Using ADAGUC for GEO NWCSAF products visualization at NMA

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Outline

- At National Meteorological Administration, satellite data and EUMETSAT SAF products are used in both operational weather forecasting and research. Data received through EUMETCast is further processed (e.g. by NWCSAF MSG and PPS software) and disseminated in near real time to the National and Regional Forecasting Centers and to other end users.

- Imagery data and satellite products are displayed in the NexReap meteorological visualization system – a quite outdated and proprietary system. A new visualization system will be implemented (COROBOR-MESSIR) until the end of 2020.

- A rolling image products archive of 3 months on an Intranet server is available through a web browser on the Intranet, while a subset is archived on the main storage system offering ftp access.

- There is a growing demand for satellite products in general and for NWCSAF products in particular, as well as for an easier and faster access to these data.

Requirements

Our group has been looking at a number of available visualization tools, which would:

Be easy to implement in an operational environment.

Allow visualization of data in hdf5/netCDF formats (thus eliminating the need for exporting data in other formats for visualization – e.g. tiff for nexReap).

Permit overlaying the displayed images with meteorological fields (e.g. NWP data).

Eliminate multiple automatic/manual ftp transfers to the visualization workstation – by accessing data directly from a single dedicated server.

Allow intranet /extranet access.

ADAGUC presentation

In this respect, the ADAGUC (Atmospheric Data Access for the Geospatial User Community) system – developed by KNMI – has been selected and tested at NMA. This presentation describes our experience installing and using ADAGUC in an operational environment.

