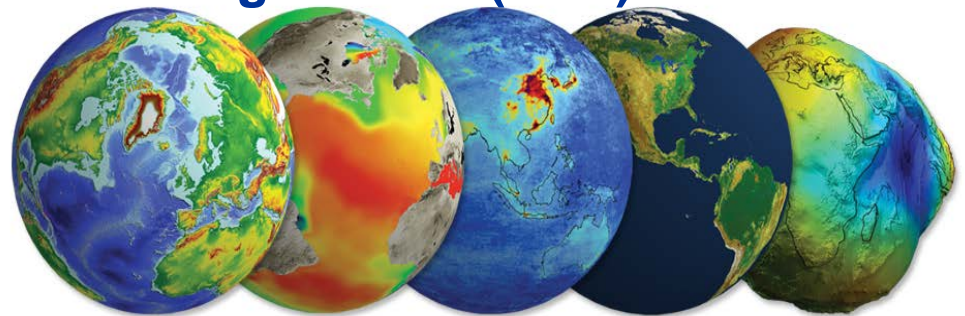


EO for the Insurance Industry

New Technologies and Opportunities

**Stephen Coulson,
Head of Industry Section,
Directorate of Earth Observation Programmes (ESA)**



ESA/ESRIN

23+24 February 2012

- **Lunch Break** 13:45 – 15:00, ESRIN Canteen (<5 euro for average meal, cash only),
- **Coffee** will be served in the Big Hall (B-14) at 11:20 and 16:30,
- **Working sessions** will take place in the Big Hall,
- **Buses** to hotels and Villa Grazioli (Frascati) at 18.15,
- **Reception** at Villa Grazioli tonight at 19:30 (kindly sponsored by Swiss Re).

— **Fire:**

- No fire drills are planned during this period,
- If alarm sounds walk out of the building the way you came in, then
- Turn left towards the ESA flag (this is the muster point).

— **Medical emergency:**

- In event of emergency, call 3333 (any internal phone),
- We are in the Magellan in the morning and Building 14, Big Hall in the afternoon,
- Trained first response team arrives within 2-3 minutes of call.

ESA EO Value Adding Element (VAE) 2008 - 2012



Support European EO Service Industry to grow use of EO-based information mainly with private-sector users.

- **New EO Services (20 activities):**
 - Novel developments in EO services,
 - New European & Canadian national missions (TerraSar-X, CosmoSkyMed, RadarSat-2, Deimos-1, DMC, RapidEye)
- **New Markets (16 activities):**
 - 51 service suppliers, 57 users (75% private sector),
 - Waste management, Geo-marketing, Tourism, AgroChemical, Forestry,....
- **Export Markets (4 activities):**
 - Investigating new prospects outside EU,
 - China, SE Asia, N. Africa, Persian Gulf.

