Video Services Forum, Inc.
News Letter

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This is the seventh issue of Video Services Forum (VSF) News Letter. The VSF feels that it is important to keep you informed about what is going on within the VSF since the VSF is **your** organization. As we realize that your time is valuable, we have kept this News Letter deliberately brief.

VSF Officers & Board Members:

During the 1Q of every year, VSF Board of Directors elections are held at the annual member meeting. The meeting took place on January 23, 2007 in Orlando, Florida during VidTrans07. Paul Atwell, Pierre Costa, John Dale, and Mary-Luc Champel ran unopposed for two year terms and Richard Friedel and Steve Storozum ran unopposed for one year terms. John Mailhot and Brian Wilson continue to serve the remainder of their two year terms.

Director	Company	Term Expires
Paul Atwell	ION Media Networks	2009
Pierre Costa	SBC Communications	2009
John Dale	Media Links	2009
Mary-Luc Champel	Thomson Grass Valley	2009
Richard Friedel	Fox Broadcasting	2008
John Mailhot	Harris Broadcast	2008
Steve Storozum	Level 3	2008
Brian Wilson	Verizon	2008

The following VSF Officers were elected by the VSF Board for two-year terms, which run through February 2009:

President	Derek Smith	Vyvx
Vice President	Carl Ostrom	System Resource
Secretary/Treasurer	Roger Hatcher	State of Georgia

Administrative and Technical Staff:

Brad Gilmer – Gilmer and Associates, VSF Executive Director
Barbara Main – VSF Administration
Bob Ruhl – VSF Operations Manager

VSF Current Member List:
A.R.G ElectroDesign
AT&T (formerly SBC Communications)
Bell Canada
BRIDGETECH
British Telecommunications
CBC/Radio-Canada
Comtech EF Data
Digital Fountain
DirecTV
DVBLink, Inc.
Evertz
Fox Broadcasting
Georgia Technology Authority
Harmonic, Inc.
Harris Broadcast Communications
IneoQuest Technologies, Inc.
Ion Media Networks
Iowa Public Television
IPITEK
Juniper Networks
Level 3
Media Links, Inc.
Merrill Weiss Group
MESoft, Inc.
Modulus Video, Inc.
Multicast Technologies
Network Electronics
Path 1 Network Technologies
Pathfire, Inc.
Pleora Technologies
QVidium Technologies, Inc.
Scientific-Atlanta, a Cisco Company
Spirent Communications

System Resource, Carl Ostrom, Principal
TANDBERG Television
Telecom Product Consulting, Wes Simpson, Principal
Thomson Grass Valley
T-VIPS
UPC Broadband
Verizon Communications
Video Products Group
vidIP/mediatvcom
Vyvx

Meetings and Conferences:

The October 2006 **VSF Meeting Series** was held October 3, 4 and 5 (1/2 day) in Broomfield, Colorado and was hosted by Level 3 Communications. This meeting was heavily attended with over 60 people in attendance. On day 1 Level 3 provided a tour of their Network Operations Center as well as hosted a Dinner-Barbeque at the end of the day. For additional information on the meeting, agenda and presentations please visit: **http://www.videoservicesforum.org/Meetings/index.htm**.

The **SMPTE Digital Content Connection and VSF VidTrans 2007 Joint Conference** and exhibition was held January 21 through January 24, 2007 in Orlando, Florida. The VSF and the SMPTE worked together to stage their third combined conference and exhibition. There were approximately 300 people in attendance, about the same as at VidTrans06. There were 5 sponsors and 22 exhibitors. It was a very successful conference.

The May 2007 **VSF Meeting Series** will be held May 15 and 16, 2007 (2 day meeting) in Austin, Texas and will be hosted by ATT Laboratories. For additional information on the meeting location, preferred hotel and registration please visit: **http://www.videoservicesforum.org/Meetings/index.htm**.

The October 2007 **VSF Meeting Series** will be held October 1 and 2, 2007 (2 day meeting) in Basking Ridge, New Jersey and will be hosted by Verizon Communications. For additional information on the meeting location, preferred hotel and registration please visit: **http://www.videoservicesforum.org/Meetings/index.htm**.

The **SMPTE Digital Content Connection and VSF VidTrans 2008 Joint Conference** and exhibition will be held February 10, 2008 through February 13, 2008 in Houston, Texas.   As soon as we finalize the site selection more details on the conference will be provided at the Video Services Forum and SMPTE websites and through e-mail announcements.

VSF Activity Groups:

VSF Activity Groups (AGs) supply input and expertise to various industry standards bodies on behalf of the VSF.   These are some of the topics that VSF Activity Groups are actively addressing:

The **WAN Video IP Activity Group** is investigating high quality/contribution video over IP infrastructure current or draft standard documents with the objective of leveraging the VSF knowledge base and making appropriate recommendations, modifications or new documents.

