



## CALL FOR PAPERS

### IEEE Transactions on Circuits and Systems for Video Technology Special Issue on Analysis and Understanding for Video Adaptation

The past decade has seen a variety of developments in the area of multimedia representation and communications and thus multimedia access. In particular, we are beginning to see delivery of all types of data for all types of users in all types of conditions. In a diverse and heterogeneous world, the delivery path for multimedia content to a multimedia terminal is not straightforward. Access networks are diverse in nature and vary in performance; also, the characteristics of end user devices vary increasingly, in terms of storage and processing capabilities and display qualities. The notion of Universal Multimedia Access (UMA) calls for the provision of different presentations of the same content/information, with more or less complexity, suiting the different usage environments (i.e., the context) in which the content will be consumed. This means content adaptation is proposed as the solution to bridge content authors and content consumers in the context of more and more diverse multimedia chains.

Technologies that will allow Universal Multimedia Access systems to be constructed are starting to appear, notably content adaptation tools. These adaptation tools have to consider individual data types, e.g., video or music, as well as structured content, e.g., portals, or MPEG-21 Digital Items; thus, adaptation extends from individual multimedia objects to multiple, structured elements. Content adaptation may also assume many forms depending on the dimension or criteria used for the adaptation; transcoding, transmoding (cross-modality transcoding) and summarization are among the most relevant content adaptation solutions. For efficient content adaptation, this means to provide the user the most powerful multimedia experience under the conditions at hand, content analysis and understanding play a major role since the more the adaptation engine knows about the content the better it can adapt this content. This includes low-level analysis for transcoding or content description but also semantic mapping and understanding e.g. for the purpose of content summarization. The objective of this "Special Issue on Analysis and Understanding for Video Adaptation" is to provide an overview of analysis and understanding technology, as well as on applications and trials, where content adaptation is the principal target. In this context, papers are solicited on, but not restricted to, the following topics:

- Multimedia content analysis and understanding tools for content adaptation
- Analysis for content structure
- 2D/3D feature extraction for content adaptation
- Supervised and unsupervised segmentation of objects in 2D/3D image sequences
- Analysis for coding efficiency and error resilience
- Audio analysis for video adaptation
- Semantic mapping for content understanding
- Extraction of adaptation hints and other metadata
- Analysis for video transcoding
- Rate distortion optimization for transcoding video
- Analysis for content scalability
- Analysis for semantic filtering
- Summarization strategies
- Monomedia, multimedia and crossmedia adaptation techniques
- Analysis and understanding for multimedia adaptation in peer-2-peer networks and in programmable networks
- Analysis for copyright protection of adapted content
- Multimedia analysis for advanced applications
- Testing, field trials and (plans for) multimedia adaptation services
- Transcoding architectures for video systems

#### **Submission Procedure:**

To submit a paper to this special issue, authors should follow the instructions in the Information for Authors on the back cover of a recent issue of the IEEE Transactions on Circuits and Systems for Video Technology. Prospective authors should send manuscripts in *pdf* format through email to one of the guest editors (electronic submission only) by no later than **May 31, 2004**. Publication is foreseen for the Spring of 2005.

#### **Guest Editors:**

<b>Fernando Pereira</b> Instituto Superior Técnico Av. Rovisco Pais 1049-001 Lisboa PORTUGAL E-mail: fp@lx.it.pt	<b>Alex Kot</b> Nanyang Technological University Nanyang Avenue, SINGAPORE E-mail: EACKOT@ntu.edu.sg	<b>Peter van Beek</b> Sharp Labs of America 5750 NW Pacific Rim Blvd. Camas, WA 98607, USA E-mail: pvanbeek@sharplabs.com	<b>Jörn Ostermann</b> Institut für Theoretische Nachrichtentechnik und Informationsverarbeitung Universität Hannover Appelstr 9a, 30167 Hannover, GERMANY E-mail: ostermann@tnt.uni-hannover.de
---	---	--	---