INTERNATIONAL STANDARDIZATION OF SPACE COMMUNICATIONS

Adrian J. Ho
Jet Propulsion Labo
California Institute of T
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NASA

ISO Member Countries - *National Standards Bodies*

ORGANISATION INTERNATIONALE DE NORMALISATION

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

Technical Committee 20 (ISO/TC20): Aircraft and Space Vehicles

(Secretariat: U.S. Aero. Industries Assoc.)

Subcommittee 14 (ISO/TC20/SC14): Space Systems and Operations

(Secretariat: AIAA)

- Interfaces, Integration & Test
- Operations & Ground Support
- Design Engineering & Production
- Environment (natural & induced)
- Program Management

Subcommittee 13 (ISO/TC20/SC13): Space Data and Information Transfer Systems

(Secretariat: NASA)

CCSDS

- Space Data Communications
- Space Information Interchange
- Space Mission Cross Support

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Industry Associates

MANAGEMENT COUNCIL

OMG OBJECT MANAGEMENT GROUP

Internet Society

ISO

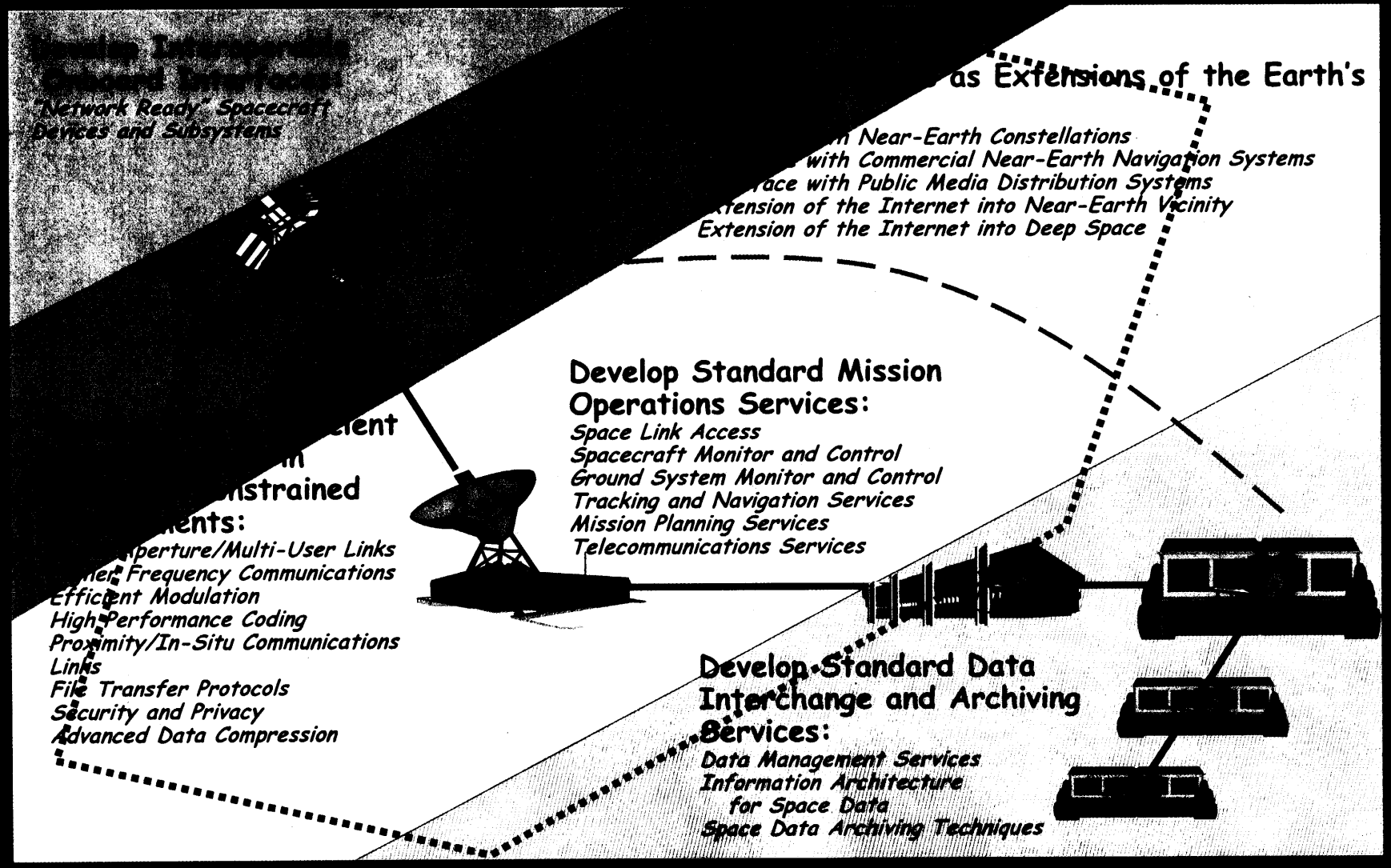
Secretariat

Technical Steering Group

PANEL 1	PANEL 2	PANEL 3
SPACE COMMUNICATIONS	INFORMATION INTERCHANGE PROCESSES	CROSS SUPPORT OPERATIONS

Observer Agencies

[illegible]	CTA/Brazil	IKI/Russia	NOAA/USA
CAST/China	DSRC/Denmark	ISAS/Japan	NSPO/Taipei
CRC/Canada	EUMETSAT/Europe	ISRO/India	SSC/Sweden
CRL/Japan	EUTELSAT/Europe	KARI/Korea	TsNIIMash/Russia
CSIR/South Africa	FSST&CA/Switzerland	KFKI/Hungary	USGS/USA
DLR/Germany	HNSC/China	MOC/Israel	


