SCI-BUS

Summary: SCI-BUS creates a generic-purpose gateway technology that provides seamless access to major European DCIs including clusters, supercomputers, grids, desktop grids, academic and commercial clouds. SCI-BUS elaborates an application-specific gateway building technology and a customisation methodology based on which user communities can easily develop their customised gateways. The developed gateway technology and customisation methodology will be applied to create application-specific gateways customised for various types of user communities including astrophysics, seismology, helio-physics, computational chemistry, bioscience, biomedicine, PireGrid SMEs' community, Blender community, citizens' web-2 community, DCI application developer communities, and business process modelling community. SCI-BUS develops business models to enable the commercial exploitation of the developed technologies.

Objectives: SCI-BUS will create a generic-purpose gateway technology as a toolset to provide seamless access to major computing, data and networking infrastructures and services. The project will elaborate an application-specific gateway building technology and customisation methodology based on which user communities can easily develop their own customised gateway. The customised gateways developed in the project will be used as best-practice case studies based on which other communities can build their own customised gateway. Various user communities in Europe will be actively supported by providing gateway development, operation and maintenance support for them to build and operate their own customised gateways. The project will create and maintain a Liferay portlet repository that enables the quick creation of user specific customised gateways on top of the generic-purpose gateways. SCI-BUS will provide user support for application developers and end-users to develop and run new DCI applications based on the developed gateways. SCI-BUS will also develop business models that guarantee the sustainability of the gateway services developed in the project.

***Networking activities*:** These activities focus on creating awareness about the SCI-BUS gateways and framework, and on attracting and training application developers, system administrators and end-users. SCI-BUS identifies and actively searches for new user communities to ensure wider take-up of SCI-BUS technologies and services beyond the consortium members. It develops and publishes a selection methodology and criteria in order to select new user communities for which the project will develop further application-specific gateways. Through the organization of focused events it trains all stakeholders of SCI-BUS technologies to better utilise the infrastructure and services. A unifying a set of stable and widely accepted standards, interfaces, services and protocols will be chosen and recommended to establish a standard for building scientific gateways. SCI-BUS strongly collaborates with other FP7 projects and communities in order to share knowledge and develop standards relevant to gateway frameworks. SCI-BUS deals with sustainability and business models to ensure the long-term sustainability of the project results. This activity collects the requirements under which the partners can utilize and operate the results of SCI-BUS beyond the end of the project. SCI-BUS analyses the market potential for the outcomes of the project and identifies and characterizes the main players in this market. This activity collects ideas and feedback from actual and potential suppliers and customers of the project, and defines sustainable business models for the further utilization and operation of SCI-BUS.

***Service activities*:** There are three major service activities in SCI-BUS. 1. Providing the SCI-BUS production gateway services. This activity deploys, operates and maintains the production level gateway services. On the one hand it deploys one generic-purpose reference gateway connected to every major DCI of Europe, and also supports the set-up of generic-purpose gateway services for several NGIs. On the other hand it also deploys and operates application-specific gateway services for each of the eleven user communities supported by the project. 2. Providing quality assurance service. This activity provides the software engineering environment to build, integrate and test gateways both for the project partners and for the external user communities that apply the SCI-BUS technology. 3. Providing application and user

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Laurea	FI
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SCIentific gateway Based User Support - RI

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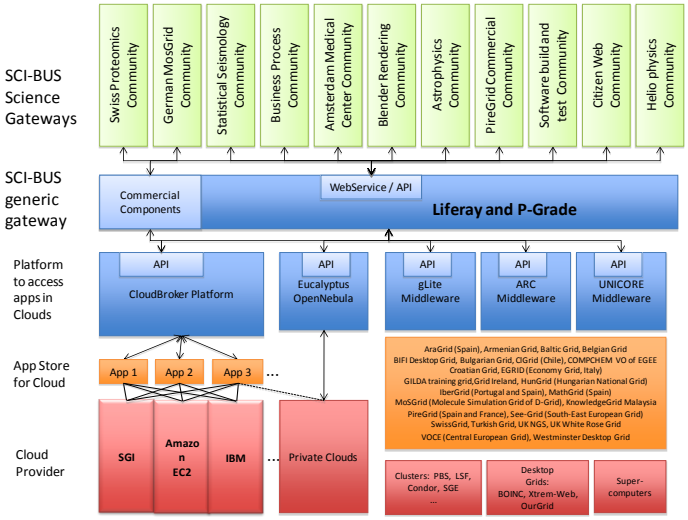
support service. This activity supports current and future user communities to use the generic and customised gateways developed and/or operated based on SCI-BUS methodology. Additionally, SCI-BUS also supports the development of new application-specific gateways: collects requirements, analyses the feasibility of utilising SCI-BUS gateway technologies and services, and designs suitable gateway based solutions for the targeted user groups. This activity provides gateway deployment services for NGIs and for external and subcontracted user communities.



***Joint Research activities*:** The key research activity in SCI-BUS is the development of the SCI-BUS generic-purpose gateway for the NGIs. SCI-BUS extends the existing generic purpose services of Liferay and WS-PGRADE/gUSE according to the common needs of the different user communities represented in SCI-BUS in order to make the SCI-BUS generic-purpose gateway easily transformable to application-specific gateways. SCI-BUS also develops the Application Specific Module (ASM) API to customise the generic-purpose SCI-BUS gateway into application-specific gateways. In addition, the project also develops an interface to commercial cloud infrastructures based on the CloudBroker Platform. Another important activity is to develop application-specific gateways for various user communities.

User communities: Consortium members directly represent the following eleven user communities for which customized scientific gateways will be built in the framework of the project: international seismology community, helio-physics, Swiss systems biology community of the SystemsX.ch project, German MoSGrid computational chemistry and bioinformatics community, biomedical researchers community of the Academic Medical Centre of the University of Amsterdam, astrophysics community, PireGrid SMEs community, business process modelling community involving a wide range of areas such as finance, healthcare, government, production, robotics and emergency, Blender rendering community, citizen Web 2.0 community, public application developer community. Beyond these communities SCI-BUS seeks for further NGI and user communities to support.

International aspects: The SCI-BUS project is linked to a large number of other national and international projects, building upon the infrastructures provided by several National Grid Initiatives (NGIs) in Europe, with whom the partners are strongly connected. NGIs that expressed their interest of using the SCI-BUS technology are: Armenian NGI, BIG Grid (The Netherlands), Bulgarian NGI, Croatian NGI, German NGI, Grid-Ireland, Italian NGI, Malaysia NGI, Slovak NGI, Swiss National Grid Association, Turkish NGI. Several international organizations and user communities have also expressed their intention to exploit SCI-BUS technology: Blender Foundation, European-Mediterranean Seismological Centre, Swiss Multi Science Computing Grid project, EU FP7 HELIO (Heliophysics Integrated Observatory) project, etc.