



PONTIS 5.1.2/5.2

TRB Asset Management Conference

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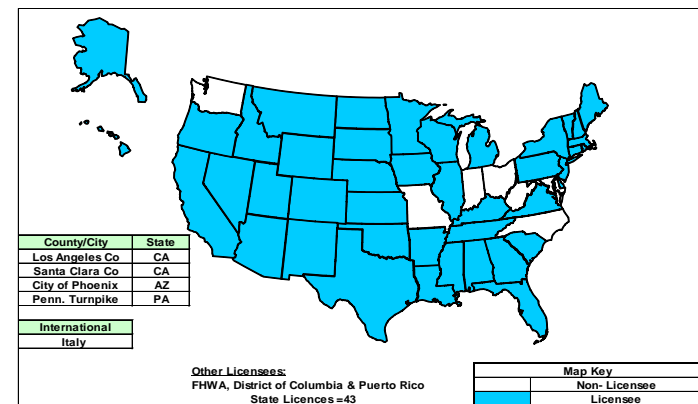
inspect*tech*

What is Pontis?

- Powerful Bridge Management Analytical Software Tool
 - Organize the bridge inventory
 - Allow for entry and storage of inspection data
 - Develop a preservation policy
 - Simulating future bridge conditions
 - Developing a bridge program

Pontis Basics

- Development started in the early 1990's under FHWA guidance
- Result of many millions invested by states and FHWA
- Part of AASHTOWARE – BRIDGEWare software
- Licensed by over 40+ states
- Supports AASHTO element level inspection and management



What's in a Number?

4.5

5.1.0.3

5.1.2

5.2



What's in a Number?

- Version 4.5
 - C++ based
 - Standalone or Client/Server Windows Application
 - CoRe Elements
 - Management and Inspection software
- Version 5.1.03
 - Microsoft .NET
 - Standalone (.NET) or Enterprise Web Based Application
 - CoRe Elements
 - Only Inspection software
 - Can share common database with 4.5 for management

What's in a Number?

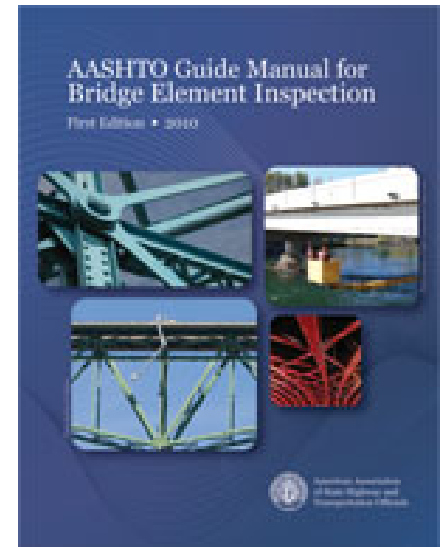
- Version 5.1.2
 - Microsoft .NET
 - Standalone (.NET) or Enterprise Web Based Application
 - NBEs/BMEs
 - Only Inspection software
 - Management depends on 5.2
 - Released March 2012
- Version 5.2
 - Microsoft .NET
 - Standalone (.NET) or Enterprise Web Based Application
 - NBEs/BMEs
 - Advanced Bridge Management Software

Why Change?

- Computer Technology Answer:
 - Have to stay up with technology to support user base
 - New Operating Systems
 - New Database
 - New Programming Languages
 - New Protocols/Standards
 - Internet
- Better performance, enhanced capabilities, and more features.

Why Change?

- Element Answer:
 - In early 2011 AASHTO officially adopted the AASHTO Guide Manual for Bridge Element Inspection
 - New elements (CoRe -> NBE)
- Provides a foundation for improving bridge management
- Incorporate 15+ years of extensive user comments
- Simplify for usability and capability
- Better align with state DOT business practices



NBEs/BMEs

- National Bridge Elements (NBEs):
 - Form the core, fundamental parts of the bridge
 - Minimum that will be required to be reported to FHWA
 - Cover items such as Girders, Deck, Abutment
 - Can not be changed by an agency
- Bridge Management Elements (BMEs):
 - Used to help model other parts of the bridge
 - Cover items such as: joints, wearing surfaces
 - Agency may add, edit, delete BMEs
- Protective Systems and Defect Flags

NBEs/BMEs

- Parent/Child relationship established
- All elements now have 4 condition states
- Defect flags applied at the element level instead
- Defect flag language included with the parent element description
- Elements can be set to deteriorate or not

- Great flexibility and supports what is needed for the bridge management modeling

The Basics of Pontis 5.1.2

- Pontis 5.1.2
 - Built off of the existing 5.X architecture (5.11/5.1.03)
 - Add support for new AASHTO National Bridge Elements
 - Assorted minor enhancements
 - “Features release”
- Goal: Allow for NBE/BME inspections to be done with Pontis and lay the foundation for 5.2 (management).

