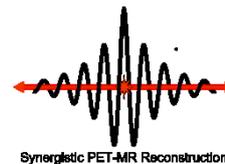


# EPSRC Collaborative Computational Project in Synergistic PET-MR reconstruction: Meeting Record of Start Up Meeting



Venue: Maisey Seminar Room, 3<sup>rd</sup> floor Lambeth Wing, St Thomas' Hospital, London

Documents distributed ahead of the meeting: Meeting summary; Open source licence summary

Present:

Kris Thielemans (UCL)	Julian Matthews (Manchester)	Steven Sourbron (Leeds)
David Atkinson (UCL)	Paul Schleyer (Siemens)	Tim Fryer (Cambridge)
Simon Arridge (UCL)	Ross Maxwell (Newcastle)	Joanna Wills (GE)
Jennifer Steeden (UCL)	Martin Turner (STFC/Manchester)	Rex Newbould (Imanova)
Jo Hajnal (KCL)	Ron Fowler (STFC)	Via TC:
Andrew Reader (KCL)	Evgueni Ovtchinnikov (STFC)	Edwin van Beek (Edinburgh)
Claudia Prieto (KCL)	Harry Tsoumpas (Leeds)	Antonis Kalemis (Philips)
Paul Marsden (KCL)		Floris Jansen (GE)
		Nick Vennart (Newcastle)

Radhouene Neji (Siemens)

11:30 – 12:30

- Following introductions, Edwin gave a brief summary regarding the situation in Edinburgh and in particular the imminent publication of a mini-competition tender for a PET-MR scanner to be installed in Edinburgh.
- Kris gave a summary on: what collaborative computational projects (CCPs) are; and the aims, summary and management structure of this particular CCP in PET-MR reconstruction. Some points that came up in discussion:
  - It was agreed that there was greater interest in incorporating code within the Matlab environment than Python, although there are advantages of Python being open source. Hence ideally both should be done.
  - The network will need to decide on priorities as it will not be possible to cover everything.
  - There are no restrictions on the network to extend internationally, but there are restrictions on what EPSRC will fund.
- Harry gave a presentation summarising the recent 2nd International Training School on PET-MRI Engineering which was partly funded by the CCP PET-MR.
  - The lectures were recorded and are available via the CPP PET-MR website for course attendees only.
  - There are plans to hold a similar event next year, although the current COST-Action TD1007 funds come to an end in June.

13:00 – 15:00

- Martin Turner gave a presentation about the SCD/STFC (Scientific Computing Division of the Science and Technology Facilities Council).
  - After 7% top slicing there will be 1.16 FTE support from STFC for the CCP PET-MR

- There has been a recent restructuring designed to encourage interactions between CCPs.
- The CCPi (Tomography) has been refunded (new funding cycle starts in Sep 2015)
- Kris Thielemans presented an overview of the proposed software.
  - Discussions took place about the proposal for the developed software to be distributed under Apache 2.0 licensing terms. Some points raised included:
    - It would not be possible to include third party software distributed under (L)GPL licensing.
    - There were concerns as to how it would be policed. One proposal is to ask contributors for a letter stating the compatibility with the Apache 2.0 license.
    - Whether the proposal would restrict the inclusion of software from commercial collaborators. This would need to be negotiated and could potentially be restricted to object code.
    - As to whether individuals could license software for which copyright is owned by their institution. This would need to be clarified within each institution.
  - At the end through a show of hands there was unanimous support (between academic centres) for the proposal of using an Apache 2.0 license.
  - Following the licensing discussion Kris presented an overview of Software for Tomographic Image Reconstruction (STIR)
    - Agreement has been reached for this to be distributed under Apache 2.0 enabling incorporation with the proposed software framework.
    - There is a work in progress (WIP) for incorporation of STIR into the Matlab environment. This uses an Open Source tool called [SWIG](#) to build the interface.
- David Atkinson gave an overview of Gadgetron.
  - Uses [ISMIRMD](#) format which is an HDF5 file format
  - Reconstruction controlled by an XML configuration file
  - Conversions available for some current scanners (e.g. Siemens)
  - Distributed under NIH license with no compatibility issues with Apache 2.0
  - Currently no-one in the network is known to be using Gadgetron (a potential risk).
  - It was suggested that getting PET and MRI raw data into a common environment would in itself be a powerful enabling tool, although there are potential issues due to manufacturer restrictions and it would be unwise to commit to all data formats.
- Tim Fryer gave a brief summary on the Dementias Platform UK (DPUK).
- In the interests of time the summaries from individual sites were skipped:
  - Cambridge
  - Leeds
  - UCL
- The meeting was wrapped up requesting for volunteers to various activities. The following offered to contribute:
  - Working group (WG): Ross Maxwell (Newcastle); Steven Sourbron (Leeds); Harry Tsoumpas (Leeds); Rex Newbould (Imanova); Simon Arridge (UCL); Paul Schleyer (Siemens); Joanna Wills (GE)

- Data format group: Jo Hajnal (KCL); Joanna Wills (GE)
- Phantom/patient data group: Paul Marsden (KCL); Steven Sourbron (Leeds).