

## **TF-VVC (Voice, Video and Collaboration)**

<http://www.terena.nl/tech/task-forces/tf-vvc/>

TF-VVC task force is the successor of TF-Netcast task force, which completed its work in the spring of 2004. TF-Netcast was established to prepare the creation of a portal for live-streaming announcements and to investigate the possible extension of the portal to an academic channel for live-streams and video-on-demand.

The remit of the new task force was to investigate the suitability of voice, video and collaboration technologies for implementation in research and education networks in Europe. The terms of reference of TF-VVC were approved by the TERENA Technical Committee in September 2004, and its current mandate will end in August 2006.

TF-VVC is not directly related with any of the GN2 JRA's, but in some activity areas the task force is collaborating with the GN2 JRA1 and JRA5.

When creating the TF-VVC task force it was decided to make the work programme more open and flexible than was the case for TF-Netcast, which had a very focused mission. Twelve activity areas and work items had been defined in the terms of reference, but participants were encouraged to contribute new suggestions and develop them as additional work items or activity areas.

The twelve initial tasks were the following:

- A: The task force will provide a collection of best-practice documents, overviews and guidelines related to the provision of voice, video and data collaboration services.
- B: TF-VVC will support the development, testing and rollout of Content Delivery Network software.
- C: In the area of Content Access Portals (CAPs), the task force will collaborate with other initiatives worldwide in order to gather information about existing content and to investigate other CAP-related questions. An example is the co-ordination with the Internet2 Research Channel Global Initiative.
- D: TF-VVC will promote existing materials about the metadata published by TF-Netcast and will encourage discussion about models and metadata.
- E: The task force will promote the announcements portal that was developed by TF-Netcast; it will investigate its possible extension to an Academic Netcasting Channel.
- F: The task force will actively contribute to discussions on international dial and numbering plans for videoconferencing and voice-over-IP (independent of protocol), and will make recommendations on how to set up interconnected systems.
- G: Information on how different collaborative multimedia technologies can be integrated will be collected and made available to the task force participants.
- H: Workshops will be organised about high-end/quality systems.
- I: In relation to usability and the improvement of user interfaces, the task force will promote discussion about user needs, collect these and contact equipment vendors to ask for the required improvements.
- J: TF-VVC will collaborate with the TERENA task forces TF-EMC2 and TF-Mobility to investigate the middleware requirements for access to video resources.

- K: As regards the deployment of IP telephony, TF-VVC will produce, among others, a survey of existing IP telephony deployments, and recommendations on how to connect different nodes.
- L: The task force will publish recommendations on how to measure end-to-end performance of real-time conferencing applications.

The task force met four times in the first year. First three meetings were held via H.323 video conference on 16 November 2004, 2 February 2005 and 19 April 2005. The fourth face-to-face meeting was held on 9 June 2005 in Poznan, Poland after the TNC 2005. The video meetings were attended by 17 participants in average. There were 34 participants in the face-to-face meeting (some of them joined via video).

The TF-VVC task force is chaired by Egon Verharen from SURFnet. The most active NRENs in the task force are SURFnet, FCCN, CESNET, FUNET, SWITCH, NIIF/HUNGARNET and RedIRIS. Also participants from universities (e.g. University of Rome), research institutes (e.g. Max-Planck Institute) and commercial companies (e.g. NEC) are contributing to the task force activities. The task force is collaborating and exchanging information with working groups and organisations all over the world, e.g. Internet2 and APAN working groups.

In the first task force meeting participants met to discuss the start of work in all the activity areas as well as a roadmap for the activities. The second and third task force meetings were devoted to report about the progress in the activity areas, to identify unsolved issues and to agree about collaboration on particular topics.

The fourth task force meeting was summarising the first year task force achievements and developments in all the activity areas.

