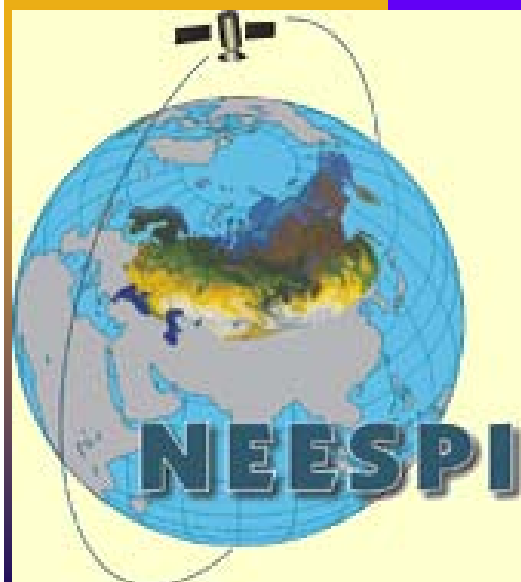


REGIONAL NEESPI WORKSHOP BEIJING, NOV. 7-8, 2006



ON POTENTIAL KEY OPPORTUNITIES FOR FUTURE COOPERATION BETWEEN NEESPI AND EUROPE

A (so far) personal position paper by
Gérard BEGNI





ABOUT THE NEESPI STRUCTURE

SEVERAL INTERNATIONAL WORKSHOPS AND CONFERENCE SIDE EVENTS SUCH AS THE AMERICAN GEOPHYSICAL UNION FALL MEETING (San Francisco, 2004), 31st ISRSE (St Petersburg, 2005), 1st NEESPI SCIENCE TEAM MEETING (IASA, Laxenburg, 2005), ENVIROMIS 2006 (Tomsk, 2006) ANALYZED THE POSSIBLE AND REALISTIC COOPERATION SCHEMES FOR SUCH AN AMBITIOUS PROGRAMME AS NEESPI AND HENCE THE UNDERLYING POSSIBLE PROGRAMME STRUCTURE

ABOUT THE NEESPI STRUCTURE

IT WAS CLEARLY EVIDENCED THAT THE RIGHT STRUCTURE SHOULD BE AN OVERARCHING SEAMLESS FEDERATION OF SUB-REGIONAL STUDIES COHERENT BOTH WITH THE NEESPI SCIENTIFIC PLAN AND SUB-REGIONAL PRIORITIES AND RESEARCH PLANS (e.g: SB/RAS SIRS INITIATIVE OVER SIBERIA)





NEESPI & EUROPE

EUROPE HAS TO BE INVOLVED WITHIN NEESPI AT LEAST FOR TWO REASONS:

- ◆ **THE GEOGRAPHICAL TERRITORY OF NEESPI COVERS PART OF EUROPE**
- ◆ **EUROPE HAS TOP-LEVEL SCIENTIFIC SKILL AND ACHIEVEMENTS IN CONNECTION WITH MULTIDISCIPLINARY APPROACHES IN THE NEESPI REGION.**



WHAT ABOUT GMES?

- ◆ In our vision, the European **GMES** (Global Monitoring for Environment & Security) initiative is a key issue for European involvement in NEESPI.
- ◆ Together with **GALILEO**, **GMES** is one of the two pillars of the European Space Policy. But **GMES** is not just a space initiative. It has to integrate space observations, *in situ* measurements, modelling, and information dissemination technologies to proper stakeholders.
- ◆ **GMES** is a joint initiative of the European Commission, ESA, and national initiatives.
- ◆ **GMES** plans switching to an operational phase starting in 2008 through the so-called **GMES Service Elements (GSE)**.



WHAT ABOUT GEOLAND ?

- ◆ One of the GSEs will be dedicated to land use and land cover.
- ◆ **GEOLAND** is the GMES project on Land Cover & Vegetation. It includes two major components:
 - ◆ the Core Service Land Cover (CSL) serves the Geoland regional Observatories and a number of national level user organisations with harmonized information on Land Cover.
 - ◆ the Core Service biogeophysical Parameter (CSP) supplies generic information on bio- and geophysical attributes of land surfaces at regional and global scales.

WHAT ABOUT POSTEL ?

