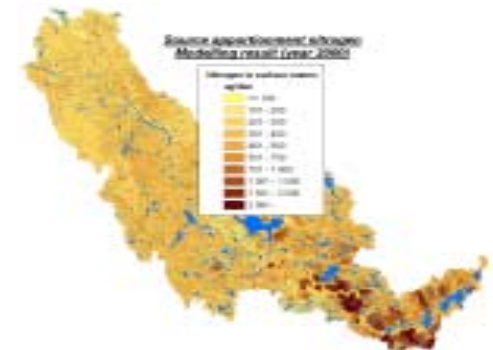# *Supporting GMES Services Interoperability*
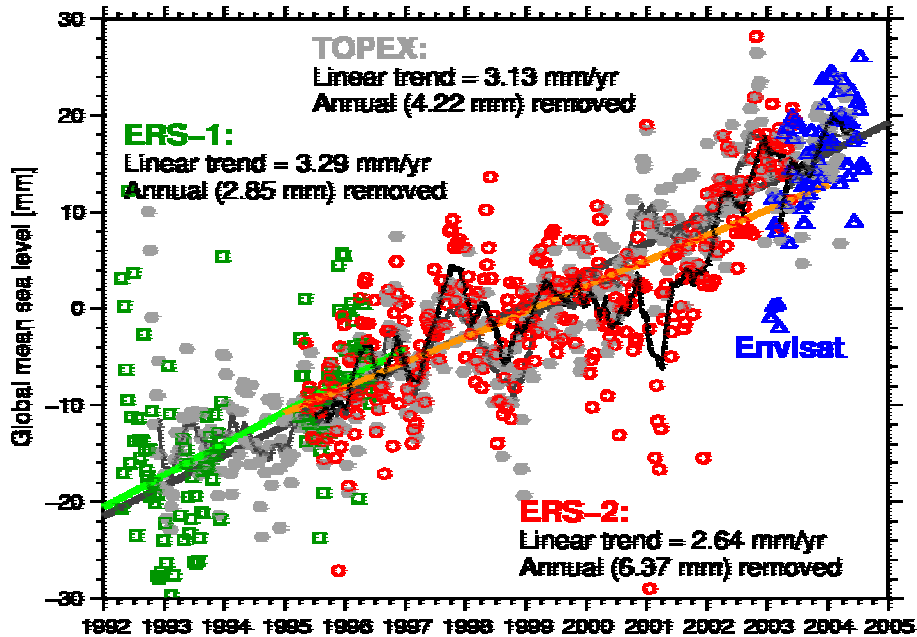
Pier Giorgio Marchetti– ESA / ESRIN
pier.giorgio.marchetti@esa.int
Earth Observation Programme
Ground Segment Department

European Space Agency
Agence spatiale européenne

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Global Climate Change & Sustainable Development

> ➢ European Environmental Policies (e.g. in EU 6th Environmental Action Programme)

