

GEOSS and CEO

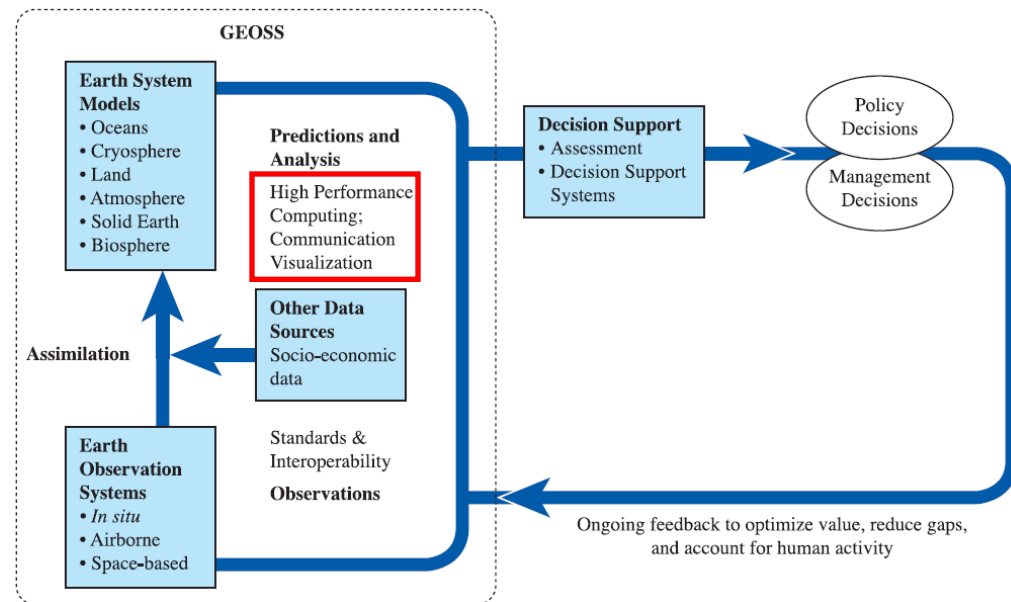
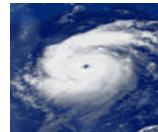
N. Kussul – SRI- NASU-NSAU Ukraine

- GEO – Group on Earth Observations**

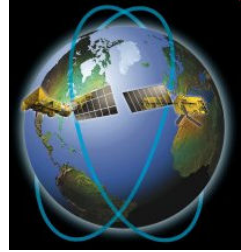
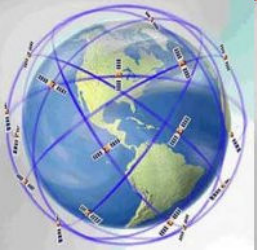
- coordinates efforts to build a Global Earth Observation System of Systems, or GEOSS.

- CEOS – Committee on Earth Observation Satellites (CEOS)**

- coordinates civil space-borne observations of the Earth
- viewed as a satellite “arm” of GEOSS

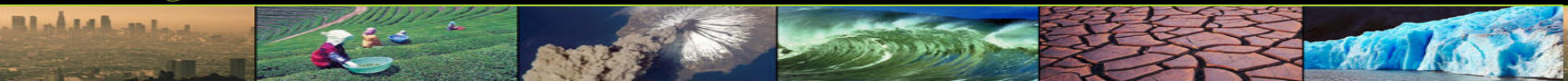


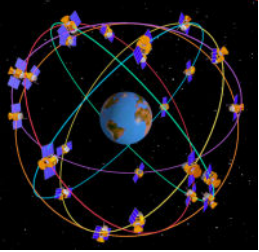
[GEOSS 10-Year Implementation Plan]



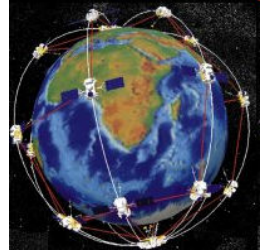
CEOS WGISS

- **WGISS – CEOS Working Group on Information Systems and Services**
 - promotes collaboration in the development of systems and services that manage and supply EO data to users world-wide
- **Technology Subgroup**
 - Chair: Prof. Natalia Kussul, Ukraine
- **Grid Interest Group (IG)**
 - Lead: Prof. Andrii Shelestov, Ukraine