"Network Ready" Spacecraft
Devices and Subsystems
as Extensions of the Earth's
Near-Earth Constellations
with Commercial Near-Earth Navigation Systems
ace with Public Media Distribution Systems
tension of the Internet into Near-Earth Vicinity
Extension of the Internet into Deep Space
ent
nstrained
ents:
perture/Multi-User Links
er Frequency Communications
Efficient Modulation
High-Performance Coding
Proximity/In-Situ Communications
Links
File Transfer Protocols
Security and Privacy
Advanced Data Compression
Develop Standard Mission
Operations Services:
Space Link Access
Spacecraft Monitor and Control
Ground System Monitor and Control
Tracking and Navigation Services
Mission Planning Services
Telecommunications Services
Develop Standard Data
Interchange and Archiving
Services:
Data Management Services
Information Architecture
for Space Data
Space Data Archiving Techniques

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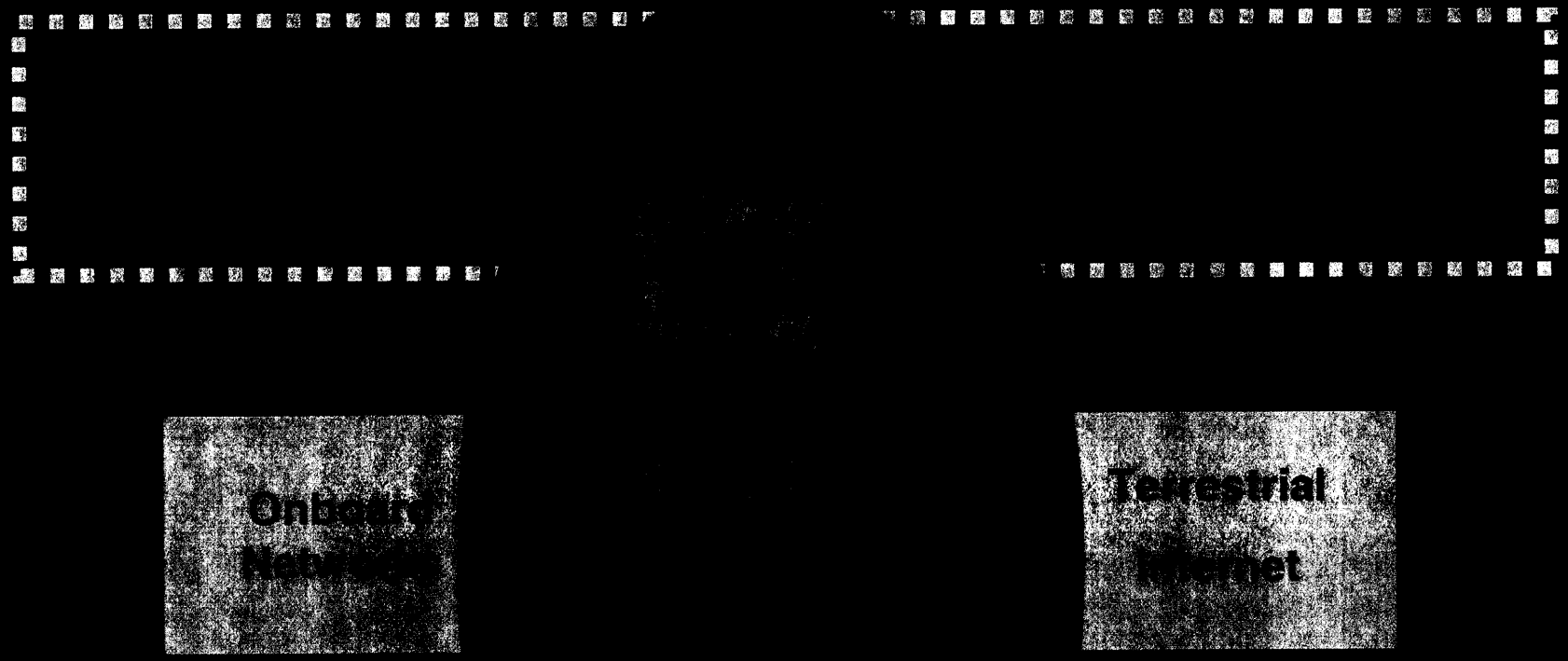

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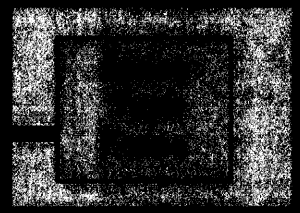
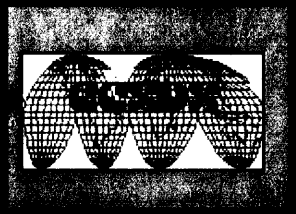


