

## Imaging Network – End report submitted but under embargo

Imaging network				
Start date: 1 October 2014.			Completion date: 30 June 2019	
<b>Overall objective(s):</b>				
1. MRI-PET site installations and qualification 2. IT network implementation 3. Harmonisation of scanning across network 4. New MRI-PET studies making use of the network, including the EC-funded AMYPAD and the MRC Deep and Frequent Phenotyping Study.				
Deliverables	Milestones	Milestone deadline	Work package dependencies	Person(s) responsible
Objective 1: MRI-PET site installations and qualification				
D1.1 Scanning capability at all sites (expected summer 2017)	M1.1.1 Full installation across 5 new sites	M1.1.1 Complete	None	Site leads
	M1.1.2 System acceptance across all 5 sites	M1.1.2 Complete		
	M1.1.3 Initial scans to demonstrate capability	M1.1.3 Complete		
	M1.1.4 Scanning protocols initiated across all 5 sites	M1.1.4 Complete		
D1.2 Evaluation of image quality and effective sensitivity (ongoing)	M1.2.1 MRI-PET NEMA testing	M1.2.1 Complete		
	M1.2.2 Comparison MRI-PET vs. PET-CT	M1.2.2 Complete		
	M1.2.3 Attenuation correction algorithm comparisons	M1.2.3 Complete		
	M1.2.4 Re-evaluation of MRI noise after GE system cable upgrades	M1.2.4 Complete		
Objective 2: IT network implementation				
D2.1 Validated XNAT version	D2.1.1 DPUL XNAT development	M2.1.1 Complete	None	Mackay, site leads
D2.2 XNAT tool across sites	D2.2.1 XNAT delivered with implementation across sites	M2.2.1 Complete	Site support	Mackay, Lyons
	D2.2.2 "Live" functionalities initiated	M2.2.2 Complete		
D2.3 DPUK IT Hub with integrated XNAT	D2.3.1 Demonstration that DPUK Hub is integrated with DPUK Portal	M2.3.1 Complete	Cohort agreement/site support	
	D2.3.2 Connectivities with sites established	M2.3.2 Complete		
	D2.3.3 Demonstration of upload of cohort data to Hub	M2.3.4 Complete		
D2.4 MRI and PET analysis pipeline toolkit	D2.4.1 Development of first analysis pipeline	M2.4.1 Complete	Pending funding	Mackay, Matthews
	D2.4.2 Accessibility of analysis pipeline tools from website	M2.4.2 Complete		
D2.5 Integrated image-phenotype large data management environment tool	D2.5.1 Agreement of targets for development	D2.5.1 Complete	Some continued funding needed	DPUK IN Steering
	D2.5.2 Agreement of MTAs for holding data	D2.5.2 Complete		

	D2.5.3 Development of UK Biobank Hubs (Swansea, Oxford, Imperial) v.1	D2.5.3 Complete		Group, cohort PIs, UK Biobank, Matthews, Guo, Mackay	
	D2.5.4 Initial pilot study for large scale imaging and phenotype integration	D2.5.4 Complete			
<b>Objective 3: Harmonisation of scanning across network</b>					
D3.1 Development of MRI-PET Harmonisation protocol	M3.1.1 Funding for MRI-PET partnership	M3.1.1 Complete		Herholz, Thomas	
	M3.1.2 Funding from ARUK for MRI Harmonisation	M3.1.2 Complete			
D3.2 Trained staff to deliver harmonised scanning	M3.2.1 Identification of key staff at each site	M3.2.1 Complete			
	M3.2.2 Protocol induction	M3.2.2 Complete			
	M3.2.3 First staff training day	M3.2.3 Complete			
	M3.2.4 Finalisation of MRI-PET harmonisation study protocol	M3.2.4 Complete			
D3.3 Demonstration of harmonised image acquisition quality	M3.3. 1First patient, first visit across centres	M3.3.1 Complete			
D3.4 Outcomes from first multi-centre study	M3.4.1 Data upload for central analysis and QC	M3.4.1 Complete			
	M3.4.2 Completion of analysis	M3.4.2 Complete			
<b>Objective 4: New MRI-PET studies making use of the network, including the EC-funded AMYPAD and the MRC Deep and Frequent Phenotyping Study.</b>					
D4.1 Deep and frequent phenotyping study protocol	M4.1.1 Completion of protocol	M4.1.1 Complete		Lovestone, Gunn, site co-Is	
	M4.1.2 First patient, first visit	M4.1.2 Complete			
	M4.1.3 Study completion	M4.1.3 Complete			
	M4.1.4 Full data upload to hub	M4.1.4 Complete			
D4.2 DFP scans accessible through DPUK Portal, MINDMAPS final protocols	M4.2.1 Aging protocol completed	M4.2.1 Complete			Rabiner, Gunn, Matthews, Politis
	M4.2.2 PD protocol complete	M4.2.2 Complete			
	M4.2.3 AD protocol completed	M4.2.3 Complete			
	M4.2.4 All regulatory approvals received	M4.2.4 Complete			
D4.3 Validation of MC1 in humans	M4.3.1 First subject, first visit	M4.3.1 Complete			
D4.4 Demonstration of aging correlates of MINDMAPS radioligands	M4.4.1 Healthy volunteer study complete	M4.4.1 Complete			
D4.5 Imaging neuropathological differences for MINDMAPS radioligands with AD and PD	M4.5.1 First PD patient, first visit	M4.5.1 Complete			
	M4.5.2 First AD patient, first visit	M4.5.2 Complete			
	M4.5.3 Final data analysed for PD	M4.5.3 Complete			
	M4.5.4 Final data analysed for AD	M4.5.4 Complete			