# Selection process for GEO Geohazard Supersites
# A proposal of the Committee on Earth Observing Satellites

September 18, 2012


## Summary

The Committee on Earth Observing Satellites (CEOS) supports the Geohazard Supersites Initiative of the Group on Earth Observations (GEO). The Geohazard Supersites Initiative aims at deepening knowledge and scientific understanding of geologic processes posing natural hazards. The Supersites serve to focus activities of research groups on a few regions of highest priority to the geohazards science community, and provide for creating rich datasets by prioritizing limited resources of data providers.

CEOS proposes to set up a transparent process for selecting Supersites, Event Supersites, and Natural Laboratories. To this end, proposals should be reviewed by a Scientific Advisory Committee (SAC) representing the relevant scientific communities, and by the CEOS Supersites Coordination Team (SCT) representing the space agencies contributing satellite data.

To ensure that data contributions remain effective towards the objectives of the Supersites Initiative, existing Supersites should be re-assessed regularly.


## Introduction

### Objective of the Geohazard Supersite initiative

The "Geohazard Supersites and Natural Laboratories" Initiative of the Group on Earth Observations (GEO) – simply called "Geohazard Supersites" in this paper – envisions "*to reduce the vulnerability to geological hazards by improving the scientific understanding of hazardous events through worldwide scientific collaboration*"[1].

[1] The Geohazard Supersites Partnership, White Paper and Implementation Plan, 11 October 2011 (available at http://supersites.earthobservations.org/SupersitesWhitePaper_final.pdf)

According to its Strategic Plan the overarching objective of the Geohazard Supersites Initiative is

"*to enrich our knowledge about geohazards by empowering the global scientific community through collaboration of space and in-situ data providers and cross-domain sharing of data and knowledge*"[2].

This objective differs from that of related initiatives, notably the International Charter Space and Major Disasters, in that it focuses on broadening scientific understanding as a prerequisite to managing geohazards.

The primary function of the Geohazard Supersites in supporting this objective is to provide easy and free-of-charge access to comprehensive satellite and ground-based geophysical data sets derived from different sources and different disciplines. This inter-disciplinary approach of using satellite radar data, seismology, and other earth science domains, provides the unique potential in making scientific steps in narrowing down the uncertainty of future disastrous events and providing information to policymakers for urbanization in geohazards endangered areas.

In its Strategic Plan the Supersites Initiative specifies six aims:

1. To facilitate new scientific discoveries through unprecedented access to a wide range of data sets
2. To develop and transfer timely scientific knowledge about earthquakes
3. To develop and transfer timely scientific knowledge about volcanic crises
4. To improve earthquake preparedness by systematic SAR imagery acquisition
5. To develop sustainable long-term Earth observation strategies following earthquakes and eruptions
6. To further develop user requirements for the Global Earth Observation System of Systems (GEOSS)

To date the Supersites Initiative has focused on the geologic hazards constituted by active tectonics involving volcanic unrest and damaging earthquakes. This scope may be broadened to other geologic hazards, e.g. landslides or subsidence, once a substantial scientific community has formed a consensus on data needs to address them.

Similarly, the initial focus has been on SAR imagery, as the Supersites initiative has been initiated by scientists interpreting surface displacements measured by SAR interferometry. Nevertheless, the data and tools employed in the frame of the Supersites initiative should follow the scientific requirements. The Supersites initiative should be supported with any relevant type of satellite and *in situ* data or modeling tools.

[2] Geohazard Supersites and Natural Laboratories Strategic Plan, Version 1.0, October 2011 (available at http://supersites.earthobservations.org/SupersitesStrategicPlan_draft_FA1_0%20.pdf)

## Types of Supersites

This section defines the terms “Permanent Supersite”, “Candidate Supersite”, “Event Supersite”, and “Natural Laboratory”. These definitions are not identical to those in the Supersites White Paper, but refine them as agreed in the Supersites Partnership.

### Permanent Supersites *(also simply referred to as “Supersites”)*

A Permanent Supersite is defined as a geographic region (single sites or extended areas) of highest priority to the geohazards community in which an active geologic process (e.g. tectonic, including volcanic, landslide)

- poses a threat to human population and/or critical facilities;
- is subject to investigations aimed at broadening scientific understanding of the causative process and/or geohazards assessment: and
- is studied using comprehensive satellite and other (*in situ*) data sets made available under the Geohazard Supersites Initiative.

