Real Interaction of Broadcast and Broadband Technologies

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Our Perspective on the Topic of the Workshop:

The Institute for Communications Technology (Technische Universität Braunschweig) is well known for its significant role as a research center in the field of Digital Television. Many standards of the DVB family have been influenced or even generated by our team.

In addition to the traditional ways of media content distribution, namely cable, satellite and terrestrial transmission nowadays also managed IP networks (IPTV) are used to deliver digital TV services. The success of IPTV in some countries shows that the QoS in such systems meets the expectations of the users. Beyond that, a new generation of so-called “hybrid” TV devices, which have access to a broadcast network and additionally to a broadband network, have already reached our homes. The different implementations of hybrid TV try to achieve what is usually called an “enhanced viewing experience” by making use of the two mass media “Television” and “The Internet”.

The approach we are following is related to a future broadcasting system and goes far beyond what is currently discussed. The corresponding field of research is called “Dynamic Broadcast” and our goal is to create a heterogeneous delivery network of (at least) one broadcast network and (at least) one broadband network. We therefore do not restrict the concept of hybrid TV to the viewer experience and to the user terminal but integrate networks. One aspect of Dynamic Broadcast is to assign the delivery path for certain media content dynamically. While delivery over broadcast networks is optimal if there is a large number of viewers watching an event, broadband is the ideal delivery channel for events with a small audience. As a result, Dynamic Broadcast no longer uses static assignments of media services to pre-determined distribution channels. Hence, the TV device no longer stays a passive receiver but becomes an active network component as the bidirectional broadband connection provides a communication channel, which allows to optimize the load on the broadcast and/or the broadband network or to minimize the cost of delivery. Therefore, hybrid user

terminals are required on the customer's side, which have access to both networks and significant local storage capacity built into the device. The networks delivering the TV services will then no longer be treated as separated and independent but start interworking with each other.

Why we would like to participate in the Workshop:

We are highly interested in web-based broadcasting and TV content distribution over the web as it could form an essential part of future broadcast systems. We would like to gain knowledge of the compatibility of web-based approaches with existing television technology and to see concrete implementations of TV related services developed for a hybrid broadcast/broadband environment. We will prepare a presentation of what we have achieved in the field of "Dynamic Broadcast" so far.