

CEOS Support to the Geohazard Supersites

The CEOS Supersite Coordination Team:

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The GEO Geohazards Supersites Initiative

- **Aims at** *enriching 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*
- **Primarily through** *providing easy and free-of-charge access to comprehensive satellite and ground-based geophysical data sets derived from different sources and different disciplines*



CEOS Engagement in the GEO Geohazard Supersites

- **Lucca Statement:** *“CEOS Agencies have decided [...] to focus on the following priority initiatives [...] continued progress in the implementation of the Geo-hazards Supersites initiative”*
- **25th CEOS Plenary** (2011) concurred on establishment of a CEOS Disaster SBA Team subgroup to review Supersite proposal requests and coordinate Agency data provision
 - Develop agreement on objectives and definition of supersites
 - Establish process to respond to Supersite proposals
 - Review Supersites proposals, evaluate the science aspect and coordinate Space Agencies data provision.
 - Advise CEOS on course of actions and policy.
 - Identify required actions in CEOS action plan and report to CEOS on milestones deliverables and progress
 - Advise on resources, delivery on commitments of Members and Participating Organizations.



- **Main 2012 achievements/outcomes:**
 - CEOS proposal for Supersite selection
 - Supersite Consortium agreed on Supersite definition
 - Specific proposal for Hawai'i Supersite
- **Future activities and milestones**
 - Settle initial Supersites Consortium structures (end 2012)
 - Agree CEOS coordination mechanism for data contributions (end 2012)
 - Prepare and evaluate Supersites proposals (initial set end 2012/early 2013)
- **Main Issues**
 - Leadership at GEO level still under development
 - Incomplete engagement of targeted science community (currently mostly InSAR-applications)
 - Not all potentially contributing Agencies engaged



Status

- CEOS Proposal presented in May 2012
- Subsequent discussions with stakeholders
- Agreed in September 2012

Types of Supersites

- (Permanent) Supersites: high priority to scientists internationally, active geophysical process poses threat, well-developed observation infrastructures
- Candidate Supersites: Supersites that have not been fully set up
- Event Supersites: recent natural disaster provides rare opportunity for research, great interest by scientist, available satellite data sets can meaningfully support research
- Natural Laboratories: similar to Supersites, but of lower priority, more regional interest, or limited observation infrastructures



Status

- CEOS Proposal presented in May 2012
- Subsequent iterations with input from larger Supersites consortium
- **SIT supported the proposed selection process**

Includes

- Selection criteria and process for
 - (Permanent) Supersites
 - Event Supersites
 - Natural Laboratories

**Plenary is requested
to accept the proposed
process**

Details provided in supporting document for CEOS Plenary



Process for Permanent Supersites

- **Supersite Nomination**
 - using standard proposal based on existing Agency standards
- **Recommendation by Scientific Advisory Committee (SAC)**
- **Recommendation by CEOS Supersites Coordination Team (SCT)**
 - includes details on data contributions planned
- **Approval by CEOS SIT and Plenary**
- **SAC confirms successful setup**

Regular review

- **Are Supersites actively exploited? Are they the right ones?**
- **Every 2 years**



Criteria applied by Supersites Coordination Team (SCT)

- **Geohazard threatens human population or infrastructure**
- **subject to investigations aimed at broadening scientific understanding**
- **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**
- **CEOS Agencies are able to provide sufficient remote sensing satellite resources to make a meaningful contribution**
- **Single PoC identified and committed to coordinate space data requests and reporting, if applicable.**



Process for Event Supersites

- **Supersite Nomination** (must be very quick in order to be relevant)
 - Nomination only by
 - Chair of the SAC
 - Any member of the CEOS-SCT
 - Point-of-contact for any existing (Permanent) Supersites
- **SCT establishes interest and ability of CEOS Agencies to contribute**
- **SCT responds on behalf of CEOS**
→ **No confirmation by SIT or Plenary needed!**

Criteria for Event Supersites

- has recently been affected by earthquake, severe volcanic unrest or similar
- Hazard/impact provide important and rare opportunity for research
- Event motivates substantial scientific interest and investigations
- Event Supersite benefits from space and in situ data made available

Review

- **Event Supersites are time limited, typically ~weeks.**



Process for Natural Laboratories

- **Supersite Nomination**
 - using standard proposal based on existing Agency standards
 - **Acceptance by Supersite Coordination Team *or individual Agencies***
- flexible mechanism for Agencies to respond to specific priorities

Criteria for Natural Laboratories

- Interest of at least one CEOS Agency
- 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
- Single PoC identified and committed to coordinate space data requests and reporting, if applicable.



Status

- De facto active since 2010
- Formal proposal according to CEOS process
- Supported by Scientific Advisory Committee
- **SIT supported SCT recommendation**

Plenary is requested to accept the Hawai'i Permanent Supersite

Recommendation of CEOS Supersite Coordination Team

- CEOS should accept Hawai'i as a "Permanent Supersite"
- CEOS should commit* to support this Supersite with these resources:

(ASI)	100 scenes/yr by end 2014	COSMO/Skymed
(CNES)	1 coverage @ 2.5m	SPOT-5
(CSA)	archive data	Radarsat-1
		Radarsat-2
(DLR)	250 scenes by end 2014	TerraSAR-X
(ESA)	complete archive	ERS-1, -2, Envisat
	any available acquisition	Sentinel-1, -2
(NASA)	any available acquisition	EO-1





By the end of 2012

the CEOS Supersite Coordination Team aims to

- Develop the initial Supersites Consortium structures in the GEO context
 - How does GEO formalize fundamental definitions, objectives, priorities in the Supersites Initiative?
 - Formal role of “Users” and “Data providers” (CEOS and in situ)?
 - How does GEO formally agree to the CEOS-proposed selection process?
- Establish the level of coordination required at CEOS Agency level to support acquisition planning for individual Supersites

In 2013

the CEOS Supersite Coordination Team aims to

- Establish requirements for coordinated data access to CEOS Supersites data and
- Develop an implementation concept to respond to these



CEOS Plenary is requested to

- 1. Approve proposed Supersite selection process [ref. supporting document]**
 - includes mandating the CEOS Supersites Coordination Team (SCT) as a CEOS SBA Disaster Team subgroup for
 - preparing decisions by SIT and Plenary
 - responding to urgent requests for accepting *Event Supersites*
- 2. Approve CEOS support to Hawai'i Supersite [ref. supporting document]**
- 3. Invite additional Agencies interested to contribute their data in support of the Supersites Initiative to nominate a Point of Contact for SCT.**