



e·nventory

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Deliverable D2.3

Final set of European e·Infrastructures Observatory indicators

Abstract: Deliverable D2.3 provides the final set of the European e·Infrastructures Observatory benchmarking indicators after the finalization of the main e·nventory project consultation activities. The final set of indicators comprises of thirty seven “numerical” indicators organised in nine groups so as to better reveal their capacity: Networking infrastructure, Supercomputing infrastructure, Grid infrastructure, Usage, Users, Investments, Impact, Digital agenda and Other. In addition to “numerical” indicators the European e·Infrastructures Observatory exhibits European achievements via an additional set of metrics found in the “Organisation mapping”, the “Communities mapping” and the “Chronology mapping of key events” services. The information/consultation/validation process with key individuals, projects, initiatives and e·Infrastructure stakeholders will continue for a group of indicators that are still under discussion and examination and will be added progressively to the European e·Infrastructures Observatory.

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Acronyms

ADSL	Asymmetric Digital Subscriber Line
CERN	European Organization for Nuclear Research
CPU	Central Processing Unit
DANTE	Delivery of Advanced Network Technology to Europe
DoW	Description of Work
EFTA	European Free Trade Association
EGEE	Enabling Grids for E-science
EGI	European Grid Initiative
EGI-InSpire	EGI-Integrated Sustainable Pan-European Infrastructure for Researchers in Europe
EIRO	European Intergovernmental Research Organisations
ERA	European Research Area
ESF	European Science Foundation
EU	European Union
FLOPS	(or flops or flop/s) Floating point Operations per Second. The FLOPS is a measure of a computer's performance, especially in fields of scientific calculations that make heavy use of floating point calculations, similar to the older, simpler, instructions per second
GDP	Gross Domestic Product
GÉANT	the pan-European data network dedicated to the research and education community
GER	Gross enrolment ratio
GERD	Gross Domestic Expenditure on Research and Development
HPC	High-Performance Computing
HPL	is a software package that solves a (random) dense linear system in double precision (64 bits) arithmetic on distributed-memory computers. It can thus be regarded as a portable as well as freely available implementation of the High Performance Computing Linpack Benchmark
ICT	Information and Communication Technology
ITU	International Telecommunication Union
IP	Internet Protocol
IRU	Indefeasible Right to Use
LFA	Logical Framework Analysis
NGI	National Grid Initiative
NREN	National Research and Education Network
NREN-PC	NREN Policy Committee
PPP	Purchasing Power Parity
PRACE	Partnership for Advanced Computing in Europe
QR	Quarterly report
R&D	Research & Development
SCI	Science Citation Index
SSCI	Social Sciences Citation Index
TCP	Transmission Control Protocol
TERENA	Trans-European Research and Education Networking Association
UNESCO	United Nations Educational, Scientific, and Cultural Organization
UIS	Unesco Institute for Statistics

Preface

The **e·nventory** project targets the formation of the **European e-Infrastructures Observatory**, a single-entry-point and one-stop-shop data warehouse, capable of representing multiple primary and convoluted indicators and benchmarks, and a yardstick tool for progress monitoring, impact assessment, post-mortem analysis and ex-ante evaluation of e-Infrastructures at regional and national levels across the European Union and beyond.

The aim of the **e·nventory** project is to carry out a design study that will set the grounds towards the European e-Infrastructures Observatory; through the collection and utilisation of appropriate indicators, the project will be able to monitor the status quo and evolution over time of e-Infrastructures development and communicate all findings to related stakeholders but also to the public-at-large, in a seamless and impartial way.

The **e·nventory** project will carry out extensive consultation with e-Infrastructures stakeholders and research and innovation indicator experts and will extend prior benchmarking efforts (e.g. EARNEST) by including an extensive set of e-Infrastructures components (i.e., computing, communication and services), eventually deploying a prototype web platform dealing with a critically-selected subset of indicators, through intuitive, interactive and user-friendly mappings, plots and graphics.

The project action plan is structured so that it can achieve:

- identification of a core set of benchmarking indicators for the European e-Infrastructures Observatory that will be the baseline for monitoring e-Infrastructures development progress,
- e-Infrastructures stakeholders' feedback and consensus on the proposed structure and functionality of the European e-Infrastructures Observatory, and
- European e-Infrastructures Observatory functionality demonstration through a prototype web platform that will be available to all e-Infrastructure communities and to the general public.

