

Under Development

BASIC FUNCTIONS

This chapter presents the main basic functions for orientation purposes of the Smart Altitude WebGIS.

Change view extent: As Ms. Curious cannot wait to see some results, the first thing she does is to zoom to an area of interest, for example Innsbruck. This can be done in multiple ways.

- **Zoom manually:** Either just zoom in or out using the + and - icons on the right hand side of the mapping window or use your mouse scroll wheel doing the same job. Note, that there are altogether 19 zoom steps possible and no steps in between. This might be important if you try to get the best resolution to see your region of interest in the mapping area of the Smart Altitude WebGIS. Clicking on the “E” symbol leads you directly to the largest extent of the selected theme.
- **Full screen:** To use the Smart Altitude WebGIS in full screen mode Ms. Curious clicks on the “full screen” icon below the zooming tools.
- **Zoom to a specific municipality or ski resort:** Ms. Curious also uses the search function within the grey bar as another way to zoom to her area of interest. To zoom to a specific municipality or ski resort, type its name into the search field and select one of the proposed names, which appear below. Then hit <Enter>. The extent will be immediately zoomed to the selected municipality. Ms. Curious types “Innsbruck” into this field and then uses the “-” button to zoom out a bit to see the full region of interest.
- **Zoom to a living lab:** To look at the Smart Altitude test regions, just click on the arrow on the right side of the “Theme” bar and then choose one. The default extent of the WebGIS is the whole Alpine Space. Ms. Curious selects the Italian Living lab of Madonna di Campiglio and the WebGIS directs her automatically to the extent of her chosen Living lab.

Chose and learn about single datasets: To see which layers are integrated in the Smart Altitude WebGIS, Ms. Curious clicks on “Theme: Alpine Space” to pop up the layer tree. In the menu tree, she finds all datasets that are available in the WebGIS organized by content.

- **Choose layers:** You can fold up the menu by clicking on the field “Theme” again. In the first menu category, Ms. Curious finds layers concerning ski resorts (pistes types, aerialways, etc.) from the Open Ski Map and the key performance indicators (KPI) for each living lab – one of the Smart Altitude project data results-, which are accessible to the public through the Smart Altitude WebGIS tool. In the second menu category, Ms. Curious finds different layers concerning renewable energy potential (wind, solar, biomass, etc.), which are available for the whole Alpine Space and can be important for planning and interpretation purposes. All other datasets listed below can be used as additional information, for analysing, interpreting and styling purposes. There are also thematic background datasets available including land use, land cover, protected areas, administrative units, the Alpine Space boundary, and other base layers like the digital elevation model combined with a hillshade.
- **Activate layers:** As Ms. Curious is interested in ski resorts, pistes and aerialways, she opens the content tree as follows: Ski Resorts, Open Ski Map. She decides on one of the given themes and activates the layer through clicking the checkbox on the left hand side of the layer name. A pre-styled visualization of the selected layer appears on the map. After playing around a bit, she finds out that there is a convention of showing pistes and aerialways in different types and colours.
- **Get legend and further information:** Ms. Curious is looking for the legend, in order to understand what the different types and colours of the line signs mean. She also wants to find

out the represented units, especially for the layer “Pistes length per LAU”. She finds the legend as well as further information (unit, data source, metadata, etc.) by clicking on the little “i”-icon on the right hand side of each layer. The “Parameter metadata box” will then appear. In the upper part of the “Parameter metadata box”, under “[Metadata PDF](#)”, she finds some information about the dataset and a link to an informative article on the project-specific datasets on WIKIAlps. This article is highly relevant for understanding and interpretation purposes of the datasets. A more general overview of the available datasets is given [here](#).

- Ms. Curious, for example, finds out that the key performance indicators (KPIs) are “indices” meaning values without units and in this case reaching from 1 to 5. In the lower part, she finds the legend that tells her which value is associated with a particular colour. The units are shown in the square brackets. Now she has almost all information she needs to interpret the map, i.e. she has the information to ‘read’ the colours in her area of interest. Ms. Curious ends up with the following basic knowledge: Within the layer “Pistes” different types of pistes referring to downhill, nordic, skitour and sleds can be distinguished. All downhill pistes are indicated by a dashed line and in addition also a coloured background is given. The colours represent the difficulties of the individual slopes, which are used in the same way for downhill and nordic pistes. Skitours and sled pistes are shown in dashed coloured lines referring violet for skitour and black for sled pistes. The layer “Pistes length per LAU” shows the pistes length for each municipality (LAU) and the units are kilometres [km]. Pistes and aerialways are taken from the OpenSnowMap, which are extracts of the openstreetmap database.

- **Get single area’s attributes:** By visually comparing the key performance indicators (KPIs) of the living labs, Ms. Curious detects that the same type of KPI can be represented in the same or in different colours shade. Ms. Curious wonders what the difference is between them. Therefore, she wants to know the exact values for several municipalities or spots, so she can compare them directly – value by value. It is quite easy to get the information of a single area’s attribute. The Smart Altitude WebGIS has according to the format of the datasets two different spatial units: (1) polygons and (2) raster datasets with individual pixels. You only have to click on a municipality or a pixel to get information of this specific polygon or pixel.

1. **Polygon:** You can get information on a single municipality, a living lab or another polygon. Ms. Curious zooms to the Living lab of Les Orres (France) and activates the layer “Overall Ski-Resort KPI (OV)”, which she finds in the content tree → Ski Resorts → Key performance indicators (KPI). She selects the living lab by clicking once on the green area. The selected object turns into yellow and the relating “Object information box” appears immediately. In this case values for all key performance indicators are listed for the selected living lab (here Les Orres in France) in the “Object information box”.
2. **Pixel for raster datasets:** At the end of the “Object information box” also the coordinates and a pixel value can be found. This information is requested for every pixel and belongs to the exact clicking point position (red frame of the pixel). For example, most layers relating to renewable energy potential are normally raster datasets, built by individual pixels. The information/values can be queried for each pixel. For example, the wind speed at a height of 50 m can be requested for each pixel. By clicking on several pixels Ms. Curious finds out that every pixel has a different value. According to the legend, categories are designed to gather several values into different classes with particular ranges represented by the same colour shade. Only those pixel values are presented in the “Object information box” which layers are activated. These layers are listed in the same order like in the “Layer properties” at the bottom left.
 - Ms. Curious finds out from the “Object information box”, that the Overall Ski-Resort KPI is 3.8 for Les Orres. Ms. Curious needs further information for interpreting these values. She opens the “Parameter metadata box” through the “i” icon. All KPIs are indices, which are ranging from 1 to 5, ranging from the worst to the best performance according to their

specific topics. The Overall Ski-Resort KPI represents the mean of all other 8 indicators. For the living lab of Les Orres, Ms. Curious can conclude that the Energy Management (4.2) reaches rather high values. But the Energy Efficiency (3.3) is lower. The Overall Ski-Resort KPI (3.8) is rather good, but there is still potential for future improvements. For more information regarding the KPIs see

http://www.wikialps.eu/lib/exe/fetch.php?media=wiki:smart-altitude_wi-emt_evaluation-report_final_XXX.pdf.

Change background map: Ms. Curious is not really satisfied with the background map. She wants to try some alternatives. She can change the background map by clicking on the “Background” drop down menu located in the upper right corner of the website. She can pick a background that best supports her layers and facilitates easy orientation. From the menu, she chooses her preferred background map: OSM Stamen Terrain

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