BIM for Bridges and Structures

T-19 Work Plan

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Presentation Outline

• Consistent Terminology – Building Information Modelling (BIM) for Bridges and Structures
• T-19 Road Map
• Examples in our Industry
• Closing Support
2015 - Saratoga

- We introduced SCOBS to BIM terminology
- We provided examples of Building Information Modelling uses in our community
- We prepared a 20-07 to execute a resource to determine our path forward
What’s in it for SCOBS?
Bridging the Information Gaps

- Marketplace for BrIM in the Bridge Process

Design
- Informed Planning
- Coordinated Documents
- Better Designs

Build
- Better Built Assets
- Faster Completion
- Reduced Cost of Construction
- Commissioning

Operate
- Optimal Use of Asset
- Efficient Operation
- Increased ROI
CIM 3D Modeling: Zoo Interchange
Design-grade/Post-construction Surveys
2017 – Midyear Meeting

• At our Mid Year Meeting we developed our Work Plan for this Initiative:
  – We are calling the T-19 initiative “BIM for Bridges and Structures”
  – We used the results of our 20-07 to determine our Work Plan.
2017 - Spokane

• We are asking for your support and participation
• We are moving forward with a work plan to provide a national standard
• We will be Soliciting a Pooled Fund to resource this effort
What is it? - Conceptually
Highlights of the T-19 Work Plan

• Establish standards, guidelines, or manuals for bridge project stakeholders to facilitate the wide use of IFC as an exchange standard in BIM for Bridges and Structures in bridge projects.

• Develop the national standard MVD, data definitions, and data requirements for the model life cycle for all data exchanges for transportation bridges and structures.
Highlights of the T-19 Work Plan

• Collaborate with stakeholders to provide timely update of IFC data dictionary for common bridge elements.

• Collaborate with buildingSMART and software vendors to design and offer suitable training covering BIM for Bridges and Structures model development, management, and usage.
Highlights of the T-19 Work Plan

• Conduct return on investment (ROI) analysis to quantify the benefits of using a common modeling format, BIM for Bridges and Structures.

• Develop a template of BIM for Bridges and Structures-specific contractual provisions for managing, reducing, or eliminating the risks associated with BIM for Bridges and Structures
Highlights of the Work T-19 Plan

• Recommendations on changing existing work flows to leverage model exchanges for project delivery and asset management for transportation bridges and structures owners.

• Provide technical support, organize training workshops, and facilitate pilot/demonstration projects for bridge owners to encourage and accelerate the adoption of BIM for Bridges and Structures.
Task 2 – Stewardship Model 5: Hybrid Stewardship Model- REVISED (2/28/2017)
BIM for bridges and structure

AASHTO BIM Infrastructure

Advisory Board T-19

Resource Staff Support

NIBS

buildingSmart

AASHTO SC OBS Committees

Engineering Consultants

Bridge Owners

Software Developers

AASHTOWare

Fabricators

ACI
PCI
NSBA
AISC
ASBI

Construction Contractors
T-19 Monday Afternoon

UDOT’s BIM for Bridges and Structures Initiative

Carmen Swanwick, SE
Utah Department of Transportation
Deputy Project Development Director
Chief Structural Engineer
T-19 SCOBS Meeting question:

Where do you see your future in the BIM for Bridges and Structures realm?

- Support large projects with many roads, interchanges, and bridges, in a collaborative manner
- Intuitive BIM based parametric modeling for all stages of the project lifecycle
- Open architecture for integration with 3rd party structural analysis and design ecosystem
- Innovation in the design of optimal solutions, leveraging machine learning. IoT for smart infrastructure
- Dedicated workflows for construction staging and documentation

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**Design model**

- Plates, Bolts & Webs
- Embeds
- Reference Models
- Reinforcing
- Bolts & Lay-Out Points

**Construction model**

We support hybrid models, that can meet current LOD 500 requirements. The bridge industry will need to create specifically cover bridges and highway-related structures, terrain, and drainage features.
We Need Your Support

I WANT YOU
T-19 Thanks You