Space for a safer world

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GMES
Observing our planet for a safer world

Saving lives

Europe is a global actor with global responsibilities. As a major space power, the EU has valuable space infrastructure, in particular Earth observation satellites. When Haiti was hit by an earthquake, when forest fires spread in the Mediterranean, and when Myanmar suffered from cyclone Nargis, Europe's Global Monitoring for Environment and Security (GMES) initiative assisted relief efforts from space. Space research is at the heart of GMES. This brochure provides an overview of the projects that empower Europe to harvest the potential of **space for a safer world**.

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Building on satellite technology, projects such as PREVIEW (**Prev**ention, **I**nformation and **E**arly **W**arning pre-operational services to support the management of risks), LIMES (**L**and and Sea **I**ntegrated **M**onitoring for **E**nvironment and **S**ecurity) and GMOSS (**G**lobal **Mo**nitoring for **S**ecurity and **S**tability) have paved the way towards the development of services for civil protection and security applications.

Reinforcing the European emergency response capacity

SAFER (**S**ervices and **A**pplications **F**or **E**mergency **R**esponse) is implementing the GMES Emergency Response Service.

SAFER provides civil protection authorities and humanitarian relief organisations with a rapid mapping capacity when natural disasters occur and in the context of complex crises.

SAFER products consist of assessment maps based on satellite images of the affected areas and on reference maps prepared in advance for areas which may be subject to disasters. Future products will also address early warning and reconstruction.

"Natural and man-made disasters take a very high toll in economic and human terms. The GMES Emergency Response Service will provide tangible benefits for all citizens, in terms of a better quality of life, better health, and increased safety."

David Hello, SAFER Coordinator

Keeping Europe safe

G-MOSAIC (**G**MES services for **M**anagement of **O**perations, **S**ituation **A**wareness and **I**ntelligence for regional **C**rises) is implementing the pre-operational GMES Security Service.

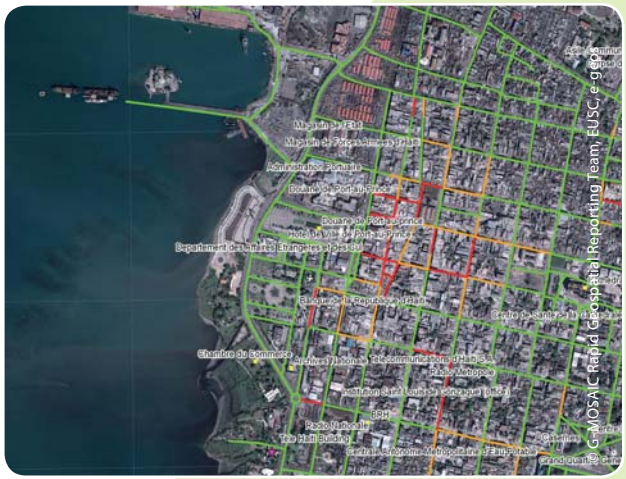
G-MOSAIC Situation Awareness and Intelligence applications monitor major threat warning factors (e.g. critical assets, illegal activities) and help identify where regional crises might occur.

G-MOSAIC Crisis Management Operations provide intelligence once a crisis has occurred, and support EU intervention in all the phases of the crisis: preparedness, crisis management, damage assessment, reconstruction and resilience.

"G-MOSAIC services will support EU intervention in an external regional crisis, which can be regarded as an indirect threat to Europe."

Sergio Proietti, G-MOSAIC Coordinator

GMES situation map showing spontaneous gathering areas where people assembled on 13 January during the first hours after the Haiti earthquake.



