

**Erasmus+ Ka2 Capacity Building in the field of Higher Education GEOBIZ
project
1st Workshop (summer school)
6th Progress meeting
11th PMB meeting
Belgrade (SER), July 05th – 09th, 2021**

| Mon. 05. July | Session / content |
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| Location: Faculty of Civil Engineering, Bulevar kralja Aleksandra 73, Belgrade, Serbia | |
| 10:00-10:45 S1 Ceremony Hall | <p>Opening & Status report</p> <ul style="list-style-type: none"> - Welcome address - Chair Branko Božić <ul style="list-style-type: none"> • University of Belgrade – <i>Rector/Vice rector</i> • Faculty of Civil Engineering – <i>Dean/Vice dean</i> - Project status report M18 - Željko Bačić |
| Coffee break 10:45-11:00 | |
| 11:00-13:00 S2 Ceremony Hall | <p>Work package 2 - MODEL, COURSES, KNOWLEDGE & PRECONDITIONS DEVELOPMENT (Development) Chair: Ivana Racetin</p> <ul style="list-style-type: none"> • Study programs at the Department of Geodesy and geoinformatics and good practice of cooperation with business sector – Mileva Petrović-Samardžić – 25 min • New BSc and MSc study program in Geoinformatics at UB FCE – Željko Cvijetinić - 25 min • Teachers training program – short overview of content and outcomes expected - Željko Cvijetinić - 20 min • Technical instructions (important information for participants) – Nenad Brodić - 15 min • Discussion |
| Lunch break 13:00-14:00 | |
| | Session / content |
| 14.00 – 15.30 S3 | <ul style="list-style-type: none"> • Training topic 1: GIS operations Phase 1: Georeferencing and vectorization of raster maps Case: <i>PCD11_Digitization of paper urban planning maps detail</i> Lecturer: Nenad Brodić (UB) |

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| Room CDS1 | <p>Using QGIS for georeferencing raster maps, collecting geospatial data and performing basic GIS operations.</p> <ul style="list-style-type: none"> - Georeferencing and vectorization of raster maps with addition of attribute data - Basic operations with raster, vector and attribute data <ul style="list-style-type: none"> ● Discussion |
| 15.30 – 16.30 S4 Room CDS1 | <ul style="list-style-type: none"> ● Training topic 1: GIS operations <p>Phase 2: Advanced GIS operations Case: <i>PCD02_Statistical Surveys and PCD24_Statistical Surveys</i> Lecturer: Nenad Brodić (UB)</p> <p>Using QGIS for performing advanced GIS operations.</p> <ul style="list-style-type: none"> - Advanced operations with raster, vector and attribute data - Linking geometry with tabular data and other statistics - Map design and print layout creating <ul style="list-style-type: none"> ● Discussion |
| Tue. 06. July | Session / content |
| 09:00-10:30 S5 Room CDS1 | <ul style="list-style-type: none"> ● Training topic 2: UAV Photogrammetry <p>Phase 1: Introduction Case: <i>PCD21_UAV in urban planning and management</i> Lecturer: Nenad Brodić (UB)</p> <p>Processing georeferenced UAV imagery and data collected on the field in Pix4D Mapper and Pix4Dcloud:</p> <ul style="list-style-type: none"> - Background of UAV Photogrammetry - Mission planning - Import imagery and GCP data, define coordinate system - Image alignment - GCP measuring - Project optimization, Report Generation and Error Analysis - ROI definition and Dense Point Cloud generation - Orthophoto imagery generation and mosaicking <ul style="list-style-type: none"> ● Discussion |
| Coffee break 10:30-11:00 | |
| 11:00-13:00 S6 Room CDS1 | <ul style="list-style-type: none"> ● Training topic 2: UAV Photogrammetry <p>Phase 2: Data Processing Case: <i>PCD22_Vectorization of 3D models of object based on point clouds</i> Lecturer: Nenad Brodić (UB) Data source: Umka UAV Mapping Mission</p> |

