

EuroSDR

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General Assembly CLGE - 2016
Tirana 18 March 2016

INTRODUCTORY QUESTIONS

Who knows what is EuroSDR?

Who does NOT know what is EuroSDR?

Who is employed at mapping agencies?

Who is from universities or research institutes?

Who is from the private sector?



EuroSDR

- a **European Spatial Data Research Network**

Not-for-profit organisation

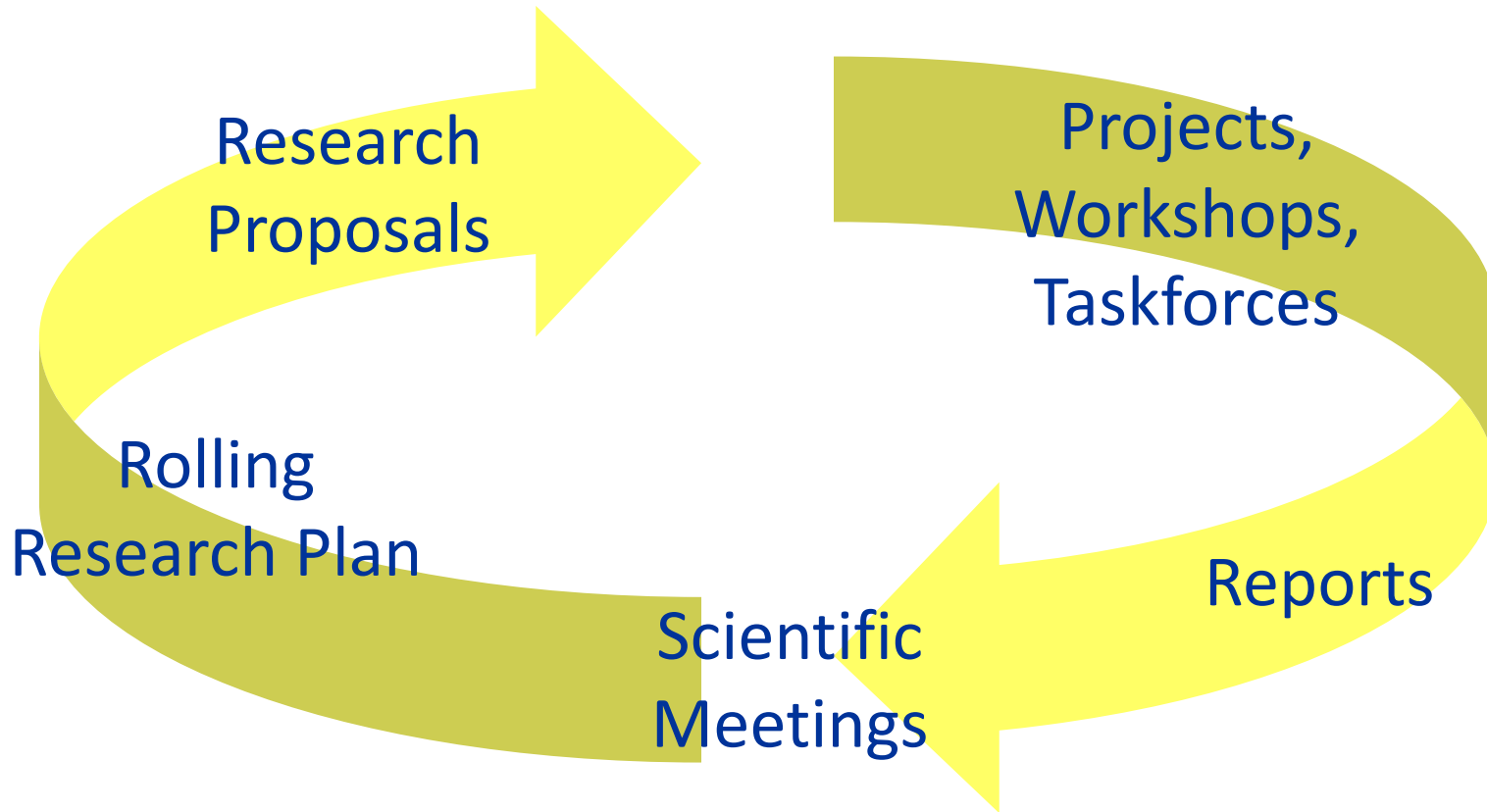
linking National Mapping and Cadastral agencies with
Research Institutes and Universities

for the purpose of applied research in spatial data
provision, management and delivery.