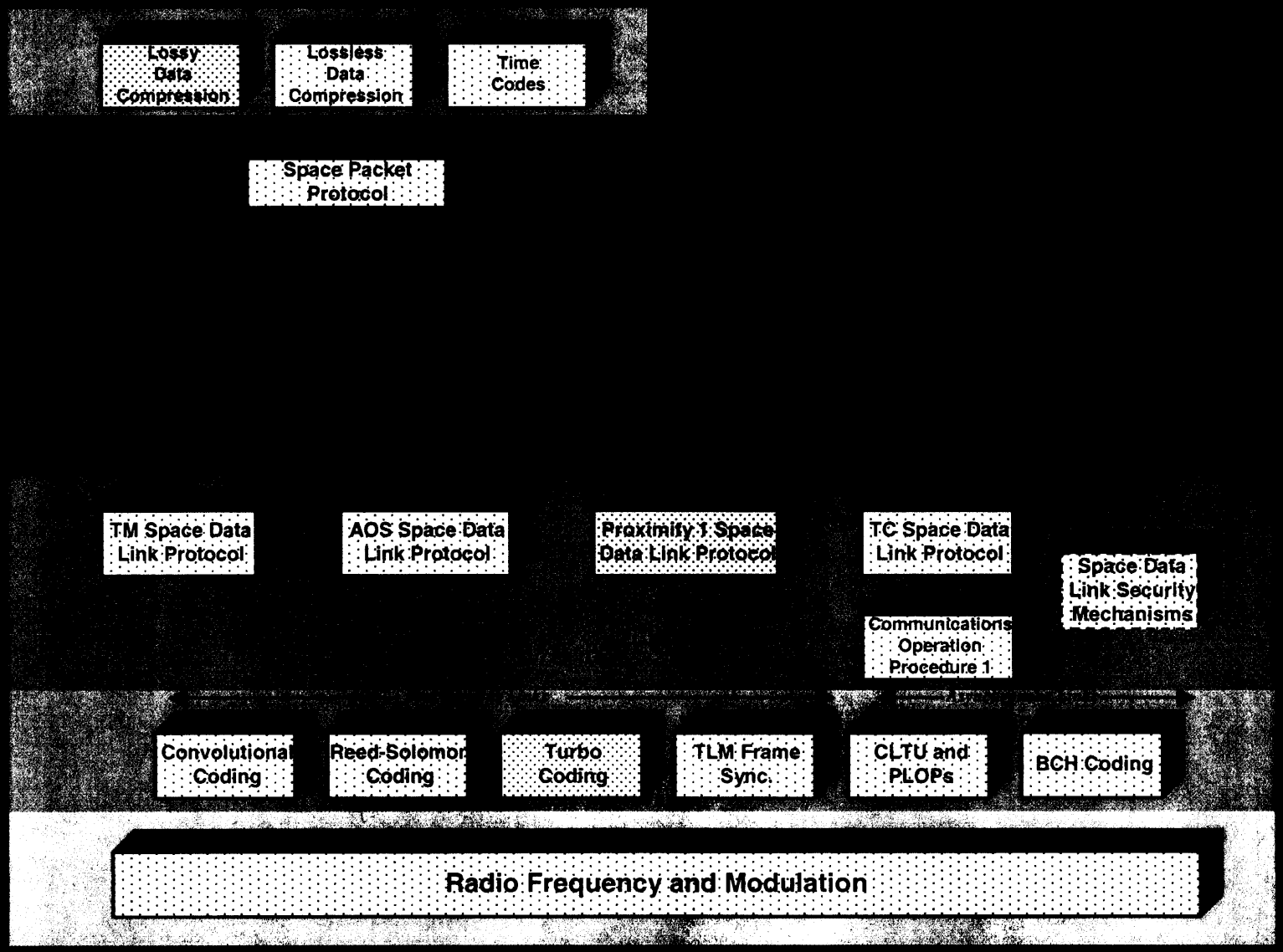
OMG
OBJECT MANAGEMENT GROUP

Internet Society



ISO

NASA



CCSDS Recommendation Draft CCSDS Recommendation CCSDS Report