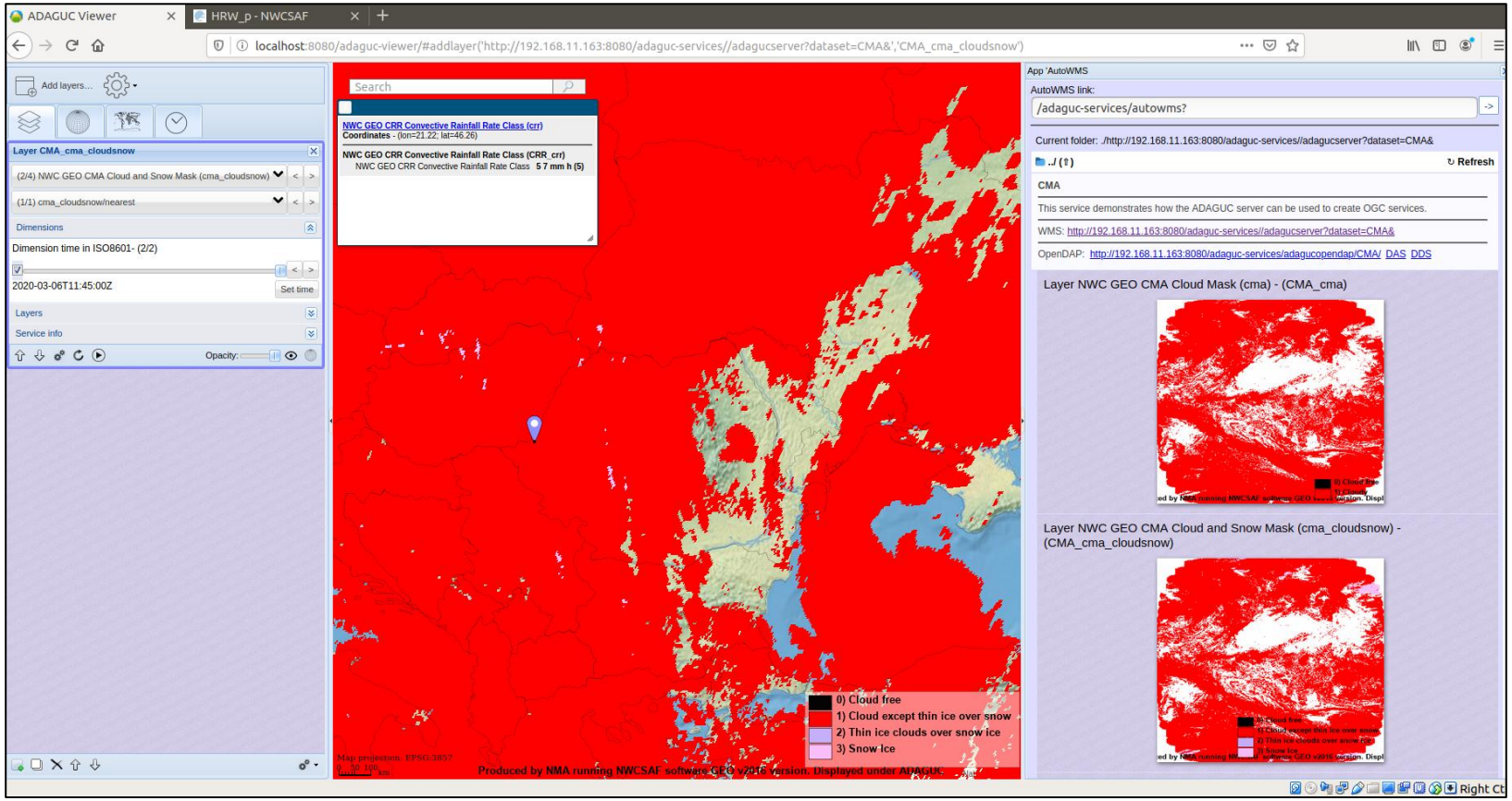
http://adaguc.knmi.nl

Atmospheric data access for the geospatial user community

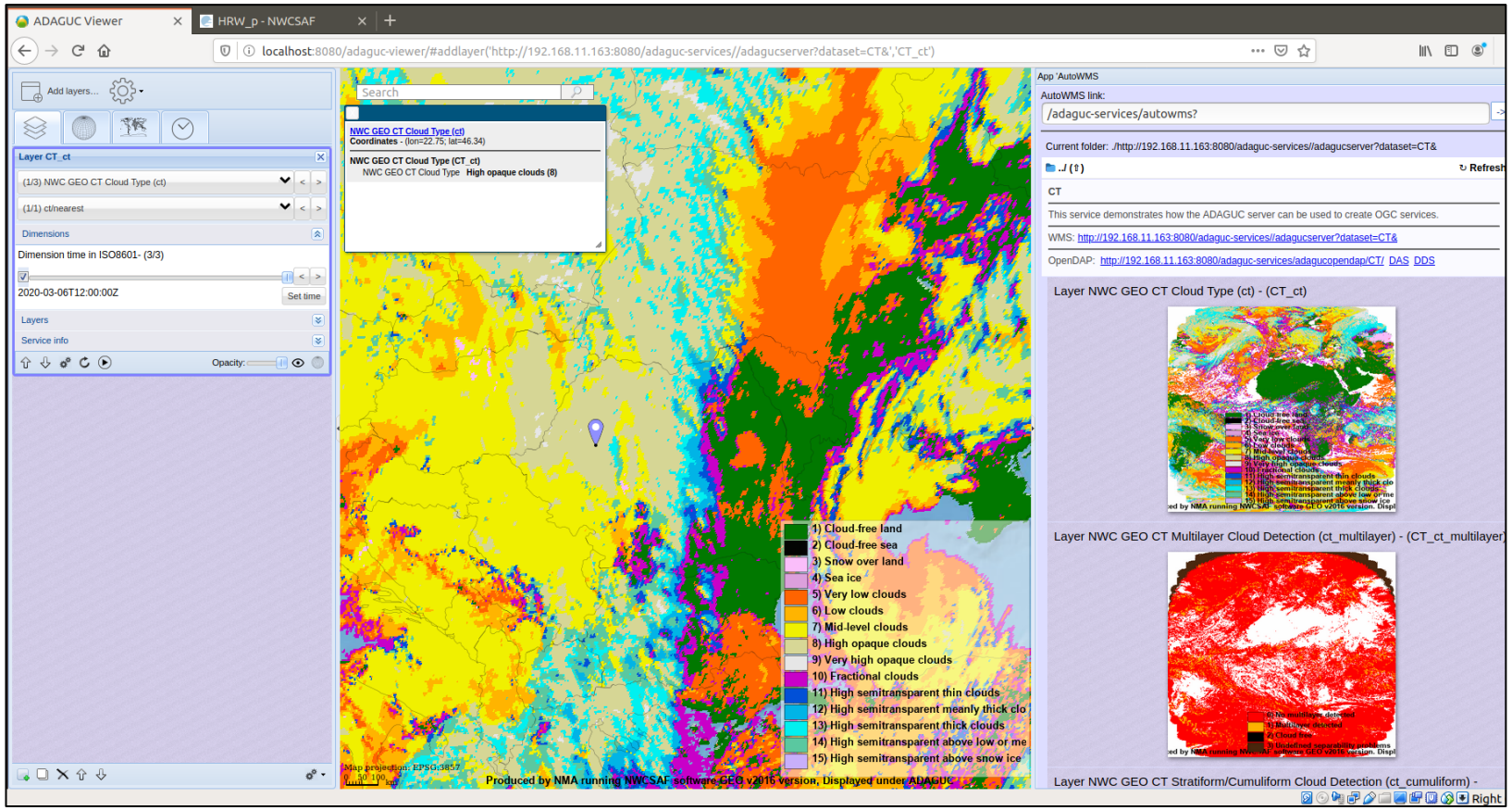
ADAGUC and NWCSAF GEO products

- ADAGUC can visualise a number of data types from data in NetCDF datafiles (NetCDF3 and NetCDF4). Data can also be read from some types of HDF5 files.
- With the great help of Llorenç Lliso (AEMET) the NWCSAF2ADAGUC suite (developed by AEMET) was installed and configured in order to read NWC GEO output products and convert them to be compatible with ADAGUC.

