EUMETView user guide

V4.1, 24 Apr 2024

This guide provides information on EUMETView, our **Online Map Service (OMS)**, which provides data visualisation through a customisable **web user interface** (WebUI), and an enhanced set of **Open Geospatial Consortium (OGC) standard** application programming interfaces **(APIs)**. EUMETView features near-real time and historical data products from Meteosat, Metop, and Sentinel-3 products.

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Accessing EUMETView

EUMETView can be accessed in two different ways:

- Via **Web User Interface (WebUI)**
- Through the **application programming interfaces (API)**

The WebUI allows users to browse, visualise, animate, and map EUMETSAT data, and download products, using a web browser. The APIs allow users to access EUMETView products via OGC standard services, using programmatic approaches.

This specific document is aimed at guiding you with the interaction through WebUI (also called GUI)

Users are free to browse, search, and visualise all of the imagery in EUMETView without any registration. However, the **download queue** and **custom views** require users to log in. **Create an account or login now**.

Using EUMETView

The WebUI offers various visual representations of the available data and a broad array of mapping tools and spatio-temporal controls. It also allows for the composition of multi-layer maps, creation of map subsets*, map re-projection, map sharing, product animation creation, and map downloads. The WebUI allows users to generate custom product 'Views', and to customise their dashboard to allow quick access to specific, user-defined visualisations. These may be saved in either ‘Event mode’, tying the view to a specific point in time for later recall, or ‘Live mode’, where the latest updated version of the map will be recalled when requested. Data can be viewed as either point-based information or as time series. Maps, and their corresponding geo-referenced products, can be **animated** and **downloaded**.

The OGC APIs allow users to integrate EUMETView into other applications, using the available Web Map Service (**WMS**), Web Coverage Service (**WCS**) and Web Feature Service (**WFS**). The availability of a given API depends on the product selected from the catalogue.

**Note:* *subsetting is only applied to the map, EUMETView does not subset the underlying data.*

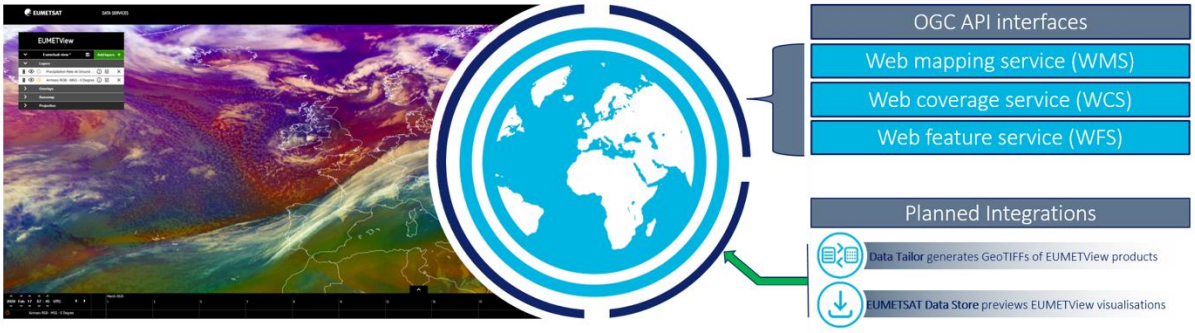


Figure 1: Schematic overview of EUMETView

Using the WebUI

(You do not need to login to view or download visualisations on EUMETView, however, some features are only available if you login.)

The landing page for the WebUI is shown in the figure below.

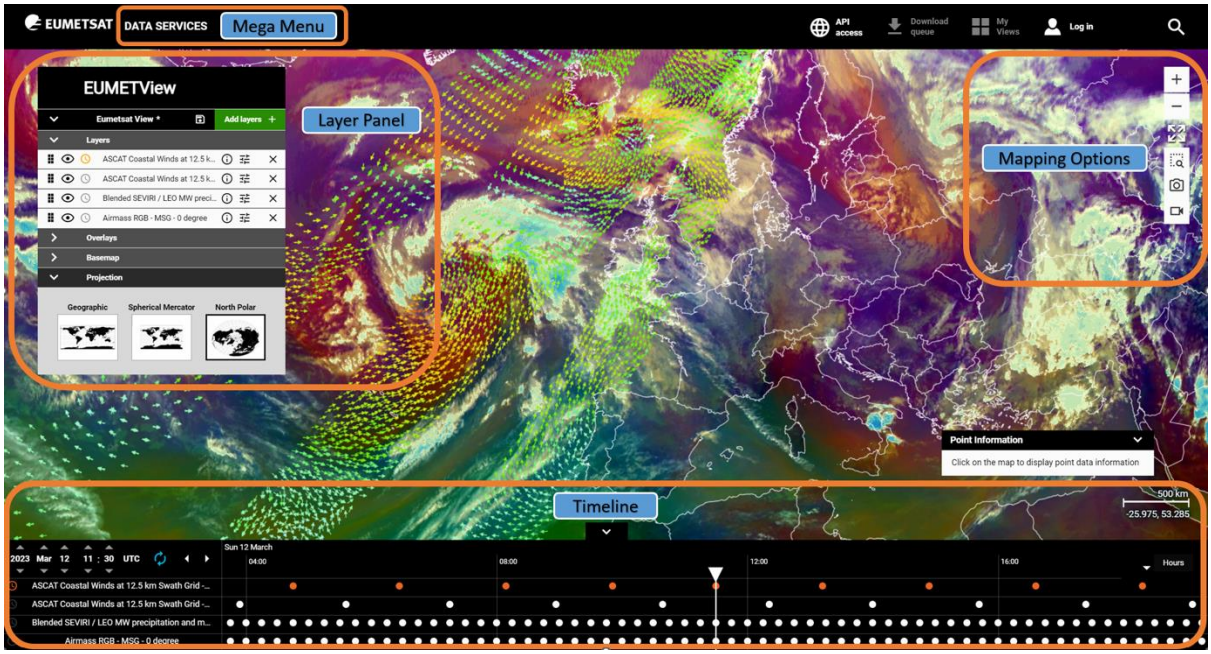
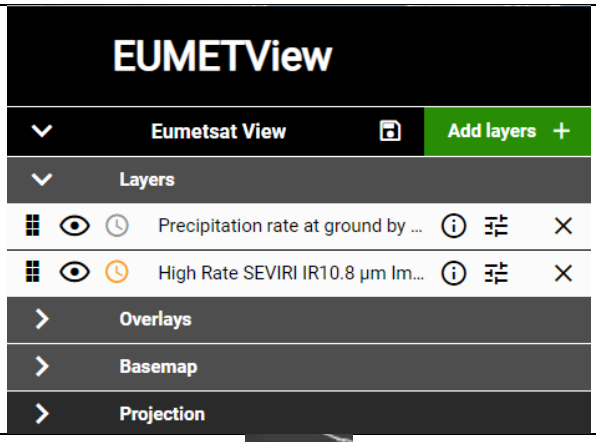