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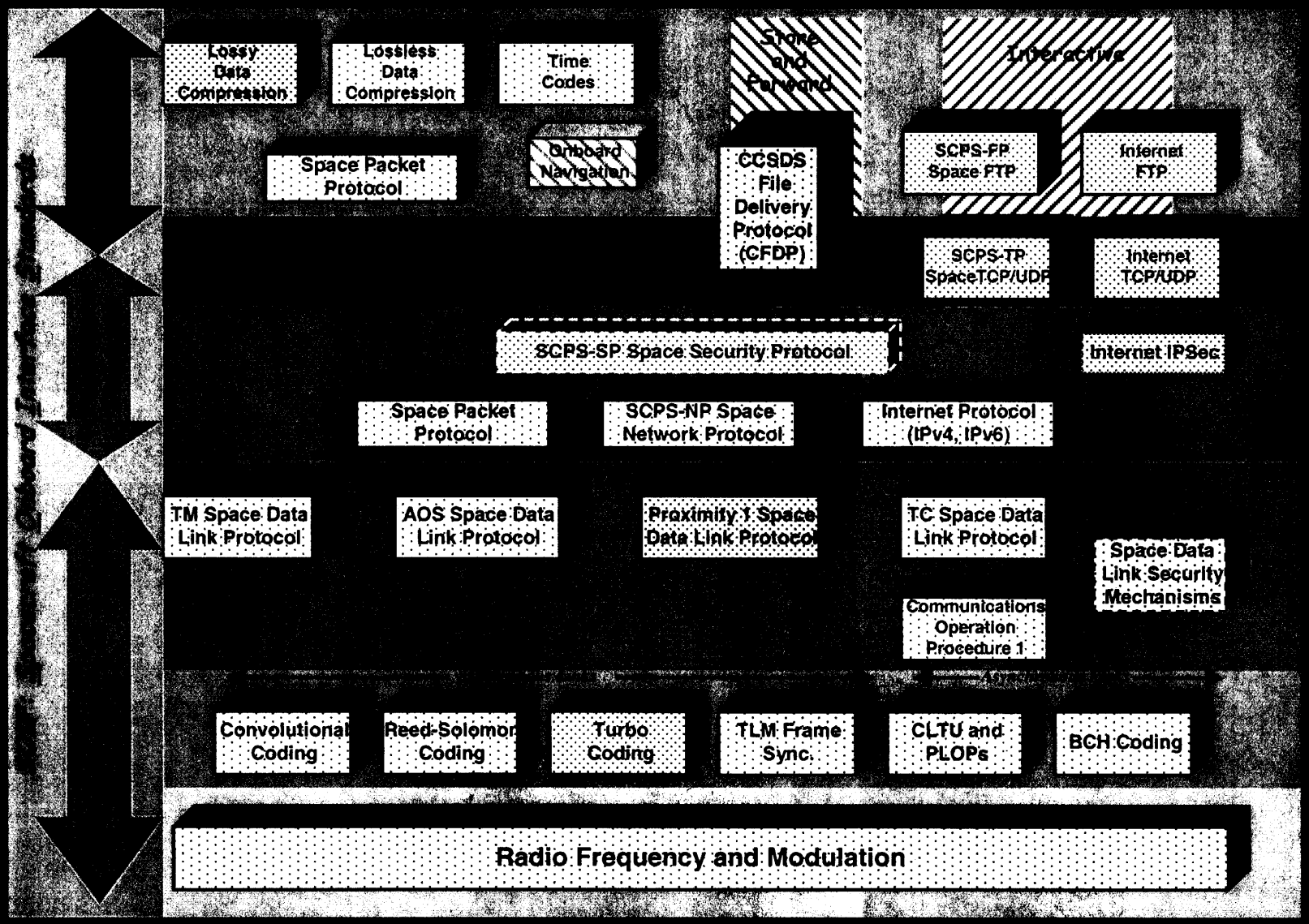
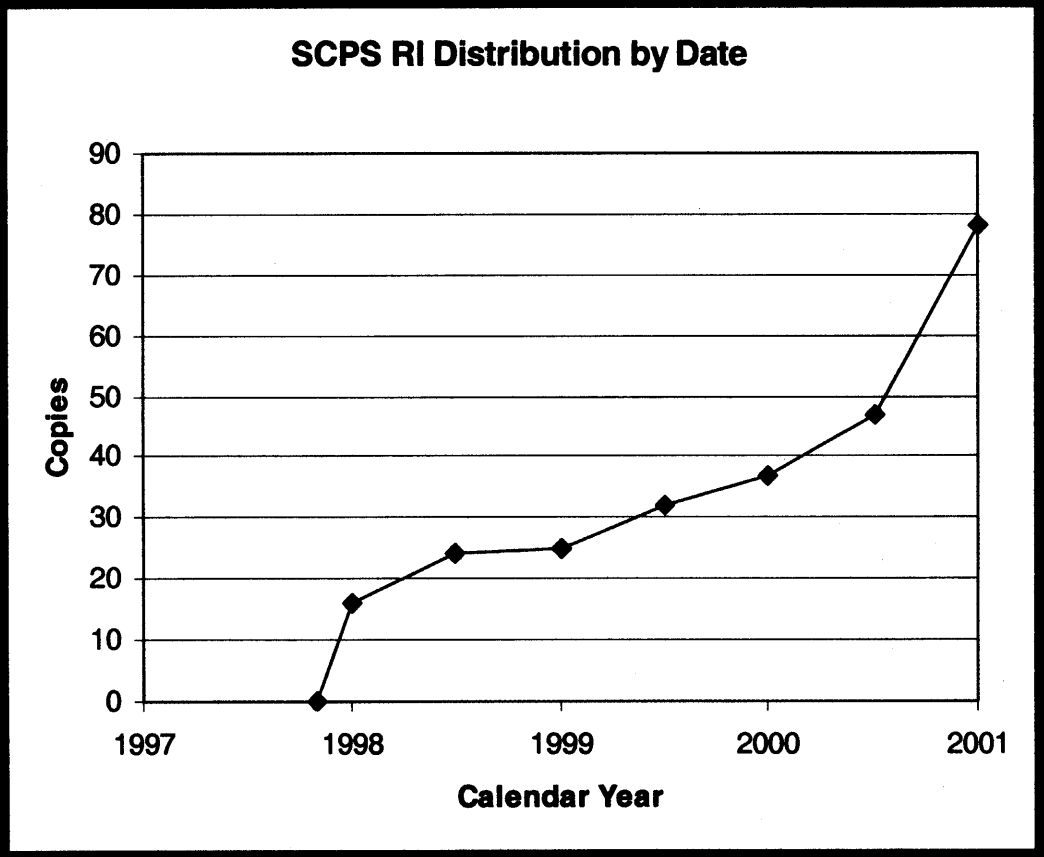
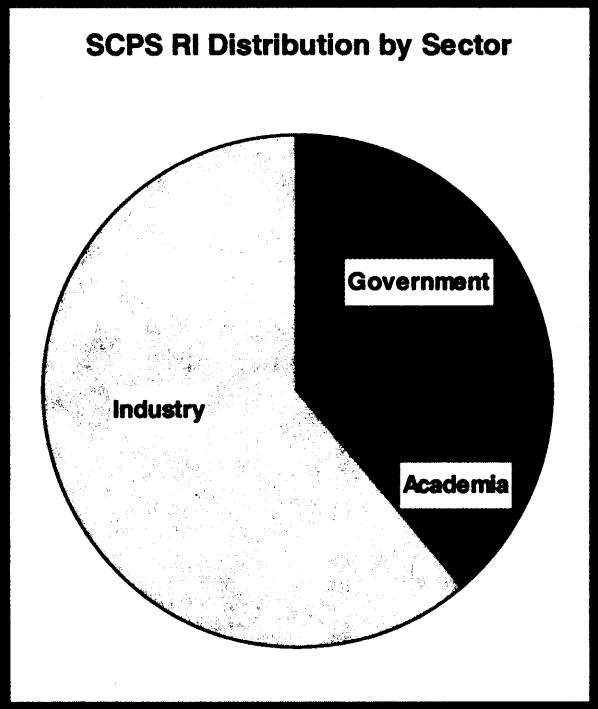
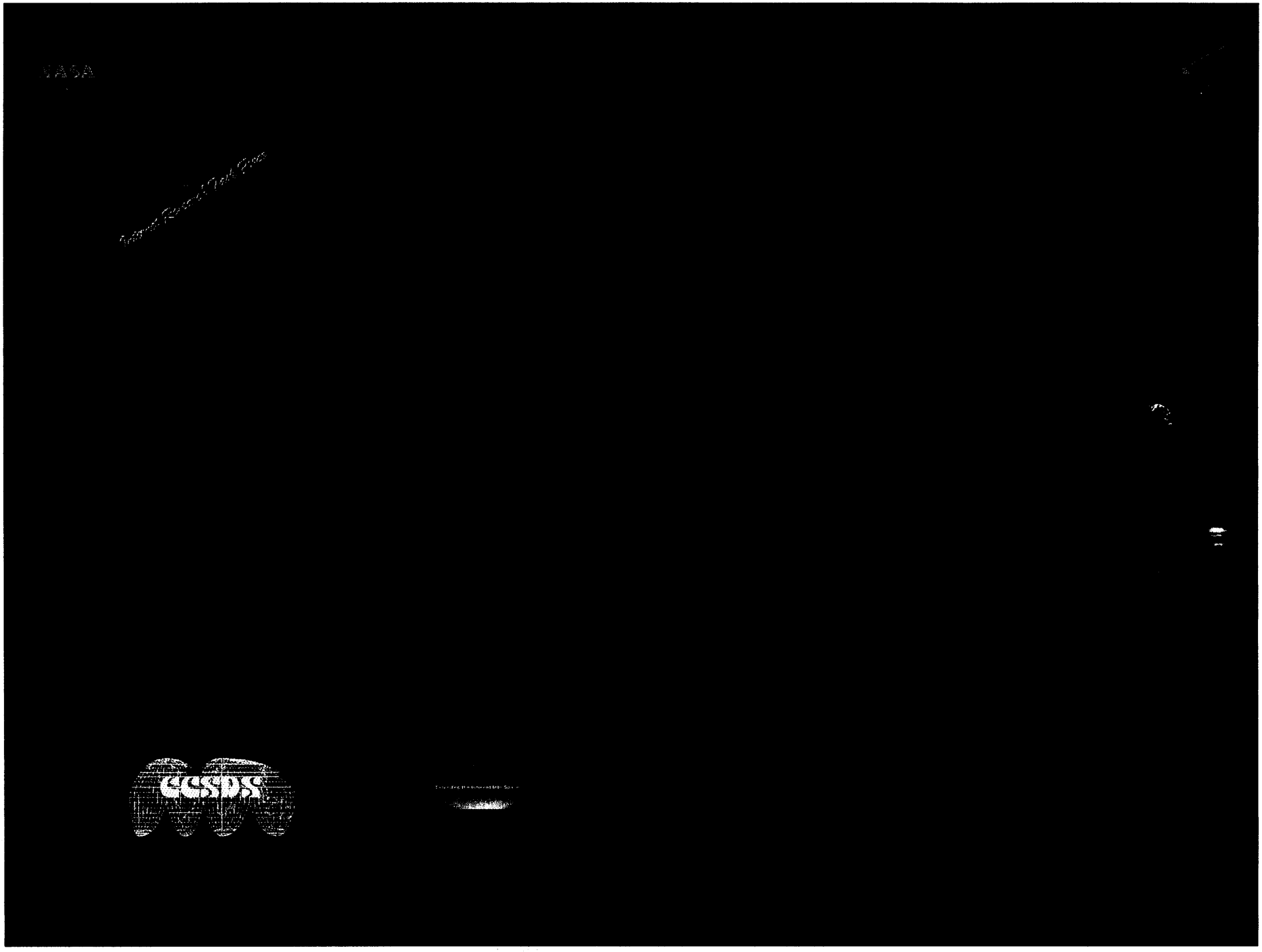