Graphical User Interface

Pontis5 Cassini Browser

File Sites Help

PONTIS BRIDGE MANAGEMENT SYSTEM

Welcome: Pontis User
Database: Pontis512 SQL Server Sample DB
Help ? Account LogOut

Menu

- Condition
- Appraisal
- Inventory
- Schedule
- Work
- Multimedia

Bridges Reports Admin Inspection Gateway

Bridge: 04 07598 Facility Carried (007): JESSE OWENS PKWY Inspection: 2004-12-15 (INRG) Type: Regular NBI Metric English

Condition Ratings

Deck (058): 7 Good Channel (061): 8 Protected
Superstructure (059): 6 Satisfactory Culvert (062): N N/A (NBI)
Substructure (060): 7 Good Waterway (071): 8 Equal Desirable

Unrepaired Spalls: (SF)

Validate Calculate SR

Element Conditions

- All Structures - Quantity Percent Show Only Non-CoRe Show Last CoRe Insp Add New Element Edit Element

Elem	Str. Unit	Env	Description	Quantity	Units	Qty. 1	Qty. 2	Qty. 3	Qty. 4	Qty. 5
12	0 / Type = M (0)	Low (2)	Concrete Deck	400.000	sq.ft	100	200	100	0	0
520			Deck/Slab Prot Sys	400.000	sq.ft	300	100	0	0	0
104	0 / Type = M (0)	Low (2)	Prestress Box Girder	500.000	ft	350	100	50	0	0
358			Concrete Cracking	20.000	ft	0	0	20	0	0
215	0 / Type = M (0)	Low (2)	R/C Abutment	144.357	ft	114	20	10	0	0
226	0 / Type = M (0)	Low (2)	P/S Conc Submgd Pile	100.000	ft	70	30	0	0	0
233	0 / Type = M (0)	Low (2)	P/S Conc Cap	30.000	ft	20	10	0	0	0















Ready http://localhost:9000/default.aspx Port: 9000

New Feature – NBE/BME Elements

- Newly adopted bridge element standard that replaces CoRe elements for element level bridge inspections
- Fully supported in Pontis starting with version 5.1.2
- CoRe elements still visible in Pontis but all new inspections will be NBE/BME

