



**Memorandum of Understanding
between
EGI-InSPIRE and MAPPER**



**Memorandum of Understanding between
EGI-InSPIRE and MAPPER**



**Memorandum of Understanding
between
EGI-InSPIRE and MAPPER**



Background	3
Article 1: Purpose.....	3
Article 2: Joint Work plan.....	3
Article 3: Timeline and Reporting	6
Article 4: Communication.....	8
Article 6: Rights and Responsibilities	8
Article 7: Funding.....	8
Article 8: Entry into force, duration and termination.....	9
Article 9: Amendments.....	9
Article 10: Annexes.....	9
Article 11: Language.....	9
Article 12: Governing Law - Dispute resolution.....	9
Annex 1 EGI-InSPIRE Description	11
Annex 2 MAPPER Description	12
Annex 3 Rights and Responsibilities	14
Annex 4 Settlement of Disputes.....	16



Memorandum of Understanding between EGI-InSPIRE and MAPPER



BACKGROUND

The “Integrated Sustainable Pan-European Infrastructure for Researchers in Europe” project (hereafter referred to as “EGI-InSPIRE”) supports the transition from a project-based system to a sustainable pan-European e-Infrastructure, by supporting ‘grids’ of High-Performance Computing (HPC) and High-Throughput Computing (HTC) resources. EGI-InSPIRE, supported by EGI-InSPIRE, the central organisation that provides a coordinating hub for European DCIs and will also be ideally placed to integrate new Distributed Computing Infrastructures (DCIs) such as clouds, supercomputing networks and desktop grids, to benefit the user communities within the European Research Area (ERA). A summary of EGI-InSPIRE is attached as Annex 1.

The EU-funded “Multiscale Applications on European e-Infrastructures” project (hereafter referred to as “MAPPER”) aims to integrate heterogeneous e-Infrastructures using additional core middleware services and tools for programming and execution of distributed and parallel multi-scale simulations. MAPPER will deploy a computational science environment for distributed multi-scale computing on and across European e-Infrastructures by adding and extending core middleware capabilities and offering a set of additional application tools. This responds to a critical need faced by today’s scientists and engineers who are commonly faced with the challenge of modelling, predicting and controlling multi-scale systems which cross scientific disciplines and where several processes acting at different scales coexist and interact. MAPPER is driven by seven exemplar applications from five user communities (virtual physiological human, computational biology, fusion, hydrological engineering, nano material science). However, MAPPER solutions are generic and will enable distributed multi-scale computing for any multi-scale model fitting into its paradigm, and MAPPER therefore is open to other user communities as well. A summary of MAPPER is attached as Annex 2.

Institutions common to both projects are:

- Leibniz Supercomputing Centre (LRZ) - Germany
- Poznan Supercomputing and Networking Center (PSNC) - Poland
- CYFRONET - Poland

ARTICLE 1: PURPOSE

The purpose of this Memorandum of Understanding (MoU) is to define a framework of collaboration between EGI-InSPIRE and MAPPER (hereafter also referred to as “the Party” or the “Parties”). The Parties recognise, by this MoU, the opening of a wider and longer-term cooperation in activities, which will bring visible benefits.

ARTICLE 2: JOINT WORK PLAN

The parties contribute to enable the vision of providing European scientists and international collaboration for sustainable distributed computing services to support their work. In this broad context, the specific goals of the collaborations are:

1. Requirements Gathering
2. Support Tools and Services
3. Standards and Interoperability
4. Virtual Research Community (VRC) Foundation
5. Sustainability
6. Policy Development
7. Dissemination
8. Training



Memorandum of Understanding between EGI-InSPIRE and MAPPER



The specific activities to be carried out in the framework of the collaboration are¹:

A.1 Requirements Gathering

Parties Involved: EGI-InSPIRE NA3 (Steve Brewer, EGI.eu); MAPPER WP4 (UCL)

Description of work: This activity allows MAPPER to submit new requirements and change requests to EGI-InSPIRE and influence the evolution of the infrastructure and the support services. EGI-InSPIRE will accept requirements in various formats through the defined channels. Requirements will be presented and reviewed by the UCB for ratification before submission to the Technical Coordination Board (TCB). The User Community Support Team (UCST) will provide support to MAPPER in the form of guidelines, services and workshops to help them capture and prioritise their own requirements.

