MPLNET and GALION

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# MPLNET

The NASA Micro Pulse Lidar Network (MPLNET) is a network of backscatter lidars placed at key sites in the Aerosol Robotic Network (AERONET). The data set began in 1999 and continues to current, with plans to support operations at least thru 2030. The network is composed of sites distributed globally and made up of both NASA owned and partner owned MPL lidars (commercially available).

The MPLNET data center provides archival services for all MPLNET calibration and operational data, both incoming raw data files and processed operational products. The data center houses a relational database of network instrument and site information. The data center also provides all processing code needed to produce our operational data products, perform calibrations, and perform data quality inspections.

The MPLNET data center provides access to browse imagery and serves data products to our user community. The data center provides near real time (NRT) services, with all Level 1 products available in < 2 hours.

The MPLNET data center provides access to older Version 2 MPLNET products, with over 44,000 days of data available. MPLNET Version 3 development was recently completed, and reprocessing of all data from 1999 to current (73 sites) began in September 2019. The Version 3 products will be available on our webserver before end of 2019.

# GALION

The GAW Aerosol Lidar Observation Network (GALION) is a network of lidar networks composed of the:

The NASA Micro Pulse Lidar Network (MPLNET)

European Aerosol Research Lidar Network (EARLINET)

Asian Dust and Aerosol Lidar Observation Network (AD-NET)

Latin America Lidar Network (LALINET)

NOAA Cooperative Remote Sensing Science & Technology Center (CREST)

The Network for the Detection of Atmospheric Composition Change (NDACC)

Each network maintains its own data center. The most advanced are MPLNET, EARLINET, NDACC, and ADNET.

The current plan is to provide a central GALION web entrance from the GAW website, with two primary nodes located in Europe (at EARLINET) and in the US (using MPLNET data center as a foundation). These will provide identical metadata and discovery information for GALION, including a common site database. This site database will be used to provide routine updates to GAWSIS.

Status: Prior to beginning work on the harmonized metadata service between Europe and the US, a US GALION data center will be built at NASA as a VM on the same cluster hosting MPLNET. MPLNET data center structure will be used as a foundation to build the US GALION node. The US GALION node will host MPLNET and new access to North American lidar data from the EPA PAMS ceilometer network and lidar systems deployed from the University of Wisconsin. Work on the ceilometer network has already begun.