18 country members

Foundation (OEEPE): 1953

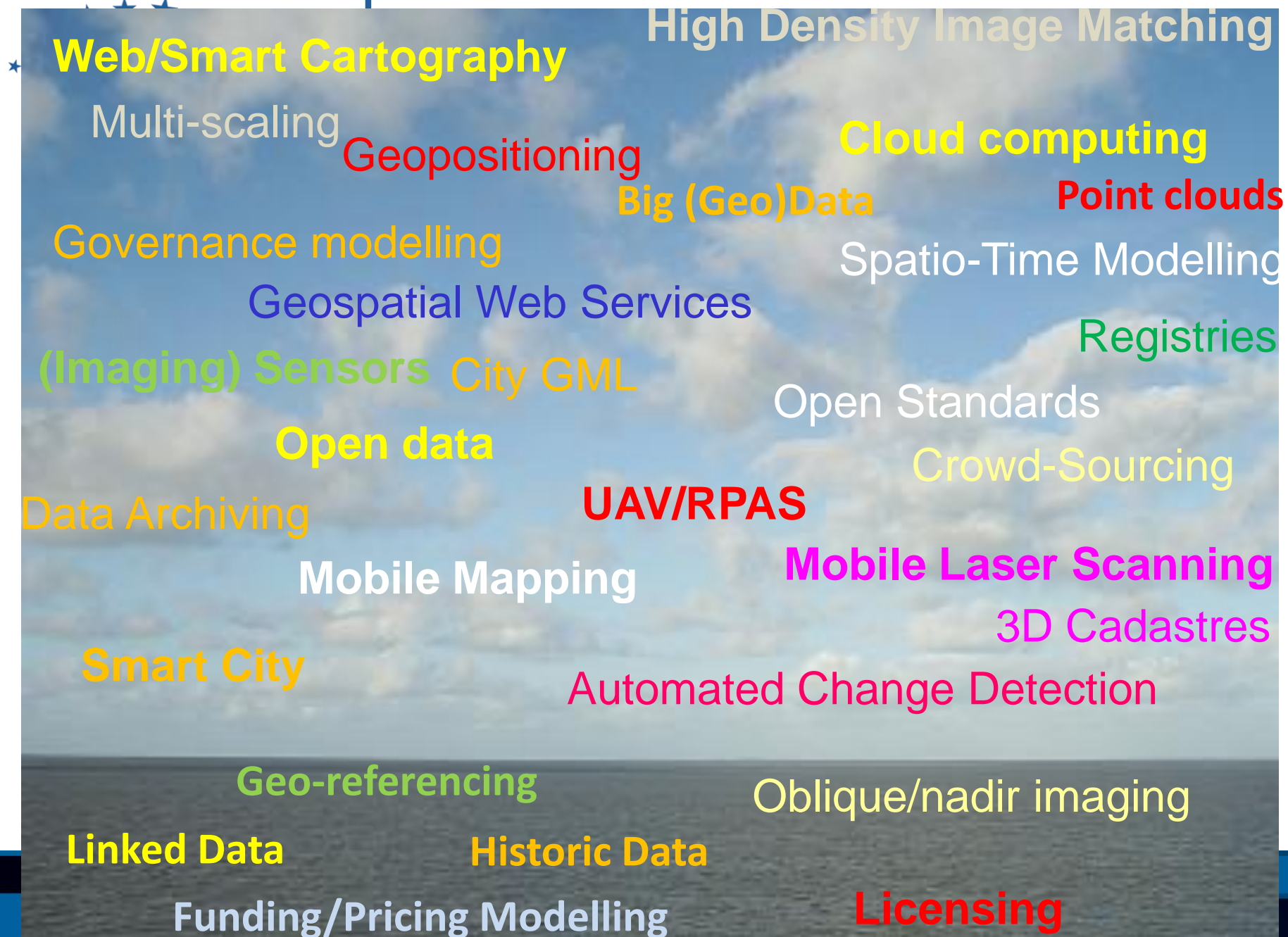
Research and Dissemination Cycle



Mapping Agencies together with Research Institutes

Official Publications and EduServ Courses

Relevant topics



Operation

- Delegates meetings
- Workshops
- Research projects
- Publications
- Educational activities



Delegates meetings



- Meet twice per year
- Research planning and management
- Keynote presentations
- Focussed discussions
- Sharing best practice
- Initiate new research

Six technical commissions

- Data acquisition
- Modelling and processing
- Updating and integration
- Information usage
- Business models and operations
- Knowledge transfer



Workshops



- Dialogue-based events
- Establishment of state-of-the-art in a particular field
- Presentations by experts in the field
- Small, focussed groups (usually < 50 participants)
- May result in identification of research topics
- Planning and dissemination of information on research activities
- Documented and information is available for members
- Short term approach (< 6 months from idea to realisation)

Recent Workshops

- EuroSDR/ICA NMA-Generalisation workshop (Amsterdam, 3-4 december 2015)
- Identifying the Economic Value of 3D (Amsterdam, 7-8 December 2015)