Co-Chairs: Pierre Costa, SBC and John Dale III, Media-Links

The **CoP3 Activity Sub-group** is specifically covering the standardization of Pro-MPEG Code of Practice #3 through SMPTE.

The **CoP3 Standardization Activity Sub-group** has successfully submitted the final FEC and Transport documents for video over IP services to the SMPTE N26 committee for ballot. These documents are based on the Pro-MPEG COP-3R2 work. The result of this work will define an interoperable standard implementation of MPEG2 transport streams over IP networks.

The Transport Stream document defines a specific mapping of MPEG2 Transport Streams into RTP. This can be used with or without FEC. If the use of FEC is desired, the FEC document defines a standard implementation of a FEC scheme to provide for a predictable packet recovery process for interoperability in a multi-vendor environment.

As of 1Q2007, the documents have passed a SMPTE Draft Standards ballot, and are in ballot at the Full Committee Draft level. The documents are now known as SMPTE 2022-1, Forward Error Correction for Real-time Video/Audio Transport Over IP Networks and SMPTE 2022-2, Unidirectional transport of constant bit rate MPEG-2 Transport Streams on IP Networks.

Chair: Carl Ostrom, System Resource

CoP3 VBR Activity Sub-group: The CoP3 (SMPTE 2022) specification assumes CBR video streams. In practice, many encoded video streams (MPEG-2, MPEG-4 AVC, VC-1) have variable bit-rate. The FEC receiver assuming a CBR stream may pace the recovered video stream to the decoder with unacceptable jitter. The purpose of the VBR AG is to determine whether adaptations are required to CoP3 or the CBR stream model in order to ensure optimal decoder performance after the FEC receiver output.

The VSF committee on Variable Bit Rate MPEG video over IP has begun work on defining an interoperable transport and FEC process for standardization. The committee is

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comprised of a number of encoder and decoder manufacturers, as well as users. The committee has a makeup similar to the CoP3 VBR committee.

The goal is to define a VBR FEC scheme that can accommodate both the robustness and efficient throughput required for contribution applications as well as the bit rate flexibility and low overhead necessary for distribution applications.

While the work will not depend on the SMPTE 2022 standard, it will rely heavily on the foundations of that work.

A presentation of an initial draft is targeted for the May 2007 meeting of the VSF in Austin, Texas.

Chair: Carl Ostrom, System Resource

The **Test and Measurements Activity Group** completed its work during the 4Q2006 and identified and described metrics required to accurately characterize packet-based network performance for streaming video transport over IP. The document titled "Recommended Video over IP Matrices" is now posted on the VSF Policy page located at http://www.videoservicesforum.org/policies.shtml. VSF is planning to submit this document to SMPTE and to ITU for further publication.

Chair: Michael Bany, DVBLink, Inc.

The **Video Over IP Interoperability Demonstration Activity Group** planned and conducted a successful demonstration in the Exhibit area of the 2007 Joint Conference with SMPTE in Orlando, Florida.

The Interop demonstration highlighted the successful interoperation of vendors supporting broadcast contribution video signals over IP networks while demonstrating the ability to survive errors and other network impairments. During the demonstration, each participating company generated an IP multicast consisting of a single 20Mb video stream with predetermined FEC/Interleaving. Prior to being distributed to all participants, the multicast streams were fed into an IneoQuest Technologies device which introduced deterministic errors. The errored streams were then distributed over the network to all other participants. This was done to demonstrate the recovery capabilities of the Forward Error Correction (FEC) system described in the Pro-MPEG Forum Code of Practice 3 Revision 2 (COP3R2).

The following companies participated in the demonstration; **Harris Broadcast Communications, Path1 Network Technologies, TANDBERG Television, Thomson Grass Valley, and T-VIPS.** Equipment provided by **IneoQuest Technologies and Spirent Communications** was used to create and/or measure the network impairments. **IPITEK, Fox Digital Television and Ion Media Networks** provided the equipment and materials as needed to create the network test bed. Organization and System Design was provided by **DVBLink and Media Links**.

Chair: John Dale III, Media Links

To learn more about these Activity Groups please visit:
http://www.videoservicesforum.org/about/index.htm.

Other News:
We have made additional updates to the VSF website so please check them out when you have a chance. In February 2007 we established a new VSF Members-only single access code for VSF Meetings and VidTrans conference notes located in the archive section. The VSF Members-only single access code has been provided to the VSF Members through the member e-mail reflector

If you have any comments or suggestions on the VSF site and/or News Letter please send them to Bob Ruhl at bob.ruhl@comcast.net .

Well, that's it for now. If there is any topic that you would like to see covered in the next issue of the News Letter, please contact Bob Ruhl.