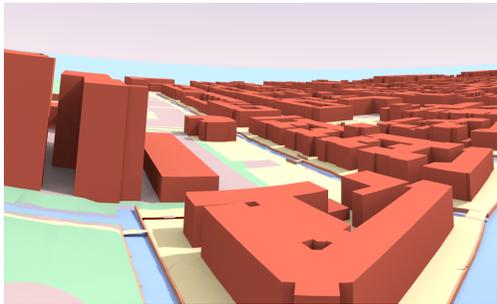




# EuroSDR Educational Service 2017

The 15<sup>th</sup> series of short e-learning courses from EuroSDR will begin with a **pre-course seminar** hosted by the 3D geoinformation group of the Delft University of Technology from 6<sup>th</sup> to 7<sup>th</sup> March 2017. 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 discuss specific questions related to the course topics. The seminar will be followed by e-learning. Each course requires about **thirty hours of online study** and it will be completed over a period of **two weeks** from March till May 2017.

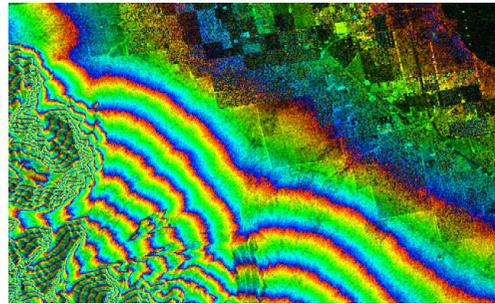


## 3D City Modelling

*Tutors: Ravi Peters, Hugo Ledoux, 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 3D city model by combining existing 2D topographical datasets with aerial LiDAR point clouds.

Dates: 13<sup>th</sup>–24<sup>th</sup> March 2017



## Synthetic Aperture Radar for Mapping Applications

*Tutor: 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: 27<sup>th</sup> March – 7<sup>th</sup> April 2017



## Oblique Aerial Camera Systems for Mapping Purposes

*Tutors: Fabio Remondino, Isabella Toschi (FBK Trento),  
Francesco Nex, Markus Gerke (ITC/University of Twente)*

Oblique airborne photogrammetry is rapidly maturing and being offered by service providers as a good alternative or replacement of the more traditional vertical imagery. Nowadays many companies and most of the European National Mapping and Cadastre Agencies still rely on the traditional workflow based on vertical photography but changes are slowly taking place also at production level. Some data providers have already run tests internally to understand the potential for their needs whereas others are discussing on the future role of the oblique technology and how to possibly adapt their production pipelines. Some research institutions and academia demonstrated the potentialities of oblique aerial datasets to generate textured 3D city models or large building block models. The course provides an overview of oblique camera systems, processing methodologies and best practices with also practical works on oblique aerial blocks.

Dates: 24<sup>th</sup> April – 5<sup>th</sup> May 2017



## Terrestrial Point Cloud for Forest Modelling

*Tutors: Liang Xinlian, Juha Hyyppä  
(National Land Survey of Finland)*

The course aims at giving an overview on the state-of-the-art of forest modelling utilizing terrestrial point clouds, e.g. from terrestrial laser scanning, mobile laser scanning and series of images. The course will cover several topics, ranging from the background information (e.g. the instrument, the measurement principles and the potential applications), the summary of the research progresses in the last two decades, the fundamental steps in the data processing chain (e.g. noise reduction, tree detection, tree modelling and parameter estimations), to the pioneering studies. The course will also work on selected topics to discuss the influences of the terrestrial point clouds on the forest modelling. The course is based on the EuroSDR project "Benchmarking on Terrestrial Laser Scanning for Forestry Applications".

Dates: 15<sup>th</sup>–26<sup>th</sup> May 2017

**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

For more information visit  
<http://www.euroedr.net/education/current>

