EUROPEAN COMMISSION
DIRECTORATE-GENERAL
Joint Research Centre

Use of high resolution orthoimage data for European Union agricultural policy implementation

Civil Commercial Imagery Evaluation Workshop

March 20-22, 2007

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Joint Research Centre of the European Commission

Outline

- Joint Research Centre
- Common Agriculture Policy
- Integrated Administration & Control System (IACS)
- Orthoimage in IACS
- Control with Remote Sensing
- Orthoimage dissemination and data policy

The Mission of the Joint Research Centre

… to provide customer-driven scientific and technical support for the conception, development, implementation and monitoring of EU policies.

As a service of the European Commission, the JRC functions as a reference centre of science and technology for the Union.

Close to the policy-making process, it serves the common interest of the Member States, while being independent of special interests, whether private or national.

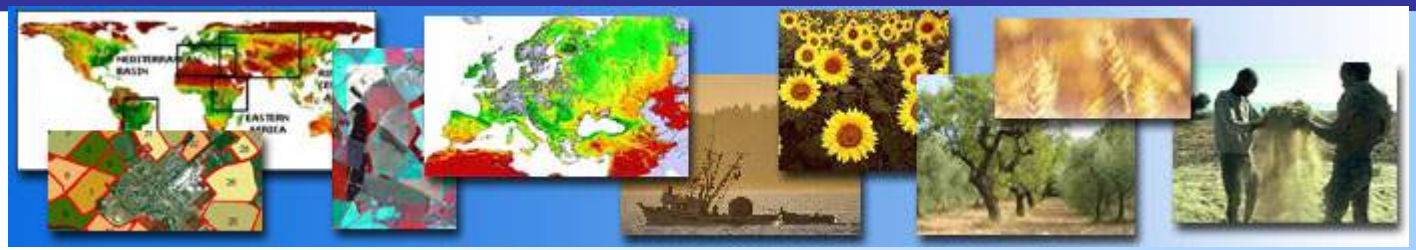
Our Structure

7 Institutes across 5 Member States

- Institute for Reference Materials and Measurements
  IRMM – Geel, Belgium
- Institute for the Protection and Security of the Citizen
  IPSC – Ispra, Italy
- Institute for Environment & Sustainability
  IES – Ispra, Italy
- Institute for Health and Consumer Protection
  IHCP – Ispra, Italy
- Institute for Transuranium Elements
  ITU – Karlsruhe, Germany
- Institute for Energy
  IE – Petten, The Netherlands
- Institute for Prospective Technological Studies
  IPTS – Seville, Spain

> 2,700 staff across Europe

AGRIFISH unit



AGRIFISH integrates research and techniques in:

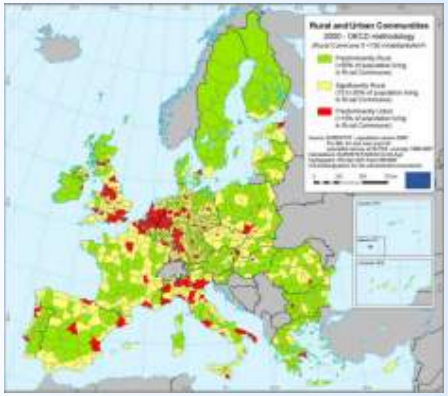
- Image processing and interpretation (satellite or air-borne)
- GIS management & web-based information technology
- Geomatics and GPS (orthophotos, large scale mapping, parcel measurement)
- Standardisation and Quality Control
- Statistics (e.g. area frame sampling)
- Agrometeorologica models (crop growth / yield)

Common Agriculture Policy (CAP)

- CAP reform
- Single Payment Scheme
- Cross-compliance
- The Integrated Administration and Control System (IACS)

CAP

- … in figures
  - 156 million ha of agricultural use*
  - 16 ha average farm size*
  - Up to 8.7 million Aid applications expected for 2007
  - €35 billion ($46.5) for agricultural direct payments
- Great variations between MS and regions

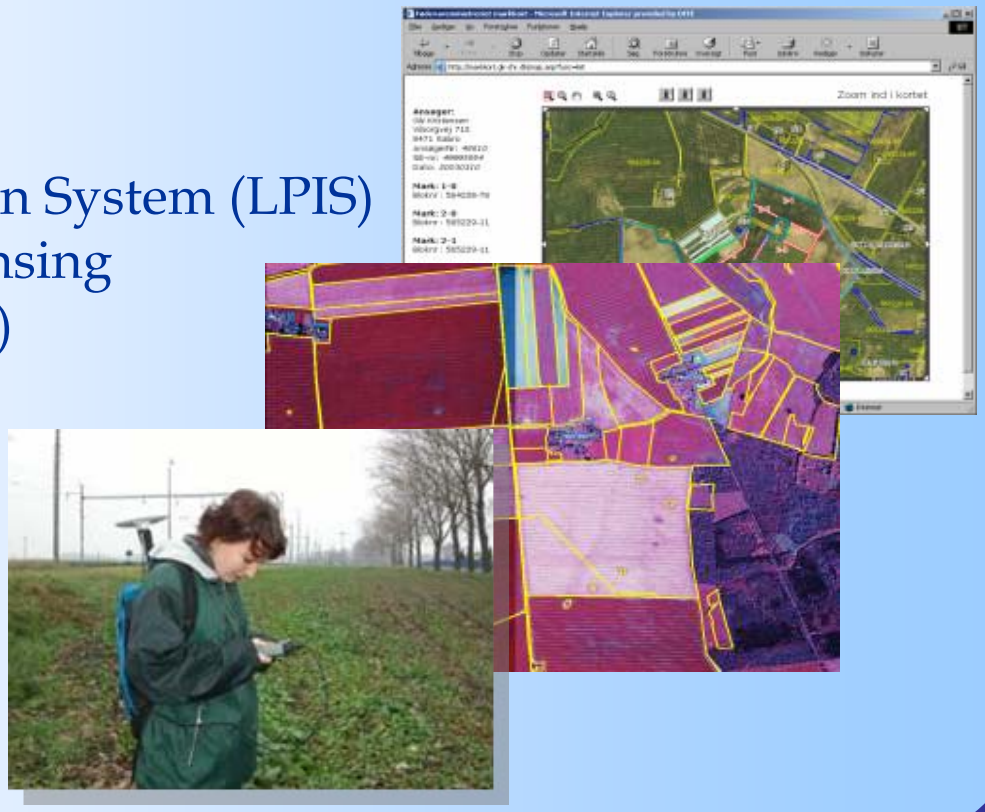


*EU-25, 2003

IACS - GIS

A System for management & control of CAP

- Data base
- Geo-spatial background
- Land Parcel Identification System (LPIS)
- Control with Remote Sensing
- On the spot checks (GPS)



