DREAM software requirements

DREAM timeline

We are now in Phase 2

- 2017-2018: Final Design Development
- 2018-2020: Construction & Installation
- 2020-2021: Cold Commissioning
- 2021-2023: Hot Commissioning (Friendly Users)
- 2023: General User Operations

in 2021 the data reduction software is needed

Some points

- In the user mind: clumsy software = bad instrument

- Software solutions can be developed for a suite of instruments, however each instrument is unique (dedicated software scientist for each instrument?)

- DREAM team wishes to be involved into development of software in earlier stage

- We are here to help: provide existing data, most challenging samples, take data at spallation sources for standard samples

- DMSC is very welcome to join us during beam time at SNS, LLB, FRM-II, ISIS

- Mantid team at SNS has a lot of experience with developing software for high-resolution powder diffraction (POWGEN) and high-flux diffraction (NOMAD) instruments (DREAM is combination of both). They are very open for collaboration

- Jülich has 10 % of beam time at POWGEN. We can test their solutions with the real-life examples

Requirements

- As one of the first instruments DREAM' early success strategy relies on usable software as early as in 2021

- From 2023 reliable and user friendly software is required for general user program

- STAP advise: ensure availability of 1D data sets in the formats compatible with common powder diffraction software GSAS, FullProf, Jana, TOPAS

- Continue to develop 2D Rietveld tools in collaboration with POWTEX team

- Auto-reduction algorithms are needed for the high throughput instrument

- Representation and easy manipulation of raw data for powders (Mantid plot)

- In addition to general powder diffraction tools PDF, SANS and single-crystal solutions would be needed (collaboration with MAGIC and HEIMDAL teams)