eJDS – A FREE E-JOURNAL DELIVERY SERVICE VIA E-MAIL

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ABSTRACT: The e-Journals Delivery Service (**eJDS**) of the Abdus Salam ICTP/TWAS Donation Programme is introduced. It is a concrete example of 'bridging the digital divide' in developing countries and across the north-south divide, in terms of applying low-cost open source information technologies to allow developing-world scientists to search and download selected scientific articles using e-mail only.

Introduction

Despite the many efforts to help developing countries to enter the global economy via the use of new information technologies, the digital divide gap continues to enlarge. The benefits of today's Information and Communication Technologies are still far from being at disposal of all. Scientific competitiveness and presence in a globalized world, especially from remote areas, requires the access to the net at low costs and also tailored services like the **eJDS** (see http://www.ejds.org or http://www.ictp.trieste.it/ejournals).

The **eJDS** Programme is geared to facilitate access to current scientific literature. Researchers in the world's poorest nations -- *where Internet connections can be slow or prohibitively expensive* -- can now receive some scientific papers free of charge by electronic mail. The *e-Journals Delivery Service*, operating since January 2002, allows developing-world scientists to **search** and **download selected articles** using e-mail only via the www4mail open software application developed in-house (see, *e.g.*, Onime & Canessa 2000).

Several publishing companies have joined the **eJDS** programme, *including Academic Press, the American Physical Society and World Scientific*, with rules defined by each publishing company. Others are being discussed.

The arrangement between **eJDS** and Publishers represents a balance between the publishers' need to generate adequate revenue flows through paid subscriptions and their desire to make information -- *the lifeblood of the global scientific community* -- more easily available to all scientists. Under this agreement:

- Developing world scientists can now have access to a much wider range of current scientific information and findings than ever before.

- The publishers are able to reach researchers who would otherwise not have either the technical or financial means to read articles in their journals in a timely fashion.

- The Abdus Salam ICTP can transfer knowledge to scientists worldwide.

Getting Started with eJDS

To subscribe to **eJDS**, scientists need to:

- Get the **eJDS** Application Form via e–mail (available in different online formats) or in printed form included in the **eJDS** Manual given to scientists upon request.
- Fill and Sign such Application Form (own signature and e-mail address is required). This is a one-time process.
- FAX or Post the signed Application Form to the ICTP/TWAS Donation Programme. After receiving the approval via e-mail and full instructions, the scientist is then invited to register as a USER of **eJDS** using any web Browser with e-mail capabilities.

The few IT tools that a scientist needs include

- Any e-mail client program to handle received file attachments, such as Eudora, MS Outlook Express or Pine.
- Any standard web browser, (such as MS Internet Explorer, Netscape, Mozilla, Opera or Lynx) via a e-mail client that pass 'Subject:' and/or body contents to an e-mail program working in off-line mode with the ability to send e-mail in addition to the e-mail address.
- A PDF (Portable Document Format) or PS (PostScript) viewer, such as the free 'Adobe Acrobat Reader' and 'xpdf'. PDF files are usually used for articles, to preserve the original printing appearance on-line. Alternatively, for PostScript versions of an on-line article, a PS viewer such as 'Ghostview' is needed.

Restrictions and Options

Although **eJDS** is a free service, it will not give access to web sites or on-line Documents that are not in the list of allowed e-journals or to those e-journals for which an **eJDS** user has not been granted access. The configurable *Access Control Lists* (ACL) consist of 2 levels of control, one to deny/allow access to some particular Copyrighted web sites, and a second to give access to authorized e-mail addresses only (subscribers list).

There is no limit to the number of scientists from a given institution who can apply to **eJDs**. However, there are limits to the usage per week. The assigned *User Quotas by Publisher* sets limits to the number of articles per e-journal that can be accessed each day (3), month (12) and year (100).

If users have exceeded their (daily, monthly, yearly) quota, the **eJDS** server will inform with a '503 Error Message - Service Unavailable (quota finished)' and will stop answering requests. It is possible to check at any time the given quota via e-mail using the 'XMYQUOTA' option.

There are many specialized options for optimizing the use of **eJDS** via e-mail, *e.g.*, setting the language and character set, allowing links for images, *etc*. A complete list is discussed in the *eJDS - User's Manual.* Main options examples are: Message Splitting Upon Request, Retrieving Any Part of a Split Message, Uuencode Messages, Graphical Snapshots of web Pages, Retrieving HTML Sources dealing with Long URLs, *etc*.

Optimization of Resources and Some Statistics

Within **eJDS** only e-mail exchanges are used to retrieve current published scientific literature. To retrieve a particular e-journal (from one of the Publisher participating in the programme), registered users simply send an e-mail 'To:ejournals@ictp.trieste.it' writing in the body of the e-mail message a single URL that points to the **eJDS** page listing the e-journals available by Publisher. The **eJDS** server automatically replies with the requested information as an e-mail attachment.

When the attachment received is displayed on a web browser, it shows up some (clickable) buttons before each highlighted line representing the true hypertexts that link to other web documents. This feature is added to facilitate navigating the Internet by simply selecting such buttons. The original page layout (tables, colours, etc.) is preserved as seen in the Figure.

