CROSS-PLATFORM INTERACTIVE TELEVISION

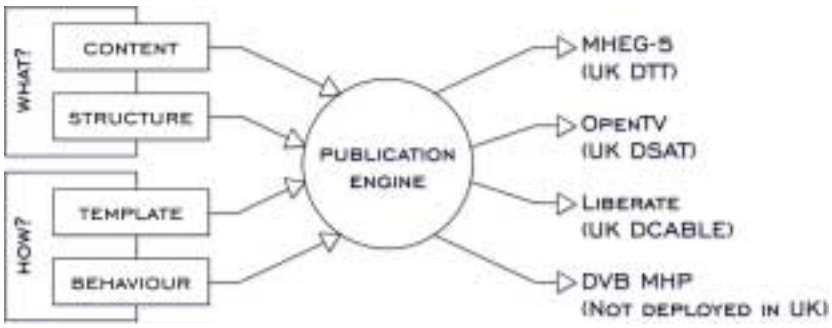
The BBC is one of the world's leading providers of interactive digital television content. It has delivered a wide range of interactive propositions across all of the key UK digital television platforms. This is despite a complex operating environment where different interactive technologies have been deployed by each platform operator.





Even given this success, the process of creating a proposition for delivery to multiple platforms remains time-consuming and expensive, often requiring a specialist technical team for each target platform. The BBC continues to undertake research in this area to investigate ways making this process more effective and efficient.

BBC Research & Development is developing a Data Model for the description of the user-experience of interactive television propositions. Coupled with a Publication Engine, this technology would allow an interactive proposition to be described once and automatically published to a number of target platforms. The feasibility of this is being explored using an experimental end-to-end chain, from authoring tools through to real head-end outputs, that targets each of the UK's three key platforms (DTT/MHEG-5, DSat/OpenTV and DCable/Liberate) plus the DVB Multimedia Home Platform (MHP).



Our research demonstrates that for certain interactive propositions it is possible to create a description that is readily portable to multiple target devices. It also shows how the involvement of specialist technical teams in day-to-day production tasks could be reduced.

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Why is the BBC conducting research in this area?

To increase our understanding of how to describe interactive propositions so as to make it easier to deliver to multiple digital television platforms, i.e. increased 'portability'. This knowledge can be used to help the BBC's operational teams improve the day-to-day business of creating interactive content. It will also allow the BBC to contribute to relevant standardisation processes such as the DVB Portable Content Format activity.

What is the BBC doing?

The BBC is developing a Data Model that supports the description of an interactive television proposition.

Is this the creation of another interactive television middleware?

The Data Model is the core part of an interactive television description interface. Unlike interactive television middleware, this interface does not require that any specific technologies be available on target devices. So instead of trying to describe *how* the application should be implemented, the interface describes *what* the user-experience should be. This is especially important in the UK where the differences between deployed interactive technologies are such that the 'how' is very different for each.

Is this solving the same problem as the DVB Multimedia Home Platform (MHP)?

The BBC is a member of DVB and has contributed to the development of the DVB MHP specification. However, as long as multiple middlewares remain deployed in the UK the issue of content portability will remain.

What form does a description take?

The description consists of a number of 'pools' of information, including the content to be offered, how this should be presented, how pages are combined into a navigable structure and the behaviour that allows the user to interact. It has been recognised that these different aspects of a proposition are often under the control of different parties. Hence the Data Model has been developed to allow devolution of responsibility where required, i.e. the description can consist of a number of independently created fragments.

Does this form ultimately limit the describable user-experience?

The Data Model supports the concept of abstract components. This means that the detailed functionality offered by specific components (or primitives) is not an inherent part of the interface. Instead it is left to specific profiles to define the available components. This has the advantage of allowing existing components to be modified or new ones to be introduced without the need to change the form of the interface specification.

What is the physical representation of this description?

An XML representation has been defined.

Why has an experimental Publication Engine been implemented?

To validate the Data Model and to explore the feasibility of automatic publication to specific targets.

How does the Data Model deal with the 'lowest common denominator' problem?

The generic or portable description of a proposition needs to be sufficient to support the most capable target. However, this same description can be filtered to create an output for less capable targets during the publication process. Our experimental Publication Engine allows a configurable mapping to be defined for each target, which may be varied on a proposition-by-proposition basis. This means that the presentation of the same content could be radically different depending on target capabilities and available resources at any point in time, i.e. tabular data could be presented as a textual table on one platform, a bar graph on another and a pie chart on a third.