



MAPPER Roadmap Y3

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1 Introduction

This document contains the roadmap highlighting the measures the project will take in Y3 in order to guarantee sufficient uptake of MAPPER technology by external users, identifying training, documentation and support to be provided, as well as planning for each step. It also provides a more detailed view of what has already been described in section 3.2.1 of the DoW and the connection with our on-going dissemination and exploitation activities.

Some of the activities that we will identify in the roadmap were not originally planned in the DoW. This will then need to result in some refocusing of our effort. We still need to do a detailed analysis of this, but obviously we need to prioritise tasks.

MAPPER is driven forward by a strong scientific pull, i.e. the need felt by scientific communities to be able to carry out multiscale computations on high-end computing resources. MAPPER contains five partners that are active members of five scientific communities. These partners deliver as much as seven different multiscale applications to MAPPER. Our vision that such very different applications from very different scientific domains can benefit from a *generic* multiscale computing solution is really new and based on earlier work done under the umbrella of ICT-FET. Now, after two years in the project we are confident that our vision is realistic, and a viable route for multiscale computing on European e-Infrastructures. Completely as planned, our seven internal applications now go in a phase of production, that is, they will all start to produce scientific results that will be published in domain specific journals. Moreover, we will also carry out performance measurements. We should not underestimate the importance of this achievement and the impact these seven applications will have in their respective domains. We will therefore fully capitalize on these achievements in terms of dissemination and reaching impact.

We should also not underestimate the catalysing effect of the MAPPER project on the collaboration between EGI and PRACE. During the first months of MAPPER we took the initiative to talk to both EGI and PRACE, which resulted in establishing the MAPPER-EGI-PRACE taskforce, in which we collaborate on a deep technical level. A few spectacular results emerged from the taskforce. For instance, as demonstrated during the 2nd review, a distributed multiscale computing scenario coupling a PRACE Tier-0 system (SuperMUC at LRZ) with EGI resources in PL-GRID was realised. We are most proud of the MoU signed in November 2012 between EGI and PSNC (partner in MAPPER), which entails the addition of

part of the main MAPPER services to the EGI software stack.¹ This basically means that these MAPPER services are now available to all EGI sites! Moreover, because of the taskforce we are planning to release in April 2013 joined EGI-PRACE helpdesk in place, a shared which from EGI and PRACE for a long time. We will also capitalize on these results much more, and disseminate them via all possible means.

2 Our Key Performance Indicators

In our dissemination report we have defined an important Key Performance Indicator (KPI), namely KPI Q10 (number of external users of MAPPER technologies) which we set to 5 by the end of the project. The other relevant KPI for the roadmap is S3 (number of communities MAPPER collaborates with) that we set to 7 by the end of the project.

For the roadmap it is important to have a clear understanding of these KPIs. We distinguish between external users, that is, *individual researchers* that actually use MAPPER tools and middleware (in KPI Q10) and communities that collaborate with MAPPER (in KPI S3).

For individual users we have stated that we will have 5 *external* users, who will actually use MAPPER for their multiscale simulations and produce key scientific output. We decided to stretch this to mean a minimum number, and as part of the roadmap we will target a larger number (10 to 15).

We also aim to meet KPI S3 in the sense that we committed ourselves to collaborate with 7 different communities. This requires a deeper analysis. A scientific community is a collection of scientists clustered around a theme, publishing in a range of journals, visiting specific conferences, and maybe collaborating in formal or informal projects. So, to collaborate with a community really boils down to collaborating with the individuals or projects within that community, or by entering in some form of collaboration with bodies that somehow represent that community. In the roadmap we will therefore identify steps to reach this. However, given our internal and external application portfolio we implicitly collaborate with a range of communities. So, we will interpret this KPI such that the application portfolio covered by both internal and external applications is sufficiently spread over (at least) 7 different communities, that we will strive for impact in these communities, and where possible, find recognition by or even seek collaboration with bodies that represent these communities.

¹ http://www.egi.eu/news-and-media/newsfeed/news_0173_New_middleware_for_new_communities.html

However, so far we still miss one entity to target. These are national or EU-funded projects that are also potential partners for collaboration. Sitting between individual researchers and communities, they represent a very relevant stakeholder for MAPPER.

