



**omii europe**

open middleware infrastructure institute



EU project: RI031844-OMII-Europe

Project no: **RI031844-OMII-Europe**

Project acronym: **OMII-Europe**

Project title: **Open Middleware Infrastructure Institute for Europe**

Instrument: **Integrated Infrastructure Initiative**

Thematic Priority: **Communication network development**

### **D:NA1.3a OMII-Europe Sustainability**

Due date of deliverable: 30 April 2007

Actual submission date:

Start date of project: **1 May 2006**

Duration: **2 years**

University of Southampton

Revision [final]

<b>Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)</b>		
<b>Dissemination Level</b>		
<b>PU</b>	Public	X
<b>PP</b>	Restricted to other programme participants (including the Commission Services)	
<b>RE</b>	Restricted to a group specified by the consortium (including the Commission Services)	
<b>CO</b>	Confidential, only for members of the consortium (including the Commission Services)	

## Document Control Sheet

<b>Document</b>	<b>Title:</b> OMII-Europe Sustainability Report	
	<b>ID:</b> D:NA1.3a	
	<b>Version:</b> 1	<b>Status:</b> Final
	<b>Available at:</b> <a href="http://omii-europe.org">http://omii-europe.org</a>	
	<b>Software Tool:</b> Microsoft Word 2003	
	<b>File(s):</b> DNA1.3a.doc and DNA1.3a.pdf	
<b>Authorship</b>	<b>Written by:</b>	Alistair Dunlop (SOTON)
	<b>Contributors:</b>	Peter Henderson (SOTON), Stephen Brewer (SOTON)
	<b>Reviewed by:</b>	Steven Crouch (SOTON)
	<b>Approved by:</b>	Technical Committee

## Document Status Sheet

<b>Version</b>	<b>Date</b>	<b>Status</b>	<b>Comments</b>
0.1	17 April 2007	Draft	Initial draft for comment written
0.2	20 April 2007	Draft	Additional discussion of sustainability options and branding
0.3	30 April 2007	Draft	Final additions and revisions
1	1 June 2007	Final	Changes made according to internal reviewers comments

## **Executive Summary**

This is a two-stage report on the sustainability of the work undertaken by OMII-Europe. This document will be updated at project month 24. This first-stage document shows that there are a number of significant parties whose interests are served by the project, and who could provide sustainability, as the concepts are not restricted to the project or even the project members.

Various options for sustainability are presented and discussed. This document also introduces the brand values that it is anticipated will emerge during the second year of the project. The second and final stage of the report due at month 24 will focus on the specific actions required to address continuity of the concept following the conclusion of the project at month 24. The second stage report will also discuss the brand value that has been acquired during the second year.

The most important opportunity for sustainability is through continued EU funding under Framework 7 for the years 2008 to 2010. Other opportunities and further time frames are also discussed.

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# 1 Introduction and Definition of Sustainability

OMII-Europe is an EU funded project that is engaged in software re-engineering and porting to achieve technical interoperability of heterogeneous grid middleware distributions. More specifically, the project mission is *“To enable e-infrastructure interoperability through the provision of standards-based middleware components”*.

The concept of “Sustainability” should therefore be looked at in the context of the above mission. This means that there are two elements to sustainability that both need addressing:

- 1) Firstly, ensuring that standards-based grid middleware components continue to be produced in line with emerging standards for the relevant middleware infrastructures.
- 2) Secondly, that appropriate support for components produced within the OMII-Europe project continues to be available following the conclusion of the project.

OMII-Europe is committed to Open Systems. As all work is based on Open Standards, there is no proprietary “lock-in” and as such both elements of sustainability mentioned could be done by appropriately qualified organisations and/or individuals. In addition, all the components that the project supports are Open Source. These two aspects of openness, Open Standards and Open Source are fundamental to the way that OMII-Europe operates. This is important as sustainability is not predicated on the existence of an OMII-Europe project or the involvement of specific partners. Having said the above, there is still a need to plan for ensuring that these activities continue and this is described in the following sections.

It is anticipated that the project will acquire the qualities of a brand during the second year of its existence as the various activities produce more tangible results. The following sustainability options should all have the potential to help reinforce this “Open Middleware Infrastructure” brand. The second-stage of this report, due at month 12, will discuss this emerging brand and suggest which of the various sustainability options can best deliver the continued viability of the “Open Middleware Infrastructure” brand.