Permanent Supersites

- must have well-developed data infrastructures providing open access to data acquired by in-situ and satellite Earth observing systems;
- support collaborative research activities of a broad international research community;
- provide open, and free-of-charge access to comprehensive satellite (optical and/or SAR) and ground-based geophysical data sets derived from different sources and different disciplines;
- are not limited in time.

Supersites must clear a selection process aimed at achieving a representative selection of areas exposed to geological threats. The process proposed by CEOS is described below.

### Candidate Supersite

A Candidate Supersite is a geographic region that has been selected as a Supersite by the Scientific Advisory Committee and CEOS through the process described below, but for which the data provision interfaces have not been established completely. The SAC should establish the specific criteria to determine the transition from “Candidate Supersite” to “Permanent Supersite” status.

### Event Supersite

An Event Supersite is a geographic region which has very recently been affected by an earthquake, severe volcanic unrest or similar event, and for which a scientific forum of experts, end-users and data providers is set up in the immediate aftermath of the event.

The hazard sources or impacts should

- provide an important and rare opportunity for scientific investigation;
- motivate substantial scientific interest and investigations of the region; and,

- benefit from comprehensive satellite and other (*in situ*) data sets made available under the Geohazard Supersites Initiative

Event Supersites

- provide open and free-of-charge access to comprehensive satellite and ground-based geophysical data sets derived from different sources and different disciplines;
- are limited in time and area and must be justified by the interests of the scientific community

Event Supersites are defined in a much quicker process. They typically benefit from data contributions and research attention over a relatively short time period only. Data providers may differentiate between Supersites and Event Supersites in the scope of data and the length of time of their voluntary commitments taken with respect to the Supersites Initiative.

Event Supersites often are proposed following events that have affected large populations, caused substantial damages and have been covered in main-stream media. Event Supersites thereby provide an opportunity also for data providers to demonstrate the usefulness of their activities to a broader public. Nevertheless, it should be emphasized Event Supersites are set up to support the scientific objectives of the Geohazard Supersites initiative. These sites support scientific investigations on major events and take benefit from the elevated attention by scientists as well as the public following them.

### Natural Laboratories

A Natural Laboratory (NL) is a geographic region in one or several countries characterized by tectonic processes and geohazards similar to those of Permanent Supersites. They are subject to investigations aimed at broadening the scientific understanding of the processes and at geohazard assessment. They may cover larger regions, contain one or more Permanent or Candidate Supersites and may be less densely monitored. NL provide a framework for regional collaborations and a mechanism for interested parties (e.g. monitoring agencies, individual CEOS Agencies) to use the Supersites cyber-infrastructure to make data and tools for a specific region available.

## Initial set of Supersites

An initial set of proposed Supersites has been defined in the development of the initiative. These are listed here (see The Geohazard Supersites Partnership Supplement to the White Paper, V. 3.3[3]):

| Location, Site Name | Supersite Point of Contact |
|---|---|
| *Earthquake Supersites* | |
| **Mt. Fuji-Tokyo, Japan** | Yosuke Aoki, ERI Tokyo |
| **Vancouver, Canada / Seattle, USA** | Herb Dragert, GSC |
| **Los Angeles, USA** | Ken Hudnut, USGS |
| **Istanbul, Turkey** | Semih Ergintav, Tubitak |

[3] The Geohazard Supersites Partnership, Supplement to the White Paper, DRAFT VERSION 3.3, FA, October 2011 (available at http://supersites.earthobservations.org/SupersitesWhitepaper_FA3_3_Supplement.pdf).

| *Volcano Supersites* | |
|---|---|
| **Mt. Fuji-Tokjo, Japan** | Yosuke Aoki, ERI Tokyo |
| **Vesuvius / Campi Phlegreii, Italy** | Sven Borgstrom, INGV |
| **Mt. Etna, Italy** | Giuseppe Puglisi, INGV |
| **Hawaii, USA** | Mike Poland, USGS |

