ARES PROJECT: ACCESS TO SOLAR MEASUREMENTS NETWORK

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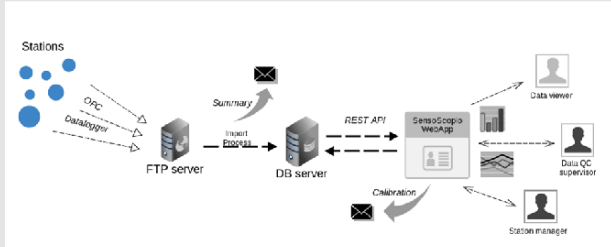Ctra. de Senés km. 4.5, 04200 Tabernas (España), +34 950 277 619

The objective of the ARES Project is to provide access to the solar radiation data recorded in distributed meteorological stations, using a web platform and through the definition of standards for the solar radiation data management. Thus, the homogenization of procedures as: data acquisition, quality control, storage and treatment, are included in the objectives.

The starting point of this initiative is a collaboration between several CIEMAT Divisions (CETA-Centro Extremeño de Tecnologías Avanzadas, Renewable Energies and PSA-Plataforma Solar de Almería) with the Qualification Department of the DLR-Deutsches Zentrum für Luft- und Raumfahrt. This collaboration is been developed in the context of the DNICast Project, a EU Project with the objective of improving the solar radiation forecasting in high resolution and time frequency.

Beyond the developments in the context of the DNICast, the ARES Project will try to set up a tool that could be extended to similar measurements stations focused in solar radiation.

ARES will aim to access to solar radiation data with the warranty of all the data will have the similar: data acquisition procedures (in those cases that are possible), metadata, storage structure, quality control procedures, time stamp checks and validation treatments. For this purpose, a software for the management and operation of measurements networks developed by CETA is been adapting to the ARES needs.

ARES PROJECT: ACCESS TO SOLAR RADIATION DATA

OBJECTIVE

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INTRODUCTION

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AREAS OF WORK

1. OPERATION AND MAINTENANCE

1.1 Metadata collection.

1.2 Maintenance (daily, weekly and annual works including calibrations).

1.3 Automatic data acquisition.

2. DATA BASE

2.1 Design and implementation

2.2 QC and timestamp check
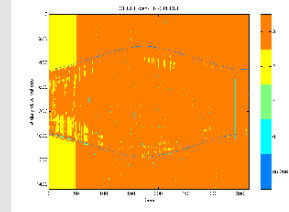
2.3 Validation procedures

Hourly, daily and monthly sums (gap filling considerations):
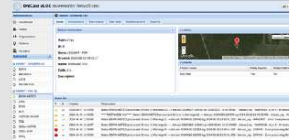
- 50% of observations in the hour period.
- <1 hourly hole at day, when $\alpha > 5°$ will be interpolated.
- <4 daily holes at month, will be substituted by the day closed to the monthly mean.

3. WEB APPLICATION

3.1 Platform administration

3.2 Database administration

3.3 Defined queries

Access to data by selection: station, row data, QC data, validated data, time periods, variables, time frequency, …

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