

Tutorial on EUMETView Service - Introduction

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EUMETSAT
Eumetsat-Allee 1, D-64295 Darmstadt, Germany
Tel: +49 6151 807-7
Fax: +49 6151 807 555
<http://www.eumetsat.int>

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1 INTRODUCTION

This guide provides a short introduction about EUMETView WMS Service, its available data and a detailed description of WMS Service characteristics and usages.

2 WHAT IS EUMETVIEW SERVICE

EUMETView is a EUMETSAT freely available service tool which allows users to access a wide selection of EUMETSAT data products in near-real-time in an interactive way through a Web Map Service (WMS) protocol, by an interactive tool at the follow address:

<http://eumetview.eumetsat.int/mapviewer/>.

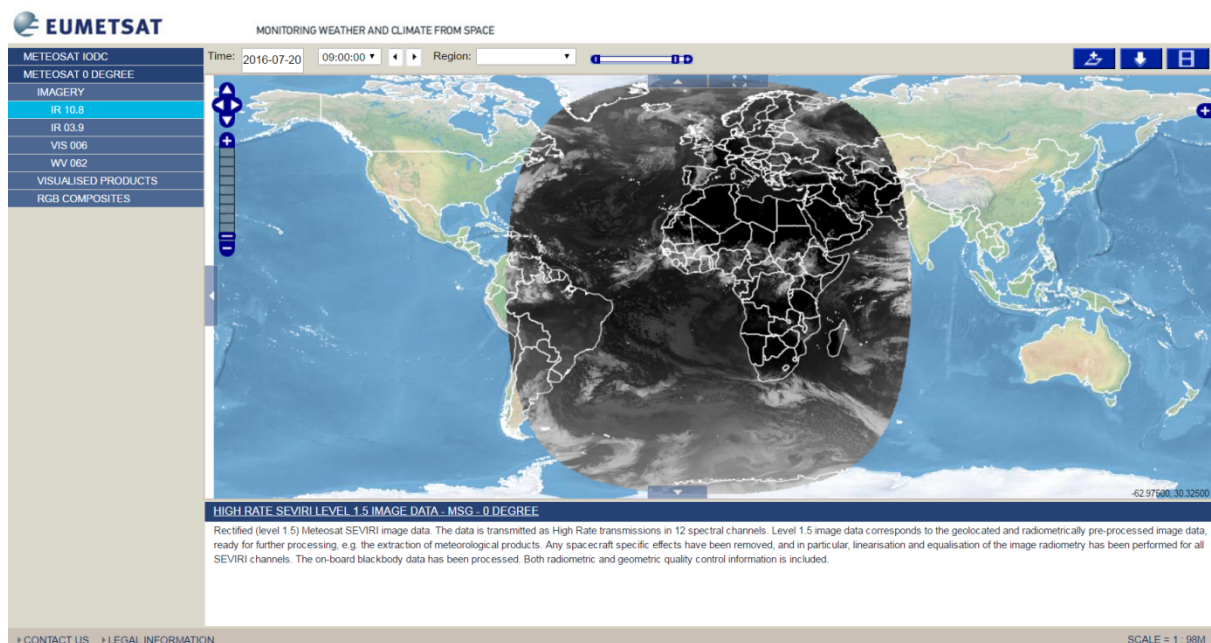


Figure 1: EUMETView Service main page

This service has been implemented as a first step to abandon the current near-real-time Image Gallery Service, which works only as a supplier of EUMETSAT data as static images characterised by a limited interactivity.

EUMETView implements the OpenGIS Web Map Service (WMS) Interface Standard and can be used to request and overlay EUMETSAT products in GIS clients supporting OGC WMS 1.3.0, available at the link: <http://eumetview.eumetsat.int/geoserver/wms>.