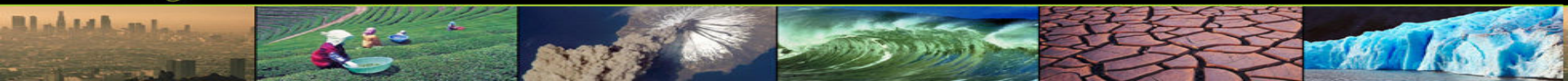
Grid IG



- Wide Area Grid
 - collaborative effort of space agencies to share data-processing resources
- Testbed
 - disaster-related applications, particularly **floods**
 - GEO 2009-2011 Task # (DI-06-09):
Use of Satellites for Risk Management
 - End-users
 - **UN-SPIDER** - United Nations Platform for Space-based Information for Disaster Management and Emergency Response



UNITED NATIONS
Office for Outer Space Affairs



Rapid flood mapping from SAR satellite imagery in Grids

- Delivered within 24 h after data acquisition
- Satellite synthetic-aperture radar (SAR) instruments

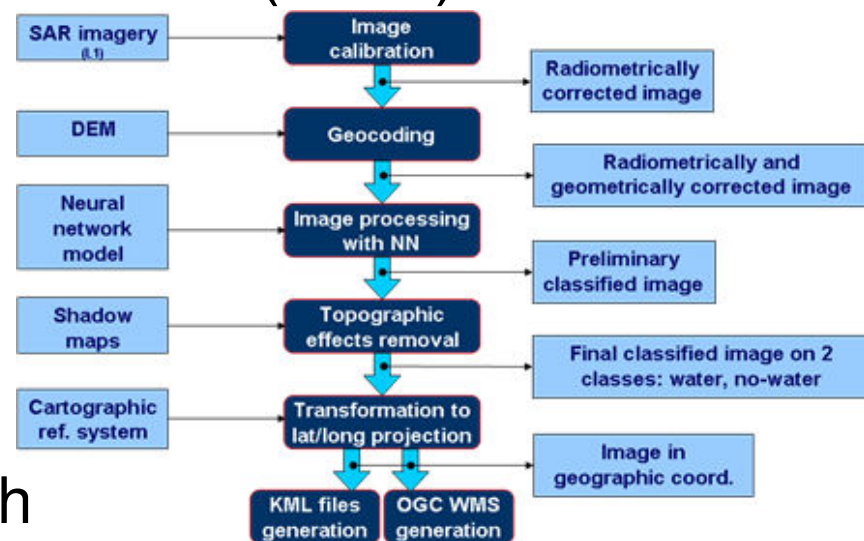
- ERS-2/SAR
- ENVISAT/ASAR
- RADARSAT-1/2

- Ground validation

- Chinese territory on river Huaihe 2008 => 95% match of satellite observations against field measurements

