

The ESSL Weather Data Displayer

... and how you can licence it

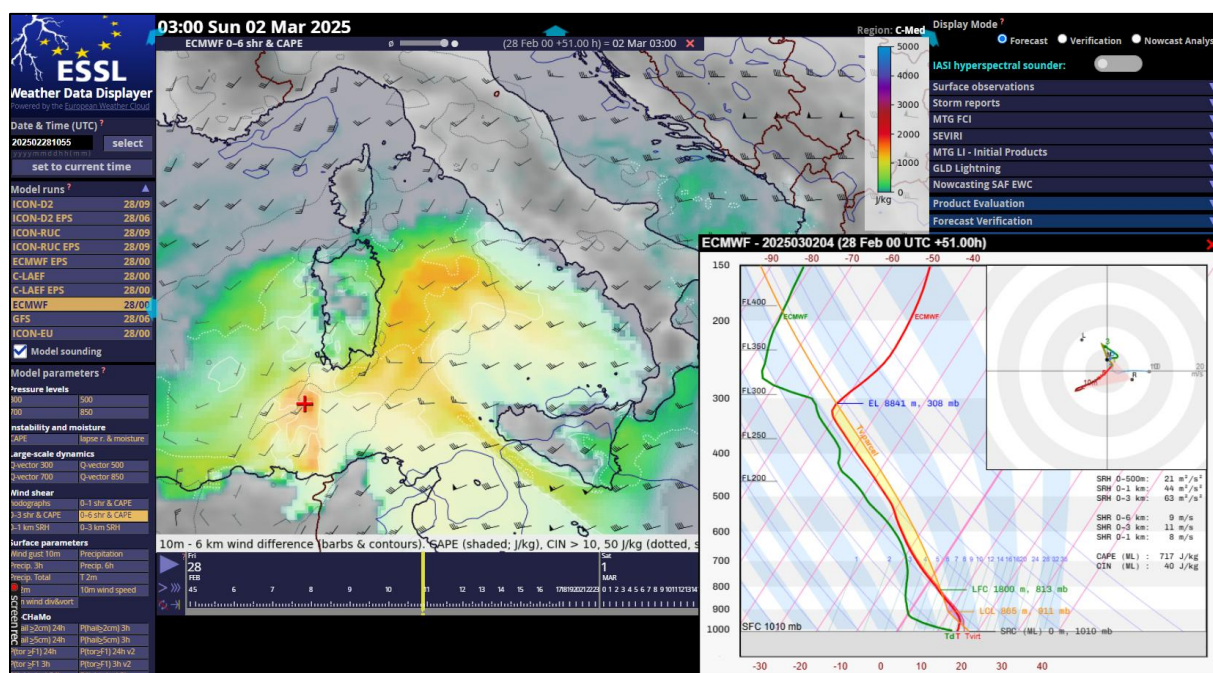


The ESSL Weather Data Displayer is a browser-based visualization tool for meteorological data developed at the ESSL Testbeds since 2012. It only requires a web browser and internet access. No software installation or maintenance work is required by the user.

What is the ESSL Weather Data Displayer (in short “Displayer”) good for? What are the limitations?

The Displayer is designed to provide easy access to graphical visualizations of weather data: various weather model maps, remote sensing (satellite, radar) and surface observations (including ESWD severe weather reports), an interactive sounding tool that includes a hodograph, basic thermodynamic parameters and a comparison of model and infrared sounder satellite data if available. Different layers can be combined and blended. Currently, static maps are available for different European sub-domains, North and South America.

The purpose of the Displayer is to support training and development activities at weather services, academia and at in-house ESSL events. Other uses cannot be licenced and ESSL is not liable for consequences of any other use of the Displayer. The Displayer shall not be seen as “operational”: partial and full outages may occur, and it should not be relied on for operational duties. The maintenance of the Displayer is provided on a best-effort basis with an availability target for the basic functionality of 90–95 %.



Screenshot of the ESSL Weather Data Displayer on 28 March 2025. ECMWF CAPE and 0-6 km shear chosen for C-Med domain and forecast time step 2 March 2025 03:00 UTC. Model sounding tool switched on for location south of Sardegna.

Is it possible to configure the Displayer individually?

The ESSL Weather Data Displayer is offered as a preconfigured platform and contains a wide range of observational and model data. That way, maintenance effort is kept to a minimum and usability is maximized. The user cannot add own data but, especially when it is of interest to the wider community, the addition of further data can be proposed to and negotiated with ESSL.