The **e·nventory** project responds to the need of e-Infrastructure stakeholders by delivering a prototype tool to aid impact assessment of related e-Infrastructure initiatives and programmes. In that respect, the user communities that will effectively use the European e-Infrastructures Observatory as a yardstick tool and translate the project outputs into a real influence on e-Infrastructure policy, are the e-Infrastructure stakeholders themselves, including:

- the **European Parliament**, the **European Commission** and **National Governments** that are sponsoring e-Infrastructure initiatives and place a high value in their policy agenda on the impact assessment, post-mortem analysis and ex-ante evaluation, to help design better and more successful future e-Infrastructure programmes;
- **research funding bodies** that plan the development of strategies to address the digital divide and digital opportunity issues and need to utilise and assess the impact of e-Infrastructures contributing to this goal;
- **e-Infrastructure policy bodies** that have a clear mandate of supporting the development and the sustainability of e-Infrastructures and need an impact assessment tool to monitor the progress of achieving their objectives;
- **e-Infrastructure projects** that carry out specific e-Infrastructure activities and need to monitor their impact during deployment as well as retrospectively;
- **scientific/research communities** that are empowered by e-Infrastructures and are eager to comprehend their strengths and weaknesses that influence their everyday work.

High utilisation of the European e-Infrastructures Observatory from the broad e-Infrastructure community is a key measure of the project's impact; therefore, the entire project work plan has been designed to maximize stakeholders' engagement and awareness.

The **e·nventory** project kicked-off in September 2010 and is planned to be completed by August 2012. The project is co-financed by the European Commission's Seventh Framework Programme for Research Infrastructures.

Executive summary

What is the focus of this Deliverable?

The objective of WP2 is to define the baseline list of indicators that will make up the core of the **European e-Infrastructures Observatory** monitoring framework. This set of indicators is the final outcome of a thorough selection process that took into consideration several related factors.

Deliverable D2.3 documents the final set of the European e-Infrastructures Observatory benchmarking indicators and other related data after the finalization of the consultation activities that took place within WP3 and WP5, including the Advisory Board and key European e-Infrastructure stakeholders.

What are the deliverable contents?

Deliverable 2.3 first describes the selection process that led to the establishment of the final set of indicators: selection criteria and framework, consultation activities, development procedure/steps.

The final set of the European e-Infrastructures Observatory indicators is then presented; for each indicator the key attributes are listed. The deliverable closes with a set of conclusions.

What are the deliverable main conclusions?

The baseline list of indicators that makes up the core of the European e-Infrastructures Observatory monitoring framework was defined. This set of indicators is the final outcome of a thorough selection process that took into consideration several related factors and represents a consensus with the e-Infrastructures stakeholders.

The final set of indicators comprises of thirty seven “numerical” indicators organised in nine groups so as to better reveal their capacity: Networking infrastructure, Supercomputing infrastructure, Grid infrastructure, Usage, Users, Investments, Impact, Digital agenda and Other.

In addition to “numerical” indicators the European e-Infrastructures Observatory exhibits European achievements via via an additional set of metrics found in the “Organisation mapping”, the “Communities mapping” and the “Chronology mapping of key events” services.

The information/consultation/validation process with key individuals, projects, initiatives and e-Infrastructure stakeholders will continue for a group of indicators that are still under discussion and examination and will be added progressively to the European e-Infrastructures Observatory.

How does this deliverable contribute to the project quality metrics?

This deliverable sets the grounds for the achievement of the following project quality metrics:

- *At least a core set of 15 indicators are selected and utilised for benchmarking*

How does this deliverable contribute to the avoidance/mitigation/exploitation of the project risks?

This deliverable contributes to the avoidance, mitigation or exploitation of the following project risks:

- *Core set of benchmark indicators not finalised / constantly being revised*

What is next in the process to deliver the e-nventory results?

- Deliverable D4.3 (M20) will document the final set of specifications for the prototype web platform dealing with a critically-selected subset of indicators and relevant repositories, its functionality and the user’s guide. It will further include the results of the usability and accessibility tests that will be conducted with the platform. This deliverable will also serve as a technical reference for any follow-up (production-level) version of the portal after the completion of the project.
- Deliverable D5.4 (M23) will take the form of an inauguration workshop that will demonstrate the European e-Infrastructures Observatory to representatives of the e-Infrastructures community at large.
- Deliverable D5.5 (M24) will provide a final report on the implementation of dissemination and outreach activities, including assessment of their impact on the targeted e-Infrastructure groups.