Expected outcome:

- M1.1 Submitted Requirements to EGI-InSPIRE: Prioritised and well-defined requirements from MAPPER submitted as their need arises.
- M1.2 Feedback to MAPPER: EGI-InSPIRE will provide regular feedback on the status of the supplied requirements.

A.2 Support Tools and Services

Parties Involved: EGI-InSPIRE SA1 (Tiziana Ferrari, EGI.eu) and NA3 (Steve Brewer, EGI.eu); MAPPER WP6 (LRZ/LMU) and MAPPER WP5 (PSNC)

Description of work: This activity covers both the tools and services required by MAPPER from EGI-InSPIRE including those in the production infrastructure (Operations) and those provided by the UCST Technical Services. It also includes applications and services that MAPPER will provide for EGI-InSPIRE and its user communities.

Expected outcome:

- M2.1 Access to the EGI Community Repository for software contributed and supported by the MAPPER community and to the EGI Help desk (GGUS).
- M2.2 EGI will provide a list of candidate NGIs (or resource centres) that would be interested in running and supporting MAPPER middleware extensions as well as application tools.
- M2.3 Configuration Database: EGI-InSPIRE will provide access to a configuration database (GOCDDB) in order get information on the resource centres and services accessible to MAPPER.
- M2.4 Monitoring: EGI-InSPIRE will provide the distributed monitoring infrastructure needed to check the status of the deployed services (e.g. central MyEGI portal, central databases). MAPPER will deliver appropriate monitoring connectors (probes) compatible with EGI-InSPIRE monitoring infrastructure.
- M2.5 Core middleware services: MAPPER will provide to EGI-InSPIRE highly available core middleware services, in particular QosCosGrid (QCG), extending capabilities of existing core middleware services according to MAPPER users requirements (e.g. top-level co-allocation and advance reservation services) to support various distributed multi-scale use cases and application scenarios.
- M2.6 Accounting: EGI-InSPIRE will provide an accounting database and portal that will allow MAPPER to review its usage of EGI resources, together with the messaging infrastructure needed to centrally collect usage records.
- M2.7 If needed, an additional MoU will be signed for selected software components that will be distributed and maintained by MAPPER partners.

¹ Party leading the activity is underlined.



Memorandum of Understanding between EGI-InSPIRE and MAPPER



A.3 Standards and Interoperability

Parties Involved: EGI-InSPIRE NA2.3 (Sergio Andreozzi, EGI.eu); MAPPER WP5 (PSNC) and WP4 (UCL)

Description of work: Contribute, steer and advance high-priority standards as identified in the EGI Standards Roadmap (EGI-InSPIRE Deliverables D2.12/D2.19/D2.24).

Expected outcome:

- M3.1 Input from MAPPER to the regular revisions of the EGI Standards Roadmap

A.4 Virtual Research Community (VRC) Foundation

Parties Involved: EGI-InSPIRE NA3 (Steve Brewer, EGI.eu); MAPPER WP7 (Universite de Geneve)

Description of work: MAPPER comprises five different user communities such as Virtual Physiological Human (VPH), computational biology, fusion, hydrological engineering, and nano material science. This activity will provide the foundation for establishing individual VRCs across the relevant domains or integration of the users into already established VRCs.

Expected outcome:

- M4.1 Individual VRCs established and MoUs signed.
- M4.2 MAPPER users engage with existing VRCs. A report is produced on MAPPER users involvement in VRCs.

A.5 Sustainability

Parties Involved: EGI-InSPIRE NA2.3 (Sergio Andreozzi, EGI.eu); MAPPER WP6 (LRZ) and WP5 (PSNC)

Description of work: Sustaining services is a priority for both projects. This activity will be dedicated to outlining a series of questions and defining solutions to what, where and how the identified services will be sustained.

Expected outcome:

- M5.1 List of defined core middleware services and application tools to be sustained by MAPPER partners, identification of who could sustain them and the rationale for why and how this can be accomplished.