ADAGUC Viewer and NWCSAF GEO Cloud Mask

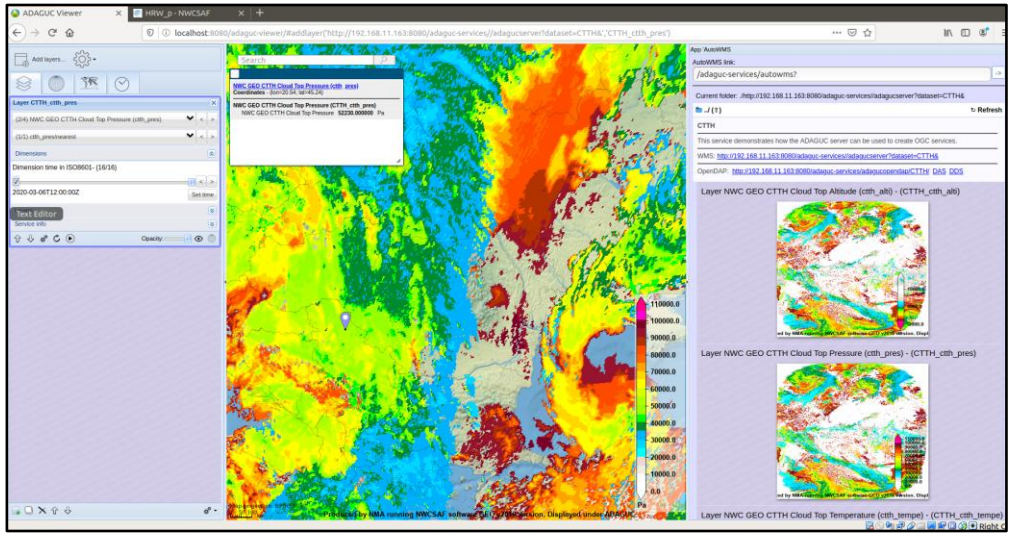


ADAGUC Viewer and NWCSAF GEO Cloud Type

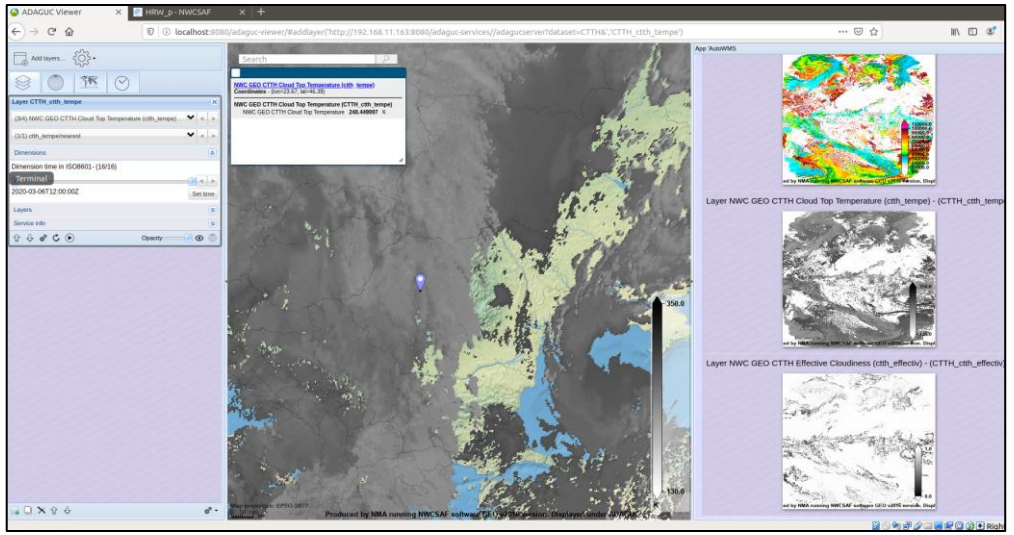


ADAGUC Viewer and NWCSAF GEO CTTH

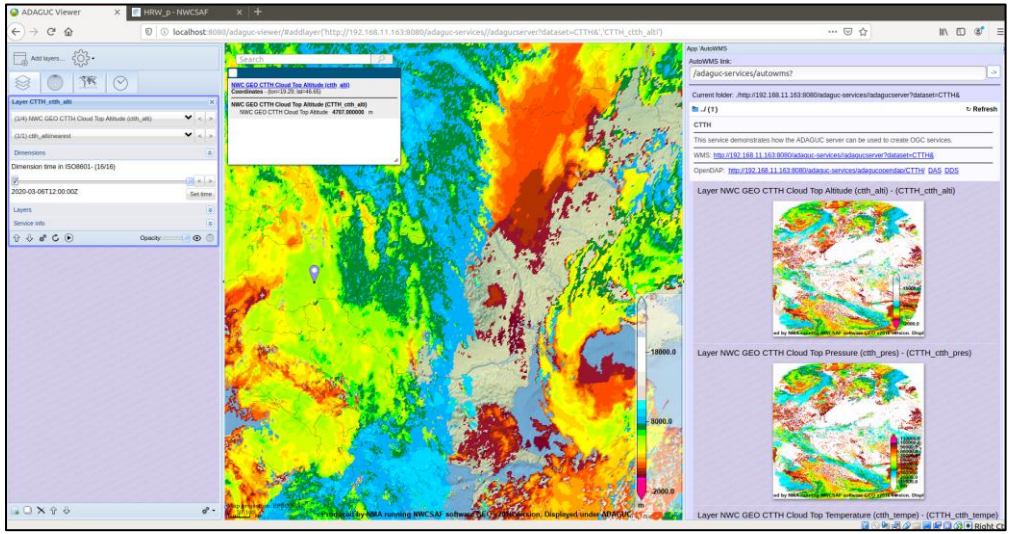
Cloud Top Pressure



