

Phil Weinstein / Accomplishments -- December 2014 -- Edit 1-07-2015

General Development Accomplishments

[I.A] New/Enhanced Software / USACE-ABQ 6

Graphical Teacup and Animation for Links / "Output Canvas" Output Device

Substantial additional development of the Output Canvas with teacup and flow line support was completed in December. Much of this work (all but basic flow line support) was added to the RiverWare 6.6 release (after the two 6.6 pre-releases, but before the actual 6.6 release in early January 2015).

Major output canvas features included in the RiverWare 6.6 release:

1. Free-standing ("canvas") text items.

The user can now define multiple text *groups*, each of which can contain multiple text *items*. Visibility (a "Show" checkbox) and *font* are defined at the text group level. Text color and text composition (supported with a handful of text types) are defined at the Text item level. These are mostly the same text items which could be added to teacups (under the teacup label). The primary difference is that slot references in canvas text items are *complete* rather than *local* (relative to a simulation object associated with each teacup).

A new "Timestep" text item type was added. This shows the canvas' reference timestep date/time. The user can specify optional Prefix and Suffix text (as with all text item types other than "plain text").

Text item types are:

1. Plain Text
 2. (slot-) Value
 3. (slot-) Value / (slot-) Value
 4. Percent (of two slot values)
 5. Percent Maximum (the Teacup's maximum) -- not supported for canvas text items.
 6. Timestep
2. Output canvases (output devices) can be added to **RiverWare Model Reports** -- similar to model report support for (Pie-) Chart output devices. When adding an output canvas to a model report, the reference timestep can be specified (overriding the reference timestep of the output device). Also, maximum width and height is specified; this limits the size of the generated output canvas image included in the HTML report (in pixels). When reducing the size of the output canvas image the aspect ratio is preserved.

Additional *usability enhancement* and *internal maintenance* work was also applied to RiverWare 6.6. This included:

1. Teacups (and all other canvas items) now have "selection ornamentation" -- a dashed bounding box.

2. Configuration selection synchronization. Selecting a configuration tree item causes the corresponding graphics item in the preview canvas to become selected. Conversely, each canvas graphics item supports a "Configure..." context menu operation which causes the corresponding configuration tree item to be selected. This shows the item's settings in the configuration settings panel.
3. Slot values which are part of the output canvas configuration are now displayed with *units*. The units are based on unit-type settings within the currently selected unit scheme (e.g. for "volume" or "flow").
4. Correct separation of the output canvas configuration instances shown simultaneously in the configuration and viewer dialog boxes.
5. Automatic output canvas configuration "correction" when the *name* of a simulation object changes (for those which are associated with a teacup or flow line).

Not all of the Output Canvas and Teacup functionality described above was originally planned for the RiverWare 6.6. But ultimately, it was all included. The following document more comprehensively describes these functional and technical enhancements:

RiverWare 6.6 Output Canvas / 12-23-2014 Merge from 6.7 Development

R:\doc\Output\OutputCanvas\2014\OutCan66-MergeTwo.docx

R:\doc\Output\OutputCanvas\2014\OutCan66-MergeTwo-2014-12-23.pdf

A usable basic Flow Line capability was also completed in December for **RiverWare 6.7**. This supports only line thickness indicating a "flow" value relative to all of the values in the whole flow line group. **Not implemented** were: (1) Threshold-based colors and line attributes indicating values relative to each channel's capacity or related guide curves; nor (2) "attachment" behaviors of Flow Line anchor points.

The developed Flow Line capabilities include:

1. Creation of multiple flow lines from a SimObj selection (with the GUS object selector).
2. "Smart" initial placement of new flow line instances, based on the position of the reference simulation object within the workspace's Simulation view.
3. Interpolated thicknesses given four values defined at the Flow Line Group level: Max and Min user values and thicknesses (pixels).
4. Draggable anchor points which appear at each end of the single *selected* flow line. The overall flow line is also draggable.
5. Menubar operation: Edit >> Delete All Flow Lines ... (with confirmation).
6. Tooltip: Flow Line slot name.
7. Context Menu:

- Open Object...
- Open Slot...
- Plot Slot...
- Configure...
- Flow Line Group >>
 - Show Slots in New SCT...
 - Plot Slots...
 - Configure Group...

The following document more completely describes the developed Flow Line capabilities. (This also includes a section on *"Some Possible Flow Line and Output Canvas Enhancements"*).

RiverWare 6.7 Development -- Output Canvas Flow Lines / Dec. 2014 [14 pp.]

R:\doc\Output\OutputCanvas\2014\FlowLinesFeatures-Dec2014.docx

R:\doc\Output\OutputCanvas\2014\FlowLinesFeatures-Dec2014-12-31-2014.pdf

Maintenance Accomplishments / December 2014
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[II] RiverWare Software Maintenance / Software Updates / Bug Fixes

The following bugs were fixed:

- Bug 5555 (followup): Series Slot w/Periodic Input initialization problem.
- Bug 5560: SCT columns in hidden sheets (subtabs) resize after a run

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