A.6 Policy Development

Parties Involved: EGI-InSPIRE NA2.3 (Sergio Andreozzi, EGI.eu); MAPPER WP3 (UU)

Description of work: This activity covers the development of policy in order to facilitate MAPPER communities to use both EGI and PRACE (e.g. resource allocation, Acceptable Use Policy “AUP”). The discussion may take place in forums like the Infrastructure Policy Group (IPG).

Expected outcome:

- M6.1 MAPPER participation in EGI Policy Groups.
- M6.2 Defined set of policies that bridge both EGI and PRACE.

A.7 Dissemination

Parties Involved: EGI-InSPIRE NA2.2 (Catherine Gater, EGI.eu); MAPPER WP2 (LMU)

Description of work: The objective of this activity is to maximise the impact of both MAPPER and EGI-InSPIRE through the efficient coordination of dissemination. This will involve establishing contact points for communication channels, publications as well as sharing timing constraints relating to both parties. MAPPER and EGI-InSPIRE will collaborate and help each

other in the production of dissemination material and also disseminate the progress and results from the collaboration within the EGI community and MAPPER.

Expected outcome:

- M7.1 Launch: advertise the start of the collaboration in each Party's website with a dedicated static page, article and press releases (within 1 month).
- M7.2 Communication: MAPPER will be invited to contribute to EGI-InSPIRE's promotional materials and publications to reflect the collaboration between the two parties and vice versa.
- M7.3 Events: joint sessions at EGI-InSPIRE and MAPPER events will be planned in order to disseminate the progress and results of the collaboration.
- M7.4 Publications: inform EGI-InSPIRE of any scientific/academic publications published by the MAPPER that use the EGI, and EGI-InSPIRE will inform MAPPER of publications that refer to MAPPER. This bi-directional communication will ensure that each party is being accurately represented by the other.

A.8 Training

Parties Involved: EGI-InSPIRE NA3 (Gergely Sipos, EGI.eu); MAPPER WP7 (UvA), MAPPER WP8 (CYFRONET), MAPPER WP5 (PSNC)

Description of work: With any new computing paradigm, comes the need for experience and knowledge exchange. MAPPER has within its description of work the mandate to organise two schools of which opportunities for participation will be disseminated throughout the EGI community. In addition, MAPPER will organise training events at EGI-InSPIRE community events in order to provide both lightweight introductory courses and detailed expert level courses to the event's participants. All material will be gathered and made publicly available on the EGI Training Marketplace.

Expected outcome:

- M8.1 Training material published on the EGI Training Marketplace.
- M8.2 Dissemination of MAPPER training schools by EGI. All material to be provided by MAPPER.
- M8.3 MAPPER training courses offered with the support of EGI-InSPIRE (e.g. offering venue at EGI User Forum, promotion)

ARTICLE 3: TIMELINE AND REPORTING

The EGI-InSPIRE NA2.3 Policy Development Team (PDT)² will coordinate the periodic review of the progress of the activities defined in Article 2 (Joint Work Plan), follow-up the milestones defined below and distribute reports to both Parties. Special meetings between the points of contact designated under Article 4 (Communication) shall be held, as often as necessary, to examine the progress in the implementing of this Agreement.

Date	Milestone	Additional Information
06/2011	M1.1	Achieved by delivering MAPPER D4.1 Review on applications, users, software and e-Infrastructures
06/2011	M6.1	Achieved by delivering MAPPER D3.1 Report of the policy framework resource providers need and D6.3 Support Process Definition by MAPPER.
07/2011	M7.1	Start of the collaboration advertised in each Party's website with a dedicated static page, article and/or press releases.

