DRIFTER Web App Development Support

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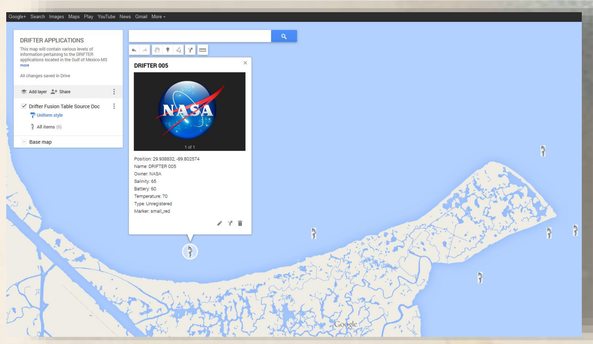
Introduction

During my 2015 internship at Stennis Space Center (SSC) I supported the development of a web-based tool to enable user interaction with a low-cost, environmental monitoring buoy called the DRIFTER. DRIFTERS are designed by SSC's Applied Science & Technology Projects branch and are used to measure parameters such as water temperature and salinity. Data collected by the buoys help verify measurements by NASA satellites, which contributes to NASA's mission to advance understanding of the Earth by developing technologies to improve the quality of life on our home planet.

Objectives

My main objective during this internship was to support the development of the DRIFTER by writing web-based software that allows the public to view and access data collected by the buoys. In addition, this software would enable DRIFTER owners to configure and control the devices.



The Django web application framework was used for rapid code development.

HTML5 and CSS3 define the functionality and layout of the display.

DRIFTER data displayed using Google Maps.

Gmail is used to send commands and retrieve data from DRIFTERs.

JavaScript and jQuery are used to make the site more interactive.

DRIFTER data is stored in Google Fusion Tables.

Outcomes

The DRIFTER buoy has great potential for environmental monitoring; however, it needs a powerful, intuitive interface to enable public use. I demonstrated the initial capabilities of a GUI that enables users to visually interact with DRIFTERs using a familiar interface based on Google Maps. This GUI allows people to locate and view the data collected by individual DRIFTERs.

Summary

The SSC Applied Science & Technology Projects branch continues to develop and apply cutting-edge instruments and software that enables the public to benefit from the investment the country makes in science and technology. This project demonstrates how NASA and Stennis Space Center are having an impact on daily life.

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