JIS - THE JOINT INFORMATION SYSTEM

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Abstract. The main aim of JIS (Joint Information System) is to overcome the present lack of detailed knowledge amongst the European Solar Physics community. This lack of knowledge occurs at several levels: groups of researchers, institutions, scientific activities, running programs, resources, new opportunities, observational campaigns etc.

JIS will not be data archives – this is the aim of EGSO, but will provide all information mentioned above collecting all possible data about the institutes and scientists working in the field of solar physics. All European solar physicists will be provided with this information by means of an easy accessible webpage including different inquiry modes (query by country, university, institute, scientist and area of research). Until now such a system did not exist in Europe, but in foreseeable future a user-friendly and logical structured webpage will take on this task.

Key words: Information system - solar institutes - researchers - activities

1. Introduction

There exist many data bases for solar observational data. Examples are the huge SOHO and TRACE archives, archives at different institutes etc. In the framework of FP6 the OPTICON (Optical Infrared Coordination Network for Astronomy) was accepted and one of the projects in that consortium is JIS. JIS is supposed to be a comprehensive archive not containing information on observational data but on people and institutions.

The European Northern Observatory (ENO) comprises Teide Observatory (OT) and Roque de los Muchachos (ORM) Observatory (Canary Islands, Spain). More than sixty research institutions of nineteen countries
have installed and operate their telescopes and other astronomical instrumentation at this site. ENO is thus an ideal site for new astronomical installations in the Northern Hemisphere.

A working group under the framework of OPTICON has been established among those research institutions with facilities at ENO to coordinate different activities such as: Site Characterization Programmes, dissemination of good practices and transfer of knowledge, development of a Joint Information System (JIS) for the European Solar Community, development of a co-ordinated Laser Traffic Control System for ORM etc.

This networking activity will allow telescope operators at ENO to set up a suitable framework of co-operation among them, by means of different actions:

1. Co-ordination of scientific communities at ENO: Solar physics, Astroparticle physics, Cosmic Microwave Background, and Optical and Infrared astronomy communities will meet to promote a better co-ordination of similar infrastructures and to approach common challenges together.

2. A co-ordinated laser traffic control system for the ORM: Development of a joint software system to orchestrate laser operations so as not to affect observations taking place at the other telescopes in any negative way.

3. Joint Information System on European Solar Facilities: This dynamic, complete and user-friendly distributed computing tool will make it possible to improve the sharing of knowledge amongst the European Solar Physics community (groups, institutions, skills, scientific activities, running programmes, resources, etc).

2. Construction of JIS

In this section we will briefly discuss how JIS has been developed already.

2.1. Questionnaire

In order to have inputs from different institutions a questionnaire was sent among the European solar physics community. The feedback should allow
to identify possible responsible persons acting as administrators for the respective institutions that will be needed to keep the system updated in the future.

Therefore, the following questionnaire was sent to all solar physics related institutions in Europe that are known to us:

1. What is the affiliation of your institute?

2. Who will be the responsible person for data access in your institute?

3. Could you recommend other institutes in your country? Please give Email addresses in case of yes.

4. Are you able to manage your data on a local server at the institute?

5. Describe details of your server; Operating system, computer specifications, etc.

6. How often are your data updated, will it be done automatically?

7. Give suggestions about how a European solar physics data base should work.

Thus we obtained contact persons from many institutions. Though this list is by far not complete it enables to set up a first run.

2.2. The structure of the webpage

The webpage consists of

- free pages: accessible for everyone and contain only general information about the JIS-project,

- restricted pages: access to these pages is only possible after the input of the login data. From the login-page the user will be redirected to the main-page, where all links to the secured subpages are activated

A graphical representation of the structure is shown in Figure 1.

In the secured members area the user only interacts passively with the solar physics database in contrast to the admin pages, where the data can be changed or updated that means an active handling with the data.
The pages: 'about', 'news', 'Europe' and all country-pages exist twice. First in the secured area including the sensitive information stored in the solar physics database and second in the free area only with general information.

2.3. Program code and software

The JIS-project uses a combination of two databases: (1) Login - database: username, password, team (2) Solar Physics - database: containing all information about the institutes, groups and scientists and a system of webpages, programmed with *php* and *JavaScript* as the interface between the user and the databases.