² The Policy Development Team is part of the task NA2.3, project EGI-InSPIRE



**Memorandum of Understanding
between
EGI-InSPIRE and MAPPER**



08/2011	M2.1	Access to the EGI Community Repository for software contributed and supported by the MAPPER community and to the EGI Help desk (GGUS) is given.
09/2011	M2.2	EGI provides a list of candidate NGIs (or resource centres) that would be interested in running and supporting MAPPER middleware extensions as well as application tools
09/2011	M2.3	EGI-InSPIRE provides access to a configuration database (GOCDB) in order get information on the resource centres and services accessible to MAPPER.
10/2011	M1.2	Achieved by delivering the EGI-InSPIRE feedback to MAPPER
11/2011	M5.1	Achieved by delivering MAPPER D5.2 vertical integration plan led by MAPPER, PSNC.
12/2011	M2.4	EGI-InSPIRE provides the distributed monitoring infrastructure needed to check the status of the deployed services (e.g. central MyEGI portal, central databases). MAPPER delivers appropriate monitoring connectors (probes) compatible with EGI-InSPIRE monitoring infrastructure.
12/2011	M8.1	Training material published on the EGI Training Marketplace.
04/2012	M2.5	Achieved by delivering D5.2 MAPPER vertical integration plan led by MAPPER, PSNC.
04/2012	M2.6	EGI-InSPIRE provides an accounting database and portal that will allow MAPPER to review its usage of EGI resources, together with the messaging infrastructure needed to centrally collect usage records.
04/2012	M3.1	Achieved by delivering MAPPER D3.2 Standardisation roadmap and first sustainability plan led by MAPPER and its future updates in 11/2012 and 11/2013.
04/2012	M4.1	Achieved by reviewing existing VRCs or signing new MoUs for VRCs.
06/2012	M6.2	Achieved by delivering a joint MAPPER, PRACE and EGI interoperability report after a set of MAPPER demonstrations.
06/2012	M8.2	Dissemination of MAPPER training schools by EGI. All material to be provided by MAPPER.
06/2012	M8.3	MAPPER training courses offered with the support of EGI-InSPIRE (e.g. offering venue at EGI User Forum, promotion)
09/2012	M7.2, M7.3, M7.4	Report on the contributions to communications, events and publications
11/2012	M4.2	Achieved by delivering MAPPER D7.2 Second report on adaptation of applications by MAPPER.
12/2012	M6.2 (update)	Achieved by delivering a joint MAPPER, PRACE and EGI interoperability report after a set of MAPPER demonstrations.
09/2013	M7.2, M7.3, M7.4 (update)	Final report on the contributions to communications, events and publications
As required	M2.7	Signing of additional MoUs



Memorandum of Understanding between EGI-InSPIRE and MAPPER



ARTICLE 4: COMMUNICATION

The Parties shall keep each other informed on all their respective activities and on their progress and shall consult regularly on areas offering potential for cooperation.

Joint working groups may be established to examine in detail proposals in areas assigned to them by the Parties referred to in Article 2 (Joint Work Plan) and to make recommendations to the Parties.

Each Party shall designate a “point of contact” that shall be responsible for monitoring the implementation of this MoU and for taking measures to assist in the further development of cooperative activities. Such points of contact shall be the ordinary channel for the Parties' communication of proposals for cooperation.

The primary point of contact for each Party is:

EGI-InSPIRE: Sergio Andreozzi, EGI.eu <sergio.andreozzi@egi.eu>

MAPPER: Alfons Hoekstra, UvA <a.g.hoekstra@uva.nl>

Questions of principle or problems that cannot be solved at primary contact level are escalated to the EGI-InSPIRE Director and the MAPPER Project Director.

ARTICLE 5: PARTICIPATION IN EGI.EU GROUPS

MAPPER agrees to name a technical representative (with deputy) for the EGI User Community Board (UCB). Further information about the EGI UCB can be found in the Terms of Reference for the UCB, which is available on request (<https://documents.egi.eu/document/120>).

MAPPER may be asked to nominate representatives to serve on other advisory groups as appropriate.

ARTICLE 6: RIGHTS AND RESPONSIBILITIES

The procedure is set out in Annex 3.

ARTICLE 7: FUNDING

Each Party shall bear the costs of discharging its respective responsibilities under this MoU, including travel and subsistence of its own personnel and transportation of goods and equipment and associated documentation, unless otherwise agreed in this MoU.

Each Party shall make available free of charge to the other Party any office/meeting space needed for the joint activities.

The Parties' obligations hereunder are subject to their respective funding procedures and the availability of appropriated funds. Should either Party encounter budgetary problems in the course of its respective internal procedures that may affect the activities carried out under this MoU, that Party shall notify and consult with the other Party in a timely manner in order to minimise the negative impact of such problems on the cooperation. The Parties shall jointly look for mutually agreeable solutions.

In order to reduce the impact on travel costs, face-to-face meetings should be co-located with other events where participants are likely to attend. Meeting via teleconferences should be considered when the nature of the discussion does not strictly require a face-to-face presence.