CCSDS Recommendation | Draft CCSDS Recommendation | CCSDS Report | Internet RFC

SCPS-FP


SCPS RI Distribution by Date
Copies
90
80
70
60
50
40
30
20
10
0
1997
1998
1999
2000
2001
Calendar Year


SCPS RI Distribution by Sector
Government
Industry
Academia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CCSDS

Operations driven by power, weight, volume

High value data, finite buffers

Transaction sizes are small compared to bandwidth-delay product

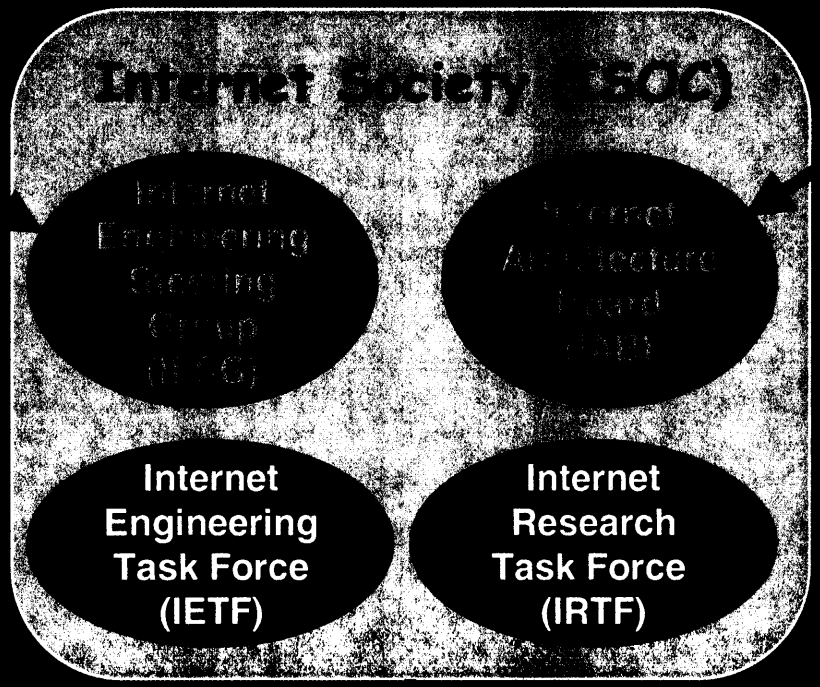
Long propagation delays

Backbone contact periods:

- short relative to delay
- possibly one-way
- possibly separated by days, weeks
- cannot guarantee an end-to-end path

The IESG is responsible for technical management of IETF activities and the Internet standards process. The IESG is directly responsible for the actions associated with entry into and movement along the Internet "standards track," including final approval of specifications as Internet Standards.

