

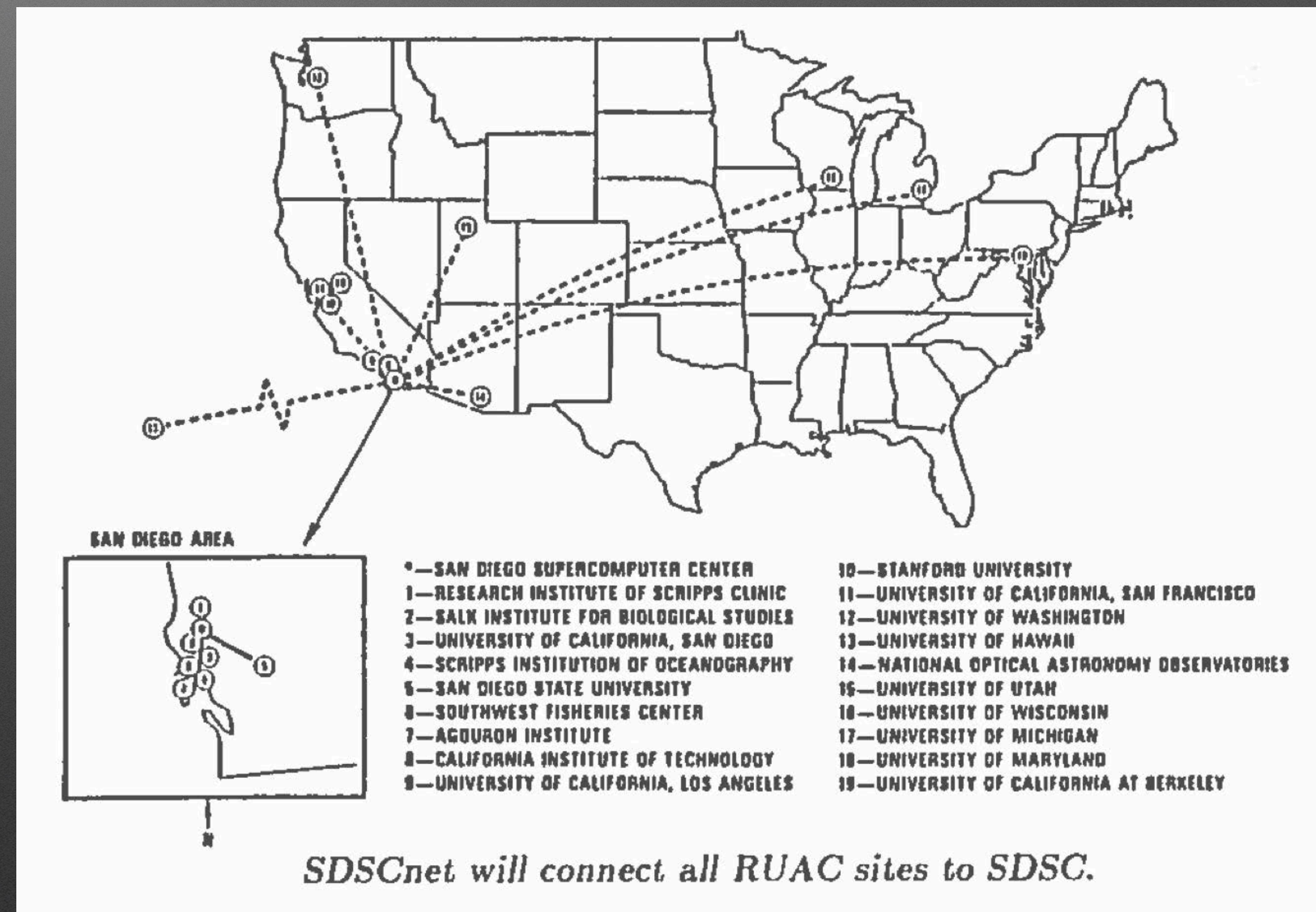


# CERFnet and CIX- The Origin Stories

*One of the NSF's investments in the early Internet*

# First, SDSCnet

- NSF funded the original supercomputer centers, 1984-85
- San Diego Supercomputer Center at UCSD = SDSCnet
  - Established Remote User Access Centers modeled after DOE RUACs
- 56 kbps Star satellite network
  - “No one has that much data”
  - 56kbps land connections to locals
- TYMNET @1200 baud (woohoo!)
- ARPANET in Spring 1986
- 56 kbps NSFnet origins to NCAR, NCSA in April 1986



In June 1988, a proposal was written for a Southern California regional network... we called it CERFnet

- 1.544 Mbps screaming fast backbone
  - Full and free transit with Los Nettos (sister network in Los Angeles formed by the late Jon Postel.)
- 33 academic institutions
- 2 industrial users
  - SAIC and Northrop
- Always commercially focused: “businesses in the region will be encouraged to affiliate with the network”
- General Atomics/San Diego Supercomputer Center operated
- Funded and live in 1989
- Susie Arnold and Karen Armstrong and I were the core implementation team.

