

MONITORING THE JUNE 2013 FLOODING IN CENTRAL EUROPE : A SUCCESS STORY

A major event, products delivered in emergency mode

- Flood monitoring over a 3-week period
- Covering affected zones in 5 countries
- Processing close to 50 satellite images
- Elaboration of more than 20 products



Mapping of vast flood affected areas



Detailed mapping of flooded urban areas using very high resolution optical data

Visualisation of products in Google Earth



During this event, the insurance industry showed great interest in the service by downloading several hundred times the products derived from Earth Observation imagery. These specific products, highly appreciated by the insurance community and widely used to rapidly evaluate event related economic losses, led to the success of the service.



SERTIT - REGIONAL IMAGE PROCESSING AND REMOTE SENSING SERVICE

SERTIT, linked to the University of Strasbourg's Telecom Physique Strasbourg, is a valorisation technological transfer centre. It is comprised of multi-disciplinary team covering domains such as remote sensing and other geomatic, natural sciences and IT fields. **Rapid production of geographic information derived from satellite remote sensing data is its speciality.**

SERTIT continually feeds the development of its services through R&D programmes having received the support of the CNES, ESA, the European Commission, the French State and regional authorities.

SERTIT uses airborne and satellite data to provide decision support. Thanks to its Rapid Mapping Service, SERTIT takes part in crisis management during natural or industrial disasters, but also provides support to humanitarian and development missions; in a different context SERTIT is heavily engaged with natural resource managers.



Our clients and partners within the framework of insurance industry services:

- Swiss Re, CCR, PERILS, Guy Carpenter, Allianz, Munich Re, Willis, EQECAT, RMS, Aon Benfield...
- ESA, CNES, Vista, AIRBUS DS, Kongsberg Satellite Services, e-GEOS...

For more information contact us :

SERTIT - Université de Strasbourg

Pôle API - Parc d'innovation
300 boulevard Sébastien Brant
CS 10413 - F - 67412 Illkirch Cedex
Tél.: +33(0)3 68 85 46 45 Fax: +33(0)3 68 85 46 46
sertit@sertit.u-strasbg.fr sertit.u-strasbg.fr
insurance@sertit.u-strasbg.fr



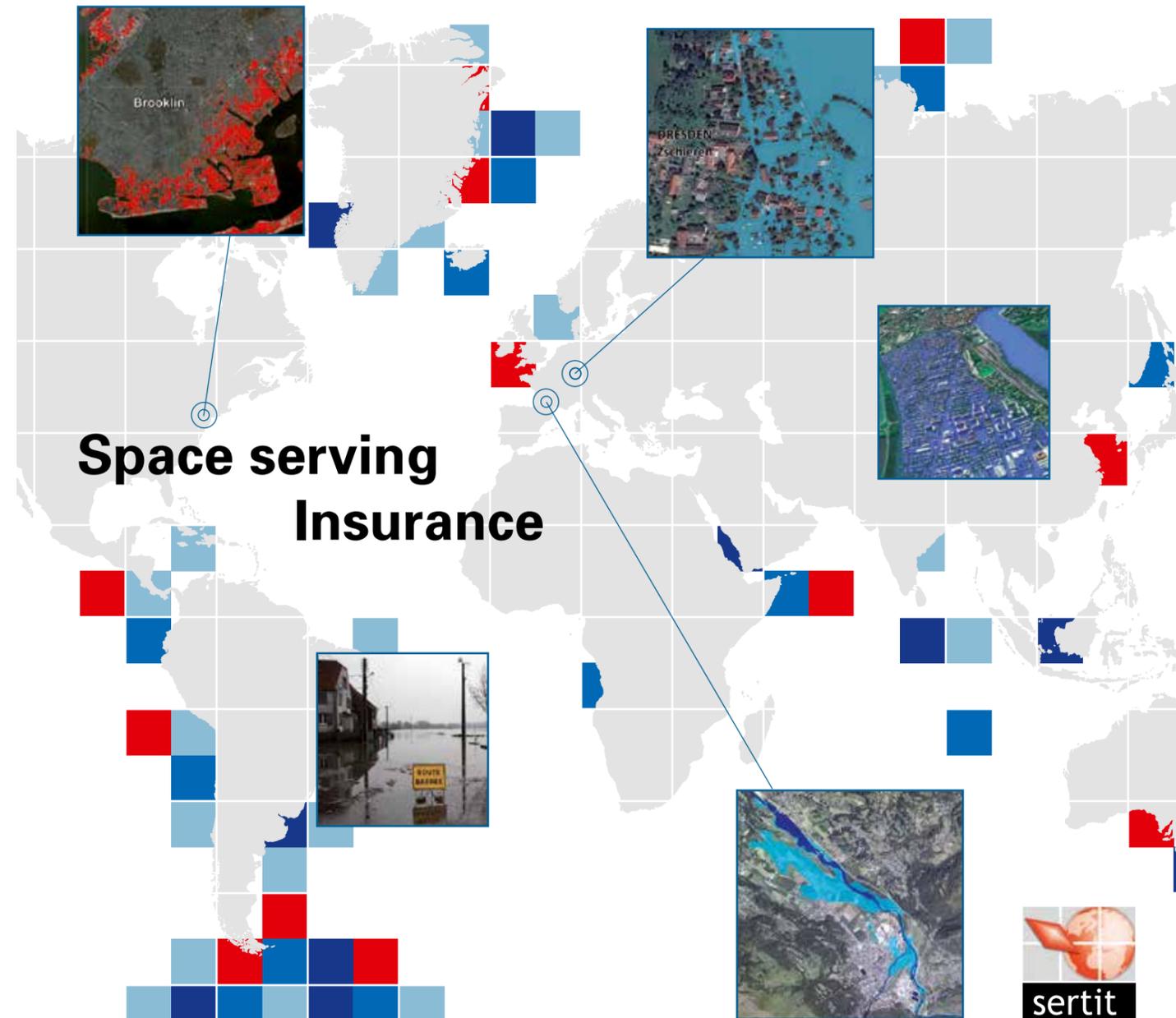
SERTIT is certified ISO 9001 for its rapid mapping activity being engaged to produce geo-information derived from satellite data within a few hours. This certification embodies its mastery of the whole production chain from satellite programming to the delivery of geo-information to users, a reflection of its performance goals.

