

IFIP

TC6 Meeting

Budapest

4th&5th October 1985

Minutes of the meeting

The Meeting Documents (MD), distributed at the time of the meeting, are to be considered as an integral part of the minutes of the meeting.

IFIP TC 6

BUDAPEST MEETING MINUTES (October 1985)

TC 6 Chairman Forward

Peter Radford has done an excellent job of preparing these minutes. We had hoped to be able to get them to you earlier, but that proved to be impossible. To avoid any further delay, I have made a few minor corrections by hand, and am sending the minutes in this form.

Let me take this opportunity to wish all of you a very happy and good new year in 1986.

If you were unable to attend the meeting in Budapest, let me call your attention, in particular, to Agenda Item 5, TC 6 Review Committee. As a result of discussion of the committee's final report, TC 6 decided to set aside time at the next several meetings to develop a strategic plan for where TC 6 will go in the future. We are planning to set aside an extra half-day at each of the meetings in 1986 for discussion of TC 6 strategic directions. This will be in addition to the regular one and a half day meeting.

The next meeting is planned for 20-21 March 1986 in Cape-town, South Africa, following the Data Communications Conference. Would you please complete the enclosed form and advise me whether you are currently planning to attend the 20-21 March meeting, and any particular topics you would like to see discussed during the half day session on strategic planning for TC 6.

Please read the minutes to find your action items.

- Encl. 1 Final Agenda
 2 WG 6.5 Report
 3 TC 6 Six Year Plan
 4 TC 6 Membership
 5 National Activity Reports

IFIP TC6 Meeting

Budapest 4th & 5th October 1985

Minutes

prepared by Peter Radford

1 Attendance and Membership

- 1.1 The meeting was opened by Andre Danthine in his capacity as Chairman of TC6. Hennie Leroux was introduced as TC6's Cognizant Officer and his role explained.
- 1.2 It was noted that this was the 25th meeting of IFIP TC6 and also that Louis Pouzin had attended every meeting. A small presentation was made to commemorate this.
- 1.3 Attendance at the meeting was as follows:

TC6 Representatives:

Andre Danthine (Chairman)	B
Fritz Königshofer	A
Kiril Boyanov	BG
J Puzman	CS
Jan Ekberg	SF
Louis Pouzin	F
H W Meier	GDR
Otto Spaniol	D
Tibor Szentivanyi	H
David Biran	IL
Bert Boutmy	NL
Wojciech Sobczak	PL
Alexandre Cerveira	P
Dipak Khakhar	S
Harry Rudin	CH
Peter Radford	GB
Ron Uhlig	USA

Others

Piercalo Ravasio	WG6.4
Brian Spratt	WG6.4A
Beatrice Paillassa	Toulouse Conference
Mike Cavanagh	E M A

In Attendance:

Hennie Leroux

IFIP Cognizant Officer

- 1.4 Koos Koen apparently tried to come but had visa problems the full saga of which had not been determined by the time the meeting finished.

- 1.5 Andre Danthine re-iterated the need for the issuing of formal invitations to TC6 meetings at least 3 months in advance to allow members enough time to get visas and make travelling arrangements. (See Porto Alegre Minutes, Item 1.5).
- 1.6 TC6 is still awaiting the appointment of a representative from the Irish Republic (see Item 26.2).
- 2 Final Agenda
 - 2.1 The Final Agenda was that published before the meeting with the addition of Item 15: TC6-TC8 relationship.
 - 2.2 These minutes attempt to describe topics in the order of the agenda rather than the order in which they were discussed.
- 3 Approval of the Minutes of Porto Alegre Meeting
 - 3.1 Andre Danthine explained the confusion that had arisen over the various editions of the minutes of the Porto Alegre meeting.
 - 3.2 The minutes were approved after noting that there had been some developments of the situation with regard to relationships with ICCC (see Item 7).
- 4 General Assembly and Council
 - 4.1 Hennie Leroux had been present at the IFIP General Assembly, September 1985, from which various documents should become available in due course. He related significant happenings at the meeting. Among these were:
 - 4.2 Ashley Goldsworthy (AUS) is President-Elect.
 - 4.3 Graham Morris (GB) has been elected as a Vice-President.
 - 4.4 Alex Verriijn-Stuart (NL) has been elected a Trustee.
 - 4.5 A fourth Vice-Presidency is to be created with special responsibility for TCs.
 - 4.6 The South East Asia Regional Computer Conference (SEARCC) has expressed a preference for having its own regional meetings rather than participating in the IFIP TCs. It would like IFIP TC members to come to the region. It has established its own set of Technical Committees (the numbers of which do not match those of IFIP). There is a

possibility of establishing a TC6 liaison to the SEARCC TC on Data Communications, SEARCC TC3, suggested names were: Trevor Housley, Fritz Königshofer or Bert Boutmy.

- 4.7 Ron Uhlig as the incoming IFIP TC6 Chairman will establish contact with SEARCC TC3. (Action: Ron Uhlig) ***
- 4.8 IMIA has asked for more cooperation between IMIA and IFIP TCs. Hennie Leroux asked that TC6 consider this.
- 4.9 IFIP has created an internal awards committee to recognize the work of TC members and WG chairmen. Recommendations must be made no later than the IFIP Council meeting in March 1986.
- 4.10 IFIP recently completed a poll of member countries on topics of technical interest. Computer Networking and Office Automation were at the head of the list with a significant gap to the next topics on the list.
- 4.11 Brazil has not been paying its IFIP dues and has until January 1986 to rectify matters.

5 TC6 Review Committee

- 5.1 The report of the Review Committee was discussed after allowing some time for its contemplation. The report was generally accepted but objection was taken to some points. It was felt that there^{are} inconsistencies, particularly between Section 7 and point 7 of the Annex; also that TC6 was better placed than outsiders to consider the "strategic plan for the future". Financially TC6's performance is limited by the ability of North-Holland to deliver books. A formal response to the document was drafted by Fritz Königshofer, Louis Pouzin and Harry Rudin for Ron Uhlig to use in replying to the Review Committee. (Action: Ron Uhlig) ***

6 Relations with ADB (Activity Development Board)

- 6.1 The Activity Planning Committee (APC) has been abolished and replaced by the Activity Development Board (ADB). Unlike the APC, membership of the ADB includes TC chairmen. This should strengthen the role of the TCs in IFIP.
- 6.2 Andre Danthine called attention to MD-20, the letter from Ashley Goldsworthy to ADB members asking how they would structure IFIP today, if they were starting with no existing structure. A TC6 task group will be established to generate ideas for discussion at the next TC6 meeting. (Action: Ron Uhlig) ***

- 6.3 Hennie Leroux said that IFIP is concerned about possible application areas not covered by TCs. The plan is to have Specialist Groups to look after new areas until they come under a TC/WG/SIG. There will be a Specialist Groups Committee of six General Assembly members under the Chairmanship of a General Council member. Specialist Groups will be set up as tentative groups for 3 years. There are none under consideration at this time.
- 6.4 He also reported that an African Regional Computer Congress is being established. Members include Kenya, Malawi, Nigeria, Tanzania, Zambia, and Zimbabwe.
- 7 ICCC and TC6
- 7.1 All ideas of a merger between the two bodies have disappeared. A new representative from ICCC to TC6 needs to be appointed, following Ron Uhlig's election to the TC6 Chairmanship.
- 8 Protocol Specification, Testing and Verification Workshop 85
- 8.1 Harry Rudin reported, see also MD-26. Because so many people are now involved and the area has become so broad, it will not be possible to hold "closed" (by invitation only) workshops in the future. Starting with Montreal, Canada (10th-13th June 1986) the future workshops on Protocol Specification, Testing and Verification will be open, with refereed papers.
- 9 Computer Message Systems (September 1985)
- 9.1 Mike Cavanagh reported that the Washington conference had gone well. There were 200 paid attendees (250 including presenters and press) and a profit of about \$12 000 is anticipated, after all invoices are received.
- 10 COMNET 85 (October 1985)
- 10.1 Tibor Szentivanyi reported that about 100 papers had been submitted. Of these, 78 were delivered; a dozen were missing from the conference proceedings. Approximately 300 people from 35 countries participated.
- 10.2 Concern was expressed by Andre Dathine and Otto Spaniol about the quality of some of the papers and about referees' comments not being taken into account. It was recognized

that this may have resulted in part from the severe illness of Tibor during the time papers were being refereed. Although it was reported that there had been some divergence of opinion between referees, Andre Danthine felt that something would have to be done before North-Holland could publish the conference proceedings.

11 WG 6.1 Activities

- 11.1 Carl Sunshine was unable to attend - note that Carl has a new address. Harry Rudin reported. There was discussion about the scope of the WG6.1A events. Andre Danthine expressed the views that the closed workshop was no longer applicable and that there would still be a large attendance even for a narrowly focus^d event. (See also Items 8, 18, 23 and 25.8.) There has been no activity in WG6.1B. Chairman Jean Louis Grange expressed regrets that he was unable to attend this TC6 meeting in Budapest.

12 WG 6.4 Activities

- 12.1 Andre Danthine reviewed the history of WG6.4 chairmen since 1979. He emphasized the need for a strong plan to revive WG6.4, stating that activity during the last year had not been adequate. He asked Piercalo Ravassio who was appointed WG6.4 Chairman in October 1984 what his plan was for reviving the Working Group. Piercalo has not been able to devote enough time up to now. The mailing list is out of date and there is, in general, very little contact between members. Piercalo outlined a four-step plan as follows:

Step1 Send a questionnaire to all on the existing mailing list, to poll for opinions on where WG6.4 should focus. Along with this, revive the dissemination of information. This would be done in October in North America and before the end of the year interest of the world.

Step2 Develop a new list of active members and a new mailing list.

Step3 Hold a WG6.4B workshop in London, in 1986, and have a full WG6.4 meeting at that time.

Step4 Add Brian Spratt as Vice-Chairman of the WG.

Brian Spratt reported that there have been serious problems with getting people for the mailing list, particularly for the North American Region.

Otto Spaniol expressed some concern over the questionnaire approach outlined by Piercalo. His concerns centred around a perceived need to improve cooperation between TC6 National Representatives and WG members. He also objected to the fee for mailing, even though it was small. He suggested that TC6 members should try to find suitable people for WG6.4.

In a discussion of what should be distributed in the mailings, Andre Danthine suggested that the LAN-related documents issued by standards bodies (eg IEEE 802, ANSI, ECMA) should be included.

After some discussion Piercalo's proposed steps were accepted by TC6. He is to provide a written outline of the steps. (Action: Piercalo Ravassio)

Brian Spratt agreed to act as Vice-Chairman of the WG.

A number of suggestions were made for sub-groups: Management; High Speed LANs; PABX; Performance; Industrial LANs; Inexpensive LANs.

- 12.2 The LAN Management Sub-Group is active and is planning a workshop for April 1986 (precise date to be determined) in London. A meeting on LAN Management is also proposed for Ruschlikon in September 1987.

13 WG 6.5 Activities

- 13.1 Details of the activities of WG6.5 are contained in the written report.
- 13.2 With the election of Ron Uhlig as TC6 Chairman, a new Chairman is required for WG6.5. The meeting accepted his proposal of Peter Schicker (CH) as Chairman, with Hugh Smith (UK) as Vice-Chairman. Otto Spaniol suggested that Rolf Speth (D) might be prepared to act as "understudy".
- 13.3 Ron Uhlig noted with sorrow the death of Dr Julian Davies, Chairman, WG6.5E, Messaging for the Communications Impaired. WG6.5 is looking for someone qualified to take the Chairmanship of WG6.5E, so that the good work started by Dr Davies can continue.
- 13.4 Jan Ekberg made known the existence of a COST project (219) on Telecommunications and Teleinformatics Facilities for the handicapped.

14 TC6 Mailing List

- 14.1 The TC6 mailing list is at present still in the hands of the previous Portuguese delegate, Jose Granado. Alexandre Ceviera was asked to investigate whether Jose was willing to continue to maintain this (and to provide two copies as soon as possible).