Figure 2: EUMETView WebUI landing page

The interactive map viewer is divided into different sections, as detailed in the table below.

Section	Screenshot	Details
The top bar		• 'Data Services' opens the mega-menu, including the useful links • API access links • Download queue (user needs to log in) • My Views (user needs to log in) • The user profile login button • The search products icon
Layer Panel		• Title of the view • Save view • Move to other views • Add layers • Displayed products and information • Overlays • Basemap • Projections
Map functionalities buttons		• Zoom • Toggle full screen • Extent drag zoom • Map data download • Map animation
Time manager		• Toggle auto-update • List of visible layers • Previous/next time step • Expand/compress timeline

		• Time slider • Change timescale

Searching for products

After logging in to the service, the map view shows. If this is your first time using the service, the map may be empty. To add products, search for them, either by searching the available archive, or by viewing the complete list of available products. The product catalogue can be accessed using either the **search 'lens' icon,** in the right of the **top bar** of the map screen (see figure below), or the green 'Add layers' button in the **layer panel**.

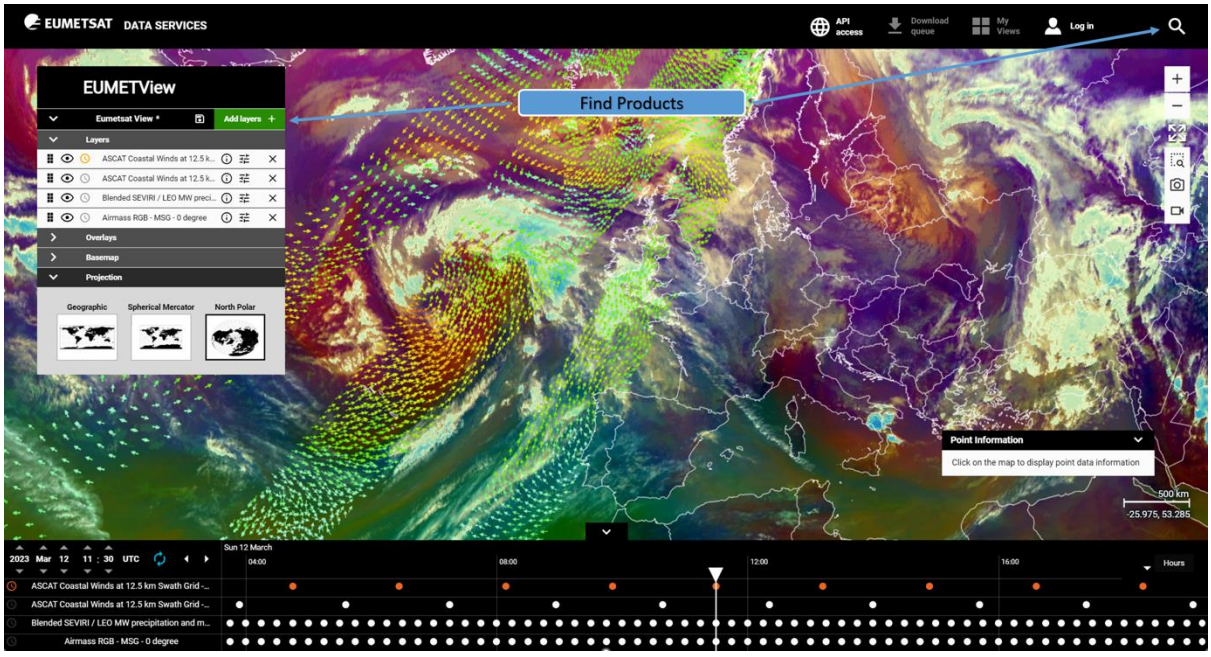


Figure 3: EUMETView map view

Clicking the **'lens' search icon** or the **Add layers** button will open the search window, as shown below. The icons in the top right of the search window can be used to view the catalogue, either as a list or as tiles. Products are organised in a tree, and can be arranged either by satellite, or by theme (eg ocean, atmosphere or weather). Users can also enter search terms in the top bar, in order to find a product of interest. The search terms will be compared against the product description, as well as their names.

Figure 4: EUMETView search window arranged by satellite and in tree view

Products can be selected by navigating through the tree. Each product in tree view has a description which gives the name of the product and a short description, the type of satellite (GEO or LEO), and the type of web services which are supported for the product (WMS, WCS or WFS), a button to add it to the map, and an information button, which will open a window with further details on the product. API users should note that information on the WMS, WFS and WCS capabilities associated with this product can be found in this window.

In the **product information window** it is possible to:

- read the entire product description;
- add the product to the map (using the add to map button). ***Note**: if the layer is already present on the map the button will say 'remove layer';*
- return to the search list;
- access OGC requests for that specific product (GetCapabilities and GetMap);
- access the **data catalogue** page for this product;
- get information about the time range, and geographical extent of this product, as well as the last acquisition time.

Once a product has been added as a layer, you can return to the map screen and manipulate it, as desired.

Displaying layers

Layers are managed using the layers panel (see **using the WebUI section** for more information on the EUMETView panels).

The layer panel is broken into five sections as shown below.