Event Supersites have been

| Location, Site Name | Event | | Event Supersite Point of Contact |
|---|---|---|---|
| **Haiti** | Earthquake | January 12, 2010 | Falk Amelung, Univ. Miami |
| **Chile** | Earthquake | February 27, 2010 | Mark Simons, Caltech |
| **Tohoku-oki, Japan** | Earthquake and Tsunami | March 11, 2011 | Yosuke Aoki, ERI Tokyo |

## CEOS support of the GEO Supersites Initiative

Enabling and supporting scientific research and realizing societal benefit of remote sensing space activities is an important mandate of the CEOS Agencies. CEOS has taken responsibility for coordinating contributions of its member agencies to the Supersites initiative to make these contributions more effective. The CEOS Agencies aim to benefit from their contributions to the Supersites Initiative by more effective use of their earth observation resources in fulfilling their mandates.

Any commitment towards supporting the Supersites Initiative given by the CEOS Agencies is purely voluntary and governed by their respective rules, regulation and resource limitations. Therefore, individual CEOS Agencies can commit at different levels to supporting the Supersites Initiative. They may restrict the number of data sets made available to the Supersites Initiative as a whole or to individual supersites, only provide certain data products or may require acceptance of terms and conditions for the use of data they provide. These may, for example, restrict the use of the data to the scientific purposes described in the Supersite documentation or prohibit re-distribution of data. Generally, the CEOS Agencies are committed to implementing the GEO Data Sharing Principles.

CEOS aims at coordinating satellite data acquisition and access in support of the Supersite initiative. The CEOS Agencies aim at making their data contributed to the Supersites initiative accessible as easy as possible and in a coordinated fashion for scientist taking benefit of the Supersite Initiative.

## Selection of Supersites

This document proposes a process by which Supersites are selected and reviewed. Such a process is fundamental to the Supersites initiative. By mandating agreement on a limited number of sites, it focuses attention and resources, facilitates cooperation among scientists and helps resource providers, (including satellite data providers) to coordinate their contributions.

The proposed Supersite selection process provides for steering and priority setting by the scientific users and some control by satellite data contributors to ensure an appropriate match with available resources.

This proposal builds on the concepts laid-out in the Supersites White Paper and, more specifically, its supplement.

## Supersites governance

The Supplement to the Supersites White paper describes a structure for the Geohazard Supersites consortium, including

- a Scientific Advisory Committee (SAC),
- Research Institutions (Data User Members) including, notably, the Geohazards Community of Practice, and
- a Steering Group (Data Provider Members), including Space Agencies and *In situ* data providers.

The process for selecting Supersites proposed by CEOS in this paper builds on these general structures, noting that the SAC itself is working on revising and developing the governance structure. It also proposes some specifications of their roles and responsibilities as well as their composition compared to the current version 3.3 (of October 2011) of the Supplement.

### Scientific Advisory Committee (SAC)

The SAC currently consists of 8 scientists that have been active in promoting the initiative.

In order to fulfill the proposed functions in Supersites selection and review CEOS proposes that the composition and procedures of the SAC are reviewed during the ongoing strategic planning process.

The SAC should be composed of

- scientists of some standing in the geohazards community,
- a member of the GEO Secretariat responsible for the Societal Benefit Area of Disasters[4],
- at least some scientists actively involved with the work on existing Supersites.

It should provide for some overlap in composition with the GEO Community of Practice on Geohazards.

While CEOS recognizes that the initial composition of the SAC[5] results of the roots of the Geohazard Supersites idea in the scientific community exploiting interferometric SAR analyses, CEOS aims at broadening the scientific communities engaged. It is therefore proposed that the SAC has representation of scientists beyond users of SAR data.

[4] Currently: Francesco Gaetani

[5] Falk Amelung (University of Miami, Chair), Yosue Aoki (Tokyo) , J. Biggs (Bristol), Eric Fielding (JPL), Yo Fukushima (Kyoto), M. Motagh (GFZ), Andy Hooper (TU Delft) , J. Pallister (USGS) , M Prittchard (Cornell), E. Sansosti (IREA-CNR), S. Stramondo (INGV) , T. Walter (GFZ), Tim Wright (University of Leeds).

CEOS would also welcome if members of the CEOS Supersites data coordination team (see below) were invited as observers to meetings of the SAC.

