

Iberonesia

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Database Design

- Introduction
- System Description
 - Web Service
- Data Transmission
- Database
- Products Generation
- Quality Assurance

- Introduction
 - Personal Profile
 - Bentorey Hernández Cruz
 - Master in Research Techniques
 - Computer Science Engineer
 - University of La Laguna

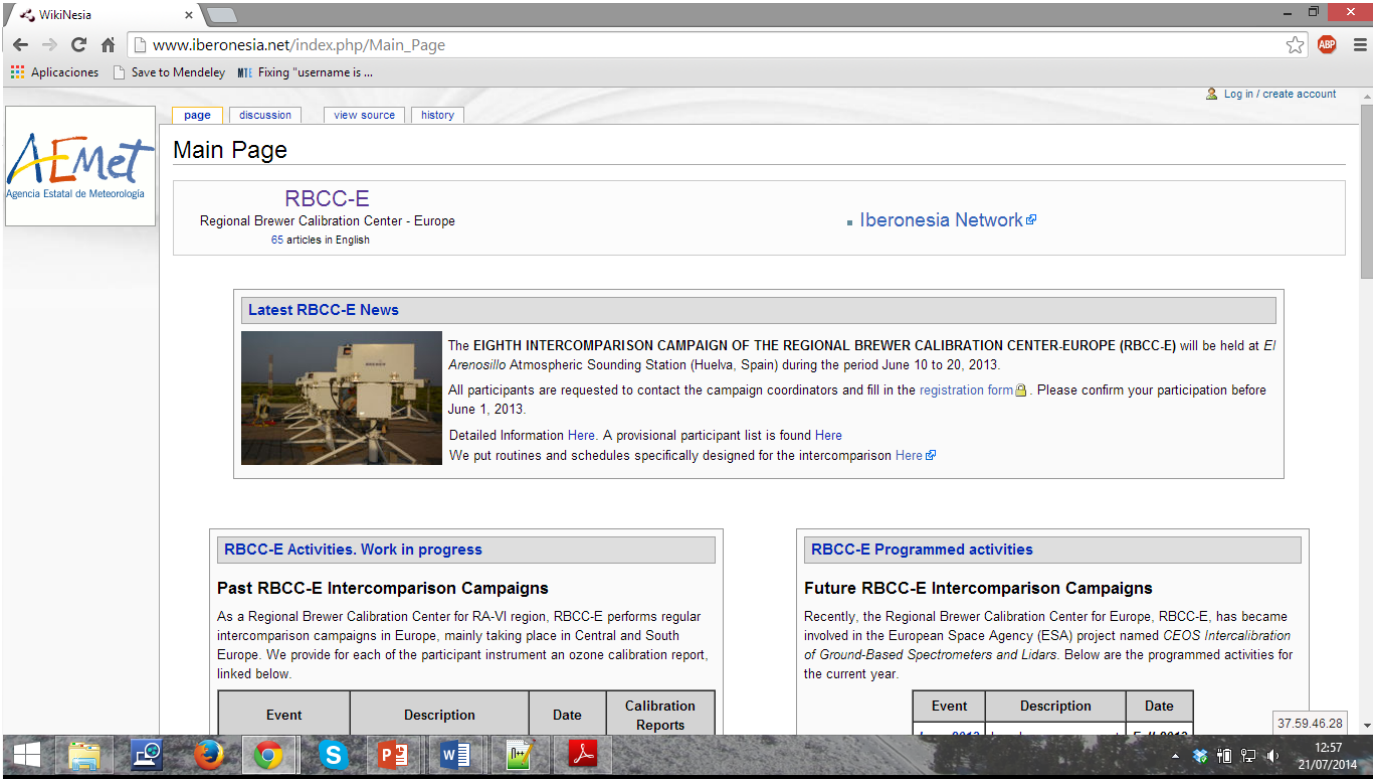
- Introduction

- Personal Profile

- Researcher: University of La Laguna
 - Earthcare ground-based spectrometer validation network
 - Webmaster: Eubrewnet.org
 - Colaborating: COST 1207

- Introduction
 - Network of Brewer Spectroradiometers
 - North Macaronesian and Iberian Peninsula
 - From 30W to 3E
 - From 28N to 44N