Therefore, in our roadmap we will focus on these three levels, *individuals*, *projects*, and *communities*, and we will describe how to “get them on board” and if and how to “deliver good science using MAPPER”. Moreover, we will identify means to disseminate MAPPER to these three levels, and how to create measurable impact of MAPPER on these three levels. Finally, as specific projects representing European e-Infrastructures, we name PRACE and EGI together as a separate key stake holder for MAPPER.

3 Roadmap

We have identified four types of stakeholders:

1. *individuals*,
2. *projects*,
3. *scientific communities*, and
4. *European e-infrastructures* (as represented by PRACE and EGI).

Our objectives are to:

1. Get these stakeholder “on board”,
2. “Produce good science”,
3. Disseminate MAPPER outcomes and results, and
4. Create lasting impact.

In our collaboration with individuals and projects we will focus on the getting them on board and producing good science, as the dissemination and impact follow from this. For the communities we follow a different approach and rely on the one hand on the implicit impact reached through our collaboration with projects and by our portfolio of applications, and on the other hand we will have active presence of MAPPER at community events (conferences, workshops), and finally through the MAPPER seasonal school we will deliver hands-on training to these (and other) communities.

In the matrix below we summarise our approach.

	Communities	Projects	Individuals	e-Infrastructures
“Get on board”	Yes, from MAPPER Fusion, Biomedical, Fusion, Biology, Hydrology, for external we target Hydro-Meteo and geosciences.	Yes, we aim to target DRIHM, Thrombus, MeDDiCa, Scalalife, and possibly others, to be identified	Yes, we aim to work with at least 5 external individual researchers.	With EGI an MoU is in place, with PRACE we collaborate within the taskforce, in particular with LRZ, PSNC (partners in MAPPER), SARA and CINECA.
“Produce good science”	Via <i>individuals</i> and <i>projects</i> .	Where possible we will set up joint work in making MAPPER services available to these project, running multiscale simulations on MAPPER, etc.	Yes, we will train ² and fully support ³ the external researchers, so that they will be able to run multiscale simulations, not possible before, on MAPPER.	We will publish a few papers, together with PRACE and EGI, reporting on distributed multiscale computing and the services to support this.
Dissemination	Via all channels as described in our dissemination plan, including the seasonal school. Also via the social media.	Via all channels as described in our dissemination plan, including the seasonal school. Also by joining project meetings. Also via the social media.	By direct collaboration.	Via all channels as described in our dissemination plan, including the seasonal school. Also by actively participating in the User forum of both EGI and PRACE. Also via the social media.
Impact	Scientific output (what was possible with the help of MAPPER?), educational (training) material, best practices, tutorials, services and tools.	Scientific output (what was possible with the help of MAPPER?), educational (training) material, best practices, tutorials, services and tools.	Scientific output (what was possible with the help of MAPPER?), educational (training) material, best practices, tutorials, services and tools.	Services and tools for distributed multi-scale computing together with general purpose advance reservation and co-allocation capabilities in EGE and PRACE, best practices.

² We plan to organise a face-to-face and hands-on training event between external users and MAPPER experts.

³ By the MAPPER operations team

Given the fact the MAPPER is now in its third year and will finish in September 2013, there is not much time left to put this into effect. Below we show actions and related timeframes to reach the goals as described above. The first set of actions is related to reaching out the projects and external individual researchers.

Time frame	Action	Comments	Current status
January 2013	Identify	Identify potential individual researchers or projects to collaborate with us.	On-going, few already identified.
February 2013	Commitments	Get true commitments, in writing.	
March 2013	Training	On site training by MAPPER partners. This is not related to the school that will be held in June.	
April – June 2013	Act	Get multiscale simulations on MAPPER and run in production, supported by MAPPER staff.	
July – August 2013	Report	We don't expect scientific publications yet on such short notice for the external researchers, but will work on some form of scientific output (report, conference abstract)	

A second set of actions is related to dissemination and impact, in line with our dissemination and exploitation plan.

Time frame	Action	Comments	Current status
February – March 2013	Write	Write up best practices, white papers, etc.	Partly covered, merging material is needed
March – August 2013	Act	Publish scientific papers, mapper booths at conferences (e.g. EGI user forum), lectures at conferences (e.g. ICCS, ISC), Multiscale Computing workshop in Leiden, MAPPER school in June, Social Media presence, news items and press releases, etc.	

The MAPPER Executive Management Board will further implement and monitor the execution of this roadmap. The EMB will also analyse the repercussions of the roadmap activities on the tasks planned for Y3 in the DoW.