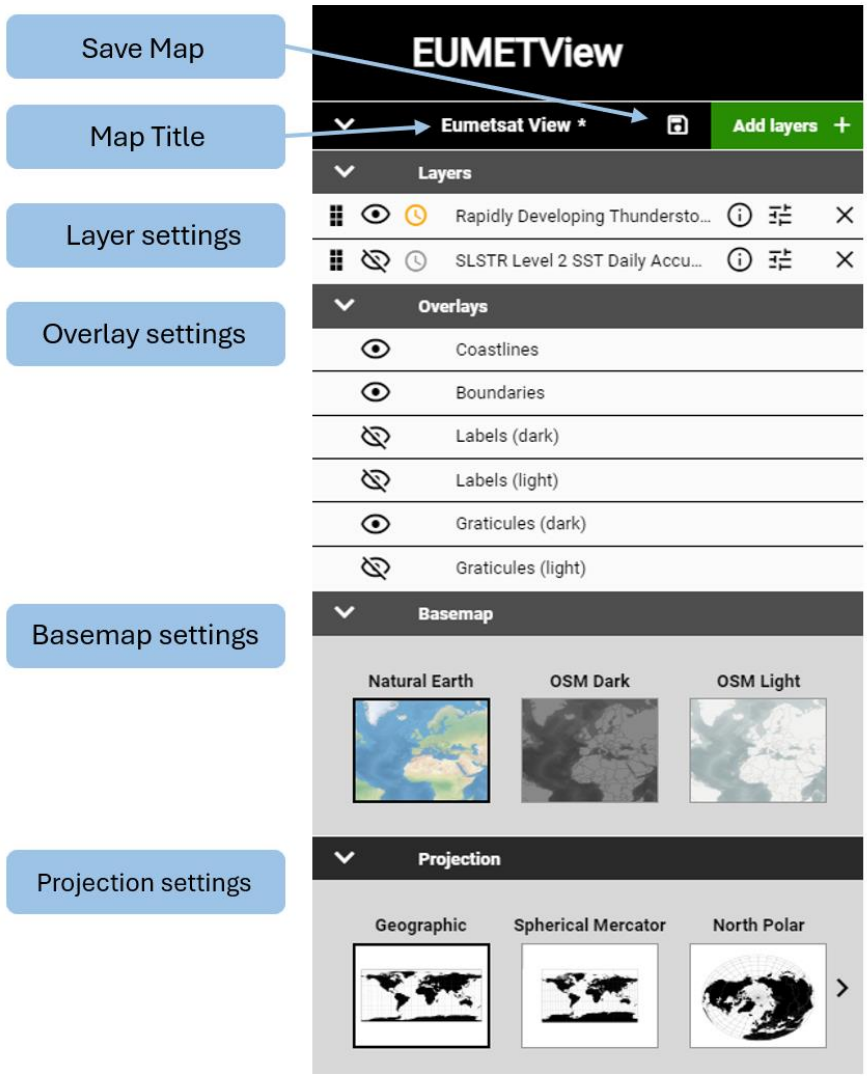


Figure 5: EUMETView layer panel

The layers section capability is detailed in the table below.

Button	Use
	To move the layer up/down in the list (just drag and drop the icon at the desired position in the list).
	To hide or show the layer from the map.
	One of the products in the map will be the driving layer. This icon allows that layer to be selected. When a product is selected as driving layer, the icon of the clock become orange. All the others remain grey.
	Button to go to the Product Information Window.

	Opens layer's options: • Opacity of the layer • Legend (if present)
×	Remove the product from the map.

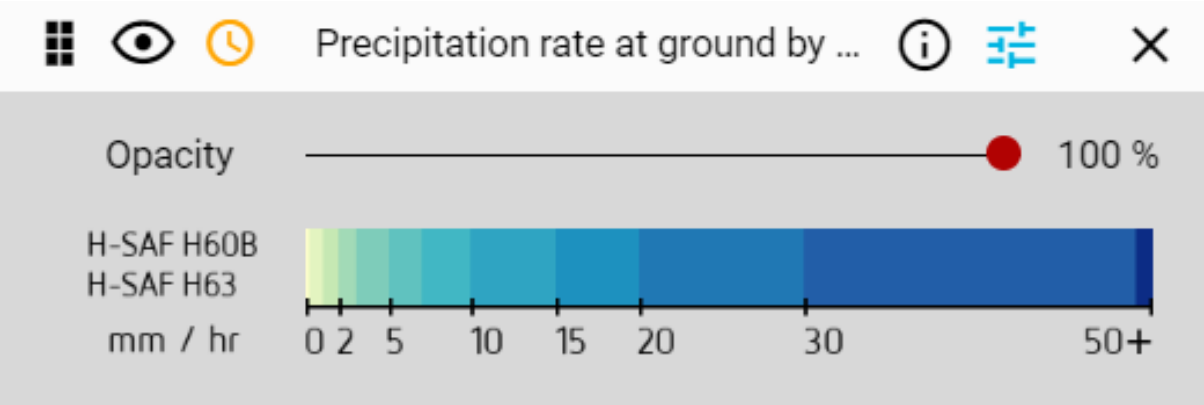


Figure 6: Layer options panel (for a single channel image)

Saving views

Once all options are set, it is possible to save the map using the disk icon on the layer management bar. If an asterisk appears on the right of the name of the map, it means that the map is yet not saved. The button to save the map is displayed close to the map name. Saved maps can be recalled in the future using the **My Views** functionality.

Manipulating maps

The map content can be manipulated/interrogated using the the map functionality buttons, point information buttons and timeline.

Map functionalities

The buttons on the right part of the map GUI include (from top to bottom):

- Zoom in and out
- Toggle full screen (all the functionalities are hidden except the timeline which is still accessible, only the visualisations are displayed, together with scale and coordinates.)
- Extent drag zoom (see **map extent** section)
- Map data download (see **downloading maps** section)

- Animate map (see **animating maps** section)
- Point Information (see **point information** section)

Map extent

When clicked the ‘Extent drag zoom’ button turns blue and the cursor becomes a cross. It is now possible to draw a rectangle by dragging the cursor on the map. When the rectangle has been drawn, the map is automatically zoomed on that area.