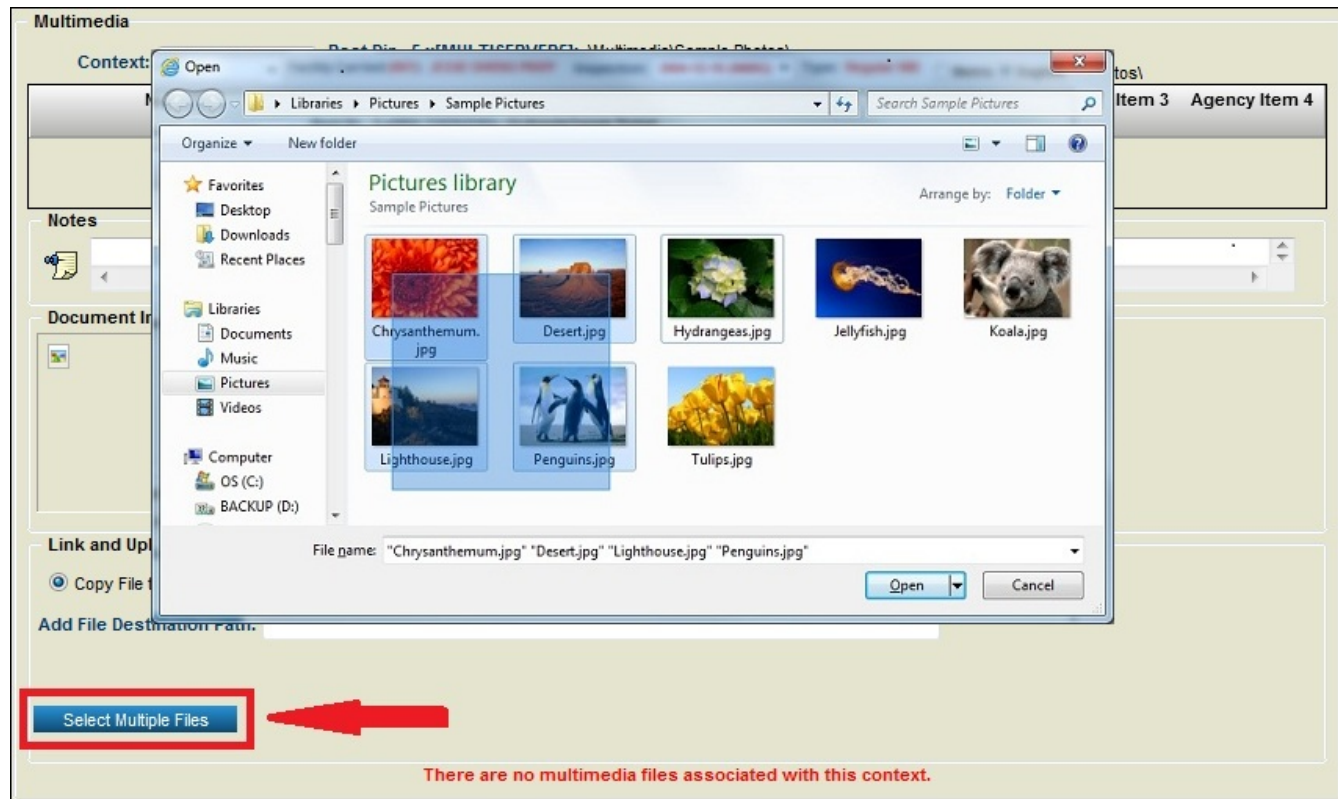
New Feature – Protective Systems

- Parent/child relationships
- Easily identifiable through icons

	Elem	Str. Unit	Env	Description	Quantity	Units	Qty. 1	Qty. 2	Qty. 3	Qty. 4	
		107	0 / Type = M (0)	Ben. (1)	Steel Open Girder / Beam	1640.420	ft	1640	0	0	0
		116	0 / Type = M (0)	Ben. (1)	R/C Stringer	1.000	ft	1	1	0	0
		358			Concrete Cracking	1.000	ft	1	0	0	0
		515			Steel Protective Coating	1.000	sq.ft	1	1	0	0
		202	0 / Type = M (0)	Low (2)	Steel Column	24.000	each	0	0	24	0
		241	0 / Type = M (0)	Low (2)	R/C Culvert	1.000	ft	1	0	0	0

