TV-Anytime: a new standard

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Four years of hard work.

On 1 August 2003, the TV-Anytime Forum's first specifications were published by the European Telecommunications Standards Institute (ETSI).

These specifications, the result of nearly four years of hard work by the Forum's 60-plus member companies, are the organization's offering to broadcasters, manufacturers and other standards groups throughout the world that confront the incorporation or development of end-user mass digital content storage systems – or in TV-Anytime (TVA) terminology, the *personal digital recorder* (PDR).

At its outset, the Forum realized that such a storage device could capture and manage far more than just video, and the group has used 'PDR' as a handle for target devices rather than the more limiting – albeit more widely used – 'PVR' (personal video recorder).

Today almost every set-top box manufacturer in the world now offers, or is developing, a PDR device, and broadcasters are recognizing the benefits and challenges of delivering services to such boxes. Consumers, faced with the reality of a device they have never seen before, are universally delighted and united in acclaim. Yet platform operators are still largely unable to find ways to describe the many and powerful features to the uninitiated. Meanwhile, media content and service providers are still struggling with business models that can best exploit the enormous promise of this powerful technology, as the hardware becomes ever more affordable, and its capacity continues to increase.

It is this fertile yet unsettled ground that TV-Anytime attempts to channel into optimal condition through the propagation of standardized practices. Its initial output is now available as an ETSI Technical Standard (TS 102 822).

A winding road

The requirements-capturing process of any such project is almost always one marked by substantial discovery. No one really knows what a new system should do a priori, and even if one were presented with a creation according to one's first thoughts, it would likely be subject to much subsequent modification and improvement.

The TV-Anytime Forum began with a raw vision and dreams of simple, user-friendly functionality for universal access to multimedia content and its local storage, working through scenarios and models to develop several Calls For Contributions (CFCs) to the industry. These CFCs have been answered by private companies, by project groups, and sometimes by members of the Forum working together in its meetings. Key outputs have been made in the areas of content referencing, metadata and metadata protection. The Forum also has spent a considerable amount of time looking at the means by which its content referencing and metadata specifications can be layered onto practical digital broadcast systems.

Those reading this article may be aware of the space addressed by the metadata specification, which describes content and the means to navigate through it, but may be less familiar with the issues addressed by the content referencing specifications. Imagine watching an advance trailer

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Simon Parnall (NDS) at the NAB

for a new television series, which will begin its run a few months in the future. At the time of the trailer's broadcast, the actual transmission schedule for the series' programmes has not yet been set. Nevertheless, it would be ideal if the user could press a single button while the trailer was airing and initiate the capture process for the whole series. The Forum's content referencing specification introduces an invariant identifier, called a CRID, which indexes subsequent information obtained from the broadcaster to locate the series and its constituent programmes whenever and wherever these are carried, and can manage series, serials, repeats, updates and other variants.

Numerous liaisons

The TV-Anytime Forum has no charter or mandate to set standards for any delivery format or system directly. It therefore has established and maintained strong liaisons with DTV standards bodies in various international regions. These liaison efforts are now bearing fruit as DTV delivery systems are being updated to incorporate TVA specifications.

The Forum has also established liaisons with other related organizations in the digital multimedia content production, distribution and

delivery industries in order to minimize divergence and maximize interoperability.

Implementations

Recently the TV-Anytime Forum has begun to see the first practical implementations of its work. To stimulate this process, the Forum presents regional Implementers & Developers Events (IDEs) in conjunction with its meetings around the world. These events provide opportunities for Forum members and others to observe and comment upon early implementations of TVA specifications. Presentations are made as papers and/or demonstrations.

The Forum also participates in (and is a co-sponsor of) the Interoperability Suite at the annual NAB Convention and IBC, where working demonstrations are presented.

Phase 2

With the publication of its Phase 1 specifications by ETSI, the Forum's developers have turned their eyes to the future. Work is now underway on the next phase of specifications, which will address the establishment of standardized procedures in more advanced features of personal media storage. These include file sharing and 'superdistribution', synchronization of multiple content sources, packaging of multiple content types, storage of interactive content, and targeting of content to specific users.

The latter area seems particularly exciting, in that it may enable powerful new business models for targeted content delivery and storage. This would allow the PDR and related devices to be embraced rather than eschewed by advertisers and broadcasters, many of whom are currently concerned that personal media storage devices will damage their existing businesses.

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TV-Anytime

To gain further information about the Forum and its work, visit www.tv-anytime.org.

To obtain access to ETSI TS 102 822, visit www.etsi.org.