15 TC6 - TC8 Relationship

- 15.1 Worries had been expressed previously that a new TC8 WG (8.4) on Office Systems covered areas held to be within the scope of TC6. Ron Uhlig had been to the conference organised by TC8 in Helsinki the previous week. He reported that the attention of WG8.4 is devoted to such things as Office Modelling and Human Factors and therefore there should not be a great overlap. There was a consensus among TC6 members that WG8.4 should make this clear by adding something to its name; "(Methods and Tools)" was suggested.
- 15.2 It was also agreed that there ought to be contact between the two TCs in this area. Initially this could be at the level of TC Chairman but there might be scope for a joint working conference, although not before 1987 (see also Item 34). There could also be an exchange of programme committee members for relevant conferences.
- 15.3 A joint Task Group for discussing TC6-TC8 cooperation, consisting of David Biran, Kiril Boyanov, Piercalo Ravasio and Ron Uhlig, was appointed.

16 Data Communication (March 1986)

- 16.1 In the absence of Koos Koen, Hennie Leroux gave a brief report indicating that all was going ahead smoothly (see also Item 25.6).

17 Information Network and Data Communication (April 1986)

- 17.1 The dates and place for this have now been confirmed as 12th-14th May 1986 at Ronneby in Eastern Sweden. Dipak Khakhar's plan was to finalise the programme mid-November for distribution early January. The objectives are to have a computer network seminar describing the state of the art and at the same time get some publicity in Sweden for IFIP and TC6.

- 18 Protocol Specification Testing and Verification (June 1986)
- 18.1 In the absence of any report to the contrary, planning for this meeting, to be held outside Montreal, Canada, seems to be going smoothly.
- 19 IFIP 86, Dublin (1-5 September 1986)
- 19.1 TC6 was the only TC to make a proposal for tutorials before the main IFIP Congress and it was therefore recommended that if the tutorials went ahead they should be under the TC6 banner. Andre Danthine would only consider doing this if there was a promise of full support from the IFIP Congress made sufficiently in advance. He had written to IFIP stating this but had yet to receive a reply.
- 19.2 Members of TC6 should have received the first issue of the Congress brochure; the cost for early bookings is £1350.
- 20 ICC 86
- 20.1 An attempt will be made to have an "IFIP TC6" session at ICC 86, with speakers including Louis Pouzin, a representative from WG6.1, a representative from WG6.4 and Farouk Kamoun on the AFRIMAIL project. Ron Uhlig is to participate as a keynote speaker in the opening session and would emphasise the work of WG6.5 there, rather than in the "TC6" session. Some concern was expressed about the registration fee of DM700, particularly with regard both to Farouk Kamoun and to Brian Spratt, who might give the WG6.4 paper. Ron Uhlig will investigate the availability of IFIP Development Fund funding for Farouk; Otto Spaniol will contact all speakers to determine availability. (Action: Ron Uhlig, Otto Spaniol) ***
- 20.2 Concern was expressed by Otto Spaniol about the closeness of the dates of IFIP 86 and ICC 86, with the possibility of the same paper's being presented to both conferences. Andre Danthine will get a list of the papers accepted for IFIP 86 for Otto to compare with the papers submitted to ICC 86 in an attempt to minimize this problem.
- 21 Local Communication Systems (November 1986)
- 21.1 In the absence through illness of Jean-Pierre Cabanel, Beatrice Paillassa reported on progress. Date and venue are fixed and the call for papers (handed out at the meeting) is being distributed to 30 000 addressees.
- 21.2 Andre Danthine noted that the Call for Papers allows

submissions in English or French and pointed out that, for publication, the papers must be in English.

22 IBERICOM 87, Lisboa, (18-22 May 1987)

22.1 Alexandre Cerviera reported that the plans for this are to have Tutorial sessions on the 18th May, the Conference from the 19th to the 21st May and the TC6 meeting on the 22nd and 23rd May. The call for papers would be issued early 1986.

22.2 There has been a request from the Portuguese and Spanish General Asssembly members to make this a permanent event alternating between Portugal and Spain. There was debate over this proposal. It was felt that once every two years might run the risk of people going only to the conference in their own country and that every three years might be better. It was decided that TC6 should adopt a "wait and see" attitude at least until we see how successful IBERICOM 87 is.

23 Protocol Specification Testing and Verification (Spring 1987)

23.1 This is scheduled for Zurich 1987. It was felt that there could be a big attendance even for a meeting with a narrow focus on protocol verification and testing.

23.2 There was discussion about broadening the scope but Andre Danthine suggested that it would be better to see what was going to happen with the Esprit conference that was scheduled to take place at about this time. Collaboration might be beneficial.

24 number not used

25 Other TC6 Activities in 1987-1988

25.1 Rolf Speth has offered to host the annual WG6.5 working conference in late 1986. It was felt that there ought to be a meeting organised by WG6.5 in this time-frame, perhaps December 1986 or February 1987. However, the conference should not be too close in time to the Local Communication Systems Conference in Toulouse in November 1986. Otto Spaniol will talk to Rolf Speth.

25.2 Nothing has been heard about the proposed LAN conference in Goa and it was decided to wait for firm information from the hosts (CSI). Piercalo Ravasio will look for interest

in one of the local regional groups, Hennie Leroux will pass on a name to him.

- 25.3 Indonesia has expressed an interest in a WG6.5 meeting in 1987. The interest was expressed to Ron Uhlig at the Messaging Symposium. Ron indicated that there was no TC6 meeting scheduled for late 1987. This was left pending (but see Item 26.3).
- 25.4 A request has been received from the Computer Society of Thailand for keynote speakers at SEARCC-86 Computer Conference and Exhibition in Bangkok in 17th-21st November 1986.
- 25.5 It was suggested that the next AFRICOM be combined with a meeting of the African Regional Computer Conference (see Item 6.4) in March 1987. However, this was felt to be impossible with all the other commitments in early 1987. Later in the year might be possible.
- 25.6 It was mooted that a series of seminars might be held in Nairobi, Kenya and/or Lagos, Nigeria (aimed at the English-speaking African countries) immediately before and/or after the Cape Town TC6 meeting in March 1986. This met with general approval. (See also Item 16)
- 25.7 David Biran raised the possibility of a Second Data Communications in the ISDN Era conference for March 1988. Objections were raised on several grounds. Andre Danthine wanted another location and suggested that for ISDN, the conference would be better held after the 1988 CCITT plenary. A general meeting on Data Communications in early 1988 would be likely to pre-empt ICC 88 which is due to be held in Israel in October 1988. The possibility of meetings on Data Communications in early 1987 or on Messaging in 1989 were raised as was that of a contribution to ICC 88 but nothing was decided.
- 25.8 WG6.1 and WG6.5 are both due to hold meetings in North America in 1988. No dates were decided.
- 25.9 In late 1989, the IFIP congress is scheduled to be held in the USA and it would be sensible to hold the TC6 meeting in conjunction with this.

26 Future TC6 Meetings

- 26.1 There was discussion on the advisability of having the March 1986 meeting in Cape Town, from the perspective of the safety of TC6 members. An adequate number of TC6 representatives said that they would expect to go if the situation does not worsen.

26.2 The late 1986 meeting is due to be in Dublin but there is still no Irish representative to organise it. If one can be appointed in time the suggested dates are Friday 5th and Saturday 6th September. As a fall-back, Bert Boutmy offered to host the meeting in Eindhoven (NL). Dates for this were left open except for objections to having the meeting on a Sunday.

26.3 The late 1987 meeting should be in Africa, in conjunction with AFRICOM (but see Item 25.3).

27 6-Year Plan

27.1 Updated by Items 18, 23, 25, 26.

28 TC6, ICID and UNESCO

28.1 Concern was expressed at the amount of bureaucracy involved in dealing with UNESCO. Hennie Leroux said that TC6 should simply say what it wanted to do. A request for funding for the Nairobi/Lagos seminars (see Item 25.6) was suggested. The possibility of using funds for SEARCC and UNESCO Research was also mentioned.

29 North Holland Publications

29.1 Concern was expressed that revenue has probably been lost because of North Holland's inability to meet orders for the Florence LAN conference proceedings. It was felt that there was a risk of a similar thing happening with the proceedings of the Kent LAN Conference unless North Holland were more on the ball.

30 IFIP Bulletin, IFIP Newsletter

30.1 Piercalo Ravasio said that he was not on the distribution list.

30.2 The need to feed information to these publications was noted; Dipak Khakhar is the correspondent to the IFIP Newsletter. He should be kept informed of anything which might be contributed.

30.3 Hennie Leroux suggested that an article should be prepared on the programme committee meeting for the Second International Symposium of Computer Message Systems, which was held by teleconference, between Paris and New York.

- 31 TC6 News in Computer Networks, Compact Journal..
 - 31.1 It was felt that Computer Networks takes far too long to publish anything.
 - 31.2 No-one admitted receiving Compact Journal.
- 32 IFIP State of the Art Report
 - 32.1 Hennie Leroux reported that the first volume of the State of the Art Reports (on Computer Integrated Manufacturing) should be available in October. The intention is to produce one such volume each year, with responsibility being given to TCs on a rotating basis.
 - 32.2 Andre Danthine suggested that it might be possible to produce something based on the IFIP Congress tutorial (see Item 19.1).
 - 32.3 Andre Danthine remarked that he would prefer to go to the IEEE Press for such a publication.
- 33 Finance
 - 33.1 There was nothing to report under this heading. However, funds are available for Working Group activities. Use of these funds must be justified to the TC6 Chairman.
- 34 Joint Sponsorship
 - 34.1 Volunteers to participate in a WG8.4 (Office Systems) programme committee for the 1987 TC8 Conference on Office Systems will be asked for at the next TC6 meeting.
- 35 Next TC6 Chairman
 - 35.1 The voting was: 11 votes for Ron Uhlig; 7 votes for Otto Spaniol and 1 vote for Tibor Szentivanyi. Ron Uhlig was therefore declared the new Chairman. Andre Danthine said that IFIP has been notified but this may take time to filter through the organisation.
 - 35.2 The possible need for a Vice-Chairman was raised. Ron Uhlig said that he would prefer to act on his own at least until the next TC6 meeting and raise the question of a Vice-Chairman once he had an appreciation of the work involved and the job a Vice-Chairman could do. He pointed out that his telex number was in the meeting documents and

that if telephone contact could not be made directly, then the next best thing would be to send him a telex with time and telephone number and he will phone back.

- 35.3 Louis Pouzin expressed the thanks of TC6 to Andre Danthine for his efficiency and standard of excellence as Chairman.

36 Questions on National Activities

- 36.1 There was no time for the discussion of national activity reports. Indeed, only some reports were circulated at the meeting; the remaining submissions will be circulated with these minutes.

37 Miscellaneous

- 37.1 As no-one else showed interest in the 2nd International Technical Symposium on Optical and Electro-Optical Applied Science and Engineering (see MD-41), Otto Spaniol's assistant, Dr Ries, will act as TC6's representative.
- 37.2 The meeting closed with thanks to Tibor Szentivanyi for his organisation of the meeting, especially considering his extremely difficult personal circumstances.

TC 6 MEETING - BUDAPEST - 4-5 October, 1985

FINAL AGENDA

ITEM	SUBJECT	PRESENTED BY
1	Attendance and Membership	TC 6 Chairman
2	Final Agenda	TC 6 Chairman
3	Approval of the Minutes of Porto Alegre Meeting	TC 6 Chairman
4	General Assembly and Council	TC 6 Chairman
5	TC 6 Review Committee	TC 6 Chairman
6	Relations with APC (Activity Planning Committee)	TC 6 Chairman
7	ICCC and TC 6	TC 6 Chairman
8	Protocol Specification Testing and Verification 85	C. SUNSHINE
9	Computer Message Systems (Sept.85)	R. UHLIG
10	COMNET 85 (Oct.85)	T. SZENTIVANYI
11	WG 6.1 Activities	C. SUNSHINE
12	WG 6.4 Activities	P.C. RAVASIO
13	WG 6.5 Activities	R. UHLIG
14	TC 6 Mailing List	TC 6 Chairman
15	TC 6/TC 8 Relations	R. UHLIG
16	Data Communication (March 86)	K. KOEN
17	Information Network and Data Communication (April 86)	D. KHAKHAR
18	Protocol Spec. Test. and Verif. (Spring 86)	C. SUNSHINE
19	IFIP 86, Dublin, 1-5 Sept. 86	TC 6 Chairman
20	ICCC 86 (Sept. 86)	R. UHLIG
21	Local Communication Systems (Nov. 86)	P. CABANEL
22	IBERICOM 87, Lisboa, 18-22 May 87	A. CERVEIRA
23	Protocol Spec. Test. and Verif. (Spring 87-Symposium)	H. RUDIN
24		
25	Other TC 6 Activities in 1987-1988	Each Delegate
26	Future TC 6 Meetings	TC 6 Chairman
27	6-Year Plan	TC 6 Chairman
28	TC 6, ICID and UNESCO	TC 6 Chairman
29	North Holland Publications	TC 6 Chairman
30	IFIP Bulletin, IFIP Newsletter	TC 6 Chairman
31	TC 6 News in Computer Networks, Compact Journal,...	TC 6 Chairman
32	IFIP State of the Art Report	TC 6 Chairman
33	Finance	TC 6 Chairman
34	Joint Sponsorship	TC 6 Chairman
35	Next TC 6 Chairman	TC 6 Chairman
36	Questions on national activities (*)	TC 6 Chairman
37	Miscellaneous	TC 6 Chairman

(*) Each national representative is requested to bring a typed summary of his national activities. These documents will be reproduced and distributed to all attendants. A period of one half hour will allow any attendant to raise questions about the circulated documents.