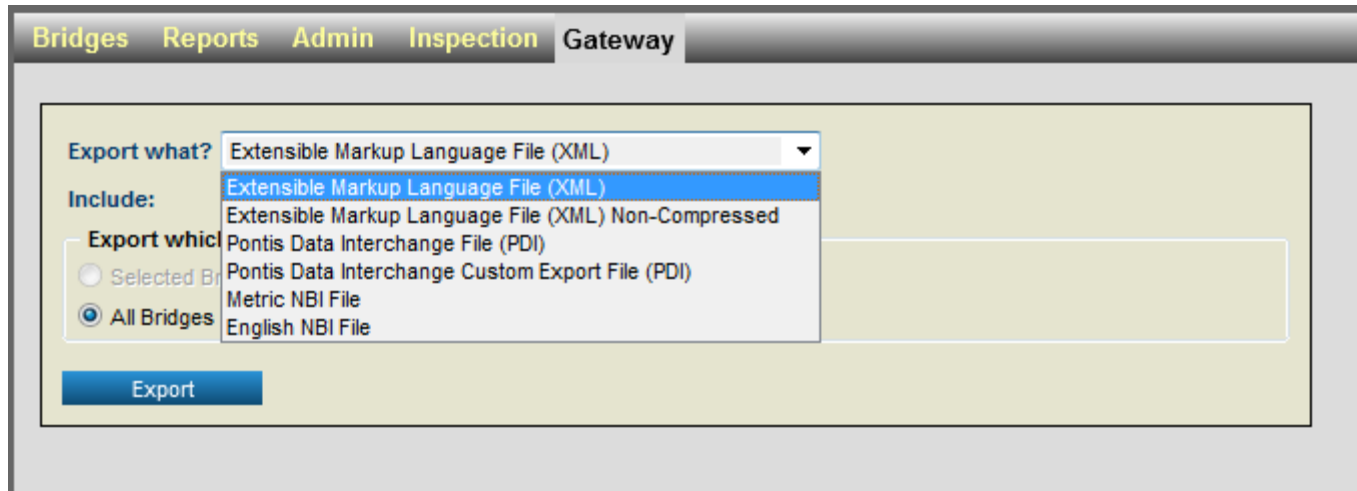
New Feature – Multi File Uploads

- Ability to upload multiple Files at once



New Feature – XML Export/Import

- XML is an industry standard format for saving and transferring data

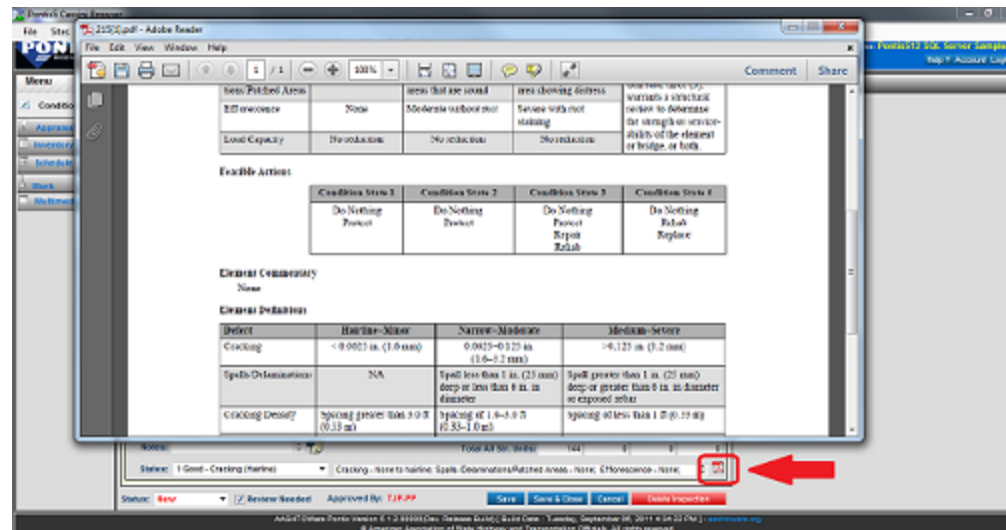


The screenshot shows a web application interface with a navigation bar at the top containing the following tabs: Bridges, Reports, Admin, Inspection, and Gateway. The main content area is a form for exporting data. It features a dropdown menu labeled "Export what?" with the selected option "Extensible Markup Language File (XML)". Below this, there is an "Include:" section with a list of options: "Extensible Markup Language File (XML)", "Extensible Markup Language File (XML) Non-Compressed", "Pontis Data Interchange File (PDI)", "Pontis Data Interchange Custom Export File (PDI)", "Metric NBI File", and "English NBI File". To the left of this list, there is a section labeled "Export which" with two radio button options: "Selected Br" (unselected) and "All Bridges" (selected). At the bottom of the form is a blue "Export" button.

- PDI is still available option for exporting/importing data

New Features – User Requested Features

- Integrated Guide Manuals



- Easy access to past CoRe elements

Elem	Str. Unit	Env	Description	Quantity	Units	Qty. 1	Qty. 2	Qty. 3	Qty. 4	Qty. 5
241	0 / Type = M (0)	Low (2)	(CoRe) Concrete Culvert	647.999	(LF)	641	7	0	0	0
333	0 / Type = M (0)	Low (2)	(CoRe) Other Bridge Railing	157.999	(LF)	158	0	0	0	0
334	0 / Type = M (0)	Low (2)	(CoRe) Misc. Rail -.33 m sw	342.001	(LF)	342	0	0	0	0
515	0 / Type = M (0)	Low (2)	(CoRe) Custom R/C Wing Wall	354.326	(LF)	354	0	0	0	0

New Feature – On Demand Lists

- Performance improvement for agencies with large databases, from 70 sec load time to 7 sec load time
- Filter bridges as you type

