

## Major Product Releases! New Features!

Releases for BRIDGEWare® products were recently or about to be sent out! Pontis 4.5, Pontis 5.1 and Virtis/Opis Release 6.2 include exciting new features. Some of the things to look out for:



- ◇ Web-based viewing, editing and reporting of bridge data
- ◇ Plug-in support for reports developed in either Crystal Reports or InfoMaker reports migrated from earlier versions of Pontis over the web
- ◇ New features for authoring bridge lists and filters over the web
- ◇ Enhanced features for defining security roles and bridge-level access groups
- ◇ Support for newer versions of ASA, Oracle; Microsoft SQL Server; and Microsoft Windows desktop and server operating systems
- ◇ Support for localization of screen labels and microhelp
- ◇ Functionality for determining long-term budget requirements to meet specified performance targets
- ◇ Support for linking multimedia documents (e.g., photos, sketches, and/or other documents) to bridges and bridge inspections
- ◇ Bridge inspection module



- ◇ Enhancements to the AASHTO LRFR engine
- ◇ Steel multi-girder structure LRFD and LRFR modules
- ◇ Rating analysis of truss-counters, hinges and through truss capabilities
- ◇ Specification updates, numerous User Group requested enhancements



- ◇ Opis Superstructure follows the same release schedule as Virtis and shares much of the same functionality, though focused on Load and Resistance Factor Design (LRFD)
- ◇ Several new input wizards to improve and simplify user input
- ◇ The Opis Substructure module was included as part of the standard Opis package adding value to the wealth of design features found in Opis
- ◇ This release of Opis also includes numerous Specification updates

See the following pages for more information and a 'sneak peak' at some of these features!

### BRIDGEWare® Management Changes

The AASHTO Special Committee on Joint Development (SCOJD) recently announced changes in the Task Force that oversees the development, maintenance and support of BRIDGEWare®.

As a result of Dennis O'Shea's retirement from Delaware DOT, Tim Armbrrecht will be the Acting BRIDGEWare® Chairman until June 2010. SCOJD will be announcing the permanent Chairperson and Vice Chair shortly after this newsletter is released.

Dennis O'Shea's almost four years of service includes being a Task Force member for a year, two years as Vice Chair and the Chairman for the last 10 months. Under Dennis' leadership, the BRIDGEWare® Task Force has taken on a myriad of challenges to keep up with product and technology improvements, while keeping the BRIDGEWare® license fees steady. His personal primary focus was to keep the users better informed as to the on-goings of the Task Force. Updating the BRIDGEWare® suite to align its products with AASHTO design and rating

standards, and the continuation of the development and deployment of additional functionality of an exciting new, state-of-the-art, web-based Pontis product, have been the main goals for the Task Force.

Dennis has been quick to credit the product improvements and success stories to all the dedicated Task Force members.

Recent new Task Force additions: Francois Ghanem (New York), Beckie Curtis (Michigan), and Bryan Silvis (Virginia) have shown fine initiative to continue to move the products forward. All the Task Force members provide extensive effort to assure that the products meet the user's needs. All users can be grateful for the time and talents these professionals volunteer to provide year in and year out. Dennis wishes the user community and all of the Task Force members all the best and suggests that they work cooperatively to enhance and develop the BRIDGEWare® products to their fullest.

## Pontis 5.X Definition of Supported Platforms (July 2010)

The BRIDGEWare® Task Force has initiated an effort to address user requests to expand supported platforms, while making an efficient effort to allocate License Revenue funds to deliver Pontis 5.2 functionality. Using volunteer testers, the Task Force is proposing to test the existing Pontis 5.X software running under Windows 7, Windows Server 2008 Standard (32 bit) and latest version of Internet Explorer and Adobe Acrobat. This effort is directly in response to feedback from the AASHTO customer survey.

### Pontis 5.X Platform Classifications

#### Release Tested Platform

A release tested platform is a computing environment specified by the BRIDGEWare® Task Force that is essentially identical to one used by the Pontis contractor for release testing. The exact specifications for release tested platforms will be published in the AASHTOWare Catalog. The Pontis community can expect the following of a release tested platform:

- The current release of Pontis 5.X has been thoroughly tested against the platform.
- The Pontis 5.X contractor has the platform on site.
- Licensees using the platform will be fully supported.

