BIM FOR BRIDGES AND STRUCTURES TPF-5(372) ROADMAP

BACKGROUND

The desired outcome of the work under the TPF-5(372) Project was to establish a standard for bridge semantic and geometric information that is common in the United States, which was a continuation of a previous effort known as the IFC Bridge project to create international standards. The resulting products from the TPF-5(372) may be used by States as a baseline for future projects to further refine standards at the local level. The work under this project was conducted in a series of activities in a five-year timeline to accomplish four major goals:

OUTCOME 1: Development of Information Delivery Manual (IDM)

OUTCOME 2: Creation of a US Bridge Data Dictionary

OUTCOME 3: Creation of Information Delivery Specification (IDS)

OUTCOME 4: Development of Software Certification Materials

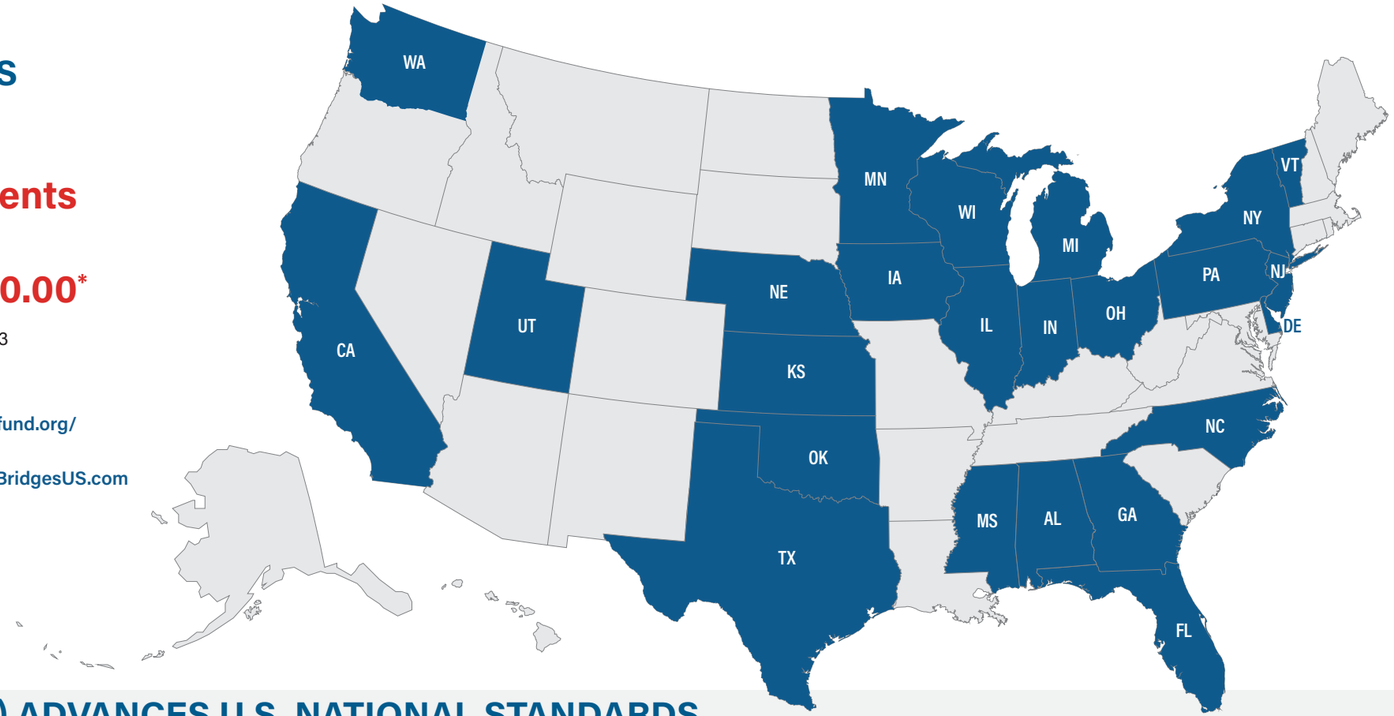
PROJECT SPONSORS

Total Commitments Received: $2,595,000.00*

*As of December 2023

https://www.pooledfund.org/Details/Study/624

https://www.BIMforBridgesUS.com

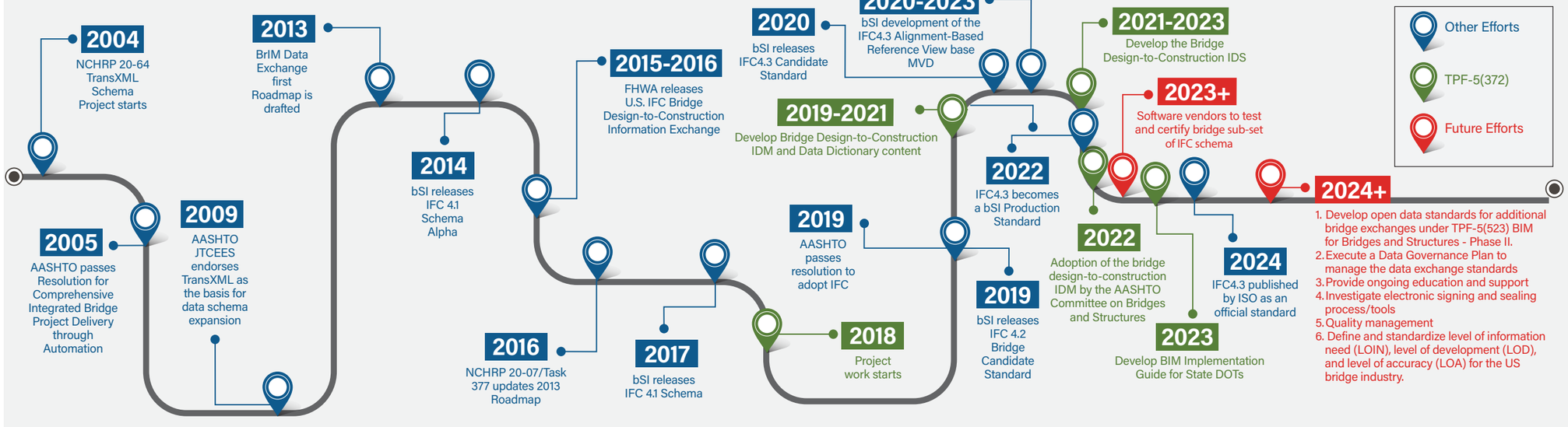


24 PARTICIPATING STATES PLUS FHWA*

AASHTO Publication

Information Delivery Manual (IDM) for the Design to Construction Data Exchange for Highway Bridges, 1st Edition (2023)

TPF-5(372) ADVANCES U.S. NATIONAL STANDARDS



Key Activities to Create IDM

- Validate FHWA Bridge Lifecycle Process Map
- Develop Bridge Lifecycle Management Overview Map* and Bridge Construction Process Map**
- Research common terms for bridge taxonomy
- Develop IDM narrative and exchange requirements
- Ballot and publish the IDM through AASHTO

* Based on earlier work by FHWA
**With contributions from NSBA Task Group 15

Key Activities to Create US Bridge Data Dictionary

- Standardize terminology, definitions, and properties
- Classify data into bridge entity and property groups
- Assign the metadata to describe the technical usage
- Identify and assign related IFC terminology
- Encode the data into the buildingSMART Data Dictionary

Key Activities to Create IDS

- Identify model-based properties
- Enrich its definition by data types and units
- Add mapping to IFC for elements and properties
- Consider further constraints on values
- Generate IDS XML file

Key Activities to Develop Software Certification Materials

- Create a software vendor engagement plan
- Create unit test instructions for IFC 4.3 certification (to be performed by others)
- Utilize project IDS for certification
- Create technical documentation of required IFC mappings and custom properties