**CADSWES Maintenance Accomplishments: June 2017**

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**I New/Enhanced Software**

B. Unfunded software development and documentation

Changes to RiverWare model file precision

In order to mitigate the risk of loss of information when floating point values are written to a model file, most values are now written with full precision (17 digits). Through RiverWare 7.1 the default precision was 12 digits, so in order to balance the potential increase in file size due to the general increase in precision, users can now choose to use a lower precision for simulation results (defined series slot values with the Output or Rule flag). As part of this work the Model Save Confirmation dialog was modified in accordance with the new options.

Modification to begin and end run diagnostic messages

RiverWare posts diagnostic messages at the beginning and end of each simulation which include the current “wall clock” time, as hours and minutes. The format of these times was modified to also include seconds.

**II RiverWare Software Maintenance**

Software Updates, Bug fixes (not associated with new development)

* Bug 5972: Arithmetic error while simplifying an optimization constraint
* Bug 5969: RPL Set Comparison Tool: function name drawing problem
* Bug 5970: Crash in RPL Set Comparison Tool when a set goes away
* Bug 5967: RPL editor crash when copy/pasting an empty statement
* Bug 5968: Global Functions Set counters accumulate across runs
* Bug 5971: RPL expressions with comments can overlap other expressions
* Bug 5964: Initialization Rule grows Integer Indexed agg. series slot unnecessarily
* Bug 5978: 3D table interpolation uninitialized variable

Regression test performance analysis

An optimization regression test was observed to have increased its run time by 30%. It was determined that this was due to the upgrade of CPLEX from version 12.5.1 to 12.6, which was required by the upgrade to the Visual Studio 2013 compiler, and further analysis led to the conclusion that this slowdown could be mitigated by adjusting the number of threads made available to CPLEX, and that no further changes were required.