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          Draft minutes of the 6th TF-TEN meeting
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Date:      9-10/1/97
Location: University of Linz, Austria
          (48°19.9'N,14°19.3'E)


Welcome and apologies
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Attendance:
(BW)   Baoyu Wang              UKERNA            UK
(CG)   Christoph Graf          DANTE             UK (minutes)
(DH)   Dirk Hetzer             DTAG/DeteBerkom   DE
(GH)   Gerald Hanusch          U. of Linz/Aconet AT
(GS)   Guenther Schmittner     U. of Linz/Aconet AT
(JMU)  Jean-Marc Uze           RENATER           FR
(MB)   Michael Behringer       DANTE             UK (chair)
(MC)   Mauro Campanella        INFN              IT
(OK)   Olav Kvittem            Uninett           NO
(PN)   Paulo Neves             RCCN              PT
(RS)   Robert Stoy             RUS/DFN           DE
(SL)   Simon Leinen            SWITCH            CH
(VE)   Vegard Engen            Uninett           NO
(ZC)   Zlatica Cekro           ULB/STC           BE


Apologies were received from:
Alain Frieden               RESTENA           LU
Celestino Tomas             RedIris           ES
Kevin Meynell               UKERNA            UK
Olivier Martin              CERN              CH
Phil Chimento               Twente University NL
Ramin Najmabadi Kia         ULB/STC           BE
Tiziana Ferrari             EPFL              CH
Victor Reijs                SURFnet           NL



Corrections to minutes from last meeting
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BE: - Belnet is the name of the Belgian academic network,
      something different is in there
    - ZC will give some input about network management
      aspects missing in the minutes
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Actions from last meeting

4.8 Action RNK: Write in more details what precisely we
ought to do with the ARP testing - open

4.9 Action OK: Write down a detailed test description for
the NHRP - closed

4.11 Action KM: Try to find out what the differences are
between PNN and ICE - open

4.13 Action OK: when you know more on the CDVT issues after
talking to the PTT please send it to the list so we can
discuss it a bit before the next meeting - closed

4.15 Action OK: bootstrap the process of getting all the
software and requirements for the experiments and send info
to the participants of the experiment - closed

ACTION 5.1 HA :write up a project description for the new
experiment. HA will write the description by the middle of
next week. Further discussions on the list - open

Action 5.2 everybody. Check if the equipment information
on the web is still up to date - open

Action 5.3 AS: Find out about the procedures for arranging
a session at JENC8 - closed

Action 5.4 DS: Talk to TF-TEN people about specific plan of
Action for SVC tests - open

Action 5.5 DH & PC: will write the precise definition of
what they are doing and what they want to do off-line and
will send the info to the list - closed

Action 5.6: VR+DH to follow up on tests with defined cell
loss - closed

Action 5.7 SK: Detailed test plan in two weeks time - open

Action 5.8 Nuno: Intermediate Report should go into D.11 -
closed

Action 5.9 Magnus: Write a proposal with different options

for videoconferencing over the Overlay network. Time: one
week - open

Status of TEN-34 and Deliverables

Unisource part of the production TEN-34 network has been
ordered. On the FUDI part all technical details have been
agreed upon, but not all parts are ordered yet. PNOs were
very reluctant agree on test on IP layer, because they
offer ATM services only and not higher protocols. Instead
of analysers, traffic for acceptance testing will be
generated on workstations to get as close as possible to
the operational conditions. Main point: PNOs are required
to co-operate in finding the solution if IP layer tests
fail. An inauguration party is planned to take place later
on this year.

The deliverable D11.2 is out and available on the web. The
next one, D11.3, is due in April. Input to the report
should be sent in one month earlier for formatting and peer
review. The report will be created with MS WORD, input
should be plain ASCII text or MS WORD.