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Space serving Insurance



INSURANCE INDUSTRY RESPONDING TO THE INCREASING IMPACT OF NATURAL DISASTERS

Faced with the augmentation of natural disasters worldwide, the aggravation of their impact on people, property, the economy and hence on insured property, the insurance industry must continuously respond to new challenges.

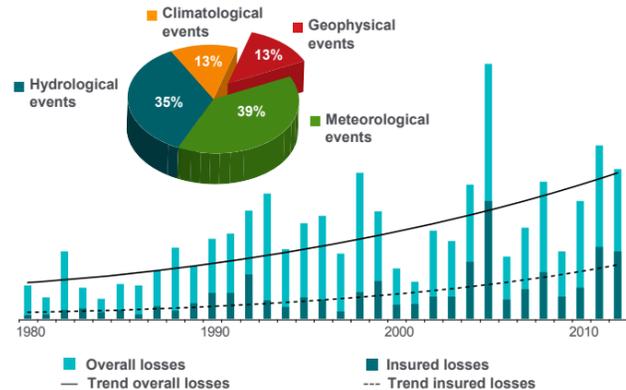
Property insured against natural disasters is concentrated in densely populated areas, with highly developed infrastructure, often in coastal areas vulnerable to flooding, marine submersions and storm risks, or in areas of high seismic activity. It is in these areas where the insurance market is the most established and where insurance claims in case of an event can be the highest.

Appropriate risk management before an event and preparing for a possible natural disaster are key factors in impact reduction. In using their risk management expertise and analyzing disaster related data, insurance players improve hazard knowledge, the vulnerability of at-risk areas and the financial consequences of catastrophes. The information assists in the development of modeling tools that aim to measure the exposure of given areas to various hazards.

Reinsurance companies generally communicate their disaster event knowledge to their clients via dedicated platforms sharing statistical and geographical information providing an overview of events impacts and risk evaluations.



CatNet®, an interactive portal sharing information related to natural risks – © Swiss Re



Trend of natural disaster related insurance losses - © Munich Re

EARTH OBSERVATION, PROVIDING VALUABLE INFORMATION TO THE INSURANCE SECTOR

During an event, the insurance industry needs to rapidly assess the cost of an event. Beforehand, they need to know their risk exposure and what is at stake in given areas. This requires the availability of up-to-date information.