### CEOS Supersite Coordination Team (SCT)

The SCT acts as the "Steering Committee" referred to in the Supersites White Paper. The SCT is composed of representatives of participating CEOS Agencies[6]. It is the primary interface of CEOS Agencies to the Geohazard Supersites. Its two main functions are

1. to review the Supersites on behalf of the space agencies contributing data, and
2. to coordinate the provision of satellite data to the Supersites.

## Selecting new Supersites

CEOS proposes to follow a 5-step procedure for establishing additional Supersites:

1. Supersite nomination
2. Recommendation of the SAC to CEOS
3. CEOS SCT recommendation to CEOS leadership
4. Acceptance by the CEOS Strategic Implementation Team and Plenary
5. Final determination by the SAC of Supersite implementation

### *1. Supersite nomination*

Any scientist or group of scientists interested in establishing a new Supersite may make a proposal to the SAC at any time. To facilitate the evaluation process, CEOS recommends that nominations employ the standard structure of the Canadian Space Agency's Science and Operational Applications Research (SOAR) Program proposal process (see below).

### *2. Recommendation of the SAC to CEOS*

The SAC then reviews the proposal for an additional Supersite. It establishes that

- the proposed Supersite supports the objectives of the Supersite Initiative,
- there is broad scientific interest in working on the proposed Supersite,
- the proposed Supersite is a well-justified complement to existing Supersites, aiming at establishing the Supersites as a representative selection of areas exposed to geological threats,
- substantial in situ monitoring exists and can be made available in support of the Supersite.

It is important to select Supersites that serve to focus the activities of research groups on a limited number of high priority regions. This will add value by providing for cooperation among research

[6] Currently: ESA (Wolfgang Lengert), DLR (Jörn Hoffmann, Chair), CSA (Guy Seguin), JAXA (Ochiai Osamu), ASI (Simona Zoffoli), NASA (Craig Dobson), and CNES (Steven Hosford).

groups and concentration on resources from different sources towards a common project. The geologic processes to be studied at the newly proposed Supersites should therefore not be too similar to those of existing Supersites.

The SAC may recommend the new Supersite to CEOS or decide not to support the nomination. In the latter case the nominated region may be supported by some space agencies outside the Geohazard Supersites context. Space agencies may start supporting sites based on the SAC recommendation alone, e.g. by acquiring data to establish relevant data archives. The SAC may also decide to require clarification on the in situ data that may be available and the expected access conditions prior to making its recommendation.

### *3. Recommendation of the CEOS SCT to CEOS leadership*

If the SAC recommends the addition of a new Supersite, it will transmit the Supersite proposal to the CEOS SCT. The SCT will evaluate the proposed Supersite with respect to the following criteria:

- Substantial interest of a broad scientific community, e.g. demonstrated by a minimum number of research teams
- Support by the country – or countries – in which the Supersite is located
- Availability of relevant *in situ* data
- Dis-similarity to already existing Supersites
- The ability of CEOS Agencies to provide sufficient remote sensing satellite resources to make a meaningful contribution to observation/analysis of the new Supersite
- A single Supersite Point of Contact has been identified and is committed to coordinate space data requests and reporting, if applicable.

The CEOS SCT expects Supersite proposals to be presented following the structure used by several CEOS Agencies, such as that of CSA's SOAR Program or comparable CEOS Agency programs. The categories of required information are included in Annex A of this document. CEOS recommends that the SAC bases its own review on that structure and amend the presentation as needed prior to its recommendation to the CEOS SCT.

### *4. Acceptance by CEOS-Strategic Implementation Team (SIT) and CEOS*

If the CEOS SCT supports the Supersite proposal, it then presents it to the CEOS Strategic Implementation Team (SIT) for the latter's confirmation of CEOS Agency resources to provide existing and future satellite remote sensing observations. The proposal by the SCT will include specific requested commitments by all participating agencies what resources are foreseen in support of the proposed Supersite. While these commitments are voluntary and realization of these commitments will be on a best-effort basis, the level of commitments will be a key element for approval of CEOS. Following CEOS-SIT acceptance CEOS Plenary will be asked to confirm CEOS support to the proposed Supersite.

Acceptance of the proposal by the CEOS-SIT marks the proposed site's transition to "Candidate Supersite" status. Participating CEOS Agencies will inform the Supersite PoC about the available

resources, procedures for data requests and access, terms and conditions for data use, and any requirements for reporting.

