

DRAFT MINUTES

NACC (Necessary Ad-Hoc Co-ordinating Committee)

First Meeting, U.S. Department of Energy, Washington D.C.,  
12th November 1987

0. Introduction

This first meeting of what became provisionally known during it as "The Necessary Ad-Hoc Co-ordinating Committee" or NACC was convened at the initiative of William Bostwick of the U.S. Department of Energy and James Hutton, Secretary General of RARE, who were co-Chairmen, and followed an earlier meeting between the 30th September and 2nd October between representatives of the U.S. Department of Energy, the National Science Foundation, the Department of Health and Human Sciences (DHHS), the Lawrence Livermore Laboratory, the University of Michigan, DFN, the Joint Network Team, the NIKHEF-H in Amsterdam and KFA Jülich to examine the specific requirements for links between these U.S. agencies and Germany, the Netherlands and the U.K. The aim was to explore problems and possible solutions in the area of medium to high speed trans-Atlantic data communications links.

The meeting was attended by representatives of the U.S. Department of Energy, the U.S. National Science Foundation, the U.S. Defence Advanced Research Projects Agency (DARPA), the U.S. Internet activity, NASA and the U.S. Department of Health and Human Sciences on the American side, and by representatives of RARE, COSINE, EUNET, EARN, University College London, the U.K. Joint Network Team, DFN, and the Commission of the European Communities.

1. Welcome

Dr. David Nelson of the Office of Energy Research in the Department of Energy welcomed the attendants. Amongst the problems he mentioned were the cost of multiple trans-Atlantic links and their general co-ordination and management, patents, copyright of transmitted data and security. Until now, each individual U.S. agency had tended to install lines to each individual European country and vice versa. This was wasteful of resources, hard to manage and should be rationalised, while keeping bureaucratic overhead to the minimum.

It was suggested there should be a further meeting in approximately six months time, linked to the RARE Networkshop at Les Diablerets, with roughly seven people on each side. In the interim, tasks should be identified and carried out by each side; James Hutton proposed that a RARE Working Group could co-ordinate the European side.

## 2. Introductions

Each participant in the meeting introduced himself and his organisation. They are listed in annexe.

## 3. Why we are here

This was treated as a series of statements by participants on their perception of the problems involved. The main points brought out were as follows, with the contributor indicated in parentheses:

- The purpose was the co-ordination of links between North America or possibly just the U.S.A. and Europe;
- The problems involved needed to be covered at 3 levels, those of policy, organisation and management, and technical aspects, all concurrently. (C.E.C. and COSINE - this was generally agreed to);
- This activity should not stop existing activities (RARE);
- Coordination was essential in order to share resources (Bill Bostwick);
- Germany has specific requirements, wishes to share resources through RARE and to use links to the U.S.D.O.E.'s MFENet to also go beyond it;
- There was a need to improve and rationalise both current and future links while recognising the differences in policies and the reasons for setting up networks (U.K. JANET);
- Cost sharing would be necessary at high band widths; the defence and industrial aspects needed to be watched (Professor Peter Kirstein, UCL, as Chairman of the International Collaboration Board);
- It would be necessary to find out exactly what was happening in what manner and where, including links with other continents (Mark Pullen, who had been approached by the Japanese);
- We needed to provide global streets for the global village and put in place programme management mechanisms to this end (Barry Leiner);
- An international scientific community existed, and while it was easy to enter into bi-lateral agreements, it was far more difficult to manage multi-lateral agreements (Steve Wolff);

- EARN, which has a single 56KBit/sec link to BITNET, is discussing possible sharing of lines between EARN and EUNET and the U.S. Internet (Dennis Jennings).