**Memorandum of Understanding
between
EGI-InSPIRE and MAPPER**



ARTICLE 8: ENTRY INTO FORCE, DURATION AND TERMINATION

This MoU will enter into force upon signature and shall remain in force until completion of the activities identified in Article 2 (Joint Work Plan), or upon termination of the projects in which the Parties participate, or upon three (3) months prior written notice by one Party to the other. In the event of termination, the parties shall endeavour to reach agreement on terms and conditions to minimise negative impacts on the other Party. In the event of the continuation of the present cooperation, the Agreement may be extended and/or amended by mutual agreement in writing.

ARTICLE 9: AMENDMENTS

The MoU may be amended by written agreement of the Parties. Amendments shall be valid only if signed by the authorized representatives of the Parties.

ARTICLE 10: ANNEXES

Annexes 1, 2, 3 and 4 attached hereto have the same validity as this MoU and together constitute the entire understanding and rights and obligations covering the cooperation accepted by the Parties under this MoU. Annexes may be amended following the provisions of Article 9 (Amendments).

ARTICLE 11: LANGUAGE

The language for this MoU, its interpretation and all cooperative activities foreseen for its implementation, is English.

ARTICLE 12: GOVERNING LAW - DISPUTE RESOLUTION

The terms of this MoU shall be interpreted in accordance with their true meaning and effect independently of national and local law. Provided that if and insofar as this MoU does not stipulate, or any of its terms are ambiguous or unclear reference shall be made to the substantive laws of Belgium. Disputes shall be resolved by amicable settlement or failing which by arbitration in accordance with the procedure set out in Annex 4.



**Memorandum of Understanding
between
EGI-InSPIRE and MAPPER**



Memorandum of Understanding between EGI-InSPIRE and MAPPER

IN WITNESS WHEREOF, the Parties have caused their duly authorised representatives to sign two originals of this Memorandum of Understanding, in the English language.

The following agree to the terms and conditions of this MoU:

Dr. Steven Newhouse
EGI-InSPIRE Project Director

Dr. Alfons Hoekstra
MAPPER Project Coordinator

1/8/11
Date

14-07-2011
Date



Memorandum of Understanding between EGI-InSPIRE and MAPPER



Annex 1 EGI-InSPIRE Description

To support science and innovation, a lasting operational model for e-Infrastructure is needed – both for coordinating the infrastructure and for delivering integrated services that cross national borders. The EGI-InSPIRE project will support the transition from a project-based system to a sustainable pan-European e-Infrastructure, by supporting ‘grids’ of high-performance computing (HPC) and high-throughput computing (HTC) resources. EGI-InSPIRE will also be ideally placed to integrate new Distributed Computing Infrastructures (DCIs) such as clouds, supercomputing networks and desktop grids, to benefit the user communities within the European Research Area. EGI-InSPIRE will collect user requirements and provide support for the current and emerging user communities. Support will also be given to the current heavy users of the infrastructure, such as high energy physics, computational chemistry and life sciences, as they move their critical services and tools from a centralised support model to one driven by their own individual communities.

Objectives

The objectives of the project are:

- The continued operation and expansion of today’s production infrastructure by transitioning to a governance model and operational infrastructure that can be increasingly sustained outside of specific project funding.
- The continued support of researchers within Europe and their international collaborators that are using the current production infrastructure.
- The support for current heavy users of the infrastructure in earth science, astronomy and astrophysics, fusion, computational chemistry and materials science technology, life sciences and high energy physics as they move to sustainable support models for their own communities.
- Interfaces that expand access to new user communities including new potential heavy users of the infrastructure from the ESFRI projects.
- Mechanisms to integrate existing infrastructure providers in Europe and around the world into the production infrastructure, so as to provide transparent access to all authorised users.
- Establish processes and procedures to allow the integration of new DCI technologies (e.g. clouds, volunteer desktop grids) and heterogeneous resources (e.g. HTC and HPC) into a seamless production infrastructure as they mature and demonstrate value to the EGI community.

The EGI community is a federation of independent national and community resource providers, whose resources support specific research communities and international collaborators both within Europe and worldwide. EGI.eu, coordinator of EGI-InSPIRE, brings together partner institutions established within the community to provide a set of essential human and technical services that enable secure integrated access to distributed resources on behalf of the community.

