

Det medisinske fakultet

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2011/16136/LGR**Notat**

Til:	Rektor
Kopi til:	Institutt for nevromedisin
Fra:	Det medisinske fakultet

Anbefaling av søknad om etablering av Erasmus Mundus Joint Doctorate - The Cognitive Connectome

Dekanus ved Det medisinske fakultet anbefaler, i samråd med rektor, at NTNU slutter seg til konsortiet som skal søke om etablering av Erasmus Mundus Joint Doctorate (EMJD) for prosjektet *The Cognitive Connectome* (COGTOME).

Konsortiet består av følgende institusjoner:

- Radboud University Nijmegen – koordinator
- Norges teknisk-naturvitenskapelige universitet – partner
- Universität Bonn – partner
- SNU – assosiert partner

NTNUs bidrag springer ut fra fagmiljøet ved Centre for the Biology of Memory og Kavli Institute for Systems Neuroscience. Det foreslåtte EMJD-programmet er derfor forankret i et fremragende forskningsmiljø, og representerer et strategisk viktig fagområde for NTNU. Et sammendrag av prosjektet er vedlagt.

Fakultetet vil ettersende fullstendige og kvalitetssikrede søknadsdokumenter til rektor innen EU-fristen.

Stig Slørdahl
for Stig Slørdahl
dekan

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All korrespondanse som inngår i saksbehandling skal adresseres til saksbehandleren ved NTNU og ikke direkte til enkeltpersoner. Ved henvendelse vennligst oppgi referanse.

EMJD – The Cognitive Connectome

- Summary

Cognition is a complex research topic, where for instance perception, attention and memory interact in order to sustain adaptive behaviour in an ever-changing world. These processes rely on the brain acting as a network involving numerous brain areas that communicate in a flexible and dynamic way. Over the last few years there has been a strong emphasis on mapping the brain as a network, e.g. the Human Connectome Project. It is now crucial to uncover how the brain operates as a network to support cognition. Such knowledge is also essential for understanding neurological and psychiatric disorders. The goal of the COGTOME project is to strengthen the quality of cognitive neuroscience in Europe by embracing new technical and conceptual developments in the study of functional brain networks. That is, the COGTOME network aims to bridge the gap between what is currently common practice and recent state-of-the-art technical and conceptual developments. This not only requires the implementation of new techniques, standards and analysis protocols but also training the next generation of neuroscientists to fully exploit these developments. This will be achieved by courses and the exchange of students between leading groups on system, cognitive and clinical neuroscience. The emphasis will be on method development and characterization of the functional interactions between specific regions supporting cognitive processes – also in the context of neurogenerative diseases. The increased collaboration between the groups is expected to lead advancements beyond current practice by:

- a) developing of a common framework that integrates new developments on network analysis of electrophysiological and brain imaging data
- b) b) contributing conceptual insights on functional connectivity supporting cognitive processes. This will be achieved by developing new data acquisition techniques and data analysis methods
- c) c) improved insight on neurogenerative disorders by characterizing connectivity changes that distinguishes healthy from diseased subjects

The COGTOME consortium will ensure the maintenance of the high quality of cognitive neuroscience in Europe and will provide the necessary training of future leaders in cognitive and clinical neuroscience. The strategic objectives of the joint PhD programme are to provide outstanding doctoral training by developing and disseminating new data acquisition techniques and data analysis methods. This will allow students to gain expertise on applying new techniques and analyses to resolve outstanding problems in cognitive and clinical neuroscience.

These objectives will be reached through original and independent research by the PhD students of the COGTOME consortium. The COGTOME aims at establishing close links between the partner universities that will be sustainable after the period covered by this grant. This objective will be translated into action by means of organizing a joint doctoral program and by facilitating career development

Under arbeid
(ikke end. versj.)

B.1 Academic and Research quality (25% of the max. score)

B .1.1 Describe the EMJD objectives (including in scientific and socio-economic terms) in relation with the needs analysis in the field(s) concerned.

The field of neuroscience is becoming increasingly complex due to both technical and conceptual advances. From a conceptual point of view, there is change in the focus from studying individual neurons or brain regions to the study of networks. On a mesoscale, all mammalian behaviour can be thought to rely on the precisely orchestrated discharges of neuronal assemblies. Recent years have considerably increased our understanding of the functional architecture of individual elements in neuronal networks and their synaptic communication. However, we have not been able to synthesize these advances into a conceptual view of neuronal function on the level of networks. Moreover, we have not yet successfully developed concepts to link impaired neuronal function at this more complex level to behavioral deficits observed in neurological disorders such as epilepsy or Alzheimer's disease. At the root of this lack of understanding is the complexity of brain tissue, with multiple different excitatory and inhibitory cell types, which are intricately and profusely interconnected via synapses. Novel technologies allowing both the in-vivo recording and manipulation of neuronal ensembles in awake behaving animals now allow to address the relevance of neuronal activity patterns for complex behavior. Further there has over the recent years been dramatic advances in neuroimaging techniques applied to study human brain function. A core objective of the proposal is to integrate researcher working on the correlates of complex behavior on the macroscale but also the mesoscale (single neurons and lfps) in humans. In parallel, we have world class groups working on rodent models which allow techniques for cellular imaging, photomanipulation and genetics. Obviously the data obtained from the human and animal studies are hugely complex and require the development of advanced analysis methods.

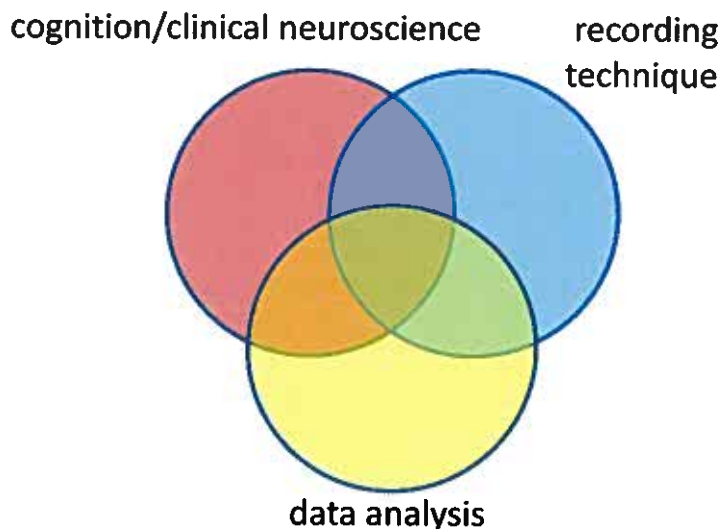


Figure 1 Understanding the brain as a network requires that the latest conceptual and technical advances are embraced from research on cognition, clinical neuroscience, recording techniques and data analysis. Given the

complexity of these individual disciplines, it is a major challenge to educate the future neuroscientist to have the appropriate set of skills. The aim of the proposal is to educate PhD students such that they acquire a least two advances skills sets (e.g. mastering cognitive neuroscience and advanced data analysis; orange slice). At the same time, each PhD student must be able comprehend and understand the advances in all of the disciplines. For instance the student mastering cognition and data analysis would be able to understand the core principles of the advanced recording techniques, albeit he/she might not be able to apply them directly.

Embracing the network perspective in neuroscience holds the strong promise of providing new basic understanding but also knowledge of great clinical value. From a basic research perspective it is clear that a given brain area regions receives a large amount of input from other areas. It is the interplay between the brain areas that allows for processing by exchange of information. Any percept, memory, decision or action is a consequence of such interplay. Indeed the network perspective is being actively embraced at many levels. For instance the ambitions of the human connectome project (<http://www.humanconnectomeproject.org/>) is to compile and make available a large set of neuronal data on human brain connectivity. This and other initiatives have made clear that neuroscience currently is at a very exciting stage since it now possible to truly embrace the network perspective due to technical, analyses and conceptual developments. From a clinical perspective is also becoming increasingly relevant to consider the neuronal basis of various psychiatric and neurological disorders as a consequence of malfunctioning networks (ref). In particular neurodegenerative disorders have been associated with problems in the exchange of information between regions. Interestingly, problems in the hippocampus, a region highly interconnected with other brain structures, have been proposed play a pivotal role is a number of neurological disorders as for instance epilepsy and Alzheimers disease (ref). Thus, as neurological disorders are becoming increasingly prevalent with the ageing of the population, there is an increased need to understand the relationship between the networks basis of brain disorders. The main research goal of the COGTOME proposal is to develop concepts and apply new techniques to understand the working brain as network. This will be done based on developments from the Human Connectome Project, clinical advances and multiarray animals recordings, but now extending the functional perceptive.

Here also, I think there should be some more conceptual integration of the cellular groups. Why not structure it in a way that one big question is the interaction of regions in the brain in cognition (macroscale). A further, really even less understood issue is the mesoscale within regions, and the structural and functional neuronal motifs that underlie processing. Both are tremendously important, also in the context of CNS disorders. What about a model graph sort of like the following:

	Normal Human Studies in Epilepsy and AD patients	Mouse	Rodent disease Models
Macroscale: Interactions of brain regions	Nijmegen	Bonn, Seoul, Nijmegen	
Mesoscale: Networks of 100s of neurons	Trondheim	Bonn, Seoul	
Microscale: Integration in single neurons, synapses	Trondheim	Bonn	

(the lowest is not really the focus here anymore – one would have to make clear that this has been what has been done the past 20 years, and now it is time for something new.....)

Extending network perspectives are highly promising when considering both basic understanding of neuronal processing and clinical advancements. As an example there is most often no mechanistic rationale for applying a given drug therapy for a specific CNS disorder. This is because we lack the understanding of the underlying functional networks at the meso- and macroscale. This lack of insight prevents us from understanding the CNS drugs act on the network level. The complexity of research on

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- Merknad [o1]: OLE
Integrate this and rework figure 2

network properties poses a serious challenge to the education of tomorrow's neuroscientist and clinician. Obviously the neuroscience community would not be able to make advancement extending beyond the ability of the researchers involved. This makes it an absolute necessity to educate PhD students with multidisciplinary skills. However, given the complexity of modern day neuroscience, a single person can only truly master a few disciplines. Thus it is essential to provide an educational setting in which the individual students are given the option to learn a wide range from which they can choose to specialize (Figure 1). Second, while a researcher will only be able to completely master a few disciplines, it is essential that he/she has the ability to understand and evaluate on what is going on in other related fields of neuroscience.

The objective of the COGTOME proposal is to create a research and educational setting in which PhD students are educated to become the internationally leading scientists in conducting and applying research devoted to understanding neuronal processing from a network perspective. This expertise would not only be beneficial for academic researcher careers but also for drug development and clinical application. This educational setting will be achieved by bringing together a set of top-end institutes with complementary experimental approaches and research focuses.

B. 1.2 Justify –using concrete evidence - the joint programme's added value and distinctiveness compared with existing programmes at national, European and international level.

Integration of the European neuroscience research community focusing on connectivity research will strengthen the competitiveness of European neuroscience research and its translation to understand and alleviate neurological disorders and thus benefit the EU socially. The COGTOME will achieve such integration by joining the PhD programs of the institutions which are doing basic and clinical research. These institutions are conducting research on brain connectivity at different levels. This will lead to an integrative approach which is strengthened by the academic associate partners that will contribute specialized expertise and non-academic associate partners that will contribute their knowledge on dissemination and the application of innovations.

The research focus of the COGTOME, taking a functional perspective on brain connectivity, has been recognized as a research priority by national initiatives in several European countries. However, integrative research that can provide the evidence base for public health initiatives and interventions has not received the necessary attention at the European level. Moreover, PhD training has so far not been structurally embedded in such European research programs.

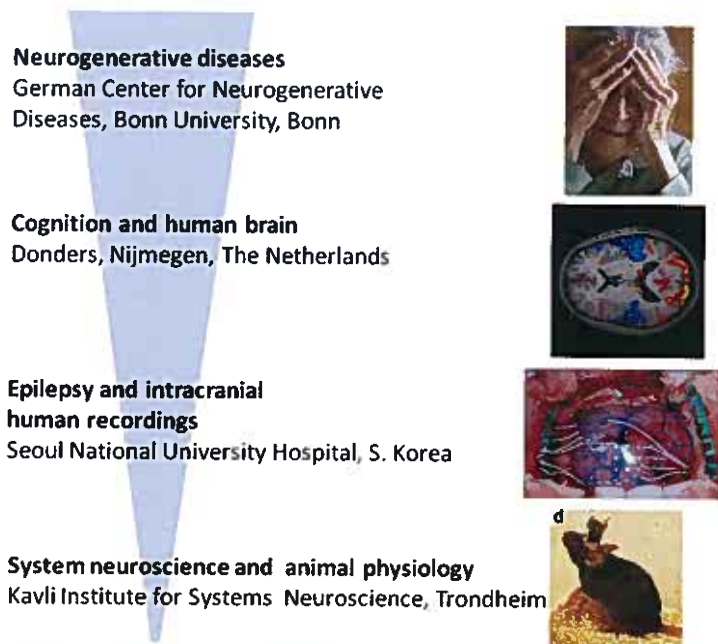


Figure 2. The aim the COGTOME is to investigate brain connectivity at different levels spanning from single cell recordings to disease. The vertical integration will be achieved through multidisciplinary training and exchange of the PhD between the institutes.

Merknad [HB2]: I do not think this scheme works any more. I would opt more for a matrix as shown above. For instance, both Bonn and Seoul would contribute Expertise on epilepsy and intracranial recordings, and both Bonn and Trondheim would contribute very complementary aspects on systems neuroscience and animal physiology.

The COGTOME's doctorate program will be embedded within current research institutes and graduate schools. The COGTOME integrates doctoral training offered by three of the leading institutes in the field: the Donders Institute for Brain, Cognition and Behaviour at Radboud University Nijmegen, Kavli Institute for Systems Neuroscience at the Norwegian University of Science and Technology, Trondheim, Bonn University and the German Center for Neurodegenerative Diseases (Deutsches Zentrum für Neurodegenerative Erkrankungen, DZNE), Germany (Figure 2). The DZNE and Bonn University will operate as one node in the consortium. Further, Seoul National University will join as a third country participant. By generating a network between these institutes and by focusing on integrated PhD training, we aim to achieve critical mass in a sustainable training network, assembling some of the strongest European institutes in a network with a clear bi-directional, translational perspective, i.e. fostering research that links basic science to public health. The COGTOME program will by its multidisciplinary setting provide optimal training and network opportunities for the trainees. This will allow them to obtain leading positions driving innovation in basic neuroscience, public health, industry or in academia after they are awarded the degree. This important future-orientated characteristic of the program will contribute to the success of the European Research Area, upcoming calls in the life sciences program of FP7 and FP8, because the ERA depends for its success critically on the availability of well-trained academics. The proposed education and research policy, in accordance with the guidelines of the Bologna Declaration and the outcomes of the Second EUA Council for Doctoral Education, aim to create a frontier-free science in Europe, to consolidate excellence in research and teaching, and establish an education system that promotes the effective professional recognition of the degrees. As

such, the Erasmus Mundus Action 1B creates an ideal setting in which researchers trained in our network will no doubt contribute to future EU research priorities.