#### Supported Platform

A supported platform is a computing environment that does not meet the rigorous specifications of a release

tested platform, but which is quite close to such a platform. The determination of what is "quite close" is made by the BRIDGEWare® Task Force. The Task Force will advise potential licensees as to whether their intended platform meets those specifications. The Pontis community can expect the following of a supported platform:

- The platform is similar enough to one of the release tested platforms to be reasonably confident that Pontis 5.X will operate on it.
- The current release of Pontis 5.X was not tested against all elements of the platform.
- The Pontis 5.X contractor may not have the platform on site.
- Licensees using the platform will be fully supported. On-site trips or remote connection may be required for some issue diagnosis and can be handled by using service units.

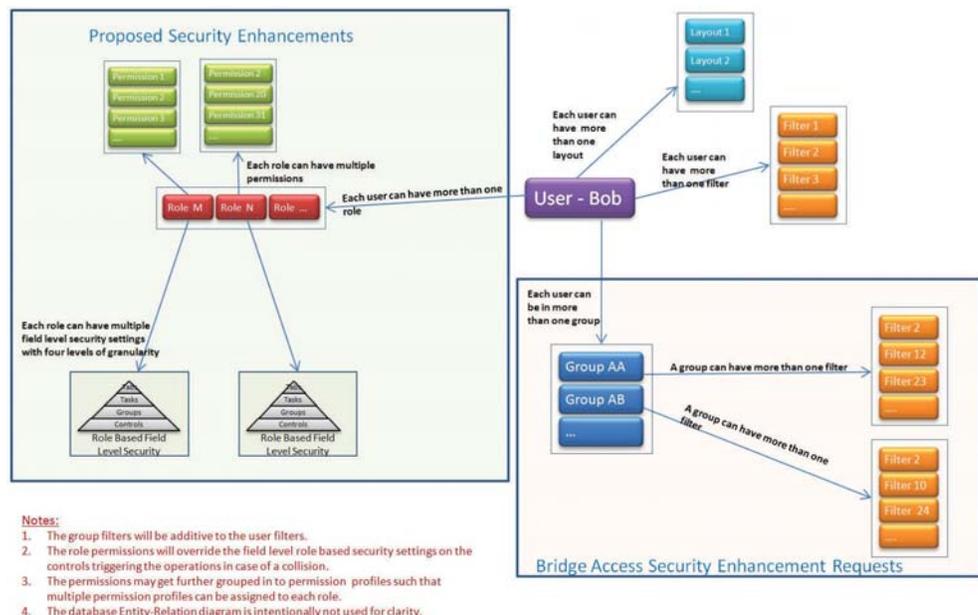
At the time of writing this newsletter the Task Force anticipates the inclusion of Windows 7, Window Server 2008 Standard (32 bit) and Internet Explorer 8 as supported platforms.

#### Unsupported Platform

An unsupported platform is any computing environment that is not a release tested or supported platform.

## The Task Force has Planned and Budgeted Further Enhancements to the Navigation and Field Level Security

The Pontis 5.X new security model must allow a user to be a member of multiple roles. As shown in the picture, any user will be able to have multiple roles and each role will have field level security and predefined permissions associated with it. When a user has multiple roles, there will be a need to resolve the permissions under those roles. There are different strategies that can be used to resolve the collision of authorizations for users with multiple roles. The Task Force has authorized work to proceed with the implementation of a more robust security model that will address the requirements set forth by Pontis Users.



## Pontis 5.2 Future Work

AASHTO's BRIDGEWare® Task Force is nearing completion of the Detailed Design Document for release 5.2 of Pontis. This important document will contain a tentative release schedule to be implemented based on availability of funds. The deadline for completion of the Detail Design Document is July 7, 2010.