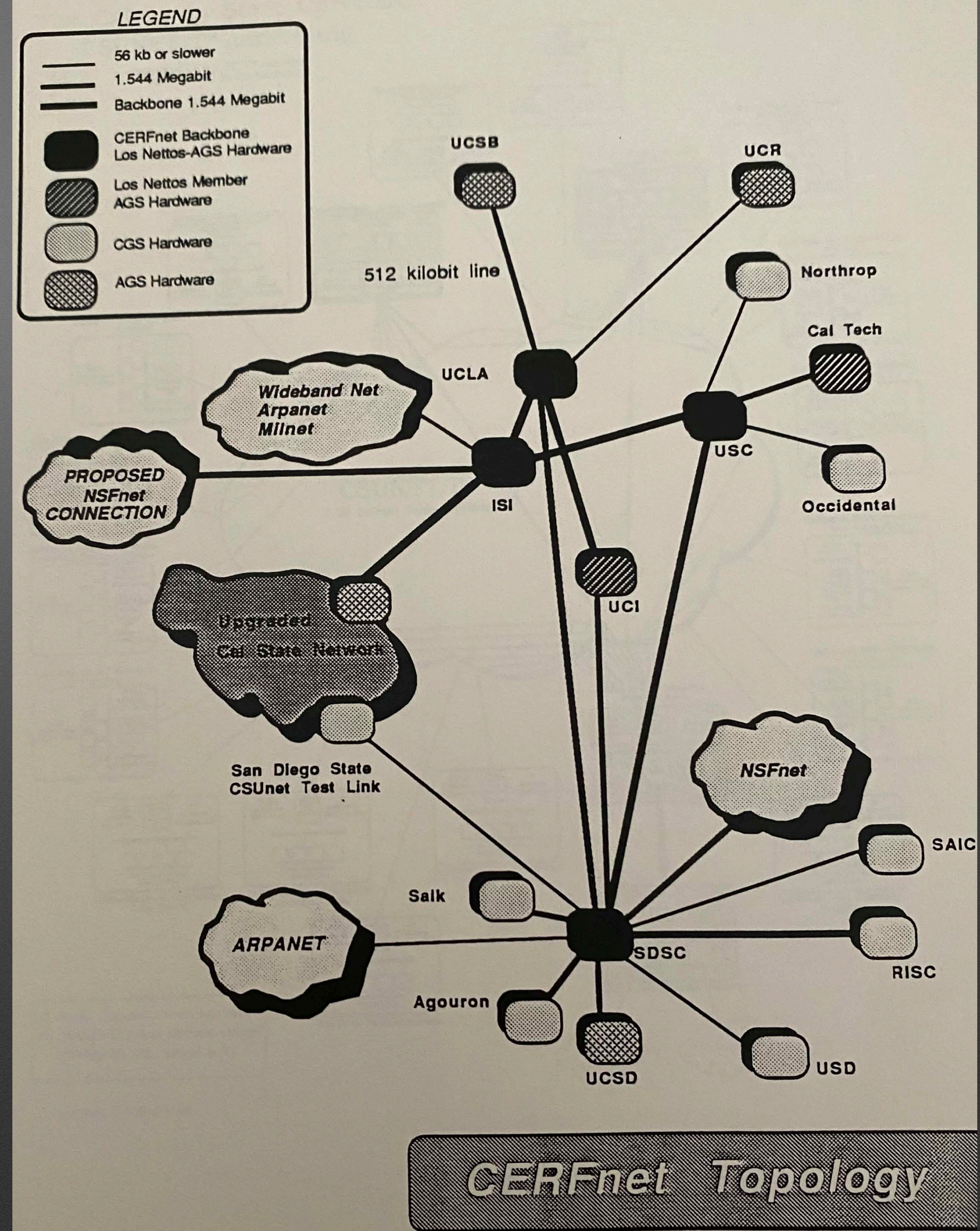
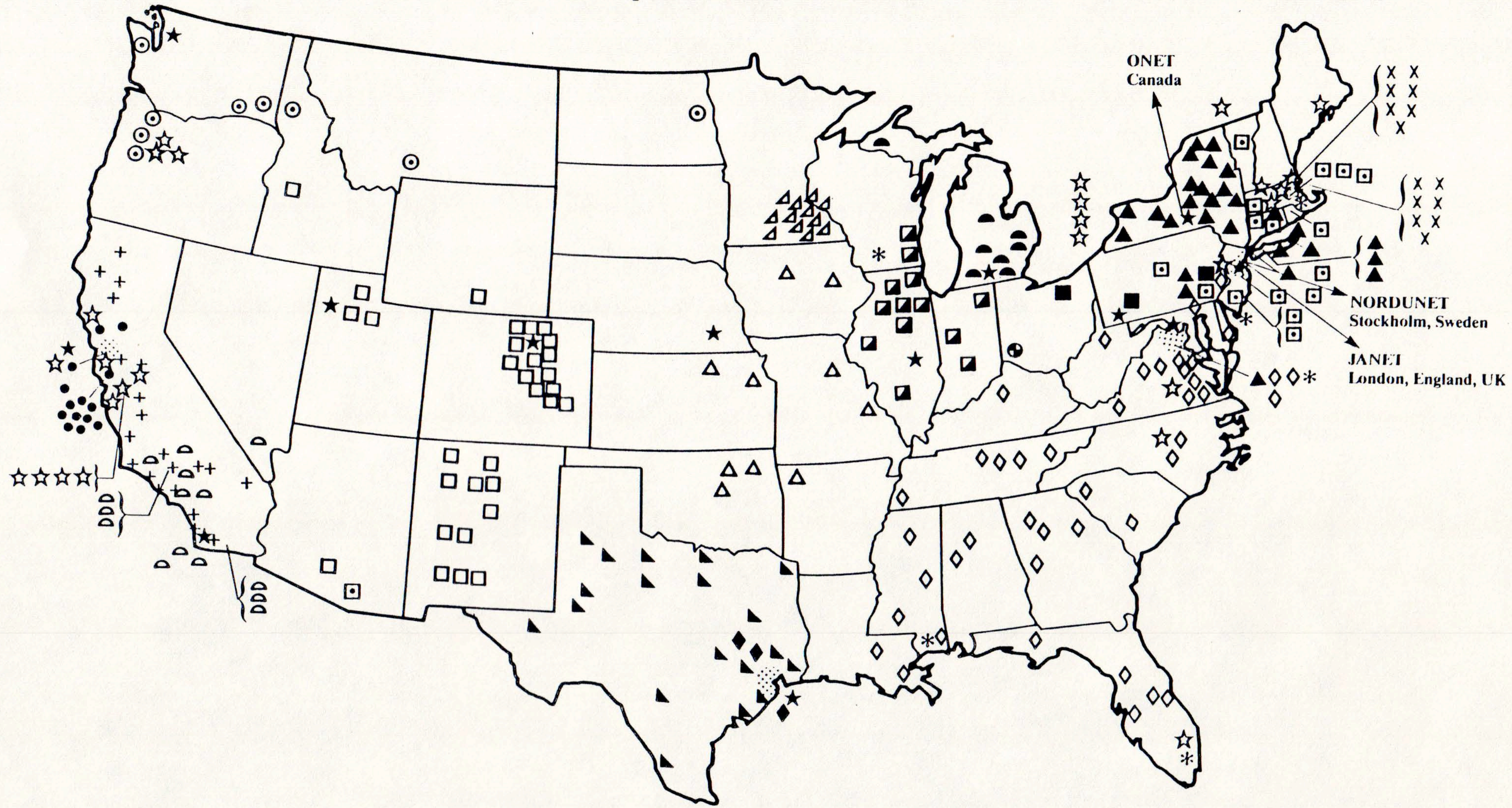


