

General requirements for SIOS

Context of general requirements in SIOS

Svalbard Integrated Earth Observing System ([SIOS](#)) is an integral Earth Observing System built on existing infrastructure, in order to better understand the ongoing and future climate changes in the Arctic.

SIOS Research Infrastructure is a distributed system for earth science, including biology, marine, atmosphere, etc.

Summary of SIOS general requirements

SIOS is building a distributed data management system, which will allow students and scientists access the observing services. Data is made available from each data management system located at different organizations. Data portal is provided, allowing users to access observation streams from different organization. Each organization manages own data. In future, users will be able to access integrated data sets and services.

There are different kinds of users. According to SIOS data management policy, use of SIOS data need to be cited. Users need to report back about their publications and results of usages of SIOS data.

There is an overlap between SIOS, ICOS and EMSO. There has been a signed agreement between EMSO and ICOS to share data and coordinate investment in RIs. In the next 3 years, SIOS data management will be implemented which will address the data sharing problem.

SIOS data system is under development. For time being, data is owned by different organizations. A number of data will be available, e.g., datasets for marine research will be relevant for EMSO, there are also dataset will be relevant to INTERACT and ICOS.

SIOS software is not open source at the moment. SIOS may bring computing resource to ENVRIplus in later stage. SIOS has an agreement with INTERACT and EMSO for data access program. There are also similar discussions with ICOS and GEM (Greenland Ecological Monetary).

SIOS RI doesn't contain a common publication repository, but each individual organization has.

SIOS communities is very divers, many organisation has their own training activities. Can be for students or scientists. An example: The University Centre in Svalbard (UNIS) has its own high quality training program for new students related to field security, i.e. how to operate safe and in accordance with environmental regulations, for all students and scientists.

Detailed requirements

A.1 What is the basic purpose of your RI, technically speaking?

A.1.1 Could you describe a basic use-case involving interaction with the RI?

SIOS is a distributed system for earth science, including biological, marine, etc. Students and scientists access observing services through data manage system which is under development.

A.1.2. Could you describe how data is acquired, curated and made available to users?

Data is made available from each data management system in each organisation. data is accessed through data portal. users can access different observations stream from different organisations. each organisation manages own data, in future users will be able to access integrated data sets and services.

A.1.3 Could you describe the software and computational environments involved?

[refer to data manage plan]

A.1.4 What are the responsibilities of the users who are involved in this use case?

Different kind of uses, report back publications, results of use. due to data manage policy, use of SIOS's data need to cited.

A.1.5 Do you have any use case involving interactions with other RIs (in the same or different domains?)

There is overlap between SIOS and ICOS and EMSO, signed agreement with EMSO and ICOS to share data and coordinate investment in RIs. in the next 3 years, SIOS data management will be implemented will address the problem

A.2 What datasets are available for sharing with other RIs as part of ENVRIplus? Under what conditions are they available?

SIOS is under development, for time being, data is owned by different organisations, a number of data will be available, eg. dataset for marine will be relevant for EMSO, others include with INTERACT and ICOS.

A.3 Apart from datasets, does your RI also bring to ENVRIplus:

A.3.1 Software? In this case, is it open source?

It should be possible but will be decided in the frame of SIOS implementation phase

A.3.2 Computing resources (for running datasets through your software or software on your datasets)?

This has to be evaluated in the frama of implementation phase

A.3.3 Access to instrumentation/detectors or lab equipment? If so, what are the open-access conditions? Are there any bilateral agreements?

access program could be relevant. SIOS has agreement with INTERACT and EMSO. has discussed agreement with ICOS and EM (greenland ecological monetary)

A.3.4 Users/expertise to provide advice on various topics?

[based on the SIOS implementation phase and on organizing aspects]

A.3.5 Access to related scholarly publications?

the SIOS RI doesn't contain a common publication repository, but each individual organization has its own.

A.3.6 Access to related grey literature (e.g. technical reports)?

[yes]

A.4 What plans does your RI already have for data, its management and exploitation?

A.4.1 Are you using any particular standard(s)?

- i. Strengths and weaknesses

[each partner of the SIOS has its own infrastructure, but not all use the same standards.]

A.4.2 Are you using any particular software(s)?

- i. Strengths and weaknesses

[can't answer]

A.4.3 Are you considering changing the current:

- i. standard(s)
- ii. software
- iii. working practices as part of a future plan?

Please provide documentation/links for all the above which apply.

[SIOS do not consider to change standards and software, it will provide interoperability]

A.5 What part of your RI needs to be improved in order:

A.5.1 For the RI to achieve its operational goals?

[can 't answer]

A.5.2 For you to be able to do your work?

[easy access to discover visualize and download data]

A.6 Do topics [1-6] cross-link with your data management plan?

A.6.1 If so please provide the documentation/links

[not at the moment]

A.7 Does your RI have non-functional constraints for data handling and exploitation? For example:

- a. Capital costs
- b. Maintenance costs
- c. Operational costs
- d. Security
- e. Privacy
- f. Computational environment in which your software runs
- g. Access for scrutiny and public review

If so please provide the documentation/links

[can't answer

A.8 Do you have an overall approach to security and access?

[yes

A.9 Are your data, software and computational environment subject to an open-access policy?

[yes]

A.10 What are the big open problems for your RI pertinent to handling and exploiting your data?

[can't answer]

A.11. Are you interested in any particular topic [1-6] to discuss in more detail?

A.11.1 If so, would you like us to arrange a follow up interview with more detail questions about any particular topic to be discussed?

[can't answer]

A.12. Optional: If you are not the right person to reply to some questions from the above, please suggest the right person to contact from your RI for those questions.

[can't answer]

Formalities (who & when)

Go-between	Yin Chen
RI representative	Jon Borre Orbek, Angelo Viola, Vito Vitale
Period of requirements collection	Oct 2015-Dec2015
Status	Waiting for information from Angelo



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