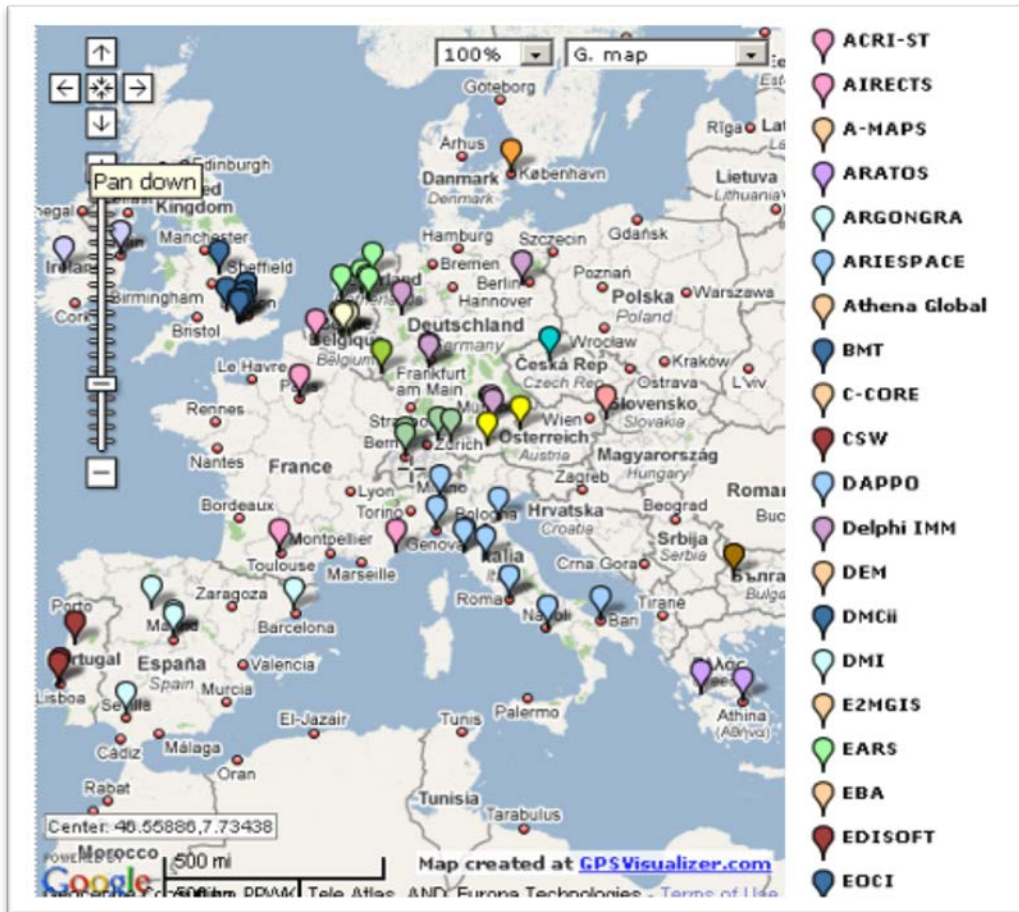


European EO Information Services Industry

- ESA developing **Capabilities & Prospects**,
- Can act as a gateway to **Services & Suppliers**.

EARSC

European Association
of Remote Sensing
Companies



Company Information

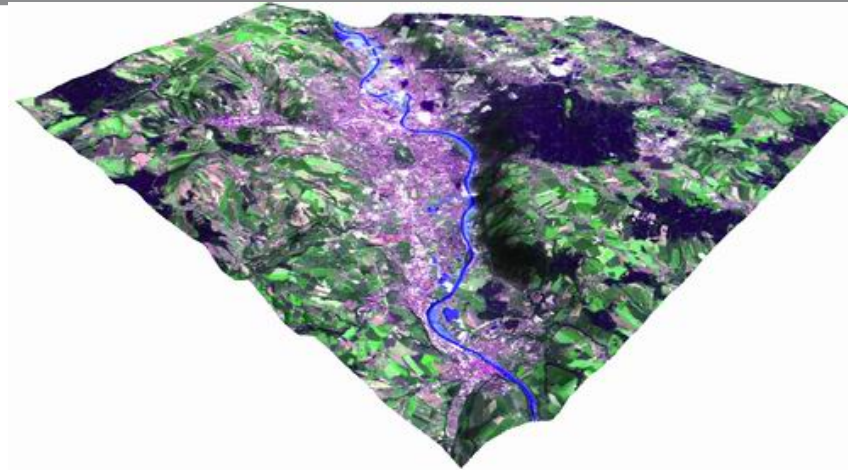
GeoVille group
1998
Medium
AUSTRIA
Museumstr. 9-11, Innsbruck
+43 512-562021-0
<http://www.geoville.com>
walli@geoville.com
Andreas Walli

Services

Land Use/Land Cover & Change Mapping
Global
Construction & Civil Engineering
Environment Protection & Pollution Management
Forestry Management
Geo-Marketing & Retail
Insurance & Finance
News, Media & Education
Regional Planning & Urban Management
Telecommunications
Utilities & Infrastructure Management
<http://www.geoville.com/apps/>
<http://www.geoville.com/apps/urbanmapping/index.php>