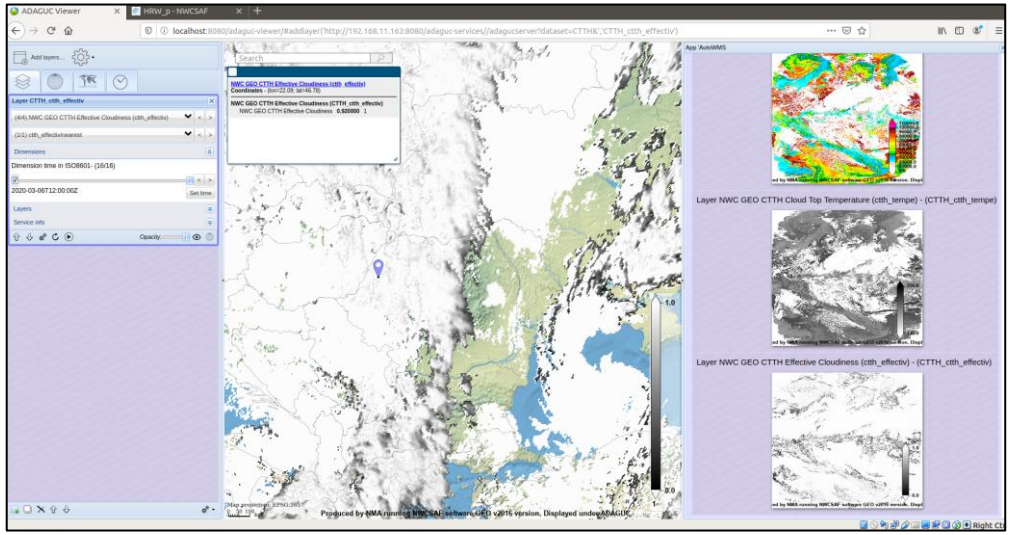
Cloud Top Temperature



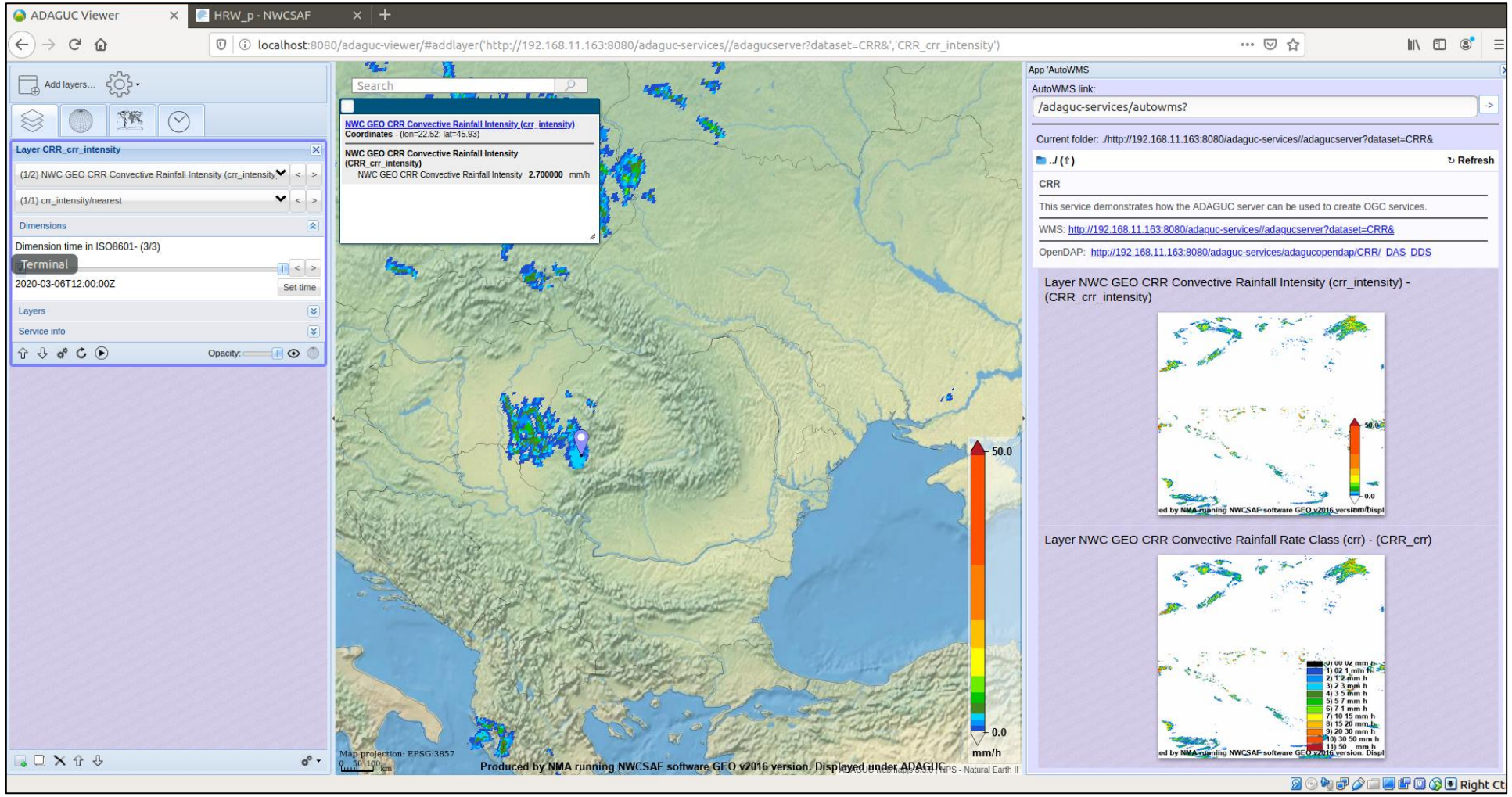
Cloud Top Altitude



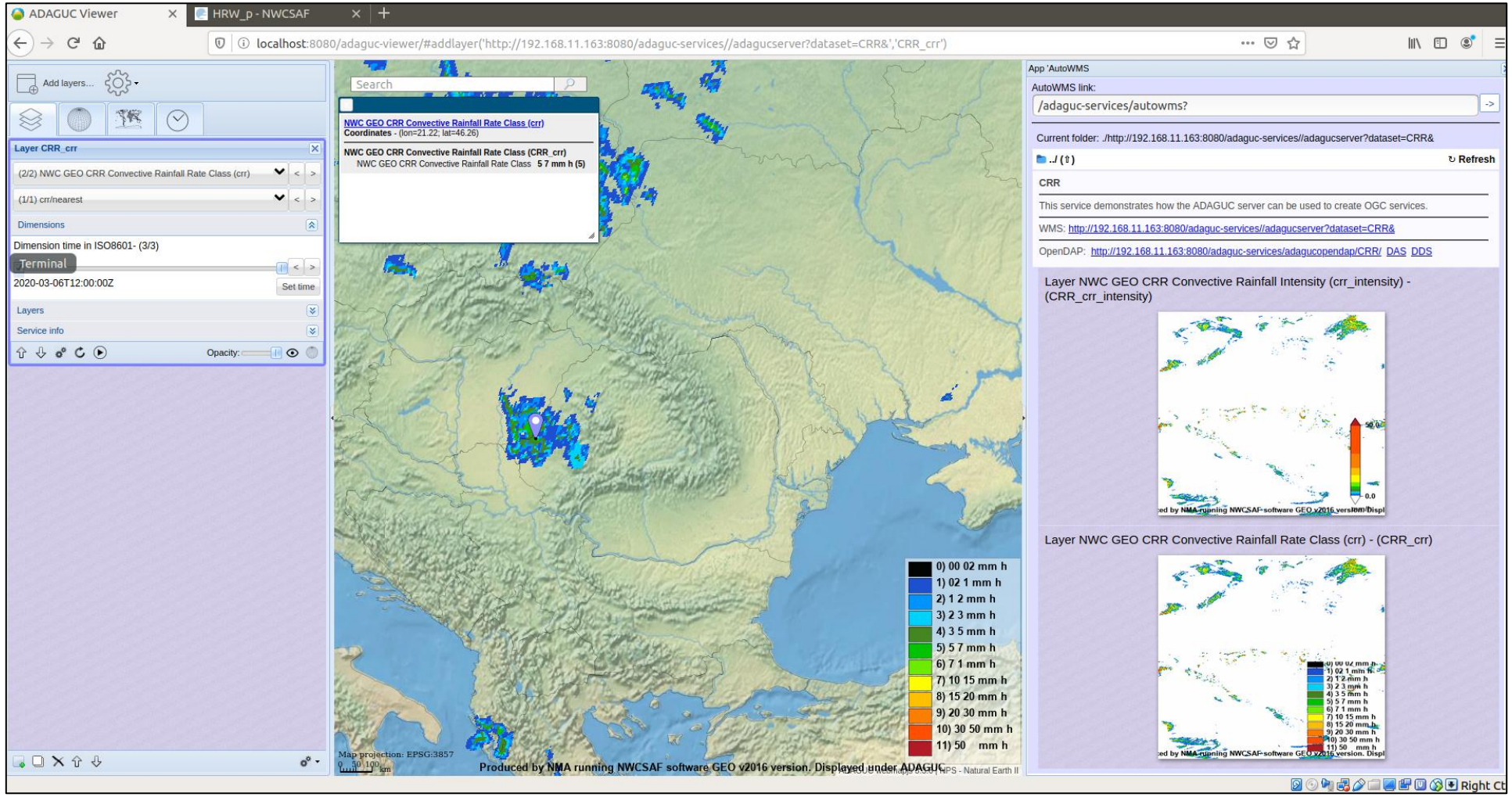
Cloud Top Effective Cloudiness



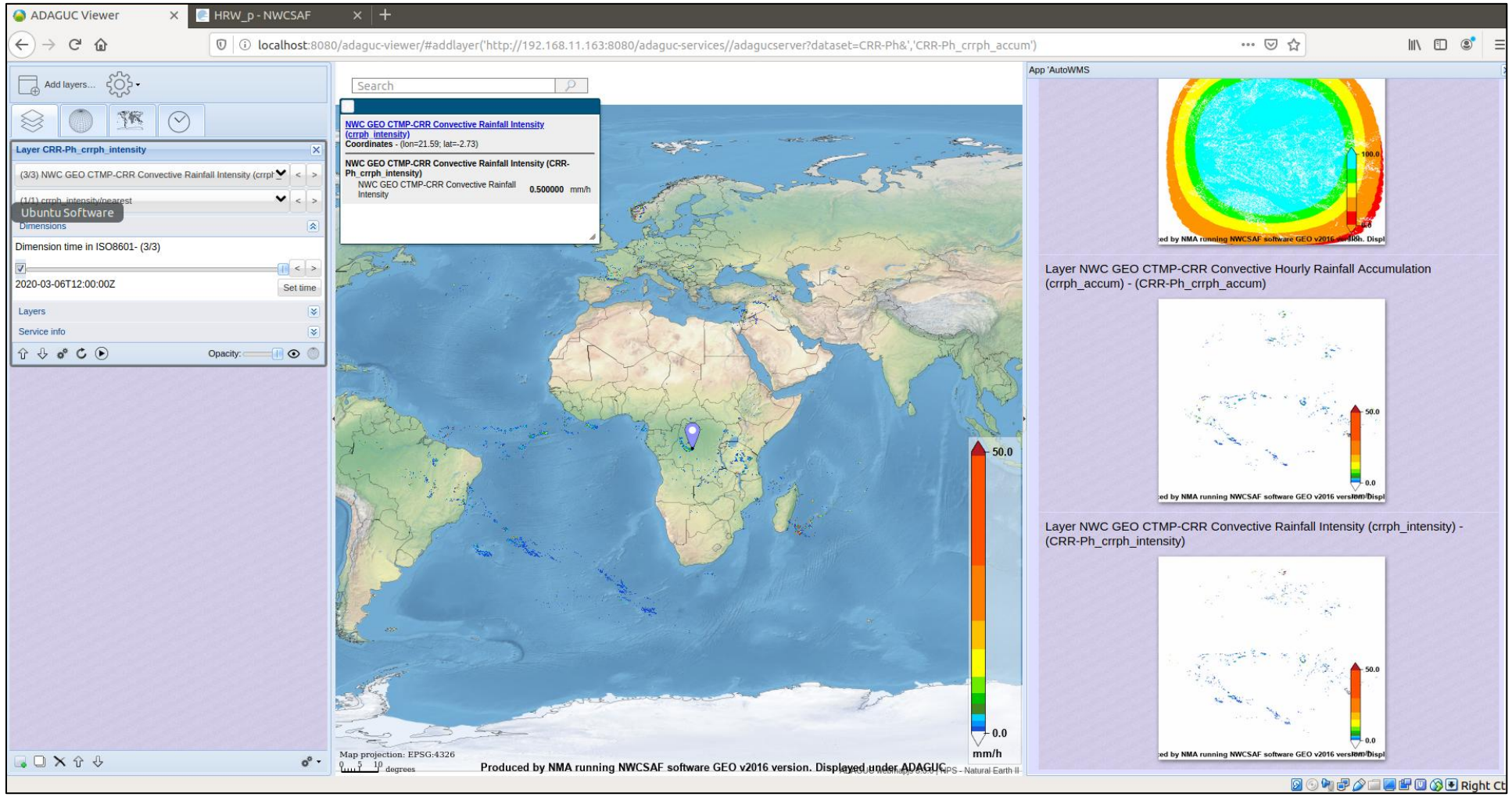
ADAGUC Viewer and NWCSAF GEO CRR Intensity