The network will create opportunities for further integration of the wide range of expertise and techniques that are required to tackle the challenges described in the needs analysis (B1.1). PhD students in our program as well as Master and PhD students in the related local programs will benefit from the broadened range of training that the COGTOME project will offer. We will create a training environment that inspires students to tackle highly relevant but difficult problems with analyses covering multiple levels of research on brain connectivity using innovative and multidisciplinary techniques. The integrative and multidisciplinary scientific training of the COGTOME program will be combined with an educational program that covers a range of specific topics in neuroscience and related disciplines (by academics and by associated SMEs, see below) aimed at acquiring a broad knowledge. Furthermore, it will provide structured collaboration with non-academic partners to facilitate implementation of research results as well as career development outside academia. Therefore, the COGTOME guarantees that young researchers will obtain both in-depth knowledge and a broad overview of neuroscience embracing a connectivity perspective as it currently develops across Europe and beyond. In addition, the individual institutes offer complementary courses aimed at acquiring transferable skills (e.g. writing (scientific) English, career development, presentation, teaching and management). Training within the strongly integrated network will foster a more mobile and consequently truly European community of researchers in this field.

B.1.3 Present the education, training and research programme, including its originality, innovative aspects and scientific quality notably as regards research methodologies and approaches.

The core component of the PhD training and research careers in the COGTOME program will be education and advancement of knowledge through original independent research on brain connectivity. Each COGTOME partner institute has selected 7-15 PhD supervisors, who were chosen based on their outstanding publication records their ability to integrate different disciplines and their proven excellence in supervising PhD students. Each institute has selected a few outstanding young talented principal investigators, who will be coached by one of their institute's senior researchers in supervising PhD students within the network, to enhance the future scientific strength of the network. The scientific quality of the selected supervisors is not only evident from their track records (Annex 1 and 2), but also apparent from the histories and successes of the local PhD programs. Each partner institute provides an excellent academic environment and research infrastructure, which is strengthened and expanded by the COGTOME network. To strengthen the course program as well as to provide the opportunity for further in-depth research training in specific areas, we have involved a number of top-level academic associate partners (Annex 9), who will each contribute highly specific expertise to the program. Each individual COGTOME PhD project will be guided by two PhD supervisors from two COGTOME institutes, one acting as primary (or Home Institute) supervisor and one acting as secondary (or Partner Institute) supervisor. By the twinning of PhD supervision the projects will be embedded in a structured common PhD program throughout the COGTOME program with transparent supervision and assessment and with a guarantee of both academic (research) and professional training (e.g. grant writing, valorisation, collaboration with industry). The home institute will generally provide a supervision team consisting of at least one additional staff member next to the primary supervisor. Furthermore, a senior advisor board will guide and monitor the network's program with the specific aim of guaranteeing scientific quality and societal impact. The COGTOME project will accommodate up to 10 new PhD exchange students (from European and/or Third Countries) each year in the program. Projects will last 3-4 years and students will be offered scientific training through original research in at least two host

institutes in the COGTOME program, in combination with tailor-made compulsory courses and annual conferences (see B3). In addition, we offer an individualized supporting program consisting of existing and established optional PhD courses throughout the academic year in each of the programs of the participating home institutes (see B.3.1 and Annex 5). In collaboration with the assigned PIs, the PhD student has to submit a training programme within 3 months after the start of his studies and this needs to be approved by the Program's Board of Education.

B.1.4 To what extent does the programme include inter-sectorial and inter-organisational collaboration

- Describe the internships
- Describe the course on innovation and entrepreneurship

Merknad [o3]: OLE

B.1.5 Describe the nature and quality of the expected outcomes from the innovative, educational, scientific and technological points of view, including in terms of skills and competences acquired

The COGTOME network is a sustainable multi-site training network enhancing European scientific education on brain connectivity research building on methodologies and expertise available across excellent institutes. The COGTOME will realize a unique multidisciplinary setting for PhD training established by world-leading scientists throughout the EU and beyond. It will bridge the research from single unit recordings to neurodegenerative disorders from a brain connectivity perspective. As such the network will contribute to research and education but also fundamental new insight on neurodegenerative disorders. PhD students trained within the network will have knowledge at the most advanced frontier of their field of expertise on brain connectivity well as at the interface of the various disciplines involved in this field. They will have acquired the most advanced and specialized skills and techniques required to solve the critical problems in research and innovation in the field of brain connectivity and will be able to extend and redefine existing knowledge and practice. Through their authority, autonomy, scholarly and professional integrity and commitment they will operate at the forefront of the field.

We will achieve wide dissemination of research results through scientific channels, especially promoting open access publication. In addition, structured collaboration and interactions with applied research, industry, health care and public health institutions will promote dissemination, application and implementation of our results. The CONNECTOME Network will enhance European research on brain connectivity and provide future career opportunities of young researchers. We will increase the career opportunities of young trainees by helping them to find leading positions in connectivity research in the EU (in academia or industry) after completion of their studies. For this, the CONNECTOME Network has set up a training infrastructure that promotes synergy through intensive collaboration with successful network partners that have an excellent reputation in the field. The exchange PhD program will demonstrate added value for the home institutes as well as for the doctoral candidates, in particular by exposure to other disciplines, different research environments and expertise, and a larger peer group. The CONNECTOME network will improve transparency, quality and admission and assessment procedures and create synergies regarding transferable skills development. The intensive collaboration will be facilitated by the limited number of partner institutes and their limited geographical spread. This network will form the nucleus of a future larger European network for research on brain connectivity and we believe that it will function as a reference for doctoral training within this research field as well as in other disciplines and fields.

B.2 Partnership experience and composition (25% of the max. score)

B.2.1 Justify the relevance of the consortium composition and the expertise of the key academic and research staff involved to achieve the EMJD objectives

To achieve the goals of the EMJD programme in terms of a multidisciplinary innovative training programme, we have formed a consortium of partners with complementary expertise in systems neuroscience and an established reputation both in research and education. The consortium consists of the Donders Institute for Brain, Cognition and Behaviour (DI), the Kavli Institute for Systems Neuroscience (KI), the German Centre for Neurodegenerative Diseases (DZNE) and the Seoul National University Department of Brain and Cognitive Sciences (BCS).

Details of the participating partners as well as the key researchers involved in the supervision of PhD students are given in Appendix A. The participating partners have excellent publication records covering the major journals in cognitive, computational and clinical neuroscience. In addition, the participants are dedicated to offering the highest quality education. On a yearly basis X MSc students and Y PhD's graduate in the four partner institutions together. The partner institutes thus have ample experience with and provide an excellent infrastructure for graduate training. The COGTOME network is a reflection of our shared ambition to integrate our current MSc and PhD programs at a European level. The complementarity of each of the partner institutes as outlined below ensures that students trained at these institutes will possess a skill set that is hard to achieve by any of the institutes alone.

B.2.2 Describe the complementarity (in terms of education, training, research or dissemination/valorisation activities) of the consortium members and their diversity (in terms of countries / regions, types of organisation, etc.).

In our consortium, we have brought together three of the leading and largest institutes in the field of cognitive and clinical neuroscience in Europe. Additionally, we have established a partnership with Seoul National University. The participating institutes make use of a variety of recording and analysis methods. Since each institute makes use of a different set of methods, they each bring its specific strengths to the consortium. For example, the DI is leading in the field of cognitive neuroimaging, the KI has unique expertise in single cell recordings, specifically related to memory functions, the DZNE is at the forefront of research in clinical neuroscience, and BCS is doing cutting edge work in clinical neuroscience and offers facilities for invasive neural recording in human subjects.

Each of the partners is currently running its local PhD program or in the process of setting up its Phd. To integrate these programs and to promote mobility, we will merge aspects of these programs into a joint program with tailor-made joint courses (Appendix B), as well as optional training elements from the PhD programs at any of the partner institutes (Appendix C).

The network consists of partners in three European countries that are within a relatively short distance. This strongly facilitates collaboration and exchange as already evidenced by our previous and existing collaborations (Appendix D). This network is strengthened by the participation of a group of academic associate partners in and beyond Europe that contribute specific methodologies and expertise, notably

Merknad [04]: MARCEL + ARTHUR

Update name of institutes + include Bonn University.
Make sure abbreviations are used correctly
Contact Arthur on the numbers (students + budget)

Merknad [05]: OLE

Describe collaboration matrix

Seoul National University. The network's diversity is also evident in the participation of academic as well as hospital departments and industry (Appendix E).

In short, by collaboration within the consortium we will offer complementary expertise and training, ranging from single cell recordings to neuroimaging in the context of cognitive and clinical neuroscience.

B.2.3 Present the partnership track records in terms of networking and cooperation activities (through their joint involvement in EU/international research and/or education projects).

As outlined above, the partner institutes within the consortium have previously collaborated in several research projects, including a number of joint PhD projects that have already led to XXX double doctorates. A large number of joint publications have already been published (Appendix D). Furthermore, all partners have previously participated, often jointly, in EU funded research and training programs (e.g. XXX).

All PhD supervisors selected for the network have extensive international academic collaborations. Furthermore, partner institutes collaborate with industrial R&D departments as well as with hospitals and rehabilitation centres. Students within the network will be able to profit from these international contacts formally or informally. Some of the existing collaborations have already been formalized as associate partnerships in the network and this number is likely to grow.

Distributed over the three institutes we have > XXX students involved in 1-year and 2-years MSc programs and XXX PhD students (in 3-years or 4-years programs) and many visiting researchers. Each of the partners fosters good relationships with many domestic and international universities and institutions. We will use these relationships not only for PhD recruitment but also to plan events such as weekly seminars in the various departments, annual meetings, symposia and tutorial series, in order to actively nurture young scientists in the international scientific community.

B.2.4 Where applicable, justify the role and appropriateness of the professional/non-academic (/economic/scientific/cultural) sector participation in terms of activities and responsibilities.

We have previously established collaborative research with the private sector (for instance with companies and R&D departments, such as XXX). Several of these collaborators will participate in the consortium as associate partners by providing formal training, participating in the annual meetings, and supporting projects including provision of secondments.

This not only provides opportunities for funding and participation in collaborative research leading to shared intellectual property, but also creates important stepping stones for our early stage investigators to bridge the gap from academia to industry (see also Appendix E).

Merknad [o6]: MARCEI.
See PDF form – use the EU grants etc
Work out the number with Arthur

Merknad [o7]: MARCEI.
Please expand on the internship in the companies – will send you the list of companies we have contact

B.3 European integration and functioning of the programme (20% of the max. score)

B.3.1 Describe the extent to which the EMJD programme is organised in a structured and integrated way.

The program integrates the outstanding research environments at the partner institutes. The COGTOME Network provides an optimal educational environment for talented young scientists to start off their successful career with a strong focus on international collaboration right from the beginning. We intend to attract the best international students in biology, physics, psychology, medicine and related disciplines who are strongly motivated to do research in systems neuroscience. PhD students will follow an integrated, well-structured, multi-disciplinary 3-year joint PhD curriculum, based on level 8 qualifications set out in the EQF. The PhD students will be employed by one of the partner institutes and integrated in the Institute's Graduate School. PhD students at Radboud University Nijmegen will be part of the Donders Graduate School for Cognitive Neuroscience, see <http://www.ru.nl/donders/graduate-school/donders-graduate/> for details. At NTNU in Trondheim, students will participate in the PhD program in Neuroscience, see <http://www.ntnu.edu/studies/phnevro> for details. Bonn University is planning to implement a Graduate School for XX. **NEED BRIEF SUMMARY OF GRAD SCHOOLS FROM PARTNERS HERE**

Students will receive intense training through original independent research supervised by two PIs (see below), along with a variety of specialized and hands-on courses tailored to the student's own research interests and courses on transferable skills (additional 22 ECs for the 3-year PhD program, see below). Scientific courses are listed in Appendix C. Courses on transferrable skills include time management, media training, computer skills, writing scientific papers and grant proposals, presentation techniques for various audiences, language courses, ethics, (project) management, communication, leadership and networking and university teaching qualifications (BKO in NL). In addition to their original research this training will enhance the students' development towards leading roles in the field either in academia or related industry. Each PhD student is advised to select a personalized, career-relevant combination of training courses and to discuss her or his plan with his supervisors at the start of the research project. The PhD research project together with the specified training plan will be outlined in her or his personal Training and Supervision Plan, see B.3.5 for details.

In addition to this compulsory EMJD PhD curriculum, further training is optional and can be taken at any of the partner Institutes and relevant associated educational institutes, where a large number of eligible PhD courses is organized and embedded in the local PhD programs (including both academic and transferable skills). Moreover, students are encouraged to attend national and international lectures, lecture series, workshops, conferences and Summer/Winter schools.

PhD students will also have the possibility and are encouraged to have an industry placement at one of the industrial partner companies (see Section XX) to facilitate career development. These internships at selected companies will last approx. one month and will usually take place in the third year of the program.

Kick-off and annual meeting: The first year of the joint curriculum begins with a COGTOME Network kick-off meeting at Radboud University Nijmegen, bringing together all PIs and first year PhD students. This meeting will include network introduction course for the PhD students emphasizing the benefits from the integration of the complementary, top-level expertise among the partners and associate partners. In addition we will organize multiple project specific meetings with the two PIs and the PhD student involved in the individual research projects.

We will also hold an annual meeting scheduled in Spring which will be hosted by another participating partner every year. Following keynote lectures by international experts, the EMJD candidates will present their own work in progress (poster and oral presentations). Within the COGTOME program

Merknad [o8]: CHRISTIAN

Please incorporate comments from Heinz Beck.