### *5. Final determination of SAC of Supersite implementation*

Once the data coordination and access procedures have been established and substantial data resources have been made available for a Candidate Supersite, the SAC determines (through its own criteria) that the Supersite has been successfully set up.

## Initial Supersites

The initial set of Supersites should be presented in the same way as newly proposed Supersites. However, as these Supersites have already been presented to several relevant bodies, including the GEO Community of Practice on Geohazards, the CEOS SIT, CEOS Plenary, and the GEO Plenary, it is expected that these will all be supported. Nevertheless, the SAC may view this process as an opportunity to review and refine the initial set of Supersites and reassess their scientific relevance.

In order to enable a coordinated response by the CEOS Agencies, the initial set of Supersites should be presented in the same structure that the SCT expects for new proposals (see Annex A). CEOS proposes that the identified PoC for each Supersite are requested to present the Supersite proposal in that format to the SAC, once it is elected. The initial Supersites will then be endorsed by the process described in the previous section.

## Event Supersites

As Event Supersites are set-up in response to sudden events (e.g. severe volcanic unrest, earthquake) that cannot be predicted with much accuracy, the process for agreeing on Event Supersites must be more ad-hoc than for the regular Supersites. A response must also be provided very quickly to be meaningful. CEOS proposes to follow a 3-step procedure for establishing additional Supersites:

1. Event Supersite nomination
2. Establishing interest and available data resources
3. Confirmation of short-term CEOS support of Event Supersite by CEOS SCT

### *1. Event Supersite nomination*

Nominations for Event Supersites are possible by

- The Chair of the SAC (currently Falk Amelung, University of Miami)
- Any Member of the CEOS SCT
- The Point of Contact of any of the existing Permanent Supersites

Nominations should be transmitted directly to the SCT following a simplified, yet standard presentation structure for Event Supersite proposals (Annex B). These should be no more than one page long.

### *2. Establishing interest and available data resources for Event Supersite*

Members of the SCT will respond as quickly as possible by confirming their intention to support the Event Supersite and by identifying available resources (e.g. data acquisitions). The Point-of-Contact for the proposed Event Supersite should be careful in specifying the data needs as these may be used by CEOS Agencies for immediate acquisition planning.

### *3. Confirmation of CEOS support to Event Supersite*

If the CEOS SCT finds that there is sufficient support among CEOS Agencies in support of the proposed Event Supersite, SCT will communicate with the Point-of-Contact of the Event Supersite about the available resources, procedures for data requests and access, terms and conditions for data use, and any requirements for reporting.

It is worth noting that this is not an operational procedure but a best-effort response. Hence, no commitment is made by CEOS Agencies to respond within a specific time, nor can it be assumed that CEOS Agencies would respond in as comprehensive manner as they would for existing, Permanent Supersites. Depending on the time of the nomination and the availability of key contact points of contributing agencies, the above procedure may be expected to conclude in about 2-3 working days. Satellite operators may choose to initiate satellite tasking and data acquisitions in parallel, though.

## Natural Laboratories

Distinguishing between (Permanent) Supersites and Natural Laboratories allows contributing CEOS Agencies with stricter limitations (in terms of data policies or resources) to differentiate in their support to the different sites. At the same time it allows the scientific user communities to identify additional regions of interest. CEOS agencies with fewer restrictions on data dissemination and/or acquisition capacities will be able to compile meaningful datasets in support of the NL.

Note that a proposal for a Permanent Supersite failing to get the necessary support by SAC or SCT may become a proposal for a Natural Laboratory.

The following simplified process – compared to the Supersites selection – could be used to select Natural Laboratories:

1. Natural Laboratory nomination
2. Acceptance by CEOS Supersite Coordination Team or individual CEOS members

### *1. Natural Laboratory nomination*

Natural Laboratories should be nominated by the SAC or a member of the CEOS SCT. Nominations can be made directly to the SCT following the same structure as the Supersites proposals (Annex A).