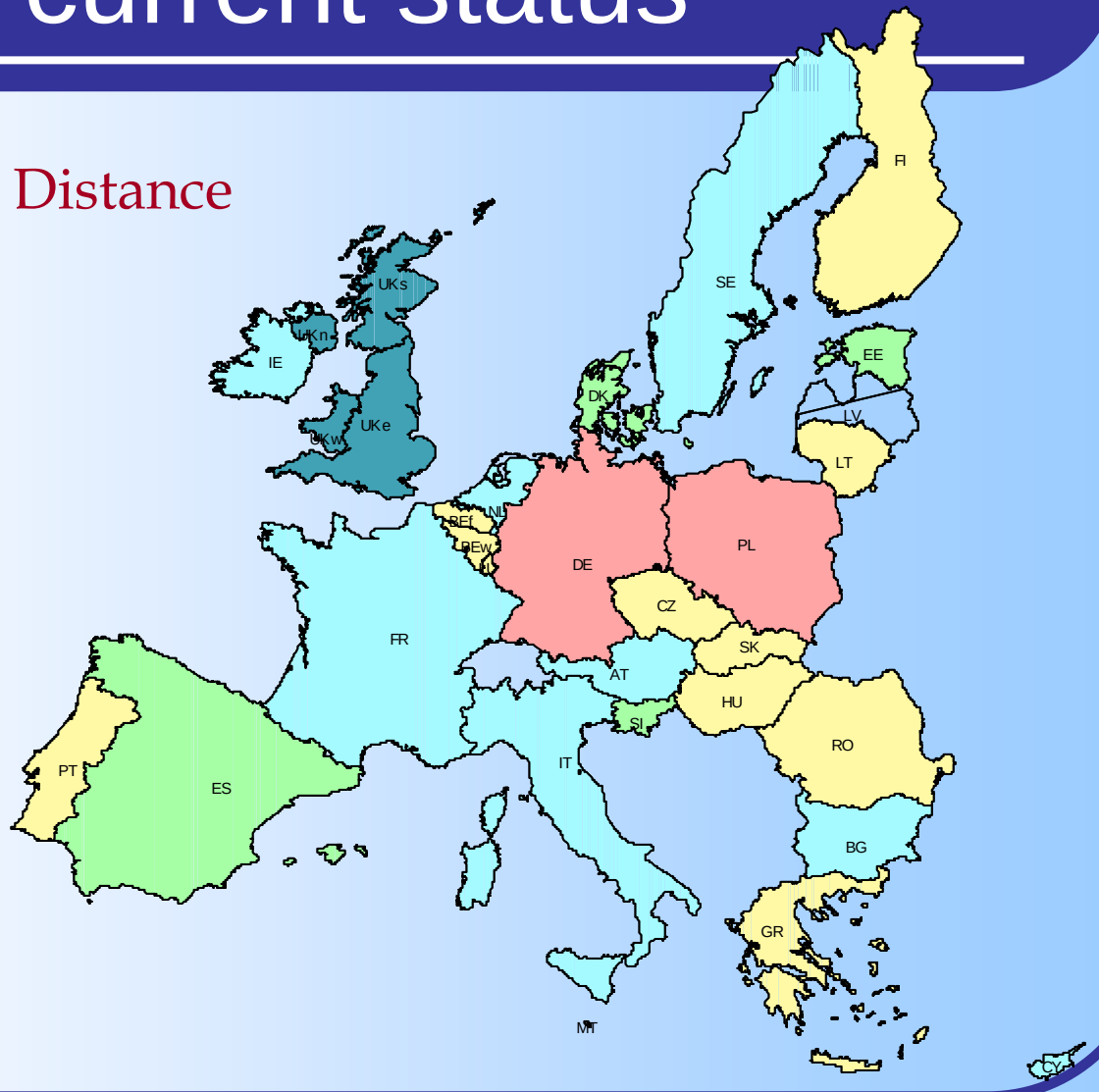
Orthoimage use in IACS

- Base of the LPIS at 25 of 27 MS
  - "Wall to wall"
  - Update cycle: 3-5 years
- Technical specifications
  - Equivalent to 1:10,000 map scale
  - 1m pixel size
  - 2.5m rmse-1D, DEM<5m rmseZ
  - Panchromatic
  - Airborne or Satellite

Orthoimage current status

Ground Sampling Distance

- 0.25 m - 0.5m
- 0.5 m only
- 0.5 m – 1 m
- Less than 1 m
- No orthophoto used



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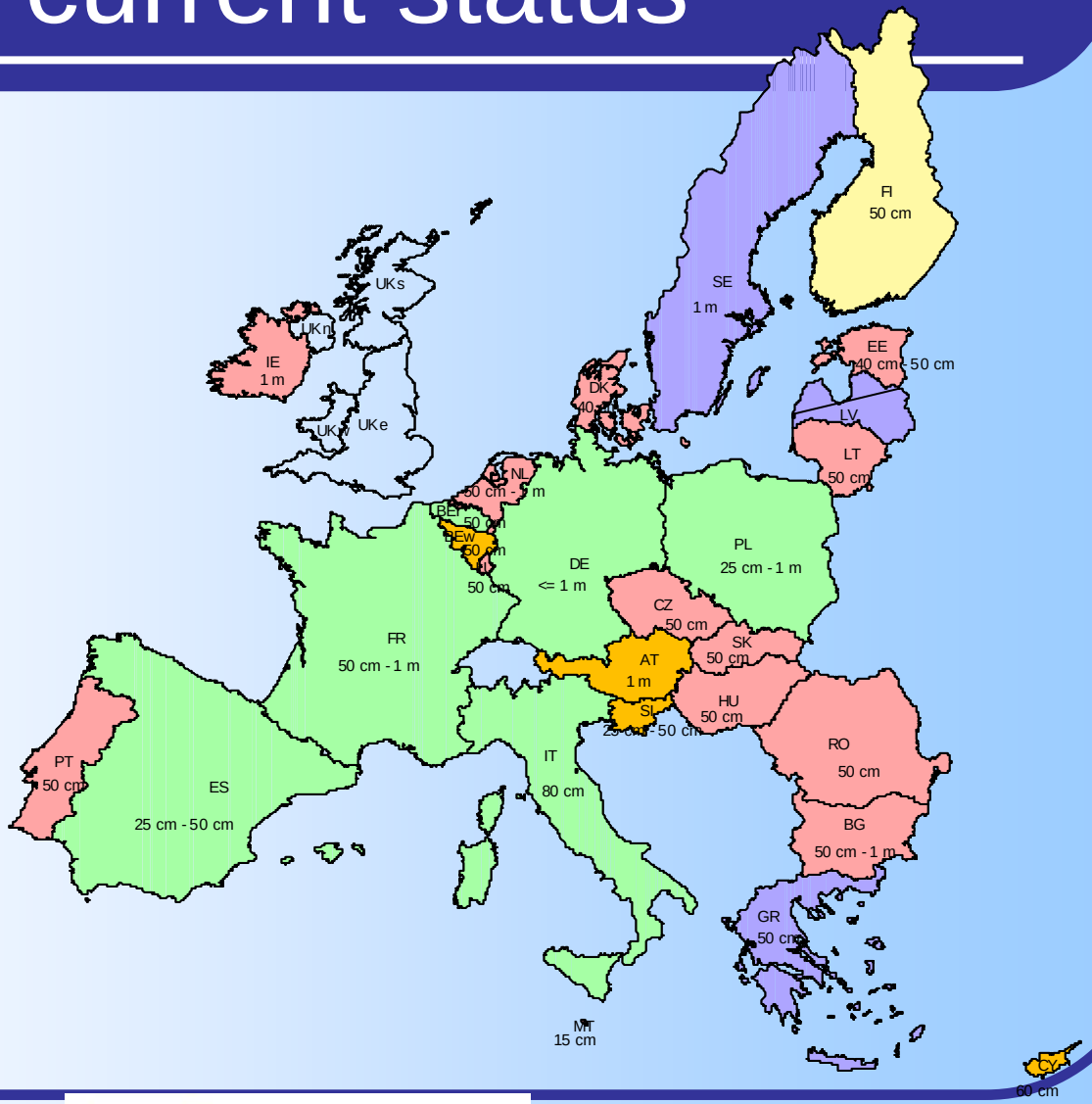
Orthoimage current status