Earth Observation technologies constitute a valuable support in improving and accelerating impact evaluation after an event, but also to assess risks in adjusting their models.

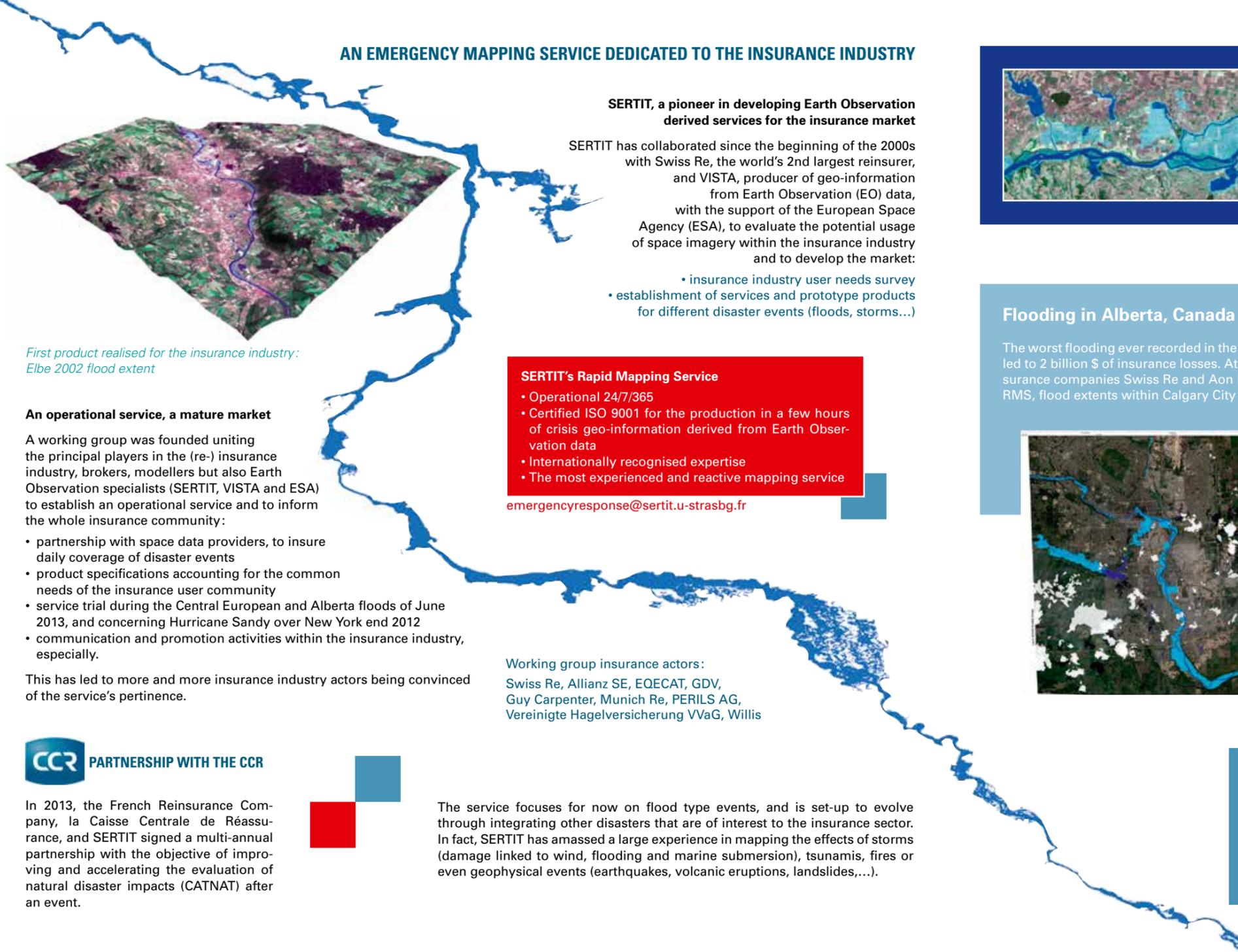
Space resources can insure worldwide daily coverage, including the most inaccessible zones, at more or less high resolution. One of the major advantages of satellite data is to have a rapidly available overview of an event and also details of areas with much at stake. Thanks to the coverage frequency offered by these technologies, it is possible to monitor the evolution of an event.

SERTIT applies its internationally recognised expertise to the rapid production of geo-information derived from Earth Observation data to serve the insurance sector and to optimally respond to requirements.

