

## CCPi Working Group Meeting – Monday 19 November 2018

University of Manchester and RCaH/Harwell Campus: using 'zoom' video-conference

### Minutes DRAFT

#### Attendees [15]

Apologies (8): Barbara Montanari, Thomas Blumensath, Alison Davenport, Kris Thielemns, Richard Brown, Hamid Dehghani, G Davis, Jakob Sauer Jørgensen

- Martin Turner (Manchester, MT) [RAL]
- Philip Withers (Manchester, PW) [UoM]
- Bill Lionheart (Manchester, BL) [UoM]
- Daniil Kazantsev (Manchester, DK) [RAL]
- Edoardo Pasca (STFC, EP) [RAL]
- Kalpani Vitharana (Manchester, KV) [RAL]
- Evangelos (Vaggelis) Papoutsellis [presentation UoM]
- Parmesh Gajjar [UoM]
- Mark Basham [RAL]
- Mark Williams [RAL]
- Manuchehr Soleimani [remote]
- Martyn Winn [RAL]
- Peter Lee [remote]
- *Jay Warnett, (presentation UoM)*
- *Bob Cernik (presentation UoM)*

Minute	Item	Action
19.11.01	<p>Plans for 2019-2020 <b>Approved</b> and Potential Software Launch:</p> <ul style="list-style-type: none"> <li>• Website, mailing lists, source code and data archives <b>Ongoing</b></li> <li>• Organise exec committee and working group meetings, as well as monthly show-and-tell sessions <b>Ongoing</b></li> <li>• Support current training courses and organise developer workshops. Assist in new proposal writing <b>Ongoing</b></li> <li>• Working with CCPi Flagship team in improving Core Imaging Library (CIL) and integrating the codes from flagship into CIL <b>Ongoing</b></li> <li>• Embed CCPi software into DAaS virtual machine to allow facilities users (DLS, ISIS) to perform analysis on their datasets from remote <b>Ongoing</b></li> <li>• Release updated version of Simpleflex segmentation algorithm developed together with Hamish Carr (Leeds) and his student. Distribute and collaborate with Diamond i12 staff to test the segmentation on real data <b>Q2 2019</b></li> <li>• Help to organise the main ToScA conference; September 2019 <b>Q3 2019</b></li> <li>• Embed lab based framework: UoM/ UoS/ UoW <b>Q3 2019</b></li> <li>• Collaboration: Working with Brian Bay (USA) on improving the digital volume correlation codes and distributing it to CCPi community <b>Ongoing</b></li> <li>• Case Studies: Three case studies will be undertaken with ISIS/Diamond and Universities <b>Ongoing</b></li> </ul>	EP/MT

	<ul style="list-style-type: none"> <li>Code sharing with CCPETMR <b>Ongoing</b></li> <li><b>Optional:</b> benchmark the core forward and backprojection code in CCPi - Barry Searle's modification of David Szotten's Jacob's rays - using MPI</li> </ul>		
19.11.02	Request for funding <ul style="list-style-type: none"> <li>Software grant for Erasmus student in Soton for work on TIGRE/CIL integration - £6k? - £14k? <b>Rejected with further info</b></li> <li>BL - Multiple axes and tensor/vector tomography in CCPi code: additional resources requested <b>Further info requested</b></li> </ul>	EP/MT	
19.11.03	Invited speakers presented <ul style="list-style-type: none"> <li>Jay Warnett - WMG new facility</li> <li>Bob Cernik - Colour bay facility at University of Manchester</li> <li>Evangelos (Vaggelis) Papoutsellis - Reconstruction software</li> </ul>	MT cttee EP/JJ cttee	
19.11.04	Review of Summer Associated Conferences: new cttee member requests <ul style="list-style-type: none"> <li>Process Tomography / ToSca (inc International - USA and Asia) / dXCT / RCaH "Advances" workshop EGUK September for 2019 and 2020</li> <li>Joint PETMR activities and PETMR joint course at MIC in November 2019 at Manchester</li> </ul>	MT to advertise  Submit	
19.11.05	Update: TPR/1 (TDW/4) /11 (XCT), Technical product realization (BSI), NPL dXCT User Group event		
19.11.06	Update on International Review of CoSeC. Future grant networks and ... case studies (of networking). For Q3 2019	PW/MT	
	New networks and proposals <ul style="list-style-type: none"> <li>Training review – DVC; requires open-source.</li> <li>Small funds for ToSca USA approved - paper/presentation submitted</li> <li>BSS Fellowship submitted (Brain Bay, October 2018)</li> <li>SSI Fellowship, February 2019 "HPC: SCARF18, Archer access: 'constructive critical champion' role."</li> <li>Leverhulme visiting professor role at UoM</li> <li>Industrial role in UoM with RAL.</li> <li>Training course for programming Nikon CT machines - funds for travel to Swansea</li> </ul>	MT	
	Location for papers on ccpi.ac.uk - including beamhardening	MT	
	Access to IMAT and i12, i13, B24 and industrial grants.	MT	
AOB	jiscmail lists and website content etc update	MT/EP	
	ATI fellowship applications Roy Regallies and Phil Manning: ICAL facility		
	Next meeting is the: - Exec Meeting on 12 March 2019, 1pm-2pm and - Working Group on 10 June 2019, 11am-1pm.		
<b>Minute</b>	<b>Action</b>	<b>Person Responsible</b>	<b>Completion date</b>
	SEE ABOVE		
<b>Minute</b>	<b>Old Action (From Exec Meeting)</b>	<b>Person Responsible</b>	<b>Completion date</b>
29.03.01	Attend WMG equipment governance group	MT	Jan 2019
29.03.02	Summer students to present at lunch and learn[along with Nghia Vo]	EP	Dec 2018
29.03.03	Bill Lionheart to investigate SAXS project -	BL	Nov 2018