#### 4. Requirements

It was agreed that there should be a common open infrastructure, open to other countries to join, for the co-ordination of inter-continental links in general. It would need to recognise the three dimensions of the policy, management and organisation, and technical issues, and act as a pole of attraction for other parts of the world. It would need global vision and yet achieve practical results on the links most immediately important, in particular between the U.S. Internet and the U.K. and Germany for particular requirements. The meeting was seen by its participants as being of great seminal importance for future inter-continental co-ordination, following on the intra-continental co-ordination which Europe had already embarked on (RARE and COSINE) and which the U.S. was currently embarking on.

The meeting defined its activity as follows:

"The purpose of this committee is to agree and progress a programme to achieve inter-operable networking services between participating entities (initially U.S. and Europe) to support open research and scholarly pursuit. Policy, management and technical issues will be examined, based on agreed requirements."

Other groups and activities that this particular group needed to be aware of were quoted in a non-exhaustive manner as follows:

Internet Activities Board

International Collaboration Board of the Internet (ICB)

ISO

Consultative Committee on Space Data Systems

ITU

GRID (Global Resource Information Database).

#### 5. Existing and planned links

These are listed below, non-exhaustively:

Existing Links

Name	U.S.	Europe	Band-width	Scope
EARN-BITNET	CUNY	Montpellier	56KBit/s (satellite)	EARN-BITNET NJE/RSCS, SNA
Comment: other EARN links were stated to be "to be removed"				
SPAN	Goddard Space Flight Center	(Darmstadt,)	19.2 KBit/s	SPAN (DECNET), X.25, DECNET
SPAN		(Noordwijk)		
SATNET	BBN	RSRE-UCL CNUCE KJELLER (Norway)	2 x 64 KBit/s	Determined nationally (TCP/IP)
L-3 Link	MIT	CERN	16.6KBit/s	L-3 experiment, X.25, DECNET, Coloured Books
EUNET/USENET	Seismo	CWI (Amsterdam)	9.6-19.2 KBit/s	Mail, IP, UUCP, Open
INFN Link	Fermilab	Gran Sasso	9.6 KBit/s	INFN/DECNET X.25
PTT links	New York	Each country	9.6-64 KBit/s	International X.25

Planned Links

Name	U.S.	Europe	Band-width	Scope
ESNET	Fermilab	CERN	56/64 KBit/s	HEP + ?, X25 ? ordered for 1Q88
NSF/INRIA	Not known to meeting	INRIA	56 KBit/s	Network research; approved
NASA	Goddard Space Flight Center	Oberpfar- fenhofen	56 KBit/s	TCP/IP BITNET, DECNET; approved
D.O.E. link	Fermilab ?	Germany	56 KBit/s	D.O.E.; X.25; 2Q88

6. Existing Planned Gateways

A non-exhaustive list of gateways was produced as follows:

<u>PROTOCOL A</u>	<u>PROTOCOL B</u>	<u>INSTANCE</u>
Grey Book Mail	SMTP	UCL-JANET to Internet
Blue Book	FTP	
Green Book	TELNET	
Grey Book	X.400 (EAN)	UCL-JANET to EAN
X.400	RSCS Mail	Darmstadt
SMTP	X.400 Mail	UCL (restricted to ESPRIT partners in Beta test)
X.400 (EAN)	MMDF/CSNET	GMD - Bonn - DFN - CSNET
	Multiple File Transfer	GIFT at CERN
Grey Book	BSMTP	UCD EARN

This table should be up-dated to render it exhaustive, and then kept up-to-date.

7. - Transition to ISO

This point was not covered due to lack of time, but the differences in approach of the participants are well known. On the European side, there is an emphasis on fairly rapid transition towards use of ISO protocols, while in the U.S. and in certain parts of Europe, there is very heavy emphasis on the use of TCP/IP. The issues of location of gateways, and of which protocol should be carried over trans-Atlantic links need to be examined.

8. Any Other Business

It was agreed that the next meeting would be held so as to allow participants to join the RARE Networkshop at Les Diablerets, and that in the meantime, we would communicate electronically. Since the meeting, the next meeting has provisionally been arranged for the week before the Networkshop in Amsterdam.

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