Summary of the "Workshop - What data?"

Detectors discussed

- Multi-grid detector (**MG**)
- Multi-blade detector (**MB**)

Design

- (**Both**) currently uses analog puls processing but will be using VMM:s in their final incarnation.
- (**Both**) requires time resolution slightly bettar than μs but will mostly use the full time resolution offered by the timing system.
- (**Both**) are somewhat gamma radiation sensitive though this is largely descriminated against by the use of pulse amplitude.
- (**Both**) are susceptible to gain drift due to a change in air pressure. This will be compensated for in the final system.
- (**MB**) has different resolutions in strips and wires.
- (**MB**) blades are angled 5° to improve usefull (and actual) count rate of the system.
- (**MG**) has some discrimination problems near acquisition board edges (every 16 channels). This can likely be fixed by the use of data analysis.
- (**MG**) uses a layers of grids to improve efficiency and usefull count rate.

Commissioning

- Both systems will require gain and threshold calibration during commissioning.
- Gain and discrimination calibration checks will have to be an ongoing process and thus doig this must be possible.
- Changes in gain can be caused by
    - Wires bending or otherwise moving arounf
    - Contamination of cathodes and anodes
    - Small movements of the detector support structure

Data processing

- Both detectors will provide pulse height (**PH**) data, spatial coordinates and a time stamp for every detected event
- **PH** data is not used by Mantid but it could potentially be useful to save it for diagnostics purposes
- **PH** data wil be required during commissioning and tests of the instruments
- Test data from the **MG** demonstrator system as tested at SNS is available

- Some test data for the MB is also avilable if requested
- Due to every event in the **MB** system causing a signal in several wires, some improvement in resolution is possible by the use of (e.g.) center-of-gravity calculations
- Readout of the detctor could be done synchronously and asynchronously
    - Synchronous readout should be easier to implement and use but will result in larger amounts of data
    - Asynchronous readout will produce less data but will likely produce data that is harder to process