

# 3rd AIRBORNE IMAGING SPECTROSCOPY WORKSHOP

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Bruges, Belgium



BELGIAN SCIENCE POLICY



# Imaging spectroscopy: The overall picture – reason for gloom?

- *Standstill in technological developments?*
  - ▶ Operation new airborne instruments delayed (APEX, ARES)
  - ▶ Satellite missions cancelled (Spectra, ...)
- *Perceived drawbacks*
  - ▶ Too expensive
  - ▶ Too complicated – too many data
  - ▶ Not commercially viable



# Imaging spectroscopy: Alive and kicking

- *Advantages of imaging spectroscopy*
  - ▶ Unique discriminative power
  - ▶ Free band selection
  - ▶ Conducive for interdisciplinary collaboration
- *Growing interest*
  - ▶ National: expanding user base (scientific, industrial, military, public administrations)
  - ▶ International: emerging IS centres (South Africa, Indonesia, ...)



# Imaging spectroscopy: The future ahead

- *Growing acceptance of technology - Shift of conventional satellite sensors systems towards “superspectral” characteristics (VEN $\mu$ S, Sentinel)*
- *First real hyperspectral sensors imminent:*
  - *MSMI (due 2007)*
  - *HERO (due 2009)*
- *ESA open to dedicated hyperspectral mission*



# Advancing airborne imaging spectroscopy: Belgium's contribution

- *Annual group shoots with various sensors (CASI, SASI, HyMap, AHS, ...)*
- *Regular RS research projects / technology transfer*
- *Hyperteach training course*
- *Hyressa*
  - ▶ EU SSA to streamline European users and providers of hyperspectral data





# Objective of this workshop: Spread the hyperspectral gospel

- *Consolidate and expand user base*
- *Keep up pressure on decision makers*
- *Exchanges of knowledge and experiences*
- *Provide feedback to group shoot organisers*

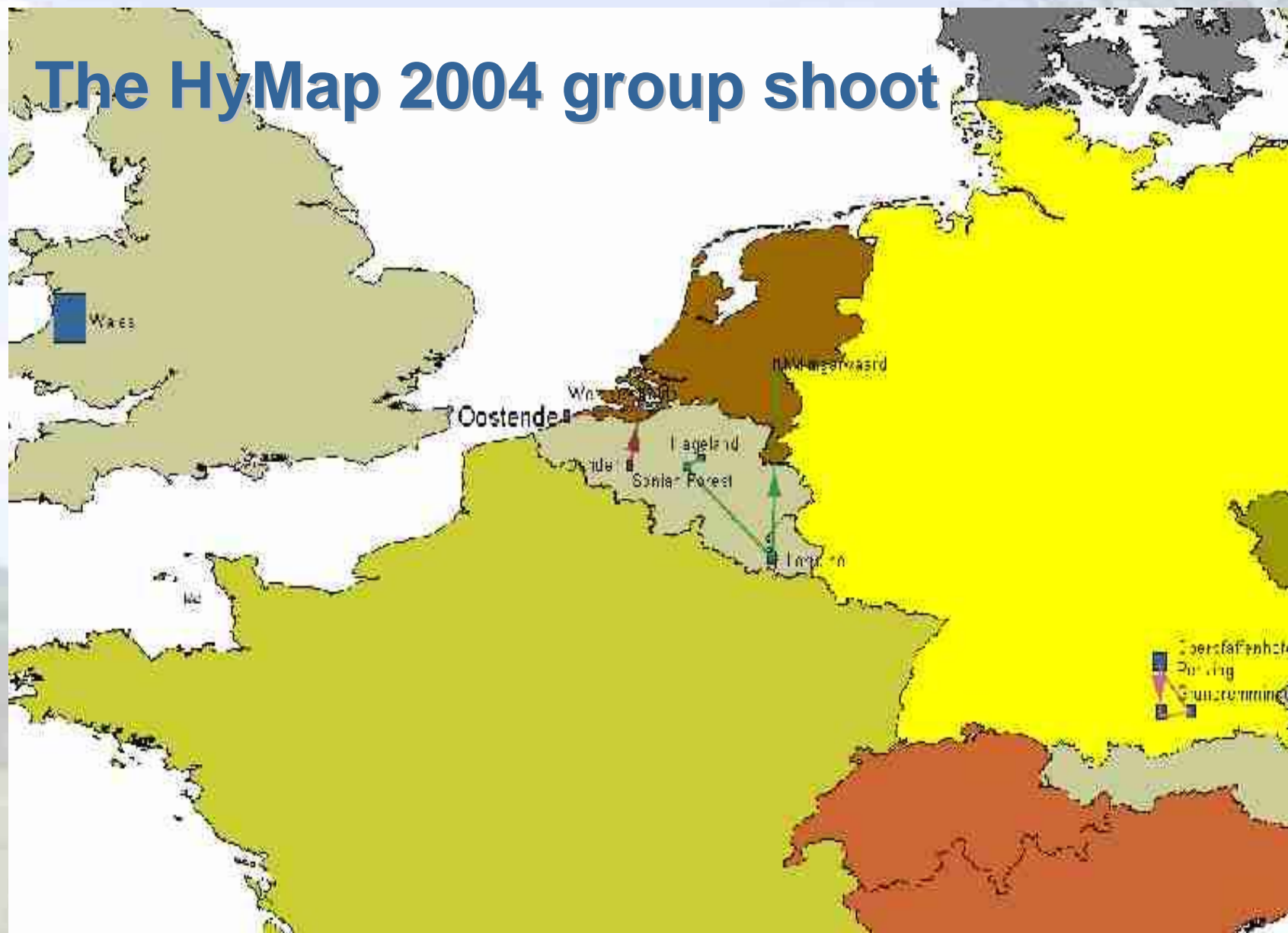


# Today's programme: HyMap goes Europe - 2004

- *Group shoot organised by VITO, BELSPO and DLR*
- *Sensor: HyMap*
  - *Hyvista Australia*
  - *132 bands / 450-2480 nm*
  - *FWHM: 15 – 20 nm*
  - *spatial resolution 4-10 m*
- *Participants from 6 European countries*



# The HyMap 2004 group shoot





# The HyMap 2004 group shoot

Research	Teams	Site
Machine Learning Techniques for Ecotope Classification	VUB (B)	Dender valley
Crop productivity-soil erosion relationship	KUL (B), U. Exeter (UK), BRGM (F)	Hageland
Linking biochemical and biophysical variables derived from hyperspectral data to ecological models	VITO, VUB, ULB (B) – WUR, Alterra (NI)	Millingerwaard
Nitrogen indicators for maize crop	ULg, UCL (B) – CRP-GL (Lux)	Attert
Man-made object classification using fused polarimetric SAR and hyperspectral data	RMA, Vito (B) – DLR (G)	Oberpfaffenhofen



## The HyMap 2004 group shoot – cont'd

Research	Teams	Site
Exploitation of HyMap data for the validation of SPOT data products	VUB (B) – INRA (F)	Sonian Forest
Time-dependent changes in the optical properties of sediments	KULeuven, UGent, VITO (B) – NIOO (N)	Westerschelde
Lead dispersal from abandoned mining sites	Africamuseum (B) – BGS (UK)	Rheidol valley

**Information on campaigns and available data sets:**

***<http://campaigns.vgt.vito.be/>***





**HAVE AN INTERESTING DAY !**



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