Leveraging Cost Model Development via XML

Federal Remediation Technology Roundtable

Environmental Cost Engineering Committee (EC²)

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Engineering Service Center
Naval Facilities Engineering Command
Environmental Cleanup Program
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The Need

• Promote Sharing of Cost Items, Assemblies, Models, Data, & Other Cost Data
• Bridge Systems by Developing Models that are Independent of the Systems
• Foster Competition & Reduce Reliance on any one Model Builder
Objective

Maximize
✓ interoperability
✓ integration
✓ cost data availability
✓ cost leveraging
✓ consistency
✓ automation
✓ competition

Minimize
✓ development costs
✓ maintenance costs
✓ redundancy
✓ reliance upon any one model builder
✓ reliance on few compatible data sources
The Solution
Establish a Bridge - 3 Components

#1 Parametric Cost Model Standard Practice
  – Parametric cost models
  – Parametric design models

#2 Electronic Standard
  – Data definition, transmission, & application

#3 Cost Model Library/ Repository/ Network
  – Centralized
  – Decentralized/distributed
Advantages of XML

- Interface/Platform/Application/Network Independent:
  - Cross platform (Windows, NT, Unix)
  - Cross network (Internet, Intranet, LAN)
  - Cross application (CTC, RTET, & others)
  - Consuming application can interpret the XML to model the estimate in many different ways
Advantages of XML

• Increases Consistency & Compatibility
• Leverages Existing Systems:
  – Minimizes development & maintenance costs
• Allows Multiple Systems to Leverage Existing Models & Extend Them to Meet Their Unique Needs
• Provides Common Ground for Bridging Agency Budgeting Systems
Electronic Standard - XML
One Source, Many Uses

Old Way: One-to-One

XML Way: One-to-Many

Model or Source  Consuming App

Model or Source  Consuming App
Electronic Standard - XML

Example

• Consuming Application Can Interpret the XML to Model the Estimate in Different Ways:
  ✓ CTC: a relational database implements the XML standard as a translation of the XML into a relational-based cost model
  ✓ RTET: an object-oriented internet-architected application consumes the data as modeled in XML
WARNING - WARNING - WARNING - WARNING - WARNING - WARNING

You have just connected to an Official Department Of The Navy Web Information Service

Department of the Navy automated information systems and related equipment are intended for the communication, transmission, processing and storage of U.S. Government information. These systems and equipment are subject to monitoring to ensure proper functioning, to protect against improper or unauthorized use or access, and to verify the presence or performance of applicable security features or procedures, and for other like purposes. Such monitoring may result in the acquisition, recording, and analysis of all data being communicated, transmitted, processed or stored in this system by a user. If monitoring reveals evidence of possible criminal activity, such evidence may be provided to law enforcement personnel.

To Get Started ... In the 'Application Explorer' tree view on the left side of your screen, double-click the component you wish to run. You may also single click on the plus sign (+) next to the component.
Project Level Cost Model in CTC

In Situ SVE Model
Project Level Cost Model in CTC

In Situ SVE Model
### Project Level Cost Model in CTC

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**In Situ SVE Model**

**Loaded Cost**
Individual Cost Element Model in CTC

Loaded Cost

In Situ SVE Construction Cost Element Model
Remediation Technology Evaluation Tool

Please make a selection to get started:

- Open Saved Project
- Open From Library
- New
- Open Blank Window
- Wizard
- Close
Project Level Cost Model in RTET

In Situ SVE Model
Project Level Cost Model in RTET

Direct Cost Only

In Situ SVE Model
Individual Cost Element Model in RTET
Conclusion

• XML Standardization is a Viable Means for Sharing & Leveraging Cost Model Development
• EC² is Working to Support Development of the Standards
• Soliciting Input on the *Parametric Cost Modeling Manual* & XML Definitions/Schema from:
  ✓ AACE International
  ✓ NIBS - IAI
• Develop ASTM Standards as a Derivative of the Manual