Asset & Infrastructure mapping
Global
Regional Planning & Urban Management
Environment Protection & Pollution Management
Geo-Marketing & Retail
Telecommunications
Utilities & Infrastructure Management
Emergency & Civil Security Management
<http://www.geoville.com/apps/infrastructure/index.php>

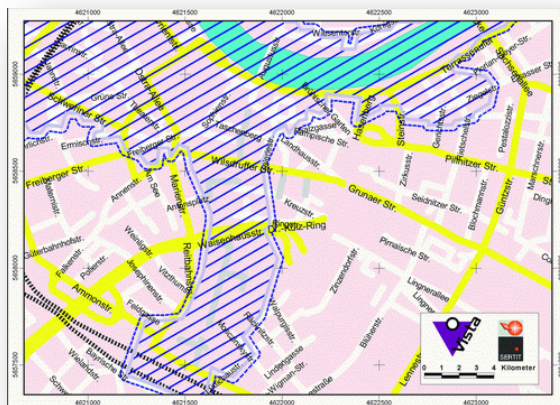
EO Experiences : To date, mainly Floods.....



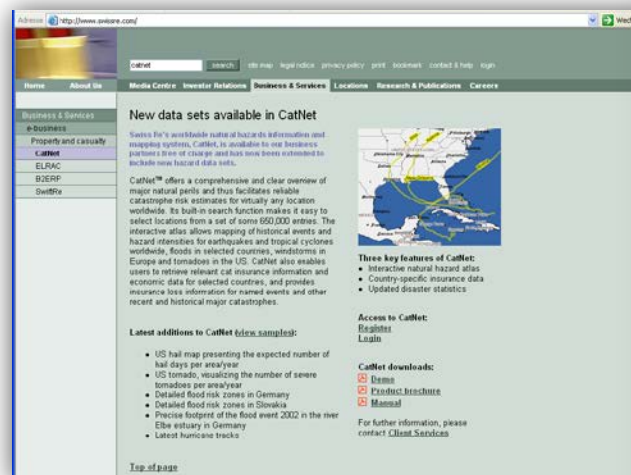
During – Flood extent, Dresden ,
Aug 2002 (ASAR / SPOT)

“Earth Observation gives us a view of the whole extent of the flood, not only within the heavily-insured urban centres like Dresden but we can also zoom out across 400 kilometres of river to see all the affected parts of Germany. We can also trace the flood peak happening. It would take a lot of work to get the same standard of information from any other source”