Figure 1

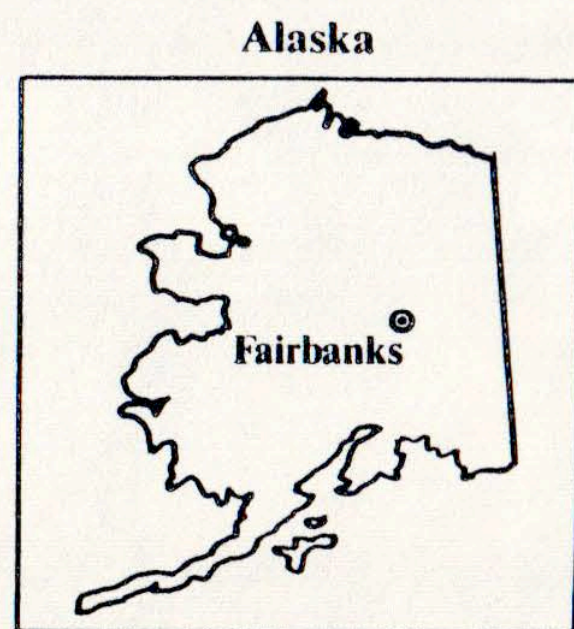
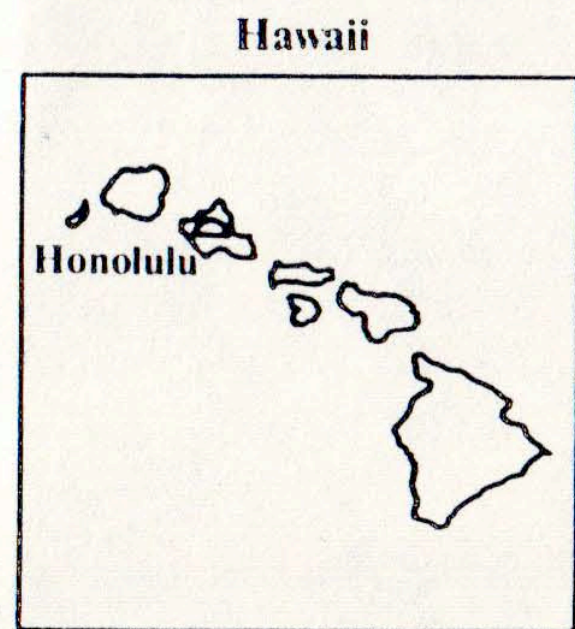


Dedication party  
July 10, 1989  
(Thanks, Vint!)