Downloading maps

This functionality offers different modes for downloading visualisations and data from the map GUI. It is possible to download different formats, according to which service is providing the products.

- **Current map view**: This will download the visualisation displayed as currently displayed (retaining the zoom and projection). It is possible to manually set the size of the image, to choose the format, and to choose if the base layer and the footer should be included.
    - For all services it is possible to download it as GeoTiff (ie geolocated image), JPG, KMZ or PNG.
- **Map region**: as with the previous function, but using the view associated to an area of interest defined on the map GUI.
    - For all services it is possible to download it as GeoTiff (ie geolocated image), JPG, KMZ or PNG.
- **Full resolution product**: This will download the displayed product in full resolution mode (the entire geographical extent of the product).
    - For WMS and WCS products it is possible to download it as GeoTiff (ie geolocated image), JPG or PNG.
    - For WFS products it is possible to download it as Shapefile, GeoJSON, GML2, GML3.

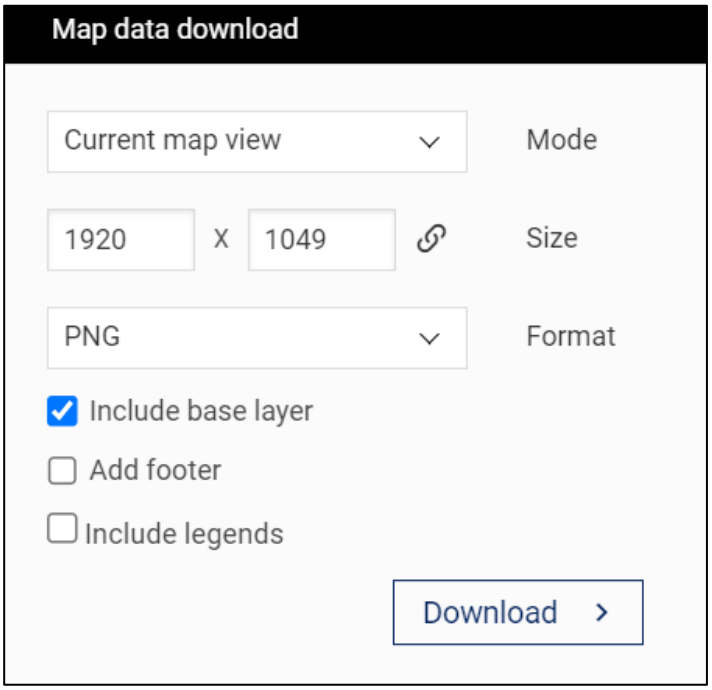


Figure 7: Current map view download window

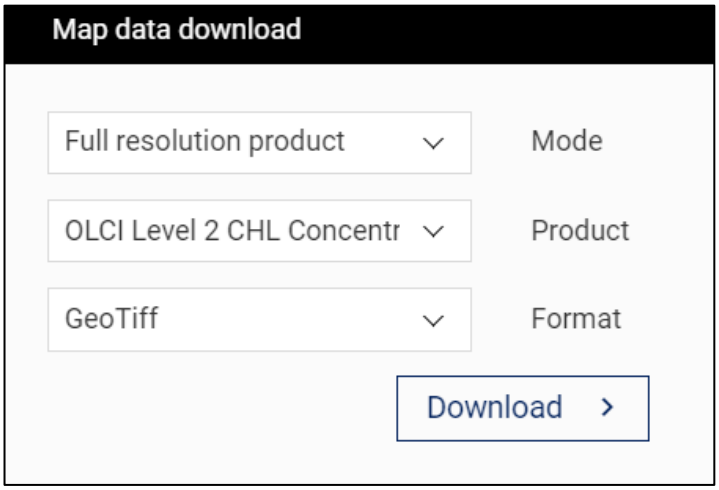


Figure 8: Full resolution product download window

Animating maps

Using this functionality, it is possible to create an animation of the displayed maps over a defined time. Clicking on the dedicated button will open the animation window.

From this window it is possible to create:

a) Automatically updated animations:

- Change the dropdown list to 'Last' and select the animation duration. In this mode, the newest imagery is added and the oldest imagery is dropped whenever a new image is available (FILO).
- Set the video speed (in frames per second).
- Set the animation step (in the example below, the animation will be played at steps of 15 minutes).
- Repeat, play, and download the animation. When downloading the animation it is possible to manually set the size of the video, to set the format, and to decide to include, or exclude, the base layer and footer in the video.