- ◆ To-day, the so-called **POSTEL** initiative evolved from a national scientific concept to a GMES initiative that includes the development phase of the Core Service biogeophysical Parameter (CSP).
- ◆ Within such a framework, France, Belgium (VITO) and Portugal (EUMETSAT SAF Land) decided to join their forces in order to set up such an operational service under the GMES label.



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WHAT ABOUT POSTEL ?

POSTEL is made up of three layers:

- ◆ Upstream: Scientific Expertise Centres (research organizations that define space missions and relevant derived products) ;
- ◆ CSP is the Core Service for biogeophysical Parameters. It develops processing chains and generates, archives & circulates products ;
- ◆ Worldwide users' community (interdisciplinary studies of surface; carbon, water and energy cycles; food security management; monitoring of land cover changes) ... *including hopefully NEESPI scientists !*



WHAT ABOUT POSTEL ?

To-day, **POSTEL** is a portfolio of projects that contribute to the CSP and can be classified into three categories:

1 - R & D PROJECTS

◆ **CYCLOPES** aims at developing and validating biophysical products (albedo, LAI, FAPAR, vegetation cover) from various wide-swath sensors (AVHRR, VEGTATION, POLDER, MERIS). The products proved useful to detecting and categorizing land use changes, and assessing C fluxes.



WHAT ABOUT POSTEL ?

1 - R & D PROJECTS (Ctd)

- ◆ The **AMMA project** addresses the African Monsoon. POSTEL provides AMMA with low-resolution continental products derived from EUMETSAT and intended to hydrologists, ecology experts, atmosphere scientists.
- ◆ The **VALERI project** aims at inter-comparing products derived from various sensors and algorithms and assessing the absolute accuracy of biophysical products delivered by the POSTEL CSP. Validation is performed through a network of *in-situ* measurements distributed over the Earth surface.



WHAT ABOUT POSTEL ?

2 – GMES pre-operational projects

◆ As described above, **GEOLAND** is an integrated project planned to be the backbone of GMES-related operational services. It plans to prove the pre-operational capacities of two Core Services divided into six downstream services among which three regional (European) services and three global services. Products include LAI, vegetation cover, water bodies, FAPAR, albedo, incoming radiance, land surface temperature & moisture, burnt areas, rainfall.



WHAT ABOUT POSTEL ?

2 – GMES pre-operational projects

- ◆ **GLOBCOVER** aims at taking advantage of the moderate resolution, hyperspectral MERIS instrument on board ENVISAT to derive 250 m resolution land cover maps over the whole world updated on a regular basis.
- ◆ **VGT4AFRICA** aims at distributing products derived from the VEGETATION instrument in Africa.