Among the innovations in the new release will be:

- Wholesale simplification of the system deterioration modeling
- Results that will form a sound foundation for economic decision making that make sense to practitioners.
- Easy to use, yet sophisticated bridge level analysis features that elevate life cycle cost analysis.
- Incorporating risk management, to help agencies perform routine risk assessments that feed into bridge analysis, project planning and programming.
- Support for the new AASHTO Bridge Element Inspection Guide Manual.
- Less data entry and a better link to systems many agencies already have, such as maintenance management.
- More powerful and flexible features to define bridge activities and tailor them to specific agencies, including more accurate improvement and replacement actions for bridges and culverts.
- Better use of graphics to help communicate the costs and benefits of a project.

## Custom Forms in Pontis 5.1

Even though Pontis 5.1 offers three ways to add agency content to Pontis 5.1, basically there are two categories of complexity in terms of developing Custom Forms in this version of the software.

1. The "Point and Shoot" approach, categorized as basic, applies to the Custom Forms needed to enter data to the USERBRDG and USERINSP tables
2. The advanced approach, categorized as complex, applies to the Custom Forms needed to enter data to the USERRWAY and USERSTRUNIT tables

To find the Technical Manual, please open the folder located in the following path: C:\Program Files\AASHTOWare\Pontis51\docs. This folder contains the Pontis 5.1 User and Technical Manuals as well as other useful documents as illustrated below:

Name	Size	Type	Date
AASHTO BRIDGEWare Startup Guide.chm	83 KB	Compiled HTML Help...	4/3/20
AASHTO License Agreement.rtf	28 KB	Rich Text Format	9/13/2
AASHTO-Pontis-API.chm	19,646 KB	Compiled HTML Help...	6/10/2
DatawindowsNET25InstallGuide.pdf	326 KB	Adobe Acrobat Doc...	8/17/2
Pontis5_directory_structure_and_basic_privileges.xls	28 KB	Microsoft Office Exc...	9/13/2
Pontis 5.1 Alpha Test Scripts - 27Aug09.doc	1,127 KB	Microsoft Office Wo...	8/27/2
Pontis 5.1 Release Notes.rtf	66 KB	Rich Text Format	8/25/2
Pontis 51 Technical Manual.pdf	6,176 KB	Adobe Acrobat Doc...	8/27/2
Pontis 51 User Manual.pdf	17,992 KB	Adobe Acrobat Doc...	8/27/2
Pontis_Installation_Guide.chm	664 KB	Compiled HTML Help...	8/27/2

Open the Pontis 51 Technical Manual.pdf file and you will find the Agency Tabs (Custom Forms) information starting on page 149 of this document.

## Pontis 5.1 Software Lock

Work is underway to include a software lock in Pontis 5.1. The security lock will be included in the evaluation, educational and international licenses of Pontis 5.1. Super Site licenses will not be affected by this new feature. The BRIDGEWare® Task Force directed Baker to conduct a detailed investigation and selection of a third party application software lock product that is appropriate for a .NET web application such as Pontis 5.1 and

different from the one currently being used for the licensing of the Virtis and Opis products.

After research and evaluation, CryptoLicensing by LogicNP was recommended as the ideal product for Pontis 5.1 licensing and distribution needs. The lock will be implemented in June 2010. This product will also be evaluated for use in many of the other AASHTOWare products.

## Virtis/Opis Top Ten List of Enhancements Combined Virtis and Opis Ranking

Enhancement	Ranking	Enhancement	Ranking
Add post Tensioned Concrete	1	Concrete Box Girder Bridge	6
Secondary Load Effects	2	Post Tension Concrete Girder	7
Need Shear Stud Wizard	3	Truss LL Distribution Factor	8
Copy Columns	4	Compute PS Transformed Section Properties Instead of Gross Properties	9
Ability to Define an Entire Bridge/Struction Definition for RC Slab Bridges	5	Automatic Calculation of Contraflexure Points	10

## Status of User Requested Enhancements

The top ten user enhancements were tallied after the 2009 User Group Meeting in Denver and sent out in the quarterly newsletter. The user requested enhancements were reviewed as program independent items (Opis or Virtis) as well as combined. The Task Force reviewed each user enhancement in detail and separated them into four categories: already implemented, a task that should be considered for service unit use, a large task that should be added to the multi-year plan, and tasks that should be included in the 6.2 Work Plan.