The earth observation (EO) data and products provided by EUMETSAT are delivered from satellites having different orbit types, which affects the spatial coverage and spatial/ temporal resolution of the produced products. The two orbit types are:

- GEOstationary orbit (GEO): satellites (e.g. Meteosat Second Generation (MSG)) are positioned at a fixed point over the equator and rotate in sync with the earth. Because of

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the high altitude produced images cover the whole visible Earth disc. Resolution is ≥ 1 km.

- Low Earth Orbit (LEO): satellites (e.g. Metop) circle the Earth in a polar orbit, passing the poles as they circle the Earth. The lower altitude compared to GEO satellites produces images that cover only part of the Earth (swath based).

EUMETView WMS Service provides access to near-real-time imagery from Meteosat and METOP satellites; in particular those are the supplied product:

- Meteosat Indian Ocean Data Coverage (IODC) (Imagery)
- Meteosat 0 Degree (Imagery, Visualised Products, RGB Composites)
- Metop (Imagery, RGB Composites)

Since data from WMS EUMETView Service are collected with a very brief turnaround (15-30 minutes), they are pre-processed and ingested in the system in near-real-time, so that they can be available on the website as soon as possible. EUMETView rolling archive of data is of 7 days, so data older than 7 days are automatically deleted from the system, and are no more accessible from the service (but a longer archive is planned). The original satellite data can be accessed from EUMETSAT Data Centre service.

3 WHAT IS A WEB MAP SERVICE (WMS)

A Web Map Service (WMS) is a web protocol developed by the Open Geospatial Consortium (OGC) as an international standard which provides a simple HTTP interface for requesting and delivering dynamic maps online through a Uniform Resource Locator (URL).

The OGC (Open Geospatial Consortium) is an international no-profit organization committed to making quality open standards for the global geospatial community. (More about OGC: <http://www.opengeospatial.org/>).

OGC services are specifically implemented to exchange geospatial data between different GIS systems and data stores. Those standards, such as WMS, are freely available for anyone to use to improve sharing of the world's geospatial data. They consist of technical documents which define details for interfaces and encodings. The WMS Service, just as other OGC Web Services, is implemented to grant the most possible interoperability among servers. The benefits in using a WMS service are that it is easier for users to integrate and overlay online data from multiple sources in a seamless way, without having troubles with data format or CRS or data model, thus providing a faster and more efficient way to access data.

Maps retrieved from a WMS service are provided as georeferenced images (i.e. with an associated coordinate reference system). Those maps can be displayed either on a web browser or loaded as a layer in a GIS desktop software (for example QGIS, but also ArcGIS, MapInfo, AutoCAD, Google Earth or any other software which includes the WMS-client capability). The main benefit of using a WMS service is that the user can access geographic images and use them for maps creation without the need of downloading the data on local disk or local net, thus saving time and local digital space.

WMS service is especially useful to make maps available in an open and interoperable way across different platforms and clients. Besides, it is useful in the case of data which are frequently updated (for example, EUMETSAT near-real-time data such as Meteosat and Metop products).

Maps provided by a WMS service can be usually downloaded in different formats, such as PNG, JPG, GIF, TIFF, and KML. Please, note that a WMS-service does not provide users a raster image that can be spatially analyzed, indeed it is intended for displaying up-to-date geographic maps straight from servers.

By now, four versions of the WMS specification have been published: v1.0.0, v1.1.0, v1.1.1, and v1.3.0 (which is the version supported by EUMETView Service). The full WMS official documentation is available at <http://www.opengeospatial.org/standards/wms>.

A typical WMS request starts from a WMS server that acts upon requests by the client which can be for example, a GIS Desktop application, for a raster map (with its area extent, layers to be displayed, CRS and transparency). As soon the request is received, the WMS consults its data sources and sends back the client the response in the form of one (or more) georeferenced image(s) that can be displayed in a web browser or in a GIS desktop.

A WMS request can perform different operations; the most important one is the GetCapabilities operation, which provides metadata about the service, including supported operations, parameters, and a list of the available layers that a WMS server can offer.