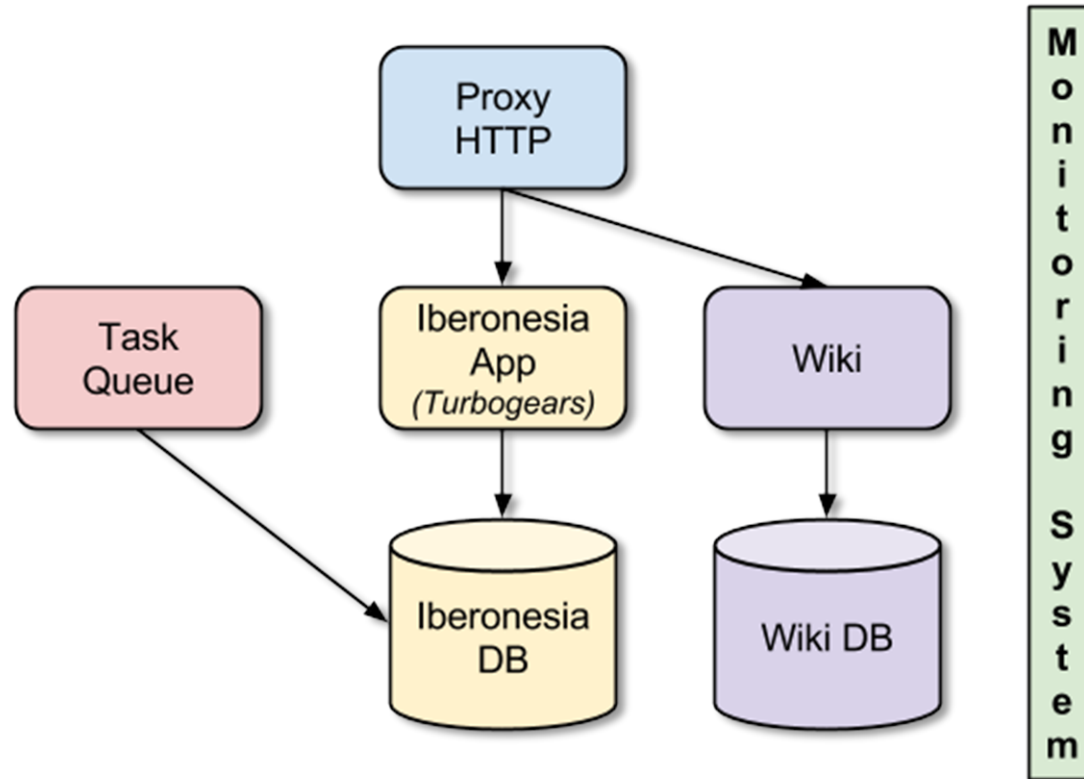
• Introduction



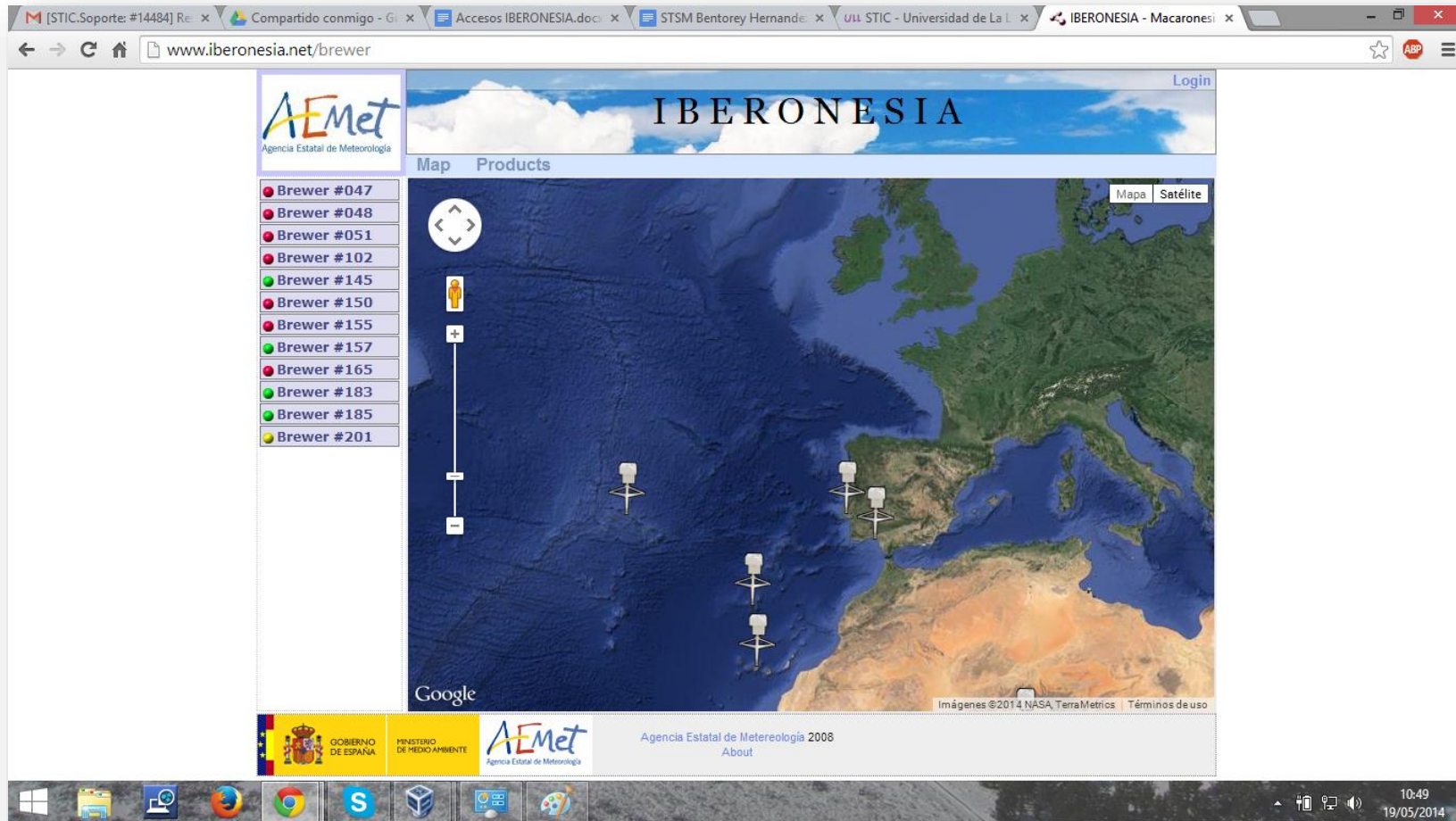
- System Description
 - Modules
 - Data Import
 - File schema and history
 - Processing
 - Database automated processing
 - Error Handling
 - Interactive process in case of error
 - Product Generation
 - Automated or in demand