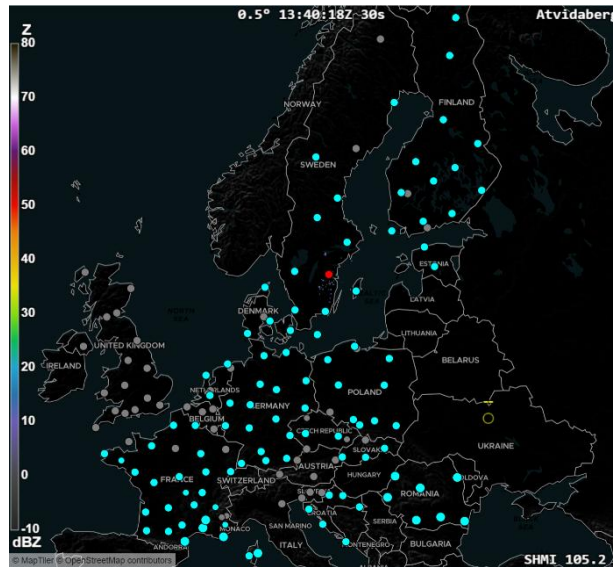
A separate Radar Displayer

In Spring 2025, a separate Radar Displayer has become available, which is licensed together with the ESSL Weather Data Displayer.

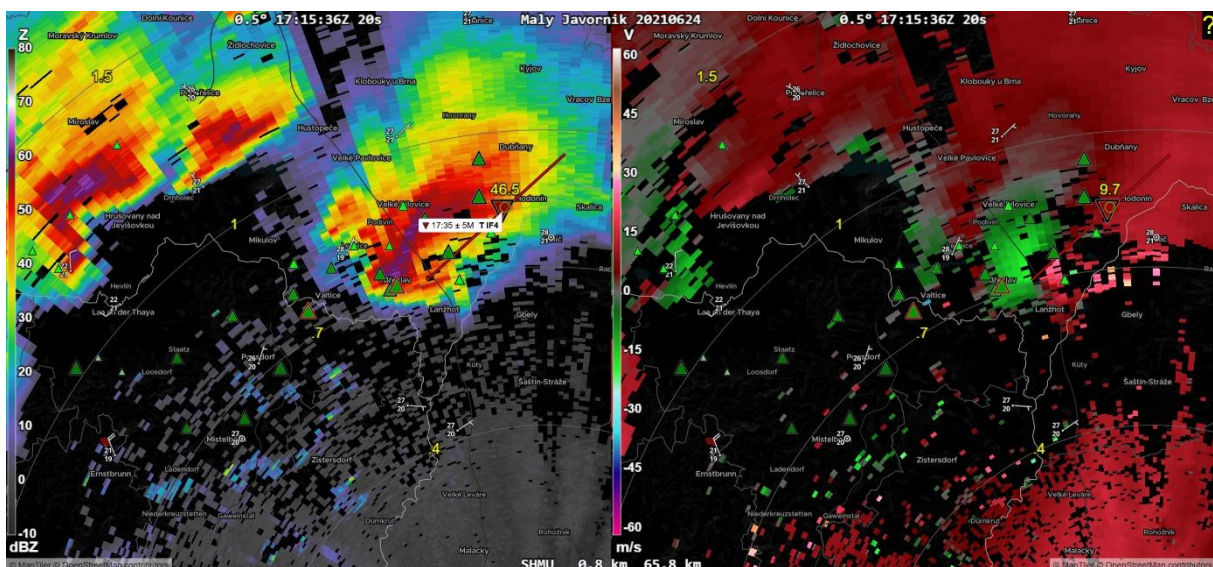
The Radar Displayer shows volumetric (3D) data for radars in the Netherlands, Germany, France, Denmark, Czechia, Estonia, Sweden, Finland, Romania, Slovakia and Austria (one radar). And depending on the license model, Poland and Croatia can be included. Additional countries will likely be added in the future, whenever their radar data becomes (publicly) available.

The Radar Displayer is very fast, allows for quick keyboard-based navigation, and optionally overlays the radar data with ESWD reports and surface observations. It also includes a list with interesting historical events, which can be useful for research and education.

A video demonstrating the capabilities of the Radar Displayer can be found [here](#).



Screenshot of the Radar Displayer showing for which radars we had real-time data available on 2 October 2025.