The screenshot displays a web application interface for bridge management. At the top, there are navigation tabs: **Bridges**, **Reports**, **Admin**, **Inspection**, and **Gateway**. Below the tabs, there is a search bar for "Bridge:" with the value "04 08" entered. A dropdown menu is open, showing a list of bridge IDs: "04 08003", "04 08508", "04 08511", "04 08529", and "04 08530". The dropdown is highlighted with a red box. To the right of the search bar, there are fields for "Facility Carried (007): JESSE OWENS PKWY", "Inspection: 2011-09-07 (TGBO)", and "Type: Regula". Below the search bar, there are several form fields for bridge details, including "Channel (061): 8 Protected", "Culvert (062): N N/A (NBI)", and "Waterway (071): 8 Equal Desirable". There are also buttons for "Validate" and "Calculate SR". At the bottom, there is a section for "Element Conditions" with a dropdown for "- All Structures -" and radio buttons for "Quantity" and "Percent". A table at the bottom shows a list of elements with columns for "Elem", "Str. Unit", "Env", "Description", "Quantity", "Units", "Qty. 1", "Qty. 2", "Qty. 3", and "Qty. 4".

Pontis 5.1.2 Foundation for 5.2

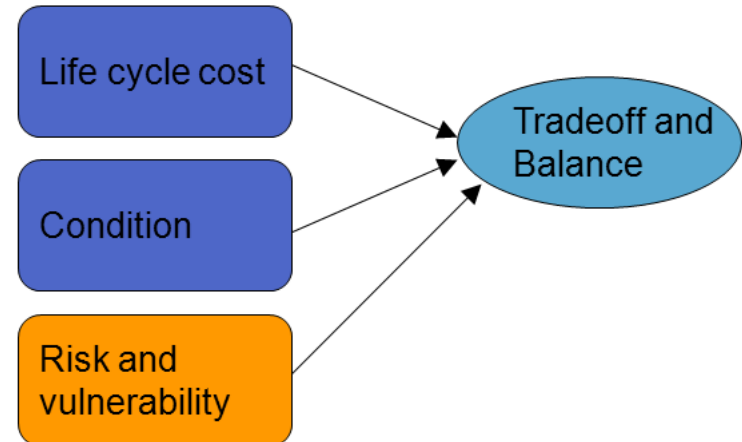
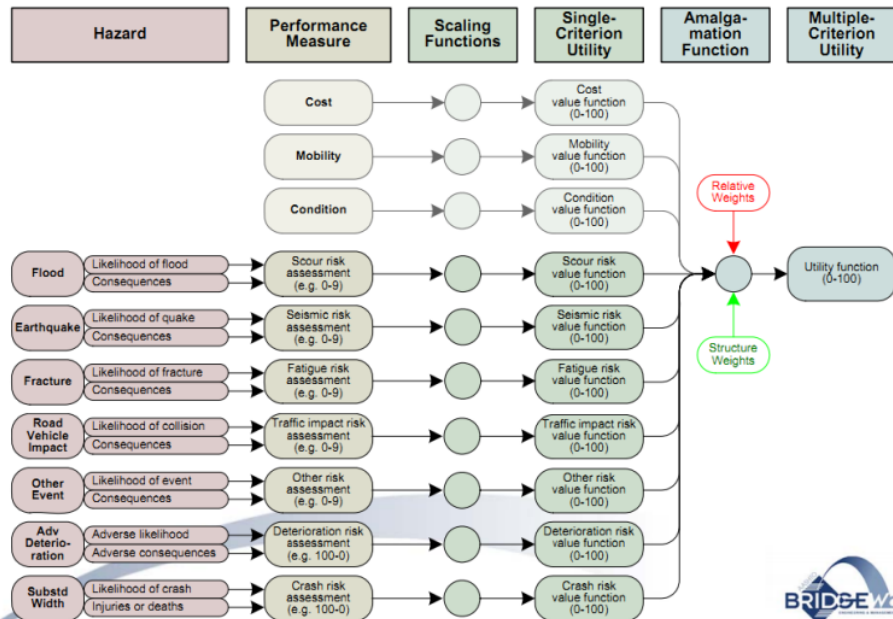
- Lays element level foundation
- Starts technology updates
- New database tables and relationships started
- Starts agencies on a multi-year migration process

What is in Pontis 5.2?

