

TERENA TRANS-EUROPEAN NETWORKING TASK FORCE

Draft Minutes of the 10th Meeting of the TF-TEN held on the 11th and 15th of May 1997 at the Apex Hotel, Edinburgh, UK.

Kevin Meynell 02/06/97

PRESENT

Name	Organisation	Country
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Stefania Alborghetti	INFN/GARR	Italy
Lajos Balint	HUNGARNET	Hungary
Michael Behringer (Chair)	DANTE	-
Vincent Berkhout	DANTE	-
Mauro Campanella	INFN/GARR	Italy
Massimo Carboni	INFN/GARR	Italy
Xavier Gobert	U.Namur	Belgium
Christoph Graf	DANTE	-
Bucur Ionescu	ROEJUNET	Romania
Olav Kvittem	Uninett	Norway
Cees de Laat	U.Utrecht	The Netherlands
Simon Leinen	SWITCH	Switzerland
Emanuele Leonardi	INFN	Italy
Olivier Martin	CERN	Switzerland
Kevin Meynell (Sec)	TERENA	-
Paolo Neves	RCCN	Portugal
Victor Reijs	SURFnet	The Netherlands
Guenther Schmittner	JKV/ACOnet	Austria
Jans Slihte	Riga Tech. Univ.	Latvia
Petzas Sulcas	LITNET	Lithuania
Ron Sprenkels	U.Twente	The Netherlands
Marc Thoelen	U.Limburg	Belgium
Jean-Marc Uze	RENATER	France
Jose Vilelc	RCCN	Portugal
Bram van der Waaij	U.Twente	The Netherlands
Dzajic Zeljks	CARNET	Hungary

Apologies were received from:

Zlatica Cekro	ULB/STC	Belgium
Baoyu Wang	UKERNA	UK

1. APPROVAL OF MINUTES

The minutes of the last face-to-face meeting on 17th March 1997 were

approved. The minutes of the telephone meeting on the 7th April 1997 were also approved.

2. STATUS OF TEN-34

Michael reported the Unisource part of the TEN-34 network had been running for three weeks, but had experienced three outages in that time. The SDH had not proved resilient and this caused problems in a network with a star topology. The FUDI part of the network had been operational for a while although the Italian link had been rejected. There had also been a problem with a link to France, but traffic had been automatically routed via Germany. Unfortunately, the lack of notification between the IP and ATM layers meant the problem went unnoticed until someone viewed the IP-traffic statistics.

TEN-34 was now connected to Nordunet, but it was not clear when Belgium and Portugal would come on-line. Links from Slovenia to Austria and the Czech Republic to Germany were planned, and a number of countries from Central and Eastern Europe were likely to join in the future. There was also a proposal for TEN-34 to obtain a connection to the United States for those countries that did not have their own bandwidth.

Michael said the TF-TEN activities had been useful to those conducting the TEN-34 acceptance tests, and he thanked the group for it's work.

Guenther asked how the routing worked between the FUDI ATM-bearer service and the Unisource managed-IP service. Michael replied the routing was essentially static with a number of backup routes. Each country was defined as a separate AS.

Guenther mentioned he had recently conducted a traceroute across TEN-34 that went via the United States. Michael replied this would have been caused by network configuration on the previous Thursday and Friday.

3. DELIVERABLES

Michael reported that Deliverable 11.3 had been produced on time. Comments from the peer reviewers at INFN had been incorporated (mostly concerned with formatting), and the final document had been sent to the European Commission. He reminded the group that Deliverable 14.1, the Specification of Phase II, was due at the end of May, although a one month extension had been agreed to allow time for peer review. The experiments to be included in Phase II would be

decided later in the meeting.

There were still problems obtaining peer reviewers. Michael asked whether anyone from the TF-TEN group who was not an experiment leader would be prepared to volunteer for this task.

4. DEMONSTRATION AT JENC

Michael said that Zlatica had been due to run a demonstration on the TEN-34 stand, but she had been unable to obtain a visa to enter the UK. He asked whether anyone else could run this.

Ron and Bram replied they would be using the same workstation for their demonstrations and it shouldn't be too difficult to set-up another X-session.

Michael also asked for volunteers to distribute handouts at the TEN-34 stand. Anyone interested should introduce themselves to Josephine Bersee.

5. STATUS OF EXPERIMENTS

5.1 Overlay Network

Michael asked about the status of the VPs on the TF-TEN Overlay Network. Testing would commence again shortly and JAMES might need to re-establish some connections.

The links UKERNA-Uninett, RCCN-RedIRIS, SURFnet-SWITCH, DFN-ACOnet, ACOnet-SWITCH and ACOnet-GARR were known to be operational. There were problems with the links Uninett-DFN, UKERNA-Belnet, RENATER-DFN and SWITCH-GARR; whilst the status of the links UKERNA-RedIRIS, SURFnet-DFN and DFN-RESTENA was uncertain. The RedIRIS-RENATER link was up, but operating at less than 2 Mbps. Michael asked everyone to confirm the exact status of the VPs by the 15th May.

