**SANS Data Reduction Redesign**

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The Mantid Project’s software framework provides general support for visualization and data reduction of neutron scattering and muon spin measurements [1]. It allows the users to implement their own custom analysis algorithms and reduction routines. For several scientific areas, such as Small Angle Neutron Scattering (SANS), simple and efficient custom interfaces with tailored data reduction frameworks have been provided to allow users to analyse their data.

The initial version of the reduction interface for SANS instruments at ISIS facilities was created nine years ago and was the first of the custom technique-specific interfaces. It has provided a successful solution and has been in active use ever since. However, increased data volumes and demanding feature upgrades have revealed the limitations of the current approach. Instrument scientists have asked us to deliver a new data reduction framework which is more scalable, robust, and solves the performance issues of the current approach. In addition, they require a solution which allows other facilities to incorporate their custom data reduction easily into the same framework and interface.

We have proposed a novel solution for the ISIS SANS reduction interface which makes use of a modular and general approach based on Mantid’s work-flow algorithms, coupled with a Model-View-Presenter based interface. This approach allows other facilities to reuse and integrate easily into the existing infrastructure and automated user interface level testing, therefore reducing future development and maintenance cost and effort. We will contrast the limitations of the current approach with the major improvements that our novel approach will deliver to the SANS instrument scientists and report on the progress that has been achieved so far.

**References**

[1] [www.mantidroject.org](http://www.mantidroject.org)