

## Innovative space technologies for society: urban risk management

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VRI Workshop: What can Galileo and GMES  
offer to society  
Brussel, 10/04/2008



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## VITO in a nutshell

- Autonomous public research company (shares 100 % owned by Flemish government)
- 550 people
- Budget: 65 M€
- Bridge between scientific knowledge and industrial applications or government policy
- Core activities: energy, environment, materials and remote sensing



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## GMES related activities at VITO

- GLOBAL MONITORING
  - GMFS provides early warning, agricultural mapping and crop yield assessment services in support of food security monitoring activities in Africa.
  - GEOLAND is a FP6 IP aiming at providing to GMES services in the "Water and Carbon", "Crop production for food safety", and "Land Cover change" areas the biogeophysical products that they need.
- URBAN RISK MANAGEMENT
  - PROMOTE focuses on stratospheric ozone, surface ultraviolet radiation, air quality, greenhouse gases, and special services (aviation).
  - Management of industrial risks (SEVESO)



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## Urban Environment



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## Urban risk management

- Mixture of housing, transport and industry
- Close proximity of population
- Intense anthropogenic emissions  
⇒ health and ecosystem impacts
- Handling, production and transport of dangerous materials



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## Urban Air Pollution

- Problem:
  - Territory management minimizing negative impact on the population (industrial permits, SEA, EIA, ...)
  - Optimized air quality management in terms of cost and benefits
  - Population information and warning in case of exceedances
- End-users
  - Environmental and health administrations, local and regional authorities, industry, interested individuals



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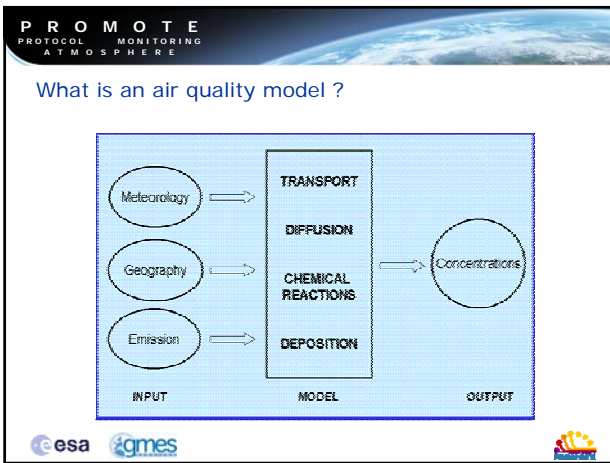
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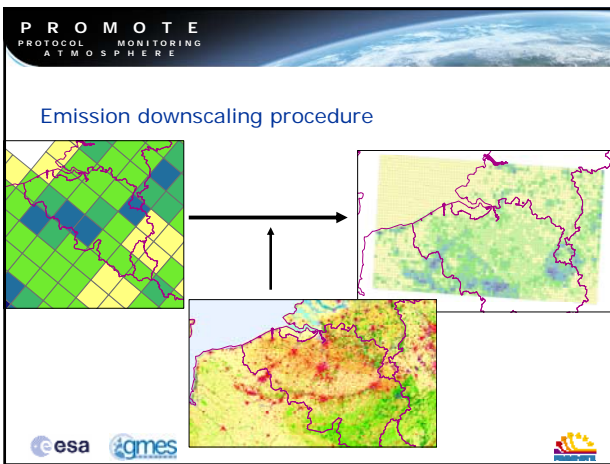
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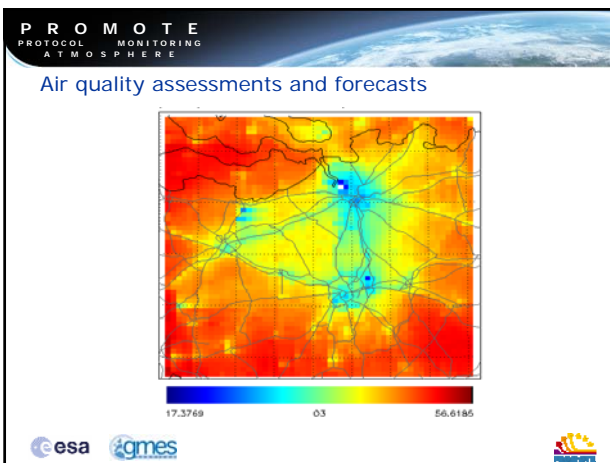
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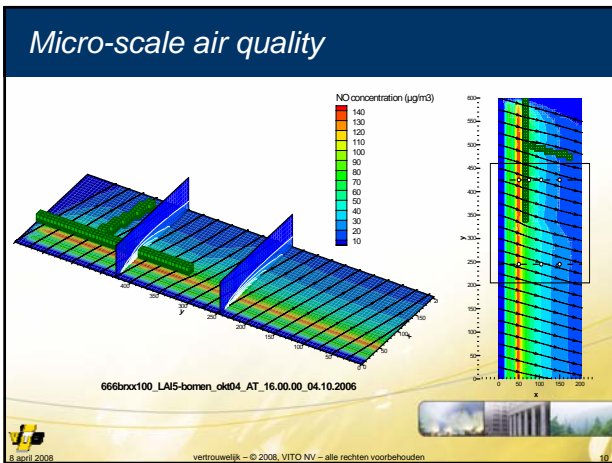
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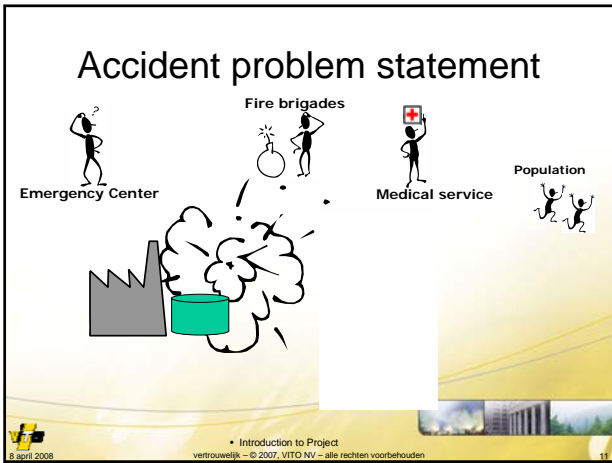
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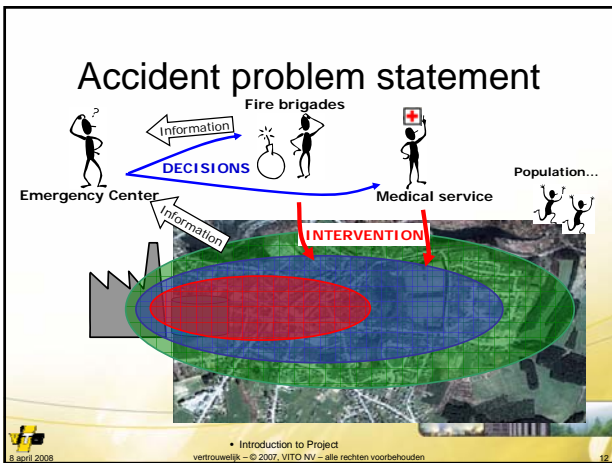
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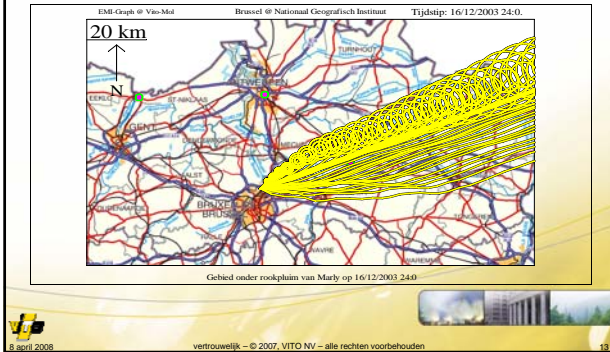
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## Marly fire example