Status of the overlay network and local access

AT-DE up
AT-IT up
BE-UK up
CH-IT up
DE-LU up
DE-NL up
DE-SE up, not tested
ES-FR down, no local access in FR
FR-IT down, no local access in FR
NL-UK up, not tested
NO-SE not working, under investigation
PT-SE down, no local access yet in PT
UK-NO and UK-ES shorted together at the JAMES PoP, up

Local access to JAMES:
BE, IT, PT (PNO fibre missing): E3
all others: STM-1

Bandwidth is shared with other applications in: IT, UK

Report on meeting with JAMES

TF-TEN experiment leaders held a telephone meeting in
December to get a picture about the co-operation (or lack
of, in most cases) between TF-TEN experiments and JAMES.
The outcome was used in the subsequent meeting between
DANTE and JAMES representatives in Cambridge in mid-
December.

Ideas were exchanged about improvement of information flow,
areas of possible co-operation per experiment were
identified and ideas for easier use of JAMES bandwidth
proposed.

Interestingly, the existing contract between JAMES and TEN-
34 solely covers areas like intellectual property rights,
but no technical aspects. This too was addressed in the
meeting.

OK: It seems important, that the definition of what is
going to be put into phase 2 experiments is co-ordinated
with JAMES in an early stage.

Status of national activities

AT (GS): EBONE access of ACOnet has recently been upgraded
to 4Mbps. 2Mbps SMDS network links the main 6 ACOnet sites.
The SMDS network will not be upgraded as the only option
would be to go to 34Mbps. ATM links will be added between
Vienna and both Salzburg and Innsbruck. Uni Linz operates 6
cisco switches linked with PNNI phase 1.

BE (CZ): LS100 is going to be replaced, but no decision
yet. BELGACOM will offer commercial ATM services. Belnet
might change to an ATM backbone.

CH (SL): In preparation of the imminent connection to TEN-
34, the national infrastructure was upgraded substantially.
The TEN-34 connection point, Geneva, was added as forth
node with two links into the existing ATM backbone of

SWITCH. Existing LS100 switches will be upgraded to LS1010
shortly.

DE (DH): JAMES is offering as of 31/1/97 SVCs to customers
based on E.164 with UBR and CBR.
DE (RS): Multicast routing will be used on the backbone
shortly. DFN provides native ATM service for dedicated
projects e.g. videoconferencing. DFN did not yet decide
about the addressing scheme to use.

FR (JMU): The topology will be changed from a ring to a
Paris centred star. The US link in place since May 96 is
a dedicated 16Mbps IP/ATM share of a Sprintlink line. More
detail will be provided at the next meeting.

IT (MC): Phase 1 of the national ATM infrastructure is
being tested now. A full mesh of 6Mbps ATM VPs link Rome,
Bologna, Torino and Milano, with CERN and US access from
Bologna, while EuropaNET access is in Milan. This is going
to be put in operation by the 1st of March. At the same
time all international access will be moved from Bologna to
Milan.

NO (OK): LS100 will be upgraded to LS1010 shortly.

PT (PN): Workstation with ATM connectivity is available at
RCCN, but no access to JAMES is in place yet.

UK (BW): No new ATM activity on national level. Seven new
ATM-based metropolitan areas went into operation.
Superjanet is going to be renewed by September 97.

News from JAMES

IP service over JAMES can now be offered. Internal tests on
LANE and switching were conducted but far away from being
offered on a large scale. VBR service is available now with
limited coverage. A credit based network resource
allocation scheme was discussed, but as the network is not
overloaded currently, it is not being implemented.

Discussion of experiments

- TCP over ATM

There are quite some uncertainties concerning the results
and the tests should be repeated. But it only makes sense,
if a close co-operation with the PNOs can be achieved. We
need to gain a better understanding of the behaviour of the
network under heavy load conditions close to the maximum
bandwidth. A simple set-up with two routers connected to a
multi PNO VP is proposed. Workstations connected to the
routers will be used generate adequate load. First tests
will be conducted between CH and IT. 2Mbps VPs will be used
in the beginning.

- native ATM

Native ATM tests will be done in phase 2.