Radiometry

- Black & White
- Colour
- B&W/Colour
- Colour and IR
- B&W/Colour/IR



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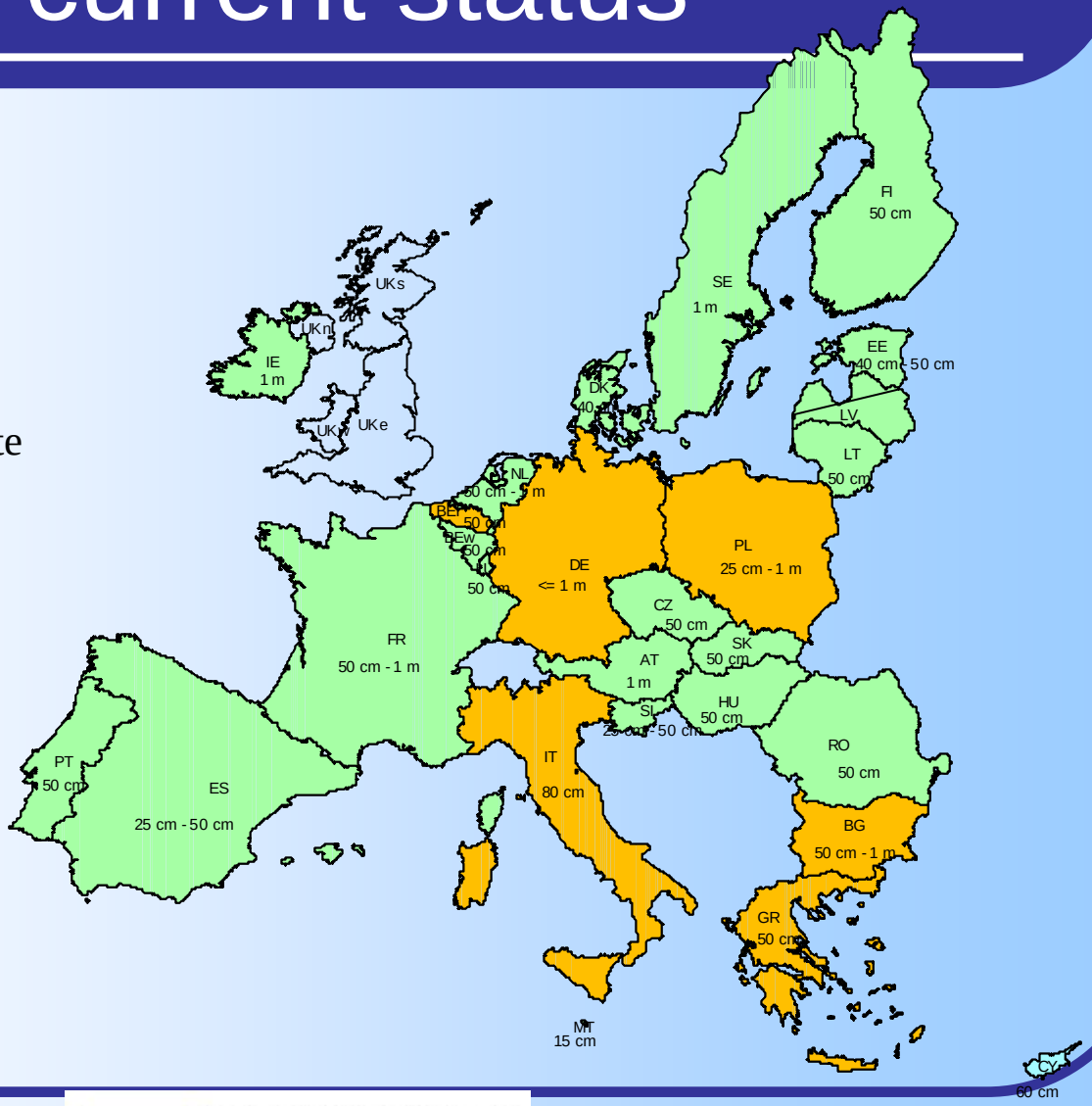
Orthoimage current status

