

## ASI DATA PORTFOLIO (STG-5)







#### SYSTEM CURRENT SCENARIO





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### **MISSION CHARACTERISTICS**









ASI supports the INSTITUTIONAL (incl. SCIENTIFIC) data exploitation

## www.cosmo-skymed.it

#### COMMERCIAL USERS

e-geos da

## e-GEOS supports the COMMERCIAL data exploitation

#### www.e-geos.it

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**Currently CSK Data Expl.** is mainly based on the following pjcts:

International Partners CNES – ORFEO Program CONAE – SIASGE Program

National and International Institutional Users COSMO-SkyMed Announcement of Opportunity ASI EO Pilot Projects

> System Owners ASI – Background Mission

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**National and International Institutional Users:** 

**COSMO-SkyMed Announcement of Opportunity** 

The approved projects have been published on the ASI website http://www.asi.it and on the http://eopi.asi.it)

27 Italian projects will be funded by ASI

**167 projects** to be activated Each project will last 2 years

ASI assigned more than 16000 CSK products to be exploited by the PIs of the COSMO-SkyMed AO





## ASI EARTH OBSERVATION PILOT PROJECTS

DEVELOPMENT OF DEMO SERVICES FOR ENVIRONMENTAL RISK MONITORING





## ASI EARTH OBSERVATION PILOT PROJECTS Use of EO data for Hazard Support

ASI main target is to improve the utilization of existing and planned EO satellite data in order to support users in every phase of risk management cycle and in the environmental monitoring

→ pre-operational applications

**Players of this process:** 

Users

Scientists

Industries

Focus on the exploitation of EO data in particular the ASI Missions: COSMO-SkyMed (currently operative) and PRISMA (to be launched at the end of 2011).



**National Institutional Users:** 

**ASI Pilot Projects on Environmental Risk** 

**SIASGE X+L - X- and L-band SAR study** 

Provide a complete and detailed definition of EO products: Aimed at improving the current SIASGE single missions (CSK and SAOCOM) exploitation, including possible commercial applications.

Applications mainly in the field of agriculture, national security and land planning. Obtaining the data combination of the SIASGE missions. Technically innovative.

Provide a demonstrator of the correct definition and technical feasibility by developing/exploiting prototype SW for the products generation.

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### DATA EXPLOITATION: BGD MISSION

#### System Owners: ASI

The COSMO-SkyMed Background Mission can be roughly defined as the plan to be implemented at the lowest level of priority.

(i.e. when no further foreground activity is defined)

ASI progressive Background Mission Plans coverage of: Main Delta River Main Wide Urban Areas 1500 Volcanoes Main Dikes Tropical Forests Polar zones (acquisition modes according to sites/apps - ca. 2700 images) For the successive phases inputs coming from Scientists (i.e.: CSK AO needs, IPY needs) Institutional Users, Commercial users



#### **CSK DATASET FOR IPY**

The CSK dataset for the IPY will be acquired in foreground and background.

Foreground: 7 CSK AO Projects focused on IPY topics. (plus 3 CSK AO Projects acquiring on Alps, Iceland, Lapland)

**Background:** 

Other acquisitions in Antarctica and Greenland matching the GIIPSY requirements. (Need: inputs from PIs)



#### **STG: ASI ACTIONS**

#### STG 3 – A4: ASI DATA PORTFOLIO. CLOSED on 06.07.2009

# STG 4 – A1: 4 high priority applications covered by COSMO-SkyMed. CLOSED @ SAR Coo. Meeting #3.

Sensors	3-day Arctic Basin	Pole to coast InSAR	Greenland – Ice fields	Supersites
	Snapshot			
COSMO-	N-A	Icestreams, Glaciers	Few InSAR coverage.	Inputs from PIs
SkyMed		velocity fields	Icestreams, Glaciers	should be
		Contributions to cover	velocity fields.	considered to
		the holes gaps.	Inputs from PIs should be	implement specific
		Inputs from PIs should	considered to implement	acquisitions in the
		be considered to	specific acquisitions in the	Background
		implement specific	Background Mission.	Mission.
		acquisitions in the		
		Background Mission.		



#### **STG: ASI ACTIONS**

**STG C3 – A4:** The space agencies should look at punctual events (e.g. Larsen B break-up, Wilkins Ice Shelf) and prepare visuals for the Oslo meeting. On-going

## • WILKINS ICE SHELF

## GLACIER VELOCITY FIELD (example of Perito Moreno)



#### 2008-09-24 WR

## Between May and July '08 a further disintegration occured on the Wilkins and a total amount of 1200-1300 km<sup>2</sup> was lost

**Charcot Island** 

Antarctic Peninsula

Ice bridge survived to the disintegrations of the first half of 2008

100 km long and 2.7 km width (900 m at the narrowest location)





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# Perito Moreno Glacier

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Automatic derivation of the ice motion field over the Perito Moreno glacier in Argentinean Patagonia.

Spotlight images pairs, with a time interval of:

- 16 days (02-18 February 09);
- 16 days (18 February–6 March 09);
- 8 days (6-14 March 09)

and pixel resolution of 1 meter were used to derive it in the tip of the Perito Moreno glacier.











An accurate co-registration of the image pair is needed considering that the ice surface speed is in the order of few meters per day.

The arrows represent the ice velocity field: different colours are referred to different values of the field (see legend in the figure).

#### Perito Moreno glacier velocity field (February 02-18 2009)





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### **STG: ASI ACTIONS**

#### **STG C3 – A7:**

The space agencies should specify what they can offer by filling in the table. The deadline is July 15. Filling in the table will show:

- 1. if the data is acquired
- 2. what we can generate in terms of input product (what the ground segment can generate processing to Level 1B)
- 3. the capacity to generate output products Internally or funding available for contracting-out)
- 4. distribution
- 5. availability of input data to scientists
- 6. integration role.

Column D of the table (labeled 'Capacity to generate') can be used to record constraints.

#### CLOSED on 15.10.09 and on 26.11.09