

THE INTERNET
AND THE
INTERNET SOCIETY

Vinton G. Cerf

January 1993

internet map

**An international professional society
intended to advance and guide the
development of the Internet for
purposes of research, education and
widespread, international use.**

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The INTERNET SOCIETY provides:

- o *A focus* for collaboration**
- o *A forum* for debate and discussion**
- o *A source* of shared values**
- o *A guide* for Internet evolution**
- o *A stimulus* for wider use**

and

- o *A vehicle* for education and research**

SUMMARY OF ARTICLES OF INCORPORATION INTERNET SOCIETY

1. Name

The name of the Corporation is Internet Society ("the Society").

2. The period of its duration is perpetual.

3. Purposes

To be a non-profit corporation, which shall be operated exclusively for educational, charitable and scientific purposes. Such educational, charitable, and scientific purposes shall include carrying on activities:

- A. To facilitate and support the technical evolution of the Internet as a research and education infrastructure, and to stimulate the involvement of the scientific community, industry, government and others in the evolution of the Internet;
- B. To educate the scientific community, industry and the public at large concerning the technology, use and application of the Internet;
- C. To promote educational applications of Internet technology for the benefit of government, colleges and universities, industry, and the public at large;

- D. To provide a forum for exploration of new Internet applications, and to stimulate collaboration among organizations in their operational use of the global Internet.

The Society shall take such actions as may be necessary or convenient to effect any or all of the purposes for which the Society is organized.

4. Stock

The Society shall not issue any capital stock.

5. Membership

The Society shall have student, individual and organizational members. Only regular individual members shall have the right to vote.

6. Board of Trustees

The initial Board of Trustees of the Society are the following individuals, namely, Charles N. Brownstein, Vinton G. Cerf, A. Lyman Chapin, Ira Fuchs, Frode Greisen, Juergen Harms, Geoff Huston, Robert E. Kahn, Tomaz Kalin, Kenneth M. King, Lawrence H. Landweber, Kees Neggers, Michael M. Roberts and Anthony M. Rutkowski.

7. Regulation of internal affairs

- A. No part of the net earnings of the Society, if any, shall inure to the benefit of, or be distributable to, any of the Trustees or officers of the Society, or any other person, except that the Society shall be authorized and empowered to pay reasonable compensation for services rendered. No substantial part of the activities of the Society shall be the carrying on of propaganda, or otherwise attempting, to influence legislation. The Society shall not participate in, or intervene in (including the publishing or distributing of statements), any political campaign on behalf of any candidate for public office.
- B. The Articles of Incorporation may be amended by the affirmative vote of at least four-fifths of the members of the Board of Trustees then in office, except that unanimous consent of the members of the Board of Trustees then in office shall be required for any amendment of this Article 7.

- C. Upon any liquidation, dissolution, or winding up of the Society, after all of its liabilities and obligations have been paid, satisfied and discharged, or adequate provision has been made therefor, all of the assets of the Society shall be distributed exclusively for such educational, charitable and scientific purposes as the Board of Trustees (or such other persons as may be in charge of liquidation) shall determine.

These articles have been adopted by the Trustees of the Society.

December 10, 1992

Calendar of Events

- | | |
|--------------|--|
| 6/91 | Formation announced - INET - Copenhagen |
| 9/91 | Secretariat Formed - Reston, Virginia, USA |
| 10/91 | Memberships Accepted |
| 1/92 | First issue - <i>Internet Society News</i> |
| 2/92 | First Trustees Appointed |
| 3/92 | Initial By-Laws Adopted |
| 5/92 | Second Issue - <i>Internet Society News</i> |
| 6/92 | First Board, Council and Member Meeting |
| | INET 92, Kobe, Japan |
| 9/92 | Third Issue - <i>Internet Society News</i> |
| 12/92 | Second Board Meeting |
| | Reston, Virginia, USA |
| 12/92 | Final incorporation of Internet Society |
| 12/92 | Fourth Issue - <i>Internet Society News</i> |

