

ARES PROJECT: ACCESS TO SOLAR MEASUREMENTS NETWORK

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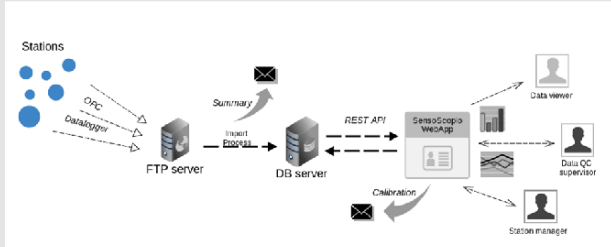
The objective of the ARES Project is to provide access to the solar radiation data recorded in distributed meteorological stations, using a web platform and through the definition of standards for the solar radiation data management. Thus, the homogenization of procedures as: data acquisition, quality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

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.

INTRODUCTION

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.

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ACKNOWLEDGEMENTS

Authors want to thanks to the European Union and mainly to the 7th Frame Program Project (<http://www.dnicast-project.net>) the partial support that have made possible to start this initiative. The Centro Extremeño de Tecnologías Avanzadas (CETA) creation has been co-funded by the Europe Regional Developing Funds (ERDF).

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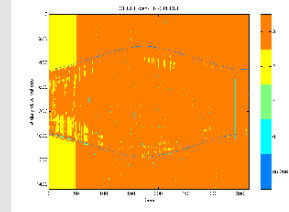
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2. DATA BASE

2.1 Design and implementation

2.2 QC and timestamp check



2.3 Validation procedures

Hourly, daily and monthly sums (gap filling considerations):

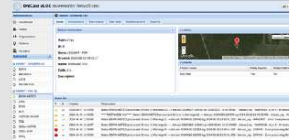
- 50% of observations in the hour period.
- <1 hourly hole at day, when $\alpha > 5^\circ$ will be interpolated.
- <4 daily holes at month, will be substituted by the day closed to the monthly mean.

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, ...

AREAS OF WORK

1. OPERATION AND MAINTENANCE

1.1 Metadata collection.

STATION METADATA					
Station	1111				
Code	FTM1				
Station name	1111				
General status	Active	Selected parameter	Active		
General metadata		Station	1111		
Station type	1111	Station type	1111		
Station location	1111	Station location	1111		
Station address	1111	Station address	1111		
Station contact	1111	Station contact	1111		
Station manager	1111	Station manager	1111		
Station calibration	1111	Station calibration	1111		
Station maintenance	1111	Station maintenance	1111		
Station QC	1111	Station QC	1111		
Station data	1111	Station data	1111		
Station QC supervisor	1111	Station QC supervisor	1111		
Station manager	1111	Station manager	1111		

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

STATION	DATE	DESCRIPTION	STATUS	USER
1111	2013-01-01	Calibration	Completed	Admin
1111	2013-01-01	Maintenance	Completed	Admin
1111	2013-01-01	QC	Completed	Admin
1111	2013-01-01	Data	Completed	Admin
1111	2013-01-01	QC supervisor	Completed	Admin
1111	2013-01-01	Manager	Completed	Admin

1.3 Automatic data acquisition.