> ➢ European Civil Protection

> ➢ CAP, Fisheries, Regional Policies

> ➢ Development & Humanitarian Aid
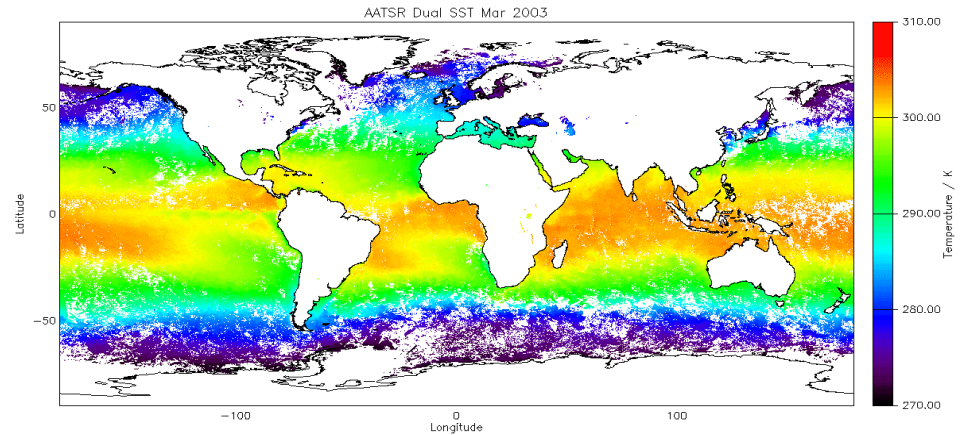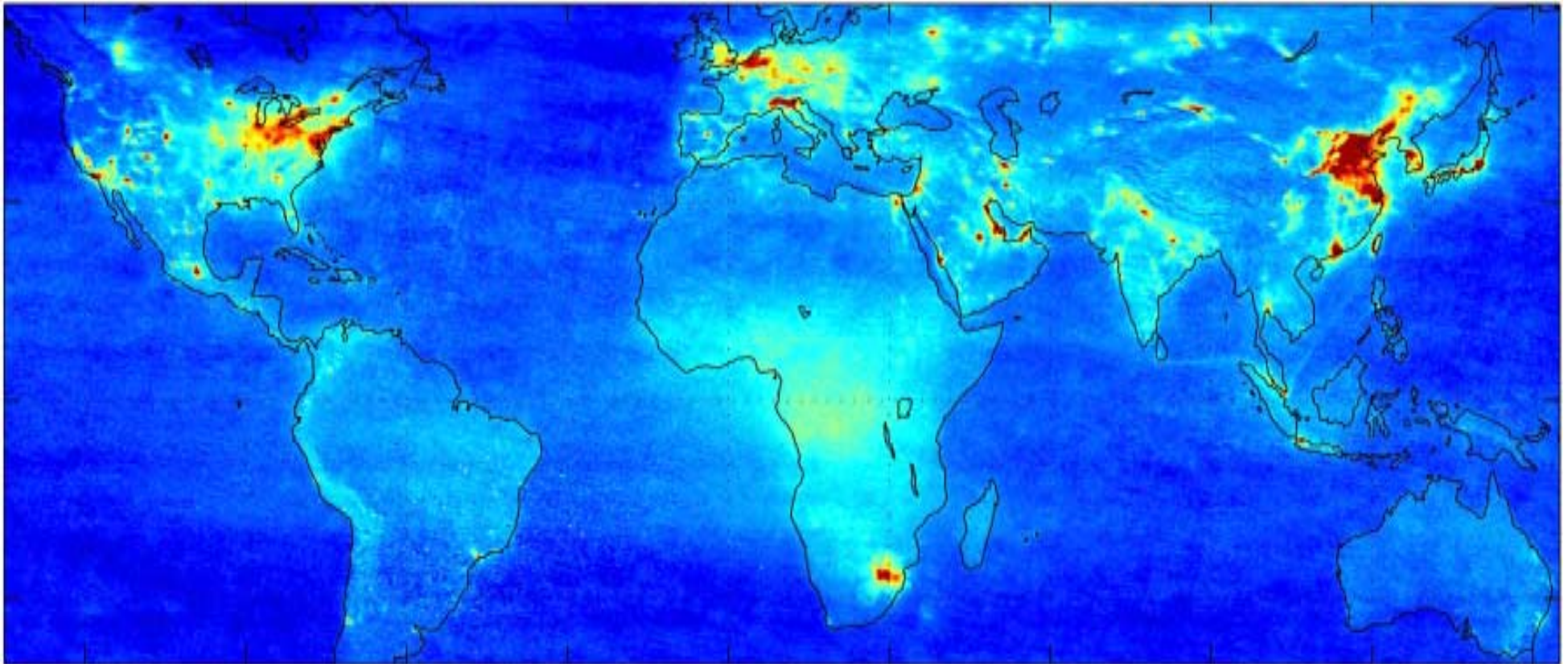
> ➢ EU Common Foreign & Security Policy

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OGC Interoperability Day
Rome 1 April 2005

– Slide 2

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Envisat - Global Climate Change

Sea Level rise

Sea Surface Temperature rise

Altimetry measurements
Trend +3 mm/yr

ATSR/AATSR measurements
Trend 0.13±0.03°C/decade

Envisat - Atmosphere NO₂ concentration

NO₂ from SCIAMACHY
(Jan. 2003 - June 2004)

X10**15 molec/cm²

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Rome 1 April 2005

– Slide 4

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50 km

Bilan des quantités de déchets liés au Prestige:
Estimation commune
Espagne-France-Portugal au 28 juin 2004