Incorporate Bonn info

<http://hss.ulb.uni-bonn.de/amtliche-informationen/amtliche-bekanntmachungen/2010/08.pdf>

Some section have changes from the proposal you used as draft – thus I have moved some stuff around
See "emdawerri2012_end.doc" for details

Merknad [o9]: CHRISTIAN

Please contact the partners directly with specific instructions on information to be provided (including number of words).

Merknad [o10]: CHRISTIAN

Will all student come to Nijmegen? (there will be three rounds)

Merknad [o11]: In addition to the kick off? Can it be combined to reduce travel costs?

these meetings will be expanded to also include a career conference. This will function to orientate students with respect to career planning through presentations by and formal discussion and informal contacts and networking with post-doctoral researchers, and associate (industry) partners.

B.3.2 Justify the relevance and appropriate organisation of the mandatory mobility periods of the candidates in the participating institutions.

Joint supervision and mobility period is a core feature of this program. PhD students in the program will be jointly supervised by two supervisors from the participating institutes, one main supervisor from the student's host institute (Home Institute) and one secondary supervisor from one of the other participating Institutes (Partner Institute), see list of PIs in Section XX. Students will stay for a mandatory mobility period of approx. 6 months at the Partner Institute. This mobility period can be chosen flexibly, but preferably in the second year of the PhD project.

B.3.3 Describe the common standards and mechanisms developed by the consortium for the application, selection, admission and review of doctoral candidates (European and third-country).

We are planning to have 50 joint PhD projects, supervised by XX PIs during the five consecutive editions of Erasmus Mundus funding. These PhD students will be embedded in the wider network of XX PhD students at the Donders Institute in Nijmegen, XX PhD at NTNU and XX PhD students at the DZNE in Bonn. Each year, the COGTOME Board of Education (see XX, NEED TO DEFINE) will select 10 PhD projects supervised by two PIs, according to the following criteria:

- PhD supervisors from any of the COGTOME Home Institutes may submit only 1 PhD project per year.
- PhD supervisors may not apply as a Home Institute applicant in the year after getting a project awarded (although they may still function as a Partner Institute PhD supervisor).
- The project is of excellent scientific quality.
- The project is within the field of systems neuroscience.
- The project plan represents a balanced intellectual contribution by the supervisors of both partner institutes.

Details of selection procedure:

- Procedure: The board will ensure a fair distribution of awarded projects over COGTOME Institutes and COGTOME PhD supervisors, with a minimum of two PhD positions per year per participating partner. The number of PhD positions available will be announced in October of year n-1. Deadline for submission of potential PhD projects is December 1 of year n-1. The COGTOME Board of Education will make the selection of the 10 PhD projects towards the end of December of year n-1 and selected projects will be announced. All promising candidates will be invited before May 1 of year n to visit the labs of the PhD supervisors of the COGTOME Home Institutes. The selection process will be conducted in compliance with the code of Conduct for the Recruitment of Researchers (<http://ec.europa.eu/euraxess/>) and will involve an interview combined with a presentation about current and previous scientific work by the candidate. Together, the collaborating PhD supervisors of a given PhD project and a member of the COGTOME Board of Education will decide on admission by May 15 of year n. Subsequently, the PhD Candidates have a maximum of 3 months to organize all aspects concerning immigration before the start of the program on September 1st of year n.

Merknad [o12]: CHRISTIAN
Please check numbers with Arthur

- **Entry requirements:** Candidates will have an MSc or equivalent degree (EQF level 7; http://ec.europa.eu/dgs/education_culture/) in a relevant discipline, e.g. neuroscience, biology, physics, psychology, medicine and related disciplines. Applicants should have specialised knowledge partially at the forefront of their field, as a basis for independent thinking and original research. The applicants must show critical awareness of the important issues and debates in their field and must demonstrate having acquired the problem-solving skills required in research to be able to successfully develop new knowledge and to integrate knowledge from different fields. Applicants should be able to manage and transform study contexts that are complex and unpredictable and that require original strategic approaches.

- **Recruitment:** We will aim at recruiting potential candidates from various local MSc programs at the three Partner Institutions. This population of graduate students allows for the recruitment of candidates with a known educational program and track record. In addition, MSc programs outside the three partner institutes will be actively approached to apply for fellowships within the COGTOME Network, and particularly the admission of applicants from outside the EU will receive special consideration (see XX). To facilitate recruitment, a network of contacts representing relevant MSc programs in the EU and worldwide has been established. Projects selected by the Board of Education and selection criteria and rules and regulations for application and admission will be published on our website and other relevant scientific job portals and websites.

The common standards for application, selection, admission and examination will be formalized in the Doctorate Candidate Agreement, implemented and carried out by the COGTOME Network Board of Education and the Management Team (see B.5), who are responsible for the program, i.e. they provide a benchmark for content and function as examination board, as curriculum board, and at the same time as selection & admission committee.

B.3.4 Justify the appropriateness and the quality of joint supervision and monitoring of the candidate activities (including the exams for the taught part and the assessment and defence of the thesis) to ensure the highest quality of the outcomes.

PhD students in the program will be jointly supervised by two PIs from the participating institutes, one main supervisor from the student's host institute (Home Institute) and one secondary supervisor from one of the other Institutes (Partner Institute).

Monitoring: Three months after enrollment, the student submits the detailed PhD project plan to the Board of Education for formal approval. This plan contains the elaborated project proposal as well as the Training and Supervision Plan (TSP) and forms the basis for monitoring progress. PhD students will follow the TSP during their 3-year PhD project, including a description of the research project and a list of courses and training events the student plans to attend. In addition, we will employ a standardized checkpoint system to track the progress of the PhD student during the 3-year period. The checkpoint form is a checklist in which the progress of the research program is systematically recorded. It serves as a basis for discussion during the checkpoint meetings. It is a duty of the supervisors to provide a high-quality supervision infrastructure for the PhD student. Both supervisors will monitor the quality of the research part of the PhD training. Further monitoring will be done by the teaching staff and supervisors during compulsory COGTOME Network courses and annual meetings. We will also implement a Mentor systems. The mentor will ensure that existing supervision arrangements are adhered to. The mentor also acts as a mediator between PhD student and supervisor. The TSP includes the project plan, project continuance (written evaluation), project progress and outlook, thesis table of contents and post contract plans as milestones during the 3-year program.

Merlnad [o13]: CHRISTIAN
Please specify in detail

Check with partners if they can accept our checkpoint system.

Since its only a 3 year PhD you might want to get inspiration from the MPI checkpoints

Good practice agreement: In addition, it is incumbent on all PhD students to follow a good practice agreement for conducting a PhD. This document is intended to clarify the requirements for obtaining a PhD and to introduce additional measures that should ensure that students finish their PhD within 3 years. The individual centres may have additional regulations.

Criteria: The minimum criteria for the PhD thesis are that it should reflect at least 3 years of research work, making an original contribution to the field. This will be operationalised, in line with current practice at the partner institutes, insofar that the thesis should contain at least three chapters that can be or have been submitted as journal articles to peer reviewed journals with impact factors representative of or better than the mean of the field. After suggestion by both supervisors and official University approval (of Home and Partner Institute) a Thesis Committee, specifically appointed for each project, will review and examine the thesis. It will normally consist of five COGTOME Supervisors not involved in the project, recruited from the list shown in Annex 1, and could also include experts in the field from outside the COGTOME network. After approval of the thesis, the candidate will defend it. In case of conflicts, the student may follow the standard procedures under the regulations of the Host Institute University. The relevant research degree regulations of the Institutions awarding the PhD degree must be satisfied within the above arrangements.

PARTNER INSTITUTES' LOCAL PROCEDURES?

B.3.5 What is the kind and nature of the degree(s) awarded? If applicable, what are the measures taken or envisaged by the consortium to deliver a fully accredited and recognised joint degree?

NEED INPUT FROM PARTNERS HERE; ARTHUR MENTIONED THAT THIS DIFFERS BETWEEN PARTNERS AND ALSO BETWEEN FACULTIES

The COGTOME Network will offer PhD students a joint degree (level 8 of the European Qualification Framework) recognized by both the COGTOME Home Institute and the COGTOME Partner Institute. After a successful PhD defense at the Home Institute and their preferred partner institute, candidates will receive a Graduate School Certificate, specifying details about their research project and attended courses.

Joint or double doctorate? We will aim for joint degrees as far as possible, and double degrees if necessary.

Merknad [o14]: CHRISTIAN/ARTHUR

Please sort this out together with Part F of the PDF form

B.3.4 Participation costs

NEED ARTHUR'S INPUT HERE

The COGTOME program will be implemented in five consecutive editions, with an annual budget of XX. The COGTOME fellowships will be allocated to the respective Host Institute of the PhD students (see Annex XX) once they have been employed, and includes a total of € XX annual salary.

Also need to provide numbers for bench fee, lab costs, travel costs (also for the mobility period) ...

Merknad [o15]: CHRISTIAN

This do no longer go here

Nov in B5.3

B.3.5 Joint supervision and monitoring

Merknad [o16]: CHRISTIAN

The structure must have changed from the draft you used. Please integrate this above under

B.4 Provisions for EMJD candidates and fellowship holders (15% of the max. score)

B.4.1 Promotion strategy. Present the information and promotion strategy envisaged by the consortium to reach out potentially interested candidates, in particular those from third countries?

The COGTOME Consortium has an extensive international network in European and third countries and currently employs researchers from more than 40 countries. The consortium will use the network to attract the most promising young scientists through open competitions. The consortium website will be used to announce the network's fellowships and will be linked to the websites of international professional associations and conferences (for example SFN, HBM, Biomag, FENS). The fellowships will be announced on the relevant websites (e.g. ec.europa.eu/euraxess/, www.academictransfer.com, www.academics.de), at conferences, via social media (e.g. LinkedIn, Facebook), via mailing lists and posters sent to other labs in the consortium's extensive network. Promotional activities will make sure that recruitment is directed to both MSc students within the consortium's graduate schools and programmes and to potential candidates from other European and non-European MSc programmes.

Merknad [o17]: ARTHUR
The formulation of the subquestion have changes a bit – you might have been using an older instruction?

B.4.2 Services offered to students. Present the services that will be provided by the partner institutions to host doctoral candidates.

The COGTOME Consortium provides a range of services to its PhD students to enhance social inclusion, active citizenship and personal development in the host countries and guest institutions. Assistance with visas and housing facilities will be provided by the local international offices and personnel departments that all have broad experiences with dealing with these issues (see for example www.ru.nl/io/english/). The assistance will include the support for the mobility periods of the fellows and services like access to university guesthouses will be provided. All social and health insurances will be offered as part of the employment contracts of the fellows and assistance will be provided by the local international offices and personnel departments. Furthermore, each of the local institutions provides services and provisions for students with special needs. It is a basic principle of the partners of the COGTOME Consortium that students with special needs should be able to finish their fellowships successfully. Proper access to buildings and research facilities is guaranteed and special provisions are available.

Merknad [a18]: Bonn, Trondheim examples?

Merknad [o19]: ARTHUR
Please contact Bonn and Trondheim for this information directly

The COGTOME Consortium will work with a mentoring system, assigning a personal mentor to each student. This is a member of the research staff that is not one of the supervisors of the student, and that can help the PhD with practical problems as well as give him or her an 'outsider's' perspective on his or her work. To overcome potential language problems and promote social inclusion, language courses in the local language, conversation classes and in scientific English will be offered to the fellowship holders. The partners of the COGTOME Consortium offer various activities aiming at social integration like introduction courses to meet fellow PhD students, social days, excursions, cultural activities and sports activities. A number of the activities is also open to the families or partners of the fellowship holders. For fellows with children, the partners offer child care facilities and contacts with international schools.

B.4.3 Language policy

The periods in the Home and Partner institutions offer exposure to different cultures and to two different languages (or three for non English speakers). All the participants' institutes are bilingual; apart from the local language, English is spoken. All institutes offer language courses at different levels and the fellows are strongly encouraged to follow the language courses. Though we expect that PhD

candidates will express their interest in taking language courses themselves, the language courses are included in the education/training programme (see B1.3 and Table 3.1), awarded with ECTS and paid for by the partners. The personnel departments or international offices will help the candidate with forms and regulations that are not available in English. Furthermore conversation classes and courses in scientific English will be offered to the fellowship holders. Along with learning the local language, candidates will gain an understanding of the cultural differences between peoples and countries enabling more fruitful collaborations to be made in the future. Overall, the consortium will provide an exciting and stimulating environment both scientifically and culturally for its participants and attract the best young scientists.

Merknad [a20]: Correct?

B.4.4 What administrative arrangements are foreseen for the award of the fellowships (including health care, social security and pension rights) and the distribution of the fellowship holders among the EMJD partners?

PhD students will get an employment contract at the home institute for the full three years of their project. Employment contracts are based on national legislation and will guarantee salary, holidays, health care insurance, parental leave, other fringe benefits, social security and pension rights. The consortium lump sum will be managed by the Donders Institute and distributed to the partners of the consortium based on the number of PhD-students. The fellowship scheme is based upon bilateral research combinations as outlined in Section B3. The grantees will be distributed approximately evenly over the 3 partner institutes, as will be the stipends. The PhD students do not have to pay tuition fees at any of the partner institutes.

Merknad [a21]: Correct?

Merknad [o22]: ARTHUR
Please inquire with the partners directly on this.

Merknad [a23]: Correct? Else replace by: Tuition fees depend on local regulations, but will be minimal and will be covered from the bench fee.

B.4.5 Describe the measures taken by the consortium to ensure the candidate's career prospects and to monitor his/her career development once graduated.

The COGTOME Consortium highly values the development of the career prospects of PhD students. To prepare the fellows for their future careers, all PhD students will have an individual Training and Supervision plan. As part of the plan, time will be dedicated to courses that will aim at increasing the career prospects of the fellows. Examples include project management, principles of entrepreneurship or other transferable skills. During the projects the career plans will be discussed at least once a year between PhD student and supervisor, and whenever applicable, appropriate measures will be taken to increase the career prospects of the PhD student. The COGTOME fellows will have ample opportunity to get to know the partner institutes, which may have promising post-doc positions for them. In addition the program ensures regular contacts with other academic partners, relevant industry and health care institutions that provide career options. The career development of the fellows will be systematically monitored after graduation to keep an eye on the output of the programme to be used by the partners in order to adjust and improve the training programmes.