ACTION - All

Michael mentioned the Czech Republic now had an E3 connection (which was cheaper than a 10 Mbps connection) and were interested in using the spare bandwidth for JAMES testing. Greece may also become involved once their connection becomes operational.

Mauro asked about the timescales for the new JAMES User Document (JUD). Christoph replied it was effective until March 1998. A copy of the JUD could be found on the TF-TEN WWW Page

(<http://www.dante.net/ten-34/tf-ten/>). Michael added that JAMES previously required a separate JUD for each change to the network, but they now agreed that changes would be covered by a Technical Framework Document (TFD).

Guenther asked whether the 2 Mbps VPs were inclusive of the ATM overhead. Christoph replied that JAMES calculated cells based on 48-bytes, but specified bandwidth in megabits (e.g E1). The effective bandwidth was therefore less than the specified bandwidth.

5.2 Tunnelling Experiment.

Cees de Laat gave a presentation on the tunnelling experiment between Utrecht and Geneva. This tested VP and VCI shaping directly between two Digital GIGA Switches, and via a UB GeoSwitch and a GDC switch.

The GIGA Switches were found to work as advertised after some minor bugs were fixed. These were tested with up to three VPs running between 1 Mbps and linespeed. No cell loss was experienced when using Flowmaster, whilst a few cells were lost otherwise. Dynamic routing however, did not work with VPs switched through SURFnet.

The GDC switch did not seem to police traffic although it may not have been configured correctly. They achieved a maximum throughput of 110 Mbps depending on tunnel settings. The UB GeoSwitch was unable accept VCIs greater than 99 and was also unable to shape traffic.

Guenther asked about SVC set-up times and how these were measured. Cees replied these were in the order of 300 msecs and were measured using IP-packets. He added however, these times may be influenced by other IP-related factors.

Simon asked whether there was fair distribution of bandwidth between multiple VCs. Cees replied this was the case provided DEC cards were used.

6. DEFINITION OF NEW EXPERIMENTS

Michael said the experiments for Phase II had to be defined, as this was a requirement of Deliverable 14.1. There were a number of areas where it would be useful to have a project, but it was important that participants were interested in the particular topic. In addition, the Experiment Leader must be prepared to devote a reasonable amount of time. If there was no interest in a particular area, an experiment should not be proposed.

One of the problems with Phase I was that many experiment proposals mentioned specific deliverables. Unfortunately, certain technologies did not mature as envisaged and this meant it was difficult to obtain results for some experiments. The new experiment proposals should not be too specific, and should be limited to technologies that will become usable within the next year.

Kevin said the JAMES Project finished in March 1998 and thought this would affect TF-TEN experiments. Michael agreed this may be a problem, but most experiments could be concluded by then.

Guenther asked whether JAMES was expected to offer support for ABR. Mauro replied it was unlikely as he believed ABR would not be available for another three years at least.

Mauro thought that proprietary technologies should be considered, whilst Olav thought they should only be considered as a interim step. Michael agreed that proprietary solutions could not be used for TEN-34, but TF-TEN also had responsibilities to the TERENA membership. He believed it should be the decision of the Experiment Leaders.

Mauro asked whether simulation experiments should be considered. Victor however, thought practical experiments were more productive as unexpected problems were often experienced.

The group agreed the following experiments should be included in Phase II:

Experiment 1 - ATM Routing and Resource Reservation

This experiment will investigate PNNI, I-PNNI and NNI. The Experiment Leader will be Guenther Schmittner

Experiment 2 - Native ATM Performance

This experiment will investigate what applications will run natively over ATM (such as TCP/ONIP and K-NET CellStack Video-Conferencing). The Experiment Leader will be Stefania Alborghetti.

Experiment 3 - ATM Point-to-Multipoint Testing

This experiment will test Multicast Protocols (PIM/DVMRP) over ATM. It will also investigate the implementation of MARS. The Experiment Leader will be Robert Stoy.

Experiment 4 - ATM Policy Control and Accounting

This will be a mainly technical study of how SVCs can be controlled at a policy level (with regards to who may establish a call, and what call parameters may be requested). It will also investigate billing. The Experiment Leader will be Victor Reijs.

Experiment 5 - ATM Traffic Management

This experiment will test new and existing ATM traffic types such as CBR, VBR, ABR and UBR. The Experiment Leader will be Victor Reijs

Experiment 6 - ATM Signalling

This experiment will test UNI 4.0 reliability and performance. The Experiment Leader Christoph Graf

Experiment 7 - IP Resource Reservation

This experiment will investigate the various RSVP implementations and possibly conduct some testing over SVCs. The Experiment Leader will be Simon Leinen

Experiment 8 - ATM Security

This experiment continues the work conducted in Phase I. Paolo Neves will take over as Experiment Leader.