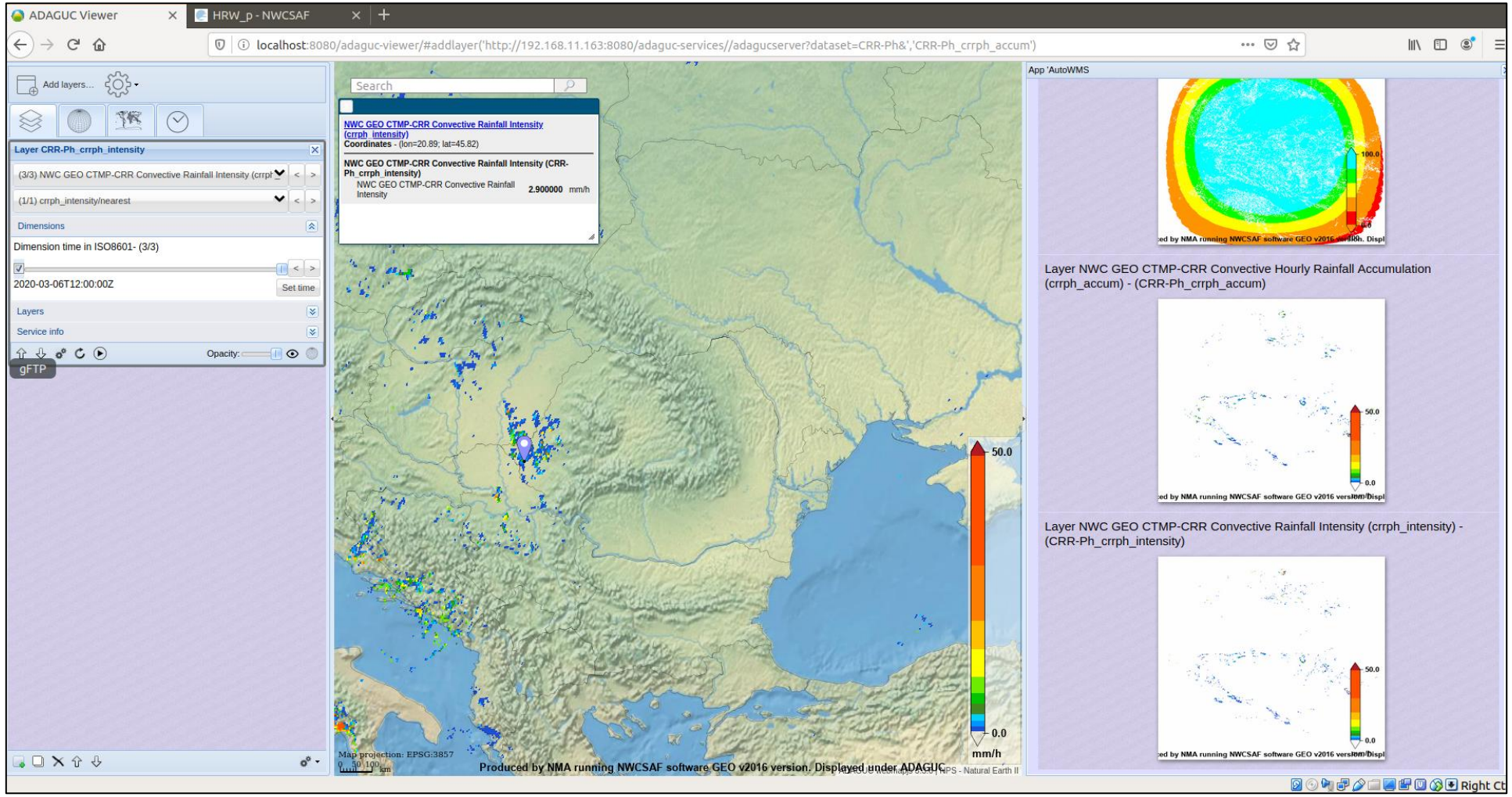
ADAGUC Viewer and NWCSAF GEO CRR Class



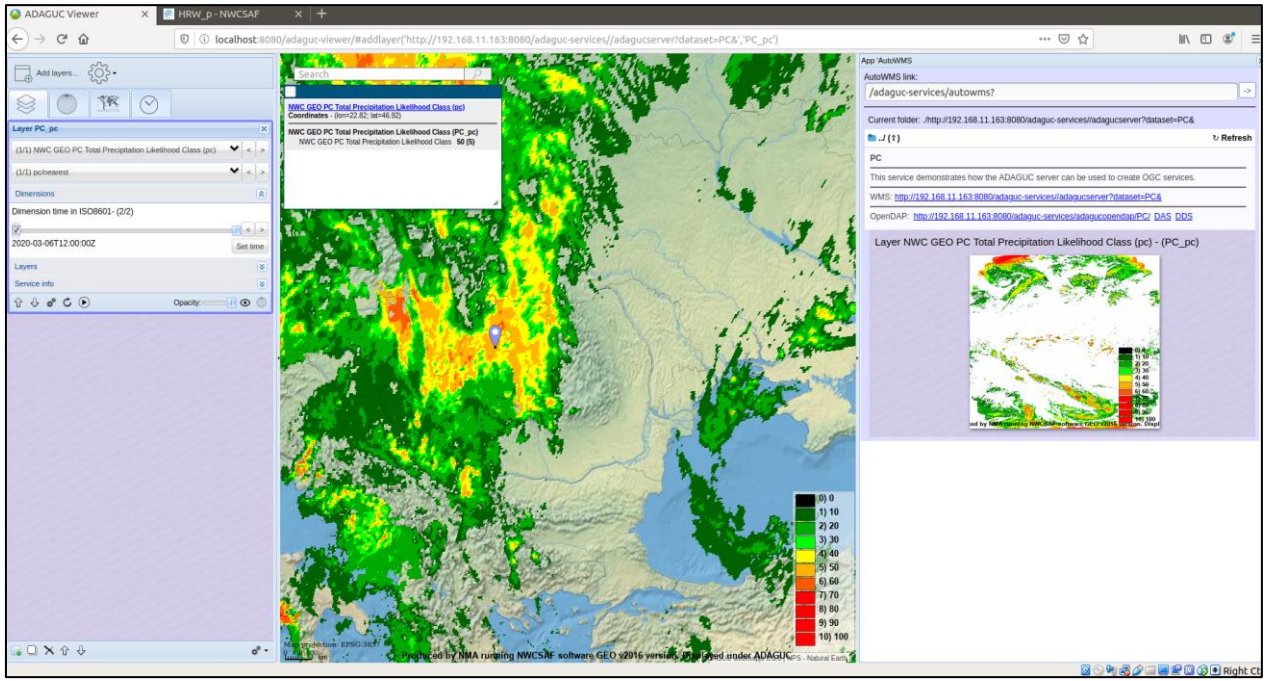
ADAGUC Viewer and NWCSAF GEO CRR-Ph Intensity