Acquisition

- Aerial
- VHR satellite
- Aerial / VHR satellite



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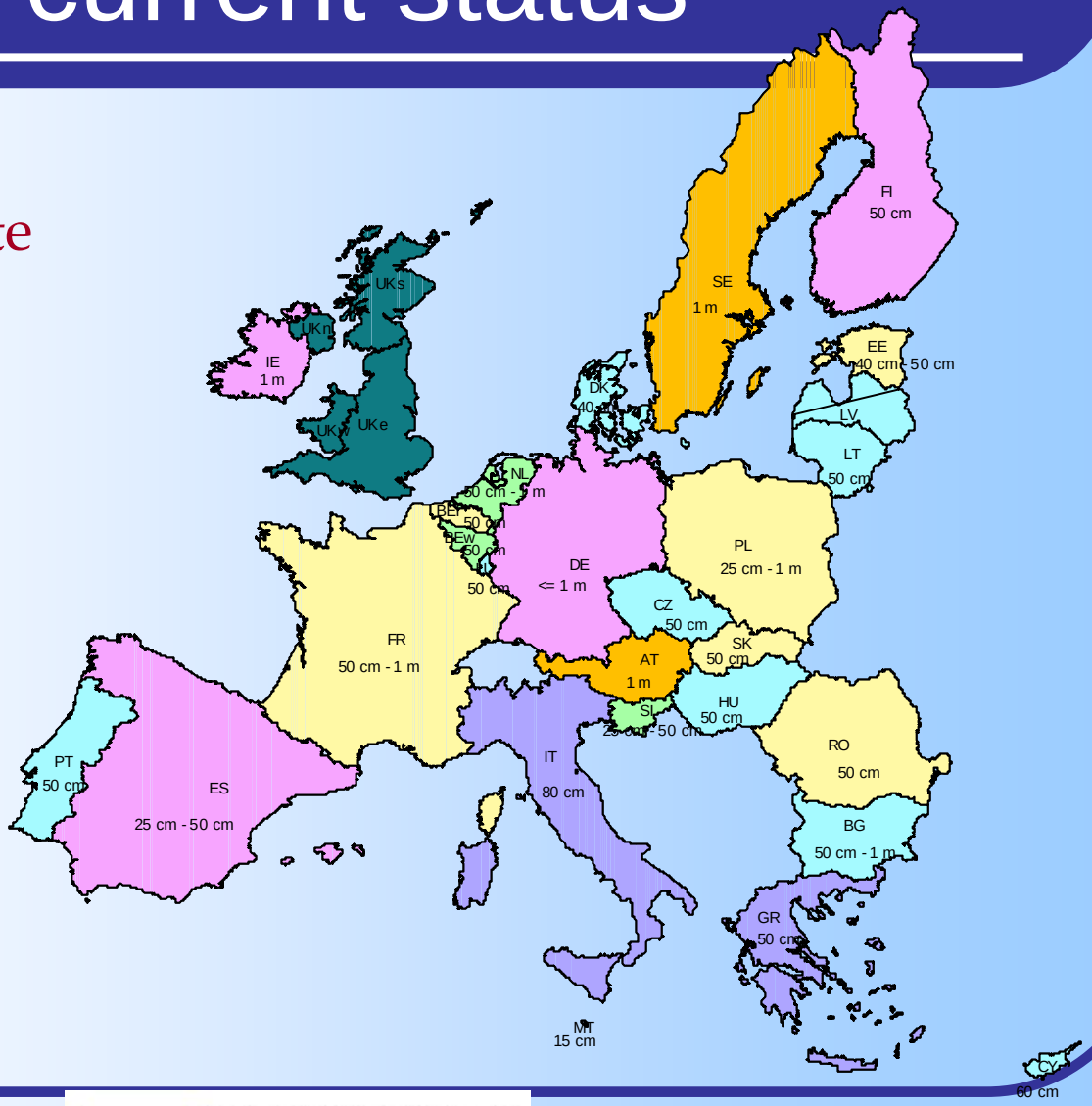
Orthoimage current status

Production date

- 2006
- After 2003
- After 2002
- After 2000
- After 1998
- After 1996



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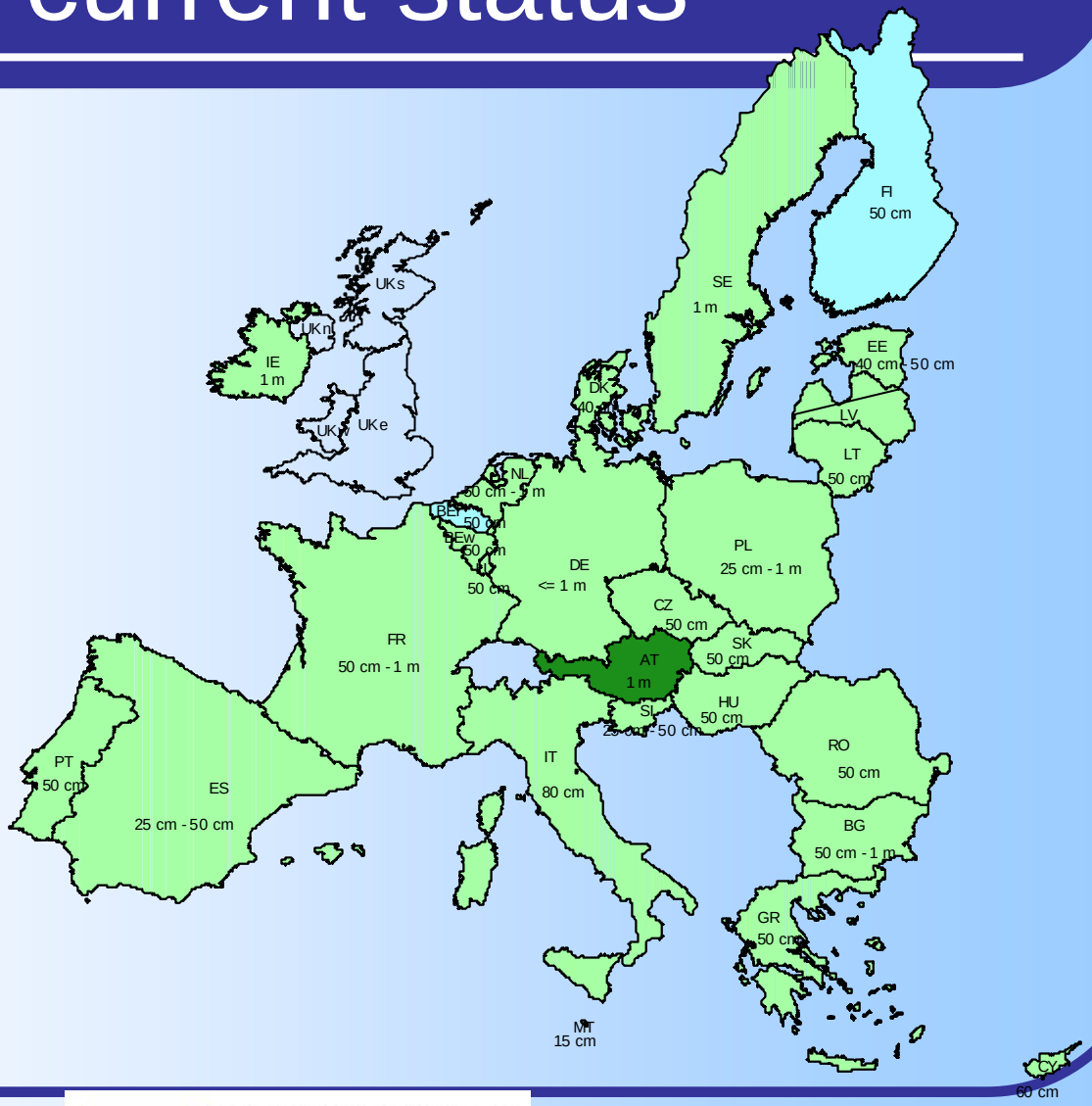
Orthoimage current status

