## RiverSMART Software Maintenance Software updates RiverSMART Visual Studio 2013 Port

During the first few months of the year RiverWare was ported to Visual Studio 2013, including upgrading the 3rd party libraries RiverWare uses. RiverSMART is also built using Visual Studio, although it uses a small subset of the 18 3rd party library RiverWare uses. Usually this means that once RiverWare is ported it’s a straightforward matter to port RiverSMART. In June RiverSMART was ported to Visual Studio 2013 and the upgraded 3rd party libraries although the port wasn’t as straightforward as expected, and the reason illustrates why these efforts can take an unexpectedly long time to complete.

RiverSMART uses the zlib library to read compressed RiverWare model files (to mine the model files for metadata describing aspects of the model). RiverWare uses the zlib library for the same purpose. After its port the RiverWare code (which was taken directly from RiverSMART) worked correctly. However, after *its* port the RiverSMART code was crashing in a call to the zlib gzopen() function. Same code, same library yet one application worked correctly and the other application crashed. (I say same code, yet there were differences. For example, RiverWare calls gzopen()from the executable whereas RiverSMART calls it from a DLL. Is this a significant difference? It can be difficult to find the answer, and searching the Internet can consume a lot of time without yielding a definitive answer.) Anyway, the hours spent debugging the crash didn’t point to a problem (much less a solution) and attention turned to using a different zlib library. (There wasn’t a good reason to think the zlib library was the problem, but sometimes something is tried for lack of something better to try.) Searching the internet identified the zlib implementation bundled with Qt as a candidate, although there are those who say it shouldn’t be used. (Their rationale is that Qt doesn’t document that it uses zlib and therefore one should view zlib as a Qt implementation detail and not rely on it.) But having already spent more time than anticipated on the RiverSMART port, it was decided to use the zlib bundled with Qt. Should a future Qt release not provide zlib the decision will be revisited.

## RiverWare Software Maintenance Bug fixes (not associated with new development)

In June the following bugs were fixed:

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| **5976** | Excel DMI crash reading a table by range |