~68 000 t

~53 000 t

~4 000 t
ZDO

total France ~26 000 t

~2 500 t

~22 000 t

ZDSO

~22 000 t

~200 t

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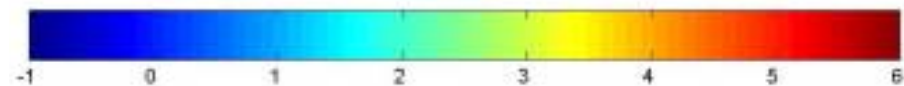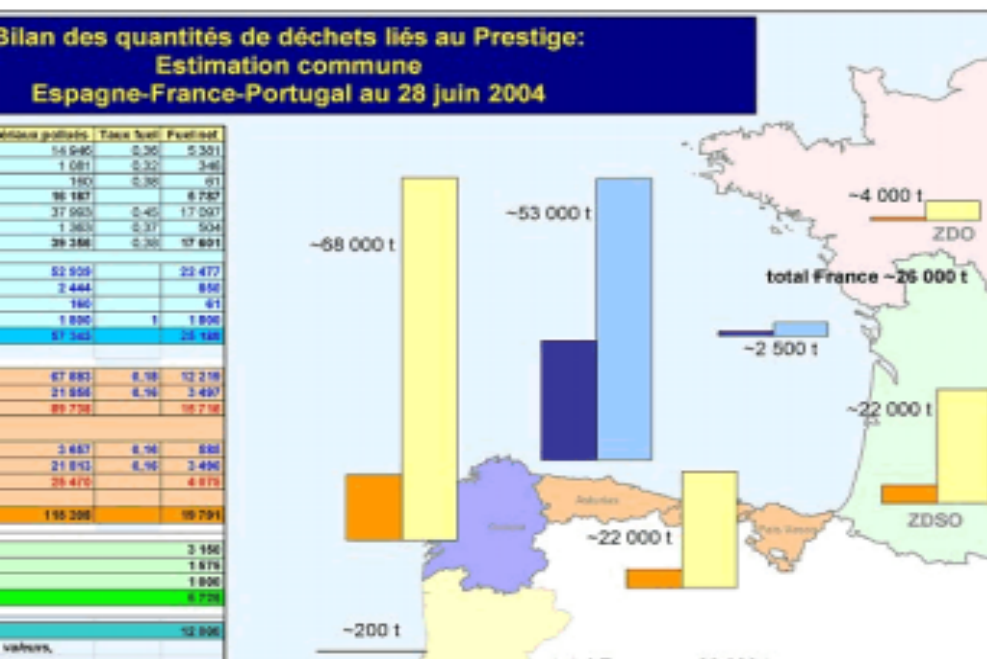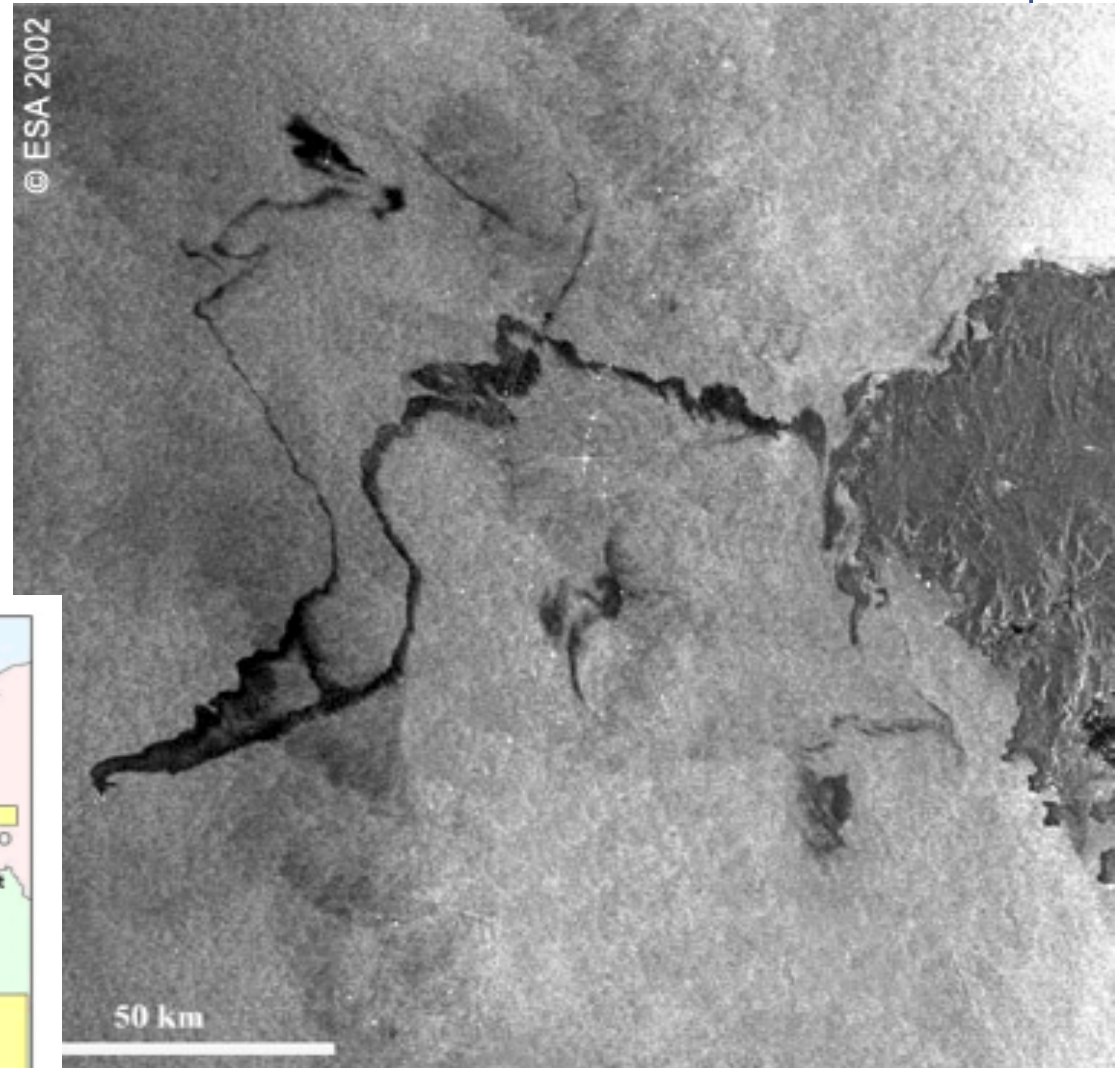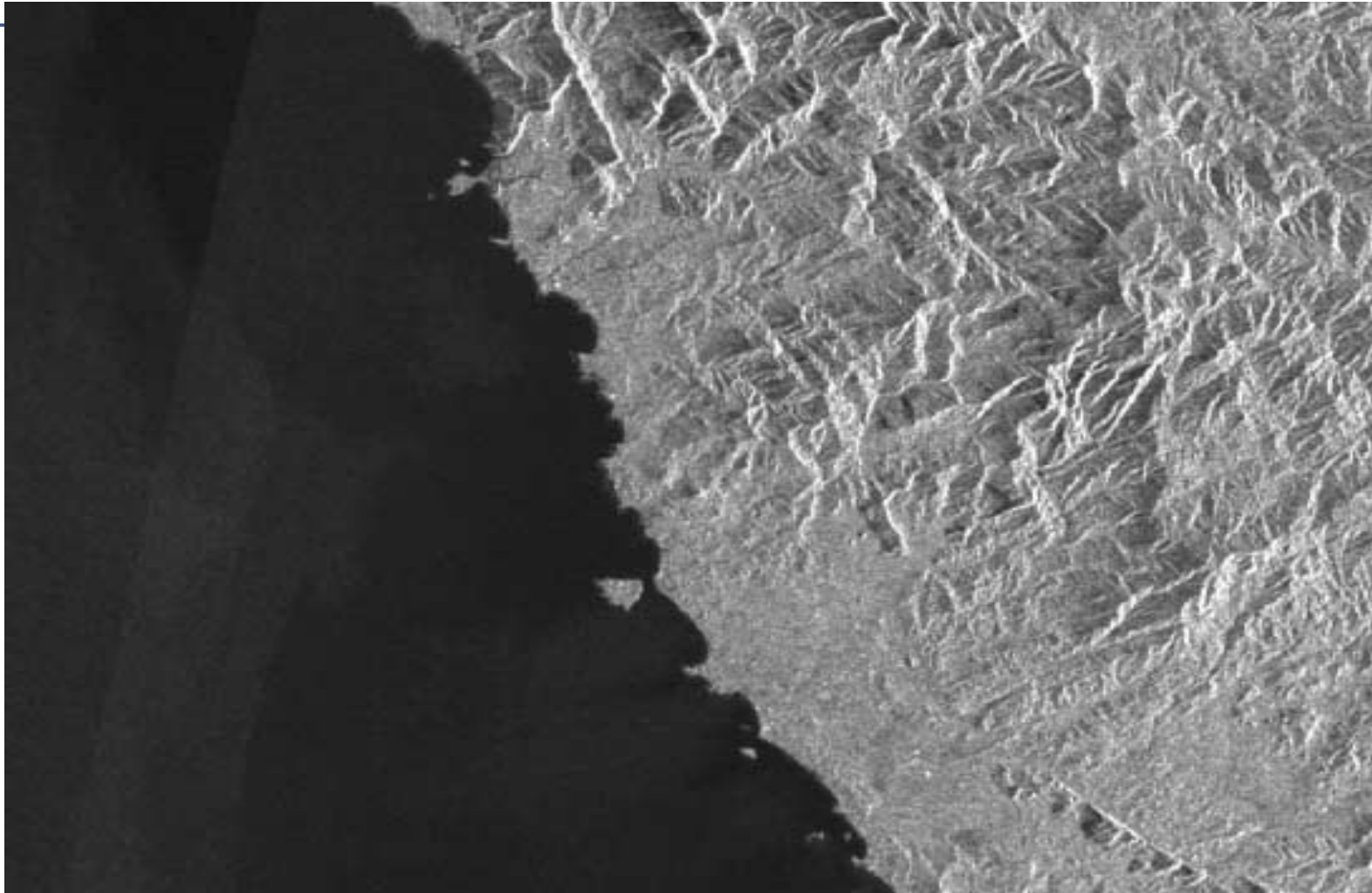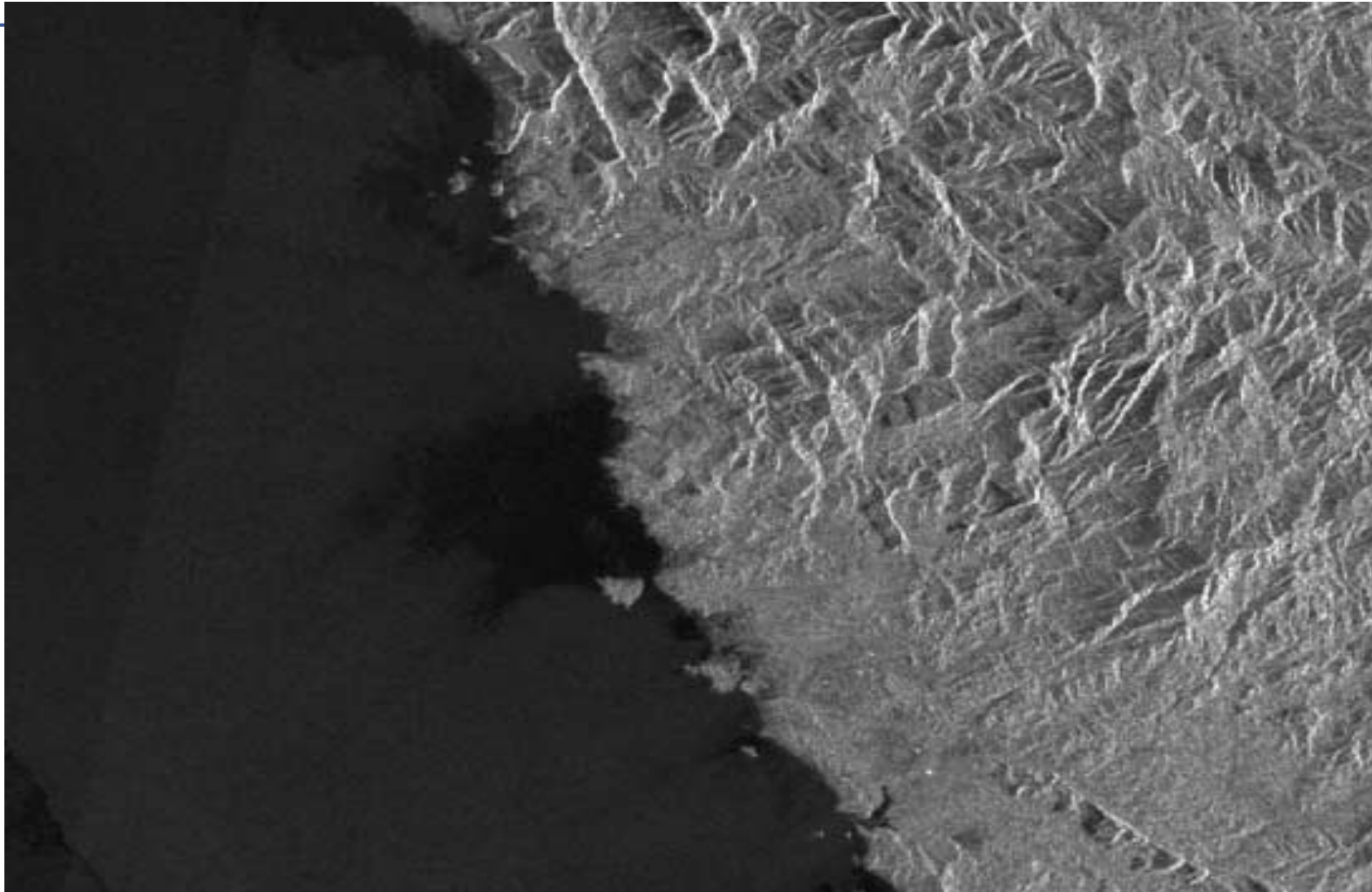
ASAR WS 17 Feb 04

