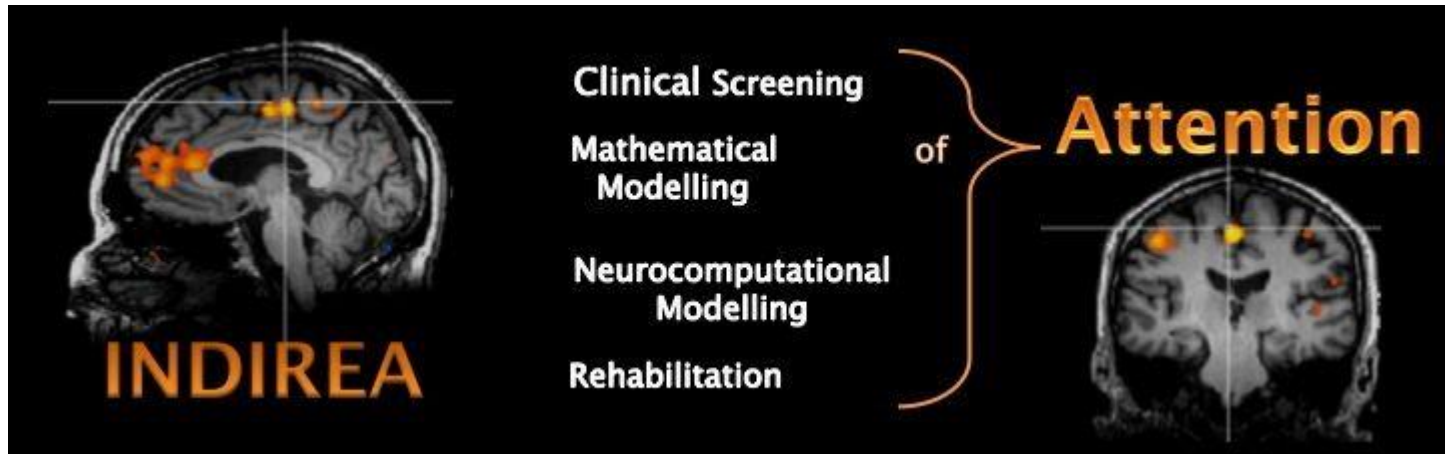
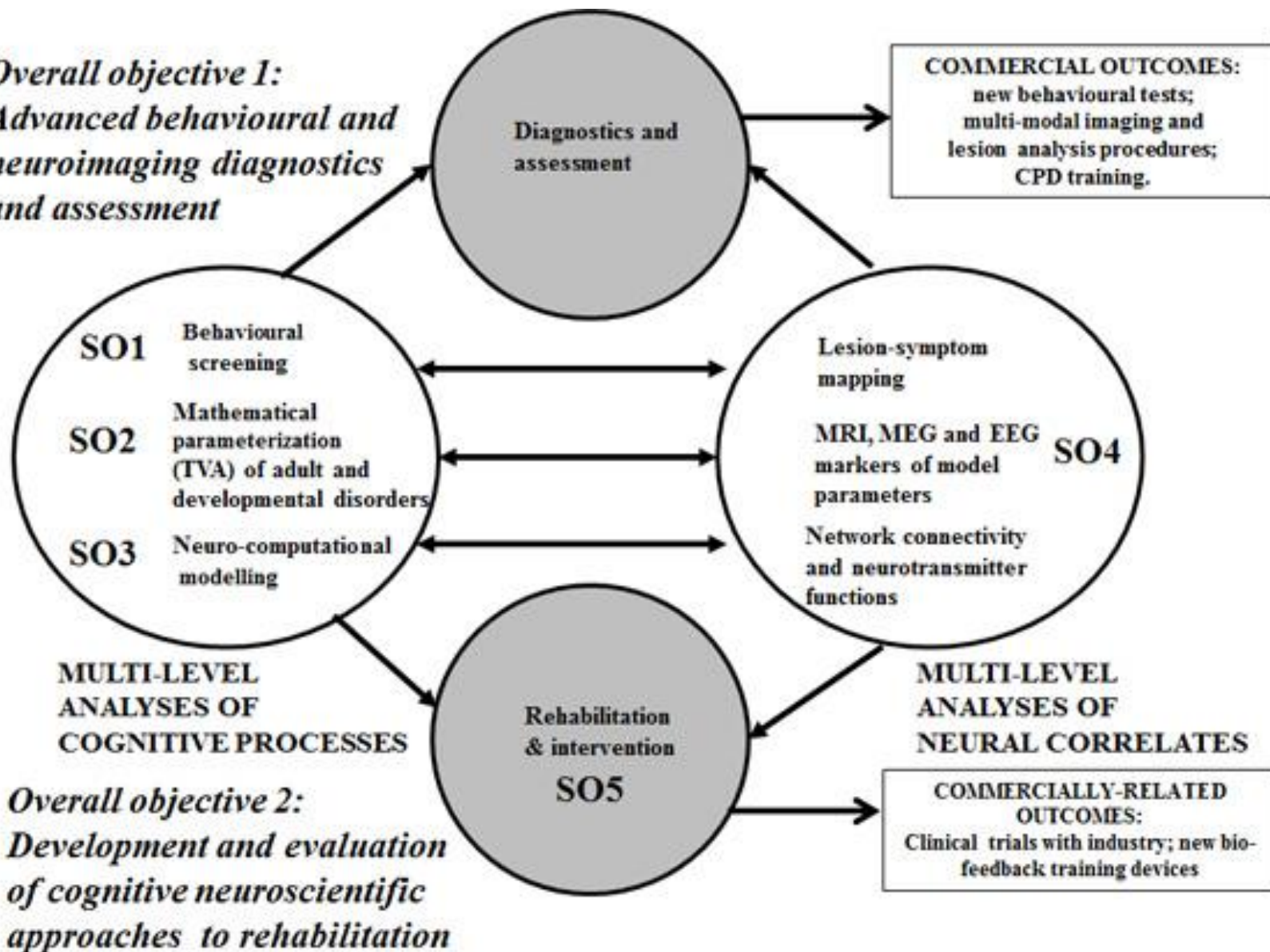


