1^{st} International Workshop on Ambient Media Delivery and Interactive Television

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Through new interactive features, television is becoming a central hub for entertainment, communication, and sharing. Instead of old, push-based broadcasting to set-top-boxes, new pull-based, interactive services and tighter integration with other audio/visual entertainment devices enable ambient access to tv programming. Thus, with the steering committee members, Marina Geymonat (*Telecom Italia, Italy*) and Roberto Rossetto (*RAI-Teche, Italy*), we have envisioned and organized the *Ambient Media Delivery and Interactive Television* workshop, AMDIT 2008, focusing on the data management challenges associated with the design of ambient media delivery and user aware interactive television systems, to make television programmes available and easily accessible in multiple contexts, through diverse media devices. Below, I provide an overview of the contributions to the workshop.

Firstly, a report of the analysis of new requirements raised by interactive television and a solution adopted by a group of researchers at RAI research center in Torino is presented at the workshop and included in the proceedings in the form of the paper "The ACMS, a Model-Driven Approach to New Interactive Television Services Production and Delivery" by Roberto Del Pero, Fulvio Negro, and Luca Vignaroli.

A particular challenge to the users who experience interactive television is the plethora of alternative programs they are simultaneously offered at any point in time. In many cases, the available electronic program guides fail in assisting the users in their choice, despite the amount of information they provide. To help the interactive TV users navigate in the program space, a coordinated effort has to be spent on multiple dimensions of the problem. In particular, to allow an informed choice by the users, it is important to make available to them rich semantic descriptions of the programs. This requires research efforts in the area of content extraction, content description, metadata definition, storage and retrieval. An effort in this direction is described in the paper "An Architecture for TV Content Distributed Search and Retrieval Using the MPEG Query Format (MPQF)", by Ruben Tous, Anna Carreras, Jaime Delgado, Giovanni Cordara, Gianluca Francini, Enric Peig, Frederic Dufaux, and Grzegorz Galinski. This paper presents the design of an architecture, based on the MPEG Query Format (MPQF), for providing the inter-operability required for deploying distributed and audiovisual content search and retrieval networks that link content producers, distributors, and consumer devices.

Effective content delivery through interactive media devices requires that media is annotated with additional information and meta-data for enabling informed user choices. At a semantic level, video content description requires detection of semantically coherent fragments of the video that can be annotated properly. Angelo Chianese, Vincenzo Moscato, and Antonio Picariello, in their paper "Scene Detection using Visual and Audio Attention", propose a new method for automatic scene detection, which takes visual patterns of movies and audio features into account. The same authors also present a complementary approach which allows detection of anomalies in a video sequence, in their paper titled "Detecting abnormal activities in video sequences." Such detection techniques can be used for identifying events of interest that can then be tagged and highlighted for easy user access and browsing and other interactive services.

Video content for semantic annotations can also be extracted from related non-visual information sources. The paper "Automatic Live Tagging of Videos Using Chronicles" by Marta Rey-Lópezy, Rebeca P. Díaz-Redondo, Ana Fernández-Vilas and José J. Pazos-Arias, presents an automatic tagging system to describe the structure and semantics of the videos for sports events, extracting information from the chronicles for these events, written in the web pages of newspapers and sports organizations. These semantic annotations then can be used along with other feature-based classifications for interactive access and for assisting users in their media choices. Classification and genre detection challenges are addressed in the paper "Multimedia Genre Characterisation with Fuzzy Embedding Classifiers", by Alberto Messina and Maurizio Montagnuolo, in which a feature extraction architecture and a novel learning algorithm for multimedia genre characterization are proposed and experimentally evaluated. Development of classification techniques requires new metrics to precisely compare media objects across their multiple dimensions. Recommendation systems combine the above information about the classified

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objects with contextual knowledge, such as the user model (declared properties, like age, sex, education level, as well as learned properties, including navigation patterns). They further rely on user tagging as a way to capture information about the preference relation among users and content. The tags as well as other content and context information are further leveraged for mining and extracting population tastes and preferences through techniques, such as collaborative filtering.

Finally, on the delivery side, contextual information can be leveraged for improving and personalizing the media delivery services through interactive devices. For example, in "System for Automatic Audio Video Service Creation for Mobile TV and Mobile Web Applications", authors (G. Alberico, P. Casagranda, A. Messina and F. Russo) describe an innovative system for delivering interactive multimedia services to mobile users. The system targets both broadcasting Mobile TV on DVB-H and interactive mobile web content over WiFi and 3G networks, both usable from handheld devices.

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I believe that the workshop offers a good opportunity for the researchers in the multimedia/information retrieval domain to interact with the colleagues from the user modeling and human interaction community, with significant cross fertilization across the complementary dimensions of the challenges posed by the new medium of interactive television.

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