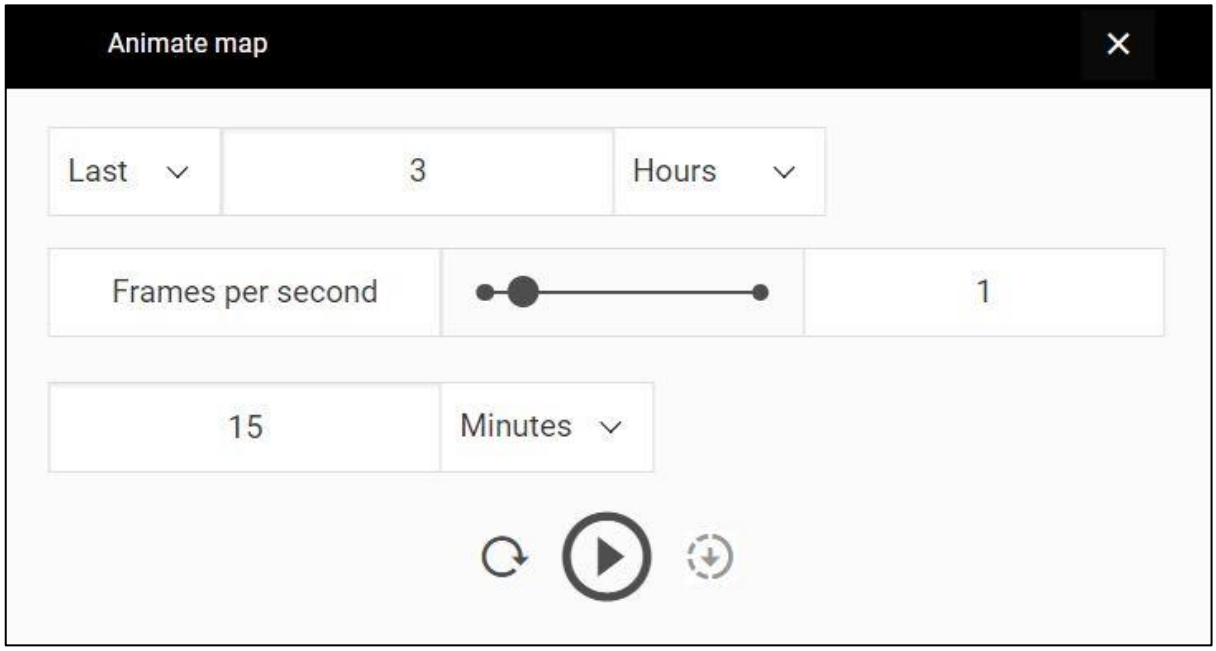


Figure 9: Automatically updated animation settings

b) Fixed time period animations:

- Change the dropdown list to 'From' and change the start date, end date, and time of the period (by acting on the calendar or by acting on the timeline). In this mode, the animation is not updated.
- Set the video speed (in frames per second).
- Set the animation step (in the example below, the animation will be played at steps of 15 minutes).
- Repeat, play, and download the animation. When downloading the animation it is possible to manually set the size of the video, to set the format, and to decide to include, or exclude, the base layer and footer in the video.

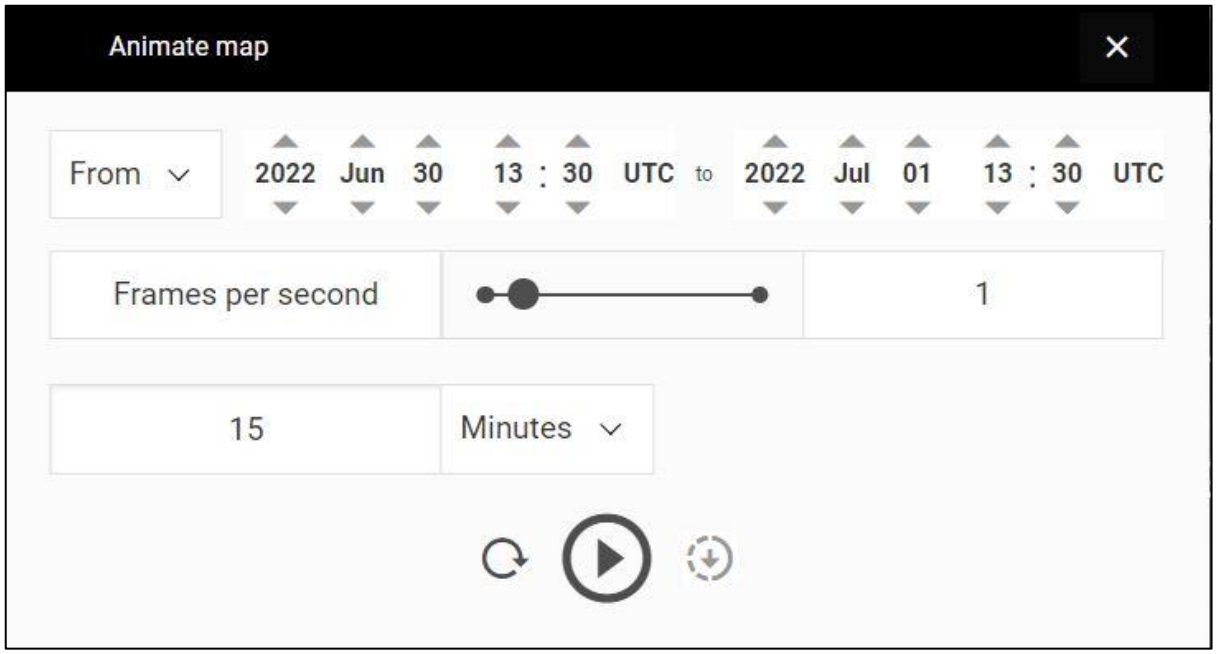


Figure 10: Fixed time period animation settings

Saving animations

If the user is logged in then the 'Download Configured Animation' button is enabled in the animate map window.

Figure 11: Save animation button

When this button is clicked, the download animation window is shown with configuration parameters like file format, etc.