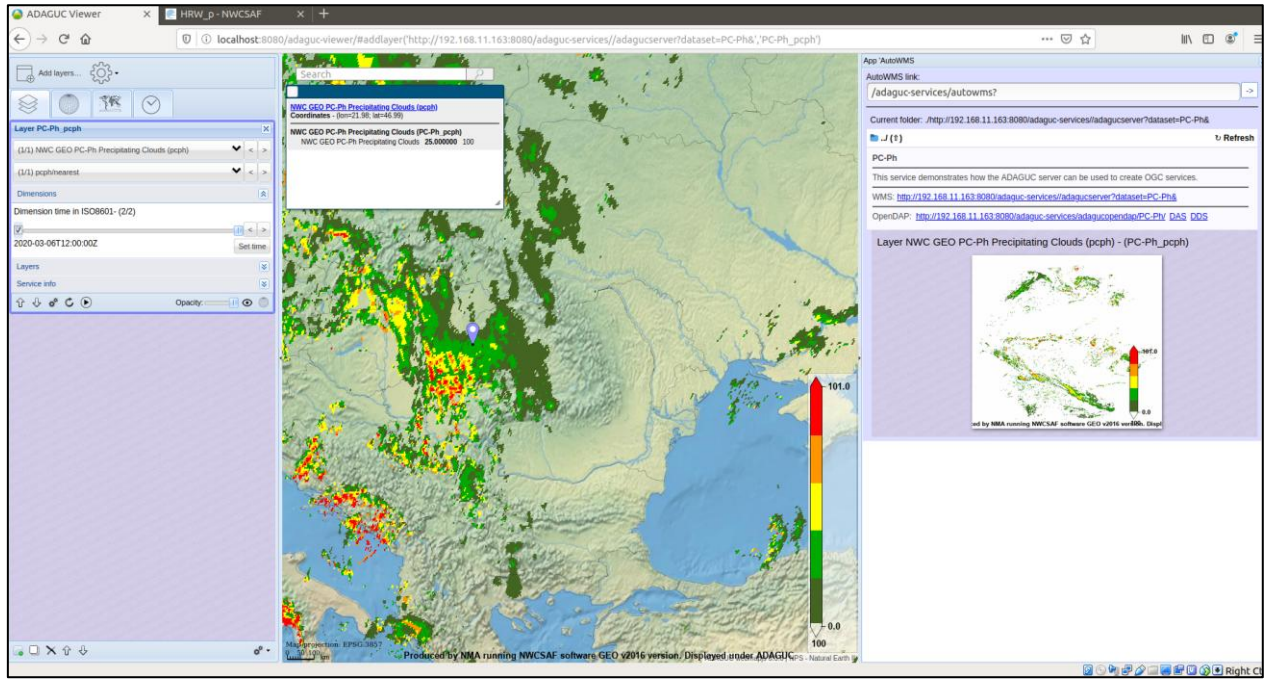
ADAGUC Viewer and NWCSAF GEO CRR-Ph Intensity