Ulrich Ebel, Vice President, SwissRe

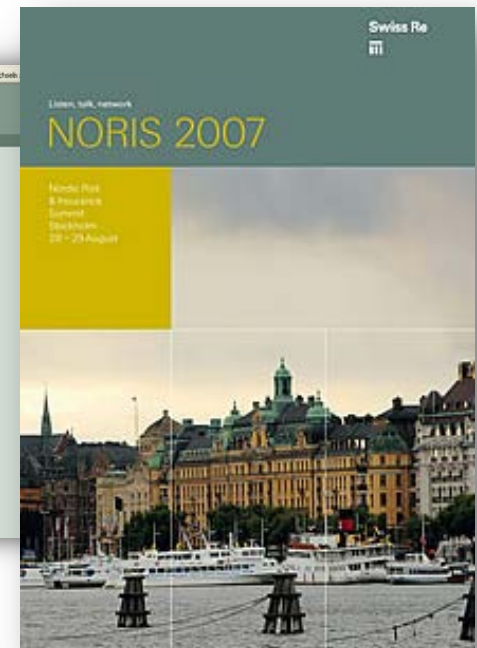


After - Postal Code
Product for Insurance

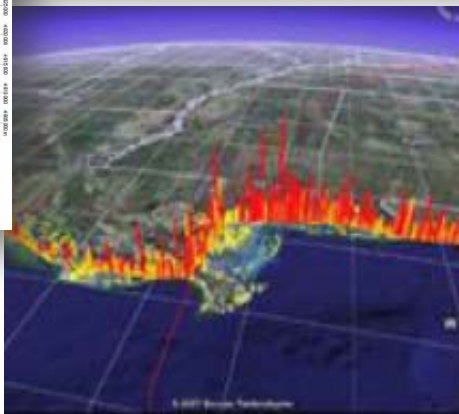
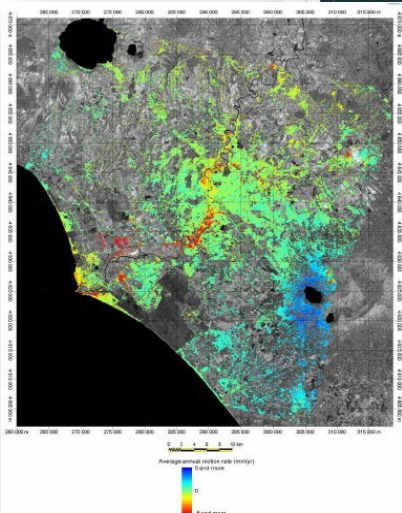
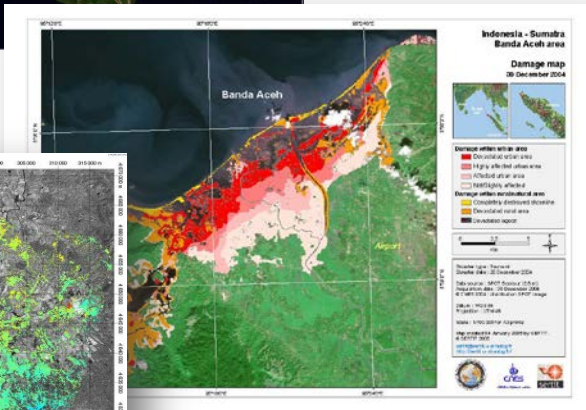
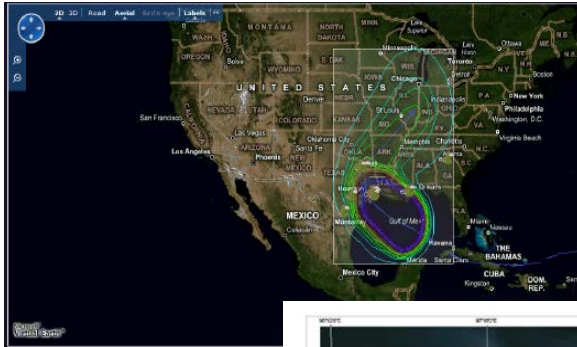


CatNet™

**Nordic Risk &
Insurance Summit
(NORIS).**

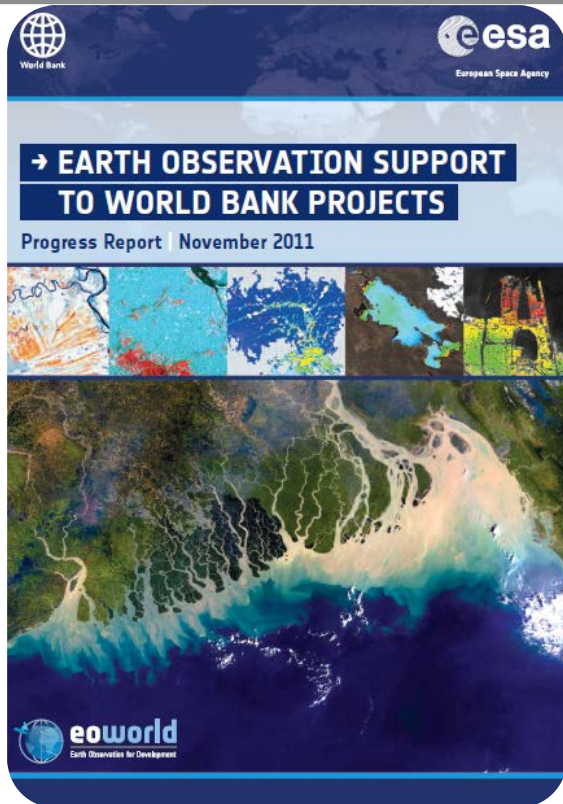


.....but potentially much more



- **Environmental Risk / Disasters**
(storms, hurricanes, subsidence, landslides, volcanoes, earthquakes, drought, tsunamis, coastal erosion, sea-surge,
..... + space weather ?)
- **Climate Variability**
(extreme weather events)
- **Climate Risk**
(ClimateWise - Industry working group)
- **Re/insurance**
(Index-linked, Multi-Year)
- **Insurance Processes**
(Risk Assessment & Modelling, Asset Exposure & Vulnerability, Underwriting, Loss Assessment, Claims Management,)