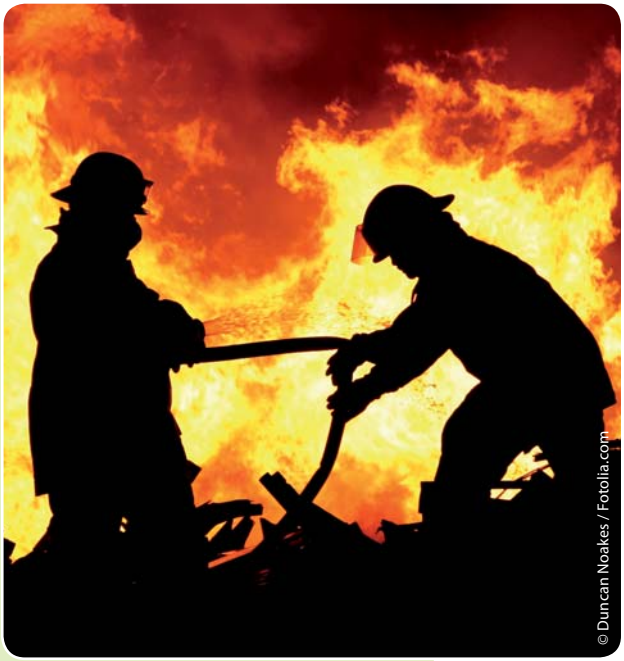
GMES situation map showing an assessment of the state of roads in central Port-au-Prince; green for "free go", yellow for "restricted go" and red for "no-go".

Complementing emergency response

GEO-PICTURES (**G**MES and **E**ARTH **O**bservation with **P**osition-based **I**mage and sensor **C**ommunications **T**echnology for **U**niversal **R**escue, **E**mergency and **S**urveillance management) complements the rapid mapping capacity offered by the GMES Emergency Response Service by adding images and videos from the field to the reference maps, at their exact location.

"GEO-PICTURES benefits Europe by improved civil protection and disaster management directly. It raises the quality and efficiency of European contributions to global disaster management, and defines a new, leading European position in integrated satellite and space solutions."

Harald Skinnemoen, GEO-PICTURES Coordinator



During the summer of 2009, GMES maps helped civil protection authorities assess the damage caused by numerous forest fires in the Mediterranean.

Improving smart border surveillance

With borders stretching over more than 60 000 kilometres in total, the European Union has a strategic need for new space-based technologies for border surveillance. NEWA (**N**ew **E**uropean **Wa**tcher) aims to identify these technologies and the innovative concepts that must be developed in order to guarantee European independence in this domain.

"The main purpose of NEWA is to review the state of the art in the EU for the Moving Target Indication technique. The project will support future development, which can enlarge the application spanning from citizen security to environmental monitoring."