The production infrastructure supports Virtual Research Communities – structured international user communities – that are grouped into specific research domains. VRCs are formally represented within EGI at both a technical and strategic level.

Consortium

The EGI-InSPIRE consortium has 51 partners with representatives of 42 National Grid Initiatives (NGIs) and European International Research Organisation (EIROs) in geographical Europe, and eight Asia Pacific partners, coordinated by EGI.eu a dedicated organisation established to provide an integrated sustainable pan-European Infrastructure for all researchers in Europe.

Duration: 48 months

EC Contribution: €25,000,000

Total Budget: cca. €72,000,000

Total Manpower: 9,241 Person Months



Memorandum of Understanding between EGI-InSPIRE and MAPPER



Annex 2 MAPPER Description

Summary:

Today scientists and engineers are commonly faced with the challenge of modelling, predicting and controlling multi-scale systems, which cross-scientific disciplines and where several processes acting at different scales coexist and interact. Such multidisciplinary multi-scale models, when simulated in three dimensions, require large scale or even extreme scale computing capabilities. The MAPPER project develops computational strategies, software and services for distributed multi-scale simulations across disciplines, exploiting existing and evolving European e-infrastructure.

Objectives:

Driven by seven challenging applications from five representative scientific domains (fusion, clinical decision making, systems biology, nano science, engineering), MAPPER deploys a computational science environment for distributed multiscale computing on and across European e-infrastructures. By taking advantage of existing software and services, as delivered by EU and national projects, MAPPER will result in high quality components for today's e-infrastructures. We develop tools, software and services that permit loosely and tightly coupled multiscale computing in a user friendly and transparent way. We integrate our applications into the MAPPER environment, and demonstrate their enhanced capabilities.

Action plan:

MAPPER integrates heterogeneous infrastructures for programming and execution of multi-scale simulations. We reuse as much of the existing infrastructural and software solutions as possible. The MAPPER solutions are developed on top of existing e- infrastructures without the necessity to modify already deployed components. The functionality to be delivered is realized as extensions to existing e-infrastructures. The integration is done using well-defined APIs and standard based interfaces, thus reducing potential impact of changes on middle- ware level components.

Networking activities:

We create and maintain a stable management of the project, with strong internal and external communication and development of realistic plans for uptake and sustainability of MAPPER results during and after the lifetime of the project. We focus on targeted dissemination actions and a foresight study addressed to policy makers on the ICT concepts and technologies that facilitate multi-scale modelling approaches on large e-Infrastructures.

Service activities:

We distinguish two layers of services constituting the MAPPER environment. Users and applications communicate with services belonging to the interoperability layer, an abstract layer to grid resources managed by different middleware stacks. The interoperability services are responsible for providing concurrent access to resources controlled by different services synchronizing and orchestrating the execution of applications in the grid.

Multi-scale loosely and tightly coupled simulations are controlled by a broker and underlying computing access services developed in the FP6-ICT QosCosGrid project³. The broker is integrated with underlying middleware and its scheduling and co-allocation algorithms are tuned for specific needs of multi-scale applications. Many of the services that we wish to use have been developed individually and do not necessarily interoperate. We ensure that these services do talk to each other where appropriate. We start working on application deployment as early as possible in the project. We therefore adopt a twin track approach in our service development activities. The fast track

³ <http://www.qoscosgrid.org>



Memorandum of Understanding between EGI-InSPIRE and MAPPER



adapts, integrates and deploys a minimal set of infrastructure components to enable coupling of multi-scale applications. The deep track will do so for the higher level services required to realise the full and integrated MAPPER infrastructure, which will enable the coupling and launching of multi-scale component codes. MAPPER services evolve on the basis of a regular cycle of top- down and bottom-up analysis of existing e-infrastructure, MAPPER building blocks as well as new requirements defined by our multi-scale user communities.

Joint Research activities:

The application portfolio is adapted to the MAPPER infrastructure. Our approach is that applications are up and running from the start of the project, with existing, easily adaptable and deployable tools in the fast track; the deeper track then produces enhancements, which are fed into the user level fast track as and when ready. A number of programming and execution tools, dedicated to distributed multi-scale computing, are developed. In the first phase of the project, the applications will have to rely on explicit coding of their multi-scale simulations, but gradually programming tools are delivered that assist in this task. JRA tools allow interaction between software components from different e-infrastructures in a hybrid way.