- Nationwide generation of height data from Airborne laser scanning and other sources (Tønsberg, 12-13 January 2016)
- Geodata on the Web workshop - Web location framework, unsolved issues and contributions from new technologies (Amersfoort/Amsterdam, 10–11 February 2016)
- EuroCOW 2016 (Lausanne, 10-12 February 2016)
- EuroSDR/NASA/OECD GeoValue Tutorial on Cost Benefit Analysis in the context of Geospatial Information (Paris, 9 March)

Research projects



- research activities are carried out through projects
- knowledge transfer through active participation of member and non-member organisations
- projects are executed by EuroSDR alone or in collaboration with other organisations and companies
- experiments using data acquired/provided by participants
- multi-site approach
- publication of results in official EuroSDR series
- long term approach (typical length: 1-3 years)

Sensors and Data Acquisition

UAVs/Remotely Piloted Airborne Systems (RPAS)

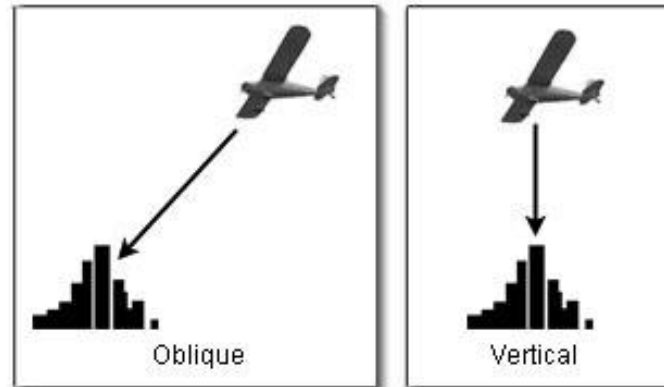


Erosion monitoring



Systems
System integration
Data processing
Operation

Oblique imagery





2012

5. Museum



Archiving

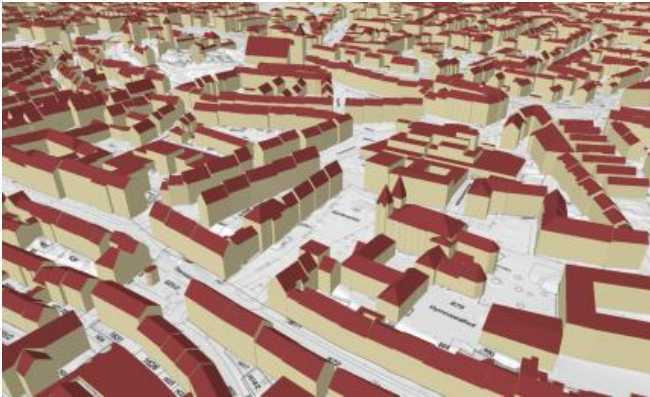


16 principles
Embedded Archiving

Long term preservation of **digital** Geographic Information



3D Special Interest Group (3D-SIG)