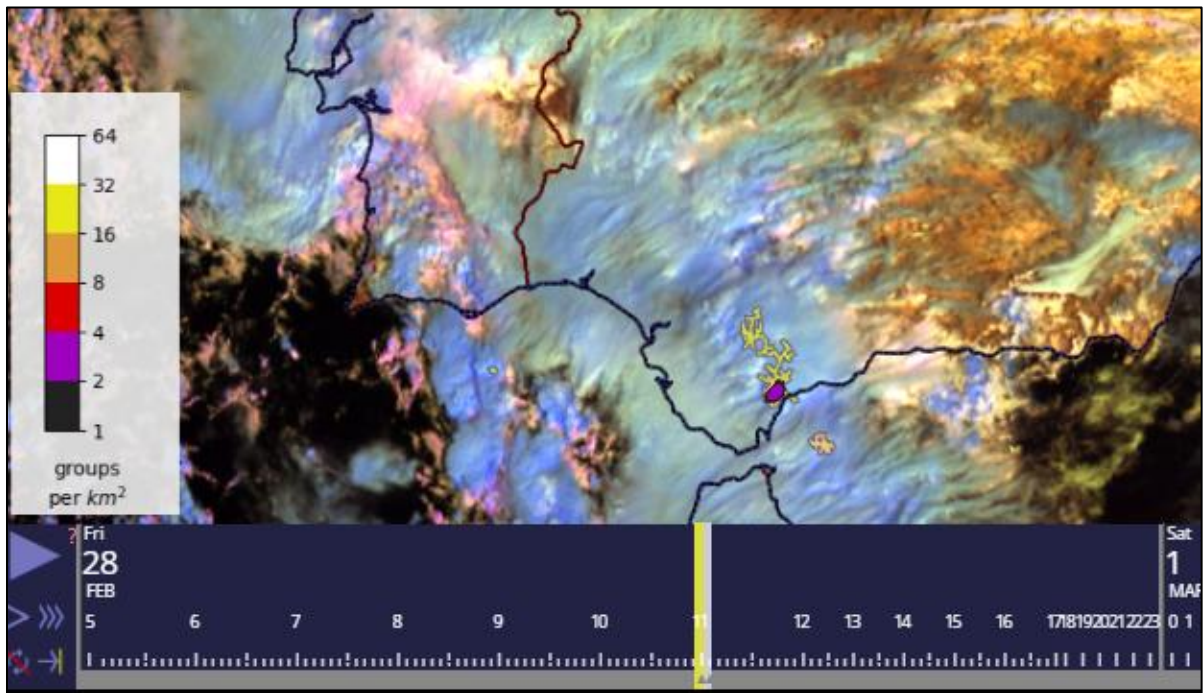
Screenshot of the Radar Displayer for 24 June 2021, when an IF4 tornado wreaked havoc in southeastern Czechia. Shown are radar reflectivity (Z) on the left, and radial velocity (V) on the right. Markers indicate that large to giant (triangles with red border) hail was produced by this supercell, next to the violent tornado.

How much does it cost?

The licencing fee is based on the categories of the ESSL membership fees and thereby dependent on the size of the licensee's institution (number of employees) and the economic wealth of the country (GDP per capita) of the licensee according to a formula. For small institutions based in a country with a low GDP per capita, the licencing price can be as low as 500 EUR per year. For medium-sized weather services in a medium GDP per capita country, annual licencing fees can be around 5,000 EUR. For large non-ESSL-member entities based in a high GDP per capita country, annual fees can be significantly higher. Please ask for an individual quotation.

Where can I order a licence or obtain more information?

The ESSL Weather Data Displayer is co-developed between the non-profit research organization ESSL Science and Training (the institution running the ESSL Testbeds) and the company ESSL Services GmbH. The ESSL Services GmbH is the licensor for the ESSL Weather Data Displayer, and a licence may be requested by sending an e-mail to: services@essl.org



Screenshot of the ESSL Weather Data Displayer on 28 March 2025 at 11:00 UTC. EUMETSAT MTG Cloud Phase RGB, overlay of LI Flash Geometry (yellow) and Density (magenta). Zoom to southern Iberian Peninsula.

Background

The ESSL Weather Data Displayer has been a success story. Since 2012, hundreds of forecasters have found it useful, especially for, but not limited to, forecasting severe convective storms. The Displayer has been used at numerous courses and testbeds and had been developed based on feedback received from forecasters from across Europe and from overseas. The main developer of the Displayer is ESSL Director Dr. Pieter Groenemeijer.

In the past years, ESSL was asked by national and regional weather services, international organizations, universities and research institutes to make the Displayer available to them. Starting in 2025, the Displayer is ready to be licenced to users. Which data sets are included within the Displayer depends on the licence model and on the pre-existing access rights of the user to restricted third party data, for example certain products from ECMWF and EUMETSAT.

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