- System Description
 - Cloud Server
 - Client - Server communication
 - OS
 - Server: Ubuntu server
 - Client: Python interpreter
 - Real Time (programmed tasks)

- Web service



- Web service



- Data Transmission
 - Data communication depending on the client
 - New files that are not stored in the server
 - Last change in the files
 - Change in a checksum based in md5
 - Only new information is sent to the server
 - Redundance of information
 - File System
 - Database

- Database
 - MySQL
 - Data issues:
 - Brewer Info
 - Code Error Messages
 - Log table
 - File status
 - Refresh information
 - Calibration and configuration
 - Neighborhood/Satellite Information

- Database
 - Brewer Table

TABLE `brewer_t`

Fields:

`description` (**varchar**(64)): Id, place, research center
`last_online` (**datetime**): Date of the last reception
`lat` and `long` (**float**): Position of the brewer
`active` (**tinyint**(4)): If the brewer is active

- Database
 - B File Table

TABLE `b_t`

Fields:

`brewerid` (**int**(11)): Number of the brewer

`date` (**date**): Corresponding day

`latitude` and

 `longitude` (**double**): Position extracted from the b file

`last` (**double**): Last value

- Database
 - Config Table

TABLE `config_t`

Fields:

```
`brewerid` (int(11)): Corresponding brewer  
`icf_id` (int(11)): Id of the corresponding icf in database  
`o3ds`, `o3zs`, `o3fz`, `o3fm`, `no2ds`, `no2zs`, `no2fm`,  
`o3ds_maxstd`, `o3zs_maxstd`, `o3fz_maxstd`, `o3fm_maxstd`,  
`no2ds_maxstd`, `no2zs_maxstd`...
```

