



U.S. Department of Transportation

Federal Highway Administration

From Reconnaissance to Asset Management:

Rethinking Workflow, Project Delivery and System Performance in the Digital Age

**STGEC 2023
Charlotte, NC**

Moderator: Ben Rivers, FHWA-RC



Session Presenters & Contributors

- Nate Thompson & Scott Anderson, BGC Engineering
- Ross Cutts, Geosetta & Schabel Engineering
- Louis Aaron, BoreDM
- *Xin Peng, Geosyntec Consultants*



Direction of AASHTO

AASHTO AR-1-19

- Intent to Adopt IFC Schema
- Formation of AASHTO Joint Subcommittee on Data Standardization – J-STAN
- AASHTO Collaboration with buildSMART International

Administrative Resolution AR-1-19
Title: Adoption of Industry Foundation Classes (IFC) Schema as the Standard Data Schema for the Exchange of Electronic Engineering Data

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Whereas, Transportation agencies are utilizing a variety of tools and equipment from multiple vendors and manufacturers to gather, display, and work with the data necessary for infrastructure project development, and interoperability of the models is a critical feature so that the agencies have the ability to transfer data seamlessly across these platforms;

Whereas, Seamless data transfer necessitates a single data schema that is recognized as the industry standard, otherwise there is a potential loss of data when translated from one device or one application to another, however, there has been a lack of consensus for adoption of a single schema;

Whereas, To date efforts to establish a national standard data schema have not been successful, in large part due to the inability to identify an agency or entity capable of providing ongoing development, support, and maintenance of the schema, so it would be advantageous to move toward a schema where that support mechanism already exists;

Whereas, There is an international effort underway, led by buildingSMART International, to extend their existing Industry Foundation Classes (IFC) standard data schema to incorporate infrastructure projects including IFC Bridge

Resolved, That the AASHTO Board of Directors recommends the adoption of IFC Schema as the national standard for AASHTO States;

Resolved, That an internal, cross-committee, multi-disciplined group within AASHTO should be formed to coordinate schema development, identify gaps, resolve any conflicts, and avoid duplication of efforts; and

Resolved, That possible AASHTO membership in buildingSMART International should be investigated to provide representation and participation for the state DOTs in schema development.

Approved by the AASHTO Board of Directors
October 9, 2019

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Direction on Geotechnical Data

- Puts DIGGS into practice
- Intent:
 - Maintain data consistency, integrity, completeness
 - System/Software developers can expect consistent data format
 - Makes data management easier
 - Extensible format facilitates expansion to performance management of geotechnical features/elements/assets

Standard Practice for

Digital Interchange of Geotechnical Data

AASHTO Designation: PP 102-20¹

Technical Subcommittee: 1b, Geotechnical Exploration,
Instrumentation, Stabilization, and Field Testing

Release: Group 3 (July)

AASHTO

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AASHTO PP102-20 – Significance & Use

Improves:

- System Interoperability
- Data acquisition, entry, display, automated programming, reporting, transmittal and visualization of field and lab testing results
- Retrieval of geospatially-referenced geotechnical data and automated assessment, analyses and designs for current and future projects
- Agency-wide system integration and automation during plan development, bid-package development, and transmittal of readily usable and immediately recognizable data to prospective contractors for their use while preparing potentially more cost-effective bids
- Construction management systems integrating geospatially-referenced geotechnical data obtained before, during and after construction, for acceptance criteria, construction records, and future performance management
- Agency-wide integration and automation of condition assessment (temporal) data for asset and performance management systems
- Agency- and Nation-wide practices through the evaluation of large data sets and sourcing statistics (i.e. Big Data)
- Complete records of all data identified to be recorded and reported by geotechnical standard test procedures, or as specified by the Agency



Direction of Transportation

- Workflow Efficiency
- Leveraging and Effective Use of Data
- Digital Project Delivery
- Data-Driven Asset Management & Decision-Making
- BIM
 - Conventional Meaning – Building Information Modeling
 - Meaning within Transportation – Better Information Management
- Model As The Legal Document

