Phil Weinstein / Accomplishments -- February 2015 -- Edit 3-02-2015

| **General Development Accomplishments** |

[I.A] New/Enhanced Software / TVA [#10] Preschedule SCT Enhancements
   SCT: Custom Time-Aggregation Summary Rows: Fix and Usability Enhancements
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The new SCT Custom Time-Aggregation Summary Rows feature was developed in October and November 2014 (for RiverWare 6.6) and was enhanced in January 2015 to support the hiding of individual summary row cells. In February 2015, in the course of TVA's use of this feature to implement a basic form of the Preschedule SCT, a dysfunction was discovered and fixed, a related usability problems were addressed.

- In some circumstances, "Slot Reference"-type custom summary row cells were not showing data. This was due to an initialization problem.
- "Slot Reference"-type custom summary row cells (which, in the context of a Preschedule SCT configuration, correspond to a slot on a *different simulation object* for each SCT column) now support this context menu operation to show the slot's open slot dialog: **"Open Custom Summary Slot..."**.
- When this type of cell is selected, the name of the slot is shown in the status bar. If the slot has the wrong unit type, that is also indicated.

[I.A] New/Enhanced Software / BOR-ABQ [_____]
   Graphical Teacup and Animation for Links / "Output Canvas" Output Device
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Provisional flow line development from two months prior (in December 2014) was completed as a deliverable feature in February 2015 for RiverWare 6.7. Flow line, and related output canvas development in February included the following features:

1. Flow line *color* and *line style* (e.g. solid or dashed) indicate values exceeding user-defined threshold values. These display attributes -- for a set of up to nine value intervals -- are defined at the flow line *group* level. Threshold values are independently defined for each flow line *instance*. Currently, threshold values can be expressed only as constants. (In the future, we may want to support references to series or periodic slots for some of a flow line's threshold values).
2. Simplification of flow line slot references. Each flow line instance now has a complete, independent slot reference (i.e. no longer restricted to a local slot name defined by the containing flow line *group*). The only restriction is that the slots for all flow lines within a flow line group must have the same unit type; typically this will be "flow".
3. Object icon groups and object icons. This new type of output canvas graphic object is typically used with flow lines. Object icons are associated with a particular simulation object (as are teacups), and provide direct access to their simulation object's open object dialog. Object icon groups support optional dynamic text items which can include values of slots on the object or related data object. This is analogous to *teacup text item* support.
4. Flow lines as "poly-lines" -- supporting more than two vertices. In the output canvas configuration dialog, flow lines are initially created with two points; additional points can be added using context

menu operations. Both individual points and the whole flow line can be dragged to a new location within the canvas.

The following document provides a comprehensive description of the current output canvas flow line capabilities. This includes features developed in December 2014 and February 2015:

- **RiverWare 6.7 Development -- Output Canvas Flow Lines / Feb. 2015**
  R:\doc\Output\OutputCanvas\2015\FlowLinesFeatures-Feb2015.docx [17 pp.]
  R:\doc\Output\OutputCanvas\2015\FlowLinesFeatures-Feb2015-26.pdf

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Maintenance Accomplishments / February 2015

[II] RiverWare Software Maintenance / Software Updates / Bug Fixes
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The following bugs were fixed:

- Bug 5582: Huge delay operating Model Run Analysis dialog's Rules Effects panel with large Ruleset.
- Bug 5583: Object Attribute Manager dialog: Missing button icons.
- Bug 5584: Open Account Dialog and SCTs opened from an SCT file are not initially scrolled to the global time.
- Bug 5587: Open Slot dialog: undesirable rescroll to selected cells after display change operations.
- Bug 5591: On the Open Object dialog, the input I flag icon was not updating when the timestep changed.
- Bug 5594: The SCT could jump to a different tab when removing a slot.

[II] RiverWare Software Maintenance
   Removed two unnecessary options to disable data collection for RPL analysis and performance measurement features.

Two checkboxes for optionally disabling data collection for analysis features have been removed from the RiverWare user interface. These features are now unconditionally enabled:

1. **"Enable Rules Model Run Analysis"** ... in the Rulebased Simulation Run Parameters dialog, accessible from the Run Control "View" menu.
2. **"Collect RPL Set Performance Information"** ... in the RPL Parameters dialog, accessible from the Workspace's "Policy" menu.

The first change above involved recoding a series of cwSets (cwDlists) as a series of bit arrays; this was done as a run-time performance enhancement. See the FastBmap class in RuleSetMgr.

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3-02-2015