Towards a Framework for Collaboration at Global RIs – A GSO Initiative



Daniel Adams

Plenary Session 2: Governance of RIs

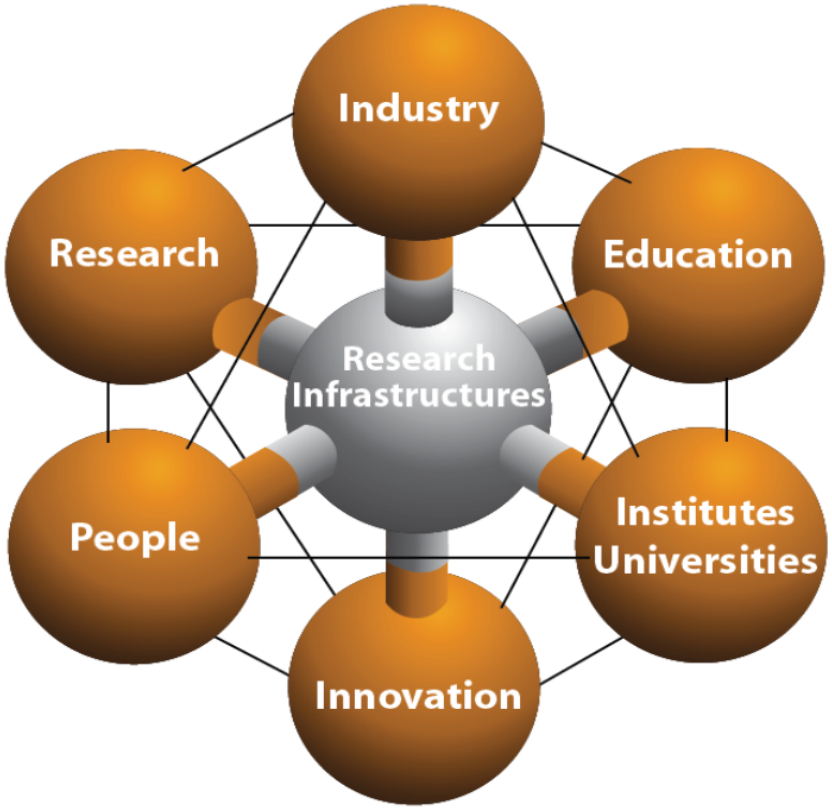
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Outline

- Objectives for establishment of GSO
- Overview of Achievements
- GSO: Classification of Research Infrastructures
- Framework and Questionnaire
- White Paper on Data
- New Mandate of GSO
- Future Plans and Potential Impact
- Conclusions

The Research Infrastructure Ecosystem



Research Infrastructures are central and an integral part of an ecosystem:

- driving knowledge generation and exploitation;
- accelerating technology development;
- training for new generations of scientists and science managers;
- technological and social innovation;
- providing capacity to address global challenges; and
- Combining the best available knowledge, human capital and resources in one specific scientific area

Objectives for establishment of GSO

The GSO was established (1st G8 Ministerial meeting, Okinawa, 15 June 2008) to:

- provide a non-binding and open forum for policy exchanges on global research infrastructures and to inform and improve international cooperation;
- share information about existing and planned new infrastructures; and
- establish principles for the development of new partnerships

Overview of Achievements

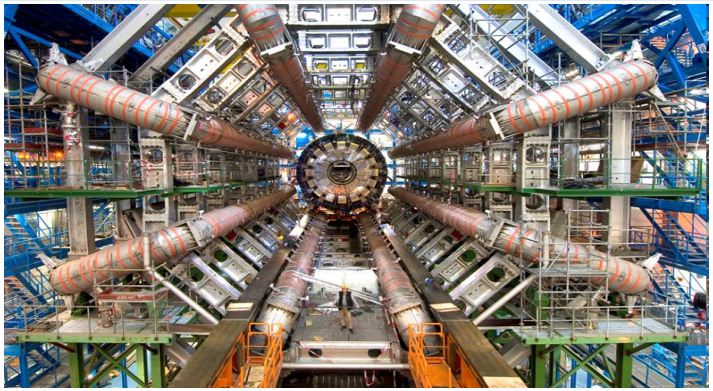
- Developed a Framework identifying the key principles that need to be addressed in presenting a research infrastructure as a candidate for international partners;
- Prepared a background report giving the justification of the components of the framework;
- Developed a questionnaire through which candidate projects can address the framework criteria; bottom-up process to decide on RIs;
- Tested the questionnaire against a limited number of candidate RIs; and
- Data Working Group has developed a White Paper on Data with 5 Principles for an Open Data Infrastructure and effective management.

At a meeting on 12 June 2013 (London, UK), the G8 Science Ministers endorsed the aforementioned actions and adopted the Framework and Data White Paper

Three broad categories of RIs of global relevance

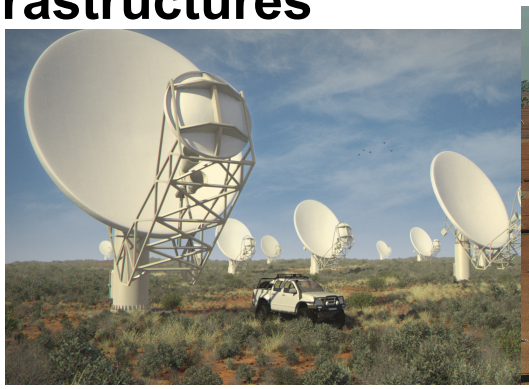
Real single-sited global facilities

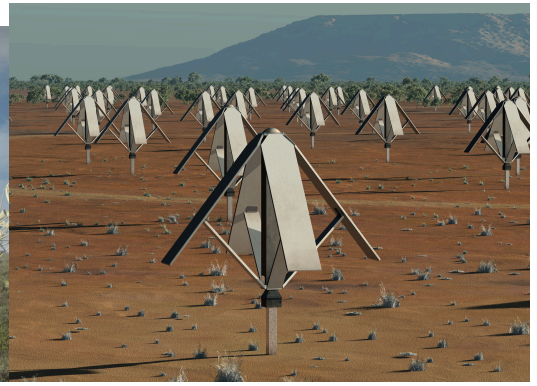
Geographically localized unique facilities; governance is fundamentally international in character (e.g. LHC at CERN);