The IETF is a large open international community of network designers, operators, vendors, and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet. It is open to any interested individual.



IAB responsibilities include:

1. IESG Selection.
2. Oversight of the architecture for the protocols and procedures used by the Internet.
3. Oversight of the process used to create Internet Standards.
4. Editorial management and publication of the Request for Comments (RFC) document series
5. External Liaison with other organizations concerned with standards and other issues relevant to the world-wide Internet.
6. Technical, architectural, procedural, and (where appropriate) policy advice to the Internet Society

Internet Corporation for Assigned Names and Numbers (ICANN)

ICANN is the non-profit [illegible] that was formed to [illegible] responsibility for the IP [illegible] space allocation, [illegible] assignment, [illegible] over [illegible] functions

IRTF Research Groups work on topics related to Internet protocols, applications, architecture and technology. Participation is by individual contributors, rather than by representatives of organizations. The Internet Research Steering Group (IRSG) may from time to time hold [illegible]

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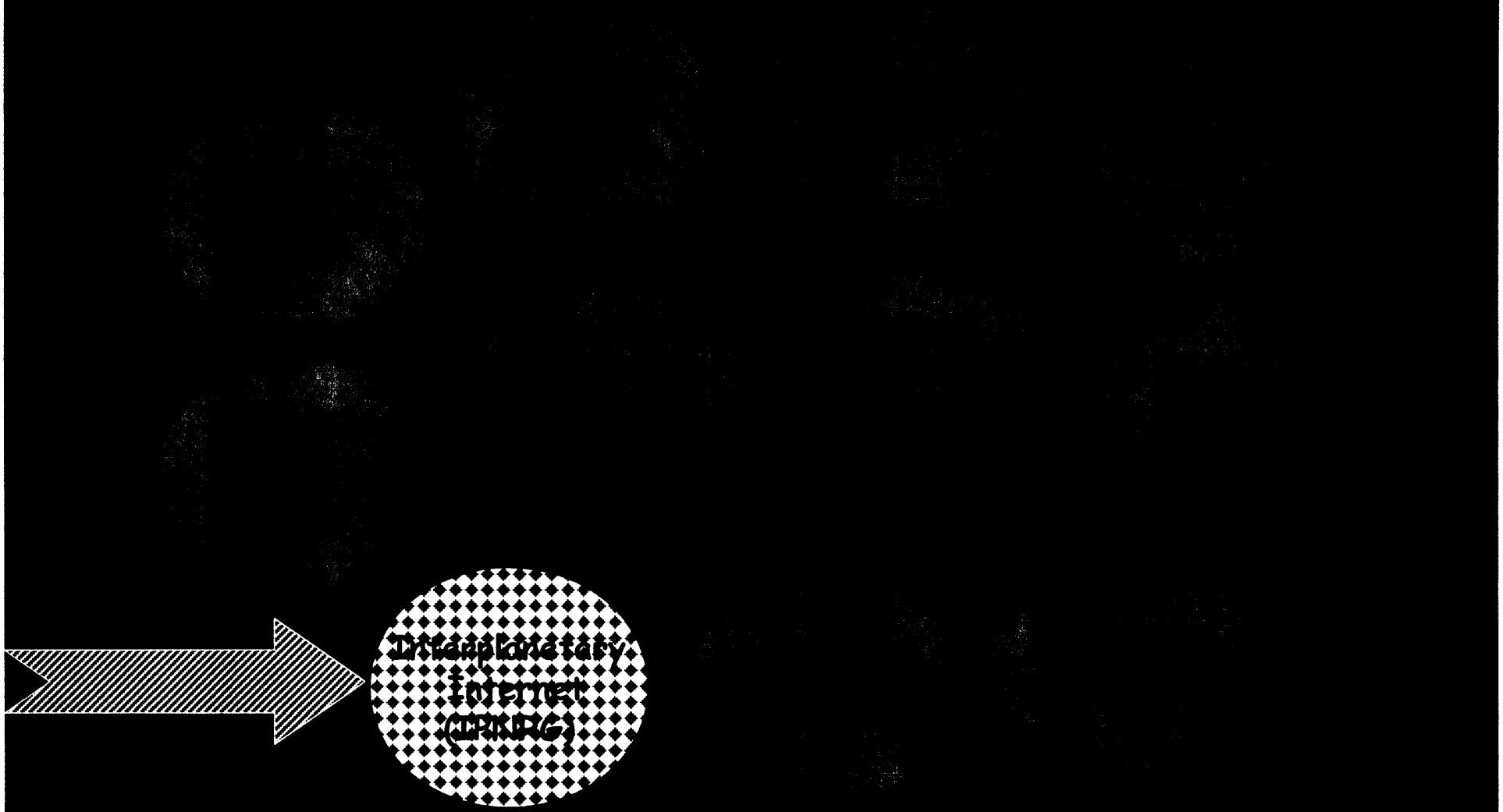
Internet Research Task Force (IRTF)