ASAR WS 31 Dec 04

Major changes to coastal line becoming fuzzy and withdrawn of several tens of pixel in some places + missing major reflectors along shore after tsunami

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Color comp ASAR WS R : after G : before : B: after

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- ➢ Initial period completed end 2003 Final Report (EC, ESA), EC Communication

- ➢ Programme Office instituted with EC/ESA/other staff

- ➢ GMES Advisory Council created – second meeting Dec 2004 – Action plan developed

- ➢ Preparatory activities started in ESA September 2004

- ➢ 12 Initial Services under development in ESA, to end 2006

- ➢ Preparation of the overall C(Min) proposal based on EC/ESA GMES initial Period Report and EC Communication

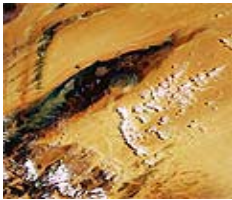Based on GMES Initial Period Report and EC GMES Communication:

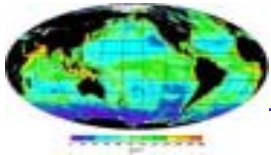ESA GMES Preparatory programme:

4 Elements

- Socio-economic analysis

- Architecture

- Ground Segment

- Space observation component - "Sentinels"
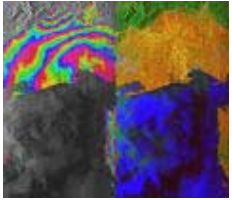
➢ Sentinel 1 – SAR imaging

- All weather, day/night applications, interferometry

➢ Sentinel 2 – Superspectral imaging

– Sentinel 3 – Ocean monitoring

- Wide-swath ocean color and surface temperature sensors, altimeter

➢ Sentinel 4 – Geostationary atmospheric

- Atmospheric composition monitoring, trans-boundary pollution

➢ Sentinel 5 – Low-orbit atmospheric

- Atmospheric composition monitoring

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– Slide 11

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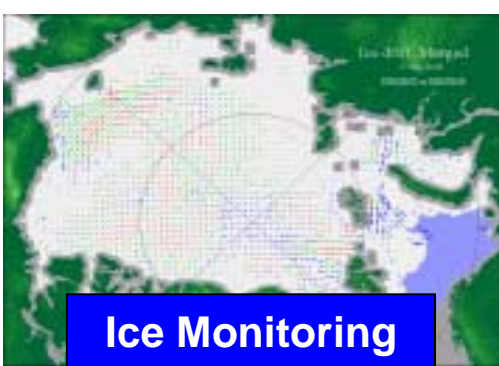The space component of GMES will