Report of IFIP Working Group 6.5
"International Computer Message Systems"
to IFIP Technical Committee 6 - Data Communications
Budapest, Hungary
October 1985

SECOND INTERNATIONAL SYMPOSIUM ON COMPUTER MESSAGE SYSTEMS

Participation and Organization

This TC-6 symposium, held 5-7 September, 1985 in Washington, D.C., was a great success. Approximately 260 persons from 19 countries participated in the symposium. There was good interaction among the participants, both in the form of questions and answers at the end of each paper and during the breaks and in the evening. Every inhabited continent was represented in the countries participating. Countries represented included: Australia, Belgium, Brazil, Canada, France, Federal Republic of Germany, Hong Kong, Ireland, Indonesia, Italy, Japan, Korea, The Netherlands, Norway, Sweden, Switzerland, Tunisia, United Kingdom, and the USA. 80 persons were from outside of the USA.

A total of 27 papers were presented from 11 countries, including: Australia, Canada, France, Federal Republic of Germany, Japan, Norway, Sweden, Switzerland, Tunisia, United Kingdom and USA. 11 papers were from North America, 12 from Europe, and 4 from the rest of the world (Australia, Japan, and Brazil). Papers were distributed into the following sessions: The X.400 Era (two sessions), Directories, Group Communications, Planning for Interconnection, Document and Message Architecture, User Environment, Experience, Multimedia, and Security and Control.

In addition, there were two special sessions. A very successful panel session on Voice Messaging was well attended and sparked considerable interest. And a special interest session entitled "ARPA-Internet Gateway Standards Workshop" attracted over 30 persons on Thursday evening to work on developing an action plan for an X.400 gateway for ARPANET.

Some Results of Symposium

"X.400 Comes of Age" could have been used as a subtitle for the symposium. In the opening session papers were presented on two X.400 compatible implementations of messaging systems. These systems were developed completely independently in Canada and Japan. Perhaps the most significant result was that the two systems have been interconnected with a minimum of effort, and are now exchanging messages. Authors from the two countries estimated that it took them two calendar months to accomplish the interconnection.

Work on Directory Services has moved very rapidly. There is now a model which includes a Directory Services agent, as an extension to the basic IFIP Mail/Messaging Model of X.400. The work done in WG

6.5 has been completely adopted by both CCITT and ISO as a basis for their work on Directory Systems and Services.

There was considerable discussion on potential for extending the X.400 protocols in several areas. One of these was in the area of Group Communications. Symposium participants were split on whether the protocols should be extended or whether additional capabilities should be built on top of the existing standards. The issue was whether there was a need for more standards. There is probably no simple answer to this question.

There was a great deal of interest in two papers presented by IBM representatives. IBM Heidelberg (FRG) is implementing an X.400 compatible gateway between EARN/BITNET and the Deutsches Forschungszentrum (DFN). However, the talk also indicated the gateway would extend to the IBM PROFS system. While this is an experiment, it indicates that IBM is thinking seriously about X.400.

Message Management emerged as a new major issue. In a paper by Sandy Shaw, University of Edinburgh, serious concerns with protecting message systems against congestion were identified. This is likely to become a new topic for investigation within WG 6.5

In the panel session on voice messaging, a serious need for standard interfaces to voice messaging systems was presented. The panel also discussed the many different encoding schemes for storage and handling of digitized voice which are being used in existing systems. There was some discussion on the utility of X.400 as a base for voice messaging as well as text messaging, but no conclusions.

Presentations on experiences in implementing message systems showed that the IFIP Messaging Model and X.400 have provided a valuable framework to implementors of message systems.

Two of the three co-chairpersons of WG 6.5E presented papers which helped give the audience some of the special concerns of developing nations in applying message systems technology.

A number of papers throughout the symposium discussed various aspects of multimedia messaging, culminating in a paper discussing an actual product allowing mixed text and voice content in message, following X.400 standards. There was also an interesting discussion on taking what has been done with multimedia messaging, and using that work as a base for real-time multimedia conferencing. The possibility of developing a real-time conferencing model, analogous to the IFIP mail/messaging model, was discussed. A first cut at such a model was presented by Harry Forsdick of BBN, USA.

The session on security and control emphasized safeguarding of sensitive messages in a business context, rather than a military security context. Despite the fact that it was the last session, a sizeable audience remained through the end of the session on security and control. In addition to protection of sensitive messages, there was a discussion of a number of complementary aspects, in-

cluding message routing, and filtering, as well as a number of potential costing and billing issues.

Selection of Papers

The program committee met 13 June 1985 to select the final program, based on the results of the reviews. This was a distributed meeting. Program Committee members attended at locations in Paris and New York City. WG 6.5 is grateful to Louis Pouzin who arranged for teleconference facilities. The teleconference proved to be quite successful. 29 papers were selected from 42 full papers which were finally submitted for the symposium. All but two of these papers were presented. Two of the authors were unable to make it to the symposium.

Financial Results

The Electronic Mail Association (EMA) did a fine job of organizing the Messaging Symposium on behalf of TC-6. There will be a small profit for IFIP, however, the time between the Symposium and the TC-6 meeting was too short for EMA to "close the books" and give a final figure on the profit, yet.

Proceedings

Proceedings of the symposium will be published by North-Holland Publishing Company. We are attempting to get some of the material presented in the Voice Messaging Panel into the final proceedings. We are also attempting to get a summary of the results of the special ARPANET Gateway session into the final proceedings.

Separate EMA Event

EMA also organized "A Preview of the Next Decade" as a separate event on 4 September. This was a vendor oriented set of four panels looking at what is happening in the next ten years in electronic messaging, although most of the focus was on the next 2-3 years. This very successful event was attended by approximately 375 persons. In part due to a very substantial discount offered to TC-6 symposium attendees, most of the persons who attended the symposium also attended the 4 September event.

WG 6.5 MEETING

A Working Group meeting was held on 7 September, following the close of the Messaging Symposium. The meeting was attended by 30 persons, with approximately equal representation from North America and Europe. Separate minutes will be issued for the meeting. The main purpose of the meeting was to initiate an examination of directions for the Working Group. During the symposium, a number of topics were raised as areas needing work. These formed the basis for discussion in the working group meeting.

Because of limited time as well as limited representation, the meeting was used to develop a list of potential future work areas for WG 6.5. A person was assigned responsibility for developing a one or two paragraph description of each potential area. These descriptions will be assembled and will be mailed to everyone on the mailing list. End October 1985 has been set as the target date for the descriptions to be completed and mailed to a central point. All will be invited to vote on 3 to 5 areas they consider the most important. They will also be asked to volunteer to develop working papers which could be distributed to the Working Group, organize working sessions, etc, for the areas they consider most important. It is possible that additional potential working areas may be identified in this process.

Potential working areas identified are as follows:

- 1) Use of Message Transfer Service for Services other than Interpersonal Messaging
- 2) Telematic Service Interconnections
- 3) Portable User Agents
- 4) Multiple Alphabets
- 5) Privacy, Security and Authentication
- 6) Message Management
- 7) Voice Messaging (User Interface)
- 8) Multimedia Messaging
- 9) Real-Time Conferencing
- 10) Group Communications
- 11) Office Procedures (Routing, Calendars, Coordination,...)
- 12) Filing and Retrieval of Messages
- 13) Personal Messaging Management
- 14) Gateways and Gateway Standards (Access Units)
- 15) Document Interchange
- 16) User Interfaces to Message Handling Systems (Including Artificial Intelligence)
- 17) Formal Methods for Messaging Protocol Specification

- 18) Integration of Other Applications
- 19) Active Messages
- 20) Medium Dependent Architectures
- 21) Messaging Protocol Conformance Testing

NEXT ANNUAL WG 6.5 WORKING CONFERENCE

Rolf Speth, University of Dusseldorf, Federal Republic of Germany, has offered to host a WG 6.5 working conference in late 1986. This would be a conference similar to the working conference held in Nottingham, UK, in 1984. Expected attendance would be approximately 100 persons. Because of the IFIP Congress in September and the TC-6 Symposium on Local Communication Systems scheduled for November 1986, the next WG 6.5 working conference should probably be scheduled for early 1987 rather than late 1986.

SUBGROUP ACTIVITIES

North American Meetings

There have been no North American meetings since the last TC-6 meeting. A joint meeting of WG 6.5A and WG 6.5B was discussed in my last report. Richard Miller has resigned as the North American co-chairman of WG 6.5B (User Environment). Einar Stefferud, President, Network Management Associates, Huntington Beach, California, has agreed to become the new North-American co-chairman of WG 6.5B. Mr. Stefferud will be assisted by Ole Pederson, SRI International, Menlo Park, California.

European Meetings

The European sections of both the Systems Environment Subgroup (6.5A) and the User Environment Subgroup (6.5B) held a joint meeting at GMD, Schloss Birlinghoven, Federal Republic of Germany, 6-10 May 1985.

The meeting included reports on the FRG DFN, COST11TER, and work in CCITT Study Group VII on messaging and directory services. Considerable time was spent on beginning development of a Message Based Communication Functional Model. This model was formed by combining the MHS Functional Model, the Directory System Functional Model, and adding a functional entity called a "Group Agent" for Group Communication. The model plus discussion is included in the attached minutes of the meeting (Inclosure 1). These minutes also include a skeleton outline for a Group Communication Working Document, developed at the meeting. Other major topics of discussion included possible structures for describing groups, P1 and P2 implementation problems, and personal message management.

The next joint European meeting of WG 6.5A and WG 6.5B will be held in Oslo, Norway in December 1985.

Legal and Policy Environment Subgroup (WG 6.5C)

There has been no activity in WG 6.5C since the last TC-6 meeting.

Subgroup on Messaging for Developing Nations (WG 6.5D)

The AFRIMAIL project is progressing in Tunisia. An excellent paper on AFRIMAIL was presented at the Messaging Symposium in Washington.

Subgroup on Messaging for the Communications Impaired (WG 6.5E)

It is my sad duty to report the death of Dr. Julian Davies who was chairman of this subgroup. Dr. Davies died on 12 June 1985 after a lengthy battle with cancer.

IN MEMORIAM - DR. JULIAN DAVIES

Dr. Davies was a Professor at the University of Western Ontario, London, Ontario, Canada.

He held a Ph.D. from the University of Edinburgh where he worked on real time systems for image processing. From there he went into "Artificial Intelligence," working mainly on programming languages for AI and Knowledge Representation in natural language understanding. At the University of Western Ontario he became involved in computer organisation for teaching, and in design and evaluation of interactive computer systems. One of his last projects was design of the MLNET message forwarding gateway system, which was reported at the 1984 working conference of WG 6.5.