# NSF-Sponsored IP Networks



CERFnet User's Guide, III.1.p. 5



NETWORKS	ON-LINE AS OF 6/15/89	ON-LINE* AS OF 12/15/89	NETWORKS	ON-LINE AS OF 6/15/89	ON-LINE* AS OF 12/15/89	NETWORKS	ON-LINE AS OF 6/15/89	ON-LINE* AS OF 12/15/89
BACKBONE SITES	★	★	MIDNET	△	△	SDSCNET	◐	◐
BARRNET	●	●	MRNET	▴	▴	SESQUINET	◆	◆
CERFNET	+	+	NCSANET	◼	◼	SURANET	◇	◇
CICNET	⊕	⊕	NEARNET	X	X	THENET	▾	▾
CSNET	☆	☆	NORTHWESTNET	⊙	⊙	USAN	*	*
JVNCNET	◻	◻	NYSERNET	▲	▲	WESTNET	◻	◻
MERIT	◑	◑	PSCNET	■	■			
						*expected		

This map and its key are courtesy of the NSC.

- We started in good company. This map reflects a view of the regionals around 1990. Most were funded by the NSF.

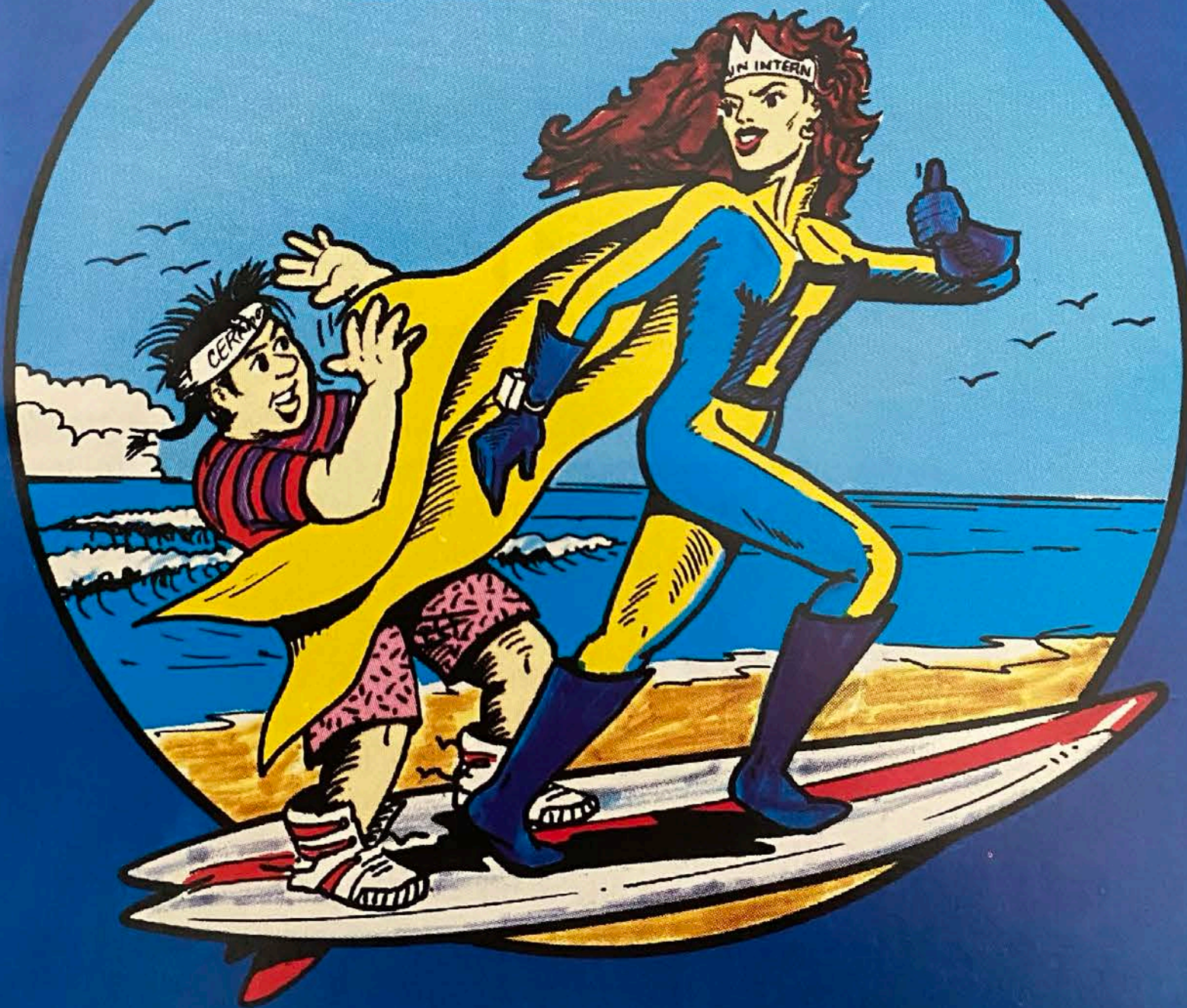
CERFnet Presents  
*THE ADVENTURES OF*

CERFnet

NO. 1  
OCT '91 \$1.25

# CAPTAIN INTERNET

-and-  
CERFBOY



*"THE LAN THAT TIME FORGOT"*

- **1990**
  - CERFnet won the 1990 Interop Achievement Award (thanks, Dan)
  - New service deployed - Dial 'n CERF.
- **1991**
  - 3 international connections went live: Brazil, Mexico and South Korea.
  - 2nd anniversary — the network had grown to over **100 members**.
  - FrEdMail gateway to CERFnet - Internet access to K-12 (Thanks, Yvonne and Al!)
  - CERFnet joined with PSInet and UUnet to form the Commercial Internet Exchange (CIX) interconnecting the networks for commercial Internet service.