- ➢ answer to user needs identified

- ➢ complement existing European capabilities

- ➢ close technology gaps

- ➢ be implemented in close coordination of all European and Canadian resources (including Eumetsat)
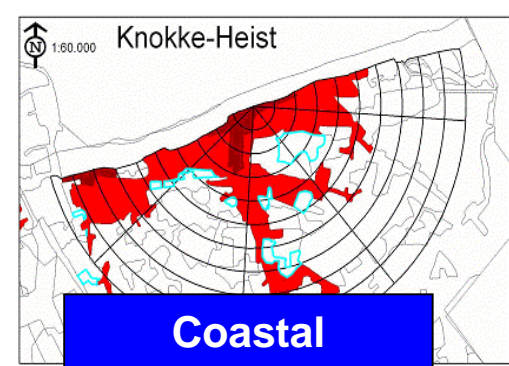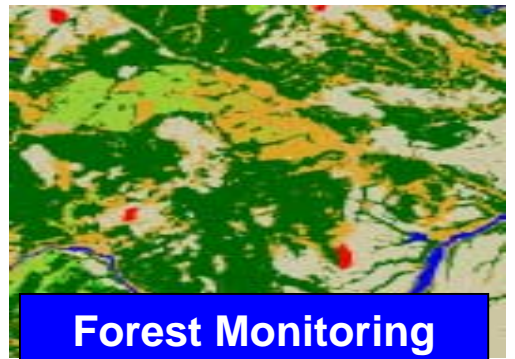
Coastal
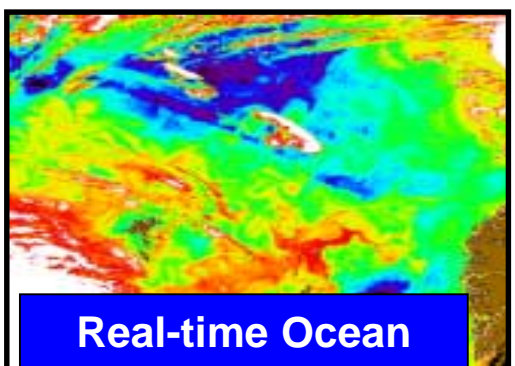
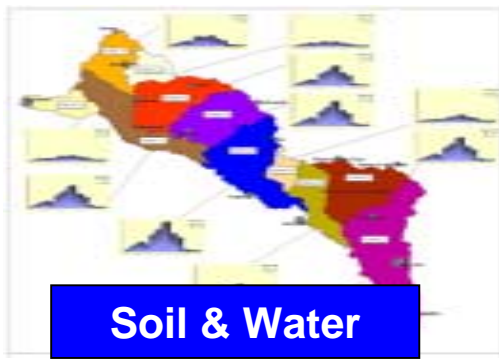Real-time Ocean
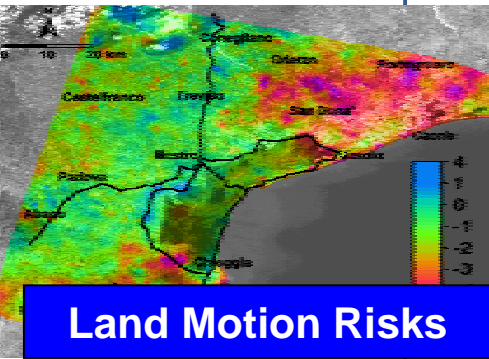
Ice Monitoring

Northern View

Risk fire & flood

Forest Monitoring

Soil & Water

Land Motion Risks

Urban Services

Humanitarian Aid

Food Security

Atmosphere

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Services in EO Domain

Service Providers

Distributors   Value Adders

Data Providers   Service Providers
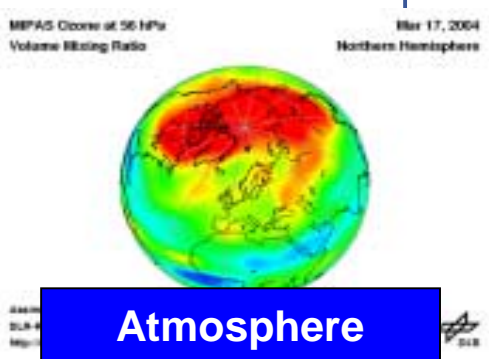
Support Infrastructure
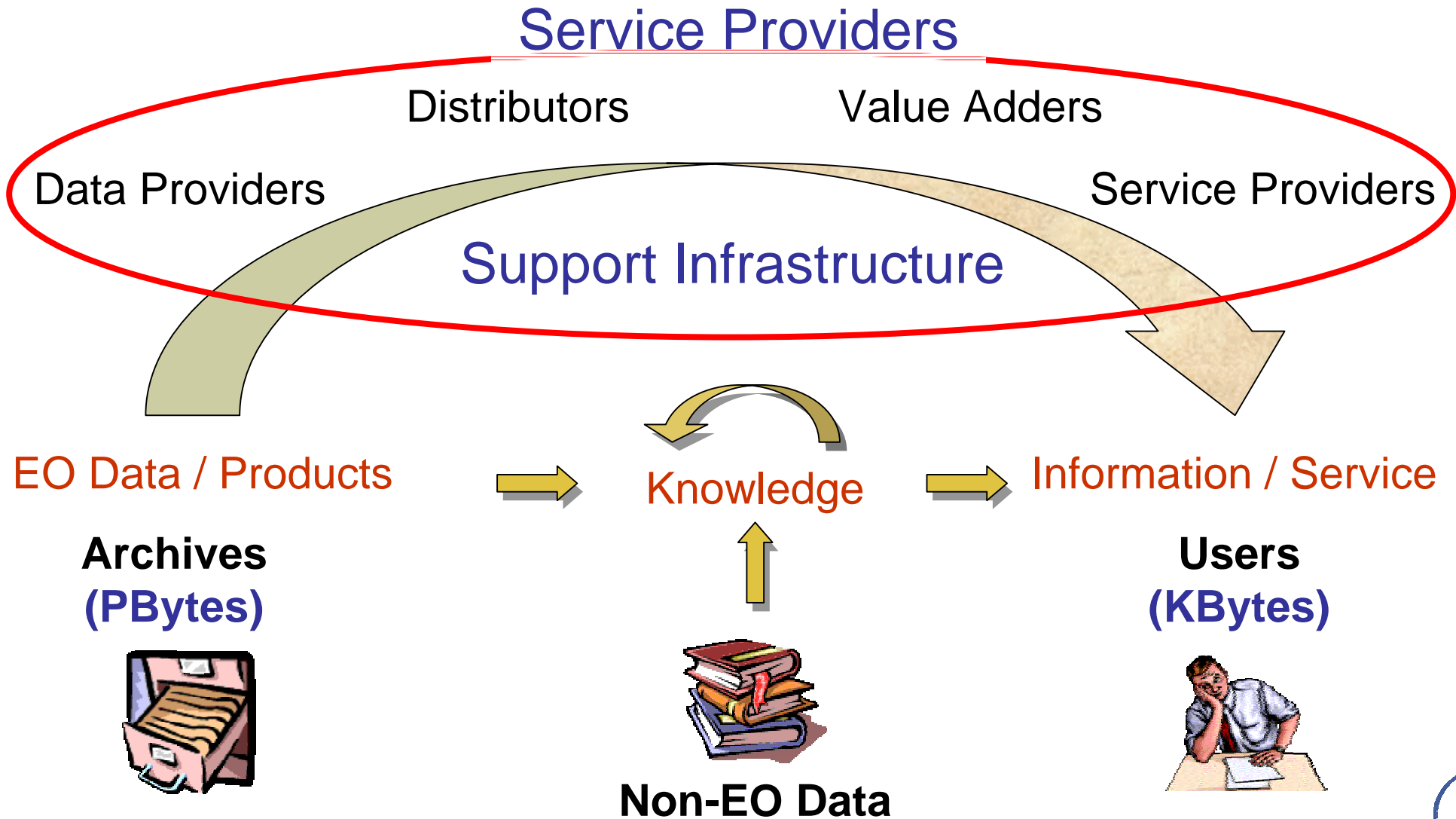
EO Data / Products   Knowledge   Information / Service