### *2. Natural Laboratory acceptance*

The SCT will review the proposal for NL according to a sub-set of the criteria used for the Supersite selection:

- Interest of data provider to open a Natural Laboratory ( at least one in-situ and 1 space data provider is needed)

- Substantial interest of a scientific community exists, e.g. demonstrated by a minimum number of research teams
- Support by the country – or countries – in which the Natural Laboratory is located
- Availability of relevant *in situ* data
- A single NL Point of Contact has been identified and is committed to coordinate space data requests and reporting, if applicable.

Following positive evaluation the SCT will respond by specifying the expected contributions by all participating CEOS Agencies to the proposed Natural Laboratory. Participating CEOS Agencies will inform the Supersite PoC about the available resources, procedures for data requests and access, terms and conditions for data use, and any requirements for reporting.

## Review procedures

Notwithstanding careful selection of the Supersites, CEOS will conduct a regular review of the continued relevance of the Supersites. This is to respond to changes in the scientific communities involved, research interests, available funding supporting data analysis in different regions, etc.

CEOS will to use the following review procedure, to be done every two years.

1. Point-of-Contacts report to SAC
2. SAC recommendation on Supersite
3. SCT recommendation on Supersite
4. Confirmation of CEOS support to Supersite at Plenary.

### *1. Point-of-Contacts report to SAC*

As a condition of his/her data receipt, the Point of Contact for each Permanent Supersite is required to compile a short written report on the activities conducted under the Supersite. This should not constitute a major reporting burden, but allow the SCT to assess whether the Supersite continues to be a focus of cooperative scientific research in support of the objectives of the Geohazard Supersite Initiative. To this end, the report should provide references to scientific publications, project reports of ongoing or recently completed research projects, and current funding proposals that are expected to support further research on the Supersite. The report should provide an update of the scientific research teams actively engaged in work on the Supersite.

### *2. SAC recommendation on Supersite*

Based on the report of the Point-of-Contact, the SAC will recommend to the SCT whether support to the Supersite should be continued. The SAC will apply the same criteria that are used in the initial selection of the Supersite.

### *3. SCT recommendation on Supersite*

Based on the report of the Point-of-Contact and the recommendation of the SAC, the SCT will recommend to the CEOS SIT and Plenary if support to the Supersite should be continued. The SCT applies the same criteria that are used in the initial selection of the Supersite. The SIT will, in turn, provide a resource update and related recommendation on all sites (Supersites and Event Supersites) to the CEOS Plenary for the latter's confirmation of continued support (as appropriate).

As part of this process, the SCT will update the specified commitments by all participating agencies, which resources are available in support of the proposed Supersite, and account for any changes in the missions available.

### *4. Confirmation of CEOS Support to Supersite*

For Supersites, continued support should be confirmed by the CEOS SIT chair in a letter to the GEO Secretariat and the PoC of the Supersite.

# Annex A – Structure to be used for proposals for Supersites

To facilitate the evaluation by the CEOS Supersite Coordination Team (SCT) proposals for Supersites should be presented according to the following structure. This structure is based strongly on existing structures used by CEOS Agencies, e.g. the SOAR[7] structure used by CSA. Proposals should be provided as an electronic document to the Chair of the SCT.

### *A.1 Proposal Title*

Should specify if the proposal is for a Supersite and include a meaningful name indicating the geographic region and the geologic process characterizing the site.

### *A.2 Supersite Point-of-Contact (PoC)*

Provide Name, Affiliation, Contact information. If the PoC is not authorized to sign legal license agreements, the name and contact information for the individual signing these agreements must also be included.

The PoC is the interface between the CEOS Agencies and the research teams using the data provided. The PoC will be responsible for

- ensuring that applicable rules and regulations are respected. These may include security regulations, terms of use (e.g. “scientific use”)
- reporting of any changes in research team compositions or affiliations
- organizing data access within the Supersite science team
- any reporting requirements specified by CEOS Agencies

### *A.3 Core Supersite Team and organization*

List of persons in the research team of the PoC and description of the structure of the team. These teams will typically be no larger than 20 individuals. This section should also indicate the teams capacity to exploit the data requested.

### *A.4 Other Supersite Research Teams*

List other research teams interested in working with data provided for the Supersite, where known. Some CEOS Agencies may require individual proposals, referring to the Supersite, so that access can be provided to research teams working largely independently from each other.

### *A.5 Supersite description and justification*

This section should provide a concise justification for the Supersite:

- How does the Supersite support the objectives of the Geohazard Supersites?
- Which geological process characterizes the site?
- How can the geohazard be characterized?

