Tedd Weitzman is a Construct-X Principal Consultant. He provides clients with cutting edge expertise in the areas of information management and business process development with focus on Advanced Work Packaging, next-generation BIM enabled Lean Construction and Digital Transformation for operations and maintenance. Tedd is widely recognized as a premiere thought leader in the areas of digital threads, lifecycle information management, cultural change management and driving business process improvements for return on investment.
About Construct-X

Services:

• Strategic Consulting
• Education & Training
• Technology Implementation
• Project Staffing
Full Asset Life-cycle Management

Product Design
Product MFG
Process Engineer Simulate
Engineer Design
Procure
Construct
Operate & Maintain (O&M)
End of Life

Device/Equip Manufacturing
Platform Integrator Capital Project
Owner/Operators

Completion, Commission and Startup
Continuous Improvement Feedback Loops

Product Model/Product=Component/Systems(Packages)/System of Systems/Plant/Facility/Platform Life-Cycles

Derived from ISO TC 184 Manufacturing Asset Management Integration Task Force Final Report
A CWA is a geographical division of work defined by construction early in the project life-cycle.

An IWP is a discrete portion of a CWP to be executed by a single foreman and crew over a single rotation (~600-1000 man-hrs).

A CWP further segregates a CWA into discipline specific scopes of work, aligned with activity items in the Level 3 schedule.
Description – This digital thread comprises an export of required data tables from the Civil/Structural Lists system into a format that is compatible with the Virtual Construction Model Assembly platform. Key is to encode required data fields per table needed to support AWP.

Links

- AWP-DT.09 – Civil/Structural Lists – Digital Thread Cover Sheet
- AWP-DT.09 – Civil/Structural Lists – Required Data Fields
- AWP-DT.09 – Civil/Structural Lists – Example Data Template
• Overview & Requirements

• **Content & Format** – [AWP-DX.3D Plant Design.xlsx](AWP-DX.3D Plant Design.xlsx)

• **Frequency** – Once per week, beginning when piping design commences in 3D Plant Design through finalization of piping design

• **Source(s)** – Data export from Smart 3D plant design system (Hexagon)

• **Destination** – AWP Project File Share Folder AWP/Smart 3D

**Conformance**

It is critical for the success of AWP that the 3D Plant Design export is produced according to the required target content, format & frequency, and placed into the designated destination. If the 3D Plant Design does not meet the specified target content and format requirements, the AWP Automation will not work.

• Team Roles

• **Project Engineer** – Ensures requirements for AWP data export from the 3D Plant Design is communicated to and accepted by Piping Design Lead for the project

• **Piping Design Lead** – Responsible to:
  - Leverage proper AWP Templates for the 3D Plant Design
  - Ensure attributes are encoded into the S3D components correctly as per AWP requirements
  - Generate exports of VUE / XML files for the project according to target content, format & frequency, placing export files into designated destination

• **AWP IM Lead** – Provides tech support when required for the 3D Plant Design export, and ensures data is uploaded to the Bentley Work Package Server

• **WFP SME** – Responsible to support project teams to leverage the 3D Plant Design export for intended use in Virtual Construction Model
Technology Committee - Fiatech
CII ORGANIZATION

CII Board of Advisors (BOA)

- Executive Director
  - Director of Operations
    - Associate Director for Funded Studies
    - Associate Director for Deployment
    - Associate Director for Technology
    - Associate Director for Membership and Communications
  - Administrative (Research, Information, Financial and Shared) Services

- Strategic Planning Committee (SPC)
  - Strategic R&D Outlook
    - Alliances
  - Innovation Function

- Executive Committee (XC)
  - Overall Institute Operations
    - Finance & Nominating
  - Overarching Research Topics
  - Strategic Planning Committee (SPC)
  - Executive Director

- Sector Leadership Committee (SLC)
  - Sector Governance
    - Sector Coordination

- Funding Studies Committee (FSC)
- Deployment Committee (DC)
- CBA's, Education & Data Function
- Technology Committee

Legend:
- Leadership Committee
- Industry Sector Committee
- Standing Committee
- Additional Committees, Functions, or Groups
- Membership Knowledge Review
- Oversight Interface
Technology Committee Leadership

Tedd Weitzman
Construct-X
Chair

Jan Kuhlmann
ExxonMobil
Vice-Chair

Yong Cho
Georgia Tech
Academic Advisor

CII Ex-Officio
John Palmer
Nuria Ayala
Susan Quaglino
Amelia Celoza
2019 Strategic Initiatives

- Digitally Structured Project Delivery
- Technology Path to the Future

- Each of these strategic objectives will be supported by a series of goals for the Technology Committee. These goals will serve to outline a clear path between the committee’s work and the strategic direction of CII.
Digitally Structured Project Delivery

• Create a vision of total project delivery that comprises…
  – An age of automation, interoperability, artificial intelligence and new hardware.
  – The project delivery cycle from Planning through Operations & Maintenance.
  – The adoption of “plug-in” technologies such as robotics, 3-D printing, etc.
  – Utilizes trending methods of modularization, global workforces, etc.
  – Aligns with a business and industry growth objective.

• Creates future (and adopts current) research topics and programs

• The output & deliverable for this strategic objective will be identified by the Technology Committee in 2019.
Technology Path to the Future

• A future path can be shaped by those technologies currently under development and being researched.

• The continuation of this path will constantly be reshaped by technologies that don’t exist today.

• Guide these technologies to step changes rather than incremental change.

• Layout a multi-generational plan that pulls the industry into a new state that exceeds the vision of industry constituents.
Technology Path to the Future

Technology that exists

Academia & Science

Technology that we can imagine but does not exist

Industry & Engineering
Technology Committee Projects

• **Facility Information Management to Support AWP**
  – Completed on 12/31/2018

• **Virtual Reality in Construction Planning**
  – Presentation at the CII Annual Conference (Aug 2019)
  – Project to be completed by end of 2019

• **AWP “Digital Threads” to Enable Supply Chain Visibility on Capital Projects**
  – Start Date – April 2019
Applies to ISDs from all sources ISA (Rev 0, Rev 1), API, PIP, IEC..
Degree of automation differs based on the consistency of the ISD
ISA now highly automatable, API much more difficult, latest versions are improved
Manual QA review identifies issues with extracted properties and issues/ambiguities in source datasheets
XML schema output used for IT contracts, JSON will be for associated instance data
OIIE OGI Pilot Phase 3.1 Activities 5-8

Information Handover
From Capital Project to Operations and Maintenance
Over ISBM (Information Service Bus Model)

Simulated

Use Case(s)
Condition Based Maintenance
Diagnostics
Prognostics
Advisory Generation

Use Case
Remove and Replace

Use Case
RFI/RFI Response (Brownfield)
Information Remediation
Digital Twin

• What is Digital Twin?

• What does it mean to you?