- Database
 - File Status Table

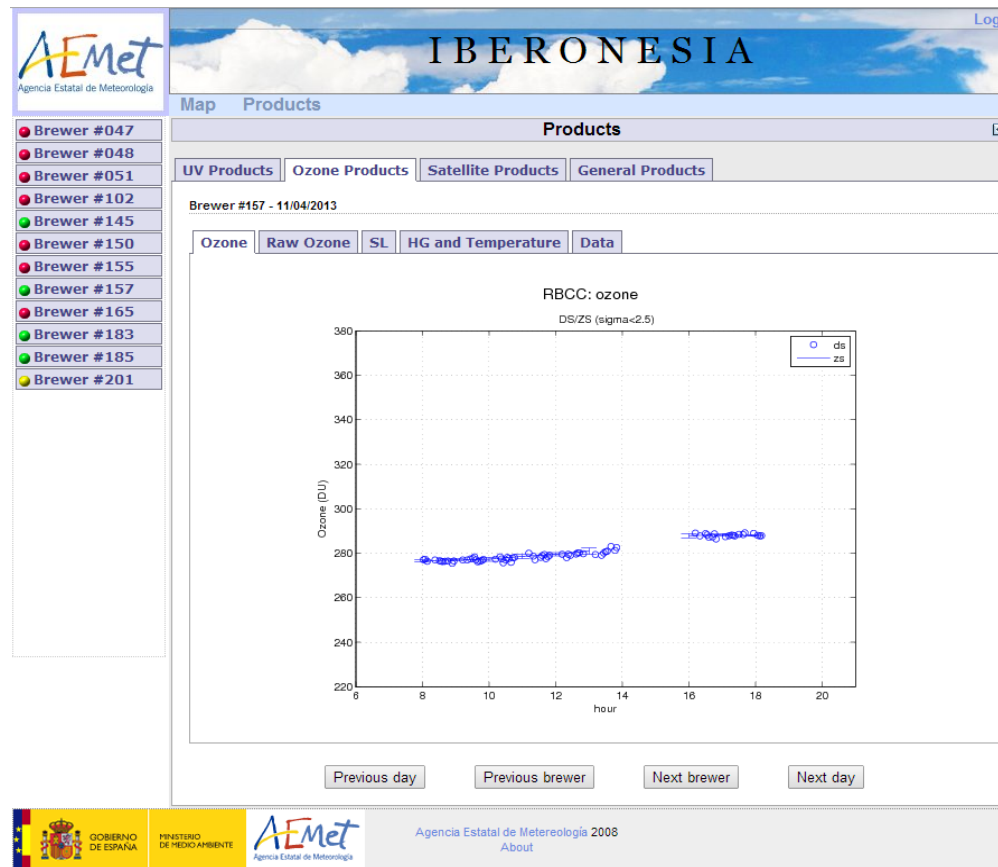
TABLE `file_status_t`

Fields:

```
`path` (varchar(255)): Absolute path to the file where is stored  
`text` (text): Message with the status  
`process_date` (date): When was processed (day)  
`process_time` (time): When was processed (hour)
```