Both databases are based on *MySQL*. The system-administrator has the choice between the use of the JIS-interface to work with the data or the use of the free software *phpmyadmin*, which is a very useful tool.

All pages of the JIS-webpage were either generated with *Dreamweaver*.
MX or with the program Textpad, the graphics were developed with Microsoft PhotoDraw. As mentioned before all pages are programmed in php plus JavaScript - components to guarantee the needed interactivity. For this reason the user/scientist has to activate JavaScript in his Browser, to view the pages without problems.

To minimize the download-time the pages were conceived with iframes, which means, that only newer browsers can show the pages correctly. At the bottom of the webpage the minimum requirements of the browsers are specified.

The dropdown-menu and the news-scroller are freeware programs and were adapted to fit to the style of the webpage.

Also the security-program, which is used to secure all pages with sensitive information, is a full-fledged software-package, which was adjusted to the demands.

All maps used in the country pages are courtesy of the University of Texas and the JIS-project has the permission to use them on the webpage.

2.4. Security

Several security levels will be defined:

- system-admin of JIS-page (1-3 persons)
- institute-admins (1 per institute)
- directors of the institutes (optional : + deputies)
- all scientists working at the institutes
- PhD-students, students working on their diploma.

Only these scientists, which have received a username (UN) and a password (PW) from the system-administrator, can enter the secured area of the JIS-website. Password and username are valid during the whole session. To prevent a multiple login with the same UN and PW, each user should logout at the end of each session by means of the 'JIS-logout' button in the upper left box. This is emphasized in the info-box on the main-page.

The users can’t request a UN and PW directly by the super-admin, but the login-data will be sent to them, after the institute-admin has provided
the super-admin with a list of all scientists plus email-addresses. So the possibility can be ruled out, that persons without the right to access the pages get a UN and a PW.

The institute-admins have the right to add new members to the database and to alter the existing data of the members as well as of the institute and the university, but they are not allowed to remove a full dataset.

In the map all towns with solar physics - facilities are underlined with red colour. The area around such a location is a so-called hot spot. That means that by clicking on such an area a new window is opened with the affiliated institute webpage, and by drawing the mouse over this area an infobox with the name of the institute pops up.
2.5. **Scientists’ Info Page**

As an example let us briefly mention the info page of a scientist.

In the first paragraph stands all information about the scientist himself according to the data stored in the scientists - table of the solar physics database.

The second part consists of the group and institute - data, followed by the information about the university in the last third of the page.
Besides the optional external link to a private homepage, there is also a link to the ADS containing the list of the scientist’s publications. You can easily find scientists by using the left menu shown in the down corner of Figure 2.

3. Implementation

The JIS will be implemented in several steps.

1. Nomination of the responsible administrators by the institutes, who have agreed to a collaboration, is already accomplished.

2. First phase: Setup of database and webpages on a server and internal testing phase without any access to community.

3. Second phase: Testing of the JIS-system by a small selected group

4. workshop

5. Opening of the basic version to community

6. further call for feedback from the participating institutes

7. amendments and adaptations according to the input

8. release of the full-fledged JIS-page and announcement to community.

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ZIS - ZAJEDNIČKI INFORMACIJSKI SUSTAV

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Izlaganje sa znanstvenog skupa

Sažetak. Glavni cilj ZIS-a (Zajedničkog Informacijskog Sustava) je da se prevlada sa- dašnji nedostatak međusobnog poznavanja unutar zajednice europskih fizičara Sunca. Nedostatak poznavanja prisutan je na nekoliko razina: istraživačke grupe, institucije, znanstvene aktivnosti, tekući programi, sredstva, nove prilike, opažačke kampanje itd. ZIS neće biti samo arhiv podataka, to je zatadatak EGSO-e, već će pružati sve gore navedene informacije sabirajući sve moguće podatke o institucijama i znanstvenicima koji djeluju u području fizičke Sunca. Te informacije biti će dostupne svim europskim fizičarima Sunca preko lako dostupne web stranice, uključujući različite načine upita (upit po državi, sveučilištu, institutu, znanstveniku i području istraživanja). Do sada takav sustav nije postojao u Europi, no u bliskoj budućnosti taj zadatak će preuzeti logično postavljena i praktična web stranica.

Kljucne riječi: informacijski sustav - solarni instituti - istraživači - aktivnosti