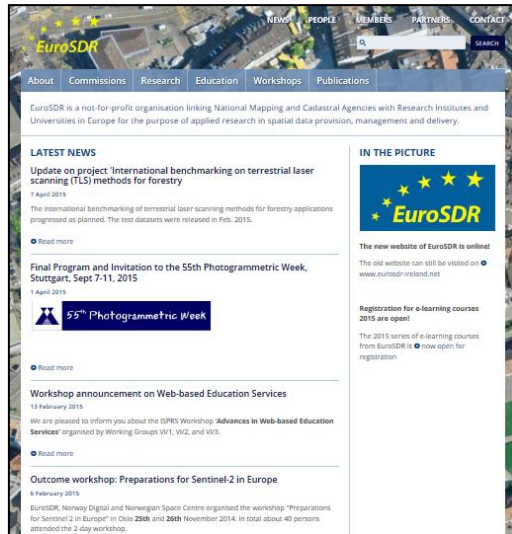
Addressing current issues of NMAs

- 3D data models
- capturing 3D objects
- producing 3D objects
- updating of 3d objects
- consistency of 3D data
- benefits of 3D data

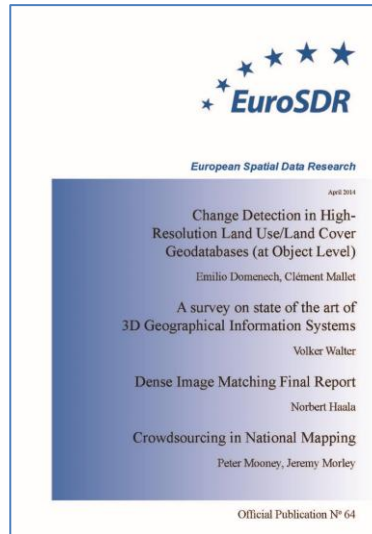
Projects

- Oblique Imagery
- HR satellite imagery for mapping purposes
- Benchmarking on Terrestrial Laser Scanning for Forestry Applications
- High Resolution Dense Image Matching
- Crowdsourcing and National Mapping
- 3D Special Interest Group – Creating an evidence base for economic value of 3D data at a regional level across Europe
- Historic data management
- Linked Open Data
- Coastal Spatial Data Infrastructures

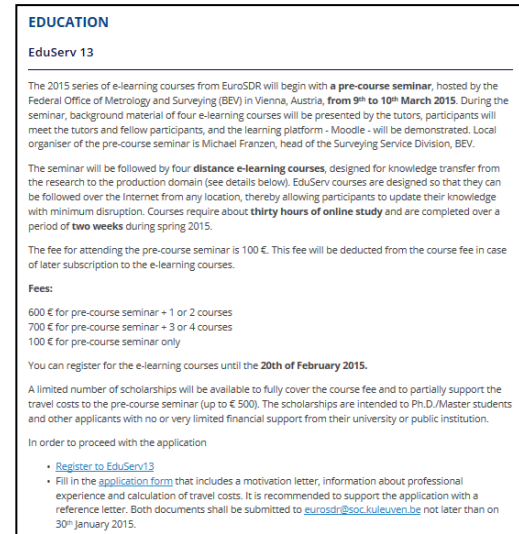
Information dissemination



www.eurosd.net



Official
publication series



Distance e-learning course

EuroSDR Education Service



EduServ – Educational Service

- Two-week courses by e-learning
- Followed from workplace or home
- Pre-course seminar



