECH Interoperability Vision Paper

- ISO 15926 Primer

- Advance interoperability with the regulatory process

- Managing material libraries and catalogs

- Data requirements for new nuclear power plant construction

- Contractual data deliverables for improved support of construction automation

- Advancing asset knowledge through the use of augmented reality technologies

- Project for advancing interoperability of CAD data

- Establishing an interoperability clearinghouse for advancing software interoperability

- Standardization of unstructured technical information

- Mixed reality experiment for building design

- Dialog with BuildingSmartAlliance on ISO15926 and National BIM Standards (IFC's, ISO 16739)
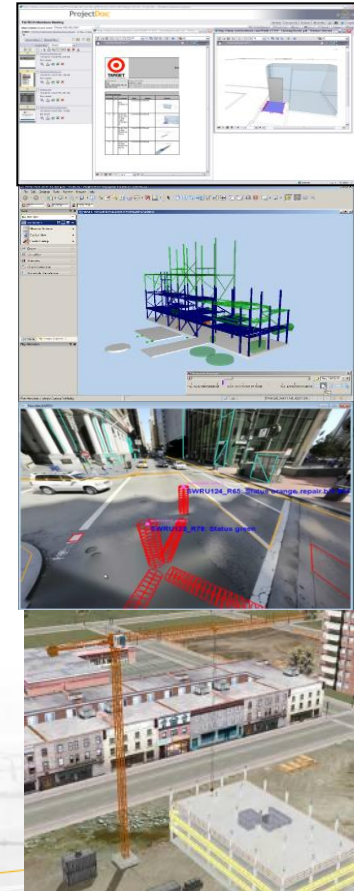
Summary - FIATECH Strategic Direction

- Advance & Enable Interoperability including accelerated delivery of ISO 15926
- Advance New & Emerging Technology Development and Implementation
- Technology Enabled Workforce and Knowledge Management
- Intelligent and Automated Construction Job Sites
- Integrated and Automated Procurement
- Electronic Permitting and Plan Review
- Advance Implementation of Sustainability Practices throughout the project life cycle

FIATECH - Advance Highest Business Value in Capital Projects Life Cycle through New & Emerging Technologies

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