Experiment 9 - ATM Address Resolution

This experiment will conduct testing of NHRP and redundant ARP. MPOA would also be investigated if it became available during the timescales of the experiment. The Experiment Leader will be Olav Kvittem.

Experiment 10 - ATM Addressing

This experiment continues the work conducted in Phase I. It is hoped that testing of E.164 to NSAP Address Translation implementations will be possible. The Experiment Leader will be Kevin Meynell

Experiment 11 - ATM Network Management

This experiment continues the work conducted in Phase I. It is hoped however, that practical tests can be conducted with OAM and XCOOP in addition to SNMP and the WWW. The Experiment Leader will be Zlatica Cekro.

Experiment 12 - VBR

This experiment will investigate the usefulness of VBR running over a WAN. Whilst there were few current applications, it was agreed MPEG and IP could be tested over VBR. The Experiment Leader will be Olivier Martin.

Experiment 13 - Label-based Switching

This experiment will investigate the various IP over ATM solutions such as Tag-switching (Cisco), IP-switching (Ipsilon) and Netflow (3Com). The Experiment Leader will be Jean-Marc Uze.

The group discussed whether there should be an experiment for integrated services such as Telephony over ATM. It was agreed however, that circuit emulation was already well understood and the issues were more organisational rather than technological. Whilst voice transmission using AAL2 was potentially interesting, no-one had the equipment to test this.

Michael asked all the Experiment Leaders to produce their proposals by the 31st May. These should preferably be HTML format, but Microsoft Word format was also acceptable. The existing template for deliverables should also be used.

ACTION 10.1 - All Experiment Leaders to produce their proposals by the 31st May.

Michael expressed concern at the number of experiments. It would be difficult for him to manage them all, and he asked whether some of the experiments could be aggregated. This needed to be discussed on the mailing list.

ACTION 10.2 - All Experiment Leaders to aggregate proposals where possible.

7. DATE OF NEXT MEETING

The next meeting will be held on the 21st and 22nd July at DANTE in Cambridge, UK.

It was also agreed that subsequent meetings should be provisionally scheduled. The dates for these were: 15th and 16th September at RCCN in Lisbon, Portugal; then 27th and 28th November at RENATER in Paris, France.

8. ANY OTHER BUSINESS

Simon mentioned that ATM Year '97 was being held at the end of June in San Jose. This was a very good technical conference and he would circulate details on the mailing list.

Victor asked whether anyone had conducted shaping tests with a Cisco Router. Mauro believed DFN had done something like this. Guenther added that he'd heard a Cisco could not be configured below 130 Kbps. Victor said this could be a problem for SURFnet who planned to sell bandwidth in 64 Kbps segments.

Guenther said the Global 360 event was being held on the 16-18th June, but there was a problem with the bandwidth to Switzerland on one of these days. Simon replied SWITCH could probably relinquish their bandwidth on the day in question.

Olav said Kees Neggers at SURFnet had asked WG-LLT whether they could initiate tests comparing IP over PPP on SDH, to IP over ATM. Michael replied a proposal needed to be produced, but tests at 155 Mbps would probably have to be conducted in a laboratory.

Mauro asked whether the group should think about conducting tests at 155 Mbps to determine how different protocols behaved at high speeds. Michael replied this would not be possible as JAMES no longer had any 155 Mbps lines available. Simon added that IP had been successfully run over 622 Mbps in the United States.

9. ACTIONS FROM LAST MEETING

8.1 Simon Leinen to use ATOMMIB to check granularity of the Cisco LS1010 and send the results to the mailing list.

- Done.

8.2 Michael Behringer to set-up a Web Page for information about the 1000 vs 1024 Kbit/s and granularity problems.

- Done.

8.3 All experiment leaders to send their final reports to Michael Behringer by 31st March.

- Done.

8.4 Kevin Meynell to speak with the TERENA Conference Organiser about obtaining a relaxation on the ten-page limit for JENC Papers.

- Done.

8.5 Christoph Graf to investigate rumours about a new type of ABR.

- Done. This was called ATM Block Transfer and was being worked on by the ITU-T. The ATM Forum was monitoring progress.

8.6 Christoph Graf to prepare the JUD for the new TF-TEN overlay network.

- Done.

8.7 Kevin Meynell to arrange a room for the extra TF-TEN meeting at JENC.

- Done.

7.4 Simon Leinen to propose a set-up for the experiment using two ARP servers.

- Done.

OPEN ACTIONS

10.1 All Experiment Leaders to produce their proposals by the 31st May.

10.2 All Experiment Leaders to aggregate proposals where possible.