Planned

- 1/93 First Election of Trustees**
- 2/93 Network and Distributed System Security
Workshop
(w/ IRTF's PSRG and LLNL)
nessett@llnl.gov**
- 3/93 Computers, Freedom and Privacy (w/ ACM)
March 9 - 12, 1993
cfp93@well.sf.ca.us**
- 5/93 Joint European Networking Conference (w/ RARE)
May 10 - 13, 1993
Trondheim, Norway
raresec@rare.nl**
- 8/93 Second Annual Meeting - INET 93
San Francisco, USA
August 17-20, 1993
request@inet93.stanford.edu**
- 6/94 Third Annual Meeting - INET 94
Europe**

INTERNET SOCIETY COMMITTEES

Administrative

- **Executive Committee**
- **Nominations**
- **Elections**

Topical

- **Developing Countries**
- **Disaster Relief Coordination**
- **Chapters**
- **Editorial Advisory Board**

Liaison

- **ITU**
- **CCITT**
- **ISO**
- **IFIP**

Activities

- **Technical information outreach**
- **Internet/OSINET hubs (COS)**

INTERNET SOCIETY PUBLICATIONS

Internet Society News

INTERNET SOCIETY CONFERENCES

INET 92 - Kobe, Japan

**INET 93 - San Francisco, USA
August 17-20, 1993**

**INET 94 - Europe
May/June**

INET 95 - TBD

INTERNET SOCIETY

Officers

- | | | |
|---|-----------------|---|
| o | Vinton Cerf | President |
| o | Larry Landweber | Vice President/Conf. |
| o | Tony Rutkowski | Vice President/Publ. |
| o | Frode Greisen | Treasurer |
| o | Juergen Harms | Secretary |
| o | Michael Roberts | Executive Director
(ex off. Trustee) |

INTERNET SOCIETY TRUSTEES

Brownstein, C.	USA	Ex-Chairman, FNC
Cerf, V.	USA	President
Chapin, L.	USA	Chair, IAB
Fuchs, I.	USA	President, CREN
Greisen, F.	Denmark	Treasurer
Harms, J.	Switzerland	Secretary
Huston, G.	Australia	AARNET Manager
Kahn, R.	USA	CNRI Charter Rep.
Kalin, T.	Slovenia	RARE General Sec.
King, K.	USA	EDUCOM Charter Rep.
Landweber, L.	USA	VP - Conferences
Neggers,	Netherlands	RARE Charter Rep.
Roberts, M.	USA	Exec. Dir. (Ex-officio)
Rutkowski, A.	USA	VP - Publications

**Introducing the
Charter and Founding Organizational Members**

CHARTER MEMBERS

**CORPORATION FOR NATIONAL RESEARCH INITIATIVES
RESEAU ASSOCIEES POUR LA RECHERCHE EUROPEENNE
EDUCOM**

FOUNDING MEMBERS

**ADVANCED NETWORK & SERVICES
APPLE COMPUTER CORPORATION
AT&T
AUSTRALIAN ACADEMIC AND RESEARCH NETWORK
BELL COMMUNICATIONS RESEARCH
BOLT BERANEK AND NEWMAN
CISCO SYSTEMS
COALITION FOR NETWORKED INFORMATION
CORPORATION FOR OPEN SYSTEMS INTERNATIONAL
CORPORATION FOR RESEARCH & EDUCATIONAL
NETWORKING
DEFENSE INFORMATION SYSTEMS AGENCY
DIGITAL EQUIPMENT CORPORATION
EUROPEAN ACADEMIC RESEARCH NETWORK
EUROPEAN LABORATORY FOR PARTICLE PHYSICS
FREEPORT-MCMORAN
HUGHES AIRCRAFT COMPANY
INTERNATIONAL BUSINESS MACHINES CORPORATION**

FOUNDING MEMBERS (Cont.)

INTEROP COMPANY
ISRAELI INTER-UNIVERSITY COMPUTATION CENTER
MCI COMMUNICATIONS CORPORATION
MICROSOFT CORPORATION
NATIONAL LIBRARY OF MEDICINE
NORDUNET
NOVELL, INC.
NYSERNET, INC.
PROTEON, INC.
SIEMENS AG
SOFT-SWITCH, INC.
SOFTWARE ENGINEERING INSTITUTE
SPRINT
3COM CORPORATION
UNIVERSITY OF NOTRE DAME
UNIVERSITY OF WASHINGTON
U S WEST COMMUNICATIONS, INC.
UUNET TECHNOLOGIES
WELLFLEET COMMUNICATIONS, INC.