[Presentations from the fourth TF-VVC meeting can be found at <http://www.terena.nl/tech/task-forces/tf-vvc/meeting-4/>]

### **A: Various guides relating to providing voice, video and data collaboration services**

Joao Pereira and Rui Ribero from FCCN lead the activity area A consisting mainly in the FCCN project "Projecto Estudios". This activity emphasizes the importance of teaching the community how to use the video content and how to produce a good content. The correct usage of the technology would improve the videoconferencing experience.

In the scope of the "Projecto Estudios" the documentation about video conferencing infrastructure, scheduling, agenda, setup, peripherals usage and best practices would be produced. The project has been delayed, some documentation has been produced in Portuguese, but nothing has been translated to English yet. Later in the project the specification from the multimedia rooms would be gathered, documents will be translated for TF-VVC and improved with input from other projects.

### **B: Content Delivery Infrastructures for Live Streaming**

Alessandro Falaschi from the University of Rome leads the activity area B focusing on the OpenCDN software. OpenCDN is the Open Source Content Delivery Network software architecture for scalable Internet live streaming. The development is based on the Apple Darwin Streaming server, and aims to dynamically create a relay distribution tree upon user's request.

The software has been written, is available as an open source and the development continues. The support for Helix was implemented by Massimo Aghemo from TiLab. People from the University of Parma were working on implementation for Windows Media, but the work was not finished yet. Plans for the next releases included support for multiple streaming server technologies hosted at the same OpenCDN node.

The OpenCDN software has been used for streaming large European events as well as the ViDe/SURA Conference.

### **C: Content Access Portal**

The aim of this activity area was coordination with Internet2 ResearchChannel Global initiative to expand their portal with European content and links. Egon Verharen from SURFnet leads this activity and actively collaborates with Internet2 ResearchChannel Global group and other initiatives. He and other people from TF-VVC have participated in the ResearchChannel meetings and given presentations.

The draft content access portal has been created (<http://i2video.larc.usp.br/>) and would be developed further.

### **D: Metadata**

Harri Salminen from CSC/FUNET leads activity area D which focuses on metadata issues. The survey has been prepared to gather information about the metadata models used in the community. The results of the survey would be available in the 2<sup>nd</sup> year of the task force.

### **E: Academic Netcasting Channel (Live Streaming Infrastructure)**

Michal Krsek and Ivan Doležal from CESNET lead the activity area E consisting mainly of the live.academic.tv portal, which was created in the framework of the TF-Netcast task force and has been developed further. The portal allowed users to enter information about live streaming events in the calendar and to receive reminders before the events started. The portal was translated into 9 languages and supported multi-language search.

The portal is fully functional and the task force has been discussing some marketing actions to wider the users' community, since until now the portal has been used mainly by people from the Czech Republic.

### **F: Global Dialling Scheme**

Egon Verharen from SURFnet leads the activity area F focusing on the Global Dialling Scheme related issues. The information about the available services in the NRENs has been gathered and put on-line (<http://www.terena.nl/tech/task-forces/tf-vvc/F/vc-services.html>).

The group has been discussing numbering systems for SIP and trying to evaluate two possible solutions, i.e. to use ENUM or to create a temporary solution – GDS system as for H.323. The group would focus their effort in the second year to integrate SIP with H.323 and GDS. Also the new GDS recommendations would be written.

### **G: Integration of conferencing, streaming and data collaboration systems**

Andras Kovacs from NIIF/HUNGARNET, Fabio Vena from SWITCH and Erik Dobbelsteijn from SURFnet work in the activity area G on integration of conferencing, streaming and data collaboration systems.

This activity area aims at describing developments in various real-time internet collaboration tools with the emphasis on the integration of these tools. Videostreaming, whiteboard and application sharing, co-browsing and instant messaging can add value to videoconferencing and help conference participants to support their message or discussion. Also, the demand for recording and playing back conferences with all content involved in a session is high. This activity area tries to clarify the possibilities, describe standards and tools and provide guidelines for optimal use.