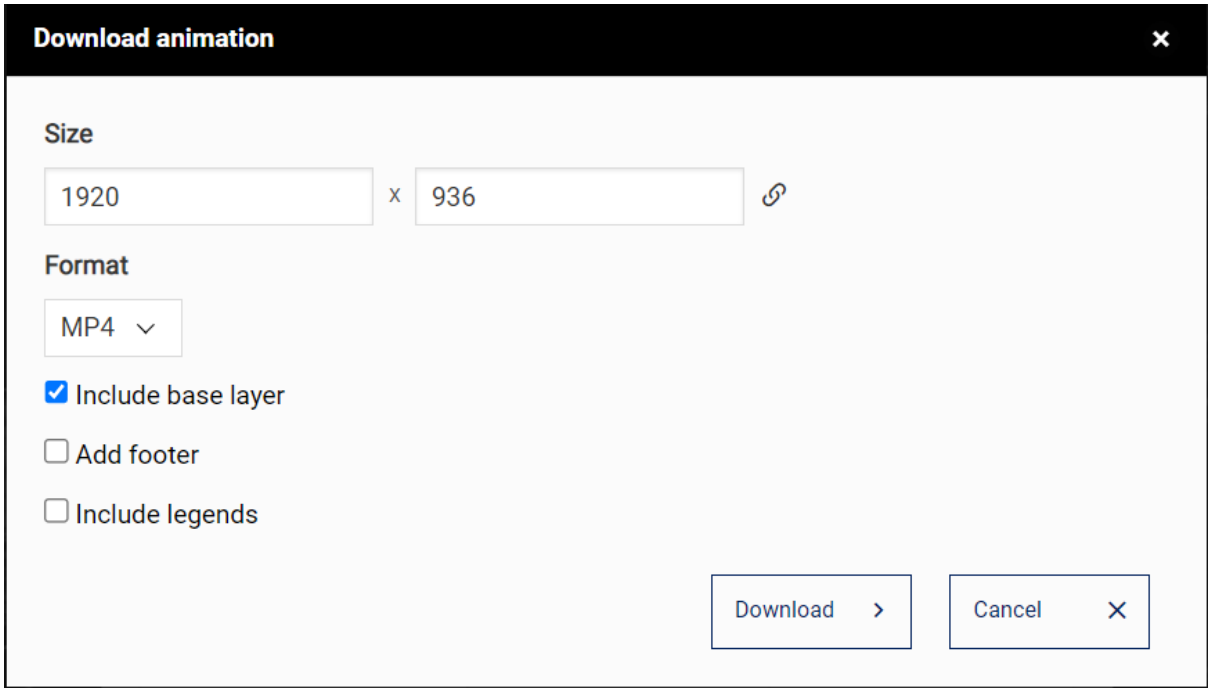


Figure 12: Animation download options

When the download button is clicked the job is added to the queue and a message is shown to the user that the animation is started to be generated. When it is done, a message at the top section of the WebUI is shown, to inform the user that the animation is ready to be downloaded.

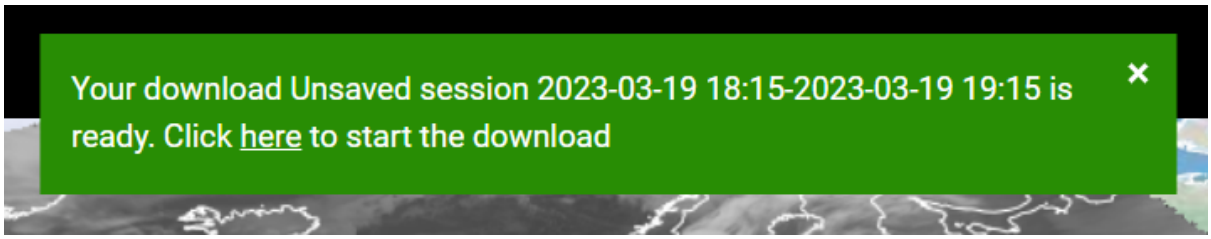


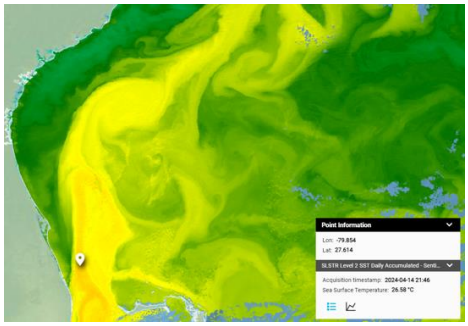
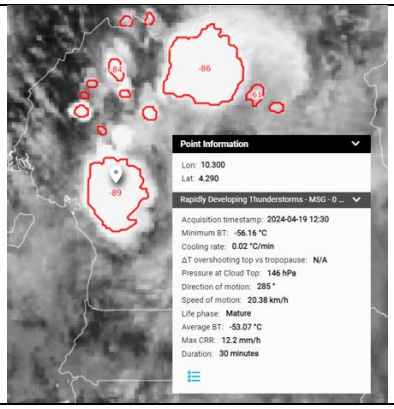
Figure 13: Animation is ready to download notification

Point information and time series

This functionality works for products available as both images and data, such as those deployed through WCS and WFS.

For these products, it is possible to query the layer and get the values represented in the product, for single pixels, in the case of WCS, and for single feature, in the case of WFS. When a product deployed using WCS or WFS is added to the map GUI, a small box with the title 'Point Information' will appear on the map GUI.

To query the values of the WCS or WFS products, click on a point on the map where there is product coverage. Information about the coordinates of the clicked point and the data values of the product will be displayed in the window (see below).

WCS products	WFS products
• Coordinates • Acquisition timestamp • Geophysical value (Chlorophyll concentration or Sea Surface Temperature) • Time series functionality is AVAILABLE	• Coordinates • Acquisition timestamp • Geophysical values (Direction, Speed, Pressure at Cloud Top, etc.) • Time series functionality is NOT AVAILABLE
	

The Time Series functionality in available for WCS products. It shows how the geophysical measurement of the product varies during time in the considered pixel (coordinate point). To access the Time Series functionality, click on the button in the Point Information window. From the 'Time Series' window, it is possible to change the considered period by:

- changing the limits of the calendar and then clicking on the ‘lens’ button;
- moving the blue arrows at the bottom of the chart left or right.

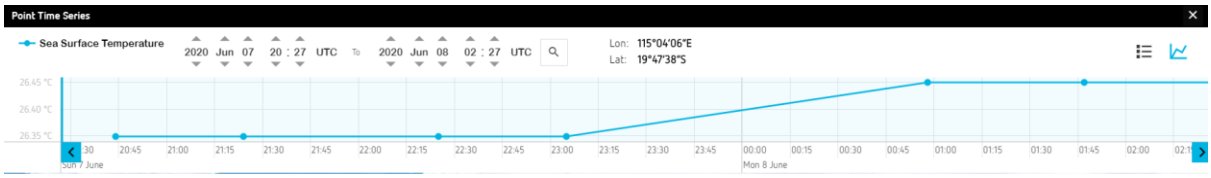


Figure 14: Timeline window

Using the timeline

The timeline functionality allows the user to act on available time ranges on displayed products.

Using the timeline, it is possible to:

- cycle through displayed maps using date/time;
- use auto-update functionality;
- check the time steps where the products on the map have images/data;
- set the driving layer (the driving layer indicates which is the layer whose temporal resolution drives the steps in the timeline);
- set the timescale.