	<del>approve travel</del>		
29.03.04	B24 dataset to be investigated (limited angle 150 deg; 500eV to move to 2.5keV) (link DK,EP)	DK EP	Jan 2019
29.03.05	Parmesh Gajjar to attend ToScA USA (and Swansea)	PG	Mar 2019
29.03.06	Thomas Blumensath code to be investigated for CIL inclusion	EP to contact then TL/PG	Jun 2019
<del>29.03.07</del>	<del>DVC to be integrated and BSS Fellowship to be applied for.</del>	<del>BB EP MT DK</del>	<del>Oct 2018</del>
29.03.08	Process Tomography - further integration by invitation to Bergen group ("low count and high speed is the commonality")	BL MS	Jun 2019
29.03.09	New proposal "Rich-and-non-linear tomography operators" (BL et al)	BL et al	Dec 2019

### Appendix A: Actions from past Exec and Working Groups

Minute	Old Actions	Person Responsible	Date due to be completed by
<del>29.03.01</del>	<del>Inform Approved items and liaise</del>	<del>MT</del>	<del>Sep 2018</del>
<del>29.03.02</del>	<del>Stand allocation three events</del>	<del>EP</del>	<del>Sep 2018</del>
29.03.03	CAS Paper	<del>DK</del> now JJ	Mar 2019
29.03.04	Informal speakers at Manchester	MT ongoing	Dec 2018
<del>29.03.05-07, .13</del>	<del>Advertise new fellows/ LoS/ meetings</del>	<del>Newsletter -ALL</del>	<del>Ongoing</del>
<del>29.03.08</del>	<del>Fringe event coordination</del>	<del>MT</del>	<del>Jun 2018</del>
<del>29.03.09</del>	<del>New staff member</del>	<del>EP/MT</del>	<del>Jun 2018</del>
29.03.10, .12	CIL/Flagship launch and new testers	EP	Jun 2018
29.03.11	Case Study coordination	MT/EP	Ongoing
<del>29.03.14</del>	<del>Brian Bay or student to speak</del>	<del>SN</del>	<del>Jul 2018</del>
<del>15.11.01</del>	<del>Coordinate a CPC paper proposal for 2019</del>	<del>DK</del>	<del>See Above</del>
<del>15.11.02</del>	<del>Coordinate with Nick Brierley/MTC on show and tell for 2018</del>	<del>EP</del>	<del>Done - talk at Manchester</del>
15.11.03	To coordinate the Avizo – Amira software licenses between DLS, RCaH, ISIS and SCD.	<del>EY</del> Issue EP	
15.11.04	Prepare pull-ups for ToScA/d-XCT roadshow and talks	EP	See Above
15.11.05	Make a small dataset working with DK on phantom dataset for CIL	EP	See Flagship
<del>15.11.06</del>	<del>Coordinate and organise a CCPi developers' day at University of Huddersfield.</del>	<del>MT</del>	
<del>15.11.07</del>	<del>Coordinate an invitation for Lee Margetts.</del>	<del>MT</del>	<del>Done</del>
<del>15.11.08</del>	<del>To give update on ISO standard for XCT</del>	<del>MT</del>	<del>Done</del>
15.11.09	To write up and make available one page documentation on cone beam reconstruction algorithm	<del>SN</del> Issue MT	
15.11.10	To make a small downloadable open dataset for CIL reconstruction algorithms. Either using Sophia beads dataset	<del>SN</del> Issue MT	

15.11.11	To estimate efforts to compare the trees and to illustrate the problem in compare two trees of the same images (with different number of projections, limited angle reconstruction )	EP	
15.11.12	To coordinate a programme (whoever interested to involve) to put together a work plan that leads to a paper on comparing the blind spot in CT reconstruction.	EP	
15.11.13	To get in touch with GD to send the paper and code on mesh to projection software.	EP	
15.11.14	To explore how to apply/try NV's denoising/pre-processing algorithms on IMAT data.	<del>SN</del> -Issue MT	
15.11.15	To get in touch with TB for using MapReduce for tomo reconstruction	Issue MT	

## Appendix B: Plans for 2019-2020

- Website, mailing lists, source code and data archives **Ongoing**
- Organise exec committee and working group meetings, as well as monthly show-and-tell sessions **Ongoing**
- Support current training courses and organise developer workshops. Assist in new proposal writing. **Ongoing**
- Working with CCPi Flagship team in improving Core Imaging Library (CIL) and integrating the codes from flagship into CIL. **Ongoing**
- Embed CCPi software into DAaS virtual machine to allow facilities users (DLS, ISIS) to perform analysis on their datasets from remote **Ongoing**
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- *Optional:* benchmark the core forward and backprojection code in CCPi - Barry Searle's modification of David Szotten's Jacob's rays - using MPI