INDIREA



*Overall objective 1:
Advanced behavioural and
neuroimaging diagnostics
and assessment*



*Overall objective 2:
Development and evaluation
of cognitive neuroscientific
approaches to rehabilitation*

WP No.	Work Package Title	Type of Activity	Lead Participant	Other Participants Involved	Start Month	End month
WP 1	Clinical screening	Research	UOXF (Humphreys)	, LMU, UCPH OVGU, TCD, SAssoc, SIEMENS, BraProd, PSYPRESS	3	42
WP 2	Mathematical modelling	Research	UCPH (Bundesen)	LMU, UCPH, UOXF, OVGU,SIEMENS, BraProd	3	42
WP 3	Neurocompu-tational modelling	Research	UPF (Deco)	UOXF, LMU, UCPH, OVGU, TCD, SIEMENS, BraProd, P1VITAL	3	42
WP 4	Rehabilitation	Research	TCD (Robertson)	LMU, P1VITAL, BraProd, UOXF, SAssoc, PSYPRESS	3	42
WP 5	Training	Training	LMU (Müller)	UOXF, UCPH, OVGU, UPF, TCD, P1VITAL, SIEMENS, SAssoc, TUM	1	42
WP 6	Implementation	Management	UOXF (Humphreys)	UOXF, UCPH, OVGU, UPF, TCD, P1VITAL, SIEMENS, SAssoc, TUM, PSYPRESS	1	42
WP 7	Impact	Dissemination and Outreach	OVGU (Braun)	UOXF, UCPH, OVGU, UPF, TCD, P1VITAL, SIEMENS, SAssoc, TUM, PSYPRESS	1	42

List of Secondments

ESR	Host Partner	Place of Secondment	Timing (months)	Purpose and justification of timing
ESR1	UOXF	UCPH	7-10	To learn TVA modelling (early skill required)
ESR1	UOXF	PSYPRESS	24-27	To learn about commercial publication
ESR2	UOXF	OVGU	7-10	To learn advanced MRI (early skill required)
ESR2	UOXF	SIEMENS	12-15	To learn advanced MRI (consolidating knowledge)
ESR3	UOXF	TCD	7-10	To integrate approaches to rehabilitation
ESR3	UOXF	SAssoc	24-27	To learn about user application (prior to commercialisation)
ESR4	UOXF	P1VITAL	24-27	To learn about commercial application
ESR5	LMU	UCPH	7-10	To learn TVA modelling (early skill required)
ESR5	LMU	BraProd	12-15	To learn EEG (finalising measures)
ESR6	LMU	UCPH	7-10	To learn TVA modelling (early skill required)
ESR6	LMU	BraProd	12-15	To learn EEG (finalising measures)

