

Course code: **OL3**

Course title: **OpenLayers 3 – creating interactive maps on Web pages**

Days: 2

## Description:

### Course intended for:

The training is intended for developers, wishing to get knowledge in development of interactive Web-based geographic information systems (GIS).

### Course objective:

The training objective is to get the users familiar with the theoretical and practical issues of creation of Web-based map applications using the OpenLayers3 library.

The training participants will learn to:

- Create an interactive map and integrate it with other Web applications,
- Prepare spatial data, which can be added to the map statically or dynamically,
- Manipulate the mode of interaction of the user with the map and the scope of information displayed.

After the training, the participants will have the knowledge enabling them to create Web applications in form of interactive maps.

### Requirements:

The training participants are required to have the basic knowledge of JavaScript and creation of Web applications. It will be easier for them to understand the issues being discussed thanks to basic knowledge of issues associated with GIS, as well as knowledge of the previous versions of OpenLayers.

### Course parameters:

2 days 7 hours each.

### Course curriculum:



1. Introduction to GIS and WebGIS
2. Comparison with OpenLayers 2 – directions of development
3. Installation of OpenLayers 3 in the Web environment
4. Programming with OpenLayers 3 – object oriented programming, code structure, debug
5. Map
  - I. Syntax and properties
  - II. Methods
  - III. events
  - IV. Renderers (Canvas, WebGL, DOM)
6. View
  - I. Syntax and properties
  - II. Methods and events
  - III. View management
7. Interactions
  - I. Hierarchy
  - II. Management and configuration
  - III. Interaction examples (DragAndDrop, DragBox, DragPan, DragRotate, Draw, Modify, Select, KeyboardZoom etc.)
8. Controls
  - I. Hierarchy
  - II. Adding controls to map
  - III. Examples of controls (Zoom, Rotate, MousePosition, ScaleLine, ZoomSlider, Attribution, OverviewMap etc.)



## IV. Development of own controls - broadening of ol.control.Control class

### 9. Animations

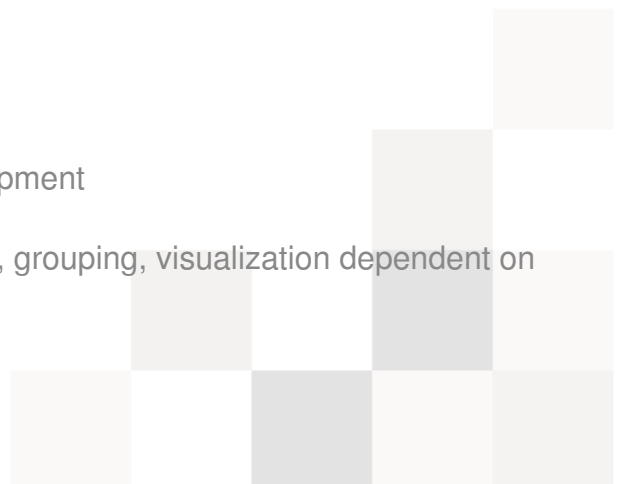
- I. Methods
- II. Examples of use
- III. Adding of animations to a map

### 10. Discussing of data sources

- I. Hierarchy and formats
- II. Discussing of basic classes of StaticVector (Geojson, GPX, GML, OSMXML etc.), ServerVector
- III. Commercial and free base layers (Google, Bing, ESRI, OSM, MapQuest and other)
- IV. WMS and WFS spatial services
- V. Data loading modes and strategies

### 11. Layers

- I. Hierarchy and types
- II. Syntax and configuration
- III. Methods and events
- IV. Adding layers to map
- V. Base layers and overlay
- VI. Raster layers
- VII. Vector layers
  - i. Styling
  - ii. Programmable object development
- VIII. Management of layers: order control, grouping, visualization dependent on scale etc.



## IX. Management of systems of coordinates

### 12. Combining of components to develop an interactive map

- I. Map development
- II. Adding layers and loading data
- III. Defining interactions
- IV. Defining controls
- V. Creation and editing of objects
- VI. optimization