He was always interested in questions on the wider impacts of technology and computers. His interest in the needs of the Handicapped spanned many years of his life. He was deaf, and first had a hearing aid at age 12. At grammar school he was interested in electronics, thinking he might design hearing aids for a career. This lifelong interest was expressed in his efforts in WG 6.5. He came to the 1983 working meeting, and volunteered to head efforts to get a program underway on applying messaging to the needs of the handicapped. He chose to carry out this program through a publication which he named "Handi-Communications." Julian published three issues of "Handi-Communications," before his untimely death. In one of his letters to me, Julian wrote, "I think it is important to build bridges between workers in different areas and projects, who are not always aware of each other." He did an admirable job of this with "Handi-Communications." WG 6.5 will be searching for someone to pick up this task, so that Julian's work will not have been in vain. The enthusiasm he displayed at WG 6.5 meetings will

be sorely missed. He will be remembered as a man of strong principles, well liked by all his colleagues.

Julian is survived by two children, Penn and Emily. He is also survived by his wife Ria.

The search for a successor to Julian is underway, so that the work he began in WG 6.5E can continue. His final paper, "Developments in Messaging for the Handicapped," was presented posthumously at the TC-6 Messaging Symposium in Washington, and will appear in the proceedings.

IFIP TC-8 OFFICE SYSTEMS CONFERENCE

IFIP TC-8 held a working conference on Office Systems in Helsinki, Finland 29 September - 4 October. 29 September - 2 October was an open conference. The program is attached (Inclosure 2). 3-4 October was set aside for formation of IFIP Working Group 8.4 - Office Systems.

I spoke on "Architectural Implications of Office Systems," with primary emphasis on communications. I also requested a meeting with key persons in TC-8 to discuss relationships between TC-6 and TC-8 with respect to this proposed new working group.

WG 6.5 DATA BASE AND MAILINGS

I have been unable to put together a mailing since the last TC-6 meeting. In part, this was due to a desire to avoid duplication of an extensive mailing made to the European members of WG 6.5A and B. A mechanism is being worked out to minimize overlap in paid mailings with material individuals receive as members of a subgroup. The material I have on hand to be mailed will be turned over to the new WG 6.5 chairman, with the request that mailings be resumed as soon as possible.

RESIGNATION/NEW CHAIRMAN - WG 6.5

I have had the privilege of serving as chairman of WG 6.5 since it was formed officially in 1979. As I am now to become the Chairman of TC-6, I must submit my resignation as Chairman, WG 6.5. I have enjoyed these years working with TC-6 members and people from all over the world as WG 6.5 chairman. I am looking forward to working with many of these people in my new role.

Peter Schicker, Zellweger-Uster, Hombrechtikon, Switzerland, has agreed to become the new chairman of WG 6.5. In this role he will

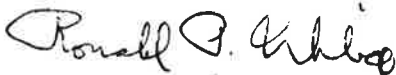
be assisted by Hugh Smith, University of Nottingham, UK, who will serve as Vice-Chairman. Their addresses are as follows:

Peter Schicker
Zellweger Uster AG
Eichtalstrasse
CH 8634, Hombrechtikon
Switzerland

Hugh Smith
Human Computer Interactive Group
University of Nottingham
Nottingham NG7 2RD
UK

WG 6.5 SIX YEAR PLAN

The WG 6.5 six year plan is attached as Inclosure 3.



Ronald P. Uhlig
Chairman, WG 6.5

IFIP WG 6.5

Minutes of the 6-10th May, 1985 Meeting

Venue: GMD, Bonn, FRG

Contents

- 1.0 Reports**
- 2.0 Minutes**
- 3.0 Group Communication Support Within MHS (Skeleton)**
- 4.0 Attendees**

The meeting convened at 2.15 on Monday 6th May at GMD, Bonn. Following a welcome to the attendees from the Chairman, the meeting opened with a report session.

1.0 Reports

DFN: The specification work had finished and DFN were about to seek tenders for the basic X400 messaging service and a distributed directory service. Implementations were required by end of 1986 for Unix (System 5, BSD 4.2), Vax VMS, Siemens B2200, and IBM VM.

COST11TER: Rolf Speth reported on the status of this project which involves a common interconnection experiment to provide Group Communication and Directory Services. The EC has given initial approval to this project and a meeting of interested parties would be convened in Brussels during June.

CCITT Study Group VII: Peter Ingram reported on the outcome of the Boulder Meeting enshrined in the final report of the study group. The Directory Access protocols are now fairly well defined. UA authentication is in, but in a fairly simple form (encryption for further study). Two new study groups will start up this year - Message Handling (Jim White), and Directory Systems (Doug Steedman). The meetings will take place 9-13th, 16-20th of September in Rome, Italy.

IFIP WG 6.5: The next European meeting will take place in Oslo in early December, probably 2-6th. This will follow the main annual meeting in Washington, DC which is to be held 3-7th September.

The *deadline* for the next European mailing will be the **15th July**. Documents should be posted to *reach* Peter Schicker at Zellweger *on or before* this date.

2.0 Minutes

The business of the meeting was conducted as follows:

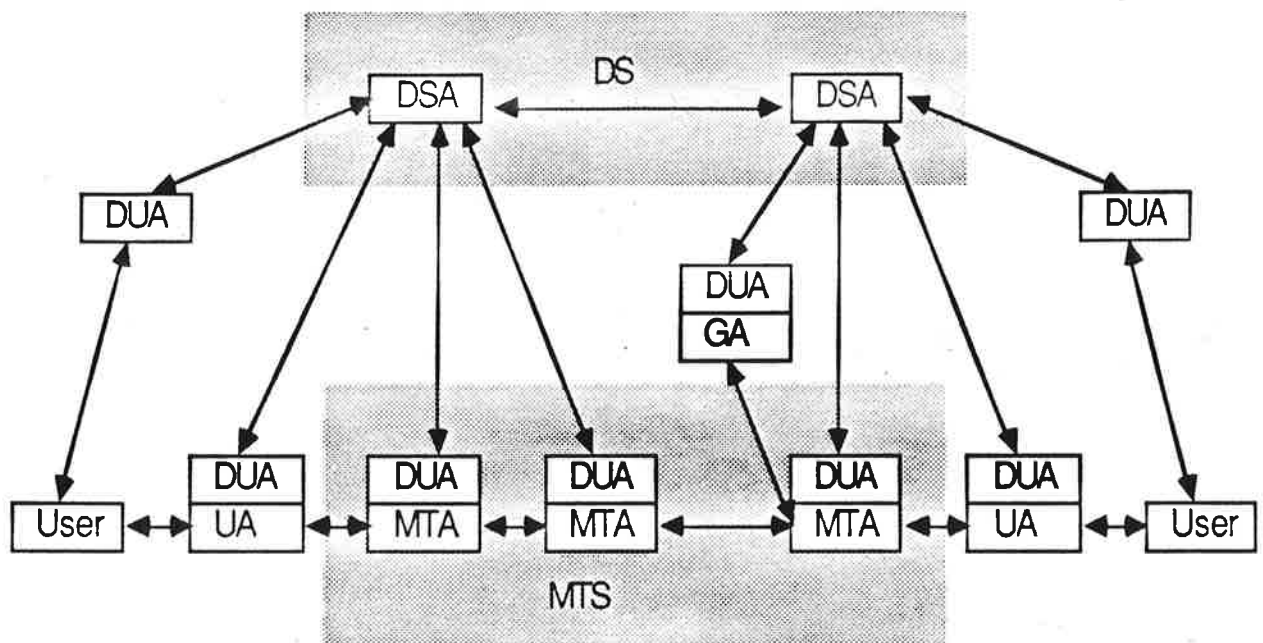
Tuesday	am	Group Communication: An MHS/DS Model
	pm	Group Communication: A basic distributor
Wednesday	am	" " " " "
	pm	Directory Work Discussion
		X400 Implementation Discussion
Thursday	am	Personal Message Management
		Domino/Komex Demonstrations
	pm	Personal Message Management
Friday	am	Group Distributors

The minutes are set out below under these headings.

2.1 Message Based Communication - A Functional Model

In order to discuss the subject of group communication and group distribution agents, a functional model was required as a starting point. The following diagram illustrates the model and the numbered paragraphs indicate points noted during the discussion.

- 1.0 The Message-Based Communication Functional Model was formed by combining the Message Handling System Functional Model, the Directory System Functional Model, and adding a functional entity - a Group Agent - for Group Communication.
- 2.0 Users, User Agents, Message Transfer Agents, and Group Agents are recognised as being users (clients) of the Directory System.
- 3.0 The Initiator/Organiser of a Group contracts with one or more MHS Management Domains to provide the functionality necessary to support Group Communication, and contracts with one or more Directory Management Domains to hold the definition of the Group.
- 4.0 For a specific instance of a user sending a message to a group, a Group Agent function will be invoked within an MHS Management Domain to relate the definition of the Group to the message (check rights; substitute list of recipients, including nested groups). For each specific instance of a message sent to a Group, the location where the Group Agent function is invoked is determined by routing. Note the output of the Group Agent is a single multiple-addressed message; the replication of the message for delivery to the members of the Group is the responsibility of the Message Transfer System. The locations where this replication is performed are dependent on routing, efficiency and cost considerations.



Message-Based Communication Functional Model

- 5.0 It was recognised that there is a need to store (archive) the messages sent to Groups (including the history of such transactions). One example would be to provide 'back-copies' for new members of a group. For each Group a single function (probably replicated) would provide such storage.
- 6.0 However, existing MHS protocols do not provide support for retrieval. This raises the question of how such a protocol should be provided:
- a variant on a P2 protocol - this solution is likely to lead to a proliferation of P? protocols for different applications.
 - a protocol layered on top of P2. This raises a further question about whether this protocol exists within an additional sub-layer of the Application Layer, or above the OSI Reference Model.

2.2 Requirements for Group Support

Following on from the previous session, the meeting discussed several possible structures for describing groups. The DFN work performed by GMD was taken as a starting point from which to specify a minimal definition of a group structure:

name:	<i>name</i>
organiser:	<i>name</i>
description of group:	<i>free text</i>
receiving members:	<i>list of names/classes</i>
writing members:	<i>list of names/classes</i>
charging information:	<i>free text</i>
destn for non-delivery notification:	<i>name</i>

The list of names and classes could be replaced by a 'name expression'. This becomes a set of names when it is evaluated. There was some discussion on rights which are not fully expanded in the description. A suggestion was made that the rights should be described by a boolean matrix of members by rights. Rights such as reading, sending, add/delete self, change organiser were discussed. Thus, if the position in the matrix is true then that member has that right.

A refined definiton of a group structure was proposed for further discussion:

group name:	<i>name</i>
group description:	<i>free text</i>
members/rights:	<i>list of names and rights</i>
procedure:	<i>procedure</i>
exception handling:	<i>list of expressions & procedures</i>

The first two components are straightforward, the others require further description.

Members/Rights: For the distribution list case, the two lists of members and associated rights for each would be as follows:

<i>receiving</i>	<i>change procedure</i>
<i>sending</i>	<i>change group description</i>
	<i>change members rights</i>
	<i>change exception handlers</i>
	<i>add/delete members</i>
	<i>display members rights</i>

Exceptional handling conditions would be needed to cope with

non-delivery
non-receipt
rights violation (e.g., attempt to send to list by a non-sender)
loop prevention

Simple Distribution List Procedure on receipt of message

The following gives a possible definition for a simple distribution list procedure on receipt of a message:

```

SEQ
  PAR
    Verify not non-delivery notification/reject indication
    Verify not acknowledgement/delivery/receipt notification
  END PAR
  PAR
    SEQ
      Verify sender in sender list
      Acknowledge message accepted
    END SEQ
    Execute loop prevention procedure
    Tag message with name of sender, name of group,
      distribution list flag
  END PAR
  Forward message to names having receive right (except for
    sender if he/she is one)
END SEQ

```

SEQ END SEQ - must be performed in sequence
 PAR ... END PAR - may be performed in parallel

Exceptions

NB. when invoked, all following sequential operations are halted. Parallel operations may continue.

```

Message is non-delivery notification/reject indication
==> Forward message to appropriate auditor
Message is acknowledgement/delivery/receipt notification
==> Do nothing
Sender not in sender list
==> Return rejection indication
      Send message to appropriate auditor(s)
Loop detected
==> Send message to appropriate auditor(s)

```

The above procedure and exception handler were checked against the group definition for ambiguities and redundancies. The following table shows the elements of the procedure, the definition elements required for them, and the elements also requiring the message

<u>Procedure element</u>	<u>Requirements</u>
Initial verification	message
Verify sender	message, sending rights, list
Acknowledge	message
Loop prevention	message, receiving rights, list
Tag message	message, name of group
Forward message	message, receiving rights, list

Exceptions

Non-delivery	non-delivery auditor
Acknowledgement	acknowledgement auditor
Not sender	rights violation auditor
Loop	loop auditor

The elements of the group definition not required for the execution of the procedure were:

- Description of group
- All rights information except reading and sending

Implementation - P1 or P2

Could this definition of a group distributor be put into the MHS model? The difficulty is deciding whether it would go into the UA or MTA layer.

