TF-TEN meeting, August 29-30, Stuttgart, Germany

Attendees

Ariel T. Sobelman	TERENA	NL
Kevin Meynell	UKERNA	UK
Christoph Graf	DANTE	UK
Victor Reijs	SurfNET	NL
Vegard Engen	Uninett	NO
Willi Huber	SWITCH	CH
Simon Leinen	SWITCH	CH
Zlatica Zekro	ULB/STC	BE
Ramin Najmabadi Kia	ULB/STC	BE
Hubert Weibel	DFN/NOC	DE
Betina Kouth	DFN/NC	DE
Thomas Schmid	DFN/NOC	DE
Alain Frieden	RESTENA	LU
Joachim Schmitz	DFN/NOC	DE
Joseph Michl	BelWu	DE
Robert Stoy	Uni Stuttgart	DE
Guenther Schmittner	ACOnet/Uni Linz	AT
Frank Breiter	TU Dresden	DE
Sabine Kuhne	TU-Dresden	DE
Tiziana Ferrari	INFN- Bologna	IT
Mauro Campanella	INFN- Milano	IT
Michael Behringer	DANTE	UK
Jean-Marc Uze	RENATER	FR
Peter Feil	RUS	DE

1. Opening and welcome

MB reporting that our first deliverable has been submitted today to the commission The process for the deliverable has been chaotic at times, and we had a first version available a month ago. The peer reviewers asked for a few changes these have been incorporated into the current version. Their report is positive and their comments were corrected in the text.

Actions from last meeting

3.2 progress on JAMES. MB will report. Action closed.
3.7 Action closed. No more information from ATRE. If some information becomes available, AS will report to the list
3.8 Action closed.
3.15 Action on Ramin to send the information on costs to the list. And then close the action.
3.16 closed. The form is on the web
3.17 closed.
3.17.1 closed. KM posted a document on our page
3.18 closed
3.19 Open for the time being.

3.20.1 closed
3.21 closed
3.22 closed
3.23 closed
3.24 closed
3.25 open
3.26 closed
3.27 open till after the IETF
3.28 closed
3.29 closed

Report on JAMES and TEN-34

MB reporting. Not much to report on JAMES. A meeting was held in June on the co-operation with them. We agreed that the people co-ordinating on our side get in touch with the people on the JAMES side.

(MC, PF & VR have. VR reports these were just initial conversations and to date have not established any real contact. But there is interest in co-operation)

Regarding the topology, there aren't many changes. It seems that the ordering of VP's has stabalized; the co-ordinator of the experiment contacts his/her JAMES contact and work out the procedures. MB proposes that all time it works, we continue with our current procedure of lead contacts from our side co-ordinating with JAMES contacts. So far we have got VP's when we asked for them within a reasonable amount of time.

At the end of September is scheduled the official JAMES opening ceremony and the user board meeting, and the issue of TF-TEN representation is raised and a number of ideas are thrown around in a related vein: Possibly to participate as individual members from home institutions. Another idea raised suggested holding a limited TF-TEN gathering in conjunction with such future events like the JAMES ceremony meeting.

TEN-34 Report

For the benefit of new attendees of TF-TEN, MB is giving a somewhat more general report on the nature of our work deliverables, milestones and the commercial model, and the framework in which our work information is disseminated and reported. The EC wants to be updated on what's going on. They want deliverables, which are our project reports.

Deliverables

The topology is very close to final. From now on it will change probably only on interfaces, nothing dramatic. Once this network is up it will have to go through acceptance testing. For each of the parts we have an acceptance test and then one for the whole network.

Next steps on ten-34: now we need to go into more detailed negotiations with the operators to sort out details like getting the same service in the

same place (CBR, VBR) and matched cell loss rates etc. From there we need to sign the contract and it will take approximately four months for beginning of service. Estimated to be up by March next year.

VR asks to highlight that cell loss rate is just a contractual issue and less important than agreeing on CBR VBR stuff.

Reports on first experiments

TF and VE describing the experiment setup and tests conducted and presenting the results. It is not in the scope of these Minutes to describe and analyze the results, and the reader is reffered to the following addresses to view the full results:

ftp.infn.it//pub/doc/tf-ten/grafici.ps (paper with the graphics)
ftp.infn.it//pub/doc/tf-ten/slides.tar (the description of the results, (each page is a separate postscript file).