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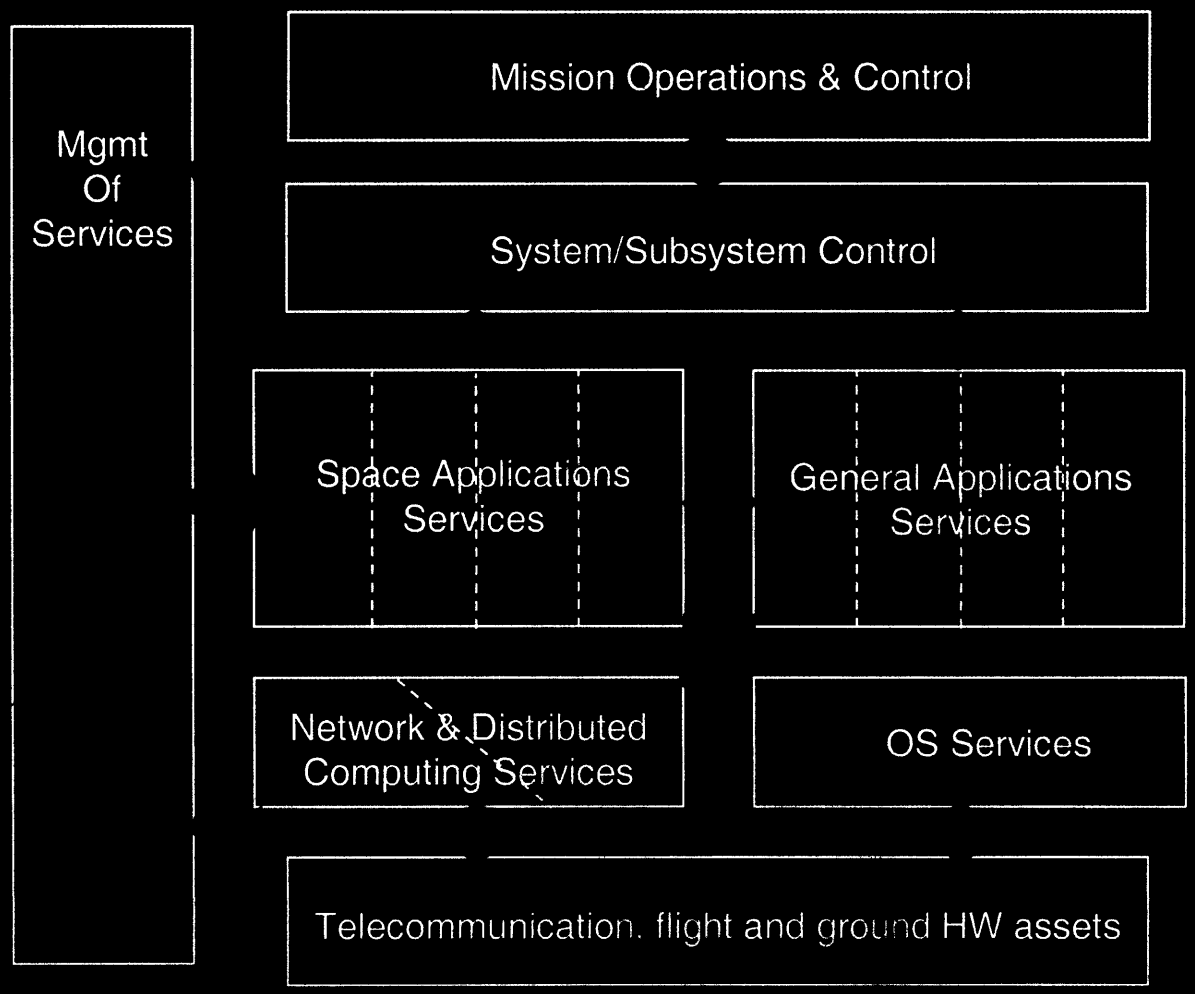
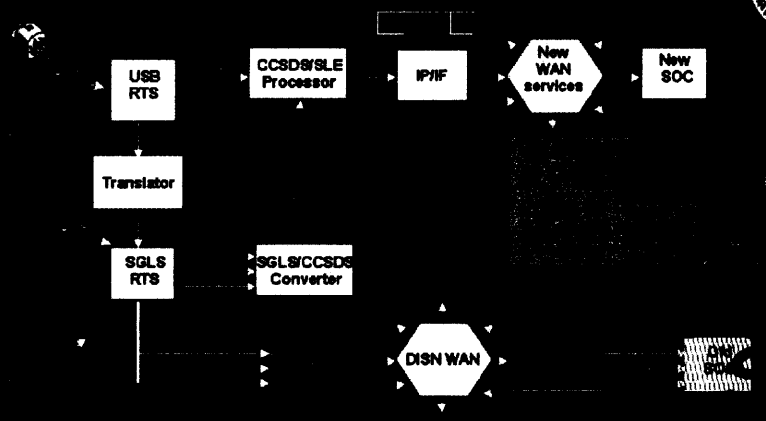
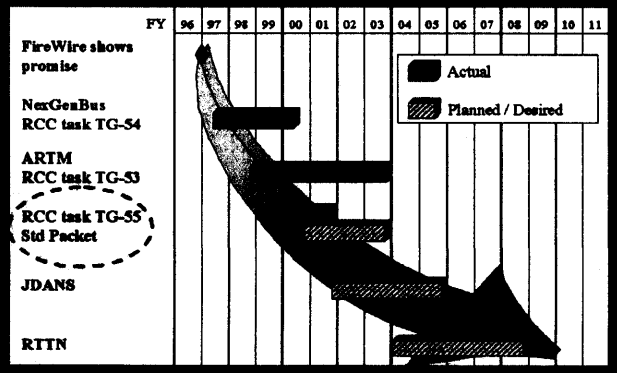

Mgmt
Of
Services
Mission Operations & Control
System/Subsystem Control
Space Applications
Services
General Applications
Services
Network & Distributed
Computing Services
OS Services
Telecommunication, flight and ground HW assets