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| | <p>Further processing of photogrammetry project results and analysis in Pix4DMapper, Pix4DCloud and QGIS:</p> <ul style="list-style-type: none"> - Point Cloud classification and editing - DSM and DEM generation - Contour lines generation and smoothing - Mapping of features, spatial measurements (heights, distances, areas, volumes) - Extracting terrain cross section • Discussion |
| Lunch break 13:00-14:00 | |
| <p>14:00-15:00</p> <p>S7</p> <p>Room CDS1</p> | <ul style="list-style-type: none"> • Training topic 3: Geodata for Civil Engineering and Architect Designing (Case PCD 20) Phase 1: Importing geospatial data in GIS software Case: <i>PCD20: Geodata for Civil Engineering and Architect Designing</i> Lecturer: Mirza Ponjavić and Almir Karabegović (GAUSS) <ul style="list-style-type: none"> - Import data collected by GPS survey into a GIS project using the GPS Tools; - Export GPS data in the shape format; - Application symbology and labelling for GPS data layers; - Creating and import a CSV file with point coordinates into the GIS project as a geometric table with data symbology and labelling; - Preparation of other terrestrial survey data sets. • Discussion |
| <p>15:00-16:30</p> <p>S8</p> <p>Room CDS1</p> | <ul style="list-style-type: none"> • Training topic 3: Geodata for Civil Engineering and Architect Designing (Case PCD 20) Phase 2: Structuring and integration of geospatial data with other spatial data sets Case: <i>PCD20: Geodata for Civil Engineering and Architect Designing</i> Lecturer: Mirza Ponjavić and Almir Karabegović (GAUSS) <ul style="list-style-type: none"> - Creating a new layer for entering polygon features, adding attribute fields and drawing the building contours; - Reading the dimensions of the building and enter the area value in the attribute table; - Update GIS data using terrestrial survey data; - Adding contextual layers using WMS services for OSM map data and Bing Satellite imagery; - Create a map layout with the Layout Manager tool; - Export the map to a PDF file; |

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| | <ul style="list-style-type: none"> • Discussion |
| Wed. 07. July | Session / content |
| 09:00-10:30 S9 Room CDS1 | <ul style="list-style-type: none"> • Training topic 4: Noise mapping using mobile devices Phase 1: Introduction Case: <i>PCD09 Noise mapping using mobile devices</i> Lecturer: Vesna Poslončec-Petrić and Iva Cibilić (UNIZG) Data source: Belgrade, FCE surrounding Description: <ul style="list-style-type: none"> - noise pollution - setting the problem - problem solving approaches - collecting noise data in the selected area <p>Discussion</p> |
| Coffee break 10:30-11:00 | |
| 11:00-13:00 S10 Room CDS1 | <ul style="list-style-type: none"> • Training topic 4: Noise mapping using mobile devices Phase 2: Data processing Case: <i>PCD09 Noise mapping using mobile devices</i> Lecturer: Vesna Poslončec-Petrić and Iva Cibilić (UNIZG) Description: <ul style="list-style-type: none"> - Statistical geodata processing for web presentation involving following tasks: <ul style="list-style-type: none"> • interpolate measurement data, • attribute data classification, • map design and print layout creating, • analysis and results comparison. <p>Discussion</p> |
| Lunch break 13:00-14:00 | |
| 14:00-15:00 S11 Room CDS1 | <ul style="list-style-type: none"> • New methods of teaching Lecturer: KU Leuven + HSBO <ul style="list-style-type: none"> - Description <p>Discussion</p> |