- Builds off capabilities of existing Pontis versions
- Completely replaces and rewrites many previous modules
- Some significant areas:
 - Full incorporation of risks
 - Multi-objective analysis
 - Enhanced deterioration models
 - Life cycle cost analysis
 - Bridge level analysis
 - Project and Program Planning
 - Enhanced reporting
 - New data exchange

Multi-objective bridge modeling and prioritization framework

- Ability to evaluate and prioritize multiple objectives (current and future conditions, risks, and safety) simultaneously across all bridges.
- Better fit to agency workflow and business practices

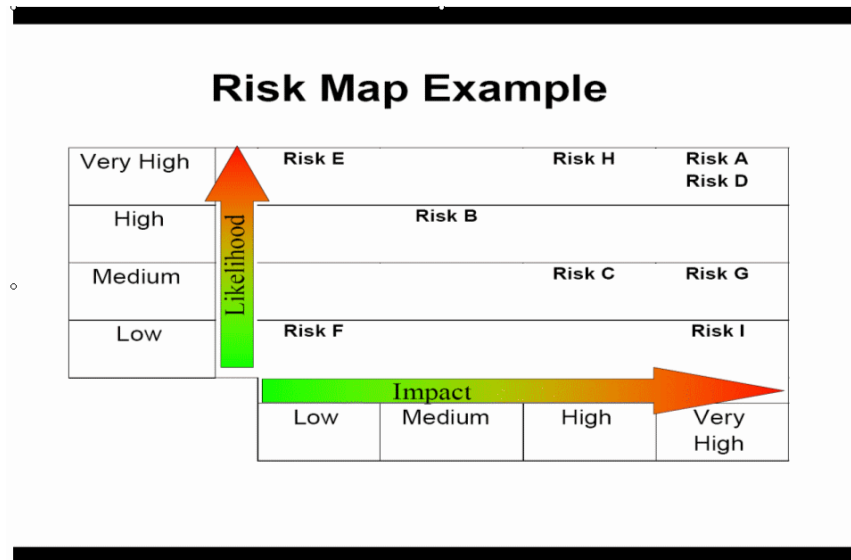


Replacement of the project planning module

- Advanced analysis capabilities to for life cycle cost analysis, multi-objective comparisons and expected performance measures for the projects being created
- Performance measures for expected condition improvement, risk reduction, safety improvement and related economic evaluation

Incorporation of risks definitions

- Ability to define bridge risks at the bridge level
- Support for user-defined risks to be considered
- Ability to define multiple risks for any bridge
- Consideration given based on the risk potential and consequences



Improved cost estimating for bridge replacements

- Improved replacement recommendations coming from future years deterioration simulations to consider roadway level of service needs and current design standards in determining the proposed width, length and cost of the replacement bridge.
- Ability to “opt-out” historic bridges
- Better models for culvert cost estimates

Support for “corridor” based and geographically proximate project development

- Ability to define a collection of bridges (on a route, in an interchange, etc.) that will have their needs queried, evaluated and packaged as a group to take advantage of economies of scale.
- Improved project development process and cost savings for the agency

Who/How will Pontis 5.2 be Done?

- AASHTO BRIDGEWare Task Force
- AASHTO Staff
- Pontis Technical Review Team (TRT)
 - Assist in evaluating technologies and making detailed recommendations
- Pontis Users Group
- Contractor (InspectTech)

- Multiple groups/people working toward the same goal.

When will Pontis 5.2 be available?

- Development on 5.2 has started!
- Phased releases
 - Version 5.2.1
 - Core program framework, risk assessments, integrated utility functions, network corridors
 - October 2012
 - Version 5.2.2
 - Implementation of new deterioration models and multi-objective analysis
 - Version 5.2.3
 - Integrated project and program planning
 - All administrative features

Completion and delivery of the final phase (5.2.3) is expected by January 2015.

Advantages of Pontis

- Full support and maintenance provided by AASHTO.
- Enhancements and features are fully coordinated with AASHTO guidelines
- Incorporation of FHWA regulatory requirements.
- Development administered and overseen by a task force of State DOT representatives.
(Software created by DOTs for DOTs)

How do I stay updated?

Enhanced Communication Options:

- Webinars
- Email list
- Twitter/Facebook
- Pontis website (<http://pontis.inspecttech.com/>)
- Just Ask!

QUESTIONS

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