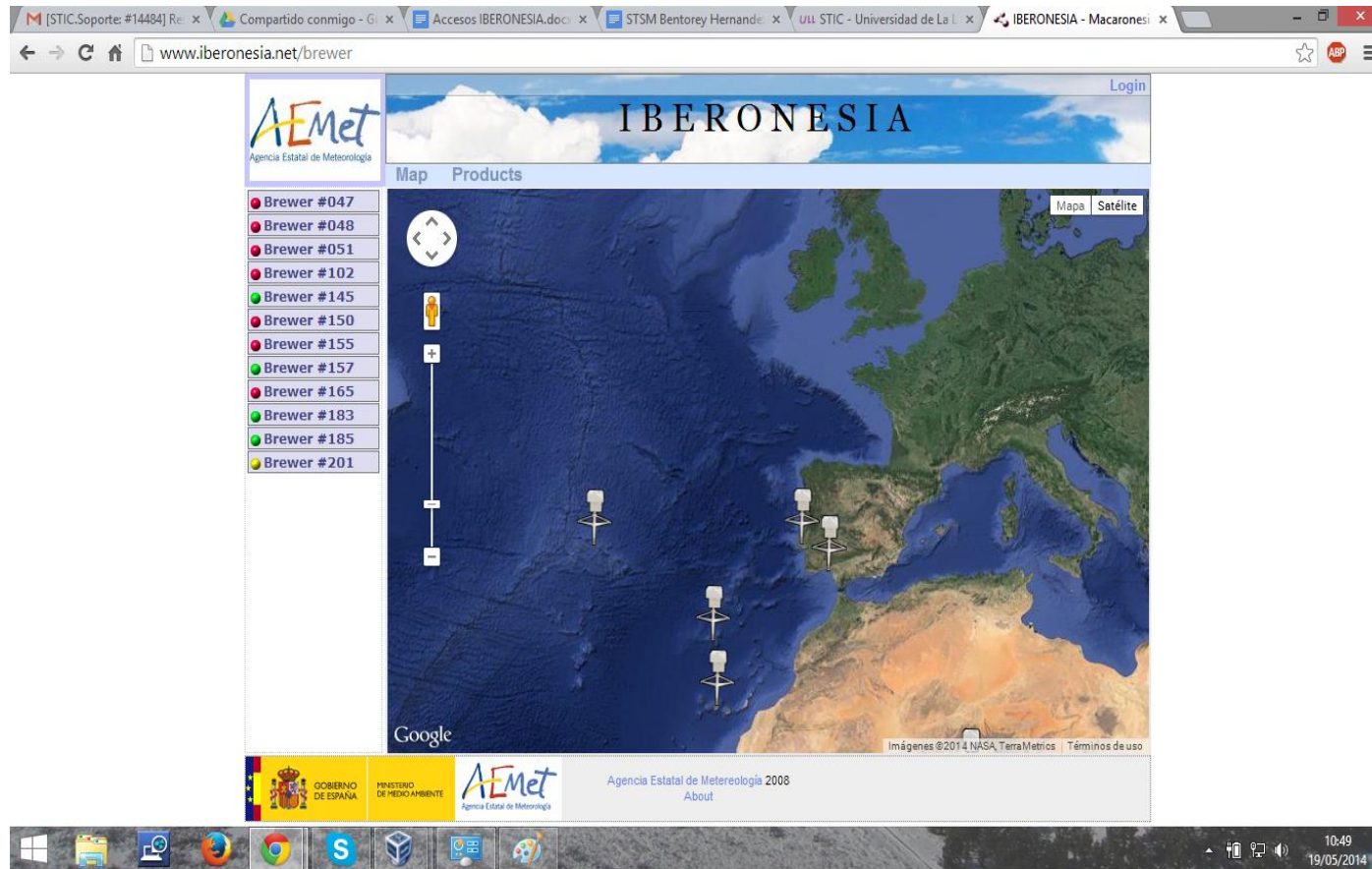

- Products Generation
 - Ozone and UV
 - Still under development
 - Several scripts in Matlab
 - Images accesible from the website

• Products Generation



- Quality Assurance
 - Real time connection control
 - Colour based tool
 - Green
 - Orange
 - Red
 - File status
 - Comprehensive message of fails:
 - Dates
 - Brewer
 - Type of message

- Quality Assurance



The screenshot shows a web browser window displaying the IBERONESIA website. The browser's address bar shows the URL www.iberonesia.net/brewer. The website header features the AEMet logo and the title "IBERONESIA". Below the header, there are navigation tabs for "Map" and "Products". On the left side, a list of Brewer instrument numbers is displayed, each with a colored dot: Brewer #047 (red), Brewer #048 (red), Brewer #051 (red), Brewer #102 (red), Brewer #145 (green), Brewer #150 (red), Brewer #155 (red), Brewer #157 (green), Brewer #165 (red), Brewer #183 (green), Brewer #185 (green), and Brewer #201 (yellow). The main content area is a satellite map of the Iberian Peninsula and surrounding regions, with several white pins indicating the locations of the Brewer instruments. The map includes navigation controls like a compass and zoom in/out buttons. At the bottom of the website, there are logos for the Government of Spain and the Ministry of Environment, along with the AEMet logo and the text "Agencia Estatal de Meteorología 2008 About". The Windows taskbar at the bottom shows various application icons and the system clock indicating the time 10:49 on 19/05/2014.

- Quality Assurance



The screenshot shows a web browser window with the URL www.iberonesia.net/brewer. The page features the AEMet logo and the title "IBERONESIA". A sidebar on the left lists various Brewer IDs from #047 to #201, each with a colored status indicator. The main content area is titled "Brewer #157" and includes tabs for "Status", "Brewer Information", "UV Index", and "Current Ozone Value". The "Brewer Information" tab is active, displaying the following data:

On-line Brewer Information 157	
Brewer ID:	157
Connection:	2
Last File:	B13914.157
Last measured value:	ds
Time since last measurement:	2014-05-19 11:52:13 GMT

Below this, a "STATUS" table shows:

ID	Code	Description
0	OK	File is OK

A "Messages" section contains several warning entries:

- WARNING : B13914.157 : line 12 : Unknown section 'b_hpscan'
- WARNING : B13914.157 : line 18 : Unknown section 'b_hgscan'
- WARNING : B13914.157 : line 22 : Unknown section 'b_reo3'
- WARNING : B13914.157 : line 82 : Unknown section 'b_summary'
- WARNING : B13914.157 : line 83 : Unknown section 'b_fv'
- WARNING : B13914.157 : line 319 : Unknown section 'b_dz'

The footer of the page includes the AEMet logo, the text "Agencia Estatal de Meteorología 2008", and an "About" link. The Windows taskbar at the bottom shows the system time as 12:35 on 19/05/2014.

Questions and Answers

Thank you for your attention