The P2 Level

An attempt was made to put it into the UA layer to see if all functions could be achieved satisfactorily. The following outlines how each stage might be performed:

Initial verifications:

Checked in the header

Nb: rejection indication is non-receipt notification

Verify sender:

Read sender O/R name from envelope

Consult group definition (list of senders)

Check with directory to see if sender O/R name is in sender list

Acknowledge:

Receipt notification for the message if requested
(message-id included)

Loop prevention:

For further study

Tag Message:

New message with auto-forwarded indicator set and the old message in body.

Indication that it is from a group distributor is for further study, but this may be indicated in the distributors name.

Forward message:

Consult group definition (list of recipients)

Put list of recipients in envelope, recipients field (not in header as this may compromise the list)

Copy other envelope parameters

Sender not in sender list:

Generate non-receipt notification (even if not requested)

Notes

1. If the distributor is implemented in the UA layer the following problem may occur. If a message is sent by a non-sender then delivery notification may be sent by the MTA. The verification process will then reject the message and send a non-receipt notification. This may lead to confusion and security violation i.e., the sender will now have confirmation that the distribution list exists.

2. The description of the group may occur in a directory service and so a general purpose distributor can be created.

3. The problem of loops has been left for further study. This should consider the problems of distribution list chains, non-delivery notification, acknowledgements and non-delivery auditors in combination. It may well be possible to generate loops, sometimes non-detectable, in certain circumstances (e.g., messages which generate different messages which start to loop.) These will not be detectable by a simple distributor which only checks to see if it has delivered the *same* message.)

Implementation at the P1 Level

If the group distributor agent were to be implemented at the P1 level then the following schema outlines the way in which it could be done:

Initial verification:

Can be checked by examining the envelope.

Verify sender:

Sender name can be obtained from the envelope and then checked with DSA.

Acknowledge:

Sender delivery notification

Loop prevention:

This is difficult to check if there is no flag to indicate distribution list (see next paragraph)

Tag message:

Name of sender will be obtained from the envelope. It is not possible to insert the name of the group as the "forwarded" indication is in the header. Not possible to raise a flag to say it is from a distribution list.

Forward message:

Put list of receivers in the envelope.

Not sent by a sender exception:

Performed by non-delivery notification.

Thus it would appear that there is no way to put the distributor agent entirely in P1 because it is not possible to indicate that it is a group or which group it is.

Earlier it was shown that it is not possible to put it entirely in P2 because a delivery notification might be sent before the check was performed to see if the sender was on the senders list. It can therefore be seen that in order to attain completely the functionality specified it is currently necessary to put the group distributor in both the P1 and P2 layers.

The meeting considered what modifications were necessary to P1 to be able to put the distributor entirely there. The following solution was arrived at:

The sender field in the envelope is changed into a list of senders. When a group distributor receives a message it adds its own name to the head of the list. Any delivery or non-delivery notification are sent to the name at the head of the list. The eventual recipient thus has the name of the sender and all subsequent distributors. It has an implicit flag indicating that a distribution list was used by the length of the senders list. If it is greater than one then a distributor has been used. This solution also has the advantage that to check for loops is easier in that the group distributor can read the list of senders to see if it has distributed this message previously.

Delivery and Non-Delivery Notification

The problem of delivery and non-delivery notification was discussed. If a group distributor receives non-delivery notifications and doesn't simply throw them away then they should be packaged together and sent to the auditor in charge of the list. This effectively creates a new message and implies the use of P2. Thus we see in more complex examples that it may be impossible to put the group distributor entirely at the P1 level.

The meeting thought that this discussion was important and should be brought to the attention of a wider audience. Tim Maude agreed to write up the examination of this problem in a more formal way so that it can be discussed further in order that any further ramifications can be explored.

One additional difficulty was pointed out - if one distribution list agent distributes to another agent in a second domain, and that distributes to a user in the first domain, then the loop prevention procedures at the domain level may cause problems.

2.3 Directory Research Topics - Discussion

The first part of the wednesday afternoon session was devoted to a short discussion of outstanding issues in Directory services and the strategy that WG 6.5 should adopt in tracking the work of CCITT and other standards bodies. Given the relative infrequency of WG 6.5 meetings, it was thought that only relatively long range issues are worth concentrating on. The results of the discussion were a classification of areas in which further work should be attempted. This is summarised as follows:

Directory Topics

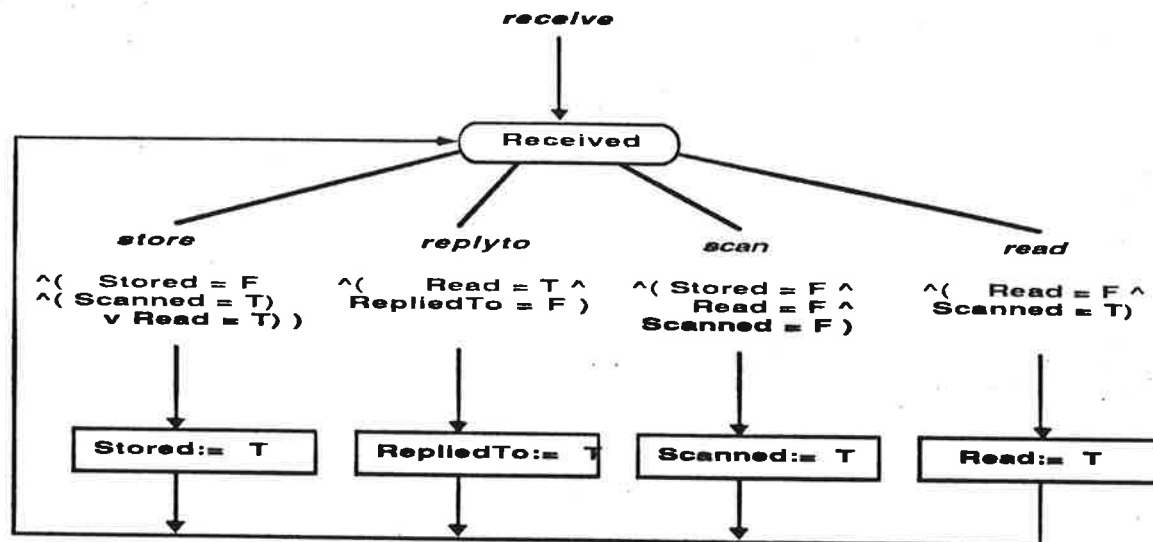
1. Group Communication
 - Directory System requirements to support group communication
2. Directory Management
 - Distribution
 - Updates
 - Name Tree Modification procedures
3. Security Issues
 - Authentication
 - Access Control
 - Encryption Key Management

The first of these topics has received considerable attention in this group and further work in this area is to proceed (see section 3.0). Issues two and three are expected to come to the fore with several member of IFIP working on distributed directory system projects. It was decided to hold over further consideration of these topics until the Oslo meeting.

2.4 Interconnection of X400 systems

The second session on Wednesday afternoon was devoted to a discussion of the state of X400 implementations within Europe and was lead by Rolf Speth. The discussion is not reported in full here as it largely concerned matters which fall within too short a time scale to be considered by WG 6.5.

The majority of those present already had an X400 implementation, or were in an advanced planning stage. All of those with working systems were using the University of British Columbia EAN. Of the public (i.e., non-proprietary) implementations being worked on, the most activity was associated with the DFN project in FRG. DFN have produced a specification and intend to invite implementation tenders for a number of time-share machines. In addition, work is proceeding on a Teletex/MHS gateway based on a subset of X430 (Günther Schulze) and the GMD plan to interface their KOMEX conferencing system to the MHS.



2.5 Personal Message Management

The group attempted to discuss message management as it relates to the services and facilities in the users' *local working environment* and the interconnection with the MHS. The following working definition of personal message management was adopted:

Those facilities and operations that a user will require in his/her local environment which will be needed to make maximum effective use of the MHS. Some of these will fall outside the strict scope of the MHS but might be expected to influence its use and perhaps ultimately its future extension

Examples include how users reference objects that exist in their local environment and (transiently) in the MHS; what interfaces exist to other communication services (e.g, financial/credit or directory services); how local procedures (i.e., office functions) can be integrated with the MHS.

The session commenced with presentations by Uta Pankoke Babst on referencing schemes for *Referable Objects* and by Michael Tschicholz on his DFN work on *Specification of UA Functionality*. In addition there was a presentation and demonstration of the GMD DOMINO system for scheduling office procedures which utilised special purpose user agents for handling office message transactions. The latter focused the subsequent discussion around the issue of communication units - that is message events which have specific relationships to prior (and latter) messages. For example, the Reply-Request, Reply and other common message relations.

From this an attempt was made to produce a taxonomy of message types. However, this was seen to be too 'wide' a topic and as a preliminary goal it was decided to concentrate on trying to specify the minimal set of states that a typical message might take on in the user agent environment. These were thought to describe message status, references to the message, references from the message, and operations required on the message. A limited set of operations were chosen - Store, Read, Scan (i.e., examine headers), Delete, Replyto. Then a number of representations were examined for describing changes in message status with respect to these operations. No totally satisfactory representation was discovered. The above figure illustrates one attempt.

A somewhat unsatisfactory conclusion was that the topic is important but needs a more precise framework and perhaps some better analytic tools to make progress.

2.6 Concluding Session

The final session of the meeting was taken up with administrative matters and an overview of the topic areas represented in papers submitted for the Washington Meeting in September.

The next meeting of the group is expected to be in Oslo in December and an agenda will be circulated following the Washington meeting. The meeting closed with a vote of thanks to our hosts from the GMD.

3.0 Group Communication Working Document

Members at the meeting emphasised the need to produce written papers setting out the results of the Groups discussions. In particular, the area known as *Group Communications* should be developed with the intention of submitting an IFIP 6.5 'view' to the CCITT and ISO standards bodies. With this aim in mind, a skeleton for a working document was drawn up and this is shown below.

Support for Group Communication within the MHS

1.0 Introduction

Why it is necessary to provide support in MHS/DS for Group Communication. Examples. Technical Constraints - short, medium and long term.

2.0 Classification of Needs

Lists of Needs including distribution agents, archivers, referencing tools, document stores, co-ordinators, and others.

3.0 Distribution Tools

Review of solutions for distribution agents (i.e., as in section 2.0 of this meetings minutes.)

4.0 Other Tools and Services

Sketched in problems and requirements for other tools as listed in the Classification of Needs.

5.0 Scenario for Integration of Tools and Services for GC

A view of an UA architecture for handling the above tools with examples.

6.0 Social and Organisational Issues in GC

A discussion of security and privacy issues as they relate to Group Communication Tools.