ESR7	UCPH	UOXF	12-15	To learn clinical testing (integrating TVA measures)
ESR7	UCPH	SIEMENS	24-27	To integrate MRI data (review after data collection)
ESR8	UCPH	UOXF	12-15	To learn clinical testing (integrating TVA measures)
ESR8	UCPH	BraProd	24-27	To integrate TVA and EEG (review after data collection)
ESR9	OVGU	UPF	18-21	To integrate modelling (ensure common platform)
ESR9	OVGU	SIEMENS	7-10	To establish knowledge of imaging (early skill requirement)
ESR10	UPF	OVGU	18-21	To integrate modelling (ensure common platform)
ESR10	UPF	BraProd	24-27	To link to EEG (to test collected data)
ESR11	TCD	LMU	7-10	To integrate work on MCI (early links required)
ESR11	TCD	BraProd	15-18	To link to multimodal imaging (to finalise procedures)
ESR12	TCD	LMU	7-10	To integrate work on MCI (early links required)
ESR12	TCD	BraProd	24-27	To link to multimodal imaging (to test collected data)
ESR13	BraProd	UCPH	12-15	To learn TVA (early skill requirement)
ESR13	BraProd	TCD	21-24	To link to rehabilitation (ensure training working)

Management group

- Co-ordinator – Glyn Humphreys
 - Director of research – Ian Robertson
 - Director of training – Hermann Muller
 - Career development & recruitment – Claus Bundesen
 - Communications – Jochen Braun
 - Ethics – ?
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- 2 meetings a year
 - Review reports, CDPs
 - Review progress of ESRs
 - Meet with Visiting Scientist
 - Review sharing of techniques/platforms
 - Review finance

	Main Training Events & Conferences	WP	Lead Partner	Month (estimate)
1	Initial orientation weekend to review INDIREA goals and procedures for all PIs (aim: to integrate goals across partners and establish procedures for test and data integration)	5	UOXF	1
2	ESR orienting meeting plus ATC1: Bootcamp 1- Attention – from neurons to cognition, from the lab to the bedside (aim: to establish common approach across ESRs including the joint team work exercises; introduce an understanding of approaches to human attention, disorders of attention and multi-level constraints on attention)	5	UOXF	4
3	ATC2: Bootcamp 2 – TVA and psychophysical testing (aim: to establish a common understanding of what TVA does and how TVA measures can be derived, including sharing common test and analysis platforms)	5	UCPH	6
4	ATC3: Bootcamp 3 – MRI (aim: to establish a common understanding of MRI techniques, experimental designs, and hands-on experience at data analysis, including developing common procedures for data sharing)	5	OVGU	8

5	ATC4: Bootcamp 4 – EEG and MEG (aim: to establish a common understanding of EEG and MEG techniques, experimental designs, and hands-on experience at data analysis, including developing common procedures for data sharing)	5	BraPr od	10
6	ATC5: Bootcamp 5 – Neurocomputational modelling (aim: to establish a common understanding of neurocomputational modelling, including reviews of how to integrate data across multiple levels)	5	UPF	12
7	ATC6: Bootcamp 6 - Science and society (aim: to give ESRs to new entrepreneurial and commercialisation perspectives, to review the role of research in society in relation to different stakeholders)	7	TCD	22
8	Project meetings (6 monthly meetings where ESRs present)	1-7	All	4, 10, 16, 22, 28, 34, 40
9	Career development workshop 1 (CSA4) (aim: dissemination and commercial development - to include reviews of potential industry-related clinical trials, patents, commercial test development)	5,7	All	30
10	Career development workshop 2 (CSA4) (aim: to review future work routes, skill sets, meeting with users and funders)	5,7	LMU	36

TOPICS	CONTRIBUTORS
<i>ATC1: Bootcamp 1- Attention – from neurons to cognition and the lab. To the bedside (main contributors: UOXF, LMU, TCD, SAssoc, PSYPRESS): Month 4</i>	
DAY 1: Attention and attentional disorders	
Introduction for ESRs	All tutors
<i>What is attention?</i>	<i>G. Humphreys (UOXF)</i>
Cognitive models of attention	H. Müller (LMU)
The neuroanatomy of attention	K. Nobre (UOXF)
Bio-molecular and pharmacological constraints	M. Husain (UOXF)
Genetic studies of attention	G. Scerif (UOXF)
DAY 2: Applications to neuropsychological diagnosis and rehabilitation	
The neuropsychology of attention	G. Humphreys (UOXF)
Developmental disorders of attention	I. Robertson (TCD)
Emerging techniques in neuro-rehabilitation (tDCS, brain-computer interfaces, pharmacological intervention)	I. Robertson (TCD), M. Husain (UOXF)
Hands-on training in cognitive screening	W. Bickerton, J. Riddoch (UOXF)
Commercial development, user views	R. Edmondson (PSYPRESS)

ATC2: TVA Bootcamp (Main contributors UCPH, LMU, P1VITAL, UOXF): Month 5

DAY 1: Using TVA

Introduction to TVA (principles and concepts)	C. Bundesen (UCPH)
Paradigms for testing TVA (whole and partial report procedures)	S. Kyllingsbæk (UCPH)
Data fitting and modelling using Matlab and Python-based toolbox for modelling	S. Kyllingsbæk (UCPH)