Coverage

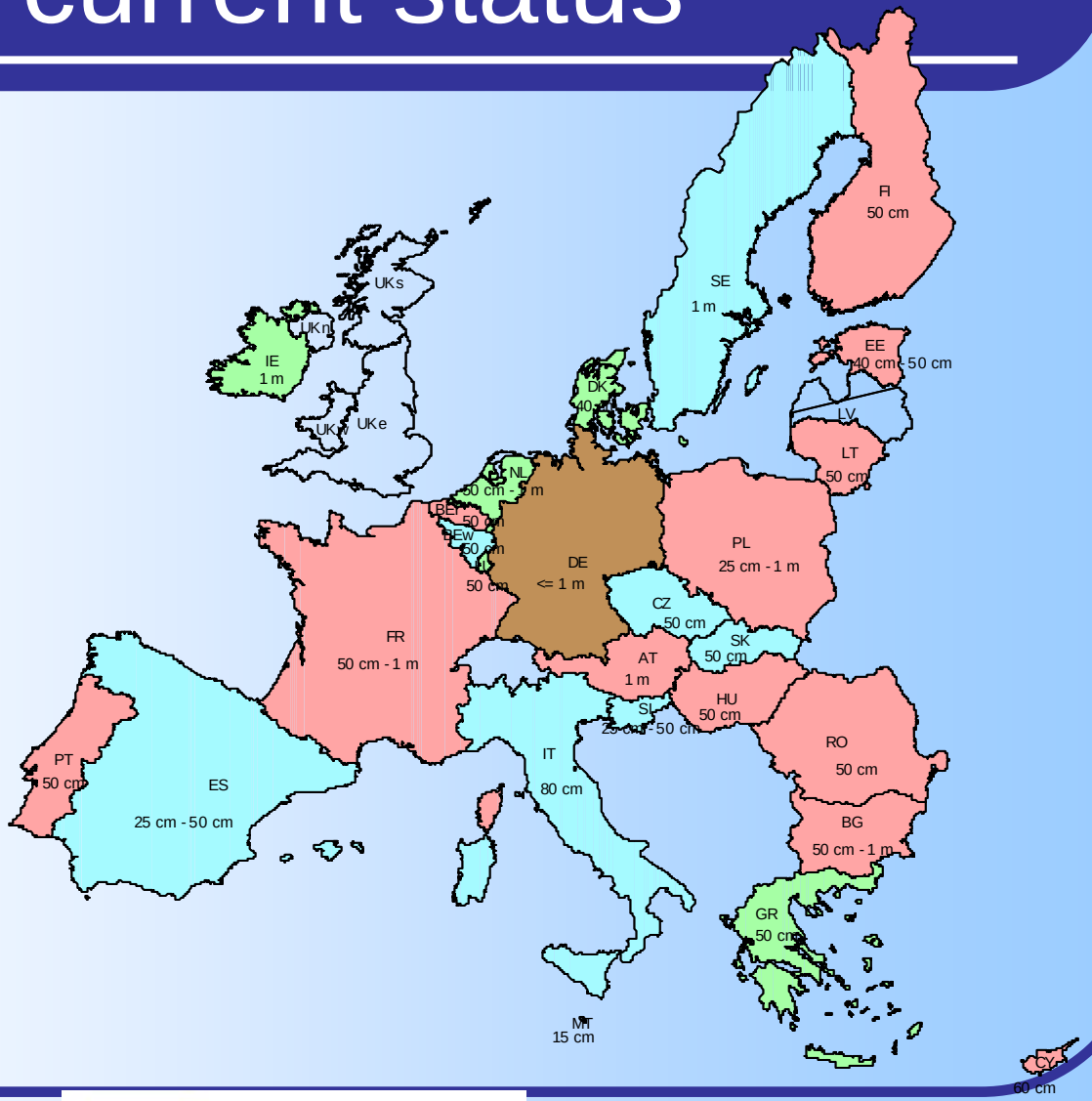
- Full
- Full (From 2007)
- Partial



Orthoimage current status

Update plans

- Update in 1-3 years
- Update in 3 years
- Update in 3-5 years
- Varies in Landers



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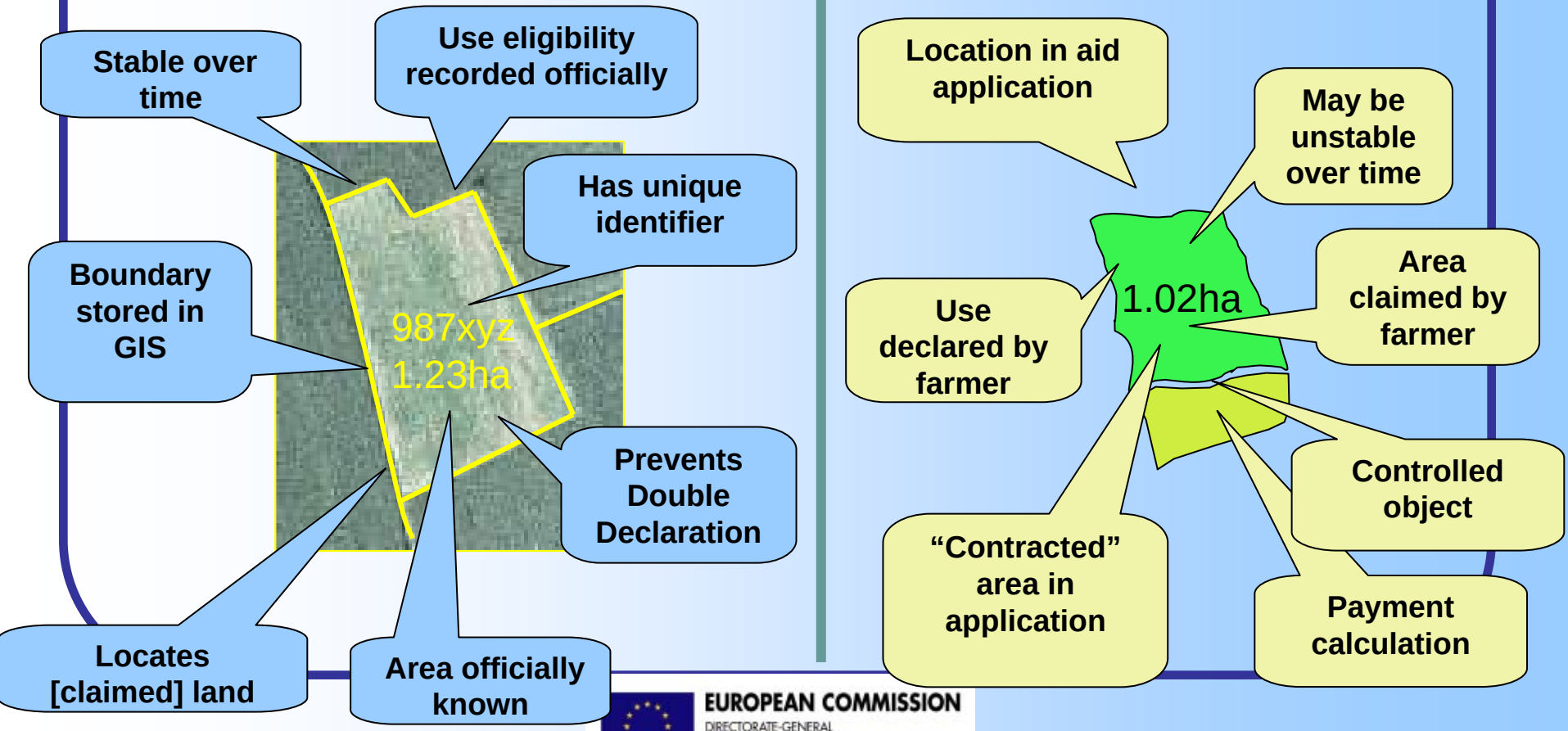
Reference parcel – claimed parcel