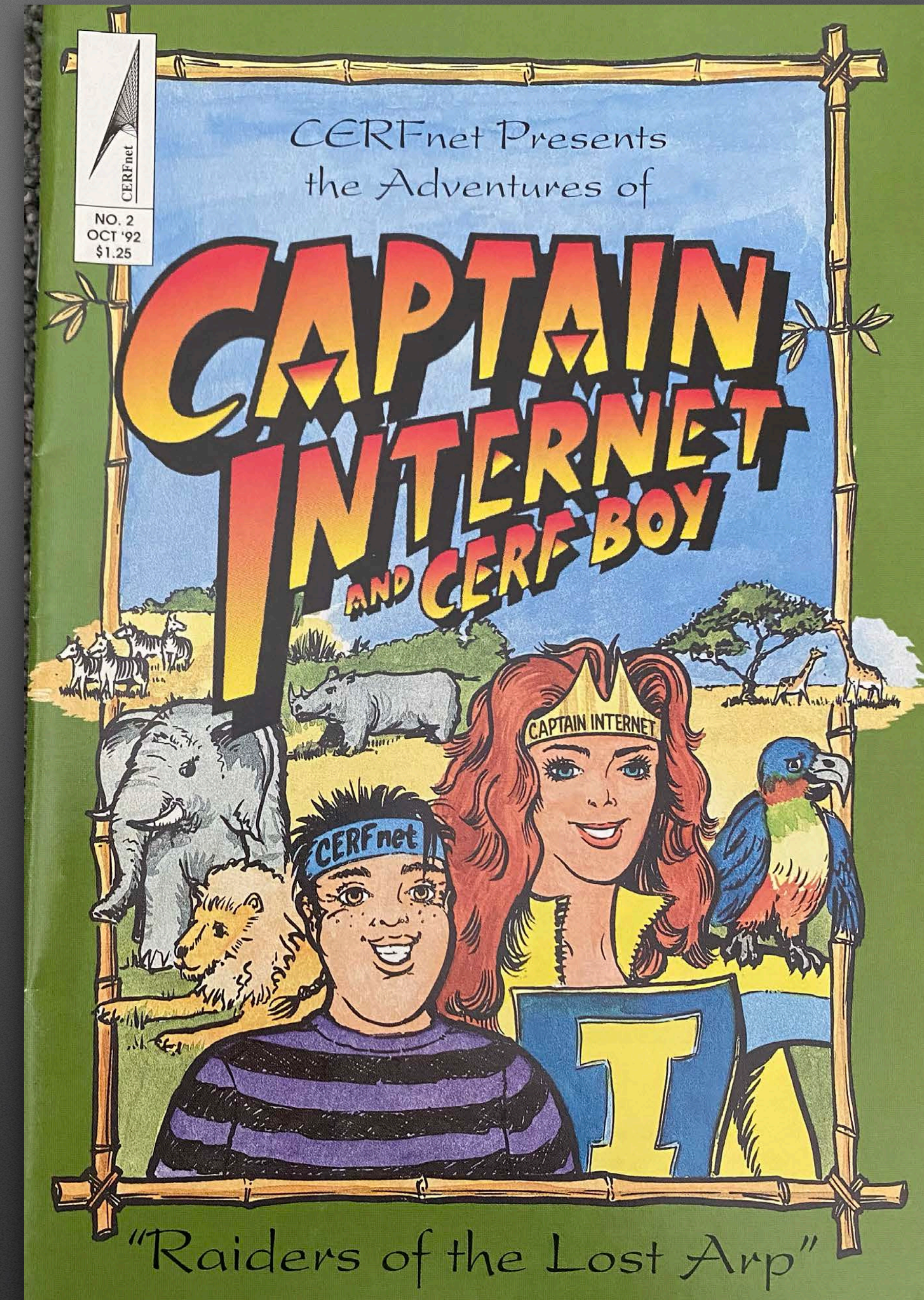
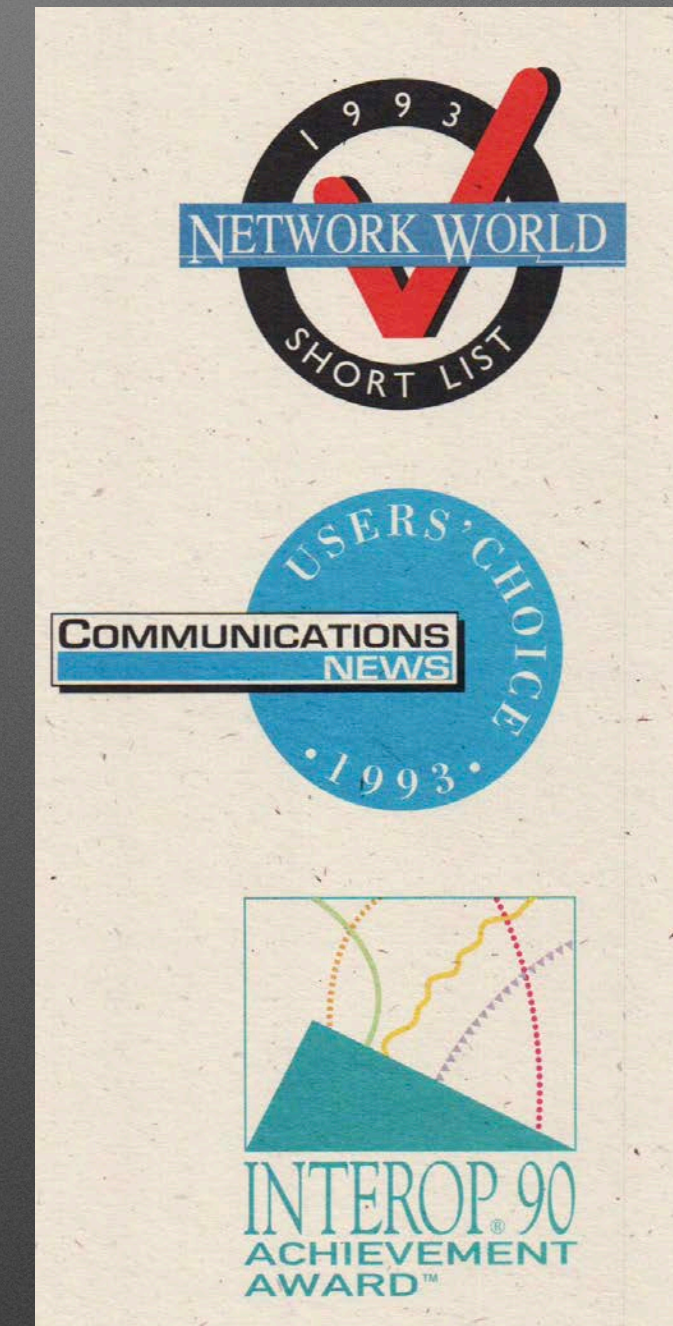
# A Word or Two about the Commercial Internet Exchange (CIX)