User communities:

MAPPER is driven by seven exemplar applications from five user communities (virtual physiological human, computational biology, fusion, hydrological engineering, nano material science), and these communities are specifically targeted. However, our solutions are generic and will enable distributed multi-scale computing for any multi-scale model fitting into our paradigm, and MAPPER therefore opens up to other user communities as well.

International aspects:

MAPPER partners have significant trans-Atlantic grid and HPC experience, and have been involved very actively in TeraGrid and with the US Department of Energy laboratories. We collaborate with the US TeraGrid to integrate infrastructures across the globe.

Contract n°: RI-261507

Project type: CP-CSA

Start date: 1 October 2010

Duration: 36 months

Total budget: €3,272,777

Funding from the EC: €2,400,000

Total funded effort in person-month: 347

Web site: www.mapper-project.eu



Memorandum of Understanding between EGI-InSPIRE and MAPPER



Annex 3 Rights and Responsibilities

A. GENERAL

1. MAPPER agrees to adhere to applicable policies and procedures relating to the use of the production infrastructure.
2. A Party, which makes material, equipment or components available to the other Party, for the purposes of activities under this MoU, shall remain the proprietor of such material, equipment or components.
3. Each Party shall remain fully responsible for its own activities, including the fulfilment of its obligations under any grant agreement with the European Commission or under any consortium agreement related thereto.

B. PERSONNEL

1. Each Party shall be solely responsible for any personnel hired to carry out work under this MoU.
2. In case personnel employed by one Party temporarily carries out work under this MoU on the premises of another (hereafter referred to as "secondment"), the following provisions shall apply:
 - (a) The persons seconded shall be subject to all regulations, including, in particular, safety regulations, applicable on the site of the Party they are seconded to.
 - (b) The personnel seconded by a Party to another shall remain employees of the Party having seconded them and such Party, as employer, shall bear exclusive responsibility for the payment of salary and for the procurement of adequate social security and insurance, including third party liability insurance and health insurance.
 - (c) Unless otherwise agreed by the Parties concerned, Intellectual Property Rights generated by personnel seconded by a Party to another shall be owned by the Party having seconded such personnel.

C. INTELLECTUAL PROPERTY RIGHTS AND LICENSE

1. "Intellectual Property Rights" shall mean all intellectual creations including but not limited to inventions, know-how, layouts, drawings, designs, specifications, computer programs, reports, processes, protocols, calculations and any other matter and protected by intellectual property rights, whether registered or not, including patents, registered designs, copyrights, design rights and all similar proprietary rights and applications for protection thereof.
2. Intellectual property rights generated by a Party under this MoU shall be the property of that Party who shall be free to protect, transfer and use such Intellectual Property Rights as it deems fit.
3. Notwithstanding the foregoing each Party shall grant the other a non-exclusive royalty free, perpetual license to use the Intellectual Property Rights generated by it under this MoU for use within its project or for the exploitation the results thereof. Such license shall include the right to sublicense the entities involved in the project.

D. JOINTLY OWNED RESULTS

1. Results that were jointly generated by both Parties will be jointly owned by the Parties, hereinafter referred to as ("Jointly Owned Results") and each of the Parties shall be free to use these Jointly Owned Results as it sees fit without owing the other Party any compensation or requiring the consent of the other Party. Each Party, therefore, for example and without limitation, has the transferable right to grant non-exclusive, further transferable licenses under such Jointly Owned Results to third parties. Each Party shall be entitled to disclose such Jointly Owned Results without restrictions unless such Jointly Owned Results contain a Joint Invention in which case no disclosure must be made prior to the filing of a priority application.
2. With respect to any joint invention resulting from this MoU (i.e. any invention jointly made by employees of both Parties), the features of which cannot be separately applied for as Intellectual Property Rights and which are eligible for statutory protection requiring an application or registration (herein referred to as "Joint Invention"), the Parties shall agree on which Party will carry out any



Memorandum of Understanding between EGI-InSPIRE and MAPPER



filling as well as any further details with regard to persecuting and maintaining of relevant patent applications.

