

Archive - FNC Material

Archived Material
Historical Purposes Only

Last updated on 10 October 1997

The Federal Networking Council

The Federal Networking Council (FNC) was chartered by the National Science and Technology Council's Committee on Computing, Information and Communications (CCIC) to act as a forum for networking collaborations among Federal agencies to meet their research, education, and operational mission goals and to bridge the gap between the advanced networking technologies being developed by research FNC agencies and the ultimate acquisition of mature version of these technologies from the commercial sector.

After a year of review and consideration by the Computing, Information and Communications (CCIC), the Computing, Information, and Communications (CIC) R&D Subcommittee, and the Federal Networking Council, it was decided to coalesce the FNC activities into several of the newer sub-organizations of the CCIC. Thus on October 1, 1997, FNC activities will be carried out through the Large Scale Networking (LSN) group. The FNC Advisory Committee has been de-chartered and many of the FNC activities are or were transferred to the LSN of the CIC R&D subcommittee or the Applications Council.

FNC Advisory Committee Resolutions

Resolution - "30% Fund"

May 9, 1997

"The NSF should work with NSI to create a mechanism to ensure that the "30% Fund" will be available for the future development of Internet Intellectual Infrastructure, such as the funding of efforts like ARIN and IANA."

Resolution - Internet Access

May 9, 1997

"The FNCAC firmly believes that the Internet is a critical resource for the national research and education communities. This resource should be made available to the widest possible customer/user base with the highest possible level of service.

For this reason, the FNCAC recommends that the FCC in its deliberations about the pricing of communications services to Internet service providers give serious consideration to policies which encourage and promote the rapid emergence of Internet access alternatives (ADSL, ISDN, wireless) and other options which provide market differentiation through quality of service."

Resolution - Cryptography and the Internet

April 15, 1997

The FNCAC endorses the IAB and IESG "Statement on Cryptographic technology and the Internet" of July 24, 1996, published as RFC 1984, with the exception of the language on complete and unlimited export of all cryptographic technology. This exception is a complex issue which brings into play multiple social objectives and which requires further consideration.

While it may be appropriate for national policy to limit the deployment of Federal production systems or exported private systems, it is inappropriate to constrain research or experimentation on security or privacy technologies.

Resolution - Internet Performance Measurements and Statistics

December 4, 1996

The FNCAC applauds the progress that has been made in the development of tools for the measurement of Internet performance. Standard suites of these tools now need be identified both for traffic flow analysis at the network level and for end-to-end performance analysis at the user level. These tools should produce results which are easy to interpret, compare, and track. In addition to providing much-needed performance metrics, these tools are also essential for the identification of network interconnection problems and potential failure points. Therefore...

The FNCAC recommends that the FNC agencies continue to fund research on Internet performance methodologies with a particular emphasis on the development of suites of tools that could be adopted by the Internet industry as standard metrics.

The FNCAC recommends that the FNC agencies continue to deploy these tools in both their production and experimental networks. Furthermore as Internet service customers, the FNC agencies should strongly encourage the industry to develop and employ such suites of tools.

The FNCAC recommends that the FNC agencies fund studies of interpretation of Internet statistical data and its trends. The results of these studies would be shared with network providers to help them optimize their operations and engineer improvements using new technologies and protocols.

The FNCAC recommends that the FNC encourage those agencies which are traditionally involved with the collection and dissemination of industry-wide statistics and data on other national resources become involved in the area of Internet statistics.

The FNCAC supports the privacy rights of individual users and networks, and hopes that these rights will continue to be protected during the acquisition, analysis, and dissemination of Internet performance data.

Resolution - WIPO Proposed Database Treaty

November 18, 1996

The FNC Advisory Council shares the concerns voiced by the Presidents of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine and by the leadership of several national library associations regarding the lack of full discussion and the potentially adverse consequences of the draft "Treaty on Intellectual Property in Respect of Databases." The FNCAC urges the U.S. delegation to the World Intellectual Property Organization (WIPO) to refrain from pursuing this treaty at the December 1996 diplomatic conference, in favor of further deliberation by the Administration and public at large.

Related Material:

[Letter from NAS, NAE, and IM](#)
[Letter from Library Association](#)

Resolution - IP Study

November 13, 1996

The FNCAC endorses the concept paper developed by the NRC Computer Science and Telecommunications Board and recommends the scope of the study be expanded to

include the addition of relevant database issues. The FNCAC recommends that the FNCagencies promptly fund the proposed National Research Council study of Intellectual Property Rights in Networked Environments.