- **The Networks** — UUNET, PSINet and CERFnet
- **The People** — Rick Adams and Andrew Partain, Bill Schrader and Marty Schoffstall, Susan Estrada and Susie Arnold
- **The Point** — Provide neutral connectivity among cooperating carriers with no restrictions on the type of traffic allowed and no settlements (charges based on traffic volume)
- **1991** — CIX was announced in March and CIX-West Santa Clara interconnections up in July.
- **Our Customers** — Requested this interconnection
- At the time, there was a LOT of NSFnet/NREN drama - ANS, poaching, interconnect fees, settlements, etc.

## 1992 and 1993

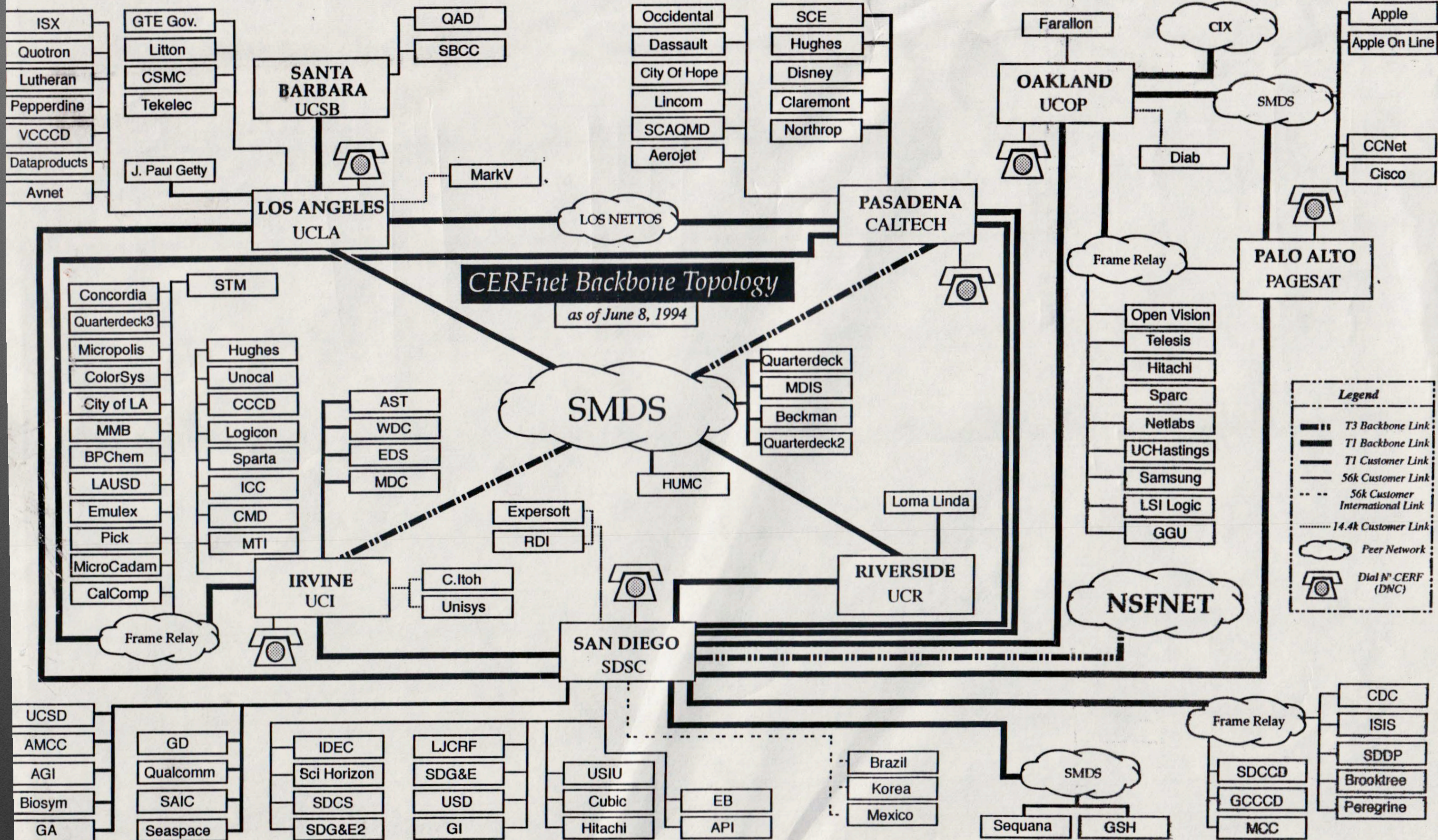
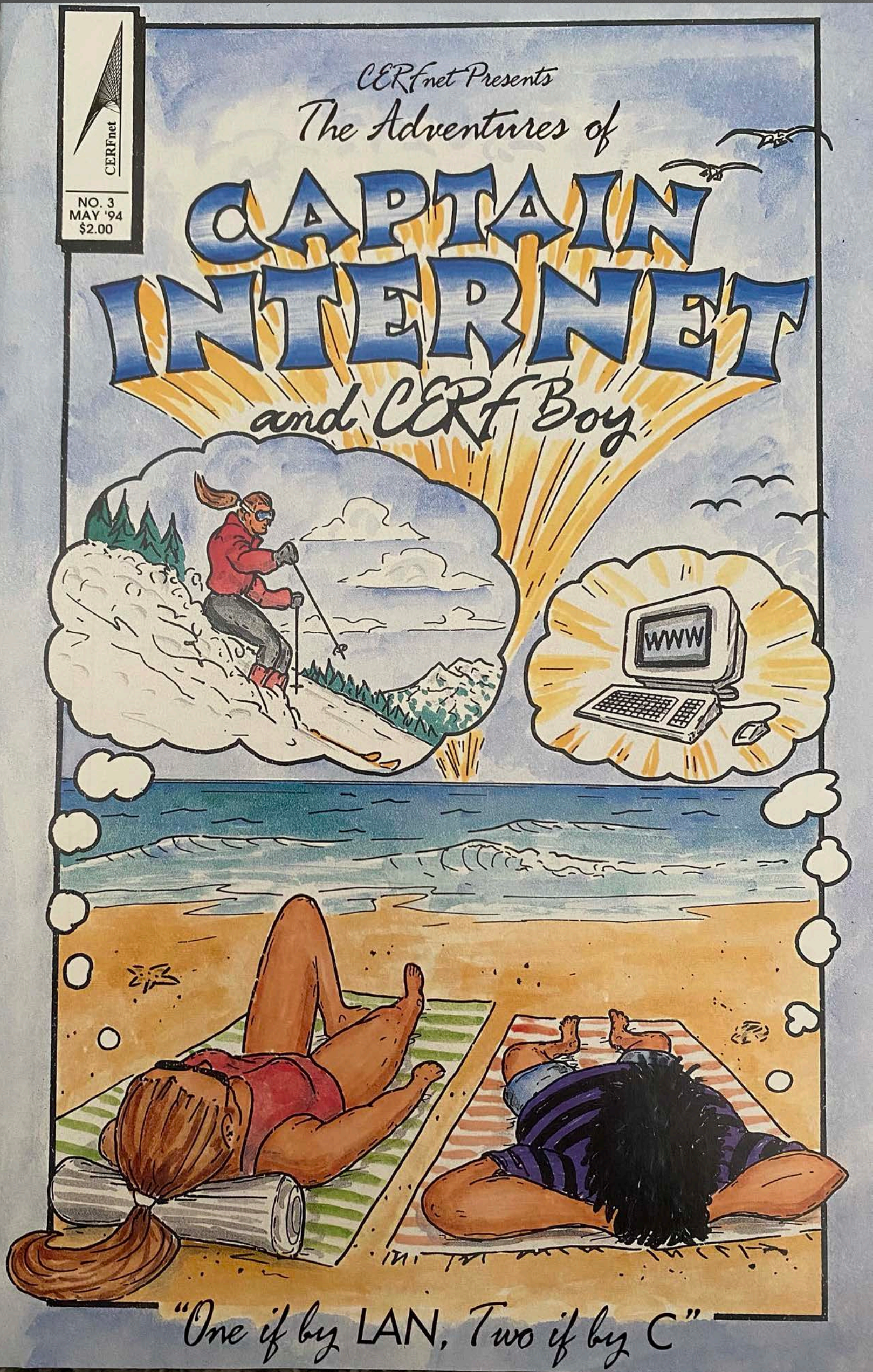
Network was self sufficient and commercial traffic was allowed