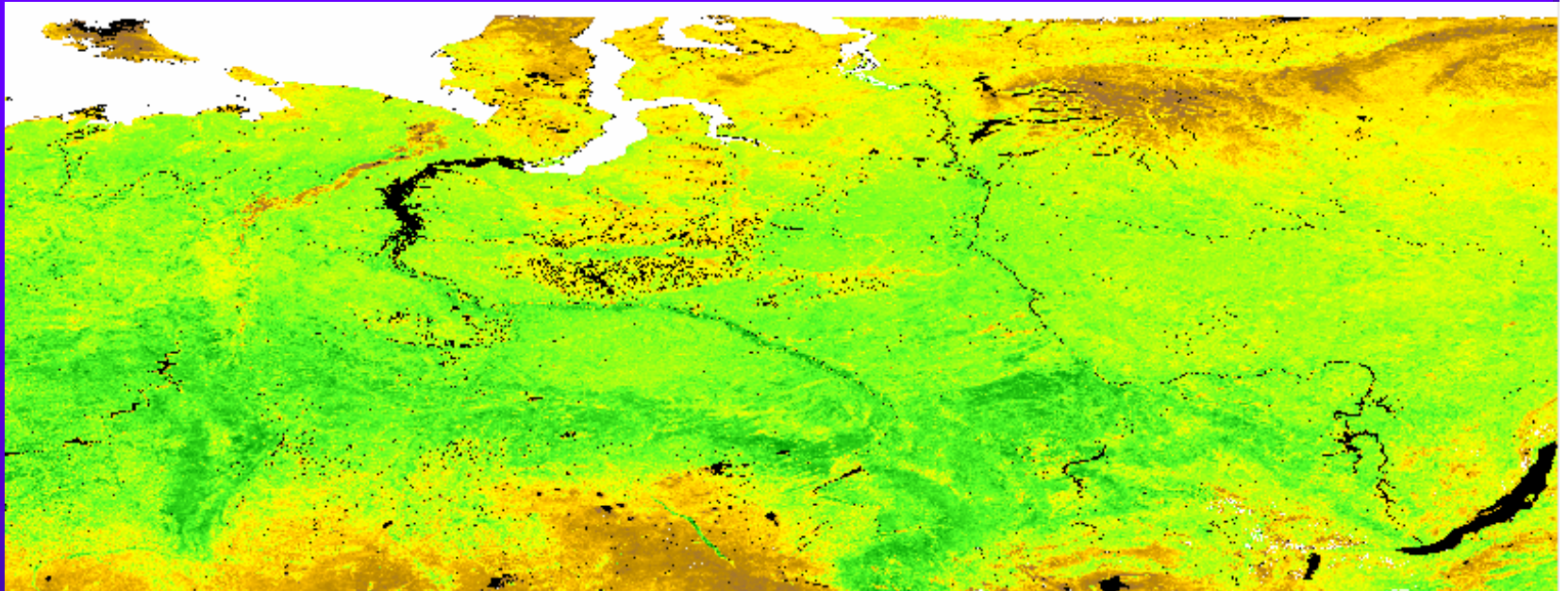
WHAT ABOUT POSTEL ?

3 – Spatial projects

◆ **POLDER** instruments measure multidirectional and polarisation radiance in the visible and NIR domain. They are/were flown on board ADEOS-1, 2 and PARASOL. Such products as directional albedo, NDVI, LAI, FVC, FAPAR, BDRF database are made available step by step through POLDER Production Centre

◆ **VEN μ S** is a Franco-Israeli project. This satellite will monitor dedicated test sites through 12 channels. Deriving biogeophysical products is also in the **VEN μ S** mission.

PRESENTING A POSTEL PRODUCT



A Postel product: fraction of vegetation cover. CYCLOPES project, VEGETATION sensor, July/August 2003 synthesis.



GMES, POSTEL, and NEESPI

- ◆ From a **technical** point of view, the GMES Land and especially the POSTEL products are well suited to ease the work of NEESPI scientists and /or to be directly used by them. GEOLAND and GLOBCOVER appear as most promising.
- ◆ From a **scientific** point of view, individual researchers involved in the POSTEL ‘upstream’ layer could be interested in NEESPI if they get an attractive scientific return. Formal bilateral relationship with research institutions should be considered.



GMES, POSTEL, and NEESPI

- ◆ From an **operational** point of view, the CPS is planned to rank among the GMES/GSE that will routinely provide scientifically labelled products.
- ◆ From a **political** point of view, GMES is highly ranked in the EC and ESA policy . Its ‘land’ component could be seen as a formal European contribution to NEESPI. This has to be negotiated by and with the proper authorities.



GMES, POSTEL, and NEESPI

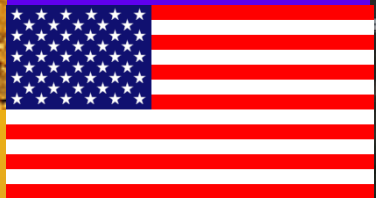
- ◆ Through POSTEL developments, GMES will be in a position to provide NEESPI with biogeophysical data that should avoid a lot of ‘upstream’ work in a transparent and scientifically assessed way.
- ◆ The ‘upstream’ scientists and institutions now involved in POSTEL development could and should have fruitful cooperation and involvement in NEESPI.



GMES, POSTEL, and NEESPI

- ◆ Quite obviously, a large part of the scientific research led under POSTEL/GMES could bring unique contributions to NEESPI.
- ◆ Quite obviously too, this does not exclude other cooperation schemes, e.g. bilateral relationship.
- ◆ **If properly mandated by the NEESPI authorities, the author can go further in investigating the formal aspects of such an initiative.**

WORKING TOGETHER TO NEESPI



THANK YOU FOR YOUR ATTENTION

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