Globally distributed research infrastructures

National or institutional nodes, part of a global network and governance is fundamentally international in character (e.g. SKA);





National facilities of global interest

National facilities with unique capabilities, attract wide interest from researchers outside of the host nation (e.g. Research Vessel, Agulhas II)



Focus of the Framework: Key Recommendations (1)

Core purpose of global research infrastructures

- address the most pressing global research challenges
- Science, technology, innovation, and advanced research training goals to be fully integrated with infrastructure development plans

Defining project partnerships for effective management

- define roles and responsibilities of partners in the different phases of a project's full life-cycle: planning, construction, operation, upgrading, and termination or decommissioning

Defining scope, schedule, and cost

- agree upon a shared understanding of the foreseen scope, schedule (including a timetable) and cost, addressing inherent uncertainties and any external constraints, and define processes to effectively address deviations

Focus of the Framework: Key Recommendations (2)

Project management

- management should be established, consistent with best practices derived from existing recommendations and experiences at the international level, to ensure rigorous project management

Funding management

- a careful balance needed between the minimum acceptable percentage of in-cash contributions and the appropriate level of in-kind contributions; in-kind contributions – quality and schedule

Periodic reviews

- scientific output and strategic goals of GRIs to be periodically evaluated and updated if needed throughout the entire life-cycle, assessment of the quality of the services offered to the scientific communities is necessary

Focus of the Framework: Key Recommendations (3)

Termination or decommissioning

- define criteria for the conclusion of operation, and establish exit criteria and procedures for closing down and recognizing future termination liabilities or encumbrances on the sponsors at the conclusion of operation

Access based on merit review

- define an access policy to GRI on the basis of peer-reviewed excellence at the beginning of the project

e-infrastructure

- recognise utility of integrated use of advanced e-infrastructures, services for accessing and processing, and curating data, as well as remote participation (interaction) and access to scientific experiments

Focus of the Framework: Key Recommendations (4)

Data exchange and interoperability

- global scientific data infrastructure providers and users to recognise the utility of data exchange and interoperability of data across disciplines and national boundaries to broaden the scientific reach of individual data sets

Clustering of research infrastructures

- cluster complementary RIs that appears to be consistent with the mission of the global research infrastructure; schemes for access to and mobility of researchers, engineers and technicians through the cluster should be actively encouraged

Focus of the Framework: Key Recommendations (5)

International mobility

- measures to facilitate the international mobility of scientists and engineers to participate in GRIs should be promoted

Technology transfer and intellectual property

- members of the GSO should regularly exchange information on best practices regarding IPR management, and on the sharing and exploitation or utilisation of data and technology generated in GRIs, by following internationally accepted regulations

Monitoring socio-economic impact

- assessment of socio-economic impact and knowledge transfer issues should be conducted throughout the life-cycle of the project.

The Questionnaire

- Questionnaire a practical tool to establish a common standard, based on framework to facilitate open exchange of information – **translate framework into a set of structured information; and**
- Information needed to enable funders and governments to assess the potential interest of the facility: RIs open for international collaboration, conditions for joining, future plans for construction, level of development, coordination of use of existing RIs on global scale

G8+6 White Paper on Data

5 Principles for an Open Data Infrastructure and effective management (aligned to Recommendations 9 and 10 of the GSO Framework):

- **Discoverable** – using conventional search methods to easily find data;
- **Accessible** – openly available with as few restrictions as possible;
- **Understandable** – data plus additional or supporting information and documentation needed for understandability and effective use;
- **Manageable** – data management policies and plans at project and institutional level, maintenance of available data, coordination of technologies and services; and
- **People** – high-skilled and adaptable workforce and culture to capture data and make it available

New Mandate of the GSO (2015)*

- Promote the Framework and continue to exchange information on potential future RIs that may present opportunities for international collaboration;
- Share information on national RI priorities and prioritisation processes; identify areas of potential benefit that could be achieved through sharing of best practices; and
- Create a representative list of global RIs open to global cooperation of interest to new partners

***Meeting on 12 June 2013 (London, UK), the G8 Science Ministers**

Future Plan and Potential Impact

- Pursue the new mandate to enable it to fulfil the areas of its original mandate that have not yet been addressed;
- Implement the Framework and associated Questionnaire for exchange of information on RIs;
- Create a comprehensive list of projects with the greatest potential for international cooperation opportunities; and
- Consider the sectors where collaboration would be beneficial, noting especially the needs of the Global Challenges

Conclusions (1)

- Using the GSO's network of policy-makers as the gateway to political buy-in for development and operation of existing and future global RIs; and
- Encouraging countries to adopt the GSO's framework for coherent and coordinated world-wide development and operation of existing and future global research infrastructures

Conclusions (2)

- Using the GSO forum as a platform for open exchange of information on major research infrastructure projects of mutual interest to countries. This could be achieved by completing the questionnaire developed by the GSO; and
- Participating in the activities of the GSO's Data Working Group to develop a framework for management of data from research infrastructures. The Data Working Group acts as a bridge between the GSO forum and the global Research Data Alliance.

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