ESA / Multi-Lateral Development Banks



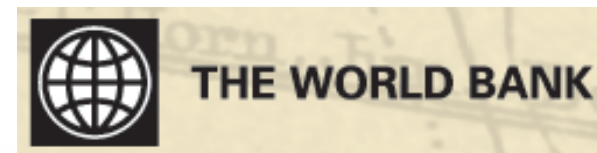
Climate Risk and Business
Practical Methods for Assessing Risk



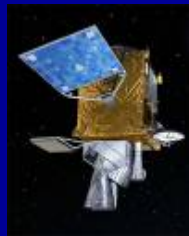
IFC International
Finance Corporation
World Bank Group



- EO for Sustainable Development
(Land, Marine, Risk EO-based services),

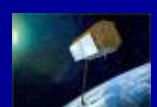
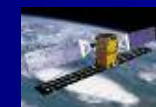
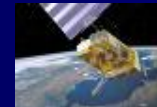
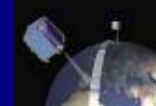
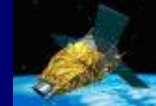


GMES Space Component infrastructure



Sentinel missions

SAR – Multi-spectral – Ocean/Land – Atmospheric (LEO and GEO); launched from 2013 onwards

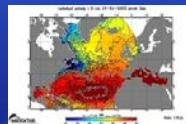


Contributing missions

Free & Open Data Policy

USERS

SERVICES

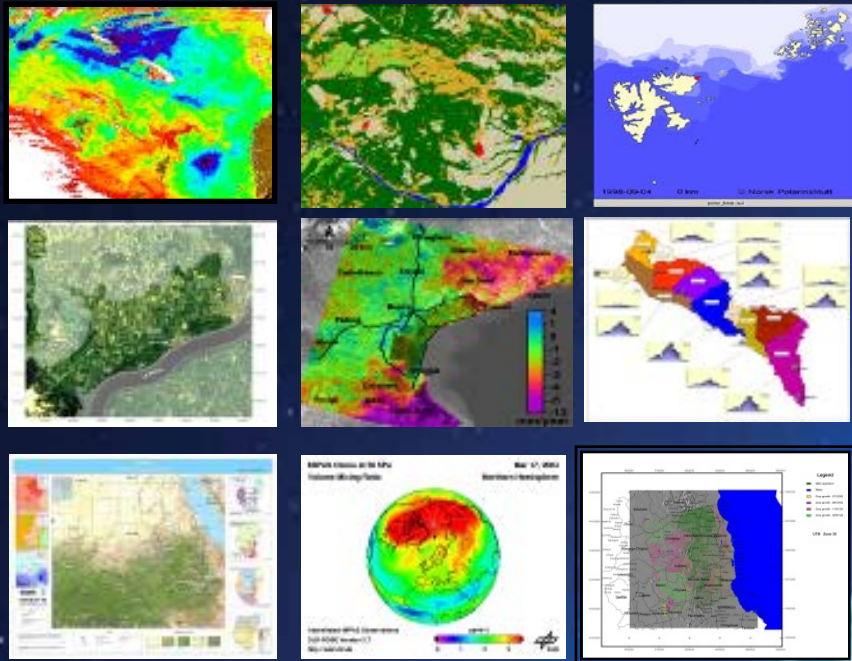


Distributed Ground Segment

GMES: Information Services

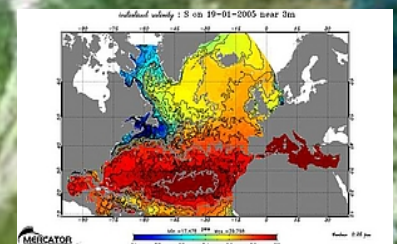
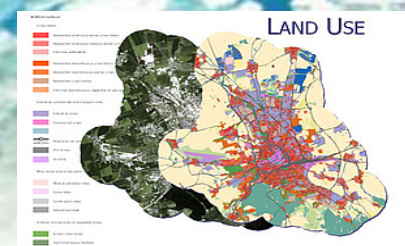


