The ESO Web at 21 Months

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Some Current Trends

"A topic which seems to be of interest for astronomy – and we should be cognizant of it – is the World-Wide Web. It is based on hypertext which has been actively discussed for years[1]." "Agreed – even though is it clearly not as important as Gopher or WAIS."

Thus ran part of a conversation during the preparation of a volume on astronomical information retrieval[2] in July 1992. An overview of WWW was obtained, although the likelihood of the subsequent take-off of this information distribution mechanism was not apparent at that time. Certainly, other network-based systems such as Gopher had a far higher profile. Then in mid-1993, NCSA's Mosaic browser came along, which altered the balance of forces between these information resource access mechanisms. In the summer of 1993, the ST-ECF set up a WWW server. ESO's Web server was set up some time later, following a meeting in February 1994.

A lot has changed since then. Now, someone accesses the ESO Web once every 12 seconds on average throughout the 24 hours of the day (November 1995 figure). Accesses have approximately doubled from June 1995. This does not include the Archive, ST-ECF, or La Silla Web servers which contribute numerous additional accesses. The rate of increase of ESO Web usage is at the time of writing around 400% per year (in terms of accesses/hour).

Users of ESO's Web are European to the tune of around 85%. The most numerous users are local (eso.org) – about 16% – and German (.de addresses) – currently around 12%.

Users have become more sophisticated: a count[3] of the number of different browsers used in accessing ESO yielded 49. Versions of Netscape and Mosaic were in the clear majority, roughly sharing the spoils in the ratio of 2:1.

Web browsers, servers and accompanying tool-kits are still very often freely and publicly available, which has no doubt helped to advance the area. A useful review of what we can expect in the near future (e.g. the features to be supported by version 3.0 of the HTML language, or current directions in regard to security) can be found in the July 1995 issue of Byte magazine. It was mentioned above how WAIS, among other mechanisms, was more widely used in mid to late 1992. It is interesting to speculate that WAIS is an inherently more marketable and commercializable product.

Phases of Evolution

WWW is a means of communication. Different phases become more popular, more quickly. It is rather like any other communication mechanism, when first faltering steps lead later to greater confidence and ambitiousness. In the case of ESO, the following rough stages can be distinguished.

Phase 1: External information.

Although touted as a new marketplace, so far the Web has remained in large measure a very large number of shop-windows. Its multimedia support has allowed it to excel at presentation of organisations and groups. Public relations information, details of meetings and conferences, established observing schedules, archive and database access mechanisms, visitor and weather information – these have been extensively and continuously used. A big upgrade of the La Silla Web area was recently carried out (and the Garching server is continually undergoing shifts of orientation and layout).

Phase 2: Internal information.

Here we are mainly interested in the organisation's openly-accessible information, relating to the organisations's products and major activities – in our case, the provision of observing services. The open information product in this case is accurate and comprehensive instrumentation description and news.

Instrumentation information is available to the user in the following ways: (a) ESO's call for proposals booklet; (b) operating manuals, mostly in hard-copy, and not always up to date; (c) articles in the Messenger; (d) personal contact of course; and (e) the Web. The latter has recently seen major new areas created for the NTT, and Optical Detectors.

The basis for this work on information dissemination[4] has one considerable advantage: the target environment is identified. The Web offers too many advantages, especially in a scientific environment, to allow for any realistic alternative. It is also now seen as the primary information distribution mechanism for internal as well as external communication, not least because of its multi-platform support.[5]

However, the detailed planning of the development of this information systems environment requires substantially more thought. This is due to a well-known fact: it is very simple to set up information on the Web, but it can be very difficult to ensure longer-term maintenance. Long-term support of ESO's instrumentation information requires a systems approach. A plan for integrating, developing and maintaining this information system is currently being drafted.

The most important activities in mid-1995 in regard to the ESO Web were in the area of telescope, instrumentation and detector information. The results of this work are now to hand.

Phases 3 and 4: Electronic publishing; and Interactive data analysis.

The effectiveness of the Web, through a personal home area or otherwise, for providing an overview of a research field, with preprints and information on publications, is quite remarkable. It is surprising that this communication resource is not used more at present. In some cases – when properly planned and executed of course – Web-delivered preprints attract a greater readership than the eventual publication. Such an opportunity is all the more attractive insofar as these are complementary and mutually-supporting ways of getting the message across.

Regarding interactive data analysis, the Web has been somewhat passive to date, but new browsers will make it considerably more interactive. The possibilities for interaction with data using the

[1] E.g. Adorf, 1989.
[2] Heck and Murtagh, 1993.
[3] B. Pirenne, figure based on Archive accesses using WDB in mid-July 1995.
[4] See McGrath et al., 1994.
[5] Barton and Wedekind, 1995, describe developments at the UN.

HotJava browser, among others, offer new prospects and challenges for the communication of ideas. Various projects are quite advanced, which will allow image processing, symbolic mathematical manipulation, and other data treatments to be dealt with purely in the Web environment.

References

H.-M. Adorf, "Hypertext and hypermedia systems", *Space Information Systems Newsletter* No. **1**, 7–14, 1989.