Satellite Earth Observation, guaranteeing daily coverage of events

Geo-information, essential to the rapid evaluation of damage and the cost of an event

AN EMERGENCY MAPPING SERVICE DEDICATED TO THE INSURANCE INDUSTRY



First product realised for the insurance industry: Elbe 2002 flood extent

An operational service, a mature market

A working group was founded uniting the principal players in the (re-) insurance industry, brokers, modellers but also Earth Observation specialists (SERTIT, VISTA and ESA) to establish an operational service and to inform the whole insurance community:

- partnership with space data providers, to insure daily coverage of disaster events
- product specifications accounting for the common needs of the insurance user community
- service trial during the Central European and Alberta floods of June 2013, and concerning Hurricane Sandy over New York end 2012
- communication and promotion activities within the insurance industry, especially.

This has led to more and more insurance industry actors being convinced of the service's pertinence.



In 2013, the French Reinsurance Company, la Caisse Centrale de Réassurance, and SERTIT signed a multi-annual partnership with the objective of improving and accelerating the evaluation of natural disaster impacts (CATNAT) after an event.

SERTIT, a pioneer in developing Earth Observation derived services for the insurance market

SERTIT has collaborated since the beginning of the 2000s with Swiss Re, the world's 2nd largest reinsurer, and VISTA, producer of geo-information from Earth Observation (EO) data, with the support of the European Space Agency (ESA), to evaluate the potential usage of space imagery within the insurance industry and to develop the market:

- insurance industry user needs survey
- establishment of services and prototype products for different disaster events (floods, storms...)

SERTIT's Rapid Mapping Service

- Operational 24/7/365
- Certified ISO 9001 for the production in a few hours of crisis geo-information derived from Earth Observation data
- Internationally recognised expertise
- The most experienced and reactive mapping service

emergencyresponse@sertit.u-strasbg.fr

Working group insurance actors:

Swiss Re, Allianz SE, EQECAT, GDV, Guy Carpenter, Munich Re, PERILS AG, Vereinigte Hagelversicherung VVaG, Willis

The service focuses for now on flood type events, and is set-up to evolve through integrating other disasters that are of interest to the insurance sector. In fact, SERTIT has amassed a large experience in mapping the effects of storms (damage linked to wind, flooding and marine submersion), tsunamis, fires or even geophysical events (earthquakes, volcanic eruptions, landslides,...).

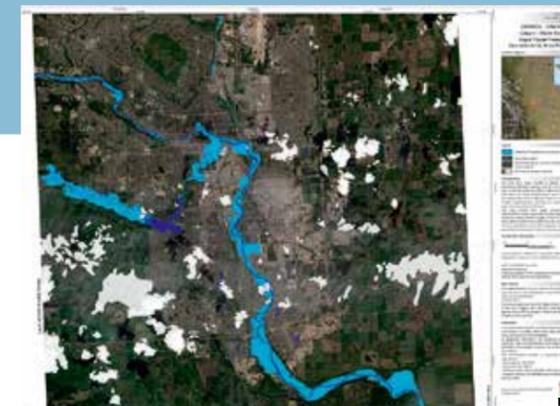
Danube Flooding during Spring 2005 & 2006



To promote the use of space technologies by the insurance industry, SERTIT mapped flood extents covering several hundreds of kilometers along the Danube River during the spring of 2005 and 2006. The reinsurance group Swiss Re distributed the resulting geo-information using its CatNet® portal, accessible to a number of insurance companies.

Flooding in Alberta, Canada in June 2013

The worst flooding ever recorded in the Province of Alberta, Canada led to 2 billion \$ of insurance losses. At the request of PERILS, reinsurance companies Swiss Re and Aon Benfield and of the modeler RMS, flood extents within Calgary City were mapped by SERTIT.



EO services to the insurance sector

An offer adapted to user requirements, specific products customised to event types: floods, storms, marine submersion, tsunamis, fires, and geophysical risks (earthquakes, volcanic eruptions, landslides, subsidence)...

Overview of events and a detailed vision of high stake areas: quality information rapidly delivered

Flooding in Brittany, France in January 2014

If a major disaster occurs, SERTIT provides the CCR with mapping of the affected area. This service enables the CCR to fine-tune its models and to improve its estimate of an event's cost. This procedure was implemented for the floods that hit Western France.