Resolution - Next Generation Internet Initiative

October 21, 1996

High-performance research and education (R&E) networking is critically needed to support today's advanced applications and for the early deployment of tomorrow's protocols, network services, and applications. Such networking promotes both continued leadership for U.S. R&E and accelerated availability of new services and applications on the commercial Internet.

Therefore,

The Federal Networking Council Advisory Committee (FNCAC) endorses the Administration's Next Generation Internet Initiative, one component of which is designed to catalyze the emergence of new Internet applications and services by promoting a vigorous partnership among the private sector, the R&E community, and the Federal Government. The FNCAC applauds the Administration's stated direction of a budgetary increase for participating Federal agencies to support this initiative.

Further, the FNCAC encourages the Federal agencies to support initiatives such as the R&E community's Internet II initiative, which is designed to provide focus and coordination for R&E institutions that may be investing at a high level in the accelerated development of new Internet applications and services.

Resolution - Domain Name Service

October 21, 1996

The FNCAC reiterates and underscores the urgency of transferring responsibility for supporting US commercial interests in ITLD administrations from the NSF to an appropriate entity.

Resolution - Internet and Copyright Legislation

May 15, 1996

A National Academy Study on Copyright and the Emerging Information Infrastructure

New information and communications technological developments in the emerging information infrastructure have raised serious questions about whether existing copyright law adequately protects the creators, users, and distributors of information. To most expert observers, the answer is, "probably not." However, the issue of what changes to make is more difficult to resolve. For example, Congress is currently considering legislation proposed by the Administration to modify the Copyright law, but the legislative proposals have been highly controversial.

In an era of rapid change in communications and information technologies, an increasing range of industries, constituencies, and stakeholders are affected by copyright policy. The developmental practices and requirements for innovation of some of these high-tech stakeholders may be quite different from the traditional intellectual property stakeholders. The FNCAC is concerned that, however copyright law evolves, it do so in a manner that is both technologically sound and that promotes the growth of an advanced information infrastructure in a way that maximizes its benefits to creators, users, and distributors in the government, the public, and the private sectors.

The Federal Networking Council Advisory Committee recommends that the Federal Networking Council request that the Computer Science and Telecommunications Board of the National Research Council undertake a study of Copyright and the Emerging Information Infrastructure. The network, the way it is used, and the rapidly changing structure of information and communications industries that operate and provide content for it, as well as the implications for the research and education communities as information providers, distributors, and users of content, raise a number of issues that should be identified, framed as research questions or workshop topics, and studied by the CSTB.

The study should examine the implications of ways in which new communications technology may vitiate existing protections the law offers to creators, users, and distributors, or may provide new opportunities to protect property rights and public interests; as well as the implications of ways the technology may create entirely new opportunities and new forms of publishing which have no precedence in existing media or current copyright law.

Questions the study might address regarding the intersection of copyright policy and network structure, efficiency and use include:

- The changing nature of liability and responsibility for service providers.
- The effects of electronic distribution of information products.

- The importance of network efficiency mechanisms such as local servers, "caching," and the necessary but often temporary reproductions in computer memory in the course of normal network and systems activity, and the impact of these mechanisms on proprietary interests.
- The effectiveness of technological protection mechanisms, and their potential impact on browsing and access to public domain information.

The FNCAC hopes the CSTB would be interested in such a study. To be most useful to the increasing variety of stakeholders, to the Executive Branch, and to the congressional committees considering legislation, the results of such a study should be available in about a year, with additional time required for full dissemination.

Resolution - Internet Statistics and Metrics

May 7, 1996

An Internet Infrastructure to Make Measurements, Gather Statistics, and Develop Metrics on Network Performance

The Federal Networking Council Advisory Committee (FNCAC) was created to advise the Federal Networking Council (FNC) on computer networking, especially as it impacts the research and education communities which receive funding from FNC agencies. The FNC played a critical role in the administration of major components of the Internet before its recent transition to commercial providers. The Internet continues to be the network on which the research and education communities depend, even as it is rapidly becoming an important information source for the general public and a valuable tool for commerce. It is in this context that the FNCAC makes the following observations and recommendations.

It is widely reported that there has been serious degradation to the services available on the Internet in the year since the NSF backbone service was phased out. The problems include poor availability and response times, limited capacity, and a lack of outage information. Unfortunately things appear to be getting worse rather than improving with time. Some of the problems are undoubtedly the result of the rapid growth which the Internet has been experiencing. However, it is generally agreed that a substantial part of the problem can be attributed to the birth pangs of a new industry where many vendors of different sizes are in direct competition, and have yet to develop the cooperative mechanisms that will be necessary for a healthy and successful Internet.