Acting on the calendar will change the date and time displayed in the map. The two horizontal arrows (in the left hand side of the timeline) will set the map one step forward/backward — the available time step is determined by the driving layer, for example, in the figure the driving layer is the precipitation rate at ground GEO product, so the steps are 15 minutes. For most of the LEO products the steps are about 100 minutes.

The driving layer can be set by clicking on the clock icon close to the name of the layer, either in the layer panel or in the timeline. If the clock icon is orange, it means that the product is the driving layer. Only one driving layer can be set at a time.

The timeline can be expanded or collapsed using the dedicated button. If the timeline is collapsed, only the driving layer is shown in the list of products. If the timeline is expanded, all the layers displayed on the maps are shown. The timescale can be set to Hours, Days, Months and Years.

***Note**: if a layer is loaded on the map, its name appears on the layer panel and in the timeline, but if the layer is hidden from the map, its name is still in the layer panel but is not shown in the timeline.*

For automatically updating the imagery, the auto-update toggle button in the timeline toolbar can be used. With this feature, whenever new imagery is available in the driving layer, the map date/time and the imagery shown on the screen are updated automatically.

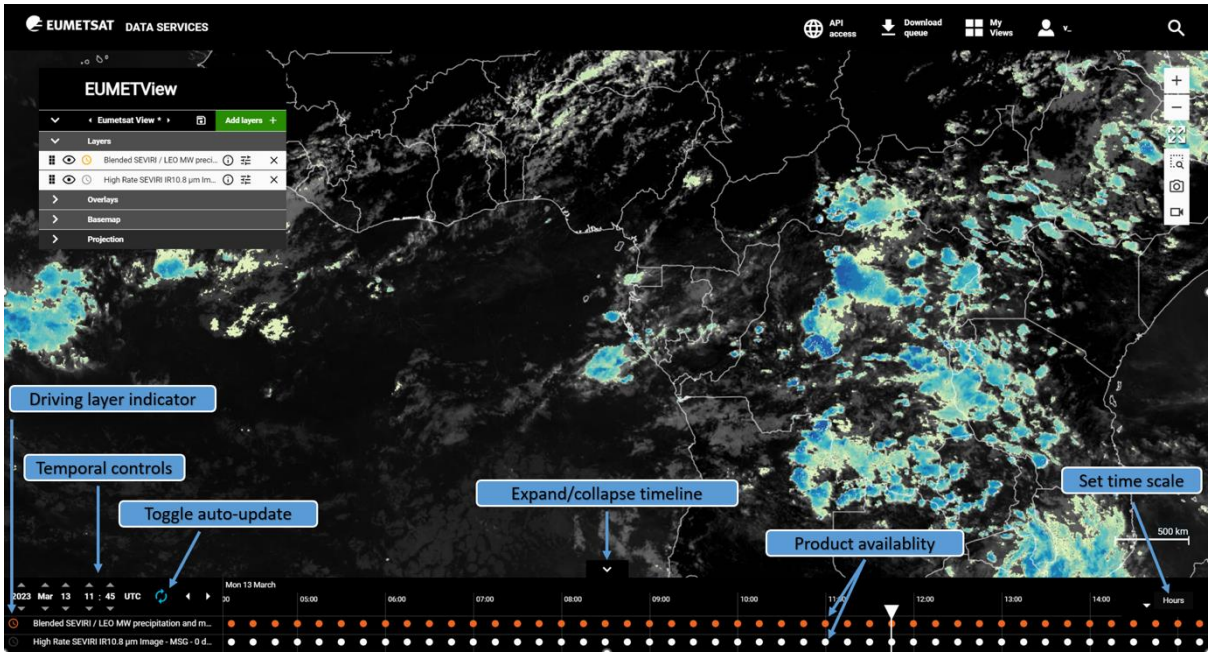


Figure 15: Managing date and time

Recalling views and using the download queue

My Views

A 'View' in EUMETView is a map with features (layers, date/time, basemap, overlays, projection, zoom) set by the user. The user can save their customised views in My Views section, to be able to display them when needed, to edit them, or also to share them with other users. The My Views functionality can be accessed using the button in the top bar. In order to use this functionality, the **user must log in with a username and password.** **Create an account or login now**.

Figure 16: My Views button

The My Views window appears as shown in the figure below. The window is divided into different groups of views (created by the user). In every group, the user can create personalised views (maps). When clicking on 'New Views' the user is redirected to the map GUI, on an empty map. The user can choose which layers add to the map, together with all the other personalised options.