In any event, the experiments raised a detailed technical discussion and it becomes apparent that at least the Madrid-Oslo tests will be repeated (sometime during September) with full bandwidth. First, however, there will be a more details discussion on the exact nature and details of this second test.

Overlay network configuration

VR leading a discussion into the issues surrounding the overlay network. (First of all, to clarify the participation, France is in, Luxembourg not sure yet. MC also asks to keep on option for Greece)

These minutes will give a very brief overview of the discussion on this topic and refer the reader to the TF-TEN web site where the full document and specifications will be available.

Obviously, the absolute priority is to provide a platform for the experiments. we need the network to support our experiments that would use it; so it should be able to support the kind of work carried out in the experiments. It should be designed in the kind of way that the minute we are not using the network for conferencing stuff, we can use the VP's for our experiment's purposes right away.

What else can we do over this network? A conference meeting tool which would enable us to hold meetings remotely when needed? Using MBone tools but not being part of the European Mbone. We don't want to have to depend on other bodies. Video conferencing, audio and white-board tools.

We can use these kinds of VP's for tunnelling between more than two parties in the future (right now, we're only tunnelling between two parties).

Should there be access to our network from the outside? VR says no. MC asks if it's a good idea? MB says that we might want to access the switches and WS over the
production Internet in order to enable network management when the overlay

network is not up. This does not necessarily include access to the network itself, which should indeed be kept separate.

-Implementation rules for the overlay network

The minimum we can ask for is 2mbt/sec. VR wouldn't want us to go any lower than that, it's just too low. We get cell loss etc. We could go higher, but is that needed?
It's agreed then - 2mbt/sec and if we need more, we can always ask for it.

VR suggests that every participant At least have an ATM switch that's part of our environment. Because we are also going to have ATM experiments and it would be quite important to have the people already know what's going on and be able to access easily. This is a requirement and is relevant to the planning of the network, because only countries that have this ability can be part of the core of the network.

We should try to Map the overlay network with the JAMES network. MB agrees in general, but we should also have at least one link that has several hops, just to compare the results.

The routing protocol on the network. There is a big discussion on whether we need a routing protocol or not. We thought of doing static routing but that's not good enough, so it seems we have no choice but to use a routing protocol. But there are various catches and no agreement about how to run a routing protocol without risking spilling problems out to the Internet.

MB suggests that the person doing the SVC test devise an addressing scheme and it's decided experiment by experiment

4.1 Action: (GS, MC, RS, SL, AS) Think about some solution for general IP routing over the network.

MB proposes that VR draws a nice picture of the network and sends it to the list. Then the people that co-ordinate experiments (especially the next coming ones) look at it and try to map their experiment ontop of it. Same for the video conferecnging. If there's a problem, they should report to the list and we'll take care of them one by one.

4.2 Action (VR) Draw up the network map by end of next week.

4.3 Action (MB) prepare the JUD when all the information on the VP's is done so DANTE can request the connections for us.

(End of day one)

Details about VBR

VR giving a talk about VBR and explaining some background necessary for understanding it. An over view of policing doctrines is given and leaky bucket doctrine theory and practice are explained

VR raises the question of what we really gain from VBR. In VR's

experience, it's not cheaper than CBR.

There are many more principles that can control the traffic flow, but these are the important ones.

VBR and IP - targets of tests:

-See if the VBR implementation of Cisco 7000 works
-See if the VBR services is value added for IP over ATM

DELIVERABLE 11

Update on what's happening next with the EC regarding when they are expecting our next deliverables. It is quite soon, around December. It's sooner than we think and we need to prepare the interim test results. Now we specify, then we will deliver. Because it will take quite some time, then we are expected to deliver an interim results report. There will be large over-lap between. MB proposes we give our documents to the JAMES people in advance and if they have any comments they tell us before sending it out.

The people doing the experiments will have to prepare the results. One of the comments of the peer review was that we should specify in deliverable 11 how the results are going to be presented.

Bigger steps are interim results report in December. Final test report is due at the end of phase 1.