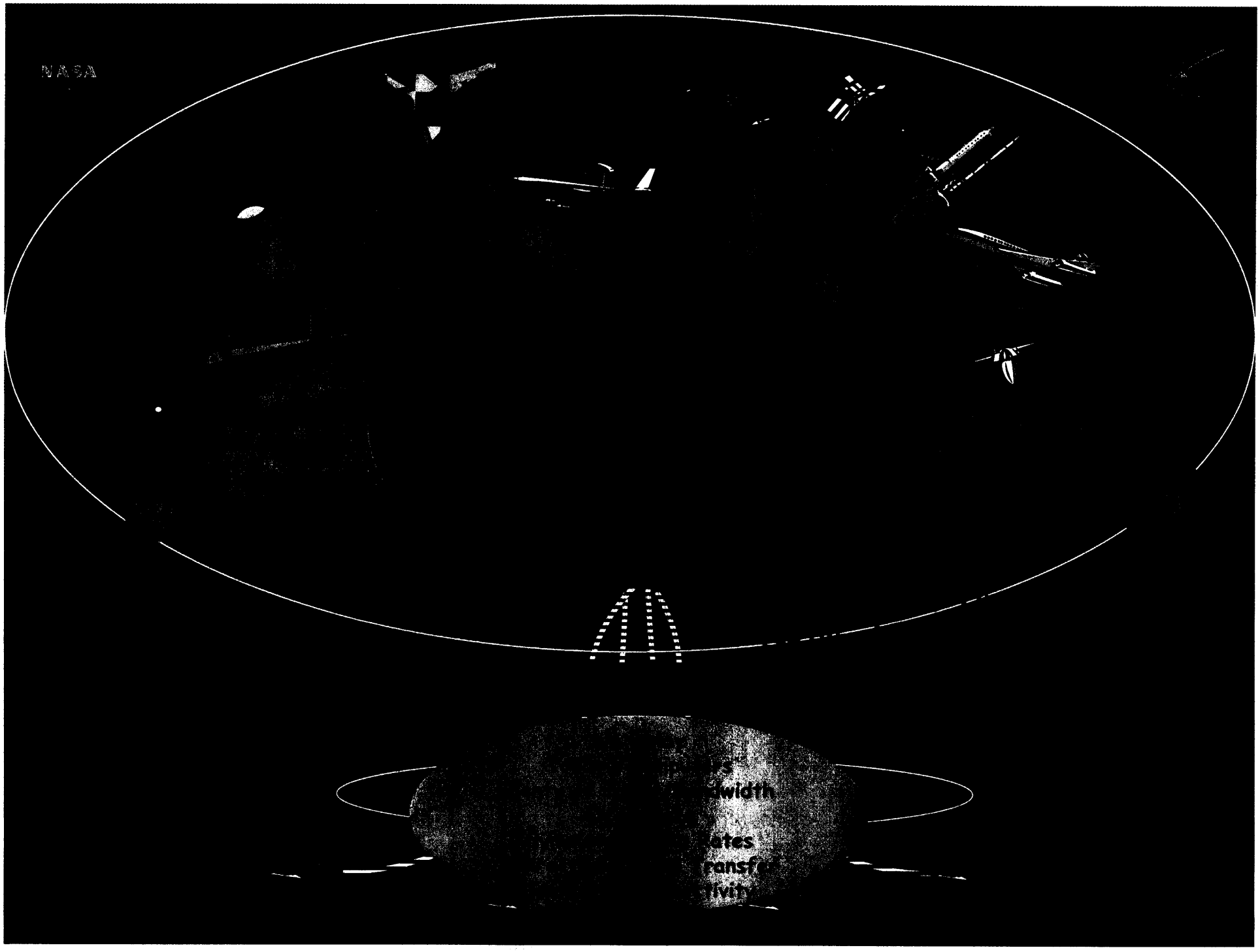
PROPOSED ARCHITECTURE FOR AFSCN TELEMETRY NETWORK



Dan Skelley
SkelleyDS@Navair.Navy.Mil

Range Commanders Council

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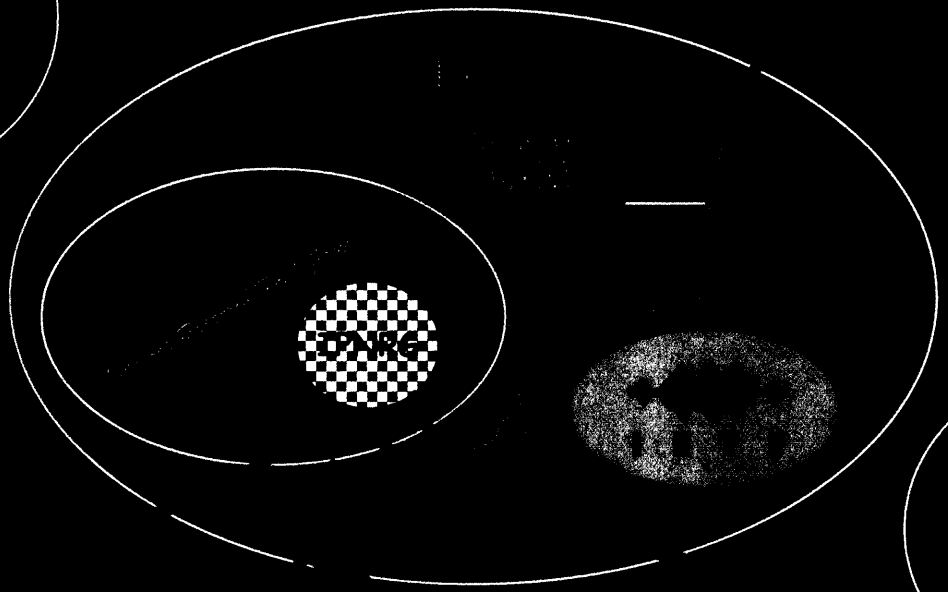
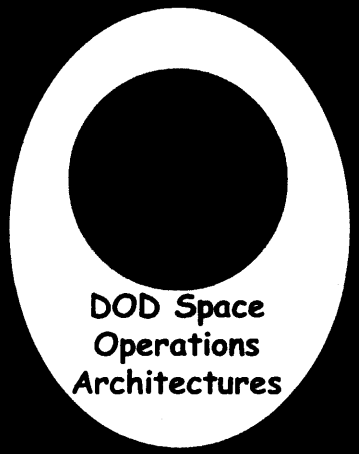


NASA Space Operations Architecture



DOD Range Operations Architectures