B 4.6 Describe the nature and comprehensiveness of the Doctoral Candidate Agreement.

The consortium adheres to the European Charter for Researchers and the Code of Good Conduct for the Recruitment of Researchers (<http://ec.europa.eu/euraxess/index.cfm/rights/europeanCharter>) unless there is an overriding obligation to ensure that the partners meet the requirements of the respective national or regional legislations. Where researchers enjoy a status and rights which are, in certain respects, more favourable than those provided for in this Charter, the terms will not be invoked to diminish the status and rights already acquired. For all COGTOME fellows a Doctoral Candidate

Agreement will be signed by the supervising institutes and the doctoral candidate, in order to guarantee the adequate transparency of the participation rules and to define clearly the candidate's rights and obligations. The Doctorate Candidate Agreement will include guidelines about admission criteria, criteria for the Supervisors, structure and organization of the PhD programme, equal opportunities issues, etc.

B.5 Programme Management and Quality Assurance (15% of the max. score)

Merknad [o24]: ARTHUR
Some of the points have changed slight
from the previous years.
Please see
Emjdawcrit2012_end.doc

B 5.1. Describe the quality of the organisational arrangements and cooperation mechanisms within the consortium and the specific role played by each of its members.

Commitment

All partners and associated partners are fully committed to the programme and are ready to provide their expertise and facilities for the successful execution of the project. Letters of endorsement from all partners and those associated partners who will play a very active role in the research and educational progress of the programme are submitted with this proposal. The commitment of each staff member to educational and research activities is described in B 2.1.

Organizational arrangements and cooperation mechanisms

A COGTOME Board of Education will be established which has a central role in the supervision of the COGTOME Network (Figure 3) and is responsible for the network's policy and strategy. The Board is chaired by the COGTOME Consortium coordinator. Each of the participating institutes is represented by two senior academic members, one of which is the local Institute Coordinator. The Board of Education will include a PhD student from each of the partners (appointed by the Board of Fellows, see Figure 3). The Board of Education will have at least two meetings per year. The precise conditions of decision making, voting and conflict resolution will be formalized in the Framework Partnership Agreement, which will be prepared at the start of the consortium. The Board of Education will decide on standards for application, selection, admission and examination of students (see also B.3.3). As such, the Board of Education is responsible for supervision of the educational process.

Figure 3 (to be included): Management structure of the network. Dashed arrows indicate advisory roles to Board of Education; dash-dotted arrow indicates advisory role plus representation in Board of Education; solid arrows represent hierarchical roles

Merknad [o25]: ARTHUR

A COGTOME Management team will be established which will implement actions during the progress of the project (specifically the tasks, deliverables, milestones, budget), offers advice and implements decisions made by the Board of Education, in particular those processes related to aspects of the training program. The Management Team consists of the COGTOME Consortium Coordinator, the other local institute coordinators and an administrative official from the coordinating institute. The Management Team will coordinate and implement all network activities, including financial aspects and will interact with the EU (project officer, MC monitor) concerning implementation, execution and completion of the program. Members of the Management Team will meet at least four times per year and will furthermore have regular phone and e-mail contact. The Management Team is in charge of the overall management: detailing of the training program and detailed budgeting at the stipend level, tracking the scientific and integration progress, safeguarding ethics and gender issues, designing and maintaining project documentation archives, progress reports including assessment of PhD projects, organization of annual meetings, effective communication with parties outside the consortium, such as

other European networks, dissemination and training tools. The aim with regard to information distribution is to keep partners, and the European Commission, fully informed about the project status and all other issues that are relevant to the partners for obtaining transparency, synergy and interaction of the consortium. Furthermore, the Management Team will coordinate the various administrative duties such as creating/Updating the consortium website, coordination of the recruitment/handling applications of fellows, helping in the organization of consortium events and preparation of progress reports. All partners will have dedicated support on the financial and personnel issues available to ensure the optimal administrative handling of budgets, employment contracts, Doctorate Candidate Agreements, and reporting.

A COGTOME Board of Fellows will be established consisting of 2 PhD students per participating year of entry, to discuss issues related to the consortium programme and assign members to the Board of Education. We will also appoint a Counselor, a trustworthy, independent and easily accessible person, for each PhD student. Students can consult their Counselor on confidential matters (e.g. problems with offered training, finances, and supervisors).

The Board of Education and Management Team will be advised by the Advisory Board consisting of the scientific directors of the partner institutes. The Advisory Board will be regularly consulted by the Board of Education or the Management Team to discuss the quality of the training program as well as strategy development concerning continuity of the funding and potential expansion of the consortium after the EMJD grant period

Merknad [o26]: I propose we appoint Counselors at each institution that then can sort problems 'locally'

Merknad [a27]: Per student (like at DC'CN), per institute or for the whole consortium?

B.5.2 Describe the way the EMJD will be managed from a financial point of view and explain how the participations costs in the joint programme have been calculated; if differences exist between third-country and European candidates, what are the reasons for such differences?

B 5.2 Describe how the consortium's development and sustainability plan is designed in order to ensure the proper implementation and continuity of the joint programme beyond Community funding

During the Erasmus Mundus project itself, the partners envisage an almost equally spread enrollment over the duration of the project and over the partners to ensure a maximum of collaboration between the partners and benefits within the consortium. Furthermore, PhD students at the partner institutes funded from other sources but working in the same field, will actively participate in the network during the EMJD grant period.

The COGTOME consortium will work towards a sustainable setting in which the COGTOME partners can continue their joint PhD program beyond the period of Erasmus Mundus funding. It is the network's ambition to establish within 7 years a solid, structured PhD training program, seen as a reference in Europe, with sufficient funding from third parties. We intend to extend the network by increasing the number of partners across Europe and world wide. To achieve this, we will develop a strategy to acquire a combined funding from both national and international agencies, as well as by teaming up with industrial partners interested in our highly-trained fellows and our expertise. To this end, the consortium will seek collaboration with industry, local funding officials, and with Technology Transfer Officers of the participating institutes to arrange for timely funding strategies. Provided that sufficient numbers of PhD students would be eligible for such participation after the grant period, the partner institutes are committed to invest in maintaining the consortium's infrastructure and program. Another important outcome of the COGTOME Consortium Programme is the recognition of the joint and double

Merknad [o28]: ARTHUR
This point has changed
We also need to state the SNU carry their own costs

Merknad [a29]: Subquestions: *What strategies have been envisaged, and over which period? What are the enrolment projections and the mid/long-term benefits for the partners? If applicable, are associated partners involved in this sustainability plan and what degree of commitment can they provide?*

degrees by the participating Universities. This practice will be used by the partners in the future for other joint projects Europe- and world-wide, thus developing and extending the ideas behind the EMJD programme.

B.5.3 Describe how the consortium's development and sustainability plan is designed in order to ensure the proper implementation and continuity of the joint programme beyond Community funding and present the Consortium's proposed actions for complementary funding

Merknad [o30]: ARTHUR
This point seems to have changed a bit

As outlined in Annex 10 the Cogtome Consortium will run for five consecutive editions with a yearly allocated budget of € 1.307.000 for the whole consortium. This budget will be issued on a yearly basis to the coordinating partner, i.e. to the Donders Institute, and includes a yearly budget for the organization and implementation of the Cogtome programme. The fellowships will be allocated to the Home Institutes of the PhD students (see Annex 10) once they have been employed, and includes a contribution of € 100.800 per fellow for salaries (both for Category A and B, as all students will get an employment contract), a contribution to the participation costs of € 21.600 per fellow (all students will be laboratory based) and € 7.500 contribution to the traveling/settlement for Category A (Third Country Candidates) or € 3.000 for mobility of Category B Fellows to Korea.

B 5.3 To what extent have complementary funding possibilities been explored and/or secured?

Future PhD students funded from other sources, such as national, international and industry research funds, but working at the partner institutes in the COGTOME research area, will be invited to join the research and training activities of the fellows of the COGTOME consortium. Examples are PhD students funded by FP7 projects, ERC Grants, the Dutch NWO, the German DFG, the Research Council of Norway and industry. The fellows of the consortium will be supported in acquiring extra funding by the partners, especially for extra travel funding. The partners and scientific organizations have programmes dedicated to PhD students. Examples are the Radboud University's Internationalisation Fund to promote international mobility among all its PhD candidates, and the travel awards from the Organization of Human Brain Mapping. The participating universities co-fund a substantial part of the programme. In particular, a large part of the continuing support of the programme and the overheads will be provided by the individual universities. They all have expressed their commitment to run this programme successfully.

Merknad [a31]: Subquestions: How do these possibilities provide additional (full or partial) fellowships to additional doctoral candidates and, if applicable, top up the difference between the fixed programme contribution to the candidates' participation costs and the actual cost for the consortium?

Merknad [o32]: Integrate and or delete

B 5.4 Describe the nature of the internal evaluation (by the institutions themselves? through candidates/scholars feed-back systems? etc.) and external quality assessment (by e.g. national, international or professional bodies) envisaged.

Internal evaluation

The individual PhD-projects will be monitored by fixed check-point meetings which take place with intervals between 3 months and one year and are attended by PhD students and supervisors. During the meetings the progress will be monitored, the individual Training and Supervision plans will be updated and if necessary, actions are planned to ensure the quality and progress of the project. Courses and the programme as a whole will be evaluated systematically by soliciting structured feedback of the PhD

students by questionnaires and by the establishment of the Board of Fellows (see 5.1). The Board of Education will monitor the results of the check-point meetings, the course and programme evaluations, monitor the quality of the training program, individual progress and research output of the PhD students (and supervisors) as well as systematically evaluate the research activities of the programme as a whole.

External evaluation

The external evaluation of the COGTOME programme will be part of the evaluation programmes of the partners. For the Donders Institute the external evaluation will be done based on the Standard Evaluation Protocol for Research Assessment in the Netherlands (www.knaw.nl/smartsite_dws?id=26104&pub=20091052). The evaluation of scientific research applies at two levels: the research institute as a whole and its research programmes. Three main tasks of the research institute and its research programmes are to be assessed: the production of results relevant to the scientific community, the production of results relevant to society, and the training of PhD-students. Four main criteria are considered in the assessment: quality, productivity, societal relevance and vitality, and feasibility. The evaluation will be done by an external committee of internationally renowned scientists.

The evaluation of the COGTOME Project will be included in the evaluation procedures of the partners, as the Programme promises to have a large impact on the development of doctorate programmes in participating Universities at the European level.

Merknad [a33]: Input external evaluation other partners needed.

Under arbeid

Cirkel endl. versj.

Annex C - Joint and double degrees.

In the COGTOME proposal we aim at providing joint degrees for the students. This will typically be a joint degree between two of the four partner universities. In the exceptional cases when a joint degree is not possible, we will aim for a double degree. Even though the rules are different at the different universities we still aim at providing a standardized and transparent collaboration and graduation procedure for the students. The joint degree will be defined in cotutelle agreements between the collaborating institutions.

First we will mention a few aspects that needs to be incorporated:

- Radboud University Nijmegen. All faculties allow for joint or double degree; however, the condition is that the first defense will be done at Radboud University Nijmegen (see Annex C.1). Joint degrees must be approved on a case-by-case basis by WHO within one year of the starting the PhD requiring a cotutelle agreement (see Annex C.1).
- DZNE. The institute cannot provide PhD degrees; however, student will graduate under the Faculty of Philosophy or Medical Faculty at Bonn University. This is already current practice.
- Bonn University. The Faculty of Philosophy has regulations allowing for double and joint degrees (see Annex C.2). Joint degrees must be approved on a case-by-case basis by the dissertation committee. The Medical Faculty has so far not rules defined for joint or double degrees. Such rules are expected to be defined end of 2012. Until the rules are finalized, candidates from the DZNE and Bonn University associated with the Medical Faculty will also get assigned a co-supervisor from the Faculty of Philosophy. This will allow them to graduate in the Faculty of Philosophy obtaining a joint degree applies.
- Norwegian University of Science and Technology: Policies and guidelines are defined for joint degrees (see Annex C.3).

Procedure for joint degrees

1. Candidate employed at one of the four universities/institutes and a primary advisor is appointed
2. The second advisor is identified at a partner university/institute
3. Students will be enrolled at both the host and partner university
4. Cotutelle agreements will be completed within the first year (Radboud University and NTNU have forms that must be filled and approved by the respective authorities)
5. The candidate will spend at least 6 months at the partner university/institute
6. The dissertation will be defended at both the host and partner university (when Radboud University is either the host or partner university, the candidate will first defend at Radboud University)
7. The candidate will receive a diploma from each institution
8. The dissertation will contain the logos of both the host and partner university
9. It is the responsibility of the primary supervisor to ensure that the cotutelle agreements completed in time.

**Annex C.1 – Radboud University Nijmegen
Regulations and cotutelle agreement.**

(vastgesteld in het overleg CvB – decanen d.d. 5-10-2010)

Joint doctoral degree

Modelovereenkomst Radboud Universiteit Nijmegen

Co-operation Agreement Joint Doctorate

The following parties

[for each partner]:

The University <name>,
represented by <name>

and

Stichting Katholieke Universiteit, more particularly Radboud University Nijmegen,
represented by
prof. dr. S.C.J.J. Kortmann, Rector Magnificus

and

Mr. /Mrs. <first name> <name>,
[for candidates from Radboud University Nijmegen: <name Research Institute>]
hereinafter 'the doctoral candidate'

hereinafter, the afore-mentioned shall be referred to jointly as 'the Parties',

have,

Account being taken of the Regulations concerning the obtainment of the academic degree of doctor at the <name partner institution>, approved by the on <date>;

In view of the provisions of the Regulations on the Structure of Radboud University Nijmegen, account being taken of the Dutch Higher Education and Research Act (*Wet op het hoger onderwijs en wetenschappelijk onderzoek, WHW*), and in particular article 7.18;

Account being taken of the Doctorate Regulations of Radboud University Nijmegen, laid down by order of the Council of Deans on 13 June 2006 <verwijzen naar meest recente versie>;

agreed the following:

Article 1. Subject: joint supervision and awarding of a doctoral degree

The partner institutions agree that they shall be jointly responsible for the educational programme of the doctoral candidate, the supervision of his/her doctoral research and thesis, and the jointly awarding of the doctoral degree.

The doctoral candidate's personal information:

Name and initials:

Date of birth:

Place of birth: <town>, <country>

Nationality:

Article 2: Designation of a home institution

For the doctoral candidate in this agreement, the home institution, responsible for overall administration, is <name institution>.