HUNGARNET is working on recording and streaming the video conferences. They have developed four different technical solutions and would write a deliverable “Best practice document on archiving video conferences”. SWITCH also has a complete solution for recording the H.323 video conferences; the complete view on the MCU can be recorded. In the future they would be working on integrated portal offering video conferencing, streaming and collaboration possibilities. The challenge for this portal would be the AAI infrastructure.

### **H: High-end/quality systems**

Egon Verharen from SURFnet leads the activity area H which focused on the high-end/quality systems. The preparations for the second high-end/quality systems workshop have been started; it will take place in november 2005 in Amsterdam, the Netherlands.

Participants of this activity area have been working on HD (high-definition) over IP technologies and collaborating with other initiatives all over the world, e.g. APAN working group, I2/RC bigvideo working group and others.

Two new activities were setup by i2CAT/UPC (Barcelona): a wiki on HDoverIP technology (now used by all major researchgroups) and investigation into SIP setup of HD conferences.

## **I: “Usability - improving user interfaces”**

The activity area I: “Usability - improving user interfaces” has been suspended because of the lack of available resources and people willing to contribute. It can be re-opened if the initiative would arise from the community.

## **J: Access control to video resources**

Jose-Maria Fontanillo from RedIRIS leads the activity area J focusing on access control providing to restricted video resources in a distributed mode. The authentication should be solved in the user's local organisation, but the information providers should have full control over their resources.

The solutions have been designed and RedIRIS has been working on implementation of a Darwin Stream Server that uses access controls to Video on Demand and live video resources. Their solution would be based on passing parameters in the rtsp url from the content access portal of activity area C.

The advantages of using the AA infrastructure for controlling access to the video resources would include centralised policies and greater flexibility for both – administrators and users. The implementation for Darwin streaming server would be aligned with the GN2 JRA5 developments.

## **K: IP telephony deployments**

Saverio Niccolini from NEC leads the activity area K focusing on different IP telephony related issues. The survey about the existing IP telephony deployments has been created and would be distributed. The motivation of the survey would be to set up cross-organisational IP telephony connections.

The deliverable “Recommendations on how to connect different nodes” will be written based on the results of the survey and on the input from other activities, for example, SIP GDS initiative, ENUM issues, usage of TRIP, etc.

Erik Dobbelsteijn from SURFnet has been contributing to the activity area K with his work on setting up SIP.EDU services in Europe. Some countries have been connected already and work will continue in the 2<sup>nd</sup> year.

## **L: End-to-end measurements**

Egon Verharen from SURFnet leads the activity area L about end-to-end measurements. He has been discussing end-to-end measurement regarding video and voice related applications with network engineers and researchers. He participated in a Dutch JRA1 meeting on video conferencing and streaming e2e measurements scenarios. He plans to contact the JRA1 leader to discuss the future collaboration possibilities.

## **Other activities of the task force**

The participants of the task force organised the **Voice over IP (VoIP) workshop** which was held in Poznan, Poland on 5 June 2005 before the TNC 2005. The programme of the workshop featured talks about PBX replacement, SIP tutorials and deployment, SIP.EDU services, IP telephony security, bridging H.323 and SIP world, future developments including presence, instant messaging, etc. and the hands-on part. There were about 50 participants in the workshop. The presentations were very informative and interesting; the level of discussion was good. The hands-on part should be improved in the future by dividing participants in smaller groups.

The feedback of the participants after the workshop was very positive. Many suggestions for the future workshops were received.

[The presentations of the workshop can be found at:  
<http://www.terena.nl/tech/task-forces/tf-vvc/voip-wsh/>]

## **Ending**

Egon Verharen from SURFnet has presented the task force results of the 1<sup>st</sup> year at the TERENA Technical Committee (TTC) meeting on 5 July 2005. The TTC feedback was very positive and they encouraged continuing the work of the task force in the 2<sup>nd</sup> year.