## 2 Case for Sustainability

The need for interoperable grid infrastructures is as obvious as the need for a unified Internet. The rapid expansion and evolution of the Internet as an information infrastructure happened for a complex and diverse range of reasons: technological, organisational and social. It was not just the development of open standards and protocols or the merging of separate computer networks but also the desire of scientists, politicians and, later, business people to create this new network. If the “Open Middleware Infrastructure” brand is to mean anything, it must surely be a recreation of this creative symbiosis of technological, organisational and social goals.

Grid infrastructures will not, in the future, exist as isolated islands. Rather, the Grid will be as ubiquitous and without boundaries as IP and HTTP. At present the provision of significant compute and scientific resources is still done largely at National levels with a growing trend to make these resources accessible through national e-infrastructures. It is important to realise that National Grid infrastructures are still in their infancy; a few exist today but many more are either in development or in planning. Despite this, national grid deployments are already concerned about interoperability. While they do not necessarily expect to achieve this in the near future, this soon becomes the most pressing issue once the operational aspects of national infrastructures are established.

A clear concern expressed by those considering incorporating interoperability components into their grid platforms or e-infrastructures is the long term future for these components. In particular, they want assurances that these components have a support procedure and are maintained, developed and enhanced as standards develop. In this sense, sustainability of the work performed by OMII-Europe

is as important as the initial work itself and the failure to provide adequate plans for sustaining this work will result have implications for its use and deployment.

### **3 Present options for Sustainability**

In order to meet the emerging need to develop further interoperability components in line with emerging OGF, Oasis and W3C standards, the OMII-Europe project has the capability to reallocate resources to develop the necessary service. This capability exists within the JRA2 activity and is currently being exercised for the second year of the project. Also, in line with the second requirement for sustainability, the project has an evaluation infrastructure and a service element to provide the required support for the outputs of the project. In its current form, the project achieves the sustainability objectives for the remaining project duration (until May 2008).

#### ***3.1 Continuing funding from the EU under FP7***

Post May 2008, the sustainability plans are centred on the successful continuation of the project in the OMII-Europe II guise. It was always stated to the commission and reviewers that the first project was an initial demonstration of the concept and did not represent the completion of work. To this end we are planning for, and anticipating, receiving continuation funding in FP7 with the proposal already in preparation.

This is our preferred medium term sustainability option. This would ensure the continued binding of the key components of the project: component re-engineering, support activities and networking activities. It is not envisaged that further EU funding will be sought after the first FP7 round for grid interoperability as all of the development work should be completed by the end of 2010 and interoperability should be well established. At this point it is expected that longer term maintenance would be carried out by e-infrastructure providers, grid middleware distribution providers. Potentially there would also be opportunities for commercial solutions or follow-on projects that concentrated on supporting key infrastructure software. It is also possible that National initiatives would want to continue supporting the “Open Middleware Infrastructure” brand following the model of the Internet. The success of this project may also point to the need for similar initiatives for other elements regarded as key middleware.

#### ***3.2 Open Source Development and National Infrastructure Funding***

In the event of FP7 funding request being unsuccessful, sustainability is not necessarily lost. In particular, it should be noted that all software developments are open source implementations of open standards. Hence it is possible that many others could pick up and continue this work. In particular, grid distribution providers could allocate resources to bring the developments within their core projects. It is certainly the intention of the major grid distribution providers to include the components in their distributions, but they have significant pressure on their resources and hence interoperability components may take a “back-seat” while other components are worked on.

There are two other possible options for developments though. The open source nature of the development lends itself to the creation of a true open source community that could continue this work. Indeed OMII-Europe has established among its partners the beginnings of such a community. Open Source communities are subject to the laws of evolution, of course. It will be a measure of how relevant our components are, that the community itself is willing to take on their further development. An aspect that would need to be considered in this regard is how to manage such open source development and publicise the work to elicit interest in this regard. This level of detail is not considered in this report but may be included in the future. An additional prospect is that national e-

infrastructure providers will find it in their interests to have these interoperability solutions and that national funding could provide a way to continue this work.

## **4 Conclusion**

The sustainability of the concepts of this project are primarily achievable through continuation funding in FP7. By conclusion of this second round funding, it is expected that the concepts would be well integrated into e-infrastructures so that sustainability is part of the management process for the e-infrastructures and grid distributions themselves.

However, the essential nature and purpose of this project is not reliant on either the existence of the project, nor on the specific project members that constitute the project. Hence, sustainability can be achieved in the partial or total absence of either the project or project members. The true mark of success for this project will be the continuation of the “Open Middleware Infrastructure” brand within all realms be they technological, organisational and social.