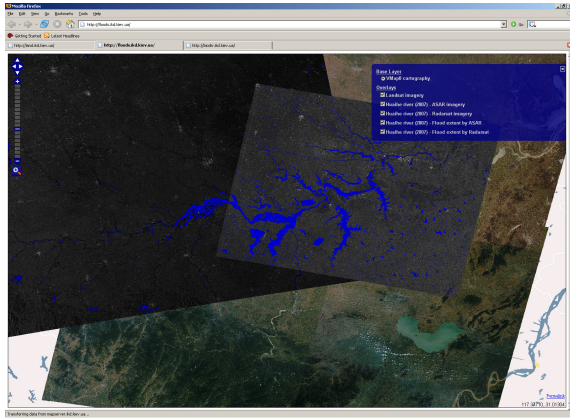
- Output format

- OGC-compatible: WMS, WCS, KML etc

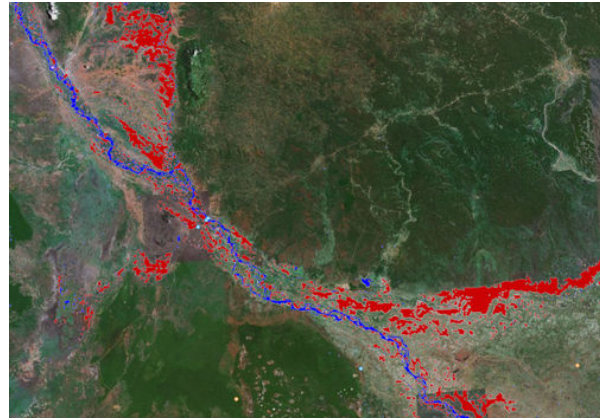


Processing workflow

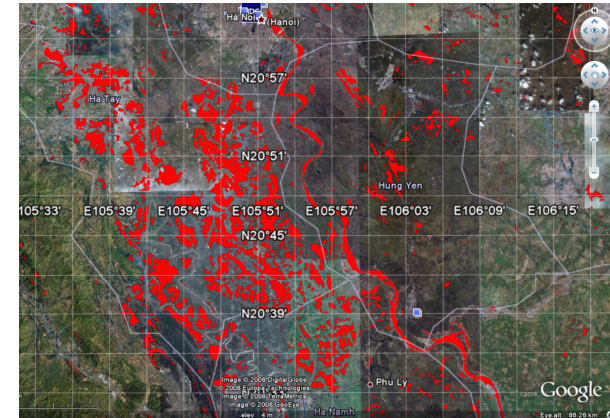
Rapid flood mapping from SAR satellite imagery in Grids (cont.)



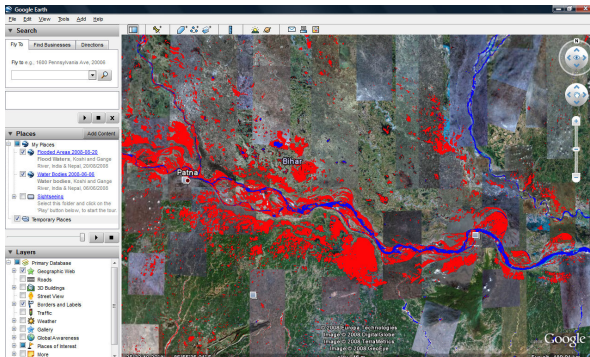
China, river Huaihe, 2007



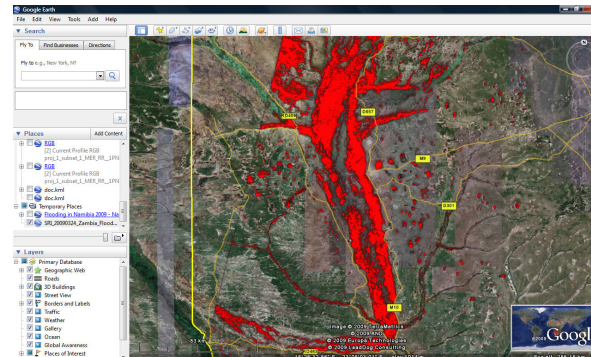
Mozambique, river Zambezi, 2008



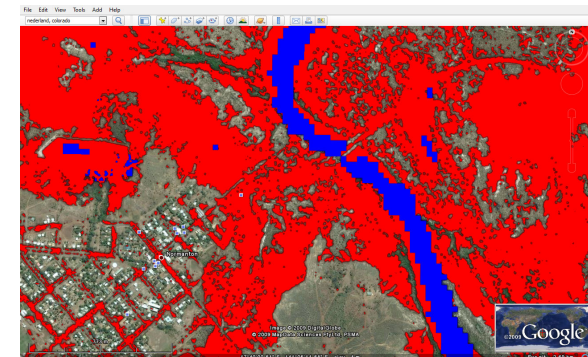
Vietnam, 2008



India and Nepal, river Koshi, 2008



Zambia, river Zambezi, 2009



Australia, river Norman, 2009

Future plans

- Deployment of flood mapping services on EGEE VO ESR / ES SSC
- New disaster-related applications within GEO Work Plan
 - E.g. droughts
- Health-related applications within GEO Work Plan
 - Water-borne infectious diseases vector modelling