4.0 Attendees

Ulrick Blank
Manfred Bogen
R. Holliday
Peter Ingram
Steve Kille
Peter Kirstein
Tim Maude
George Montgomery
Uta Pankoke-Bababtz
W. Racke
Horst Santo
Pietro Schicker
Heinrich Schmith
Günther Schulze
Hugh Smith
Rolf Speth
Michael Tschickholz
Alfons Warnking
Lothar Wosnitza

CoCoNet GmbH, Düsseldorf, FRG
GMD, St Augustin, FRG
IBM, Heidelberg
BT, SES6.5.1, Ipswich, UK
University College London, UK
University College London, UK
BTRL, Ipswich, London
BT, SES6.5.1, Ipswich, UK
GMD, St Augustin, FRG
IBM, Heidelberg
GMD, St Augustin, FRG
Zellweger Uster AG, Switzerland
GMD, St Augustin, FRG
GMD, Darmstadt
Nottingham University, UK
Universität Düsseldorf, FRG
HMI, Berlin, FRG
GMD, St Augustin, FRG
CoCoNet GmbH, Düsseldorf, FRG

IFIP OFFICE SYSTEMS - Working Conference

29 September - 2 October 1985 in Helsinki

Preliminary Programme (10.6.1985)

Sunday, 29th September:	14.00 - 15.15	The field of office systems <i>Clarence Ellis</i>
	15.30 - 16.45	The nature of the office <i>Rudy Hirschheim</i>
	17.15 - 18.30	Office analysis <i>Don Tapscott</i>
Monday, 30st September:	08.30 - 09.45	Tools for office systems <i>Dennis Taichritzis</i>
	10.00 - 11.15	Office modelling <i>Giampio Bracchi</i>
	11.45 - 13.00	The spectrum of methodologies <i>Philip O'Donovan</i>
Tuesday, 1st October:	08.30 - 09.45	Design of office systems <i>Najah Naffah</i>
	10.00 - 11.15	Semantics in office systems <i>Carl Hewitt</i>
	11.45 - 13.00	Architectural implications <i>Ron Uhlig</i>
	15.00	Coffee
	15.30 - 16.45	Human factors in office systems <i>Leela Damadoran</i>
	17.00 - 18.15	Organizational implications of office systems <i>Heinz Klein</i>
Wednesday, 2nd October:	08.00 - 09.15	Security of office systems <i>Jim Finch</i>
	09.30 - 10.45	Implementation of office systems <i>Nils Bjorn-Anderson</i>

Inclosure 3 - Working Group 6.5 Six Year Plan

ACTIVITY	TITLE AND DESCRIPTION	TIME	PLACE	STATUS
1 Symposium	Messaging Systems	4-6 Sep 85	Washington D.C.	complete
2 Working Conf	Messaging Systems Annual Meeting	late 86 or early 87	West Germany	under study
3 Working Conf	Messaging Systems Annual Meeting	early 88	North America	volunteer needed
4 Symposium	Messaging Systems	Spring 89	Europe	under study

NOTE: Systems Environment Subgroups (Europe and North America, and User Environment Subgroups (Europe and North America) hold meetings 3 to 4 times per year in Europe and North America. Additional activities to be planned for Subgroup on Messaging for Developing Nations, and for Subgroup on Messaging for the Communications Impaired.

	ACTIVITY	TITLE AND DESCRIPTION	ORGAN BY	TIME	PLACE	STATUS	APPROVAL
1	Conference	Data Communication	CSSA	17-19 March 1986	Johannesburg South Africa	O.K.	Beijing 83
2	Meeting	TC 6 Meeting	TC 6	20-21 March 1986	Cape Town South Africa	O.K.	
3	Working Conference	Local Area Network Management	WG 6.4 A	April 1986	Canterbury U.K.	O.K.	
4	Conference	Information Network and Data Communication	SSI SDF TC6	12-14 May 1986	Ronneby Brun Sweden	O.K.	Requested
5	Working Conference	Protocol Specification Testing and Verification VI	WG 6.1 A	June 86	Montreal Canada	O.K.	
6	Congress	IFIP 86	IFIP	1-5 September 1986	Dublin Ireland	O.K.	
7	Meeting	TC 6 Meeting	TC 6	5-6 Sep or 8-9 Sep 1986	Dublin or Eindhoven	Under Study	Requested
8	Conference	ICCC 86	ICCC	15-19 Sept. 1986	Munich Germany		
9	Symposium	Local Communication Systems LAN and PBX	WG 6.4	26-28 Nov 1986	Toulouse France	O.K.	
10	Workshop	Local Area Networks	CSI	December 86 January 87	Goa India	Under Study	

	ACTIVITY	TITLE AND DESCRIPTION	ORGAN. BY	TIME	PLACE	STATUS	APPROVAL
11	Working Conference	Message Systems	WG 6.5	February 87	Germany	Under Study	
12	Tutorials	<u>Pre-IBERICOM</u>	API	18 May 1987	Lisboa Portugal	O.K.	
13	Conference	IBERICOM	API TC 6	19-21 May	Lisboa Portugal	O.K.	
14	Meeting	TC 6 Meeting	TC 6	22-23 May 1987	Sintra Portugal	Under Study	
15	Symposium	Protocol Specification Testing and Verification VII	WG 6.1	5-8 May 1987 (or March)	Zurich Switzerland	O.K.	
16	Symposium	Network Information Processing System <i>Мрежу за оправа на</i>		1988	Sofia Bulgaria	Under Study	
17	Conference	AFRICOM 88 <i>утоплива</i>		Fall 1987 Spring 1988	Egypt, Senegal Ivory Coast or Kenya, Nigeria	Under Study	
18	Working Conference	Message Systems	WG 6.5	Spring 1988	USA	Under Study	
19	Symposium	Protocol Specification Testing and Verification VIII	WG 6.1	Spring 1988	North America	Under Study	
19	Symposium	International Computer Message Systems	WG 6.5	Spring 1989	Israel	Under Study	

OFFICIAL SEQUENCE AND ABBREVIATION SYMBOLS FOR MEMBER SOCIETIES AS USED IN IFIP PUBLICATIONS

Algeria	DZ	German Democratic Republic	GDR	Norway	N
Argentina	AR	Germany, Fed. Rep. of	D	Poland	PL
Australia	AUS	Greece	GR	Portugal	P
Austria	A	Hungary	H	South Africa	ZA
Belgium	B	India	IND	Spain	E
Brazil	BR	Iraq	IQ	Sweden	S
Bulgaria	BG	Ireland	IRL	Switzerland	CH
Canada	CDN	Israel	IL	Syria	SYR
China	PRC	Italy	I	Tunisia	TN
Cuba	C	Japan	J	United Kingdom	GB
Czechoslovakia	CS	Korea, Rep. of	K	U.S.A.	USA
Denmark	DK	Morocco	MA	U.S.S.R.	SU
Egypt	ET	Netherlands	NL	Yugoslavia	YU
Finland	SF	New Zealand	NZ	SEARCC	SEARCC
France	F	Nigeria	WRN		

Updated 30 Dec 1985

IFIP TC 6 MEMBERSHIP (1985/12)

DECEMBER 1985

DELEGATES

AR	ANGIO Juan Carlos Entel Defensa 143 9° piso Buenos Aires ARGENTINA	Tel. (1)499925 Home Telex 18003 or 17821
AUS	HOUSLEY Trevor Housley Computer Communications Pty. Ltd. P.O. Box 41 Lindfield, NSW 1070 AUSTRALIA	Tel. +61(2)4672488 Home +61(2)4499894 Telex aa70592 hously
A	KONIGSHOFER Fritz The World Bank IRMNC 1818 H Street, N.W. Washington, D.C. 20433 U.S.A.	Tel. +1(202)4733039 Home +1(301)4698160 Telex 440098 (ITT) 248423 (RCA)
B	DANTHINE Andre Univ. de Liège B.28 Montefiore, Sart Tilman B - 4000 Liège BELGIUM	Tel. +32(41)562691 Home +32(41)836372 Telex 41797 saunlg b
BR	TAROUCO Liane (Mrs) UFRGS Centro de Processamento de Dados Rua Antenor Lemos 90 90000 Porto Alegre-RS BRAZIL	Tel. +55(512)312355 Home Telex 512680 ccuf br

BG	BOYANOV Kiril Inst. Math. with Com. Center Ul. Akad. G. Bonchev 8 1113 Sofia BULGARIA	Tel. 719212 or 748116 Home 873917 Telex 22628 banmat bg
CDN	TWYVER D.A. Northern Telecom Advanced Data Systems 9705 Data Park Minnetonka, Minnesota 55343 U.S.A.	Tel. +1(612)9328000 Home Telex 290909
CS	PUZMAN J. CSc. State Commission for Science, Technology, and Investments Slezka 9, Vinohrady 120 29 Praha, CZECHOSLOVAKIA	Tel. +42(2)253315 Home +42(2)734918 Telex 121107, 121, 427
DK	IVERSEN Villy Baek IMSOR Danmarks tekniske Hojskole DK - 2800 Lyngby DENMARK	Tel. +45(2)881433 Home Telex
SF	ECKBERG J. Technical Research Centre of Finland Telecommunications Laboratory Tekniikantie 6 SF - 02150 ESPOO FINLAND	Tel. +358 0 4566500 Home +358 0 574260 Telex 123704 VTTTE SF TFX +358 0 4550115
F	POUZIN Louis CNET-PAA Rue du General Leclerc 40 F - 92131 Issy-les-Moulineaux FRANCE	Tel. +33(1)4529850 Home +33(1)7415216 Telex 206121 Electronic Mail POUZIN@MIT-MULTICS.arpa mcvax!vmucnam!timpitO!pouzin
GDR	MEIER H. W., Prof. Dr. Akademie der Wissenschaften der DDR Institut fur Informatik und Rechentechnik Rudower Chausee 5 DDR - 1199 Berlin GERMAN DEMOCRATIC REPUBLIC	Tel. 6743733 Home Telex

D	SPANIOL Otto, Prof. Dr. Technical University Aachen Lehrstuhl Informatik IV Templergraben 64 D - 51 Aachen FED. REP. OF GERMANY	Tel. +49(241)804568 +49(241)804539 Home +49(241)574590 Telex 0832704 thac d
GR	PAPACHRISTODOULOU Z. Av. Gaston Dietrich 125 L - Luxembourg GRAND DUCHE DE LUXEMBOURG	Tel. Home Telex
H	SZENTIVANYI Tibor Szamalk P.O. Box 146 H - 1502 Budapest HUNGARY	Tel. +36(1)158276 Home +36(1)353177 Telex 225144
IND	MAHABALA H. N. Computer Center I.I.T. Madras INDIA 600 036	Tel. 415342 X209 414160 Home 414719 Telex 7362 MADRAS
IRL	HARRIS Neville R. Dep. of Computer Science Engineering School 201 Pearse Street Trinity College, Dublin 2 IRELAND	Tel. Home Telex
IL	BIRAN David Communication, Computers, Command and Control Systems Associates 30 Rehov Trompeldor Ramat-Hasharon 47264 ISRAEL	Tel. +972(3)497973 Home +972(3)471542 Telex 33647 Alda II Attn. NTZ
I	LE MOLI Gesualdo, Prof. Politecnico di Milano, CREI Piazza L. da Vinci 32 I - 20133 Milano ITALY	Tel. +39(2)296826 Home +39(2)8433614 Telex 333467
J	NAKAGOME Yukio, Dr. K.D.D. 2-3-2 Nishishinjuku Shinjuku-Ku- Tokyo JAPAN 160	Tel +81(3)3477531 Home Telex J 22500
MA	ABDERRAZIK J.	Tel. Home Telex

NL	BOUTMY Bert J. Philips International B.V. Dept. Corporate Communications Building VN3 NL - Eindhoven 5600 ND NETHERLANDS	Tel. +31(40)783827 Home +31(40)444120 Telex 35000 PHTCNL
NZ	COOKE Peter IBM New Zealand Ltd P.O. Box 6840 Auckland NEW ZEALAND	Tel. +64(9)778910 Home +64(9)575975 Telex
N	JENSEN Willy University of Tromso Computer Science Dept. P. O. Box 935 N - 9001 Tromso NORWAY	Tel. +47(83)81688 Home Telex 64124 AUROB N
PL	SOBCZAK Wojciech Gdansk Technical University Ul. Majakowskiego 11/12 80-952 Gdansk POLAND	Tel. 416 186 471 774 Home 410 208 Telex
P	CERVEIRA Alexandre G. Departamento de Informatica Universidade Nova de Lisboa Faculdade de Ciencias e Tecnologia Quinta da Torre 2825 Monte de Caparica PORTUGAL	Tel. +351(1)2955641 Home +351(1)2951419 Telex 14542 FCTUNL P
ZA	KOEN Koos P.O. Box 87694 Houghton 2041 Johannesburg SOUTH AFRICA	Tel. +27(11)7870250 Home +27(11)6468294 Telex 321326 SA
E	LAVANDERA Luis Compania Telefonica Nacional de España (C.T.N.E.) Avda. Brasil 17 Madrid 20 SPAIN	Tel. +34(1)4552982 +34(1)4559715 Home +34(1)7398799 Telex 27320 CTNE-E
S	KHAKHAR Dipak DEPE International Box 12026 S - 220 12 Lund SWEDEN	Tel. +46(40)464871 Home +46(40)460256 Telex