Article 3. Subject of the doctoral dissertation

The subject of the doctoral dissertation will be:

Article 4. Supervision of the doctoral candidate

The doctoral candidate's supervisors shall be:

[for each partner institution]

At the <name partner institution>

Name:

Academic unit:

Position:.....

At Radboud University Nijmegen:

Name:

Faculty:

Research Institute:

Position:.....

Article 5. Admission to the doctoral programme

The doctoral candidate has been admitted in the doctoral programme of the relevant partner institutions:

from the university <name> on <date>

from Radboud University Nijmegen on <date>

Article 6. Content of the doctoral programme

The content of the doctoral educational programme, including the amount of ECTS, shall be described in annex 1, which is part of this agreement.

Article 7. Duration of the doctorate

The time period of the doctoral research, including the writing of a doctoral dissertation lasts <number of months>. If necessary, the period may be extended by mutual consent, account being taken of the applicable regulations at each partner institution.

Article 8. Residence and research periods

The doctoral candidate shall spend research periods of at least six months in at least two [in the case of two partners: 'both'] of the partner institutions. The delineation of the research periods shall occur by mutual consent between the doctoral candidate and the supervisors.

The doctoral candidate shall be registered by the partner institutions where he/she will take residence, according to their respective rules and regulations.

Article 9. Doctoral dissertation

The doctoral dissertation shall be written in <language>.

A translation of the title and a summary of the contents shall be written in <language>.

Article 10. Committee for the doctoral examination

The examination committee for the doctoral examination (doctoral dissertation and defence of the dissertation) shall be composed by mutual consent of the partner institutions. At least one of the members of the committee is external to the partner institutions.

Article 11. Defence of the doctoral dissertation

The final examination/public defence of the doctoral dissertation shall take place in <language> at the <name university>.

Article 12. Awarding of the degree

When the doctoral candidate passes the joint doctoral examination, the partner institutions shall award him/her one joint doctor's degree diploma, officially recognized by all partner institutions.

The doctor's degree diploma will be drawn up by <name university> and shall be signed by the representative of <name universities involved>.

Article 13. Additional financial arrangements

Contributions to the expenses of the doctoral candidate that are related to the doctoral programme and/or to the doctoral defence, shall be discussed and agreed upon by mutual written consent of all Parties.

Financial arrangements shall be described in annex 2, which is part of this agreement.

Article 14. Insurance

The doctoral candidate shall comply with the obligation to take the necessary steps to be sufficiently covered by international health insurance and other necessary or mandatory insurance cover.

Article 15. Intellectual property rights

1. Intellectual property (IP), including but not limited to (confidential) information, knowledge, results, findings, know how, whether they can be protected or not by intellectual or industrial property rights (such as patent rights), except copyrights on scientific publications, developed on the basis of a joint program undertaken by a candidate during the course of this agreement, belongs to the university where the candidate has generated the IP.
2. When the IP is generated by two or more partner institutions such that the IP cannot be separated and attributed to one of them, then the partner institutions will have joint ownership in equal shares, unless otherwise agreed upon.
3. Contrary to paragraph 1 and 2 of this article, if agreements have been made with third parties on the funding of the doctoral degree program and related IP, Parties shall make a different agreement on the distribution of IP, before the start of the doctoral degree programme. The Parties have informed each other about such agreements before signature of this joint doctorate agreement and shall not conclude such agreements during this joint doctorate agreement without first consulting the other Party/Parties.
4. In case of joint ownership of IP the partner institutions will have the joint right to determine the commercial exploitation and disposition of such IP and make joint applications for the registration on the same as they jointly deem necessary. Neither Party will disclose to a third party, nor to Parties not relevant to the IP, license, use commercially, register or otherwise deal in such IP without the prior approval of the other partner institution(s). Before any registration or commercialization of any intellectual property takes place, the partner institutions agree to reach a separate written agreement relating to such registration or commercialization, and will include issues such as exploitation rights, revenue sharing and cost sharing. Any publication in relation to such IP will only be possible with the prior written consent of all partner institutions, such consent shall not be unreasonably withheld.

Article 16. Doctoral regulations

By signing this agreement, the doctoral candidate and the supervisors pledge to act in accordance with the doctoral regulations enforced at each of the partner institutions. In the event of contradictory stipulations, the doctoral regulations of the home university shall apply.

Article 17. Dispute resolution

Any disputes arising under or in connection with this agreement which cannot be resolved by amicable discussions between the Parties shall be resolved by the competent court of the home institution.

Article 18. Enforcement and period of validity of the agreement

This agreement shall take effect on <date> and shall end the day after the doctoral degree has been awarded. The agreement may be terminated earlier, e.g. in the event that the doctoral research makes insufficient progress.

Article 19 Cases, not provided for

In cases where this agreement does not provide, the rector of the home university shall decide.

Co-operation Agreement Joint Doctorate between

[for each partner]:

The University <name>,
represented by <name>

and

Stichting Katholieke Universiteit, more particularly Radboud University Nijmegen,
represented by
prof. dr. S.C.J.J. Kortmann, Rector Magnificus

and

Mr. /Mrs. <first name> <name>,
[for candidates from Radboud University Nijmegen: <name Research Institute>]
doctoral candidate

Place:

Date:

Mr./Ms. ...<name candidate>,

Doctoral candidate

.....

Co-operation Agreement Joint Doctorate between

[for each partner]:

The University <name>,
represented by <name>

and

Stichting Katholieke Universiteit, more particularly Radboud University Nijmegen,
represented by
prof. dr. S.C.J.J. Kortmann, Rector Magnificus

and

Mr. /Mrs. <first name> <name>,
[for candidates from Radboud University Nijmegen: <name Research Institute>]
doctoral candidate

Place:

Date:

[representative partner institution]

<name>

<position><name institution>

.....

Co-operation Agreement Joint Doctorate between

[for each partner]:

The University <name>,
represented by <name>

and

Stichting Katholieke Universiteit, more particularly Radboud University Nijmegen,
represented by
prof. dr. S.C.J.J. Kortmann, Rector Magnificus

and

Mr. /Mrs. <first name> <name>,
[for candidates from Radboud University Nijmegen: <name Research Institute>]
doctoral candidate

Place:

Date:

Prof. dr. S.C.J.J. Kortmann,

Rector Magnificus Radboud University Nijmegen

.....

Co-operation Agreement Joint Doctorate between

[for each partner]:

The University <name>,
represented by <name>

and

Stichting Katholieke Universiteit, more particularly Radboud University Nijmegen,
represented by
prof. dr. S.C.J.J. Kortmann, Rector Magnificus

and

Mr. /Mrs. <first name> <name>,
[for candidates from Radboud University Nijmegen: <name Research Institute>]
doctoral candidate

SEEN AND AGREED

Place:

Date:

<name>,

supervisor <name partner institution>

.....

Co-operation Agreement Joint Doctorate between

[for each partner]:

The University <name>,
represented by <name>

and

Stichting Katholieke Universiteit, more particularly Radboud University Nijmegen,
represented by
prof. dr. S.C.J.J. Kortmann, Rector Magnificus

and

Mr. /Mrs. <first name> <name>,
[for candidates from Radboud University Nijmegen: <name Research Institute>]
doctoral candidate

SEEN AND AGREED

Place:

Date:

<name>,

supervisor <name partner institution>

.....

Annex C.2 - Bonn University Regulations

Regulations from Bonn University, Faculty of Philosophy. We here reproduce §22 defining the rules for joint degrees from the university regulations:



Rheinische
Friedrich-Wilhelms-
Universität Bonn

Amtliche Bekanntmachungen

Inhalt:

Neufassung der Promotionsordnung der
Philosophischen Fakultät der Rheinischen
Friedrich-Wilhelms-Universität Bonn

Vom 04. Juni 2010

40. Jahrgang
Nr. 08
10. Juni 2010

Herausgeber:
Der Rektor der
Rheinischen Friedrich-Wilhelms-Universität Bonn,
Regina-Pacis Weg 3, 53113 Bonn

IV. Gemeinsame Promotion

§ 22

Gemeinsame Promotion mit einer ausländischen Hochschule

- (1) Die Philosophische Fakultät der Universität Bonn kann zusammen mit einer wissenschaftlichen Hochschule des Auslands in einem gemeinsam durchgeführten Promotionsverfahren den Grad Doktor der Philosophie („Doctor philosophiae“) verleihen. Der Doktorgrad wird im Zusammenhang mit dem Namen in der abgekürzten Form „Dr. phil.“ geführt. Dieses Verfahren setzt abweichend von § 7 Abs. 4 eine gemeinsame Betreuung durch je einen Betreuer und ein jeweils mindestens einsemestriges Promotionsstudium an den beiden Hochschulen voraus. Insbesondere sind die Zulassungsvoraussetzungen zur Qualifikationsphase sowie zum Prüfungsverfahren beider Hochschulen zu erfüllen. (Beispiel: Cotutelle)
- (2) Zum Zweck eines gemeinsamen Verfahrens ist zwischen der Universität Bonn und der Philosophischen Fakultät sowie der ausländischen Hochschule eine Vereinbarung zu treffen, die der Promotionsausschuß genehmigen muß. Die

Vereinbarung regelt ein gemeinsam von den zuständigen Organen der ausländischen Hochschule und dem Promotionsausschuß geleitetes Promotionsverfahren, insbesondere eine gemeinsame Prüfung, Bewertung und Benotung der Prüfungsleistungen der §§ 12, 14 und 16 durch eine gemeinsame Prüfungskommission.

(3) Die Vereinbarung kann Ausnahmen zu den Vorschriften vorsehen, z.B.:

- Zusammensetzung und Zuständigkeit der Prüfungskommission nach § 4 Abs. 1,
- obligatorische Qualifikationsphase nach § 6 Abs. 1,
- Erstellung der Gutachten nach § 12 Abs. 1-3,
- Einsichtnahme in die Gutachten
- Sitzungsteilnahme bei Einspruch nach § 12 Abs. 9 letzter Satz,
- Form und Dauer der mündlichen Prüfungen nach § 13 Abs. 4-8,
- Sprache der Urkunde nach § 19 Abs. 2,

Der Promotionsausschuß kann in begründeten Fällen weitere Ausnahmen zulassen.

(4) Die Dissertation kann entweder in deutscher oder englischer Sprache oder abweichend von § 11 Abs.2 Satz 2 in der Landessprache der Partnereinrichtung vorgelegt werden. § 11 Abs. 2 letzter Satz gilt entsprechend.

(5) Die Beurteilung der Prüfungsleistungen erfolgt sowohl nach dieser Ordnung als auch nach dem für die beteiligte ausländische Einrichtung geltenden Recht.

(6) Die Pflicht zur Veröffentlichung der Dissertation und die Rechte an ihr richten sich nach den Vorschriften beider Hochschulen.

(7) Die Urkunde enthält die Verleihung eines einzigen Doktorgrades, der in der von der ausländischen Hochschule verliehenen wie in der von der Philosophischen Fakultät verliehenen Form geführt werden darf. Diese Beurkundung erfolgt in einer gemeinsamen lateinischen Urkunde, der Übersetzungen in den jeweiligen Landessprachen und ggf. eine englische Übersetzung beigegeben werden. Sie wird von dem zuständigen Vertreter der ausländischen Hochschule und dem Dekan der Philosophischen Fakultät der Universität Bonn unterschrieben und trägt beider Hochschulen Siegel.

(8) Über die Möglichkeit der Vereinbarung gemeinsamer Promotionsverfahren gemäß Abs.1-7 hinaus kann die Fakultät auf Antrag genehmigen, daß ein Promotionsverfahren gemeinsam mit einer auswärtigen Hochschule bzw. mit einer von deren Fakultäten durchgeführt wird. In diesem Fall werden bis zu zwei zusätzliche Prüfer aus der betreffenden Fakultät dieser Hochschule bestellt.

**Annex C.3 - Norwegian University of Science and Technology
on double and joint degrees
Regulations, cotutelle agreement and guidelines**

Regulations concerning the philosophiae doctor degree (PhD) at the Norwegian University of Science and Technology (NTNU)

Passed by the Board of NTNU on 7 December 2005 in accordance with the Act of 1 April 2005 no. 15 relating to Universities and University Colleges § 3-3 and 3-9 no. 7.
The following clauses in the Degree Regulations at NTNU, passed by the Board on 7 December 2005 apply to doctoral education: §§ 2, 10-12, 23 no. 3, 24-30, 32-40, 42 and 44. Changes passed by the Board on 28 March 2007, 27 February 2008 and 4 December 2008.

§ 1 Scope and extent of the regulations

These regulations apply to education at doctoral level that leads to the philosophiae doctor degree (PhD) at the Norwegian University of Science and Technology (NTNU).

The regulations stipulate the rules for admission, doctoral work, and completion of the PhD degree at NTNU.

§ 2. Objectives of the PhD education programme

The PhD education programme has the objective of training candidates to be independent researchers who can work at an international level in cooperation with Norwegian and international research groups.

The PhD education programme has the objective of meeting the current and future requirements for research, development, supervision and dissemination within universities, other public institutions, private-sector institutions, enterprises and organizations.

§ 3. PhD Programmes

The PhD education programme requires that the candidates take the PhD Programmes that are offered by the faculties or scientific/interdisciplinary networks.

The Rector is to approve each PhD Programme. When the Rector approves a PhD Programme, he/she is to stipulate which faculty has responsibility for the administration of that PhD Programme. A PhD Programme can be established in cooperation with Norwegian or international research institutions.

All PhD Programmes are to be presented in a course catalogue for the whole of NTNU. The faculty charged with the administration of the PhD Programme is to approve the curriculum and the description of courses.

§ 3a. Joint degrees and cotutelle

If there is an agreement concerning joint degrees or cotutelle (cooperation in joint supervision) with universities outside Norway, the Rector is empowered to grant exemption from these regulations.

Such an agreement is as a minimum to cover enrolment, funding, academic training, supervision, residency requirements at the institutions, reporting requirements, the language and structure of the thesis, its evaluation, the award of the degree, the issue of the certificate and the ownership of intellectual property rights to the results. The agreement is to be signed by the Rector.

The PhD education programme at the cooperating institution must have a nominal duration of three years. The candidate can be enrolled at both institutions. It is a condition that the whole of the thesis and its appendices are to be part of the public domain.

