

# FOREST Federation of distributed data sources and Scientific Teams

Dr. Shane Maloney  
Paul Kiernan



## Introduction

FOREST is an ESA funded project which aims to improve the access to and use of Heliophysics data through a unified data description and centralised web access approach. The underlying advanced semantic data model describes not only the data itself but also how it should be visualised.

## Technology

FOREST will use state of the art technology to accomplish its goals. HTML 5 elements such as canvas allow the creation of rich interactive visualisations (movies of images, line plots for time series). JavaScript enhancements such as Asynchronous requests (AJAX) and web workers will be used to provide timely responses to user interaction.

## Data Model

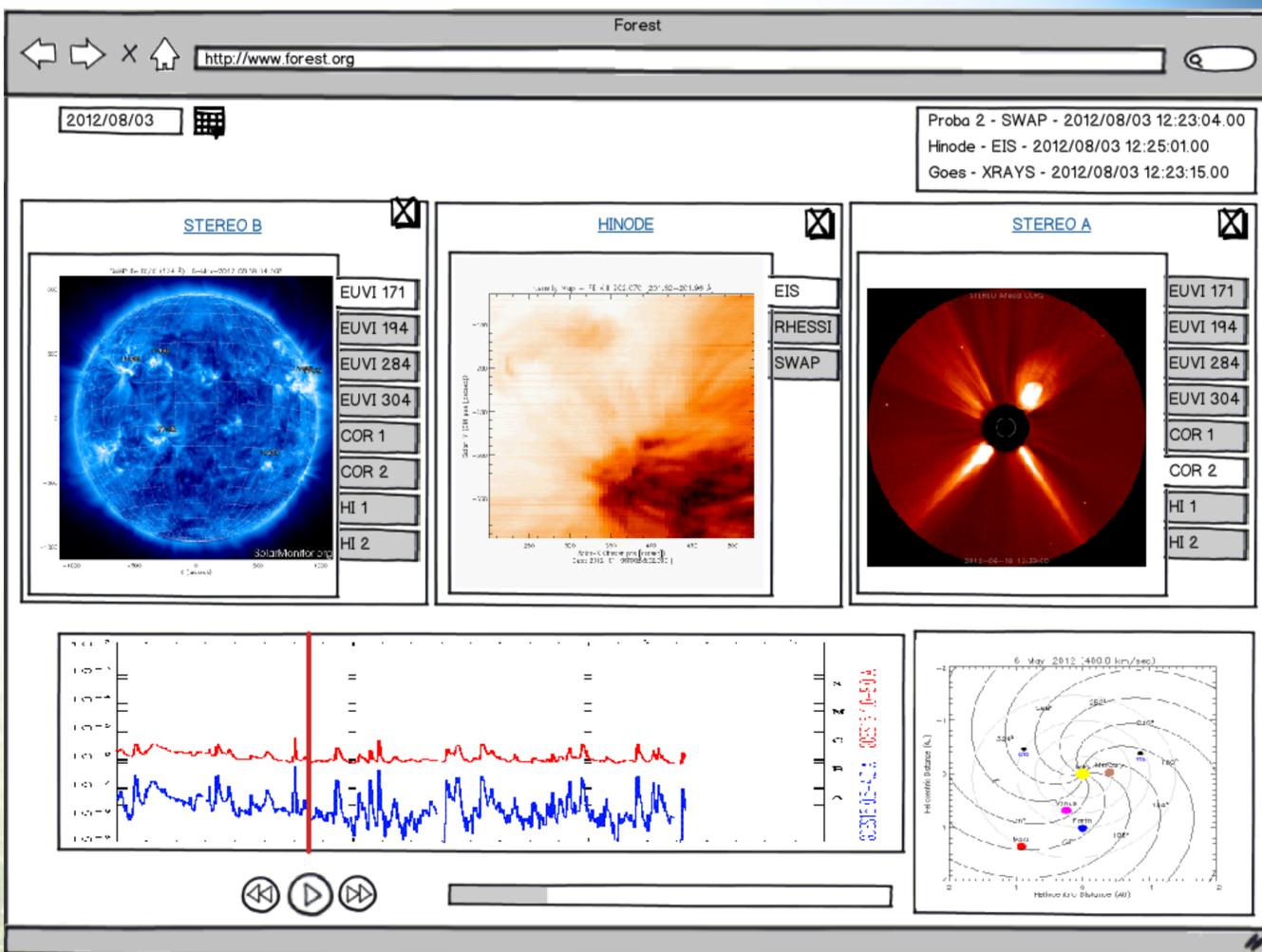
The data model developed will allow the generation of detailed meta data from existing data sources which describes the data in a uniform, cross domain compatible structure.

## FOREST System

The FOREST system itself will index the various data sources into the data model generating the necessary meta data as it crawls the data sources. The system will allow complex searches which would not be possible without the semantic description. A possible example would be to select all observation which can detect CME for a list of CME events.

## Semantic Description

A semantic description of the observations will be developed. This description will be aware of many facets of the data, type, location, field of view etc. It will also describe how the data should be presented. The ontology developed will build on existing work such as SWEET, CASIS, Solar Space Weather Ontology and Virtual Solar-Terrestrial Observatory Ontology.



## How you can be involved

In order for FOREST to be successful we need to identify the science goals which are difficult or impossible to achieve with the current systems and technology. Get involved by becoming part of the science user group and an early software adopter of the FOREST demo.

## Project Timeline

Project Kick Off: 31 Aug 2012  
Requirements: Now–Mid Nov  
Data Model: Nov–Mar 2013  
Semantic Model: Nov–Jul 2013  
FOREST Demo: Jul 2013 - Mar 2014

## FOREST Demo

The FOREST demonstrator will create a 'virtual satellite' combining instruments from different missions. This will be accomplished by leveraging the FOREST system through an interactive web interface. The demo will combine data from STEREO, HINODE, ACE, WIND, RHESSI as examples.

## FOREST Team

The FOREST team consist of **Skytek** and the Solar Physics group at **Trinity College Dublin** led by Dr Peter Gallagher. Skytek's expertise in the areas of semantic ontology and advanced web technologies combined with the domain knowledge to TCD personnel make this an idea paring for the FOREST project



Contact Details: [www.skytek.com](http://www.skytek.com)  
[Shane.Maloney@skytek.com](mailto:Shane.Maloney@skytek.com)  
[Paul.Kiernan@skytek.com](mailto:Paul.Kiernan@skytek.com)