ORGANIZATIONAL MEMBERS

ELECTRONIC FRONTIER FOUNDATION
NYNEX SCIENCE & TECHNOLOGY, INC.
TENON INTERSYSTEMS

Introducing the Internet Society

Advisory Council

Rick Adams	UUNET
Ed Albrigo	COS
Guy Almes	ANS
Stephen An	WELLFLEET
Michael Arnold	FREEPORT-MCMORAN
Cliff Bamford	MICROSOFT
William Biagi	COS
Daniele Bovio	EARN
David Brandin	INTEROP COMPANY
George Buchanan	HUGHES AIRCRAFT COMPANY
Lee Caldwell	NOVELL
Michael Carter	APPLE
Steve Cisler	APPLE
Michael Conn	MCI COMMUNICATIONS
Hans Deckers	EARN
Matthew Dovens	MCI COMMUNICATIONS
Robin Erskine	AARNET
David Farber	ELECTRONIC FRONTIER FOUNDATION
Francois Fluckiger	CERN
Howard Funk	IBM
Dain Gary	SOFTWARE ENGINEERING INSTITUTE
Cary Giese	U S WEST
William Grant	U S WEST
Terry Gray	UNIVERSITY OF WASHINGTON
Erik Grimmelmann	AT&T
Phil Gross	ANS
Anita Holmgren	TENON INTERSYSTEMS

Advisory Council (Cont.)

**Steve Holmgren
E.W. Bud Huber**

**TENON INTERSYSTEMS
HUGHES AIRCRAFT
COMPANY**

**Ole Jacobsen
Ron Johnson**

**INTEROP COMPANY
UNIVERSITY OF
WASHINGTON**

Walter Johnston

**NYNEX SCIENCE &
TECHNOLOGY, INC.**

Mitch Kapor

**ELECTRONIC FRONTIER
FOUNDATION**

**Anthony Lauck
Donald Lindberg**

**DIGITAL
NATIONAL LIBRARY OF
MEDICINE**

**James Luckett
Richard Mandelbaum
Bruce Martin
Olivier Martin
Jeff Mayersohn**

**NYSERNet
NYSERNet
IBM
CERN
BOLT BERANEK AND
NEWMAN**

**David McDonald
John Mullarvey
Catherine Muther
C. Joe Pasquariello**

**FREEPORT-MCMORAN
AARNET
CISCO SYSTEMS
DEFENSE INFORMATION
SYSTEMS AGENCY**

**Andrew Partan
Janet Perry
Paul Evan Peters
Rich Pethia**

**UUNET
NOVELL
CNI
SOFTWARE ENGINEERING
INSTITUTE**

**John Pickens
Werner Sammer
Thomas Schwarcz
Paul Severino**

**3COM
SIEMENS AG
SIEMENS AG
WELLFLEET**

Advisory Council (Cont.)

David Sincoskie
Leonard Swatski

BELLCORE
DEFENSE INFORMATION
SYSTEMS AGENCY

Dave Thompson
Michael Thurk
Paul Tsuchiya
Peter Villemoes
Richard West

MICROSOFT
DIGITAL
BELLCORE
NORDUNET
CNI

INTERNET SOCIETY STATISTICS

Organizational Members

- | | |
|--------------------|----|
| • Charter Members | 3 |
| • Founding Members | |
| For-profit | 21 |
| Non-profit | 15 |
| • Organizational | 3 |

Total	42
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Individual Members

- | | |
|------------------------------------|-----|
| • Europe/Eastern Europe | 220 |
| • Asia | 20 |
| • Africa | 32 |
| • Pacific Rim | 343 |
| • North, Central and South America | 944 |
| • Middle East | 17 |

Total	1576
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Ten Critical Internet Development Areas

- o Growth
- o Internationalization
- o Commercialization
- o Security
- o Privacy
- o Mobility
- o Speed/Dynamic Range
- o Standards
- o Multimedia Applications
- o Distributed Computing