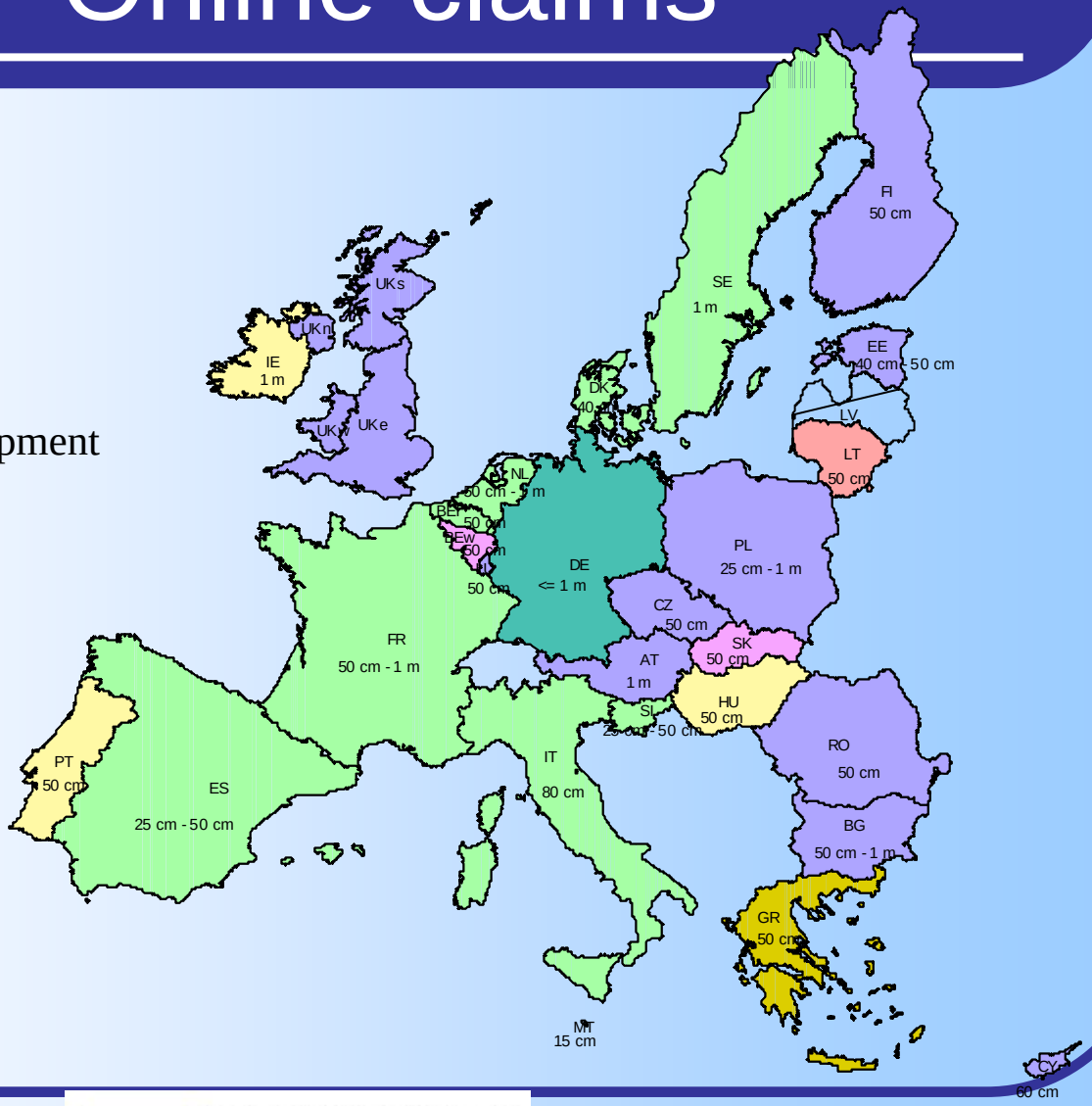
In IACS-GIS
Land Parcel Identification System

Acts as reference frame for
Aid application

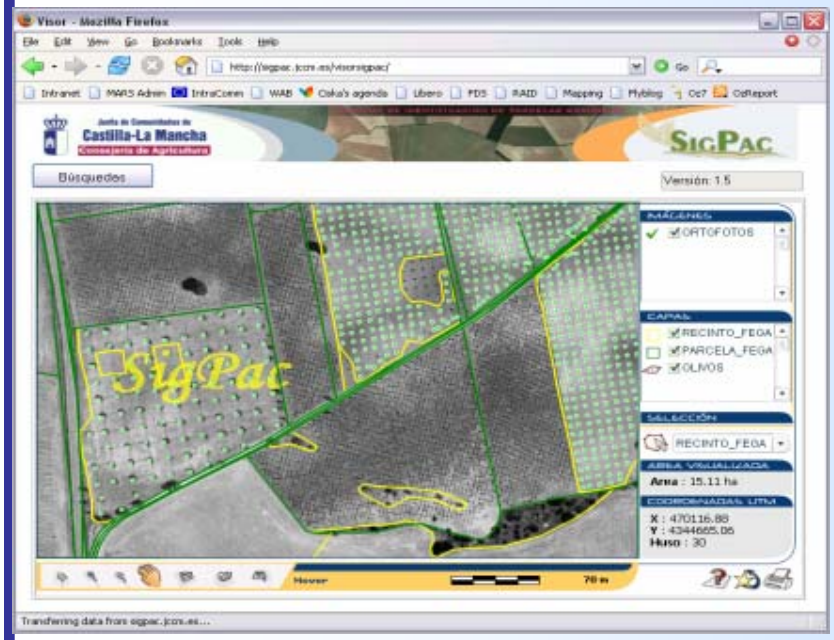


WEB LPIS – Online claims

- Yes
- Pilot
- In process of development
- Planned for 2007
- In future
- No
- Some Landers