EduServ – Educational Service

- Knowledge distribution via **e-Learning**
- Completed **projects and additional topics**
- In particular for EuroSDR members, but **open to everyone** with a basic understanding of GI
- **2017 course will likely run out of** Delft University of Technology, The Netherlands



EuroSDR Educational Service 2016

The 2016 series of short e-learning courses from EuroSDR will begin with a **pre-course seminar**, hosted by the Faculty of Geography and Regional Studies, University of Warsaw from **7th to 8th March 2016**. During the seminar, participants will hear presentations covering background material of four e-learning courses and the learning Moodle platform; they will meet the tutors and fellow students and will have opportunity to take an active part in round-table discussions about the course topics. The seminar will be followed by four **distance e-learning courses**. Each course requires about **thirty hours of online study** and it is completed over a period of **two weeks** during spring 2016.



RPAS in Land Survey – Theory and Practice

Tutors: Dr. Göres Grenzdoerffer (University of Rostock), Dr. Michael Cramer (University of Stuttgart)

The course will give an introduction to the use of RPAS and the processing of data. There are significant differences in RPAS imagery – compared to the data which typically are used in airborne photogrammetry, e.g. quality of utilised cameras, irregular image block geometry. Still the quality of the RPAS derived products like surface models and orthophotos may completely fulfil requested demands. This will be exemplarily illustrated compared to the standard reference data from national land survey. Special focus will be laid on the processing of image data from RPAS like application of structure from motion for the image block orientation and dense matching. Furthermore the course will give an overview of the different RPAS carrier platforms and sensor systems and will also illustrate the topic of flight regulations and getting permission to fly.

Dates: 14–25 March 2016



This course will kindly be supported by Pix4D, Lausanne – Switzerland. Each participant will receive a free month of Pix4Dmapper Pro UAS software.

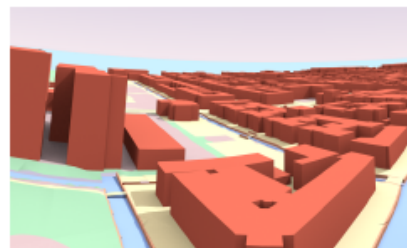


International Standards for Geographic Information

Tutor: Prof. Wolfgang Kresse (University of Applied Sciences, Neubrandenburg)

The course aims at giving a structured perspective at the suite of the ISO/Technical Committee (TC) 211 “Geographic information / Geomatics” and the Open Geospatial Consortium standards and will teach the path from abstract models to implementable solutions for the important fields such as metadata, services, web mapping and imagery. It will focus on the structure of the standards, their content and their interdependence. ISO- and OGC-standards will be discussed as if they belong to the same large model. The course will work on selected applications which build upon the UML-models of existing standards, but require their profiling and an application schema, i.e. decreasing the model and extending the functionality to areas that are not directly covered by the standard. This will be done using UML. The resulting model will be converted to an xml-schema document using the conversion tool ShapeChange.

Dates: 4–15 April 2016

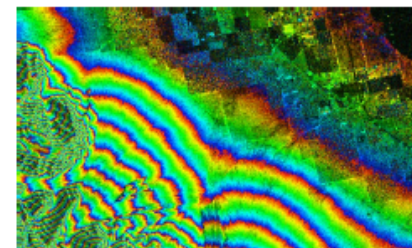


3D City Modelling

Tutors: MSc. Ravi Peters, Dr. Hugo Ledoux, Prof. Jantien Stoter (Delft University of Technology)

This is an introductory course to 3D city modelling. 3D city models are becoming an ubiquitous tool in areas such as urban planning and environmental modelling. This course gives an overview on state-of-the-art in 3D city modelling and its applications, introduces the participants to the underlying principles of 3D city modelling and lets them experience hands-on what it means to create a 3D city model. A number of topics will be discussed: the international CityGML standard, the concept of Level of Detail (LOD) in 3D city models, and the importance of data quality. The goal of the practical exercise, to be executed with FME, is to create a valid and CityGML-compliant LOD1 3D city model by combining existing 2D topographical datasets with aerial LiDAR point clouds.