Ø Addition to the regulations dated 4 December 2008 no. 1389.

COTUTELLE AGREEMENT

This Agreement sets out the guidelines for co-operation between the Norwegian University of Science and Technology (NTNU) and

institution _____

represented by:

Name, Rector, NTNU _____

and

Name, institution _____

These two institutions shall co-operate in respect of the doctoral degree training for

Name, candidate _____

1. Admission

It is a condition that the doctoral degree candidate satisfies the admission requirement at each of the two institutions and has been/will be admitted to an approved doctoral degree programme at both institutions.

Name, candidate _____ has been admitted to the doctoral training programme at _____ (faculty, NTNU) by decision of xx Month year by the _____ (faculty, NTNU) and to the programme for _____ (institution) by decision of xx Month year by the _____

2. Funding

The candidate's doctoral education is financed as follows:

3. Organized academic training

The candidate's programme (project, theoretical syllabus etc) shall satisfy the regulations/doctoral degree programme of both institutions.

4. Title of the dissertation

The two institutions approve a joint arrangement for a doctoral degree and a joint doctoral dissertation when the latter shall be defended at a disputation. The title of the dissertation to be prepared is:

5. Registration

The doctoral degree candidate is to be registered at the two institutions for the following period of agreement:

from _____ to _____

It shall be possible to complete the research work within the period of agreement, of which a net period of 3 years is dedicated to the candidate's doctoral degree training. Only exceptionally may the duration be prolonged. This may be done only at the request of both the principal supervisors, and provided the two institutions are in favour thereof. Such a request should be made 3 months before the expiry of the period of the agreement. The decision is to be formulated in an appendix to the present Agreement.

6. Supervisors

The candidate shall have at least one supervisor at each institution. Both supervisors are responsible for the progress of the doctoral degree work.

From NTNU:

Name, supervisor _____

is the principal supervisor.

From institution:

Name, supervisor _____

is the joint supervisor.

The supervisors undertake to perform joint exercise of their advisory function in respect of the doctoral degree candidate with the current regulations at each institution. They also undertake to consult each other regularly concerning the progress of the research work.

7. Residency and research periods at the institutions

The doctoral degree candidate has made plans to spend time at two institutions in the following manner:

Institution, from, to _____

Institution, from, to _____

Institution, from, to _____

8. Work space

The candidate is entitled to a work space at both institutions in those periods when he/she is present there.

9. Reporting

The candidate and supervisors shall deliver separate annual reports on progress to both institutions.

10. Dissertation

The dissertation shall be written and defended in English, or another language both institutions agree upon.

The dissertation form is _____

The dissertation shall bear the imprint of the logo of both institutions and the cotutelle relationship shall be clear from the cover/title page of the dissertation.

11. Public dissertation

Both institutions take cognizance of the fact that no restrictions may be placed on the making public and publishing of the results or of the dissertation.

Where the candidate is the sole author of the doctoral degree dissertation, he or she alone has the copyright to the work. Where the doctoral degree dissertation consists of a collection of articles and a summary, the candidate alone will have the copyright to those parts that are the result of his or her independent effort.

12. Use of the results

Both institutions have the right to use the results and the dissertation for the purposes of teaching and research activities.

Separate agreements shall be written for works that may lead to patents.

13. Appointment of an adjudication committee

The adjudication committee shall be appointed by _____. Taking account of the PhD regulations of both institutions, the committee shall consist of

The supervisors should not be members of the committee and should not be its administrators either. The committee shall work in accordance with the regulations applying at the institution at which the disputation is held.

14. Disputation

The dissertation shall be defended at a single disputation which is planned to take place at:

In connection with the disputation the regulations applying at the institution at which the disputation takes place shall normally be followed. Both supervisors must be present at the disputation.

Travelling and subsistence expenses relating to the disputation are to be covered by the institution at which the disputation takes place.

15. Degree

The dissertation is subject to the approval of both institutions which undertake to confer the Degree of

Philosophiae Doctor (PhD) at the Norwegian University of Science and Technology, and degree, institution _____

Both degree titles shall be explicitly mentioned in the report submitted from the disputation.

16. Diploma

Each of the two institutions will issue its own diploma. It shall be clear from the diploma and/or from a supplement that this is a cotutelle degree.

17. Financial compensation

Each institution is entitled to the financial compensation to which a doctoral degree gives rise in the home country.

Place and date

Place and date

Place and date

PhD candidate

principal supervisor
NTNU

joint supervisor
institution

Place and date

Place and date

Dean of the Faculty, NTNU

institution

Place and date

Place and date

Rector, NTNU

institution

Guidelines for cotutelle agreements (joint supervision) and joint degrees at NTNU

NTNU's board of directors has determined guidelines for cotutelle agreements and joint degrees, cf. S-case 83/08, 4 December 2008.

"Such an agreement is as a minimum to cover enrolment, funding, academic training, supervision, residency requirements at the institutions, reporting requirements, the language and structure of the thesis, its evaluation, the award of the degree, the issue of the certificate and the ownership of intellectual property rights to the results."

The PhD training must have a scope of three years of normal study time, and the candidate must be enrolled in both institutions. It is a requirement that the entire dissertation and its attachments are made public.

Guidelines

1. NTNU may enter into agreements on cotutelle cooperation on the PhD level with universities abroad.
2. The agreement must be signed by the two supervisors, the Dean, the PhD candidate and the Rector.
3. The candidate must be enrolled in both institutions. The academic basis for enrolment must be a Master's degree or similar.
4. The PhD training must have a scope of three years of normal studies.
5. The candidate must have at least one supervisor at each institution.
6. The training part must satisfy the requirements of both institutions.
7. The candidate must have a period of stay at both institutions. The agreement should specify when the candidate is to stay at each institution.
8. The candidate must have a place to work, access to laboratory facilities and other infrastructure at each institution.
9. The dissertation must have the logo of both institutions, and the cooperation agreement must be specified.
10. The dissertation and its attachment must be made public.
11. The agreement must regulate the composition of the assessment committee.
12. For the public presentation of the dissertation, the rules that are in force at the institution where the presentation is to be given must be complied with.
13. The candidate shall receive a diploma from each institution.
14. Both institutions shall have the right to use the dissertation and the results in their education, training and research.

The guidelines apply in the same way to joint degrees where a number of institutions agree to establish a joint doctoral degree programme. With joint degrees, the candidate may receive a diploma from each institution or a joint diploma.

5. Practical matters – procedures for entering into agreements

The following procedures must be complied with when making agreements on joint degrees or joint supervision (cotutelle):

1. Academic communities intending to enter into agreements on joint degrees or joint supervision (cotutelle) must contact their administration (dean, head of department) to ensure they have the administration's support with respect to entering into a cooperation agreement with the institution in question.
2. After receiving positive confirmation from the administration, negotiations are then initiated by the academic communities. The academic community is urged to contact the Department of Academic Affairs early in the process to obtain advice and guidance.

Contact persons at the Department of Academic Affairs:

Advisor Jon Inge Resell, tel.: +47 73595259 , e-mail: jon.resell@ntnu.no.

Legal consultant Anne Marie Snekvik, tel.: +47 73595294 e-mail: anne.snekvik@ntnu.no.

3. One of the institution's standard agreement templates must be used, but both institutions' cooperation requirements must be satisfied.
4. When the agreement has been drawn up, the faculty sends it together with the necessary information to the Department of Academic Affairs, which presents the agreement and the faculty's information to the Rector. The Department of Academic Affairs also submits a brief statement on whether the agreement is in accordance with NTNU's guidelines.
5. The Rector assesses whether the agreement is in accordance with the university's policy and signs the agreement if it is. The Rector may be advised by the Committee of Education or the Dean's Meeting if this is deemed necessary.

6. The Department of Academic Affairs returns the agreement to the Faculty. The Faculty files the agreement when it has been signed by all the parties, and sends a copy of the signed agreement to the Department of Academic Affairs.
7. The Department of Academic Affairs reports all agreements on joint degrees to NOKUT (Norwegian Agency for Quality Assurance in Education).

The Department of Academic Affairs has prepared a template for joint supervision (cotutelle agreement). This can be used as the point of departure for negotiations on cooperation with another institution.

Annex C.4 – Seoul National University Regulations



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ERASMUS MUNDUS

Application Form

ERASMUS MUNDUS 2012 Call for proposals

Joint Master Courses / Joint Doctorate Programmes

Before you begin completing this eform:

- Try the test eForm. This is a very brief eForm to help you become familiar with how the fields and tables work and to test that your software and internet connection allow an application to be submitted.
- Check that you have the latest available version of the eForm. In the event of a significant eForm problem arising, the Agency may decide to publish an updated i.e. corrected version of the eForm. Please check to see if a later version is available and to see details of any problems that have arisen and their impact.

Click on the following link to go to the webpage to try the test eForm and to check for the latest version of the eForm:

http://eacea.ec.europa.eu/eforms/index_en.php

Programme	ERASMUS MUNDUS	
Sub-programme *:	Action 1 Erasmus Mundus Joint Programmes	
Programme guide / Call for proposals	EACEA/42/11	
Action *:	EMJD	
Sub-action *:	N/A	
Deadline for submission	30/04/2012	12:00 midday (Brussels time)
Project title *:	The Cognitive Connectome	
Project acronym *:	COGTOME	
Language used to complete the form *:	English	

YOU MUST COMPLETE ALL FIELDS ON THIS FIRST PAGE BEFORE COMPLETING ANY OTHER PARTS OF THE FORM. SELECTIONS YOU MAKE ON THIS FIRST PAGE, DICTATE THE APPEARANCE AND BEHAVIOUR OF THE REST OF THE FORM.

Submission number:
00000000

Validate form



Part A. Identification of the applicant and if applicable other organisation(s) participating in the project.

Parts A and B must be completed separately by each organisation participating in the project.

A.1 Organisation

Partner number	P1	
Role in the application	Applicant Organisation	
Full name of the organisation * :	Radboud University Nijmegen	
Full name of the organisation in latin characters		
Acronym * :	RU	
Erasmus University Charter number	28958-IC-1-2007-1-NL-ERASMUS-EUCX-1	
Department / Faculty	Donders Institute	
Registered address		
Street * :		Number
Comeniuslaan		4
Post code * :	Town * :	
6525HP	Nijmegen	
Country * :	Region * :	
NETHERLANDS	Gelderland	
Internet address:	http://www.ru.nl	
Telephone 1 * :	Telephone 2	Fax
0031243616161		

**A.2 Person responsible for the management of the application (contact person)**

Title * : Family name * : First name * :
Dr. Jensen Ole

Role in the organisation * : E-mail address * :
Principal Investigator ole.jensen@donders.ru.nl

Check this box if the address is different from
the address provided in section A.1

Address

Street * : Number
Kapittelweg 29

Post code * : Town * :
6525EN Nijmegen

Country * : Region * :
NETHERLANDS Gelderland

Telephone 1 * : Telephone 2 Fax
00312436109884 0031243610989

Check this box if the legal representative is different from the person
responsible for the management

**A.3 Person authorised to represent the organisation in legally binding agreements
(legal representative)**

Title * : Family name * : First name * :
Mr Reincke Wilfried

E-mail * :
w.reincke@mso.ru.nl



European Commission

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ERASMUS MUNDUS

Role in the organisation * :

Strategy and Development

Check this box if the address is different from
the address provided in section A.1

Address:

Street * :

Number

Comeniuslaan

4

Post code * :

Town * :

6525HP

Nijmegen

Country * :

Region * :

NETHERLANDS

Gelderland

Submission number:
000000000

Validate form



Part B. Organisation and activities

B.1 Structure

Status * : Public

Type of organisation * : University or higher education institution (tertiary level)

B.2 Aims and activities of the organisation*

Please provide a short presentation of your organisation (key activities, affiliations etc.) relating to the domain covered by the project. (Max. 1000 characters)

The Donders Institute (DI) for Brain, Cognition and Behaviour at Radboud University Nijmegen is a leading neuroscience research institution with a strong international reputation. It is composed of three centers (Center for Cognition, Center for Cognitive Neuroimaging and Center for Neuroscience) including over 500 researchers in total. To ensure collaborations amongst the centers, four research themes have been formed. This promotes active exchange of ideas and provides a rich intellectual environment for developing innovative research. The DI has an enterprising collaborative spirit and an excellent track record on research on human cognition. As a result the DI has a excellent international reputation as evidenced by a high research output published in leading journals.

Please describe the role of the organisation in the project. (Max. 1000 characters)

In particular the expertise on advanced brain imaging will complement and benefit the COGNOTOME consortium. The DI has state-of-the-art brain imaging tools dedicated to research including three magnetic resonance (MR) systems (1.5 T, 3 T and 7), a transcranial magnetic stimulation (TMS) laboratory, magnetoencephalography (MEG) system and several electroencephalography laboratories. Cross-modal studies are increasingly used (e.g. MR combined with EEG or MEG) in the investigations. These tools allowing for whole-head recordings of human brain activity are applied to address neuroscience questions by numerous research groups with diverse interests on cognition. This research is complemented by method development including recording techniques and advanced data analysis. Recently 'Brain networks and neuronal communication' was identified as a core research theme and work on this topic is now integrated amongst researchers across the three centers.

B.3 Other EU grants

Please list the projects for which the organisation, or the department responsible for the management of this application, has received financial support from the EU Programme during the last three years.

Programme or initiative	Reference number	Beneficiary Organisation	Title of the Project	
ERC Starting	283567	Donders Institute	Perception and Action in Accelerating Environments	X



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Programme or initiative	Reference number	Beneficiary Organisation	Title of the Project	
ERC Starting	261177	Donders Institute	Recontext	X
ERC Starting	204643-1	Radboud University	Spatial Memory	X
ERC Advanced	268800	Donders Institute	Neuroschema	X
FP7-HEALTH-2007-A	200728	Donders Institute	Brainsync	X
FP7-PEOPLE-2009-RG	256456	Donders Institute	Visual Attention	X
FP7-PEOPLE-2010-NIGHT	265742	Radboud University	Brainnight	X
FP7-HEALTH-2009-COLLABORA	241959	Donders Institute	PERS	X
FP7-HEALTH-2011-COLLABORA	278948	Donders Institute	TACTICS	X
FP7-HEALTH-2010-COLLABORA	260576	Donders Institute	ADDUCE	X
FP7-HEALTH-2010-COLLABORA	261411	Donders Institute	STOP	X
IMI-2011-3rd Call		Donders Institute	EU-AIMS	X
FP7-PEOPLE-2010-RG		Donders Institute	***TITLE?***	X
FP7-PEOPLE-2010-RG	277091	Donders Institute	MERE GLU	X
KP7	216886	Donders Institute	PASCAL 2	X
KP7 STREP	FP7-ICT-2009-C	Donders Institute	SUMO	X
KP7	270327	Donders Institute	CompLACS	X

Add a project

Please list other grant applications submitted by your organisation, or the department responsible, for this project proposal. For each grant application, please mention the EU Programme concerned and the amount requested.