4.4 Action (MB): find out and send to the list the date for end of phase 1 and when the reports need to be submitted.

SVC testing

The experiment was first run locally. There were some problems, but it worked. PF thinks it is the right way to deal with the experiments, first test things locally before sending them out to the JAMES network. GS also conducted local tests at first.

The test will have to be done again. Now that we know SVCs work then we can fix the various problems.

At this stage it doesn't seem reasonable to test performance, because the switches don't know and can't provide such in depth information. At this point, GS says, it is practical testing for set-up time for SVCs and stuff like that. Only later when we get more information can we actually make an effort to study deeper performance issues.

Next Meeting

Because a number of people have to leave early, we skip in the agenda to decide where the next meeting will be held. It is decided as follows,

subject to checking if it's possible. 30-31 October, luxembourg

Next steps with SVC

We order a VP between switches that we know can handle it. CG is showing a scheme describing the experiment.

Does it work? Is it useful to run any real applications on top of that? Yes, it sort of does work, but no, it cannot be used for any service. The main point why it doesn't work is that the workstations send full speed. This means they send at say 150 Mbit/s while the VP can only carry say 2M and will therefore discard almost all cells.

CG is asking who is in for more experiments. MC is. RNK is Possibly for mid-September? We need the connections for two weeks or so. If someone has two Fore switches than they can also do the tunnelling locally.

RUS has a Fore switch, so GS suggests testing the Lightstream against the Fore. VR is saying September is too early for him, he has to find out what the equipment can do.

The ARP tests are coming up next, so it shouldn't be pushed off too long. RNK actually has a problem with the ARP tests because he doesn't have a work station to run the tests on. GS is running ARP stuff already now and doesn't see any problem why it wouldn't work over the VP structure. CG is saying the important issue is not to break the experiments apart.

It's not feasible to have the experiments if we can't find a date that everyone is happy with, and in that case we break them apart. In which case MB suggest we start the tests earlier. If we're breaking it into chunks, then we can start earlier anyhow.

CG is saying it might be the best to find pairs or small groups interworking, to minimize the hassle to get the connections up. So actually between RNK, GS, CG and MC it's four. VR will join in on the discussions. We have four to start with. GS saying we can request a VP between Italy and Austria and Belgium and Switzerland

4.5 Action CG: set up a new JUD for the SVC tests requesting two VP's. The next step will be using the overlay network.

4.6 Action GC: write down in greater detail what will be tested in the SVC tests and send it to the list. Including the addressing issues. One week Monday, September 9th.

4.7 Action GS, VR: Provide the example configs for the SVC tunnelling.

The rest of the issues about the addressing should be discussed on the mailing list after CG sends his information. And if someone wants to joint he experiment then just send info to the list.

ARP

RNK doesn't have work plans because he doesn't have a work station. The idea is to get the SVC running first and as soon as it's up he can make a plan. RNK is asking who else is in a position to run ATM ARP servers. GS and MC say you can run it on the router or on the switch. We decided to start with one ARP server for the bingeing, this will be in Brussels. So for the first phase it will be in Austria. RNK will co-ordinate with GS. MB proposes we first concentrate on the SVC, but as soon as we have that going, we can go on to the ARP stuff.

4.8 Action RNK: Write in more details what precisely we ought to do with the ARP testings. Two weeks. September 13th...

NHRP Tests

The feeling is it won't start before November because it depends on SVC stuff. OK can possibly do some local experiments. Anyhow, this is pushed off to the next meeting because of the feeling that it will take some time to start.

RSVP - OK is giving presentation

OK giving presentation - the full description of this will be available on the Web site and this will be a brief over-view of the main ideas. Reporting and giving an overview on RSVP. He starts from IETF activities that started in 93 in search of integrated service communication infrastructure.

The current thinking is in direction of enhancing the current datagram structure and
quality of service.

Stuff that can be interesting for us: IP integrated services in ATM, Flow specification, - traffic streams, service requirements, (flow specs), Routing - quality-based routing, MOSPF, CBT

Reservation of bandwidth and
buffer reservation

More policy oriented things - mission controls (grant or deny access)

Packet scheduling
- scheduling algorithms
- weighted fair queuing

Guest presentation - directory of RUS

Many thanks to director of RUS/DFN for taking the time to give a short over-view of their activities and structure.

