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TO:

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Liaison statement to Video Quality Experts Group (VQEG)

QUALINET thanks VQEG for the updates on the progress of its work and the establishment of new projects MOAVI, RICE, and HDR.

QUALINET reconfirms its interest in seeking good areas of collaboration with VQEG. To coordinate such actions in QUALINET, a task force has been established. QUALINET inquires about the possibility and interest of VQEG to set-up a joint email-reflector to make the contacts between our respective members more direct and to facilitate collaborations in projects of common interest.

In response to VQEG's last Liaison QUALINET has sent out an inquiry to its members encouraging contributions in the following categories:

1. Secret video source
2. Open source video material
3. Reliable full-reference video quality metrics
4. Processed video sequences
5. Identification of missing degradations in 3D video
6. Laboratories willing to perform 3D pair comparison tests

Two organizations have so far responded, and their offers are attached.

Prof. T. Ebrahimi

Action Chair

COST IC1003 (QUALINET)

Brno University of Technology, Department of Radio Electronics

I would like to offer our contribution to the VQEG activities by generating processed video sequences. Our team is with the Brno University of Technology, Department of Radio Electronics. We would like to offer processing of the SRC sequences and introducing errors using the DVB-T/H / DVB-T2 broadcasting in laboratory environment. Our transmission link consists of the following:

1. Creating the MPEG-2 transport stream carrying the desired SRC sequence compressed with H.264/AVC. To create a DVB-compliant transport stream, we use the Open Broadcast Encoder software - <http://code.google.com/p/open-broadcast-encoder/> . The resulting transport stream is then carried over TS ASI serial interface using the DekTec DTA 145 PC interface card and the DekTec StreamXpress player.
2. The transport stream is fed into the Rohde & Schwarz SFU Broadcast Test System (transmitter). The options installed in the SFU allow for transmission in the DVB-T/H and DVB-T2 standards. Furthermore, the SFU can introduce noise, imperfections and different types of fading in the RF modulated signal. We can also degrade the signal using an external interferer, such as GSM / UMTS signal, for instance.
3. The RF signal is received by Rohde & Schwarz DVM 400 Digital Video Measurement System (supplemented by DVMS1 external receive for DVB-T2). With DVM400, we are able to capture the whole transport stream or just a selected service and record a number of receiving parameters. DVM 400 doesn't create pcap traces. If such records are necessary, the instrument can stream the received transport stream in real time via udp, which can easily be captured.
4. Decoding of the video can be done in the DVM 400 receiver (although its capabilities for HD decoding are limited), in a set top box (and recorded in a PC through HDMI capture card) or in a PC software directly from the recorded transport stream.

I enclose a photograph of the laboratory setup.

Please do not hesitate to contact me for any further details.

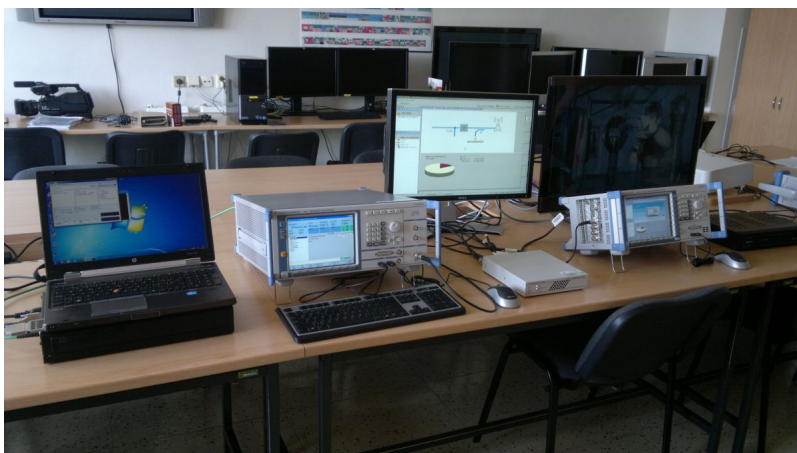
Best regards,
Martin Slanina

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University of Valenciennes

DREAM (Développement, Recherche et Enseignement en Audiovisuel et Multimedia) is the course of study in audio and video engineering field of the University of Valenciennes. DREAM offers professional opportunities in audio and video engineering, at the convergence of broadcasting, telecommunications and computer science domains.

Inevitably, new algorithms, devices and systems implemented in next broadcasting and multimedia services require the study and development of innovative high technology electronic systems in the areas of digital communications, processing and restitution of high quality audio and video contents. To address these aspects, DREAM is working closely with research laboratories of the University such as the OAE Department of IEMN, whose researchers are widely involved in regular lectures.

IEMN is a research institute created by the National Centre for Scientific Research (CNRS), two universities and an Engineer school of France northern region. IEMN equipment for design, fabrication and characterization of devices are at the best European level. The institute has a total staff of about 500 persons including 109 professors and associate professors, 45 CNRS researchers, 100 engineers and administrative agents, about 150 PhD students as well as 30 post doc and invited professors and 60 master students and trainees. The IEMN scientific activity covers a large domain going from the physics of materials and nanostructures to microwaves, digital data communications, acoustics and instrumentation.

Very open to international collaborations, more than 100 foreigner scientists coming from 20 different countries are currently working at IEMN.

The Department of OAE IEMN, located at the University of Valenciennes and Hainaut-Cambresis (UVHC), has in recent years developed skills on the circuits and systems for high-speed digital transmission for multimedia applications on wired (DSL, PLC, fiber optic) or wireless networks as well as associated digital signal processing techniques, still images and video compression techniques, and new display technologies and image rendering.

Links:

<http://www.univ-valenciennes.fr/DOAE/>

<http://www.iemn.univ-lille1.fr/recherche/recherche.html>

Some of the research topics within the laboratory for audio and video engineering:

New digital audio and video broadcasting systems and technologies convergence: on such aspects, IEMN-DOAE has just completed a successful 3 years research project entitled TOSCANE (Joint Source/Channel Optimized Real-Time Video Transmission), which focused on optimizing the delivery of HD content based on joint source and channel coding techniques. As part of TOSCANE, the laboratory has developed several solutions including original real-time rate adaptation of high definition H.264/AVC then SVC compressed video streams.

Optical components and devices for video transmission and display: IEMN-DOAE has many years proven expertise in the design of optical components dedicated to the modulation, deflection and filtering of light for applications image rendering video: stereoscopic projection HDTV, and optical transmission: multiplexing wavelengths: carrier equalization optical tunable filter.

Diversification of formats and uses: on this theme, the laboratory will provide experience on video quality assessment issues and development of digital video processing systems to optimize the quality perceived by end users.

University of Valenciennes (DREAM and IEMN DOAE), France, can contribute to tasks 1, 2, 3 and 4.