Dates: 18–29 April 2016



Synthetic Aperture Radar for Mapping Applications

Tutor: Prof. Olaf Hellwich (Technical University Berlin)

The course gives a complete introduction to Synthetic Aperture Radar (SAR). The paging geometry and radiometry are explained using examples from currently available sensor systems. Sensor orientation and geocoding are treated from a geodetic viewpoint. SAR interferometry, SAR polarimetry, polarimetric interferometry and SAR tomography are dealt with intensively. Approaches making use of satellite-borne SAR for solving geodetic problems are discussed. Mapping applications are discussed with an emphasis on high-resolution 3D object detection and reconstruction. The required computer vision and machine learning concepts are included. The course is of interest for both beginners in SAR remote sensing as well as advanced learners interested in the use of pattern analysis techniques.

Dates: 16–27 May 2016

For more information visit
<http://www.eurosd.net/>, section Education



Fees
600 € for pre-course seminar + 1 or 2 courses
700 € for pre-course seminar + 3 or 4 courses
100 € for pre-course seminar only

EduServ Partners + Location

Year	Host Organisation	Country
2002	Aalborg University, Aalborg	Denmark
2004	Budapest University for Technology and Economics, Budapest	Hungary
2005	Dublin Institute of Technology, Dublin	Ireland
2006	ITC, Enschede	The Netherlands
2007	Charles University, Prague	Czech Republic
2008	University of Applied Sciences, Stuttgart	Germany
2009	Norwegian University of Life Sciences, Ås	Norway
2010	KU Leuven, Leuven	Belgium
2011	ENSG, Paris	France
2012	Dublin Institute of Technology, Dublin	Ireland
2013	CISM, Udine	Italy
2014	Bruno Kessler Foundation, Trento	Italy
2015	Federal Office of Metrology/Surveying, Vienna	Austria
2016	Warsaw University, Warsaw	Poland
2017	Delft University of Technology?	The Netherlands?

EduServ Courses - A rich track record

- Integrated Sensor Orientation
- Automatic Orientation of Aerial Images on Databases
- Laserscanning & Airborne Interferometric SAR
- Digital Cameras/Sensors
- Co-ordinate Reference Systems and Transformations for Spatial Data Position
- Positional Accuracy Improvement in GI Databases
- Quality of Geospatial Data and Related Statistical Concepts
- Quality Control of DTMs
- Mapping with SAR
- Laserscanning for 3D city models
- CityGML
- Geometric performance of digital airborne cameras
- Schema matching
- transformation for INSPIRE
- Laserscanning for Tree Extraction
- Assessment of the quality of Digital Terrain Models
- The INSPIRE Directive and its Implementing Rules
- Geodetic Reference Systems
- 3D Urban Modelling
- Radiometric performance of Digital Photogrammetric Cameras and Laser Scanners
- Open Standards & Open Source WebMapping
- Integrated use of airborne laser scanning and aerial photogrammetry
- High Density Image Matching

EduServ Archive – previous courses now available on DIT Moodle Server

- Change detection in High-Resolution land use/cover geodatabases (at object level)
- Mapping using high-resolution satellite imagery
- High Density Image Matching
- Integrated use of Airborne Laser Scanning and Aerial Photogrammetry
- Open Standards and Open Source WebMapping
- Radiometric performance of Digital Photogrammetric Cameras and Airborne Laser Scanners

Partner Organisations

- Association of Geographic Laboratories in Europe (AGILE)
- EuroGeographics
- Global Spatial Data Infrastructures Association (GSDI)
- International Cartographic Association (ICA)
- International Federation of Surveyors (FIG)
- International Society for Photogrammetry and Remote Sensing (ISPRS)
- Open Geospatial Consortium (OGC)
- Permanent Committee on Cadastres in the EU(PCC)
- UVS-International

- **and CLGE – Council of European Geodetic Surveyors?**
shared Workshops, small projects, (online) courses, ...

QUESTIONS