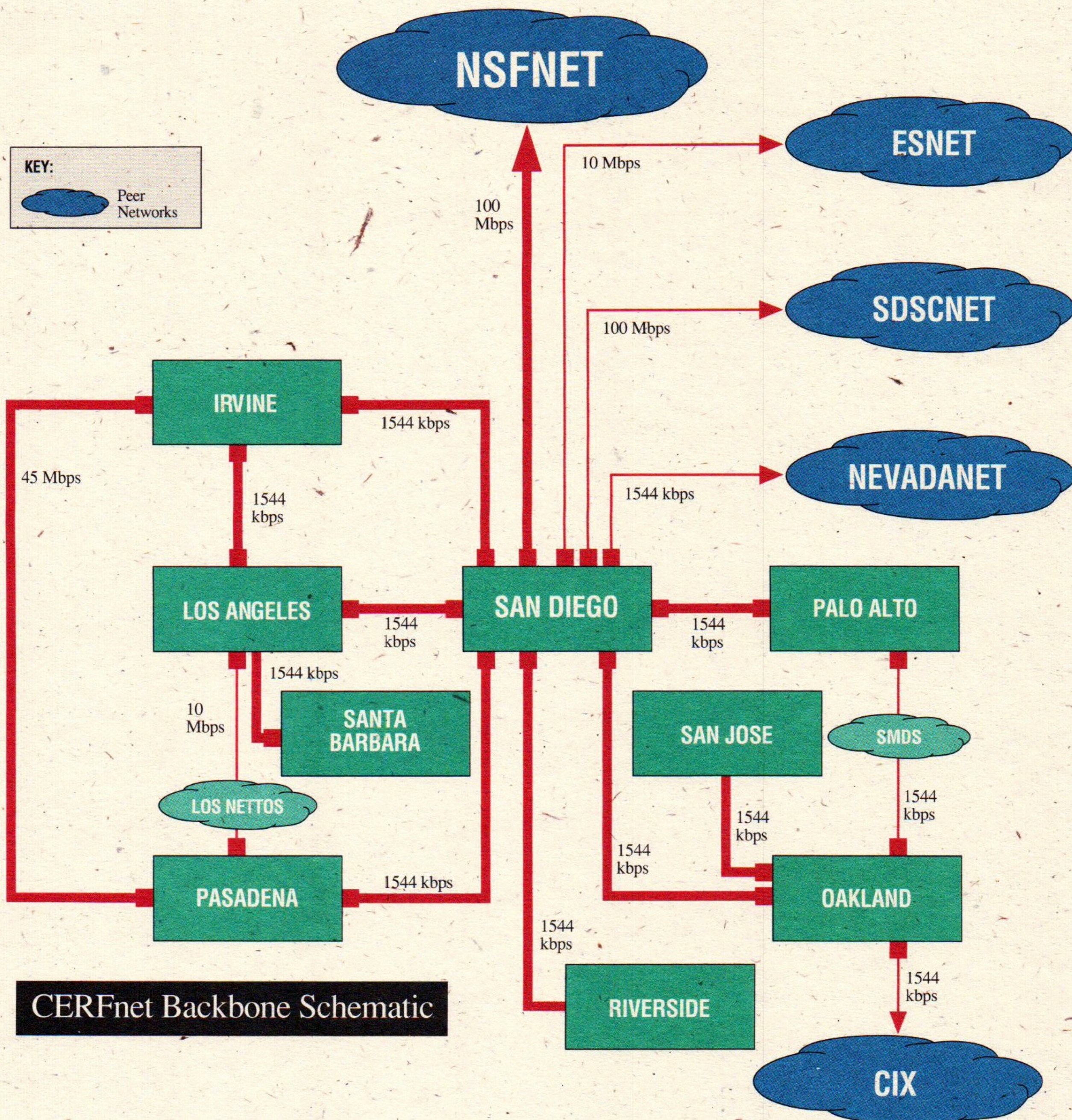
- 24/7 support
- Services had grown to include:
  - CERF 56
  - CERF 1544
  - CERF 45000
  - CERF 14.4
  - Dial n' CERF Plus
  - Dial n' CERF - hourly
  - Dial n' CERF USA - Toll free #
  - Dial n' CERF AYC - unlimited
- CERF n' Safari - CERFnet in the K-12 classroom (Thanks, Yvonne!)





1994





CERFnet Backbone Schematic

# The End

( or was it the beginning...)