- CDVT tests

RS reports on the tests conducted between DE and NL
(results were sent to the list earlier). A cell stream of
110k cells was traced at the source in NL and at the
destination in DE. Traces collected by DH inside JAMES in
DE will be available shortly. A significant increase of the
burstiness of the traffic on the way from the source in NL
to the destination in DE could be observed. Further
investigations will show at which stage the burstiness was
increased. The group proposes, that further tests should
use the full bandwidth of the VP (as configured by JAMES),
give the distribution of inter arrival times (not only min
and max values), should possibly be carried out on an
otherwise heavily loaded network and should include other
JAMES PoPs, if possible.

- RSVP

Moving the main part of RSVP testing to phase 2 will allow
to do a better job. An overview of the work done so far
will go into D11.3. It will contain some tests with Mbone.

- VBR

Experiment leader not present. VBR is now available in many
JAMES PoPs. It is felt sensible that the VBR tests should
concentrate on verifying Victor Reijs' results of national

VBR tests on international JAMES provided VBR VPs. SL will get in touch with Olivier Martin and start testing on the link CH-IT.

- ARP

Experiment leader not present. No fundamental problems detected so far. First tests conducted in AT revealed no additional problems other than the one to be expected from the unreliability of the underlying SVC infrastructure. The network used for the ARP tests will be a second LIS, using an additional logical IP interface on each participating end system, operating over the same SVC infrastructure. RS is getting in touch with Ramin to help with organising the ARP tests.

- SVC

The network will be restructured to create two interconnected equipmentwise more homogeneous SVC clouds in an attempt to reduce the interoperability problems being experienced right now. All existing LS100 switches used in the signalling path will either be upgraded or bypassed. DE, AT did already upgrade to LS1010, CH and IT will follow shortly. BE will configure the LS100 switch to short the VPs BE-UK and BE-DE. ES and UK will form the Fore sub-cloud, while CH, IT, AT, DE, LU and NO form the Cisco sub-cloud.

A teleconference will be held between NO, DE and AT, to investigate the SVC reachability problems. Date: Wed 15/1/97 14:00

- NHRP

Proposed topology: Two main NHSs to be set up, with further NHSs connecting to them. Participants: NO, ES, CH, IT, DE.

- ATM addressing

No new activity.

- Network management

CZ included a MIB of LS1010 into SUNnet manager. Activities include some investigations about SNMP V2 support in SUNnet

manager and monitoring evolving ITU recommendations about tests with loopback OAM cells. CZ will produce a plan of tests and make it available.

- Security in ATM Networks

Paulo Neves (PN): The major work for the Deliverable is done. The production of the workpackage had the helpful co-operation of Maryline Laurent and Pierre Rolin, from Telecom Bretagne (ENST-B). The first phase - Definition of the experimental framework - was completed. Due to technical questions, the second and third phase of security experiments will be moved to the second phase of ATM testing.

Overlay network planning

GS proposed the use of VCs over the Overlay Network to have some background traffic, with the assumption that none of this traffic will be injected into the production Internet. This traffic will only be transferred between TF-TEN partners. One of the possibilities is to use a different IP network with only one WS attached, at each TF-TEN partner, to a "very controlled router". OK stated that this could be an environment favourable to NHRP testing. GS said that one could start with a small cloud and then enlarge.

The TFD of the overlay network will be extended to end of March 97.

Planning phase 2 of the experiments

Moved to next meeting

AOB and next meeting

The place and date of the next meeting will be discussed on the list.

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Actions
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6.1 JMU to present the ATM works of RENATER in more detail at
the next meeting.

6.2 MB to check with Maria Pallares on the conditions of
publishing work of TF-TEN.

6.3 SL to get in touch with Olivier and start work on VBR.

6.4 VR and PC to explain in further details the CDVT
measurements.

6.5 CG to organise a teleconference about SVC debugging on
15/1/97.

6.6 GS to report to the list about ATM address translation
on ciscos.

6.7 Kevin Meynel to include a list about NRNs' and PNOs'
decision in terms of ATM addressing schemes in the
addressing test report.

6.8 MB: add the description of WP 11 to the WEB site.

6.9 MB: extend overlay network TFD to end of March.
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