

## Call for Papers

# Special issue: Resource-aware adaptive video streaming

Modern multimedia applications such as mobile television, movie on demand, IPTV, multiview video, distributed video conferencing, streaming and gaming over wired and wireless networks have stimulated research for new technologies in the area of multimedia architectures, processing, and networking. Current communications networks exhibit a wide range of capabilities, including various architectures, throughputs, quality of service and protocols. Interconnection of different networks provides several advantages, but also poses major technical challenges. On the other hand, users employ heterogeneous terminals with a wide range of computational and display capabilities, energy resources, features, accessibilities, and user preferences. The variety of possible scenarios has escalated the need for efficient and effective techniques for streaming and adapting compressed videos in such heterogeneous environments. Considerable research activity in industry and academia has been devoted to developing the enabling technologies needed to make this vision a reality.

The goal of this special issue is to provide an up-to-date picture of state-of-the-art research in the field of video streaming, emphasizing the two key aspects of *adaptation* and *resource awareness*. In particular, papers are solicited mainly, although not exclusively, in the following areas:

### Bandwidth and resource adaptive video streaming

- Optimization of energy resources for video streaming
- Platform awareness for low-power and embedded devices
- Dynamic video content adaptation
- Cross-layer optimization for video streaming
- Cooperative video streaming
- Peer-to-peer video streaming

### Resource adaptive encoding/decoding algorithms

- Scalable video coding (quality, spatial, temporal and computation scalability)
- Reconfigurable video coding
- Distributed video coding

### Adaptation to network errors and losses

- Error resilience and concealment for video coding and communication
- Source, channel and network coding for error-resilient video streaming

### Applications and systems

- IPTV: Video broadcasting and multicasting
- Multi-view and interactive video
- Video-anywhere

**Guest editors**

Enrico Magli  
Department of Electronics,  
Politecnico di Torino, Italy  
enrico.magli@polito.it

Chia-Wen Lin  
Department Electrical Engineering,  
National Tsing Hua University, Taiwan  
cwlin@ee.nthu.edu.tw

Deepak Turaga  
IBM T. J. Watson Research Center,  
Hawthorne, NY, USA  
turaga@us.ibm.com

Pascal Frossard  
Ecole Polytechnique Fédérale de Lausanne (EPFL),  
Lausanne, Switzerland  
pascal.frossard@epfl.ch

**Important dates**

First call for papers	June/July 2007
Manuscript due	November 1, 2007
Acceptance notification	March 1, 2008
Final manuscript due	April 15, 2008