ADAGUC Viewer and NWCSAF GEO Precipitating Clouds

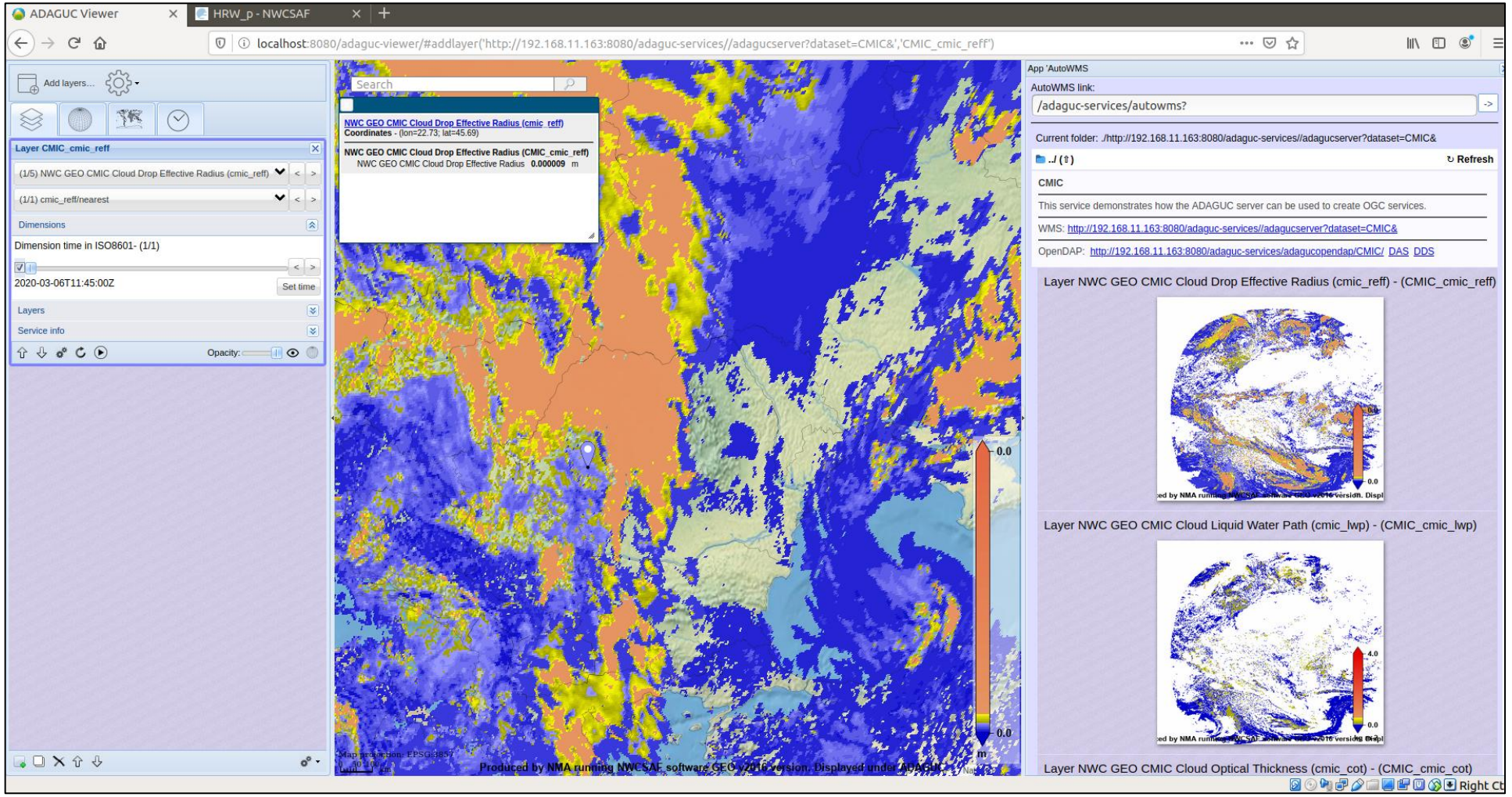


Precipitating Clouds

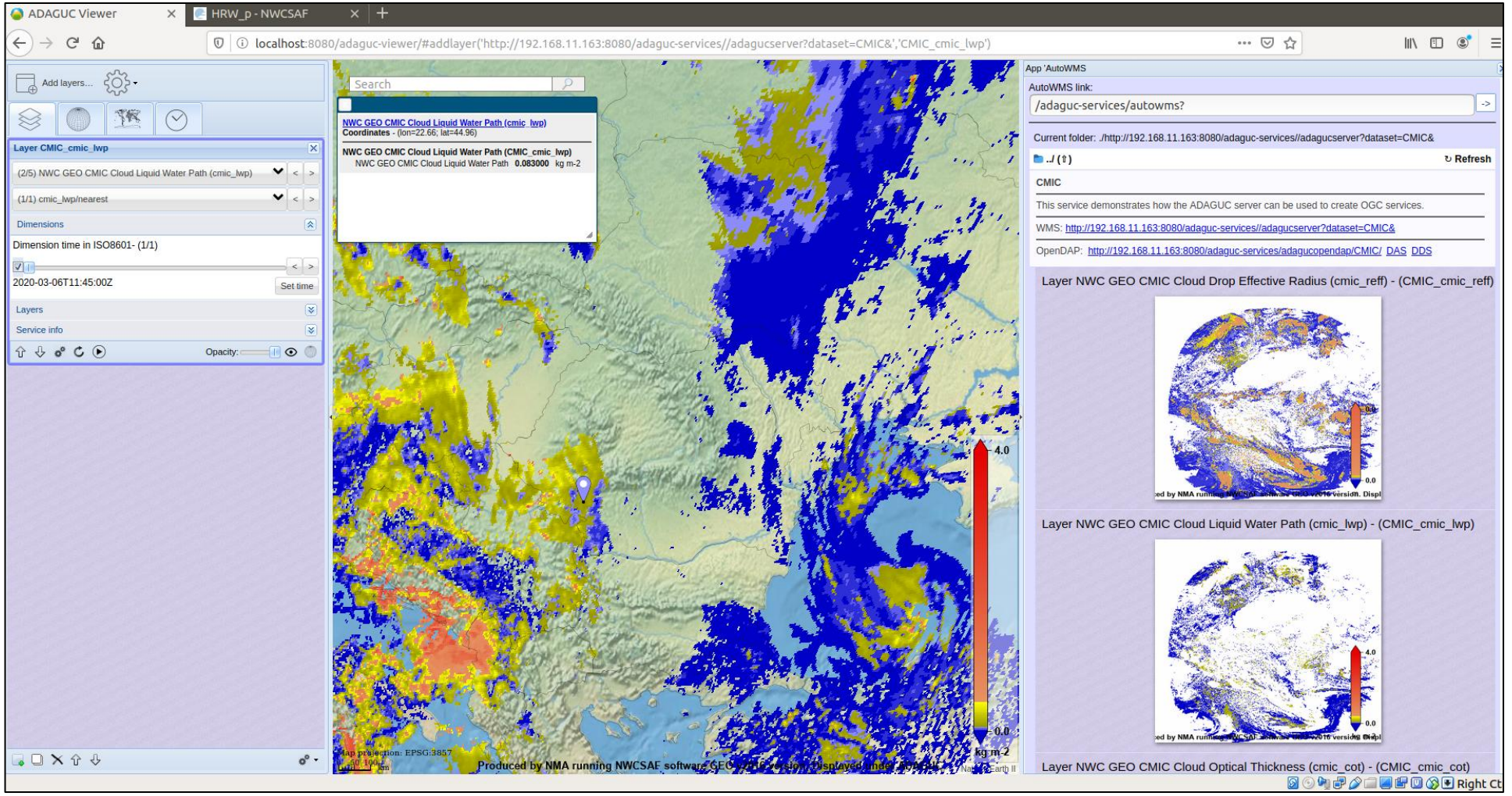


Precipitating Clouds based on Cloud Physical Properties

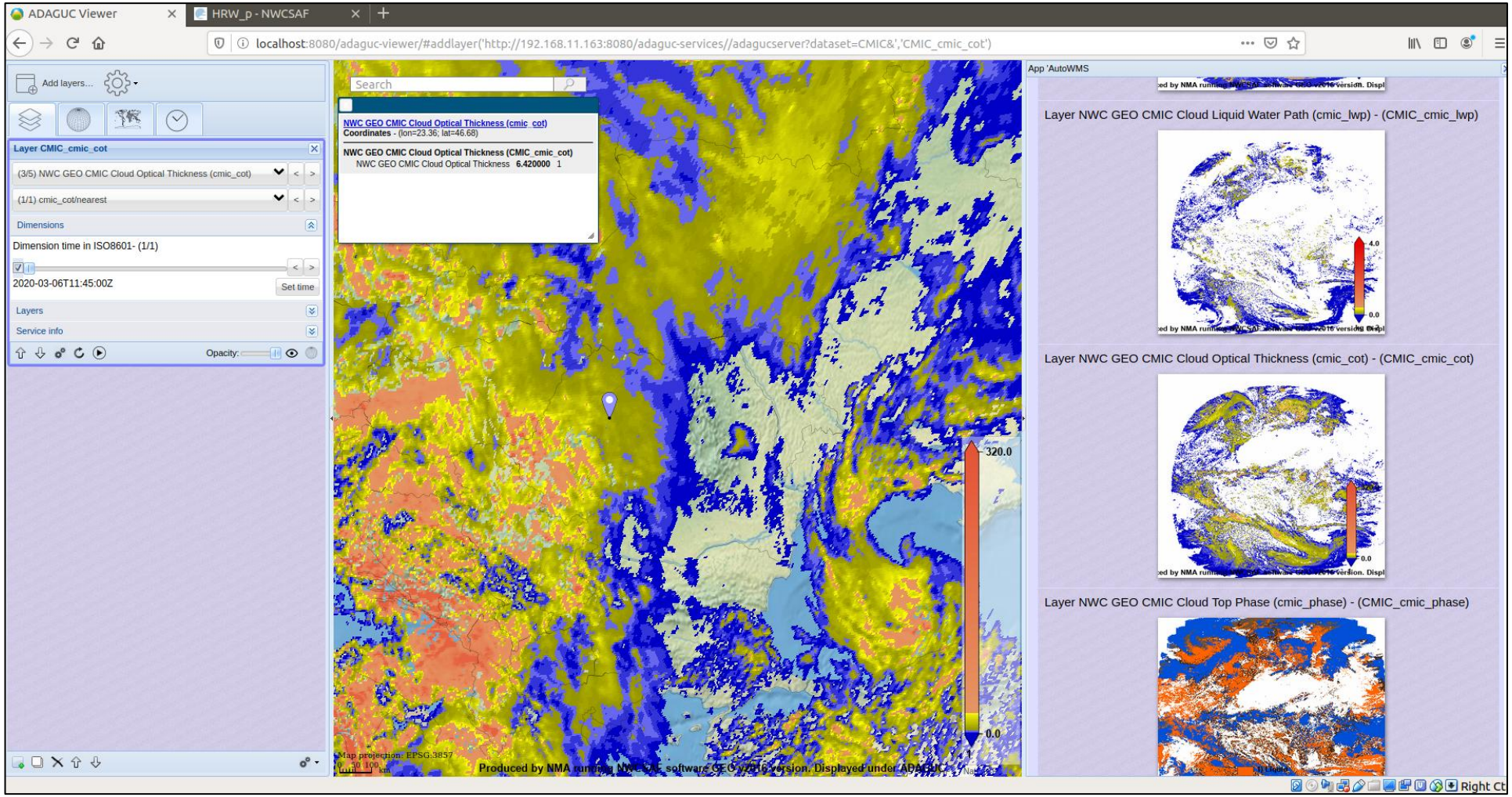
ADAGUC Viewer and NWCSAF GEO CMIC Cloud Drop Effective Radius



