Agenda and Minutes of the 2nd Meeting of the JRA in FP7-II, 19th September 2013

Agenda:

1. Review of Task 2, 'Software Development for Data Analysis'
2. Review of preliminary results obtained from APD tests at ISIS

Attending:

1. Steve Cottrell
2. Elvezio Morenzoni
3. Adrian Hillier
4. Andreas Suter
5. Robert Scheuermann

Discussion:

1. Review of Task 2, 'Software Development for Data Analysis'

Steve Cottrell reviewed draft reports intended for deliverables D17.1 'Document outlining specification of software routines' and D17.3 'Document considering integration of simulation codes'. Andreas Suter suggested revisions to former document; Steve agreed these could be made and revised copy returned. It was agreed that Andreas would add material focussed on applications required at PSI to complete both documents.

Andreas asked if there had been further progress with the development of the tool for validating NeXus files, a number of minor bugs currently limiting its application. Further development of this tool was seen as highly desirable; however, a shortage of effort at RAL is currently limiting work. Andreas noted that the common exchange file format was nearly complete, with just a few inconsistencies to work out. It was agreed that detector grouping would become a mandatory entry.

2. Review of preliminary results obtained from APD tests at ISIS

Steve Cottrell reviewed recent APD tests at ISIS with Robert Scheuermann. Steve highlighted two problems, namely that very small pulse heights recorded using the ^{90}Sr test source rendered it unusable as a test system and that preliminary calibrations suggested a large signal deadtime. Robert commented that from tests at PSI a ^{90}Sr source should yield pulse heights ~80% of those recoded for decay positrons. The problem of signal deadtime was discussed. The present tests used a Mini Circuits preamplifier with a signal output that reflects well the shape of the APD pulse. Unfortunately this is an extended pulse, and it was agreed that further testing using the PSI pre-amplifier (which shapes the APD output) was highly desirable. Steve raised the problem of the extended signal tail measured during preliminary tests of these preamplifiers. Robert commented that this hadn't been seen at PSI and suggested modifying components to adjust pole zero. It was agreed, however, that testing using a modular amplifier such as the Ortec 474 Timing Filter Amplifier might simplify development since this would permit easy pole zero adjustment to optimise the output pulse shape. Robert noted that the preliminary APD detector design at RAL was similar to that developed at PSI for the ALC detector array, making use of wavelength shifting fibres between the scintillator and APD. Robert commented that these are no longer required given the improved sensitivity of APD devices, and their removal would result in a more robust detector.