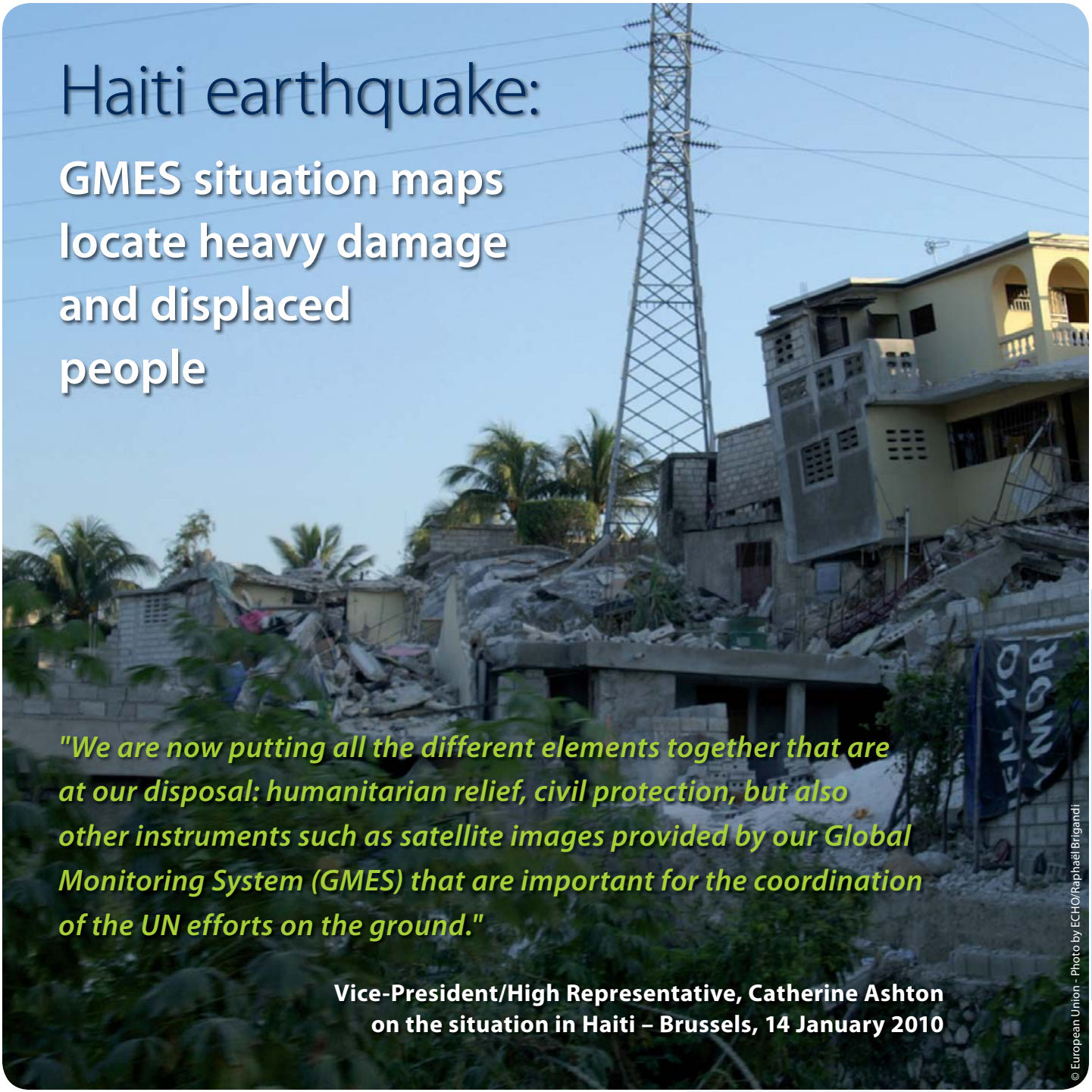
Claudio Catallo, NEWA Coordinator

Towards better emergency response in Africa

GARNET-E (**G**MES and **A**frica: **R**egional **N**etwork for information **E**xchange and **T**raining in **E**mergencies) aims at integrating African requirements in the operation of the GMES Emergency Response Service in Africa. GARNET-E will help strengthen regional and local capabilities in order to enable African users to access the information provided by the GMES Emergency Response Service.

"The concept of GARNET-E is to construct 'needs-driven' activities. These activities must be part of a joint strategy with other GMES and African initiatives. They should not be just 'for', but 'with' Africa and with due respect for African ownership."

Dr Nick Veck, GARNET-E Coordinator



Haiti earthquake:

GMES situation maps locate heavy damage and displaced people

"We are now putting all the different elements together that are at our disposal: humanitarian relief, civil protection, but also other instruments such as satellite images provided by our Global Monitoring System (GMES) that are important for the coordination of the UN efforts on the ground."

Vice-President/High Representative, Catherine Ashton on the situation in Haiti – Brussels, 14 January 2010

PREVIEW (FP6)
Estimated total cost: € 22 911 000
Duration: 45 months
Coordinator: Infoterra France
www.preview-risk.com

LIMES (FP6)
Estimated total cost: € 21 248 000
Duration: 42 months
Coordinator: Telespazio S.p.A., Italy
www.fp6-limes.eu

GMOSS (FP6)
Estimated total cost: € 6 000 000
Duration: 48 months
Coordinator: DLR, Germany
http://gmoss.jrc.it

SAFER (FP7)
Estimated total cost: € 39 312 720
Duration: 36 months
Coordinator: Infoterra France
www.emergencyresponse.eu

G-MOSAIC (FP7)
Estimated total cost: € 15 300 000
Duration: 36 months
Coordinator: Telespazio S.p.A., Italy
www.gmes-gmosaic.eu

GEO-PICTURES (FP7)
Estimated total cost: € 3 104 033
Duration: 24 months
Coordinator: AnsuR, Norway
www.geo-pictures.eu

NEWA (FP7)
Estimated total cost: € 772 538
Duration: 18 months
Coordinator: Thales Alenia Space, Italy

GARNET-E (FP7)
Estimated total cost: € 985 000
Duration: 24 months
Coordinator: Infoterra Ltd, UK

SEVENTH FRAMEWORK PROGRAMME

The views expressed in this leaflet are those of the SWIFT project and do not necessarily represent those of the European Commission.
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European Commission
Enterprise and Industry

More information about European space research:
http://ec.europa.eu/embrace-space