DAY 2: Applications of TVA

TVA, MCI, dementia (issues in applications to this population)	K. Finke (LMU)
TVA and lesion-based studies of attention	T. Habekost (UCPH)
TVA and biomarkers of attention (including PET, fMRI and EEG)	C, Sorg (TUM)
TVA and pharmacological intervention	T. Habekost (UCPH), M. Husain (UOXF)
Designing clinical trials	C. Dourish (P1VITAL)

ATC3: MRI Bootcamp (Main contributors UOXF, SIEMENS, OVGU): Month 8**DAY 1: Introduction to MRI**

Background to MRI – principles from physics, types of imaging	C. Buckley (SIEMENS)
Structural imaging – from T1 to DTI (lesion detection, tractography)	M. Chechlacz (UOXF)
Functional imaging	S. Smith (UOXF)
Imaging and neuropsychology (problems, solutions)	A. Wohlschläger (TUM)
Introduction to VBM (SPM) (VBM, VLSM, overlap analyses)	M. Chechlacz (UOXF)

Day 2: Workshops

VBM workshop	M. Chechlacz (UOXF)
<i>Visualising attention in the brain</i>	<i>M. Corbetta (U. Wash., VS)</i>

Day 3: Application to projects

Imaging and attention	G. Humphreys (UOXF)
Imaging the older brain (issues, pitfalls, work-arounds)	C. Sorg (TUM)
Connectivity analyses	M. Corbetta (U. Wash., VS)
Pattern classification analyses	J. Braun (OVGU)

ATC4: EEG and MEG Bootcamp (BrainProd, LMU, TCD, UOXF): Month 10**Day 1: EEG**

EEG – basic principles, Brain User workshop	A. Svojanovsky (BraProd)
Measuring evoked potentials (filtering, decomposition of ERPs)	T. Töllner (LMU)
Oscillations, coherence	P. Dockree (TCD)
EEG workshop (Brain Vision Analyzer)	T. Töllner (LMU)

Day 2: MEG

MEG – basic principles and physical principles	K. Nobre (UOXF)
MEG data – introduction to data analysis	K. Nobre (UOXF)
Multi-modal data integration	A. Svojanovsky (BraProd)

Day 3: Applications

EEG and MEG applications in cognitive ageing	K. Nobre (UOXF)
EEG and MEG applications in neuropsychology	G. Humphreys (UOXF)
Applications in multi-modal data integration	A. Svojanovsky (BraProd)
Application in brain-computer interfaces	A. Svojanovsky (BraProd)

ATC5: Neurocomputational modelling bootcamp (UPF, OVGU, UOXF): Month 12

Day 1: Introduction

Neural net modelling – an overall introduction	J. Braun (OVGU)
Connectionist modelling of attention (from SLAM to SAIM)	G. Humphreys (UOXF)
Neural level modelling – spiking level and mean field analyses	G. Deco (UPF)
Workshop – exploring properties of neural networks	All course tutors

Day 2: Applications

Neural network modelling of attention	J. Braun (OVGU)
Neural network modelling of decision making	G. Deco (UPF)
Neural network modelling of neuroimaging data	J. Braun (OVGU)
Neural network modelling in neuropsychology	G. Humphreys (UOXF)

List of Milestones

WP	Milestone No.	Milestone	Lead Partner	Month
6	1	Creation of basic website	UOXF	1
6	2	Positions advertised	UOXF	1
6	3	Consortium agreement signed	UOXF	1
5	4	Start-up meeting at UOXF	UOXF	1
6	5	Web-site up and running with web 2.0 features	UOXF	3
6	6	ESR recruitment complete, <i>reviewed by the Supervisory Board</i>	UOXF	4
1	7	Creation of new neuropsychological screen, <i>following successful validation against longer specialist measures of attention</i>	UOXF	10
2	8	Stimulus presentation and data analysis platforms for TVA studies, <i>judged by software running well across all partners</i>	UCPH	10
3	9	Benchmarking MRI at high fields, <i>validated by demonstrating significant effects (e.g., fMRI contrast) in standard conditions</i>	UPF	10
3	10	Creation of toolbox for neurocomputational modelling, <i>validated by successful tests at other sites</i>	UPF	15
3	11	Complete imaging studies on control participants, <i>validated by demonstrating significant effects across critical conditions</i>	OVGU	15
7	12	First international conference presentation	UOXF	9

Recruitment

- Joint advert
- Individual adverts
- Passing on information about candidates

Impact

- Dissemination plans, e-Newsletters
- Marie-Curie Ambassadors to schools
- Visits to Brussels, EuroScience Open Forum

Ethics

- Need ethics certificates for all programmes
- Ethics section needs to be a standing item on management group agendas and part of the report to the management group