E. PUBLIC RELATIONS

1. Any publication by a Party resulting from the activities carried out under this MoU shall be subject to prior agreement of the other Party not be unreasonably withheld.
2. EGI-InSPIRE and MAPPER may each release information to the public, provided it is related only to its own part of the activities under this MoU. In cases where the activities of the other Party are concerned prior consultation shall be sought. In all relevant public relations activities, the contribution of each Party related to activities covered by this MoU shall be duly acknowledged.

F. CONFIDENTIALITY OF INFORMATION

1. The Parties may disclose to each other information that the disclosing Party deems confidential and which is (i) in writing and marked “confidential”, or (ii) disclosed orally, and identified as confidential when disclosed, and reduced in writing and marked “confidential” within fifteen (15) days of the oral disclosure (hereafter referred to as “Confidential Information”). Confidential Information shall be held in confidence and shall not be disclosed by the receiving Party to any third party without the prior written consent of the disclosing Party.
2. Notwithstanding the foregoing a Party is entitled to disclose Confidential Information which it is required by law to disclose or which, in a lawful manner, it has obtained from a third party without any obligation of confidentiality, or which it has developed independently from any Confidential Information received under this MoU, or which has become public knowledge other than as a result of a breach on its part of these confidentiality provisions.

G. LIABILITY

1. Each Party shall use reasonable endeavours to ensure the accuracy of any information or materials it supplies to the other Party and of any other contribution it makes hereunder and promptly to correct any error therein of which it is notified. The supplying Party shall be under no obligation or liability other than as stated above and no warranty or representation of any kind is made, given or to be implied as to the sufficiency, accuracy or fitness for a particular purpose of such information, materials or other contribution or as to the absence of any infringement of any proprietary rights of third parties through the possession or use of such information, materials or other contribution. The recipient Party shall be entirely responsible for its use of such information, materials or other contribution and shall hold the other Party free and harmless and indemnify it for any loss or damage with regard thereto.
2. Except in case of gross negligence or wilful misconduct, neither Party shall be liable for any indirect or consequential damages of the other Party, including loss of profit or interest, under any legal cause whatsoever and on account of whatsoever reason.

H. PARTICIPATION IN SIMILAR ACTIVITIES

1. Parties are not prevented by this MoU from participating and activities similar to those described in this document with third parties. There is no obligation to disclose any similar activity to the other party. However, when considered of mutual benefit, both parties are encouraged to involve the other party in similar activities to the goal of disseminating the knowledge about EGI-InSPIRE.



**Memorandum of Understanding
between
EGI-InSPIRE and MAPPER**



Annex 4 Settlement of Disputes

1. All disputes or differences arising in connection with this MoU which cannot be settled amicably shall be finally settled by arbitration in accordance with the procedure specified below which shall be adapted in the light of the number of Parties involved.
2. Within thirty (30) calendar days of written notification by a Party to the other Party of its intention to resort to arbitration, the first Party shall appoint an arbitrator. The second Party shall appoint an arbitrator within three (3) months of the appointment of the first arbitrator. The two arbitrators shall, by joint agreement and within ninety (90) calendar days of the appointment of the second arbitrator, appoint a third arbitrator, who shall be the Chairman of the Arbitration Committee.
3. If the second Party fails to appoint an arbitrator or the two arbitrators fail to agree on the selection of a third arbitrator, the second or, as the case may be, the third arbitrator, shall be appointed by the President of the Court of Justice of the European Communities.
4. Unless otherwise agreed by the Parties concerned within thirty (30) calendar days of the provision of notice referred to in Article 12 above, the arbitration proceedings shall take place in Brussels and shall be conducted in English. The Parties shall within one month of the appointment of the third arbitrator agree on the terms of reference of the Arbitration Committee, including the procedure to be followed.
5. The Arbitration Committee shall faithfully apply the terms of this MoU. The Arbitration Committee shall set out in the award the detailed grounds for its decision.
6. The award shall be final and binding upon the Parties, who hereby expressly agree to renounce any form of appeal or revision.
7. The costs including all reasonable fees expended by the Parties to any arbitration hereunder shall be apportioned by the Arbitration Committee between these Parties.