CH	RUDIN H., Dr. IBM Res. Lab. Saumerstrasse 4 CH - 8803 Ruschlikon SWITZERLAND	Tel.	+41(1)7248111
		Home	+41(1)7204302
		Telex	53626 IBMRU CH
TN	KAMOUN Farouk Centre National de l'Informatique Rue Belhassen Ben Chaabane 1005 Tunis TUNISIA	Tel.	+216(1)894757
		Home	
		Telex	CENIF 13904 TN
GB	RADFORD Peter Logica 64 Newman Street London W1A 4SE UNITED KINGDOM	Tel.	+44(1)6379111
		Home	+44(245)262328
		Telex	27200
USA	UHLIG Ronald P., Dr. Northern Telecom 2100 Lakeside Blvd Richardson, Texas 75081 USA	Tel.	+1(214)4378836
		Home	+1(214)5966080
		Telex	6502591777 MCI

COGNIZANT OFFICER

LE ROUX H. W. P.O. Box 45 Newlands 7725 REP. OF SOUTH AFRICA	Tel.	+27(21)6832133
	Home	+27(21)699011
	Telex	524939

WG AND SUB WG CHAIRMEN

WG 6.1	SUNSHINE Carl, Dr. M.D. 91-12 System Development Corporation 2525 Colorado Avenue Santa Monica, California 90406 USA	Tel.	+1(213)4535161
		Home	
		Telex	652358 SYSDEVCO SNM
WG 6.1/A	RUDIN Harry (CH Representative)		
WG 6.1/B	GRANGE Jean-Louis INRIA Rocquencourt BP 105 F - 78153 Le Chesnay Cedex FRANCE	Tel.	+33(3)9549020 X3110
		Home	+33(3)4600622
		Telex	698109
		Arpanet Mail:	
			GRANGE at MIT-MULTICS

WG 6.4 RAVASIO Piercarlo
R&D, Systems Architecture
ITALTELTELEMATICA
Piazzale Zavattari 12
I - 20149 Milan
ITALY

Tel. +39(2)43883030
+39(823)791497
Home +39(39)508485
Telex 314840

WG 6.4/A SPRATT Brian
Computing Lab.
University of Kent
Canterbury Kent CT2 7NF
UNITED KINGDOM

Tel. +44(2)2766822 X627
Home +44(2)2768927
Telex 965449 ukclib g

WG 6.5 SCHICKER Peter
Zellweger-Uster AG
CH - 8634 Hombrechtikon
SWITZERLAND

Tel. +41(55)416111
Home

ICCC REPRESENTATIVE

(to be named)

CHAIRMAN OF IC 6 CONFERENCE

CABANEL Jean-Pierre
Université Paul Sabatier
Laboratoire de Langues et
Systèmes Informatiques
Route de Narbonne 118
F - 31062 Toulouse Cedex
FRANCE

Tel. +33(61)556765
Home +33(61)758862
Telex

IFIP NEWSLETTER EDITOR

ROSENFELD Jack.L.; Dr.
IBM T.J. Watson Research Center
P.O. Box 218
Yorkstown Heights; N.Y. 10598
U.S.A.

IFIP NEWS IN COMPUTER NETWORKS

VAN EYBERGEN H.
North Holland Publishing Co
Office address :
Molenwerf 1
1014 AG Amsterdam
Postal address :
P.O. Box 1991
1000 BZ Amsterdam
THE NETHERLANDS

Tel. +31(20)5803253
Home
Telex 18582 ESPA NL
Cables ESLPUBCO

NORTH HOLLAND CONTACT

SMIT Stephanie
North Holland Publishing Co
Office address :
Molenwerf 1
1014 AG Amsterdam
Postal address :
P.O. Box 1991
1000 BZ Amsterdam
THE NETHERLANDS

Tel. +31(20)5803254
Home
Cables ELSPUBCO

IMPORTANT IFIP PEOPLE

ANDO K.; IFIP President
Fujitsu Ltd
2-6-1 Maruno-UCHI
CHIYODA-KU
Tokyo 100
JAPAN

Tel. +81(3)2163211
Home
Telex 2224361 ft Tor j
Cable address :
Fujitsu Limited Tokyo

IFIP Secretariat
Gwyneth Roberts
Rue du Marché 3
CH - 1204 Geneva
SWITZERLAND

Tel. +41(22)282649
Home
Telex 428472 IFIP CH
Cable : IFIPSEC GENEVA

FOUROT J.
IFIP Secretary
CII-Honeywell Bull
121 Avenue Malakoff
F - 75016 Paris
FRANCE

Tel. +33(1)5021080 X3413
Home
Telex 614050 bull hq

GOLDSWORTHY A.
APC Chairman
P.O. Box 554
Fortitude Valley 4006
AUSTRALIA

Tel. +61(7)2533567
Home
Telex 44432 sgiobs

NARASHIMAN R.
ICID
Ncsdct Tata Institute of
Fundamental Research
Homi Bhabha Road, Colaba
Bombay 400 005
INDIA

Tel. +91(22)214316
Home
Telex 113009

DALTON O.
IFIP Treasurer
Future Technology Ltd
Shield Life Building
Frescati Road
Black Rock
Dublin
IRELAND

Tel. +35(31)831126
Home
Telex

DUNCAN K.A.
IFIP Publications Officer
Health Information Systems
15 Parsons Way
Los Altos, CA 94022
USA

Tel.
Home
Telex

NATIONAL ACTIVITIES REPORTS: CZECHOSLOVAKIA

Josef Pužman

September 1985

Data Communication Services

According to Act No. 110/1964 all public telecommunication services are provided by the Czechoslovak PTT within the framework of the so-called Unified Telecommunication Network. Since 1971, telecommunication services have also been including data communications, which, at present, follow the Data Communication Regulations valid since 1983.

PTT services for data communications are understood to be a set of technical and organizational arrangements. They include:

- leasing of lines on a permanent or temporary basis for local, trunk, and interstate communication
- supplying subscribers with appropriate facilities and equipments (e.g. data sets, DCEs) enabling their DTEs to be connected to public networks and/or leased lines
- licensing of DCEs for the connection to the leased telecommunication lines and of DTEs for co-operation with DCEs of the PTT
- consulting activity at the stage of user's teleprocessing and computer-communication systems designing.

In mid-1985 there were 2100 users' DTEs in operation, of which approx. 1450 were connected to data links provided on telephone lines. More than one half of connections operates at a transmission rate of 600/1200 bps, the maximal rate over leased telephone lines is 9600 bps.

Data Communication Networks

There are several user terminal and computer-communication systems in operation now. The earliest and largest is provided by the State Bank of Czechoslovakia, others are facilities of the industry, agriculture, universities, etc. These systems are naturally closed without the possibility of mutual co-operation.

The first open computer network based upon ISO standards (including RM of OSI) and CCITT recommendations has been in a trial operation for gaining sufficient experience for nonpublic and public networking in Czechoslovak conditions.

Some transborder data flows are also available within the framework of the World Meteorological Organization and the ICAO networks for meteorological purposes, SITA networks for the GABRIEL Seat Reservation System, Western European data networks for the purpose of scientific, technical, and economic information exchange, etc.

New Projects

New scientific and technical programs have been devised as part of the preparation of the R&D plans for the next decade. Among them is the Telecommunication Services Program involving, i.a., several pilot projects for data communications and telematic services. In addition to the development of data transmission towards higher readiness (transmission rates), accuracy (less error rate), and reliability, a public data network will be designed and its experimental operation launched. The era of telematic services will start with the telefax, bureaufax, and teletex, followed later by the videotex. All services shall strictly satisfy approved CCITT recommendations, and ISO and CMEA standards.

Local Area Networks

LANs are only at the beginning of their implementation because of the limitations of the appropriate components. Some progress is, however, expected owing to the promising results of Czechoslovak industry and CMEA co-operation, particularly in the field of fiber optic technology.

Conferences

The 7th International Conference on Data Transmission (DPD'85) will be held at the end of October at Karlovy Vary (Carlsbad); it will be aimed at data communication and telematic services.

DPD conferences take place in odd years, alternating with International Conferences on Computer Networks in Bratislava in even years.

NOTES ABOUT FINNISH RESEARCH

1. Research establishments

About 75 % of the research work in the telecommunications field is performed by the industry, 15 % by the service suppliers and the remaining part shared by the Technical Research Centre (5 %), the Technical Universities (3 %) and others.

2. Research costs

At the inauguration of a new factory for personal computers (starting capacity 500/year) and terminals (25 000/year) the Nokia Electronics president pointed out that the R & D costs in this field are very high. (over 230 MFIM annually of a total turnover of 2 000 MFIM)

3. Research projects

As an example of a public research effort the development program of information technology can be mentioned.

The main objective of the development program is to improve and support the share of the Finnish information technology in the international market. The main sub-areas of the program are identified as five development projects, which are further divided into subprojects:

- I Integration of Teleinformatics
 - Work stations
 - Gateways
 - Distributed data management
 - Communication between organizations
- II CAD/CAM
 - Distributed computer aided design
 - Distributed production control
 - Visual product models
 - Computer aided engineering tools
- III Software Technology
 - Software engineering expert system
 - Software engineering tools and ADA
 - Specification and development environment for concurrent systems
- IV Applications of Pattern Recognition
 - Speech communication in automation and telecommunication applications
 - Work station for digital image processing
 - Computerized image detection in 3-dimensional measurement and control
 - Medical image detection
- V Artificial Intelligence
 - (Starting phase)

The four year budget (1984 - 1987) of the development program is 70 Mmk. The Technology Development Centre Finland (TEKES) is responsible for 70%, the research institutes 15% and the participating industry 15% of the whole budget. Project I has a budget of 23Mmk, which is divided similarly into 70%, 15% and 15% shares. An average of 20 people are working at Project I.

PROJECT I: INTEGRATION OF TELEINFORMATICS

The object of Project I is to provide data communication and distributed database services to the end user and to the The distributed database services are built on the integrated data transfer services. The data transfer services are constructed on public data networks and local area networks as far as possible. The necessary protocol conversions are implemented in gateways designed in the project. The subprojects are organized to provide the object services in an experimental distributed multivendor system (called later: the experimental system).

2.1 Work Stations

The subproject I.1 (work stations), builds a prototype work station according to the requirements imposed by the participating enterprises. This prototype is equipped with the common data transfer and database management services.

2.2 Gateways

This subproject I.2 (gateways) develops a transparent gateway between the public data network (PDN), the public telephone network (PTN) and a CSMA/CD Local Area Network (LAN). Another gateway to be developed implements a store-and-forward conversion between the PDN Teletex and the LAN integrated applications.

2.3 Distributed Data Management

In subproject I.3 (distributed data management) formal data resource description and distributed database design tools are developed. These tools are applied in the implementation of an experimental multidatabase service.

2.4 Communication Between Organizations

Subproject I.4 (OVT) implements a teletex -based data transfer service for communicating office applications. The communication rules are specified in particular for trade applications as in GTDI (Guidelines for Trade Data Interchange). The protocol implementation and testing tools, which are used also in subproject I.2, are designed in I.4. The final integration of the system is done here, too.



ACTIVITY REPORT

REPORT NUMBER: 7

COUNTRY: Portugal

DATE: October 1985

AUTHOR: Alexandre Cerveira

1. ELENA Project. The pilot networks are being installed in a real environment.
2. Research Project SIFO (Integrated Services by Optical Fiber). Studies concerning the future participation of the Portuguese industry is under way. The development of the prototype of this broad-band LAN is expected to May 86.
3. PSEUDSTAR Project at University of Aveiro. A new topology is being implemented for a Picture Archive and Communication System. It is based on OSI and it is supposed to deal with image, data and voice.

4. PTT Services. It looks like a definite effort on new services is under way. The development, implementation and the commercial activity concerning the new services has been changed to a new subsidiary company TELEDATA. The PTT are also starting their participation in projects like TBB and RACE of the European Community.

TELEFAX project awaits high level decision which is expected soon.

VIDEOTEXT previous studies are completed. By the end of 1986 a pilot service will be available for a reduce number of chosen users.