The FNCAC feels that it is particularly important for Internet service providers (ISPs) to incorporate the concept of quality of service in their offerings. In order to do this it will be necessary to establish infrastructure to make measurements, gather statistics, and

develop metrics on network performance. These data will in turn be useful for problem avoidance and resolution, as well as for designing and implementing network improvements. Performance metrics would also help Internet consumers make informed provider choices.

The FNCAC recognizes that market forces should be the principal determinants of the evolution of the Internet, and that the role of the government should be as a catalyst. With this in mind we make the following recommendations to the FNC:

1. We commend the FNC for the collaborative development of performance measurements and trouble ticket tracking on the Federally-sponsored segments of the Internet. We urge that this process be continued and expanded. Of particular importance is the attention given to the impact of such measurements on the privacy of Internet users and providers, and on the security of Internet facilities and usage.
2. We recommend that the FNC agencies fund research on measurements and measurement techniques that can be employed by ISPs and users (or their representatives) to quantify Internet quality of service (packet loss, packet delay, route availability, etc.). These should include methods that can be employed in the NEAR TERM.
3. We recommend the FNC agencies stimulate the formation of an ISP-industry-wide neutral body empowered (by its constituent members) to make measurements and quantify performance under strict confidentiality, and to share its data and conclusions with individual providers in ways that are collectively acceptable, for the purpose of improving the performance of the Internet as a whole.

We believe that the above steps will help to restore the levels of dependability and service that were previously available on the Internet, and to maintain and improve their quality in the future. Furthermore we feel that because of urgency and importance of the situation these measures should be given very high priority.

Resolution - Internet Access

June 29, 1995

Controlling and Facilitating Access to the Internet by Children

Because the Internet interconnects users and information resources in local, state, and national jurisdictions, it is inevitable that the federal government will become involved in issues of network use and information content.

A recent example of an issue before the federal government is the "Exon Amendment" to the telecommunications legislation passed recently by the U.S. Senate (S.652) which

seeks to prohibit the use of telecommunications devices (including networks) for obscene communications unwelcome by a recipient or involving minors.

The Federal Networking Council Advisory Committee believes that societal goals in research, education, and lifelong learning will be best served by an information infrastructure that encourages the publication of a wide variety of viewpoints and creative works, while empowering users to determine the kinds of information that is accessible at their access points to themselves and their children.

The Federal Networking Council Advisory Committee wishes to point out that technical means may be used to restrict access to unsuitable materials. Such technical solutions may obviate the need for new legislation regarding content.

We urge that strong priority be given to encouraging:

1. The exploration of technical means to implement mechanisms that allow parents, teachers, librarians etc., to control the access by children to information accessible via the Internet
2. The enforcement of existing laws which apply to the use of electronic means to disseminate obscene messages, and to the conduct of other illegal activities covered by those existing laws.

It is the view of the FNCAC that existing and emerging technology can create mechanisms which allow parents, teachers, librarians, etc. to voluntarily restrict children's access to sources of information accessible via the Internet which they have directly or indirectly selected as suitable for those children.

In today's framework of paper books, parents, teachers, and librarians can select the books they wish children to have access to by:

1. Choosing books published by reputable publishers whose editorial policies with respect to children's books they trust and agree with.
2. Using lists of books which are suitable for children which they have obtained from sources of their choosing to create children's libraries.
3. Personally selecting books which they have examined and determined to be suitable for children

In the framework of the Internet, and its associated technology, it is possible to create Internet access software which will limit access by children to electronically stored lists of information sources that parents have selected, based on their own standards. As in the case of paper books, these lists can be created by third parties acting in a role analogous to publishers of children's paper books and other organizations who recommend paper books as suitable for children today. Such third parties can include for profit and not-for-profit organizations ranging from publishers to library and

teachers `associations.

It should be noted that some existing on-line services restrict access to bulletin boards and Web sites that they consider to be unsuitable for their customers, and that products are emerging in the marketplace which will allow users to limit their access to sites which they deem suitable and/or to prevent access to sites which they deem unsuitable.

It should also be noted that mechanisms such as those described above can be used not only to restrict access to unsuitable information, but also to facilitate access by children and others to information that is most likely to meet their needs--e.g., access to information most suited for grade school children vs high school children, access to information in specific languages, etc.

The FNCAC recognizes the seriousness of the concerns which the Exon Amendment is seeking to address. We encourage the federal government to explore technical means which allow parents, teachers and librarians to control and facilitate access by children to information which is determined by those responsible adults to be appropriate, and we encourage the federal government to enforce existing laws regarding the dissemination of obscene information and other illegal acts covered by those existing laws.