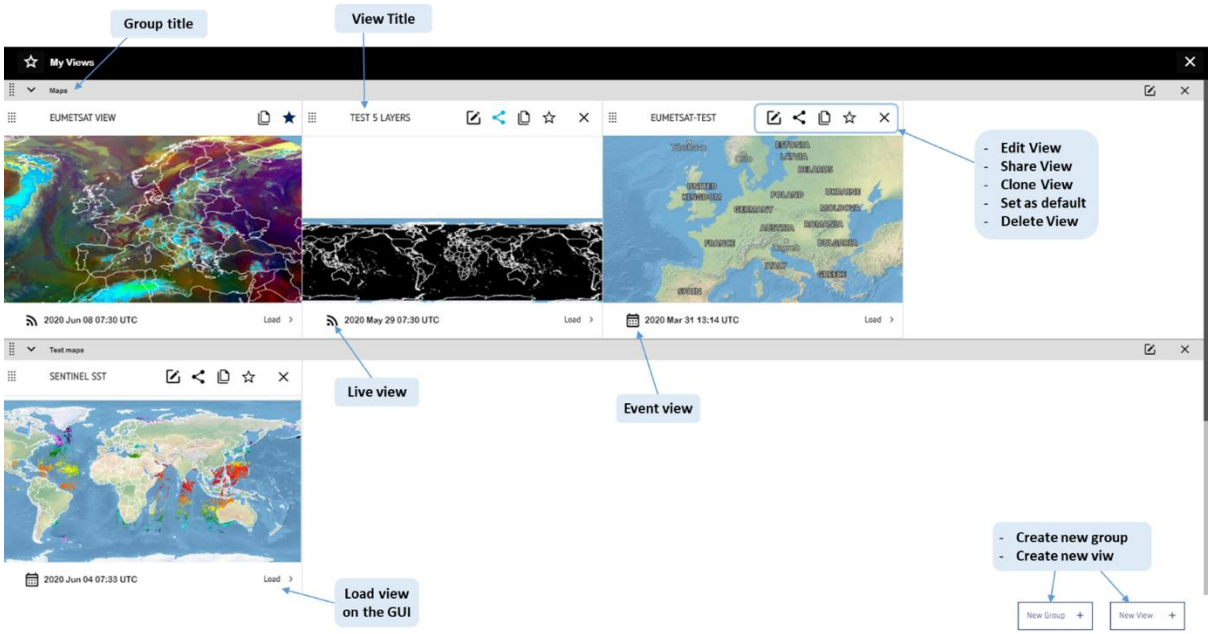


Figure 17: My Views example

When clicking on the save button the user is prompted to the window shown below, where it is possible to choose the view title, in which group to put the view, the type of the map (Event, Live), and the time of the map (in case of Event View).

- An **Event View** shows images from a given event at a specific date and time.
- A **Live View** shows the most recent available images from the selected visualisations

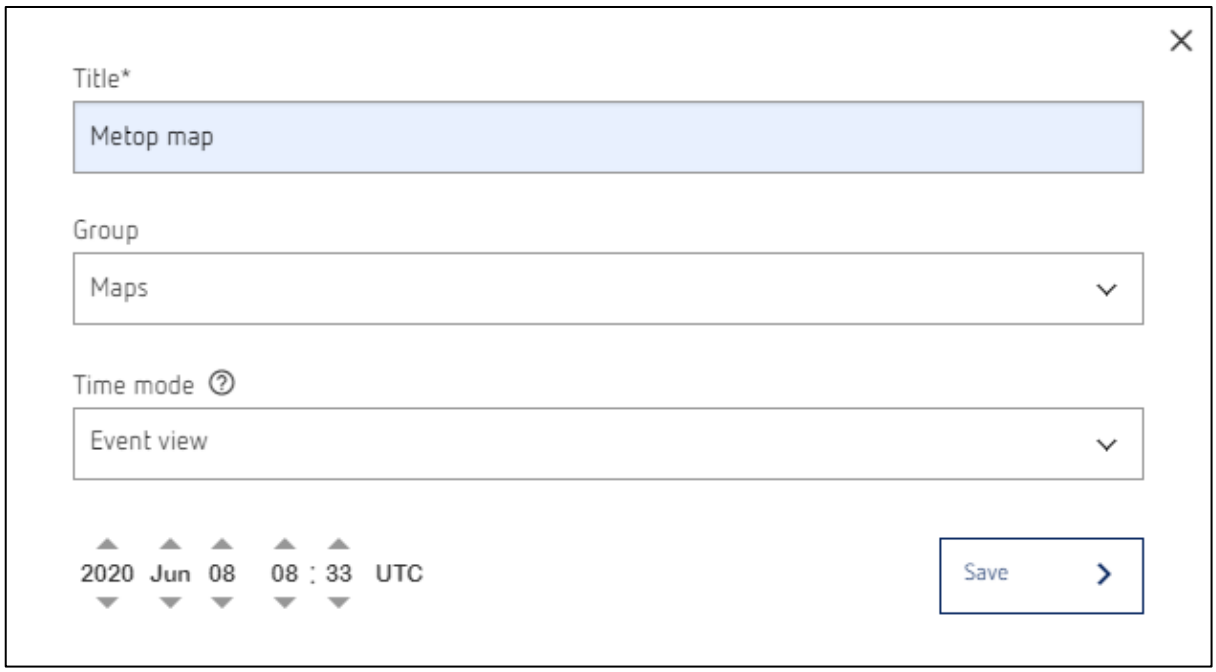


Figure 18: My Views create and edit options

It is possible to change the position in the window of Groups and Views, and it is possible to move a View from one Group to another, using the dedicated functionality provided by the 'dot-grid' icon on the left.

The download queue

Download queue can be accessed from the top bar, using the **download queue** button. When the user downloads an animation or a full resolution product, the download is added to the download queue. A message will appear when the files are ready to be downloaded.

Figure 19: Download queue button

The figure below shows how the download queue appears:

- Name of the product and the requested timestamp are displayed.
- If the file is ready to be downloaded a 'Download' button is active, otherwise a 'Cancel Process' button is active, to stop the creation of the file and delete it from the queue. A file can be downloaded as many times as desired.

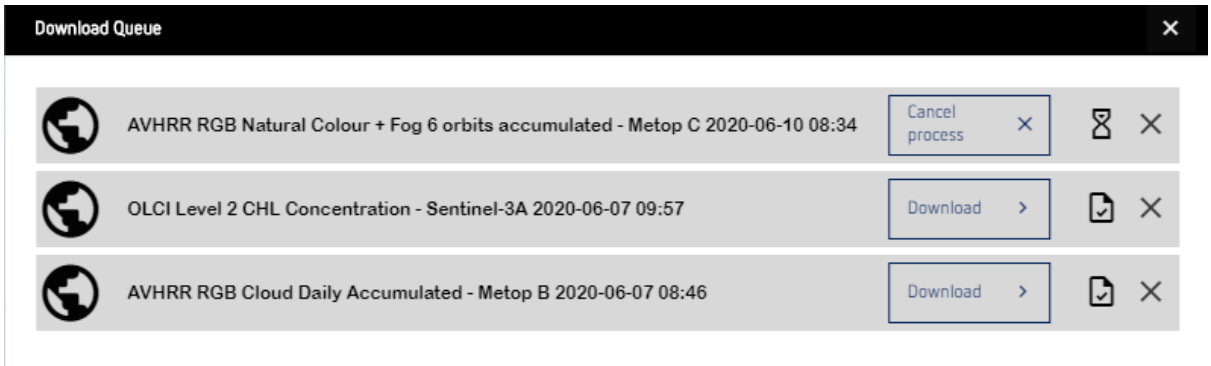


Figure 20: Example download queue