GMES Service Element



GMES Core Services

- Emergency Response
- Land Monitoring
- Marine Services
- Atmosphere (Pilot)
- Security (Pilot)



100 M€ from ESA MS
Period 2003-2008 (2009)
330+ user organisations
EC invested additional 100 M€

GMES: Today's Status



- The **Sentinel-Satellites** (1A/B, 2A/B, 3A/B, 4 und 5“Precursor”) are under **development**, *Sentinel-5 in definition*
- **Satellite launches** as of **2013**
- The **ground segment** (data reception, processing and distribution) is being **implemented**
- **ESA coordinates** the space segment
- **Coordination** with European **partners**
- **Sustainability** of operational GMES is the biggest political **challenge**
- **16-Feb-2012 EU Parliament** agrees motion to finance GMES within next EC Multi-Year Financial Framework (MFF).



ESA Climate Change Initiative



- ESA EO programmes **essential** for Climate Change monitoring
- **30 years** of EO data archived
- **20 new satellites** launched over next 10 years

Programme goal:

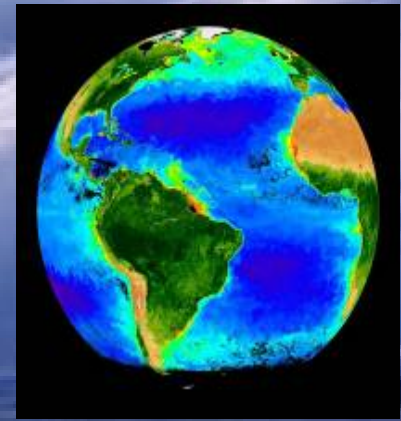
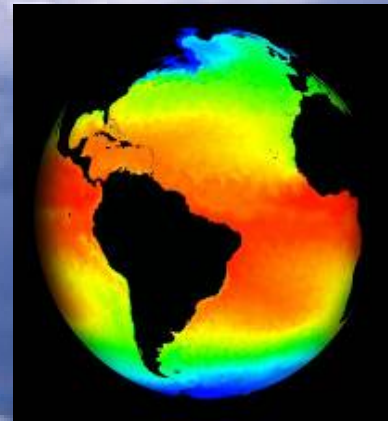
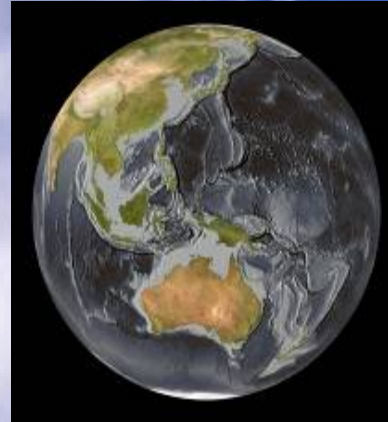
to systematically generate and distribute long-term series of
“Essential Climate Variables” (ECV) to meet needs of UNFCCC and IPCC



11 Essential Climate Variables



- **Cloud Properties**
- **Carbon Dioxide, Methane & other GHGs**
- **Ozone**
- **Aerosol properties**
- **Sea Surface Temperature**
- **Sea Level**
- **Sea Ice**
- **Ocean Colour**
- **Glaciers and Ice caps**
- **Land cover**
- **Fire disturbance**



For further Info : www.esa.int/eomd



Thank You !

**The ESA Earth
Observation
programmes**

... understanding our planet
... securing our environment
... benefiting our economy