Programme concerned	Amount requested
---------------------	------------------

Submission number:
000000000

Validate form



European Commission



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ERASMUS MUNDUS

Add a project

Submission number:
00000000

Validate form

<http://eacea.ec.europa.eu>

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Part A. Identification of the applicant and if applicable other organisation(s) participating in the project.

Parts A and B must be completed separately by each organisation participating in the project.

A.1 Organisation



Partner number P2

Role in the application * : Partner

Full name of the organisation * : Norwegian University of Science and Technology

Full name of the organisation in latin characters

Acronym * : NTNU

Erasmus University Charter number 29704-IC-1-2007-1-NO-ERASMUS-EUCX-1

Department / Faculty The Kavli Institute for Systems Neurosci

Registered address

Street * : _____ Number _____

Post code * : _____ Town * : _____

_____ Trondheim

Country * : _____ Region * : _____

NORWAY Trøndelag

Internet address: http://www.ntnu.no/cbm/

Telephone 1 * : _____ Telephone 2 _____ Fax _____



A.2 Person responsible for the management of the application (contact person)

Title * : Family name * : First name * :
 Dr, Roudi Rashtabadi Yasser

Role in the organisation * : E-mail address * :
 Principal investigator yasser.roudi@ntnu.no

Check this box if the address is different from the address provided in section A.1

Address

Street * : Number
 Olav Kyrres Street 9

Post code * : Town * :
 7030 Trondheim

Country * : Region * :
 NORWAY Trøndelag

Telephone 1 * : Telephone 2 Fax
 +4773598242



Part B. Organisation and activities

B.1 Structure

Status * : Public

Type of organisation * : University or higher education institution (tertiary level)

B.2 Aims and activities of the organisation*

Please provide a short presentation of your organisation (key activities, affiliations etc.) relating to the domain covered by the project. (Max. 1000 characters)

A core area of expertise at the Kavli Institute for Systems Neuroscience (KI)/Norwegian Brain Centre (NBC), is the study of memory function and spatial navigation in mammals. Using a variety of modern techniques ranging from in vivo and in vitro recording tools to genetic and imaging tools, the KI/NBC has an expertise in studying the neural circuitry involved in intact memory functions, as well as the neurobiology of memory disorders in animal models and human subjects. The centre was established at the Norwegian University of Science and Technology (NTNU) in 2002. In 2007, the centre was selected as one of 15 prestigious Kavli Institutes - the only European neuroscience institute to date. The research groups focus on animal electrophysiology, neuroanatomy and computational modellings/data analysis. KI/NBC has an excellent record in training and research in the study of neurobiology of memory and is involved in several collaborating EU research and training frameworks.

Please describe the role of the organisation in the project. (Max. 1000 characters)

The major contribution of KI/NBC to the COGNOTOME consortium will be through its research and training facilities focusing on systems neuroscience in the healthy and diseased brain. With 24 new recording labs with one in vivo recording system in each, in vivo and in vitro optogenetic facilities, modern functional neuroanatomy facilities, and human and animal MRI facilities, allowing high resolution structural, functional and metabolic studies, KI/NBC dedicates a state-of-the-art repertoire of tools and training opportunities for systems neuroscience to the consortium. These are complemented by a unique computational infrastructure involving two national supercomputer facilities, as well as a new high speed parallel computing facility within the KI/NBC (to be established within X months from a Norwegian research council funding) allowing for developing and using modern data analysis techniques.

B.3 Other EU grants

Please list the projects for which the organisation, or the department responsible for the management of this application, has received financial support from the EU Programme during the last three years.

Programme or initiative	Reference number	Beneficiary Organisation	Title of the Project	
FP7; Collab. projects	HEALTH-2007-2.2.1-2	Kavli/NTNU	Coding in neuronal assemblies	X



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Programme or initiative	Reference number	Beneficiary Organisation	Title of the Project	
ERC Advanced Instigator		Kavli/NTNU (E. Moser)	Neural circuits for space representation in the mammalian cortex	X
ERC Advanced Instigator		Kavli/NTNU (M.B. Moser)	Neural circuits for memory formation in the hippocampus	X
Marie Curie ITN		Kavli/NTNU	NETADIS: Statistical Mechanics of Networks Across Disciplines	X
				X
Add a project				

Please list other grant applications submitted by your organisation, or the department responsible, for this project proposal. For each grant application, please mention the EU Programme concerned and the amount requested.

Programme concerned	Amount requested	
		X
Add a project		

Submission number:
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Part A. Identification of the applicant and if applicable other organisation(s) participating in the project.

Parts A and B must be completed separately by each organisation participating in the project.

A.1 Organisation

Partner number

P3



Role in the application * :

Partner

Full name of the organisation * :

Deutsches Zentrum für Neurodegenerative Erkrankungen

Full name of the organisation in latin characters

Acronym * :

DZNE

Erasmus University Charter number

Department / Faculty

Helmholtz-Gemeinschaft

Registered address

Street * :

Number

Holbeinstr.

13-15

Post code * :

Town * :

53175

Bonn

Country * :

Region * :

GERMANY

Köln

Internet address:

<http://www.dzne.de/>

Telephone 1 * :

Telephone 2

Fax

+49228433020



A.2 Person responsible for the management of the application (contact person)

Title * :	Family name * :	First name * :
Ms	Schoen	Annette

Role in the organisation * :	E-mail address * :
Organizer	annette.schoen@dzne.de

Check this box if the address is different from the address provided in section A.1

Address

Street * :	Number
Holbeinstr.	13-15

Post code * :	Town * :
53175	Bonn

Country * :	Region * :
GERMANY	Köln

Telephone 1 * :	Telephone 2	Fax
+49-228-43302-122		+49-228-43302-169



Part B. Organisation and activities

B.1 Structure

Status * : Public

Type of organisation * : University or higher education institution (tertiary level)

B.2 Aims and activities of the organisation*

Please provide a short presentation of your organisation (key activities, affiliations etc.) relating to the domain covered by the project. (Max. 1000 characters)

The DZNE, Helmholtz Association research institute studying neurodegenerative diseases. It was founded on 3 April 2009 to meet the challenge posed by the increasing burden of neurodegenerative disorders in the ageing society. It pursues an integrated research approach which combines basic and clinical research as well as patient care research and aspects of Public Health. The mission is to understand the causes of and risk factors for neurodegenerative disorders and to explore the pathological basis and potential cure/prevention. It closely collaborates with its partner Universities/hospitals. The research includes the major neurodegenerative diseases, i.e. Alzheimer's and other dementias and Parkinson's disease, but also rare conditions such as prion or Huntington's disease. One core area of DZNE research is to study what functional changes in neurons and networks of neurons occur in these disorders, how they translate to functional cognitive impairments, and how they can be treated.

Please describe the role of the organisation in the project. (Max. 1000 characters)

The DZNE will constitute an important extension of the consortium in two major ways. Firstly, the DZNE will provide expertise in the field of the molecular, cellular and network alterations in neurodegenerative disorders, both in models of these disorders and in humans. Secondly, the DZNE has developed a large number of cutting-edge technologies aiming to understand the precise changes in complex neuronal connectivity in neurodegenerative disorders. These include novel in-vivo and in-vitro multiphoton imaging and photomanipulation techniques, combined with molecular biological and genetic techniques. A major interest of DZNE groups is to understand the precise relationship of neuronal activity to behavior, and how disruption of this relationship gives rise to cognitive dysfunction.

B.3 Other EU grants

Please list the projects for which the organisation, or the department responsible for the management of this application, has received financial support from the EU Programme during the last three years.

Programme or initiative	Reference number	Beneficiary Organisation	Title of the Project	
EU/FP6	LSH-CT-2006-037315		"Functional Genomics and neurobiology, EPICURE	X

Submission number:
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Programme or initiative	Reference number	Beneficiary Organisation	Title of the Project	
ERA-NET NEURON			Development and advancement in methods and technologies towards the understanding of brain diseases	X
EU FP7	NEUROGLIA 202167		Molecular and cellular investigation of neuron-astroglia interactions: Understanding brain function and dysfunction	X
EU FP6 Mobility	SINGLE HUMAN NEURONS 40445		Invariant neurons for visual representation in the human medial temporal lobe: A generalized version of rodent place cells?	X
Joint programming on Neuro		DZNE	BIOMARKAPD – Biomarker for Alzheimer’s and Parkinson’s disease	X
FP7 Marie Curie CIG	PCIG10_GA-2011-3 04108	DZNE	Title Gene-Environment interactions n the Etiopathogenesis of Parkinson’s Disease: Role of Inflammation	X
Add a project				

Please list other grant applications submitted by your organisation, or the department responsible, for this project proposal. For each grant application, please mention the EU Programme concerned and the amount requested.

Programme concerned	Amount requested
Add a project	



Part A. Identification of the applicant and if applicable other organisation(s) participating in the project.

Parts A and B must be completed separately by each organisation participating in the project.

A.1 Organisation

Partner number

P4

X

Role in the application * :

Partner

Full name of the organisation * :

University of Bonn Medical Faculty

Full name of the organisation in latin characters

Acronym * :

UBMC

Erasmus University Charter number

29901-IC-1-2007-1-DE-ERASMUS-EUC-1 29901-IC-1-2007-1-DE-ERASMUS-EUCX-1

Department / Faculty

Neuroscience Center

Registered address

Street * :

Number

Regina-Pacis-Weg

3

Post code * :

Town * :

53113

Bonn

Country * :

Region * :

GERMANY

Köln

Internet address:

<http://www.meb.uni-bonn.de/neurosciences/>

Telephone 1 * :

Telephone 2

Fax

+4922828711837



A.2 Person responsible for the management of the application (contact person)

Title * : Family name * : First name * :
 Professor Beck Heinz

Role in the organisation * : E-mail address * :
 Professor Heinz.Beck@ukb.uni-bonn.de

Check this box if the address is different from the address provided in section A.1

Address

Street * : Number
 Sigmund-Freud Str. 25

Post code * : Town * :
 53105 Bonn

Country * : Region * :
 GERMANY Köln

Telephone 1 * : Telephone 2 Fax
 +492286885270



Part B. Organisation and activities

B.1 Structure

Status * : Public

Type of organisation * : University or higher education institution (tertiary level)

B.2 Aims and activities of the organisation*

Please provide a short presentation of your organisation (key activities, affiliations etc.) relating to the domain covered by the project. (Max. 1000 characters)

The center has established a large number research professorships, young researcher groups and new institutes that are devoted exclusively to basic research. These groups are embedded in a clinical research environment in close proximity or within the clinical neurological departments (Epileptology, Neuropathology, Neurosurgery, Neurology, Medical Psychology and Psychiatry). Research addresses the molecular and cellular underpinnings of cognitive processes, and their disturbances in neuropsychiatric disorders. Due to seamless integration of clinical and research institutes within the university, but also with associated institutes such as the DZNE, a very strong translational approach has been realized. The research environment is characterized by a strongly interdisciplinary and collaborative approach to scientific questions, as evidenced by the number of collaborative grants and projects.

Please describe the role of the organisation in the project. (Max. 1000 characters)

The Neuroscience Center at the University of Bonn Medical Faculty will together with DZNE form a node in the consortium. The centre will contribute organizational experience in PhD training and provide the PhD degrees through the relevant faculties at Bonn University. Scientifically, the center has together with the DZNE a strong focus on the basis of CNS disorders, and will be instrumental in extending the proposal in a translational direction. Bonn University houses the largest European center for epilepsy surgery, and the second largest world-wide, enabling to study the basis of cognition and its impairment in humans with electrophysiological and imaging techniques. The center is collaborating closely with the DZNE to develop our understanding of the mechanisms underlying impaired cognition in neurodegenerative disorders.

B.3 Other EU grants

Please list the projects for which the organisation, or the department responsible for the management of this application, has received financial support from the EU Programme during the last three years.

Programme or initiative	Reference number	Beneficiary Organisation	Title of the Project
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Programme or initiative	Reference number	Beneficiary Organisation	Title of the Project
FP7 (European-Russian)	F4-2009-242257	Bonn University	Genomic variations underlying common neuropsychiatric diseases and disease-related cognitive traits in different human populations (Alzheimer's Disease, Alcoholism, Memory, Schizophrenia, ADAMS)
Add a project			

Please list other grant applications submitted by your organisation, or the department responsible, for this project proposal. For each grant application, please mention the EU Programme concerned and the amount requested.

Programme concerned	Amount requested
Add a project	

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Part A. Identification of the applicant and if applicable other organisation(s) participating in the project.

Parts A and B must be completed separately by each organisation participating in the project.

A.1 Organisation



Partner number

P5

Role in the application * :

Associated partner

Full name of the organisation * :

National University, College of Medicine

Full name of the organisation in latin characters

Acronym * :

SNUCM

Erasmus University Charter number

Department / Faculty

Registered address

Street * :

Number

Daehak-Ro Jongno-Gu

101

Post code * :

Town * :

110-744

Seoul

Country * :

Region * :

Korea, Republic Of

N/A

Internet address:

http://medicine.snu.ac.kr

Telephone 1 * :

Telephone 2

Fax

+82-2-2072-2352

+82-2-2072-0806



A.2 Person responsible for the management of the application (contact person)

Title * : Family name * : First name * :
Department chair Chung Chun Kee

Role in the organisation * : E-mail address * :
Organizer of the Seoul Team/PI chungc@snu.ac.kr

Check this box if the address is different from the address provided in section A.1

Address

Street * : Number
Daehak-Ro Jongno-Gu 101

Post code * : Town * :
110-744 Seoul

Country * : Region * :
Korea, Republic Of N/A

Telephone 1 * : Telephone 2 Fax
+82-2-2072-2352

Part B. Organisation and activities

B.1 Structure

Status* : Public

Type of organisation* : University or higher education institution (tertiary level)

B.2 Aims and activities of the organisation*

Please provide a short presentation of your organisation (key activities, affiliations etc.) relating to the domain covered by the project. (Max. 1000 characters)

The SNUCM has been the nation's best institution for medical education, research, and clinical performance since its establishment 60 years ago. The talented students who came to SNUMC passionately absorbed the knowledge and experience with full commitment as a doctor and researcher who deals with the quality of human lives, and the graduates who have gone through the scholastically-dedicated teachings and trainings are proving as the leaders of the society in such diverse fields as medical education, research, treatment, and health administration. The teaching staffs and research teams of this school are not only playing the leading roles for the medical advancement but also showing outstanding capabilities in global academic research activities. On such firm, comprehensive academic basis encompassing education, research, treatment, and community service, the SNUCM is aiming at becoming the globally renowned medical center for advanced research and education in the 21st century.