Next steps on the experiments (continued)

OK will try to do more preparation for the next meeting, but so far he's found out there is one implementation for the workstation. Cisco has an internal implementation of NHRP. If we're going to experiment, we'll have to do it just with ciscos. But OK says that is definitely doable. By next meeting he'll have info if it's possible locally and that way we'll be able to plan larger experiments. The idea is to be able to provide IP routing service ontop of NHRP

4.9 Action OK: Write down a detailed test description for the NHRP. Should be ready for end of September.

People who said they would join OKin this experiment: VR, GS, RS, JMU, SL, AF

Addressing - Kevin Meynell

KM giving presentation. Here are the main points: The first part of the address is very well defined.

Kevin is showing the diagram of the address scheme.

We need to get the James people involved. Goerge from UK has been trying to get this information for a long time. There is the ATM forum working group on Broadband; Do we know what's going on in that working group?

4.10 Action KM, GS: Try and collect more information from the ATM forum working group on addressing activities. (PF will help with ATM forum access).

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

We basically don't' really know what the difference is and therefore we can't really decide what it is we are trying to achieve, test and establish...

After we have such information we can decide what it is we actually want from the PNO's and then start pushing JAMES for the right solution.

NETWORK MANAGEMENT

Zlatica giving a presentation.

It's a very ambitious plan. According to the needs of the future TEN-34 network.

We are ready now to do the tests and conduct some experiments in the area. We will have more experience on the user side managing local ATM networks. We need as many participants as possible.

It's a subset of the tests that were planned over the past meetings. The second thing is to have some elements of the management of the whole network and we will try to use SNMP. The platform we can propose to use for the moment the IP regular network and then some other way to reach the overlay network.

The plan is to poll the switches connected to the overlay network either through the production Internet (in case no ATM connectivity is possible), or over the JAMES network directly. The results should be fed into a NM system, and possibly converted into a web page, so that we can see the status of the overlay network at all times on the web.

4.12 Action ZC: Get all the information collected and various contacts for the network management lists and send it to the list within two weeks.

CDVT

Find some rules how to design and how do we test it?
In many counties there should be ATM testers available. Also, close co-operation with JAMES is very important. VR hasn't really talked to them, just a few preliminary phone conversations.

VR has two partners, OK and PF . We can also test without anyone, just have some sort of logical look, but he doesn't know if you can still understand and measure all the results if that's what we do.

OK wants to first discuss this further with his contacts at the PTT so it will probably be the end of this month, beginning of next month before he has a detailed plan for how to test this. Anyone else want to join? CT would like to join. So now there are four partners in this experiment.

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. This will be done within a month.

RSVP tests

We need a couple of work stations. Possibly a multimedia session. We will start with this implementation. Try to get the 11.2 implementation from cisco and start doing some tests at home to make sure it operates well.

4.14 Action AS: find out what's going on in this connection with MERCI, when are they about to start doing some of the work? Send that to the list as soon as possible.

Who is participating with OK? JMU, VR, GS, RS, SK

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.

Native ATM

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no new ideas since last time. Action on MC and TF to see the features of ATM native testing using netperf.

How to go on with high bandwith tests.
First it is needed to fully understand the results of the previous experiments. September will be devoted to this goal and in writing the draft of the report. We could ask the new VP in October. For the next test it is important to have the JAMES participation to measure cell loss and other parameters on the PNO network Action on PF to look for names related to the Exploit experiment (RACE project) as they developed an ATM analyzer..

OM is not here. Action on MB to contact him and see if it is interested.

Security: pontential candidates from France, Portugal, UBL., names will be given to MB.

MB will get in touch with F O Keane to speed up the joint experiments contact between responsibles. Action on each responsible to contact the JAMES responsible by end of next week.

4.16 Action on everyone to find out the greatest number of info (CDVT, relationship
between assigned user BW and configured, type (cross connect or vp/vc switch), UNI support and so on).

ACTIONS

3.19 Action OK: Write up details and thoughts on RSVP project.

3.25 Action MB: come up with a unique experiment identifyer acronym.

3.27 Action OK: Report back to the list after the IETF on NHRP status

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4.2 Action (VR) Draw up the network map by end of next week.

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