Archives
(PBytes)

Non-EO Data

Users
(KBytes)

SSE Architecture

Portal

Directories
- Service A
- Service B
- Service C
- ...

Workflows

Service A

A1 ◇ A2
        A3

User

Requests →

← Info

On-line / Off-line Results

Internet

Toolbox

Toolbox

Service Provider 1   Service Provider 2   Service Provider 3

On-line / Off-line Results
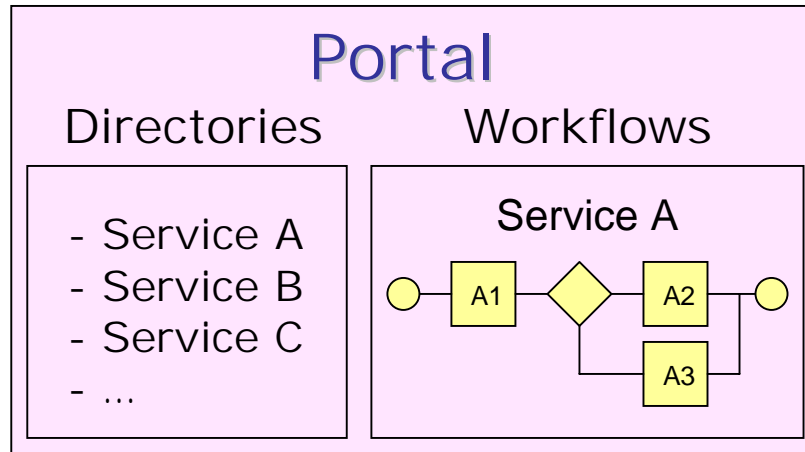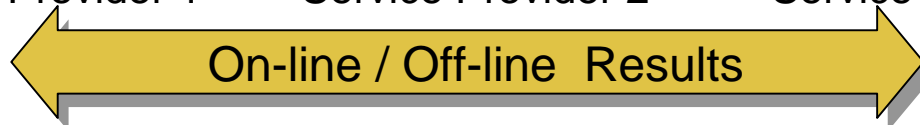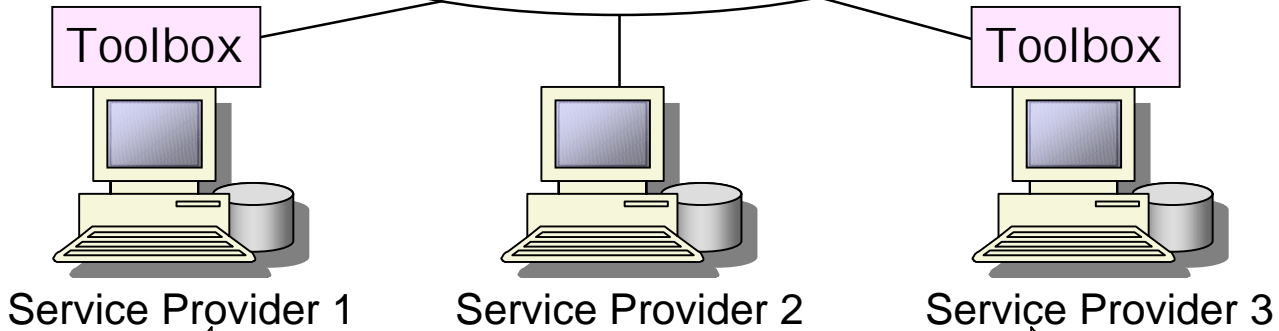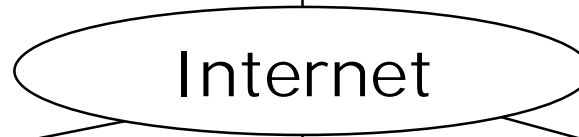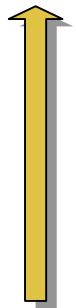
- Service publication, chaining, fruition
- On-line / off-line services
- Services remain at providers' facilities
- Data exchanges outside Portal