J. Barton and L. Wedekind, *IAEA Bulletin*, vol. **37**, no. 3, 44–47, 1995.

A. Heck and F. Murtagh, Eds., *Intelligent Information Retrieval: The Case of Astronomy and Related Space Sciences, Kluwer Academic Publishers, Dordrecht, 1993.*

G.M. McGrath, C.N.G. Dampney and E. More, *"Planning for information systems integration: some key challenges", Journal of Information Science,* **20**, 149–160, 1994.

The ESO STC in Times of Change

J. ANDERSEN, Chairman, ESO Scientific Technical Committee

The Role of the STC

The charge of the ESO Scientific Technical Committee (STC) is to advise the ESO Council on "... policy matters of long-range scientific and technical importance ...". It consists of 12–16 members appointed "... for their scientific and technical eminence, with at least one member from each Member State ..." (plus observers from Portugal and Chile, pending their full STC membership).

Four years ago, the writer found himself appointed to this august body. And three years ago, the then Director General asked if I would accept a nomination to chair the STC, the extra workload estimated to be about two days per year.

As 1995 draws to a close under a new Director General, a quick status shows that neither ESO, the STC, nor its chairman look much like we did then. One thing has remained constant, however: Chairmanship of the STC is limited to three years. As my term thus comes to an end, the Editor has asked me to summarise my impressions of life in the STC for the readers of The Messenger.

The STC's Modus Operandi

As I joined the STC, veteran members discreetly aired a certain frustration that meetings were somewhat formal affairs and the communication mostly one-way. Not known for letting tact get in the way of change – and with the active encouragement and support of the new ESO Management – I have tried to modify certain aspects of the STC's working modes and style.

First, new Terms of Reference have been approved by Council, which clarify the role of the STC as dealing with general policy matters, as a two-way information channel between ESO and its community, and also the relative roles of the STC and the Users Committee (UC). The STC can now have 12-16 members, so new ESO members or scientific fields can be quickly accommodated. And terms are now for three years (renewable once) rather than the previous fixed five-year terms, also in the interest of flexibility.

The STC also equipped itself with a Vice Chairman, elected annually by the STC itself to replace the regular chairman as needed; Klaas de Boer, Bruno Marano, and Andre Blecha were elected in 1993-95.

At the meetings, the previous lengthy oral status reports by the ESO staff have been replaced by "fact sheets" sent out in advance (a "sheet" is a piece of paper with no more than two sides!), time at the meetings being devoted to two-way discussions. And each day starts and ends with a half-hour informal session (STC members only) where potential problems or misunderstandings can be identified and prevented, resolutions drafted and/or modified, etc.

It is not for the writer to judge whether efficiency has improved. But the consensus seems to be that the meetings have at least become rather more lively, culminating in the May 1995 meeting in the magnificent Council Room at Observatoire de Paris, with a subsequent visit to REOSC and a first live glimpse of the 8.2-m VLT primary mirrors.

Contact to other ESO Bodies

The STC's direct reference is to the Council, and the STC chairman is invited to attend its meetings. During my term, Council has expanded the scope of the debates at which the STC chairman is present to include matters of such direct scientific impact as, e.g., the future of ESO in Chile. I am glad to convey the STC's appreciation of this sign of Council's confidence in its main advisory committee.

In order to improve coordination with the UC and minimise the work of the ESO staff in preparing the meetings, the UC Chairman now has a standing invitation to attend the STC meetings. Similar mutual invitations between the STC and the Finance Committee were suggested by certain humorous souls, but might be too much of a cultural shock for both sides... Still, I hope the STC has been able to provide useful technical advice on some of the major contract decisions in the VLT project (see, e.g., The Messenger 81, 3).

Finally, the STC has invited all the ESO committees and the astronomical members of Council for the discussion in November 1995 of the long-term plans for La Silla (see below). I hope very much that discussing such a long-term policy issue in this broad and representative forum will have been found useful.

Planning for the VLT

The first task for the new Director General in early 1993 was to re-establish a realistic schedule for the VLT project and re-structure ESO to carry out the project according to that plan. The magnitude of this task was well illustrated by the 1994 Audit Team: While the LEP project corresponded to three annual CERN budgets, the VLT is equivalent to five annual ESO budgets. As the corresponding refurbishment of the ESO structure proceeded, part of the task of continuing the long-term scientific planning fell, appropriately, to the STC.

The previous concept of having the four VLT telescopes in place almost simultaneously, complete with instruments, avoided the need to discuss priorities. With the new schedule, this was no longer possible. Hence, the STC appointed a Working Group on Scientific Priorities for the VLT Observatory, ably chaired by Dr. L. Vigroux, to reconsider the most urgent science to be done with the VLT.

One of their initiatives was the first of what is now a series of ESO Workshops, „Science with the VLT". Their report, issued on that background, was unanimously endorsed by the STC. The STC - indeed all of us – owe Dr. Vigroux and colleagues our cordial thanks for their efforts and dedication in placing the VLT planning on a firm scientific basis.