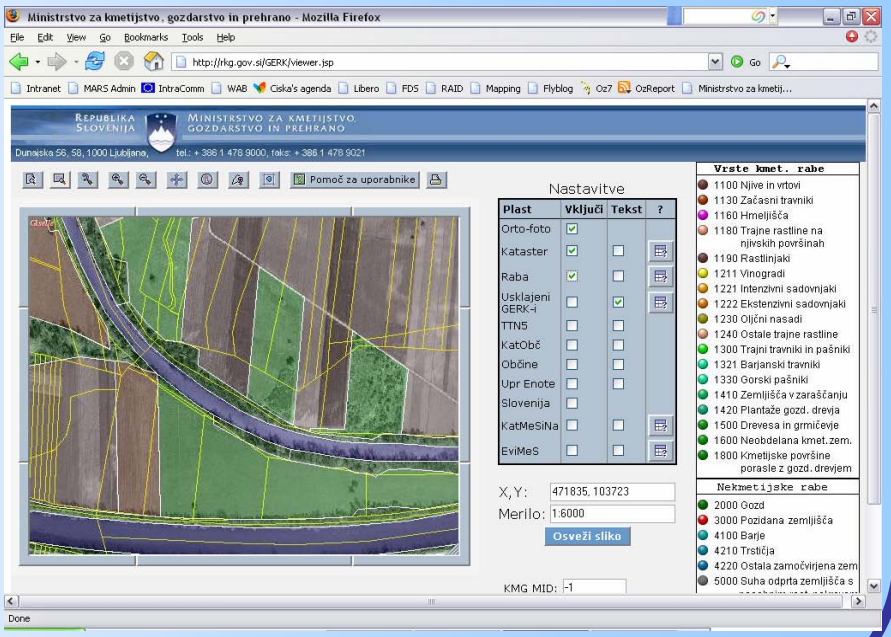


WEB - LPIS

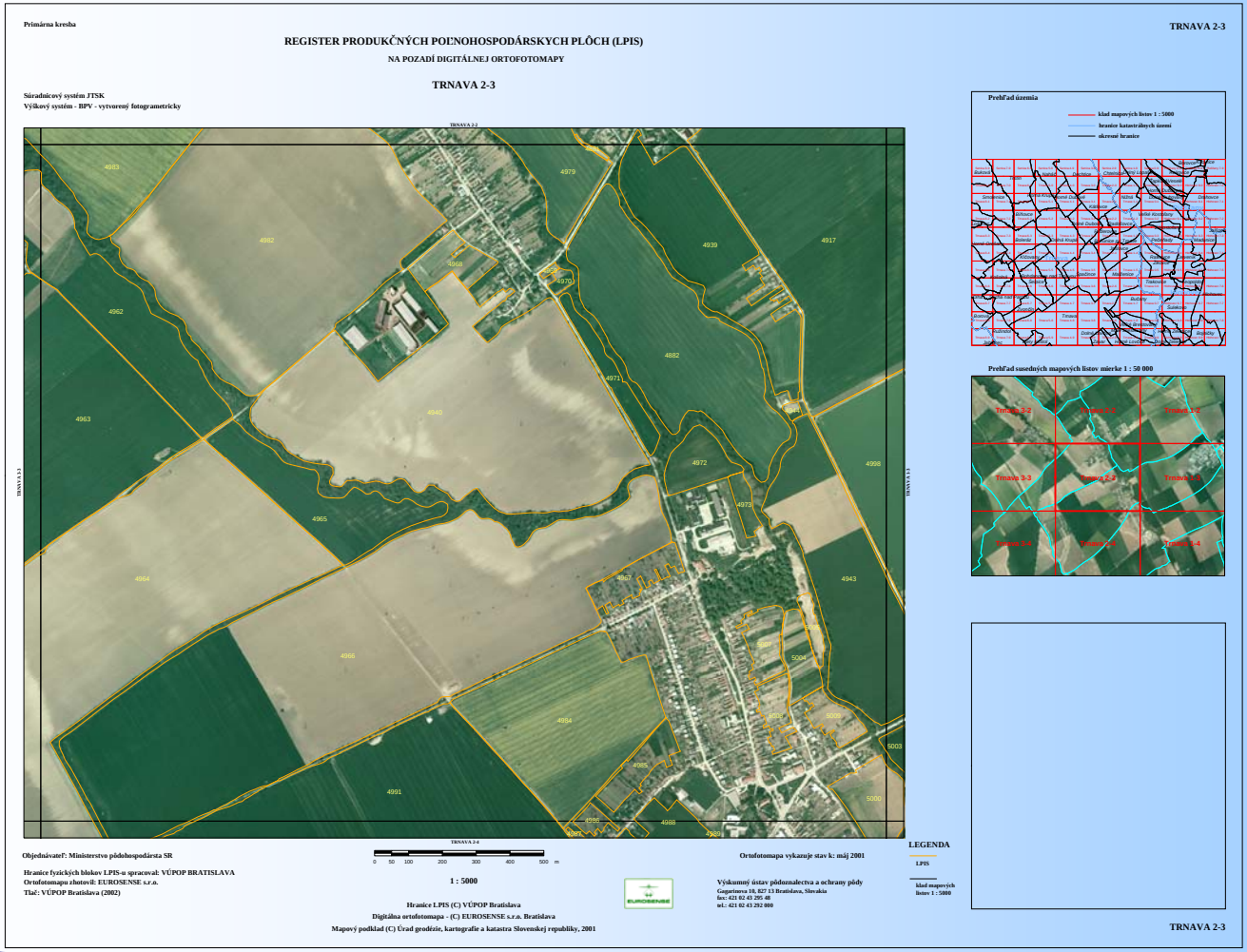


SigPac Demo, Spain

CozyLab Demo, Slovenia



IACS-GIS - Slovenia



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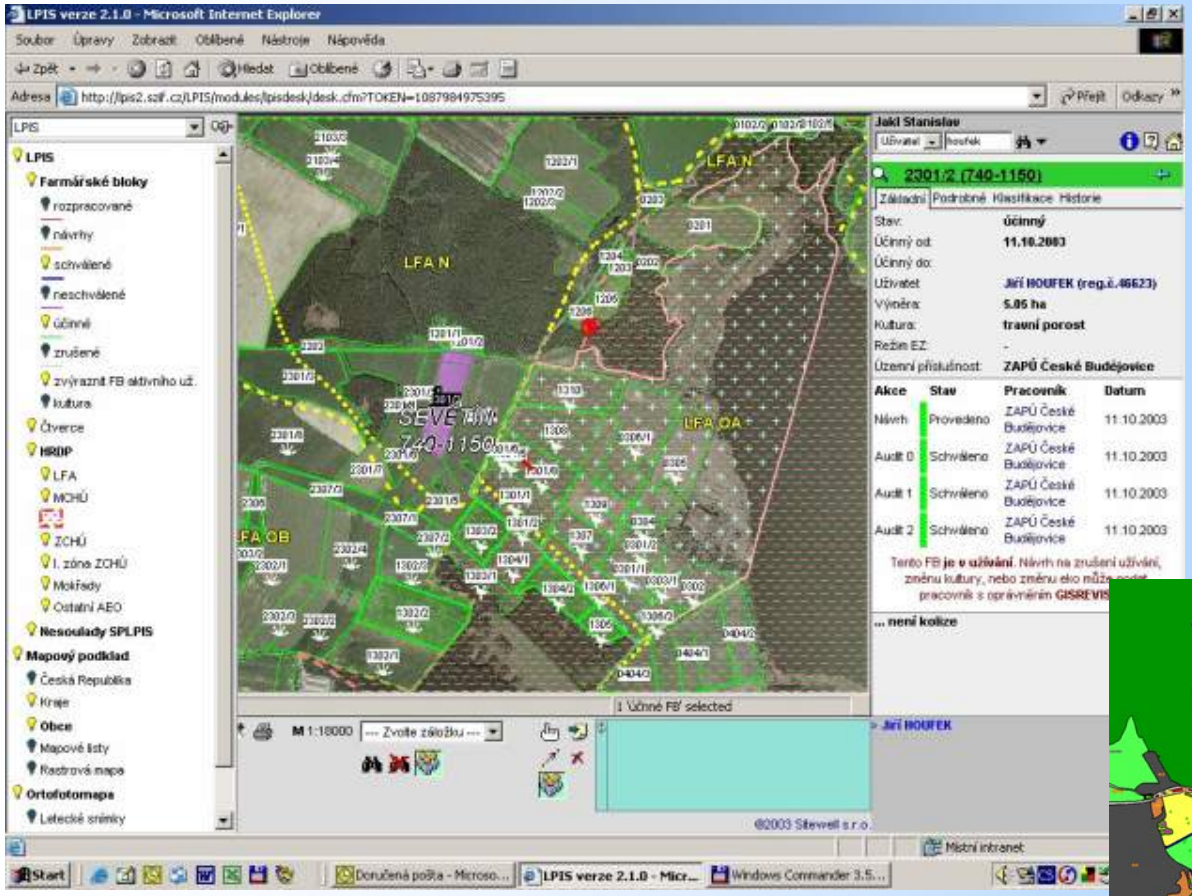
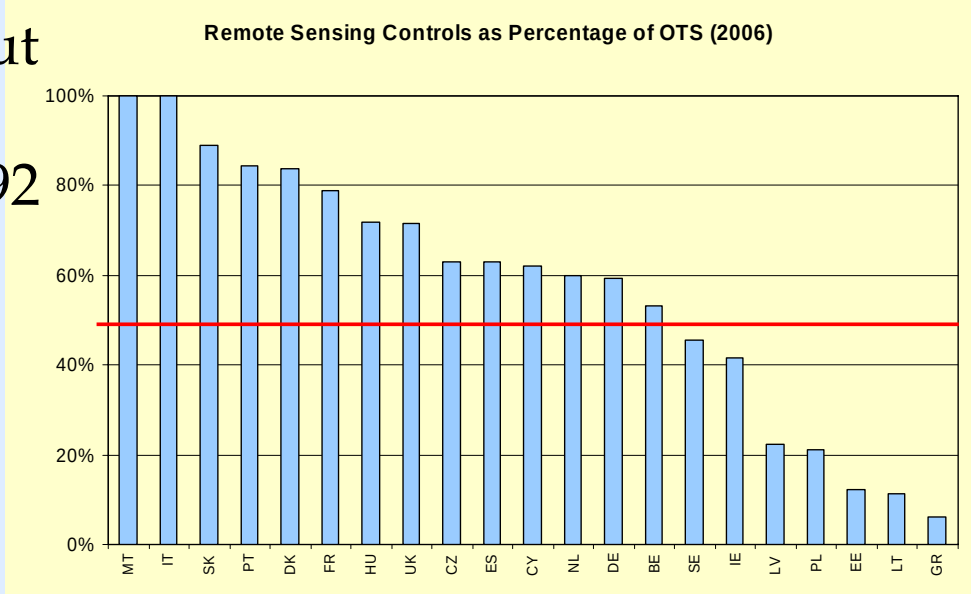
IACS-GIS – Czech Republic



- Multipurpose mapping for agricultural areas: orthophoto + GIS

EU Control with Remote Sensing, 2006

- 21 MS involved in the program
  - 25 contractors
  - ~226,000 farms checked in 2006 (about ½ of all OTS checks)
  - ~800 images over ~192 zones, (avg. 780km^2)
  - VHR: 127,000km^2
  - 4 million ha checked
- Expenditure €5.4M ($ 7.2M)



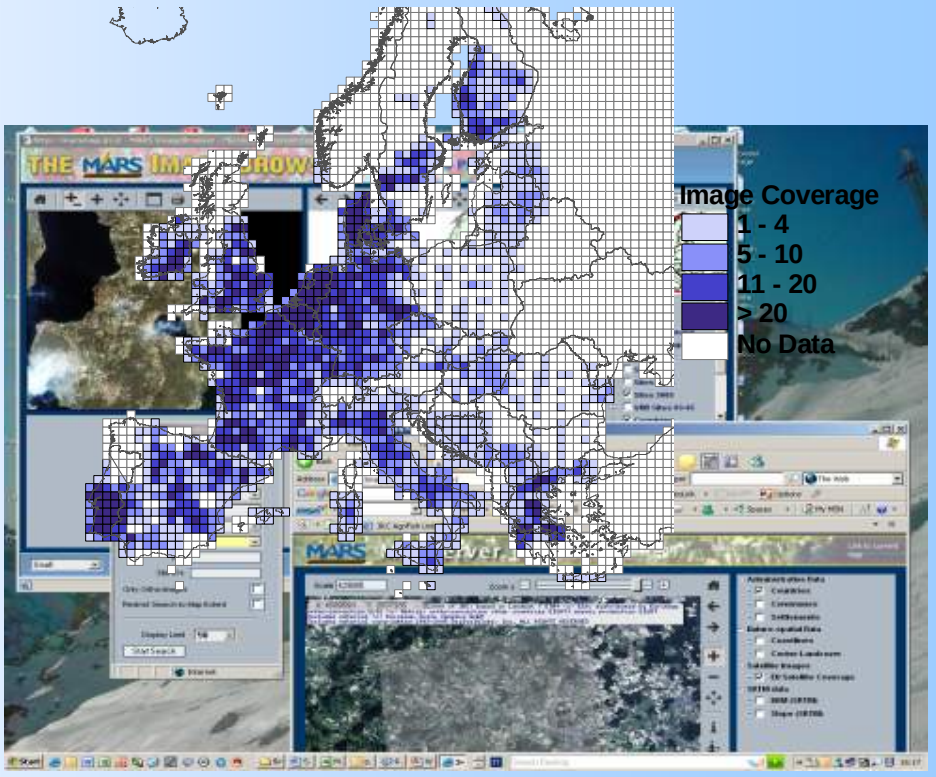
EU Control with Remote Sensing, 2007

- 24 MS involved in the program
  - 30 contractors
  - ~275,000 farms will be checked in 2007 (about ½ of all OTS checks)
  - HR: 700 images over ~226 zones
  - VHR: 153,000km^2
  - 6 million ha will be checked
- Budget €6M ($ 8M)

  - Demand for CwRS sites against On-The-Spot checks
  - Demand for VHR over HR imagery

image archiving / image portal

- today 10 TByte data
- 10.000 images
- 11 different sensors
- 1984 – 2006
- future to grow…
  - JRC wide 40-50 TByte



Summary

- Geo-information technology is well embedded in EU policy
  - Agriculture is the leading example
- EU wide datasets are developed, operational
- Satellite and airborne complementary tools
- Data policy is often member state responsibility – and variable
- Orienting applications and services for users is critical
  - Information, not data

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Thank you

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