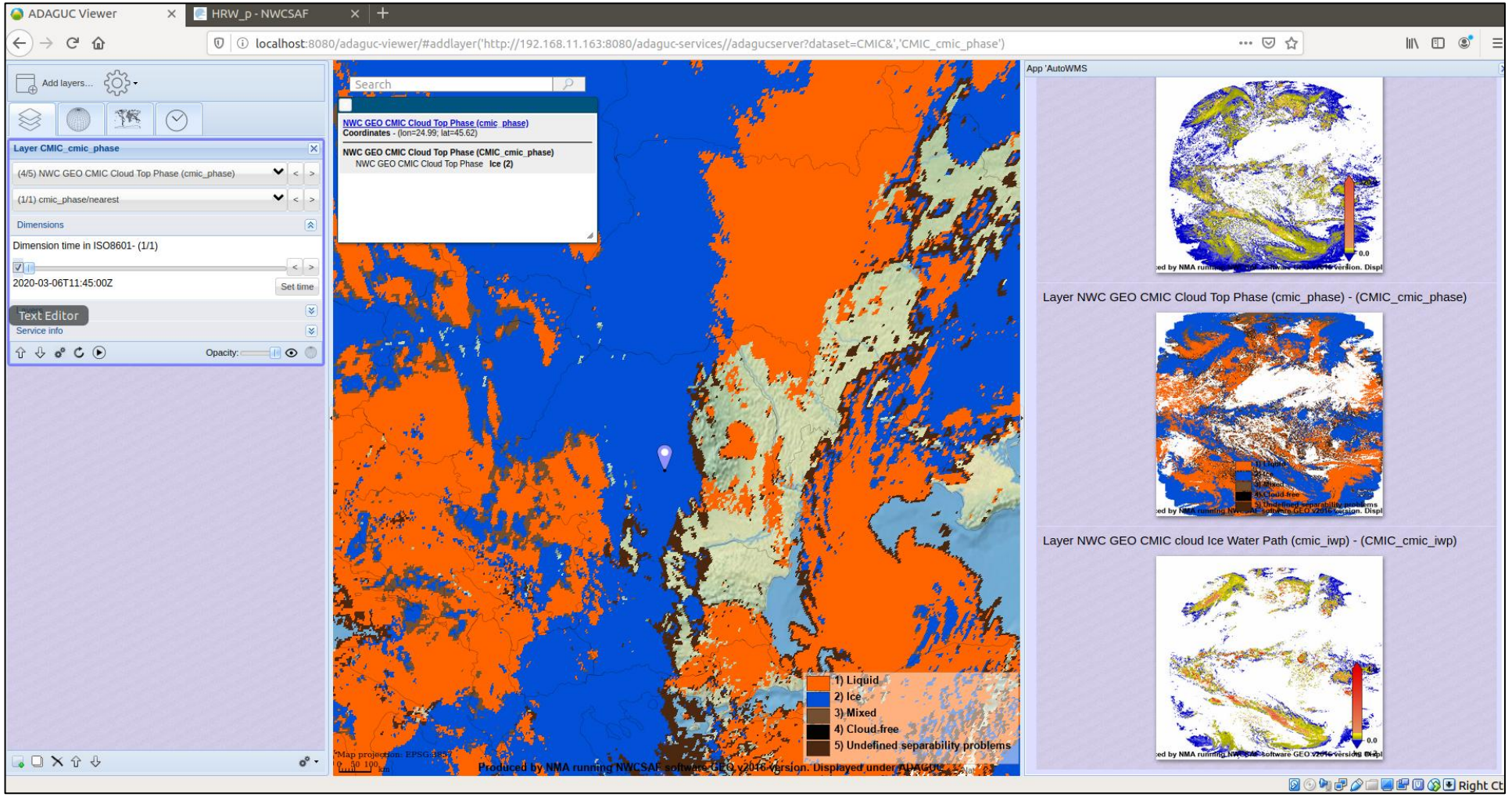
ADAGUC Viewer and NWCSAF GEO CMIC Cloud Liquid Water Path



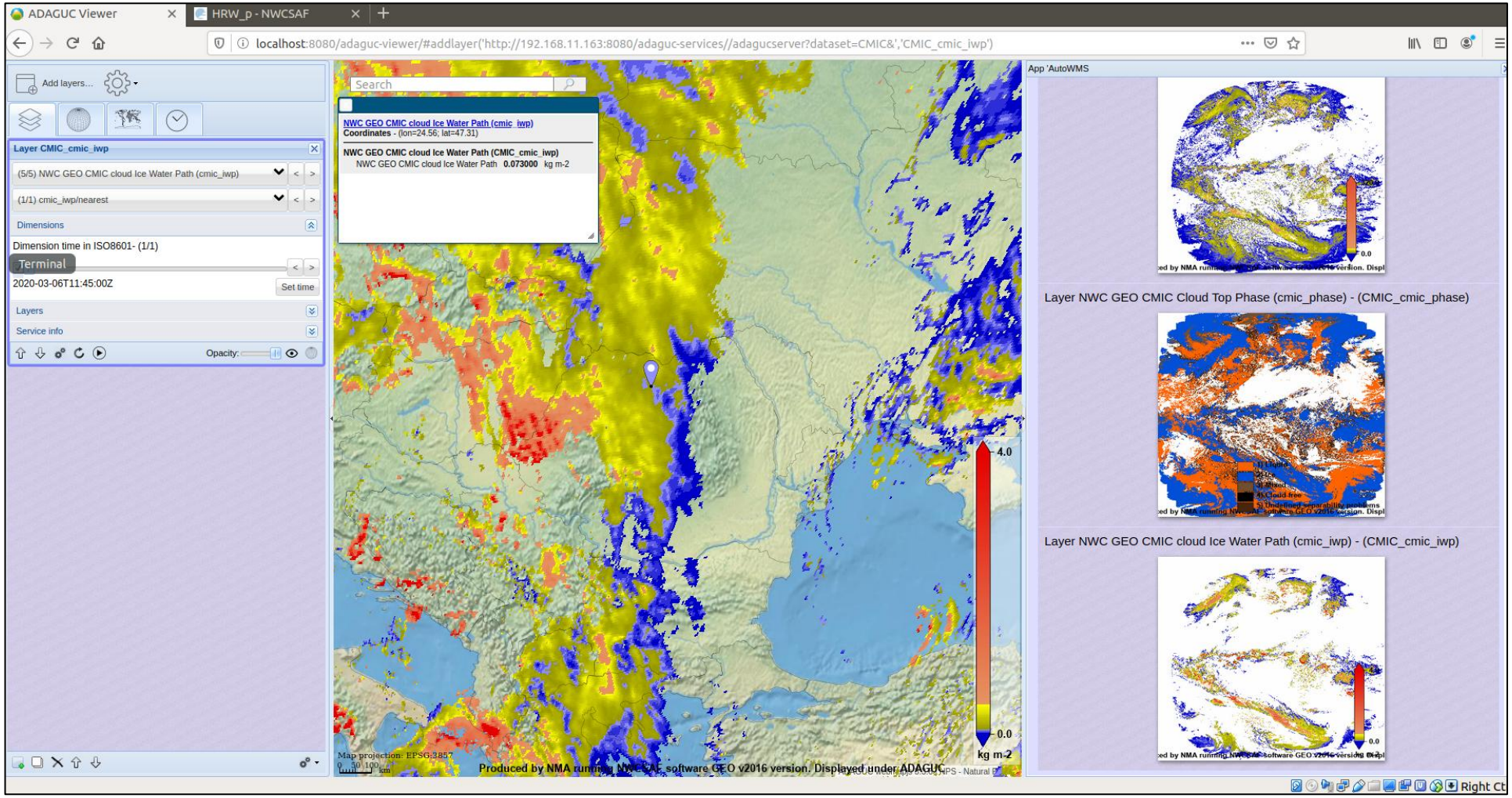
ADAGUC Viewer and NWCSAF GEO CMIC Cloud Optical Thickness



ADAGUC Viewer and NWCSAF GEO CMIC Cloud Top Phase



ADAGUC Viewer and NWCSAF GEO CMIC Cloud Ice Water Path



Conclusions

- ADAGUC server and viewer were easy to install and configure
- NWCSAF2ADAGUC suite was also easy to install/configure/run
- ADAGUC Server/Viewer eliminate multiple automatic/manual ftp transfers to the visualization workstation – positive feedback from our forecasters.

Thank you for your attention!