Please describe the role of the organisation in the project. (Max. 1000 characters)

The SNUCM has been the nation's best institution for medical education, research, and clinical performance since its establishment 60 years ago. The talented students who came to SNUMC passionately absorbed the knowledge and experience with full commitment as a doctor and researcher who deals with the quality of human lives, and the graduates who have gone through the scholastically-dedicated teachings and trainings are proving as the leaders of the society in such diverse fields as medical education, research, treatment, and health administration. The teaching staffs and research teams of this school are not only playing the leading roles for the medical advancement but also showing outstanding capabilities in global academic research activities. On such firm, comprehensive academic basis encompassing education, research, treatment, and community service, the SNUCM is aiming at becoming the globally renowned medical center for advanced research and education in the 21st century.

B.3 Other EU grants

Please list the projects for which the organisation, or the department responsible for the management of this application, has received financial support from the EU Programme during the last three years.

Programme or initiative	Reference number	Beneficiary Organisation	Title of the Project
Add a project			

Submission number:
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Please list other grant applications submitted by your organisation, or the department responsible, for this project proposal. For each grant application, please mention the EU Programme concerned and the amount requested.

Programme concerned	Amount requested
Add a project	

Number of organisations to add *: 1

Add organisation(s)

List of partner organisations

Partner no	Role	Organisation Name	City	Country
P1	Applicant Organisation	Radboud University Nijmegen	Nijmegen	NETHERLANDS
P2	Partner	Norwegian University of Science and Technology	Trondheim	NORWAY
P3	Partner	Deutsches Zentrum für Neurodegenerative Erkrankungen	Bonn	GERMANY
P4	Partner	University of Bonn Medical Faculty	Bonn	GERMANY
P5	Associated partner	National University, College of Medicine	Seoul	Korea, Republic Of

Submission number:
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Part C. Description of the project

C.1 STATISTICAL DATA

The EMJD will last * : 4 years

The EMJD will be mainly laboratory based * : Yes

Doctoral candidates will be enrolled under * :

Employment contracts

Stipends

Is the EMJD directly linked to :

A running EMMC?

A Marie Curie Initial Training Network (ITN)?

Has this application been the subject of a proposal under previous EM calls for proposals? * : No

During their EMJD period, the candidates will visit at least * : 2 different countries.

The taught part of the EMJD will be provided in the following language(s) * :

Language to add

English

Add >>

Clear All

Clear Last

Estimated number of Doctoral candidates planned to be enrolled PER EDITION of the Joint programme :
applies to all doctorals candidates, with or without EM fellowship

EU Doctoral candidates * :

Third Country Doctoral candidates * :



C.2 THEMATIC FIELD

Main Area :

Level 1 * :

Science, Mathematics and Computing

Code

4

Level 2

Life science

Code

42

Clear Main Area

Second Area :

Level 1

Social sciences, Business and Law

Code

3

Level 2

Psychology

Code

311

Clear Second Area

Third Area :

Level 1

Health and Welfare

Code

7

Level 2

Psychiatry and clinical psychology

Code

7211

Clear Third Area

Validate form



C.3 SUMMARY DESCRIPTION OF THE PROJECT * (Max. 3000 characters)

Cognition is a complex research topic, where for instance perception, attention and memory interact in order to sustain adaptive behaviour in an ever-changing world. These processes rely on the brain acting as a network involving numerous brain areas that communicate in a flexible and dynamic way. Over the last few years there has been a strong emphasis on mapping the brain as a network, e.g. the Human Connectome Project. It is now crucial to uncover how the brain operates as a network to support cognition. Such knowledge is also essential for understanding neurological and psychiatric disorders. The goal of the COGTOME project is to strengthen the quality of cognitive neuroscience in Europe by embracing new technical and conceptual developments in the study of functional brain networks. That is, the COGTOME network aims to bridge the gap between what is currently common practice and recent state-of-the-art technical and conceptual developments. This not only requires the implementation of new techniques, standards and analysis protocols but also training the next generation of neuroscientists to fully exploit these developments. This will be achieved by courses and the exchange of students between leading groups on system, cognitive and clinical neuroscience. The emphasis will be on method development and characterization of the functional interactions between specific regions supporting cognitive processes – also in the context of neurogenerative diseases. The increased collaboration between the groups is expected to lead advancements beyond current practice by

- a) developing of a common framework that integrates new developments on network analysis of electrophysiological and brain imaging data
- b) contributing conceptual insights on functional connectivity supporting cognitive processes. This will be achieved by developing new data acquisition techniques and data analysis methods
- c) improved insight on neurogenerative disorders by characterizing connectivity changes that distinguishes healthy from diseased subjects

The COGNOTOME consortium will ensure the maintenance of the high quality of cognitive neuroscience in Europe and will provide the necessary training of future leaders in cognitive and clinical neuroscience. The strategic objectives of the joint PhD programme are to provide outstanding doctoral training by developing and disseminating new data acquisition techniques and data analysis methods. This will allow students to gain expertise on applying new techniques and analyses to resolve outstanding problems in cognitive and clinical neuroscience

These objectives will be reached through original and independent research by the PhD students of the COGTOME consortium. The COGTOME aims at establishing close links between the partner universities that will be sustainable after the period covered by this grant. This objective will be translated into action by means of organizing a joint doctoral program and by facilitating career development



Part D. Technical Capacity

D.1 Consortium experience of the area of joint programmes and the specific discipline(s) of the project

Provide a list of projects/activities implemented by the consortium organisations in relation with the proposal

Title	Duration	Funding	Programme	Partners involved

X

Add Project / Activity

D.2 Skills and expertise of key staff involved in the project

Summary of the relevant skills and experience, including where relevant a list of the (main) publications related to the domain of the project. Maximum 3 profiles per partner institution. (Maximum 750 characters for each profile)

Validate form



Organisation number

P1

Organisation name

Radboud University Nijmegen

Name of Key Person*	Summary of relevant skills and experience*	
Ole Jensen	Ole Jensen is a principal investigator at the Donders Institute for Brain, Cognition and Behaviour. He heads the research group 'Neuronal Oscillations' at the Centre for Cognitive Neuroimaging. His work focuses on linking oscillatory brain activity to neuronal processing and cognition: how oscillatory brain activity shapes the functional network of the working brain in the context of memory and attention. His group is primarily using MEG to investigate these questions but also animal data and multimodal techniques such as TMS-EEG and fMRI-EEG. He has successfully supervised 5 PhD students. Published papers: 92; citations: 4250; H-index: 36.	X
Guillen Fernandez	Guillén Fernández is director of the Donders Center for Neuroscience. He received full training in clinical neurology and cognitive neurosciences in Bonn, Magdeburg, and Stanford becoming principal investigator at the Donders Institute 2002. His area of research is human cognitive neuroscience in which he studies the brain basis of memory, emotion, and their interactions. He is particularly interested in how preexisting knowledge modulates encoding of new memories and their consolidation in a brain-wide network. He applies an interdisciplinary approach integrating cognitive neuroimaging, genetics, pharmacology and diverse clinical disciplines. He supervised twelve completed PhD projects. Published papers: 163, Citations: 3875; H-index: 33.	X
Arthur Willemsen	Arthur Willemsen is management director at the Donders Institute for Brain, Cognition and Behaviour. He got a Master in Business Administration at Twente University, worked as financial and supply chain manager in industry and has been working at the Donders Institute since the start of the institute in 2001. Over the past years, he gained ample experience in attracting, organizing and coordinating national and international collaborative grants. Furthermore, he has played a major role in the development of the Donders Graduate School for Cognitive Neuroscience.	X



Organisation number

P2

Organisation name

Norwegian University of Science and Technology

Name of Key Person*	Summary of relevant skills and experience*	
Edvard Moser	Professor of Neuroscience and the Director of the Kavli Institute for Systems Neuroscience and the Centre for the Biology of Memory at NTNU. Using electrophysiological single-unit and network recordings in behaving animals, combined with state-of-the-art molecular biology, he investigates how a variety of functional cell types in the entorhinal microcircuit contribute to representation of location, how the outputs of the circuit are used by memory networks in the hippocampus, and how episodic memories are separated from each other in hippocampal memory storage. Together with his colleagues he discovered grid cells in 2005. Published 71 papers; 6780 citations; H-index 41.	X
May-Britt Moser	Principal investigator at the Centre for the Biology of Memory. Her main interest is in understanding how the brain computes and processes information and how this results in cognitive behavior and experience. The combination of advanced lesion, anatomical and recording techniques has resulted in the discovery of grid cells in the entorhinal cortex. The discovery of grid cells was succeeded by identification of other functional cell types, including head direction cells, conjunctive cells and border cells and collectively the findings point to the entorhinal cortex as a hub for the brain network for self-motion. Nine students have completed their PhDs under her supervision. Published 62 papers; 6931 citations; H-index 37	X
Menno P. Witter	Professor in Neuroscience , Norwegian University of Science and Technology (NTNU). Has ample experience in organizing a large-scale graduate school. He was chairman of the educational board (1994-1999) and director of the Graduate School in Neurosciences, Amsterdam (1999-2006). Currently a member of the program board of the graduate program in Neuroscience at the NTNU and as per 1 January 2012 is the initiating director of the to be established graduate program for Neuroscience of the Norwegian Brain Center, in which NTNU in Trondheim and the University of Oslo have agreed to collaborate. Expert on functional neuroanatomy with a focus on the medial temporal lobe. Published 130 papers; 9492 citations; ; H-index: 51.	X

Submission number:
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Organisation number

P3

Organisation name

Deutsches Zentrum für Neurodegenerative Erkrankungen

Name of Key Person*	Summary of relevant skills and experience*	
Annetee Schoen		X
Thomas Klockgether		X
Monique M. B. Breteler	Director of Population Health Sciences at the DZNE. Professor of Population Health Sciences at the University Bonn. Professor of Epidemiology at Harvard School of Public Health. Established the Rhineland Study, a prospective cohort study of 30000 individuals that aims to identify preclinical biomarkers of neurodegenerative and neuropsychiatric diseases, and to investigate brain structure and function over the adult life course. Worked at Erasmus University Rotterdam until 2011 where she was the PI for neurological diseases of the Rotterdam Study and founded the Rotterdam Scan Study; an internationally leading population studies in the area of neurodegenerative diseases. Published papers: > 450, 26133 citations; H-index=87.	X

Organisation number

P4

Organisation name

University of Bonn Medical Faculty

Name of Key Person*	Summary of relevant skills and experience*	
Heinz Beck	Heinz Beck is a principal investigator at the Department of the Epileptology of the University of Bonn, and is associated with the German Center for Neurodegenerative Diseases DZNE in Bonn. He heads the Department of Experimental Epileptology and Cognition Research. His work focuses on examining neuronal dendritic integration, as well as dissecting the functional architecture of neuronal micronetwork motifs in the normal and diseased brain. His group is using in-vitro and in-vivo electrophysiology in combination with light based stimulation (optogenetics and multiphoton photoactivation) and ensemble imaging. He has supervised 6 PhD students and 9 medical students, and has currently 5 more PhD students. Published papers: 99;	X
Frank Jessen	Frank Jessen is Professor for clinical dementia research at the Department of Psychiatry at the University of Bonn, where he heads the clinical dementia research group. He is the psychiatric head of the interdisciplinary memory and dementia clinic (Klinisches Behandlungs- und Forschungszentrum für Neurodegenerative Erkrankungen, KBFZ) at the University Hospital. He is also an affiliate of the DZNE and the PI of the DZNE multicenter longitudinal study on cognition and dementia (DELCODE). His main research interest is early detection of Alzheimer's Disease with a methodological focus on MR-imaging. He has supervised >10 doctoral students. Published papers: 138, H-Index: 31	X
Andrea Weber	administrator of THEME graduate school on the admin side.	X



PART E. Degree(s) awarded

The joint programme will result in the award of a* :

- Double degree (i.e. more than one official degree)
- Multiple degree (i.e. more than two official degrees)
- Joint degree i.e. a single diploma officialy recognised in at least two of the European consortium countries

Organisation number Name of the Degree Awarding Organisation

P1 **Radboud University Nijmegen**

Official name of the degree in		Type*	Recognition status		Function of the degree signatory
National language*	English		Already recognised?*	Expected recognition date OR validity end date (/ next review date) if applicable	
					X

Add a Degree

Organisation number Name of the Degree Awarding Organisation

P2 **Norwegian University of Science and Technology**

Official name of the degree in		Type*	Recognition status		Function of the degree signatory
National language*	English		Already recognised?*	Expected recognition date OR validity end date (/ next review date) if applicable	

Add a Degree

Organisation number Name of the Degree Awarding Organisation

P3 **Deutsches Zentrum für Neurodegenerative Erkrankungen**

Official name of the degree in	Type*	Recognition status	

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National language*	English		Already recognised?*	Expected recognition date OR validity end date (/ next review date) if applicable	Function of the degree signatory
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Add a Degree

Organisation number Name of the Degree Awarding Organisation

P4 University of Bonn Medical Faculty

Official name of the degree in		Type*	Recognition status		Function of the degree signatory
National language*	English		Already recognised?*	Expected recognition date OR validity end date (/ next review date) if applicable	

Add a Degree

Submission number:
00000000

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Attachments

Declaration on Honour. PDF document (pdf) *

Consortium's answer to the Award Criteria. Word document (doc,docx) or PDF document (pdf) (maximum 25 pages - Times New Roman - Font 11) *

Other relevant annexes. Word document (doc,docx) or PDF document(pdf)

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number**

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