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Collections:

ESA.ENVISAT.MIP_NL__xF
ESA.ERS.ATSR.UBT
SPOT.20M_COLOUR
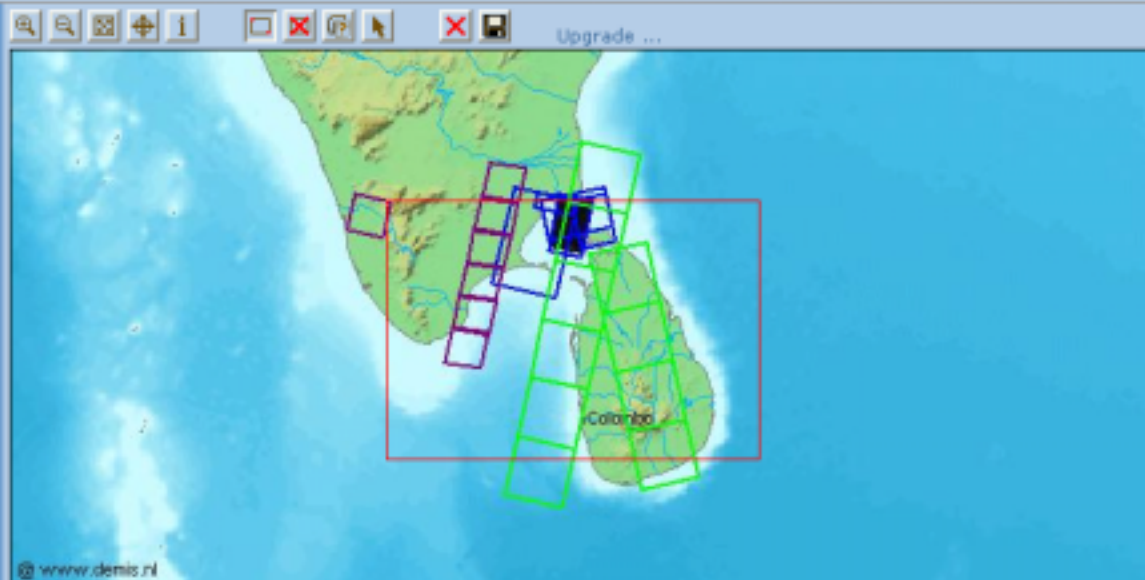SPOT.10M_N&B
SPOT.10M_COLOUR
SPOT.5M_N&B
SPOT.2_5M_N&B
SPOT.ALL

Date:
From: 2004 | Dec | 20
To: 2005 | Jan | 10

Cloud Cover Percentage:

Retrieve 10 metadata

Starting from 1

@ www.demis.nl

Colombo

Upgrade ...

Map | AOI

Services

(Click here to add a WMS ...)

Demis World Map (1.1.1)
ESA MUIS2WMS Server (1.1.1)

Available layers

Ocean features

Selected layers

Envisat ASAR Alternating Polarisa
Cities (visible)
Streams (visible)

Styles

(Default style)

Map
Update

Settings
Save | Load

Scale : 250 km

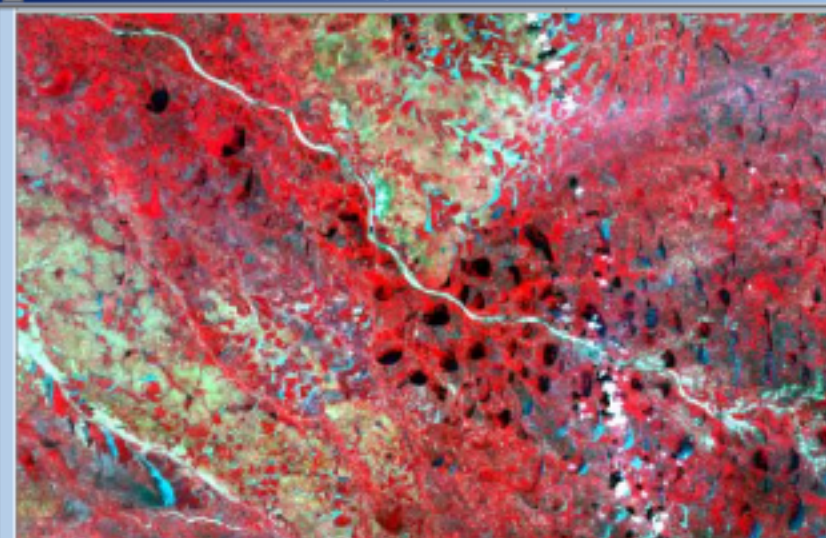Search | Next

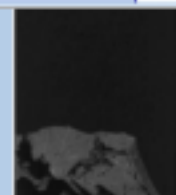General Search Status : OK, successful

11   14

Present Results - Microsoft Internet Explorer

05-01-01T04:23:33.17Z | Orbit: 14845
Orbit Direction: descending
Track: 262

05-01-04T04:29:13.51Z | Orbit: 14888
Orbit Direction: descending

OI: 0.01, Search: 33.969

Home   About   Search   Disclaimer   Contact Us

Lat:12.520661°,Long:74.814050°   Internet

Further information at

http://services.eoportal.org

Thank you !