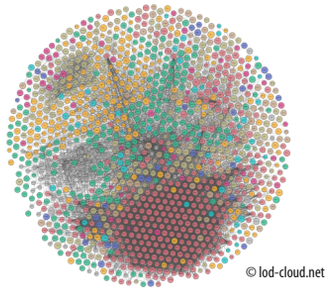
EuroSDR Educational Service 2021

The 19th series of EuroSDR e-learning courses will open on 1st and 2nd March 2021 with an **online pre-course seminar**. The goal of the seminar is to introduce the topics and content of the following e-learning courses. The **four two-week e-learning courses are scheduled from March to June 2021**. Each course requires about **thirty hours of online study**.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Spatial Linked (Open) Data

Tutors: Erwin Folmer (Kadaster and University of Twente), Stanislav Ronzhin (ITC, University of Twente, Kadaster), Rob Lemmens (ITC, University of Twente), Wouter Beek (Triply, VU University, Kadaster)

This is an introductory course to Spatial Linked Open Data. Linked Open Data is a standards based approach for data interoperability. In this course we will teach the basic theory of Linked Data, and introduce the most important standards such as RDF. More in depth the topic of data modelling, vocabularies and ontologies will be elaborated as one of the key concepts of Linked Data. Although the concepts and technology is generic and not specific for spatial data we will discuss in particular the context of spatial data on the web. The second part of this course is split in a technical module and a business module. The business module will discuss the business case for linked data implementations based on the case study of the Dutch Kadaster, one of the earlier linked data implementations in Europe. The technical module will provide best practices how to convert data into linked data, and will be practical hands-on creating SPARQL queries.

Dates: 8th–19th March 2021


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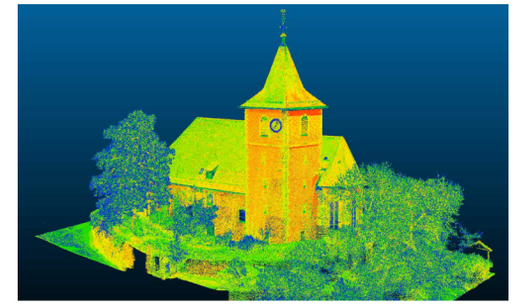
GeoBIM – Basic Principles and Use Cases

Tutors: Claire Ellul (University College London), Lars Harrie and Per-Ola Olsson (Lund University)

There is an increasing awareness amongst practitioners in both the geospatial and Architecture Engineering and Construction (AEC) communities that enabling interoperability and moving towards integration of data from the two domains can provide benefits to sectors such as construction, asset management, safety and security, local and regional planning and building permit processes, national mapping agencies and many more.
Taking a data-driven perspective on interoperability and integration – i.e. looking at the integration of Building Information Modelling (BIM) and geospatial data - the course will provide a comprehensive overview of GeoBIM, starting from first principles - comparing BIM and Geo, identifying opportunities for using integrated data and challenges arising. Two case studies then give the opportunity to explore the topic more in depth – planning/permits processes and asset/facilities management. The course concludes by allowing students to explore GeoBIM in a wider context, as a location-enabled foundation for digital twins, smart cities and the internet of things. Various examples from practical applications and hands-on practical work will illustrate the theory.

Dates: 12th–23rd April 2021

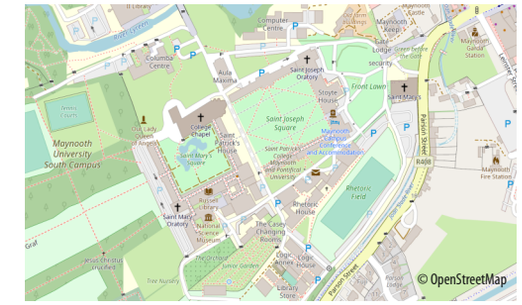


Recent LiDAR technologies

Tutor: Gottfried Mandlburger (TU Vienna)

The course tackles the recent progress in Airborne Laser Scanning (ALS), the state-of-the technique for 3D mapping of topography and shallow water bathymetry, including the following topics: point density and spatial resolution, full waveform analysis (state-of-the art FWF processing techniques enable higher measurement precision and better target characterization), multispectral laser scanning (scanners using laser wavelengths facilitate point classification by exploiting the radiometric content of the captured data), hybrid sensors (scanners and cameras mounted on the same platform enable joint processing of laser scans and image blocks), single Photon LiDAR (the new mapping sensors provide a higher area coverage at the prize of lower accuracy and higher outlier rate requiring robust point cloud filtering techniques), topo-bathymetric LiDAR (beyond charting shallow coastal areas, laser bathymetry evolved to a powerful tool for high resolution mapping of the entire littoral area), UAV-LiDAR (sensor miniaturization and progress in aviation technology has opened new close-range airborne applications).

Dates: 3rd–14th May 2021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Working with Volunteered and Crowdsourced Geographic Information

Tutors: Peter Mooney (Maynooth University), Levente Juhász (Florida International University)

Up to recently geographic data was exclusively available from authoritative sources such as National Mapping and Cadastral Agencies, professional companies, etc. The rapid emergence of Volunteered Geographic Information (VGI) and Crowdsourced Geographic Information (CGI) has challenged and changed this situation. VGI and CGI have transformed from being considered 'disruptive' and poor quality to well-known mainstream data sources used widely in industry, research, and other applications. The goal of this course is to introduce participants to VGI (and CGI), the current state-of-the-art research in these areas, methods for obtaining VGI/CGI data (API sources, processing GeoJSON, etc), and advanced topics such as assessment of the quality of these data. Participants are informed that a basic knowledge of a programming language is required to complete some practical exercises and assessments. Free and open source software and openly accessible VGI/CGI will be used.

Dates: 24th May – 4th June 2021

Fees

400 € for pre-course seminar + 1 or 2 courses | **500 €** for pre-course seminar + 3 or 4 courses

5 grants for PhD/MSc students covering admission fee are available! See the application form on the EduServ website.

For more information visit
http://www.eurosdr.net/education/current