Three of the enhancement requests have already been implemented. These are: Compute Prestress Transformed Section Properties Instead of Gross Properties, Automatic Calculation of Contraflexure Points and Shear Reinforcement Ranges - Symmetric Option.

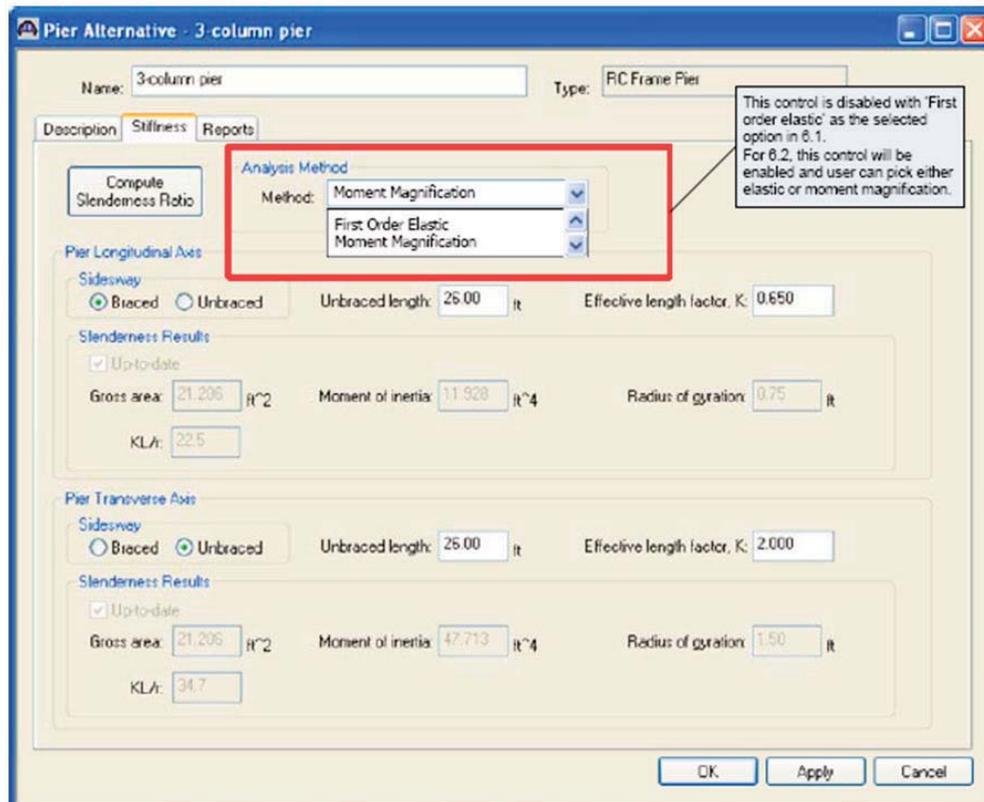
Eight enhancement requests are being considered for future work plans or for service unit expenditures. These enhancements include: Copy Columns, Truss Live Load Distribution Factor, Add Reinforced Concrete Box Girder Bridges, Member Capacity in Output, Add Option for AASHTO 8-59, Provide Another Dead Load Distribution Method Based on Percentages of Load, Shear Reinforcement Wizard and Shear Reinforcement Design Tool, and Spec Check of Individual Pier Components.

The definition of "large task" was set to be any item which could not be funded in a work plan by user enhancements alone. All of the large task items have been incorporated in the Multi-year plan, removed from the user requested enhancement category, and will be presented at the next user group meeting.

After re-classification of the large task items, the three top user requested enhancements in the Virtis, Opis, and combined categories were selected for implementation into the 6.2 Work Plan. They are: Shear Stud Wizard, Secondary Load Effects, and Hinge for Concrete Structure. These enhancements will be included in the 6.2 release, scheduled for July 2010. The Shear Stud Wizard is described in detail in an independent article in this newsletter. The Secondary Load Effects enhancement will provide an option to perform moment magnification on strength limit combinations for column analysis per the LRFD specifications.