[7] http://www.asc-csa.gc.ca/eng/programs/soar/

- What research questions, application developments or operational system enhancements will be pursued at this site?
- How does this new site complement / add value to the existing set of Supersites?
- What data and observation systems and models are available for this site? Who operates them? Can these data/systems/models be accessed readily by the research team?
  If the Supersite PoC represents a primary (in situ) data provider, this should constitute a "commitment" to making data/systems/models available for the Geohazard Supersites.
- Describe the local support to the Supersite proposal.

### *A.6 Current or future use of requested data*

Brief description of the primary investigations that will be supported by the data requested for this site.

### *A.7 Schedule*

Description of milestones for establishing, monitoring and evaluating the Supersite.

### *A.8 Detailed geographic region of interest*

Describe the region of interest in detail. This should include geographic names (country, province, city, fault zone, volcano) and geographic coordinates delineating the area.

### *A.9 Data requirements*

This section should detail the required data acquisitions. It must describe the necessary data types (SAR band, polarization, imaging mode, incidence angles, viewing geometry, etc), information on the required acquisition times (e.g. monthly coverage, coverage during summer months). This section should include an estimation of the number of products that will be requested.

### *A.10 Available resources*

This section should indicate the resources available for conducting the research. Major research grants and funding programmes should be indicated.

### *A.11 Additional comments*

Further information can be provided that will be useful in the evaluation of the proposal.

# Annex B – Structure to be used for proposals for Event Supersites

Event Supersites are generally set-up in response to sudden events (e.g. severe volcanic unrest, earthquakes). Consequently, the process for agreeing on Event Supersites is more ad-hoc than for the regular Supersites. CEOS Agencies will decide quickly if and how they intend to respond to a request for support of an Event Supersite.

### *B.1 Proposal Title*

Should specify that the proposal is for an Event Supersite and include a meaningful name indicating the geographic region and the Event.

### *B.2 Person proposing the Event Supersite*

Nominations for Event Supersites are possible by

- The Chair of the Scientific Advisory Committee
- Any Member of the CEOS Supersite Coordination Team
- The Points of Contact of any of the existing Supersites

### *B.3 Event Supersite Point-of-Contact (PoC)*

Provide Name, Affiliation, Contact information. If the PoC is not authorized to sign legal license agreements, the name and contact information for the individual signing these agreements must also be included.

The PoC is the interface between the CEOS Agencies and the research teams using the data provided. The PoC will be responsible for

- ensuring that applicable rules and regulations are respected. These may include security regulations, terms of use (e.g. “scientific use”)
- reporting of any changes in research team compositions or affiliations
- organizing data access within the Supersite science team
- any reporting requirements specified by CEOS Agencies

### *B.4 Event Supersite research team*

List of persons expected to work with the data requested, to the extent known.

### *B.5 Event Supersite description and justification*

This section should provide a concise (~1/2 page) justification for the Supersite / NL:

- How does the Supersite / NL support the objectives of the Geohazard Supersites?
- Description of the event;
- What research questions, application developments or operational system enhancements are expected to be pursued at this site?

- What data and observation systems and models are available for this site? Who operates them? Can these data/systems/models be accessed by the research team?

- Has local support to the Supersite proposal been established?

### *B.6 Current or future use of requested data*

Brief (1 paragraph) description of the primary investigations that will be supported by the data requested for this site.

### *B.7 Schedule*

Anticipated duration of the interest in the Event Supersite.

### *B.8 Detailed geographic region of interest*

Describe the region of interest in detail. This should include geographic names (country, province, city, fault zone, volcano) and geographic coordinates delineating the area. Care should be taken in defining this region as it may support immediate tasking by CEOS Agencies.

### *B.9 Data requirements*

This section should detail the required data acquisitions. It must describe the necessary data types (SAR band, polarization, imaging mode, incidence angles, viewing geometry, etc), information on the required acquisition times (e.g. monthly coverage, coverage during summer months). This section should include an estimation of the number of products that will be requested. Care should be taken in defining this region as it may support immediate tasking by CEOS Agencies.

### *B.10 Additional comments*

Further information can be provided that will be useful in the evaluation of the proposal.