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## SEVESEO

- Decision support system with:
  - remote sensing (surface characterization, visual aid)
  - GIS functionalities (data analysis, use of auxiliary data layers)
  - connection to dispersion models (atmosphere, soil, ...)
  - connection to dangerous product databases
  - database of incidents/scenarios/consequences

SEVESEO IS - Prototype Presentation • Client-Server



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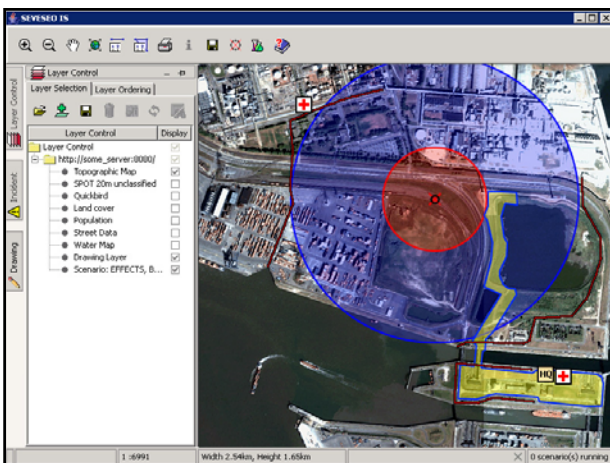
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## Future Outlook SEVESEO

- Evolutions:
  - Transition from preventive decision support towards response phase support
  - Transition from fixed sites (SEVESO) towards moving objects (transport of hazardous materials)
- Technologies
  - Introduction of satellite navigation and communication
  - real-time data-management (sensor web, remote sensing, adapted ICT technology)



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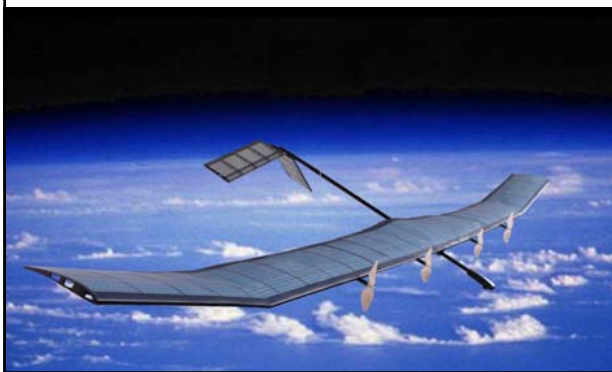
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## Pegasus HALE UAV



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## GMES advantages

- Quality assured services
- Local service can be linked (without additional costs) to a national or European service
- Transition from research towards end-user-driven operational services
- Easy access to information and geo-data



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