The Hinge for Concrete Structure enhancement will allow the analysis of reinforced concrete beam or slab bridges with hinges. It will be an option available for LRFR analysis and for NSG or standard LFR analyses.

Thank you to everyone that provided input on the prioritization of enhancements.



## Shear Stud Wizard

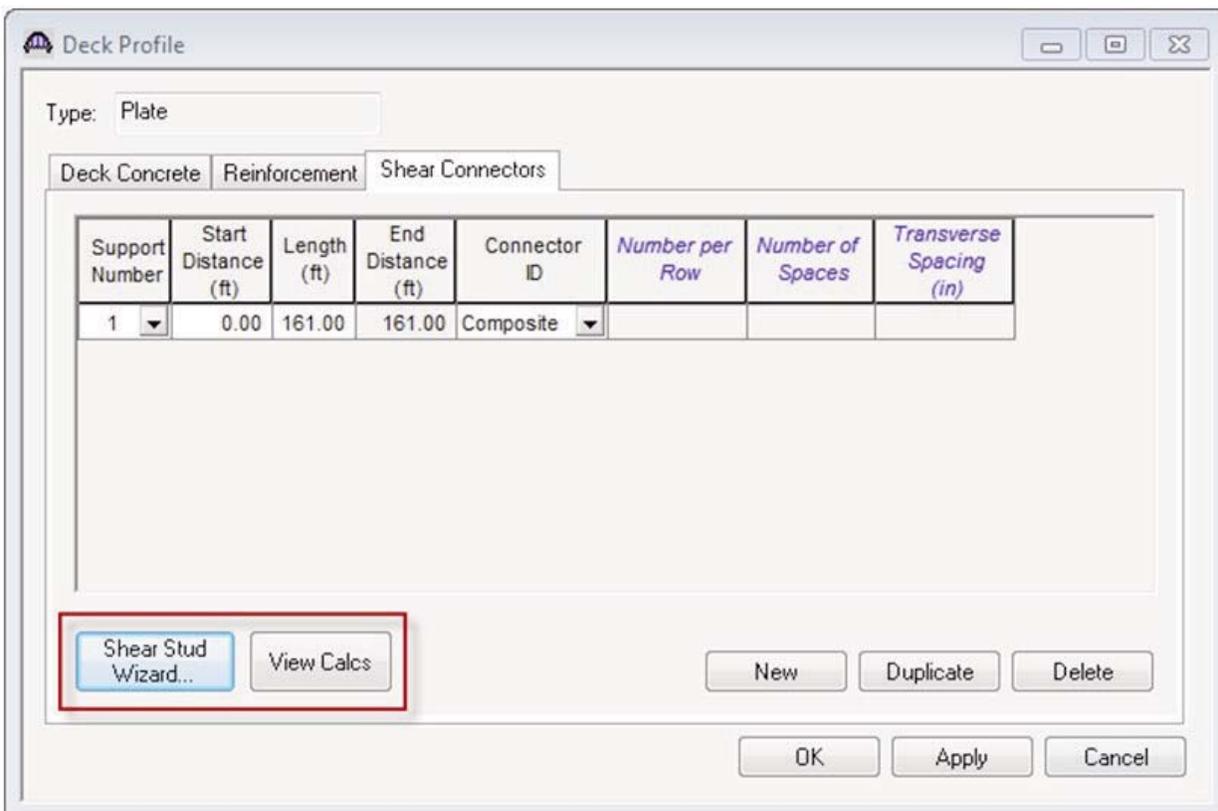
In 2003, the user base requested a Shear Stud Wizard be added to the User Interface (UI). The request stated that we “add a wizard to first suggest the number of studs and spacing, and after an analysis, take the information provided by the spec checker to revise the original estimate.” Issue #4312. The issue was voted by VOBug members as one of the top 10 enhancement requests at the 2009 annual user group training meeting. The Task Force subsequently approved the Wizard enhancement for inclusion in Virtis/Opis 6.2.