There are also many different option fields to search within each publisher/e-journal. The **eJDS** procedure to follow is similar to that used when connected in real time, direct mode to any web server. It is necessary to fulfill the required search fields within the search engine and then select their GO search button.

The e-journals, web pages and articles retrieved or the search results obtained using **eJDS** (as attachments) can be stored in the computer and re-used at a later stage.

In this way, both **Time and Bandwidth can be saved** by reusing the same web documents and making selections of articles anew and off-line from anywhere in the net.

Within the period January to August 2002 (first six months of the **eJDS** programme), the number of subscribers in the database amounted to 1,311 single scientists, of whom 48% access the Internet via free e-mail accounts like Yahoo and Hotmail web interfaces. Of this total, the potential users account for 25%. As an example, scientists access **eJDS** from Algeria, Cameroon, Egypt, Eritrea, Ghana, Lesotho, Malawi, Nigeria, Zimbabwe – to mention a few.
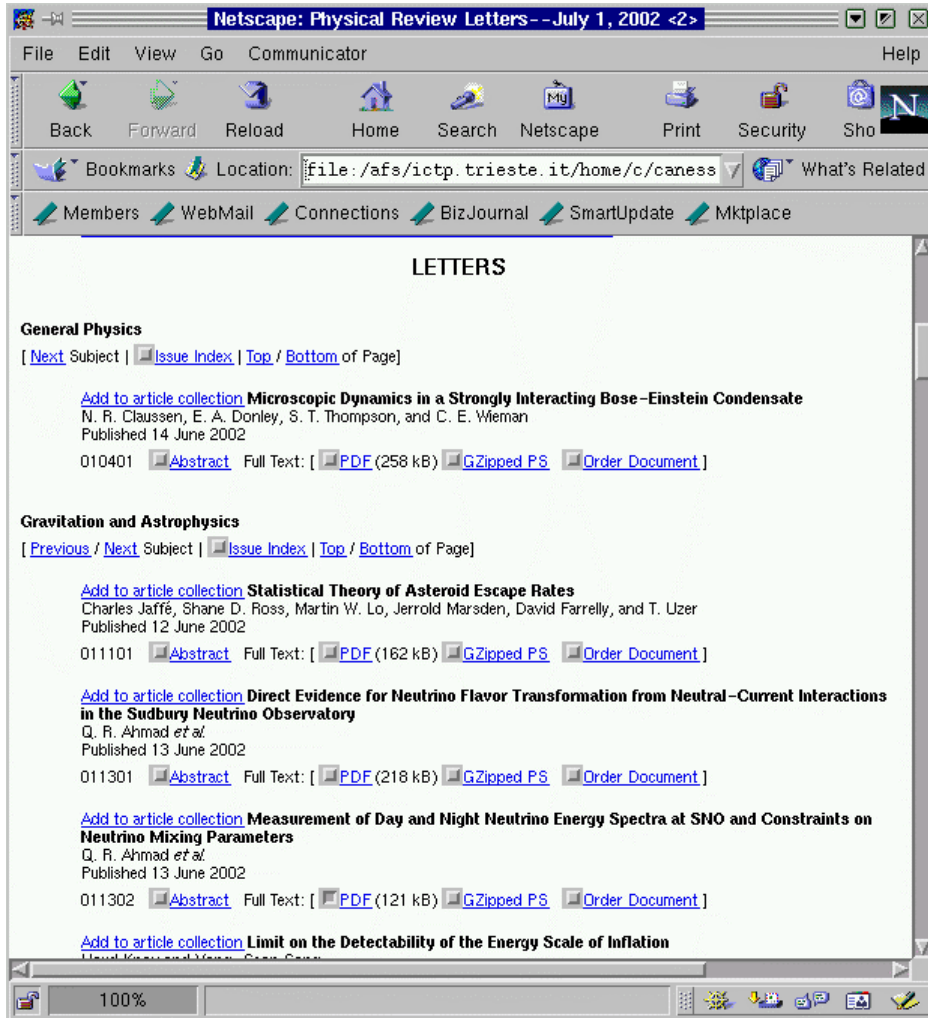
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Fig 1. Example of **eJDS** output sent as attachment.

Concluding Remarks

The amount of bandwidth available in a community poses an ongoing challenge (e.g., due to the insufficient basic infrastructures in Africa). Without broad and unlimited access, scientists, artists, (young/old) people are limited in the amount of creative and diverse content they can produce, communicate and share.

According to the recent **Recommendations of Trieste** (Oct 2002) to help bridging the digital divide, where international experts gathered for an open round table sponsored by the Abdus Salam ICTP, ICSU, IUPAP, UNESCO, TWAS and WIF, it was agreed to encourage web to e-mail access and invite more scientific publishing companies to participate in the **eJDS** program. The goal is to expand **eJDS** ideas to other subjects besides Physics and Mathematics (Cerdeira 2002).

The e-Journals Delivery Service, here briefly introduced, is a concrete example of 'bridging the digital divide' in developing countries and across the north-south divide, in terms of applying low-cost open source information technologies. With **eJDS**, the Abdus Salam ICTP/TWAS in Trieste, Italy, has broadened its ability to transfer knowledge to, and assist scientists from, the developing word following its mandate.

References

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