5. LAN project at University of Minho. A real-time LAN is being implemented based on a deterministic Bus. It is supposed to support real-time distributed control systems.

6. Seminars. An half-day panel discussion on distributed integrated services was held on June by the Portuguese group on Data Communication.


(Alexandre Cerveira)

NETHERLANDS NATIONAL REPORT TO TC-6

OCT 1985

B. BOUTMY

Deregulation of the Dutch PTT

A proposal for reformation of the Dutch PTT has been published in July 1985 by the Steenbergen Committee. This three member committee has been installed by the Dutch Government. In October 1985, the cabinet will decide on the various recommendations.

The proposal is to split up the PTT into three private companies under one Board of Management, i.e. for Mail, for Telecom Utility, and for the Telecom Entrepreneurs function. The state stays in possession of the shares and keeps control of the public Telecom utility functions by means of a governmental regulatory body. The PTT keeps the monopoly for this subinfrastructure by a concession from the government. In the other areas, e.g. PABXs, local area networks, ... there will be free competition. In general, the PTT top management is in favour of the proposals. For more details, see annex.

Satellite Communications

The satellite multiservice SMS, a new service from the European Telecommunications Satellite organization, was launched in Rotterdam in June 1985. Seven PTT administrations hosted 250 participants at a two day symposium where the new services were presented to industry. The SMS services are assessible under the same conditions in all zones covered by Eutelsat F2 and Telecom 1 satellites. Basically 64 Kbps and 2.048 Mbps transmission speeds are offered. Especially videoconferencing and bulk volume transport of data are promoted.

Dutch PTT Reforms Urged

by FRANK KUITENBROUWER

The Dutch Cabinet in October intends to make public its stand on breaking up the PTT organization. In a first reaction on recommendations to this effect by a blue-ribbon panel, the Undersecretary of State for telecom affairs Dirk Scherpenhuizen termed the proposals 'far-reaching', but added that the general thrust of the report at first sight was agreeable to him.

In its report *Signals for the Future (Signalen voor straks)* the three-member commission argued that the PTT should be changed as fast as practicable into a conglomerate of corporations under private law with continued full ownership by the state. The report rejected a *sui generis* solution, arguing that state ownership is a sufficient guarantee for the public interest. The commission called for breaking the present state-run telecom monopoly into three major segments:

Network infrastructure, which should still be operated as a monopoly on the basis of a government concession to the PTT. This 'public utility telecom corporation' should be required to provide leased lines to private companies, allowing them to re-sell (new) services.

Equipment attached. Telecommunication lines and new value-added telecom services should be handled by a separate 'entrepreneurial telecom corporation' under the PTT holding, in open competition with private enterprise. This part of the PTT should be free to set up joint ventures with private companies. The existing PTT control on domestic telephones would have to go. It is being circumvented more and more anyhow, the commission said, pointing to all kinds of private phone shops springing up.

All regulatory matters (including conditions of entry into the public networks) should be the province of a new government agency, operating under the responsibility of the minister

PTT Code of Conduct

The Dutch PTT signed an 'automation contract' with the trade unions on 20 June 1985. The eight-paragraph general agreement has been termed a 'code of conduct' for future automation projects of the state-run post and telecom organization. Main purposes are to:

- make automation projects transparent;
- create a framework for consultations and negotiations;
- provide employees with safeguards.

To achieve these ends the process (from planning to implementation) will be phased. The PTT says it will do its utmost to avoid involuntary dismissal of personnel, but it expects in turn that employees will be cooperative and flexible. For major projects, additional agreements with the unions are possible. ■

charged with telecommunication affairs (currently the Undersecretary of State for Transport). The PTT should lend technical assistance. Decisions could be appealed to the administrative courts.

Major considerations of the committee were that the PTT should be free to attract investment capital on the open market, ending its subservience to the national Treasury. The commission also strongly felt that the PTT should be freed of civil-servant salary scales to be in a better position to compete with private enterprises for 'scarce talent' needed to man the sophisticated telecom services of the near future.

The commission was charged last year by the Government to study the structure, status and supervision of the PTT (see *TDR* Vol VII No 2 p 64). The Chairman was T J Steenbergen, a former top executive of the Aegon insurance concern and a member of the Swarttouw Commission that in 1982 recommended the Government to give the PTT more leeway. Members of the commission were Jens Arnbak, a Danish-born telecom specialist at Eindhoven Technical University, and M Albrecht of the Hoogovens Steelworks. The commission used the services of McKinsey & Co., management consultants. In an interview Steenbergen emphasized that the proposals do not intend to privatize the PTT as has been done in the United Kingdom, but only to make it more independent of the State. Government and Parliament should be able to regulate, e.g. set tariff structures for telecom services, not as part of the yearly budget debates, but only in general terms.



Steenbergen

The report was welcomed generally by spokesmen of private enterprise, although the private sector's Centre for Information Policy (CIB) said that free competition should be extended to the telecom infrastructure. A monopoly on the networks, however, is virtually unassailable in Parliament; witness a debate over a government White Paper in June 1984.

In a first reaction trade unions objected to privatizing the status of the more than 100,000 PTT employees and voiced concerns about employment effects. If installation and maintenance of domestic telephones is freed from the monopoly, the PTT might lose quite a few jobs, the commission acknowledged, but it pointed out that private firms will gain new employment as a result.

Whether Parliament will agree with ending the monopoly on domestic telephones remains to be seen, however. So far it has not shown any enthusiasm, a spokesman of a consumer organization noted. His organization incidentally has gone to court against the PTT to liberate domestic appliances. ■

The report is available from Commissie Steenbergen, Postbox 13373, 2501 EJ The Hague, The Netherlands. Tel: (31-70) 472-944.

SWISS TELECOMMUNICATIONS SCENE

for TC6 Meeting in October, 1985 (Budapest)

General

In 1984, the Swiss PTT spent 1.7 billion Sfr. for telecommunication equipment. This amounts to about 260 Sfr. per inhabitant of Switzerland. The expenditures for 1984 amounted to an increase of about 18 percent over 1983.

In telecommunications overall, a growth of 4.7 percent is the target for 1985.

The following figures are interesting. They show to which extent the various PTT services cover their own cost. Overall, the PTT had a cost coverage of 105 percent in 1984, i.e., made a profit, overall, of 5 percent.

In summary --

86 percent	:	postal services
120 percent	:	telecommunication services

Detailed breakdown --

85 percent	:	postal letter
76 percent	:	postal packet
110 percent	:	postal payment
57 percent	:	postal coach and goods
119 percent	:	telephone
130 percent	:	teleinformatics
86 percent	:	wire radio broadcast (Telefonrundspruch)
109 percent	:	radio broadcast
112 percent	:	television

The first single-mode glass fibre communication link was installed recently. It operates at a rate of 565 Mbit/sec and over a distance of about 28 kilometers without repeater.

Data Communication

Compared with the end of 1983, the use of data terminals increased by 24 percent on the switched telephone network and by 22 percent on leased lines. 65 percent of the modems in use are attached to leased lines.

At the end of 1984 there were nearly one thousand terminals connected to Telepac.

At the beginning of 1985, Telepac took over all the subscribers to Euronet and Data-Link. When it was disconnected in January 1985, the Euronet node in Zurich had been in operation for five years.

SWISS TELECOMMUNICATIONS SCENE (continued)

Videotex

At the end of 1984 there were some 1100 subscribers to the trial Videotex service.

Videoconferencing

During the summer of 1985 the first videoteleconferencing trials between Switzerland and the US took place. Studios in Zurich and in Bern are available for the trial.


Harry Rudin

IFIP TC6

National Activity Report: United Kingdom

Peter Radford

October 1985

Summary

In the few months since the last report, the major happenings have been a series of poor showings from the computer manufacturing industry and progressive developments by the communications suppliers.

Industry

Bad reports have come from all positions on the size scale. At the top end, the chairmen of both STC (who recently took over ICL) and Thorn-EMI (who own Inmos amongst others) have had to resign because of the poor financial results and poor operating decisions concerning the companies. At the other end, Sinclair and Acorn are still rather rocky, despite in the latter case the involvement of Ollivetti. The rot is not confined to the to ends. One erstwhile home micro company, Amstrad, does seem to be OK at present, however, and has recently announced a word processor for £400 (plus tax).

Communications

On the communications front matters seem somewhat healthier.

British Telecom have just announced greater than expected profits. BT's pilot ISDN offering, IDA, has at last starting operating (several months late but with ambitious expansion plans). It is expected that the pilot will evolve into a full ISDN service rather than there being a hiatus of evaluation and replanning. At present the service does not accord with CCITT recommendations, however, since the basic access offers 64+8+8 kbit/s not 64+64+16. This was probably as a result of BT's failure to predict the way CCITT would go. Ironically, at about the same time that IDA starting operating, BT's research Labs published a paper which concluded that the CCITT recommendations would be workable on the vast majority of British local loops!

At a much more mundane level, BT have installed the 100000th Telex machine in the UK. Teletex does not seem to be making very rapid progress, the latest prediction is for 30000 machines installed by 1990.

PR1ACL

Mercury Communications have been making steady progress and are now offering high speed digital transmission to Hong Kong as well as to New York.

Cellular radio, introduced at the beginning of the year has been doing well. Two companies are licensed to operate, one (Cellnet) part owned by BT, and both are expanding their coverage rapidly and the equipment suppliers (neither operator is allowed to sell the user equipment) also appear to be doing well. In part this is due to demand being held back by limited radio frequency space but there is also a measure of status selling involved.

USA NATIONAL REPORT TO TC-6

OCT 1985

SUBMITTED BY R. P. UHLIG

Terminals and Personal Computers

IBM has introduced the System 36 PC, a combination of a "very mini minicomputer" called the 5364 System Unit and a personal computer modified with some new software and a driver card. The PC functions as the system control panel, and is the only required attachment to the System/36. Three other workstations can connect through a port on the 5364. The Systems/36 runs the System Support Program (SSP) as its operating system, while the directly attached PC runs the new PC-DOS 3.1 operating system.

AT&T has introduced a number of new terminals including the 3B2 Model 400 and the 3B15, and an IBM 3274-compatible cluster controller.

Northern Telecom has introduced a new integrated voice/data terminal called "Displayphone Plus." It incorporates full DEC VT100 and VT52 terminal emulation, IBM 3101 cursor addressing and ANSI 3.64 cursor addressing and has an integral 1200 bps modem.

Networks

Interest in ISDN is increasing rapidly in the US. A number of seminars on ISDN have occurred during the past six months. It is expected that ISDN will begin appearing in telephone company Central Offices in 1987, and that ISDN will be fairly wide spread by 1990, and will be used extensively for both voice and data services.

Many large companies in the US have multiple data networks. There is a trend now to consolidate these networks, using X.25 as the base for consolidation. In addition, the use of T1 (1.544 mbps) carrier links in backbone networks is becoming very widespread. A number of companies are planning to combine their digital voice and all their data traffic on these T1 links. In many cases, they are finding that they can do this for no more than they are currently paying for their existing voice-only private networks.

IBM has sold Satellite Business Systems (SBS) to MCI in return for a 16% share of MCI stock.

MCI is implementing Tymnet's X.PC link protocol in the nodes of its packet switching system. MCI plans to have X.PC running nationwide sometime in the fall.

IBM has introduced an internal prototype network called SNA Low Entry Networking (SNA/LEN). It is designed to serve the needs of

4) It would provide criminal and civil penalties for disclosure of contents of a message, when such disclosure causes harm.

5) A warrant would be required for a government agency or anyone else to obtain copies of electronic messages stored in a system.

Regulatory Scene

The Federal Communications Commission has proposed ending the Computer II rule that AT&T cannot sell its "enhanced" computerized data services through the same companies as its basic transmission services. The proposal would not dilute the requirement that AT&T market end-user equipment through a separate, unregulated subsidiary. It could pave the way for AT&T to offer Net 1000.

The FCC is permitting Cox Cable to compete with high-speed voice and data carriers offering services such as video teleconferencing, electronic mail and fax. Commline Inc., a Cox group, developed the system to be used. The FCC is expected to approve cable telecom, but on a case-by-case basis.



Ronald P. Uhlig
AFIPS Member, IFIP TC-6