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| 15:00-16:00 S12 Room 141 | 11th PMB meeting (agenda to be defined) |
| Thu. 08. July | Session / content |
| 09:00-10:30 S13 Room CDS1 | <ul style="list-style-type: none"> • Training topic 5: Mapping burnt areas using satellite EO data Phase 1: Problem formulation Case: <i>PCD16_Land cover and land use mapping</i> Lecturer: Jovan Kovačević and Nikola Stančić (UB) <ul style="list-style-type: none"> - Application of remote sensing for monitoring wildfires and mapping burned areas - Available Earth observation datasets - Useful remote sensing indices • Discussion |
| Coffee break 10:30-11:00 | |
| 11:00-13:00 S14 Room CDS1 | <ul style="list-style-type: none"> • Training topic 5: Mapping burnt areas using satellite EO data Phase 2: Manual processing of satellite EO data using GIS software Case: <i>PCD18_Application of remote sensing data in mapping and monitoring forest</i> Lecturer: Jovan Kovačević and Nikola Stančić (UB) <ul style="list-style-type: none"> - Data download and preparation - Algorithms for manipulating raster data - Detecting burnt areas and reporting • Discussion |
| Lunch break 13:00-14:00 | |
| 14:00-15:30 S15 Room CDS1 | <ul style="list-style-type: none"> • Training topic 6: <i>Crop monitoring with remote sensing</i> Phase 1: Problem formulation Case: <i>PCD17_Crop monitoring with remote sensing</i> Lecturer: Gordana Jakovljević and Mladen Amović (UNIBL) <ul style="list-style-type: none"> - Remote sensing for agriculture - Spectral characteristics - Vegetation indices - Available EO datasets |

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| | <ul style="list-style-type: none"> - Introduction to GEE • Discussion |
| <p>15:30-16:30</p> <p>S16</p> <p>Room CDS1</p> | <ul style="list-style-type: none"> • Training topic 6: <i>Crop monitoring with remote sensing</i> Phase 2: Processing of data using GEE Lecturer: Gordana Jakovljević and Mladen Amović <ul style="list-style-type: none"> - Time series in GEE - Analyze of vegetation dynamics • Case: <i>PCD17 Crop monitoring with remote sensing</i> • Discussion |
| Dinner 20:00-23:00 | |
| Fri. 09. July | <p>Session / content</p> <p>6th Progress meeting</p> |
| <p>09:00-11:00</p> <p>S17</p> <p>Room 141</p> | <p>Opening & Status info</p> <ul style="list-style-type: none"> • Meeting opening - Željko Bačić (5') <p>WP2 session DEVELOPMENT – Chair: Ivana Racetin</p> <ul style="list-style-type: none"> • Task 2.4 Geoinformatics LLL courses design – start – Medžida Mulić (20') • Task 2.6 Acquisition of equipment – status – Danijel Šugar (20') <p>WP3 session IMPLEMENTATION – Chair: Branko Božić</p> <ul style="list-style-type: none"> • Task 3.1 Cooperation platform – final – Gezim Gjata (20') • Task 3.2 Implementation of courses – overview – Željko Cvijetinović (20') |
| Coffee break 11:00-11:30 | |
| <p>11:30 – 13.00</p> <p>S18</p> <p>Room 141</p> | <p>WP4 session DEVELOPMENT – Chair: Andreas Wytzisk</p> <ul style="list-style-type: none"> • Task 4.2 Quality assurance & evaluation – status – Sonila Papathimiou (15') • “Regular” & Covid-19 risks overview – Željko Bačić (10') <p>WP5 session IMPLEMENTATION – Chair: Miro Govedarica</p> <ul style="list-style-type: none"> • Task 5.3 Dissemination & Exploitation Plan – review of exploitation part of the Plan – Livia Nistor-Lopatenco (15') • Task 5.5 Business-Academia cooperation workshops – how to gain result from workshops – Dušan Jovanović (15') <p>WP6 session</p> |



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| | <p>MANAGEMENT – Chair: Željko Bačić</p> <ul style="list-style-type: none">• Task 6.5 Sustainability plan – launch – Miro Govedarica (15')• 2nd Summer school Dubrovnik – announcement – Iva Cibilić (5') <p>Progress meeting wrap up – Željko Bačić (15')</p> |
| Lunch break 13:00-14:00 | |