In Virtis/Opis 6.2 you will find a couple of new buttons in the Deck Profile Dialog under the Shear Connectors tab. The first button will launch the Shear Stud Wizard with the second button providing you the calculations resulting from using the Wizard.

To address the needs as spelled out in the user request, the design module will have an initial guess procedure. As stated in AASHTO LRFD 6.4.4, the strength of the shear stud is 60 ksi. The Wizard will ask for the diameter of the shear stud from the user. If there are negative moment regions along a girderline, the user will need to tell the software if shear connectors will be placed in those regions. The number of shear studs will start out with the maximum number that can fit on the minimum flange width throughout the girderline, as required by the code.

Opis will use some internal assumptions. Opis will optimize the shear stud layout so that the design ratio is as close to 1.1 as reasonable and that all related articles pass. Using the same LRFD Export in use now, negative and positive moment regions will be defined for the HL-93 Fatigue Truck. Using LRFD 6.10.10.1.1, 6.10.10.1.3 and 6.10.10.1.4 Opis will determine an initial guess at a layout of shear studs. The initial guess will attempt to use a single stud definition that will satisfy the steel cross section properties along the girderline. LRFD 6.10.10.4.2 is used to define the number of studs required for the defined regions from the LRFD Export. LRFD 6.10.10.1.2 is used to define and check the required pitch at tenth points along the girderline.

Refinement of the initial guess will involve iterations of possible solutions that will incrementally reduce the number of studs along the girderline as required for the region, while the following continues to be met: the design ratio goal is reached (DR is between 1.05 and 1.15); all related articles pass; and the number of maximum iterations has not been exceeded.

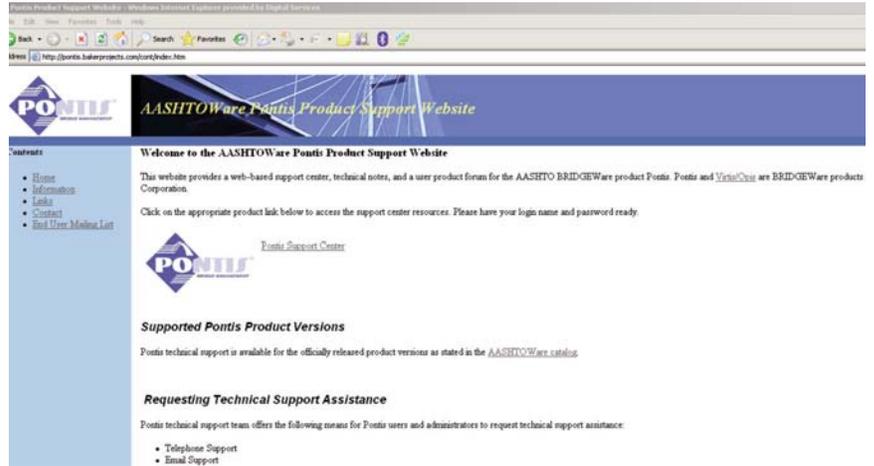


## Project Websites

Project websites contain additional information about BRIDGEWare products including access to technical support, general information, helpful links to other websites including the customer support centers and access to an end user mailing list. The mailing list provides end users an opportunity to be e-mailed product news.

<http://pontis.bakerprojects.com/>

<http://aashto.bakerprojects.com/virtis/>



### Strategic Direction Set

Each year, the Task Force reviews and defines strategic directions for the BRIDGEWare® product suite. The long term plan for these products includes:

1. Preserving and expanding the license base;
2. Enhancing decision support capabilities;
3. Enhancing usability;
4. Supporting asset management;
5. Supporting other related business processes;
6. Strengthening product integration;
7. Developing product technical architectures;
8. Improving the software development process; and
9. Facilitating third-party development.

Planning that is underway for both the near and long term strives to meet these goals.

### Upcoming BRIDGEWare® User Group Meetings

Virtis/Opis User Group  
August 3-4, 2010  
Location: Nashville, TN

Pontis User Group  
September 21-22, 2010  
Location: Newport, RI

*Hope to see you there!*

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