# OBSEA WEB: DESIGN AND IMPLEMENTATION

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*Abstract - In this paper we present the steps followed in order to do the design of the OBSEA project website, and also the technologies and mechanisms used to process and show the data acquired by the observatory. One of the main bases of our work plan was to take into account the destination public who the website is addressed to, both general public and scientists or engineers must find interesting contents. For the construction of this website we have used commercial programs and applications.*

## I. INTRODUCTION
Parallel to the completion of the OBSEA observatory development, we start the project of constructing its own website. We established two main objectives: serve as an information portal, where we would explain the objectives of the OBSEA project and its features and as a data source, where people could find the different data obtained by the observatory.

## II. WEBSITE DESIGN
When it comes to decide the main design of a website, you have to think about which kind of target it is addressed, including the information and services offered. In our case we have two different matters: we have to be able to inform everybody who is interested, or that has some curiosity about the sea environment or the climatic evolution, about the OBSEA, but we also have to make them curious about the technical part of the project.

In the other hand, we have scientists and engineers, concerned about the same matters as the rest, but from a different point of view. Scientists would like to count with the obtained data for their studies, while engineers will show interest in data about the infrastructure construction, instrumentation, materials and software components, data management, etc.

Due to this fact, we came up with a design combining the two points of view, serving as  an introduction for the great public and providing more interesting data for the specialized staff, all shown in a friendly, easy and intuitive environment.

## III. IMPLEMENTATION AND DATA MANAGEMENT
One of the most important sections of our website is the one that gives us access to the data obtained by different instruments installed in the observatory. Depending on what kind of data to treat, we apply different procedures:

 - Data sent by the CTD is completely numerical, and is received and stored in a MySQL database. From the website we can access this database, using the dynamic language PHP, obtain the last stored measures and show them on the screen, so the visitor is able to learn about the current sea conditions.

 - The sound captured by the hydrophone is shown in two different ways. Through an FTP connection to the data server, we get two files: an image and an audio file. The first one will have a chart with the sound data obtained in the last 15 seconds, while the second file will allow the users to listen to the sound fragment stored during that time.

 - Finally, the video captured by the webcam installed in the observatory is shown in real time. This image is sent by the webcam to the video server, which is the one who provides the streaming service to the users connected through the website.

## IV. CONCLUSIONS
The results of this project can be seen at the address www.obsea.es . The first step of the website creation has been finished, but we are still working to provide new sources of information and data services to our users. One of the most important improvements to be done is the implementation of different forms which will allow our users to make queries of data relative to specific time periods, and also the creation of tables and charts from those results.

*References*
*[1] www.obsea.es*
*[2] www.cdsarti.org*
*[3] www.melmakstudio.com*

# SECURING ON-THE-INSTRUMENT "PLUG AND WORK" DEVICE DRIVERS

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*Keywords – PUCK, plug-and-work, device driver, security*

In the MBARI "plug and work" approach, the use of different kinds of measurement instruments is facilitated by storing machine-readable device identification within the instrument. This identification can be used to retrieve an appropriate device driver – for example via a network connection. We present a solution for offline operation by automatically loading device driver code from the instrument to the host computer using the PUCK protocol. In this setting, it can obviously not be excluded that some person equips an instrument with malicious code and connects the spoiled instrument to the measurement host.

Since retrieval and execution of the driver code is performed without human interaction, the host would immediately load the malicious code and start executing it – with unforeseen damages to the measurement process. In our contribution, we propose as countermeasure to protect the byte code of the device driver by a digital signature. A valid digital signature guarantees both origin and integrity of the device driver code. After loading the code from the instrument's storage, the host checks the validity of the signature and verifies that the origin of the signature (e.g. the device driver's author) is known and trusted. In a case study, we used the Java Distributed Data Acquisition and Control framework that comes with minor overhead. However, an adaptation to other (especially Java based) frameworks should be very easy.