BRIDGEWare Update

2007 AASHTO SCOBS

Wilmington, DE
Presentation Outline

- BRIDGEWare Strategic Priorities
- Pontis Update
- Virtis/Opis Update
  - Overview of Capabilities
  - Past Year Accomplishments
  - Upcoming Enhancements
- User Group Meetings
- Licensee Statistics
- Task Force Members
Virtis and Opis

- Complete Opis Substructure (LRFD)
- Enhance Opis as a design tool
- Develop AASHTO LRFD superstructure engine and specification-checking tool
- LRFR for Virtis

Pontis

- Develop Web-based Version with current, enhanced capabilities using Microsoft.NET managed code technology
Development of 5.1 (Inspection Module) well underway – delivery Feb 2008

New Contractor selected for Pontis 5.1 and maintenance of Pontis 4

Michael Baker Jr., Inc.
Pontis 5.1 Features

- Agency bridge inspection, structure unit and roadway forms
- Improved editing of agency-specific data items
- Improved agency customization
  - Language
  - Labels
Support for Inspection Calculations

- NBI translation
- Sufficiency rating
- NBI validation rules
Pontis 5.1 Features

- Migration of inspection reports to Crystal Reports
- Data import and export functionality
  - Transfer data between DBs
  - NBI data
Future Pontis Versions

- Pontis 5.2 detailed planning begins Fall 2007
- Analysis and modeling functionality from Pontis 4 to be included in Pontis 5.2
- Evaluate NCHRP 12-67 modeling and analysis
  - Multi-objective optimization
  - TRB AHD35
- Planned for 2009 release
Virtis & Opis Update
General

- Most common superstructure types
- Multiple specifications supported
- Complete bridge system or line-girder input
- Agency-customizable libraries for
  - Vehicles
  - Beam shapes
  - Appurtenances
- Third-Party development supported
Reinforced Concrete

- Continuous and simple
- T-beams and slabs
- Constant or variable depth girders
Prestressed Concrete

- Continuous and simple
- I-girders, bulb tees and box girders
- Constant or variable depth girders
- Straight, harped or debonded strands
- Reinforcement definition and development length calculations
Steel Girders

- Continuous and simple
- Rolled beam, cover plates, built-up and welded plate girders
- Constant or variable depth girders
- Homogenous or hybrid
Girder Systems – Rating Analysis of each structural element

- Two-girder systems with floorbeams, with and without stringers
- Rolled beam, cover plates, built-up and welded plate girders
- Constant or variable depth girders
- Flared girders
Truss Systems – Rating Analysis of each structural element

- Simple, continuous and cantilever trusses
- Floorbeams, with and without stringers
- Constant or variable depth trusses
- Timber beams using Madero engine
- Timber decks on timber or other superstructure types
- Frame structures (steel or concrete)
Substructure

- Reinforced concrete piers
- Wall, hammerhead, multi-column bents
- Spread or deep foundations
- Load definition and analysis (current demo version)
Past Year Accomplishments V-5.5

- Non-standard vehicle analysis and rating using AASHTO FEA engine to support agency permitting-routing operations
- Completed truss analysis
- Enhancements to AASHTO Standard Engine
Upcoming Enhancements V-5.6 Summer 2007

- LRFR using the BRASS-GIRDER(LRFD)™ engine
- Schematic enhancements
- Non-standard gage vehicle schematic
Fall 2007 ...

- AASHTO LRFD RC engine & spec-checking module
- Complete analysis & spec checking for piers

... and beyond

- Analysis of floor trusses
- AASHTO LRFD engine and spec module for additional material types
- Opis as a design tool
- AASHTO LRFR engine
Upcoming Enhancements – beyond Fall 2007

- Analysis of floor trusses
- Improve Opis as a design tool
- Continuation of LRFD engine development (ASE) which includes the specification checking module
- LRFR through AASHTO Standard Engine
- Slabs (system definition)
- Additional enhancements to ASE
- Analysis of counters in trusses
- Available in fall 2007
- No additional license fee to the original Opis substructure participants and discounted future maintenance and support fee
- Free 12-month trial for all BRIDGECWare licensees
Virtis/Opis

- August 21 – 23, 2007
  Myrtle Beach, South Carolina

Pontis

- September 5 – 6, 2007
  Portland, Maine
Licensee Update - Pontis

Number of Licenses

2005
- International: 3
- U.S. Agencies: 47

2007
- International: 6
- U.S. Agencies: 49
Licensee Update – Virtis/Opis

Number of Licensees

- 2005:
  - Consultant: 35
  - Agency: 53

- 2007:
  - Consultant: 38
  - Agency: 89

Number of Individual Licenses

- 2005:
  - Consultant: 58
  - Agency: 67

- 2007:
  - Consultant: 64
  - Agency: 100
State directed enhancements (recent & ongoing)

- Oklahoma
- New York
- California
- Illinois
- Montana
- Virginia
- Kansas
- Alabama
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Questions & Comments