Technical Notes:

The lists of "suitable" Web sites and bulletin boards can be stewarded by servers which are queried each time a client wishes to link to a new Web site or bulletin board, or they can be downloaded and cached in the client or a router to which clients connect to access the Internet.

There may be many such lists, which parents, teachers and librarians can choose from, or combine into aggregate lists.

Webs sites and bulletin boards maintained by responsible organizations need only police their own content. Although they would not intentionally "point" to another site which is unsuitable, the connection to another site would only occur after the suitability of that site is checked against the list of sites which was selected by the adult responsible for the client.

Web sites that are not created and maintained by organizations which are trusted to be responsible for their content can become trusted by seeking a trusted third party to certify their suitability---just as an unknown author can seek out a trusted publisher to publish children's book.

Resolution - New Internet Paradigm

May 23, 1995

FNCAC Recommendations to the FNC Concerning the New Internet Paradigm

The Internet is currently in a state of transition from a small set of federally subsidized networks to a large number of commercially run networks. The Federal Networking Council (FNC) is chartered to "oversee the operation and evolution of the Federal Internet Program in support of research and education". In this charter and in the recommendations that follow the term Internet is meant to refer to those unclassified networks that were initially sponsored by Federal agencies for the support of research and education computing, and which are either undergoing transition now or may be in the future. The long term goal of this transition should be a global system of open networks that are interconnected with a minimum of restrictions.

To ensure that the research, education, and library communities continue to have robust Internet access, the Federal Networking Council Advisory Committee (FNCAC) makes the following recommendations to the FNC. The FNCAC recognizes that with the transition of the Internet, many of the issues addressed in the recommendations may not, in the end, be amongst the responsibilities of the FNC to manage or execute. However, during the transition, the FNCAC believes that the FNC should attempt to articulate who should assume these responsibilities. FNCAC is also aware that the list of recommendations is not exhaustive and could be subject to additions or modifications in the future.

1. It is imperative that the funding agencies represented on the FNC be aware that commercialization of the Internet may place additional burdens on the recipients of research and education grants. Without a corresponding increase in support the activities supported by these grants may be impaired. Traditionally networking has been treated as a generally available service like a library and its costs have been absorbed on a campus-wide or lab-wide basis. Although we believe that this is still appropriate, it is clear that if networking costs increase there may be no choice but to implement more complex billing procedures such as direct charges to individual groups or departments. Furthermore, in some cases special arrangements may be required to maintain the levels of connectivity that are required by various programs and that were previously made available by federally sponsored networks.
2. It is urgent that the FNC should study what Internet-wide committees and organizations are necessary for the successful operation of the Internet both during and after its transition to commercial providers. This study should be done in consultation with both domestic and international network service providers. Some of the necessary bodies may already exist and others may need to be chartered; in both cases it is important to ascertain who will charter and fund them, and to whom they will report. It is particularly important for the FNC to recommend the extent to

which the government in its role as provider of research and educational networking should be involved with these entities. Some examples of relevant issues are:

- a) Assignment of address space and domain names as currently done by IANA,
 - b) Network protocol development and other IETF activities,
 - c) Network operations coordination as previously done by the NSF.
 - d) The future need for a new addressing architecture and global routing system as the existing system approaches its limits.
3. High priority should be given by the FNC to coordinating Federal networking research programs - in collaboration with the private sector whenever appropriate - to make the best use of available funding, and then to facilitate the transition of networking research results and findings into operational networks that support the research and education community.
 4. The FNC should investigate what the potential impact of the post-FTS2000 telecommunications system is on federally sponsored research and education networking. If possible recommendations should be made that will make this system useful as a component of the Internet.
 5. The FNC through its policy committee should formulate a new acceptable use policy for the any federally sponsored portion of the Internet that is intended for research and education use. The policy should to the greatest extent possible reflect community traditions of academic freedom and inquiry, and respect the diversity and openness that nourish the R&E enterprise.
 6. The FNC should commission a study on the implications of intellectual property rights on the use of the Internet by the research and education communities. Recommendations should be made as to how these rights can be protected without compromising the fair use, library, and educational exemptions in the copyright law, and without compromising the "open" nature of the Internet. Any recommendations that are made should also take into account the impact they may have on the use of the Internet by private individuals and commercial ventures. Consistent with the goals for the National Information Infrastructure, these recommendations should be formulated so as to encourage the productive use of the Internet by all user communities.