GROWTH

- o Approx. 10,000 networks on Internet
- o Add'l 20K not connected
- o About 7,000 routed through NSFNET
- o Class B limited to 2^{14} nets (~16K)
- o Class C has 2^{21} nets (~2M)
- o Sparse utilization of address space
- o Overloading of routing system
- o No topological discipline!
- o RIP -> OSPF or IS-IS
- o EGP -> BGP or IDPR (long term)
- o CIDR
- o Need IP V7 w/new address mgmt

INTERNATIONALIZATION

- o Many countries now linked
US, UK, DE, FR, IT, IL, CH, NO, SE, FI,
YU, PO, ES, AU, JP, MX, BR, IS, SA, CA,
IR, RK, CS, SU, HU, AS, IN, ...
- o EMAIL extends via BITNET, UUNET,
FIDONET and international commercial
carriers
- o RFC1174 Provisions (IAB/FNC) Distributed
NIC/Address assignment
- o Reseaux Associees pour la Recherche
d'Europeenne (RARE)
- o Coordinating Committee on Intercontinental
Networking (CCIRN) and derivatives
- o International IAB Membership
- o Export Control Effects

COMMERCIALIZATION

- o US: PSI, UUNET, ANS CO+RE, CERFNet, JVNCNET, CIX, Sprint, Infonet
SMDS: Southwest Bell, Bell South
- o Finnish & Swedish PTTs
- o UK: Private TCP/IP Services
- o Industry standard for multi-vendor Networking
- o Need for Authentication/Accounting
- o Charging: impact on protocols (!)
- o Competitive Products & Services (impact on standards setting)

SECURITY

- o NRC/Clark - "Computers at Risk!"
- o Computer Emergency Response Teams (CERTs) - SEI/CMU/Pethia
- o Common Authentication Technology
Kerberos/MIT + RSA/RSADSI
MD2 & MD4 (Message Digests)
Authentication API - in dev't.
- o Host Password->Authentication
- o Router/Server Authentication including
Net Management
- o Export Controls
Authentication/Dept. of Commerce
Confidentiality/Dept. of State/ITARS
- o All Protocol Standards Subject to
Security Review

PRIVACY

- o Privacy Enhanced Mail (PEM)
Certificate Authorities
Certificate Generation Units
Internet Certificate Registration Service
- o Trans-border Data Flow Issues
- o End-to-End Confidentiality
Telnet, File Transfer, ...

MOBILITY

- o Dynamic Name/Address Binding DNS?
Multicast? Forwarding?
- o SLIP and PPP (authenticity!)
- o Connection Re-direction?
TCP extension?? UDP??

SPEED

- o Gigabit Networking
ATM, SONET, PLANET, SUNSHINE
CNRI/DARPA/NSF Gigabit Testbeds
- o FDDI and Gigabit LANS
- o 100 Mbls Ethernet
- o TCP Extensions
Extended Window and Sequence
Space
Selective Acknowledgements
Header Prediction
- o Flow/Congestion Controls
- o Implementation Strategies
Hardware Assist?
- o New Protocols - XTP, OSI/TPx
- o Resource Allocation/Priority

STANDARDS

- o IAB/IETF - Better Defined Process
- o Coexistence with OSI (!)
- o Cooperation with Other Orgs
ANSI, ITU(!), IEEE, NISO, T1, ISO, CCITT
- o Accommodation of Proprietary Stds
e.g. SUN/NFS, DEC SPx, Novell IPX,
...
- o Accommodation of Patented Stds
e.g. RSA

MULTIMEDIA APPLICATIONS

- o Compound Document Standards
- o RFC822-> x.400 Extensions (MIME)
- o Resource Allocation/Prioritization (e.g. voice, video...)
- o Hypertext, Hyperdatabases...
- o Digital Library Systems
- o Multimedia Video-Conferencing
- o Packet audio, video multicasting

DISTRIBUTED COMPUTING

- o Global File System
- o Knowbots (and related systems)
- o OSF Distributed computing Environment
- o Access Control, Resource Sharing
Memory Access, File Access,
Processor Sharing, ...

Internet in the Future