

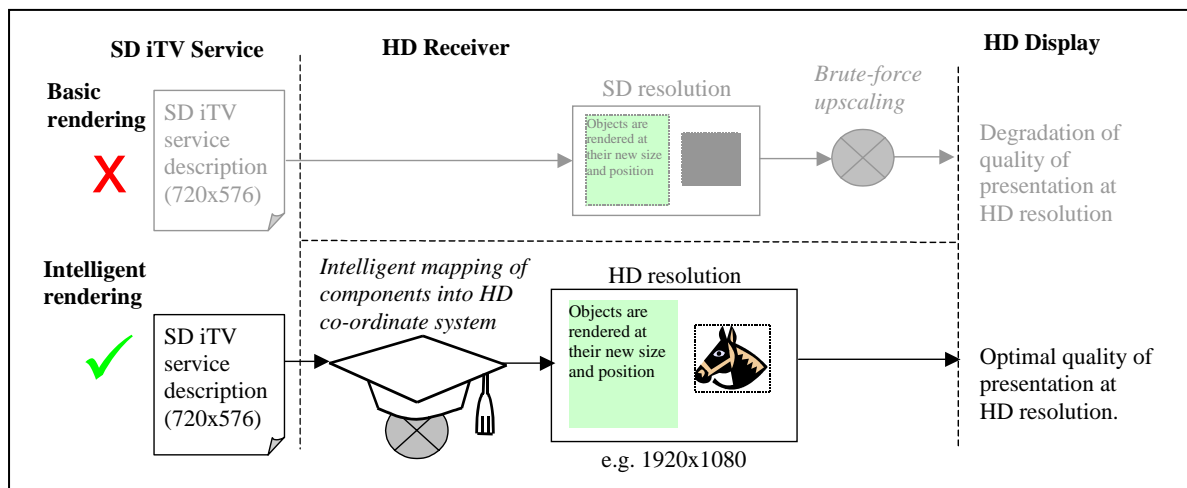
Background

High Definition (HD) video is applauded for its clear, crisp pictures with vivid colours and increased detail. But whilst BBC HD broadcast trials showcased acclaimed dramas and the World Cup, there was no interactive television (iTV) content available. BBC R&I have been investigating how best to provide interactive content alongside HD video and are actively involved in collaborative work within the industry to resolve the challenges it presents.

Current work

One objective has been to ensure that interactive services can switch seamlessly between SD and HD resolution video without any disruption to the viewing experience. This kind of functionality can be used to switch between a linear SD channel (such as BBC One) and an HD channel (that is an HD simulcast of a particular programme in the SD channel's schedule). It can also be used to bring HD coverage of an event into an otherwise SD interactive multi-stream service, such as "Wimbledon Interactive".

However, the HD experience is not just about HD content but also about the optimal presentation of SD content on HD displays, remembering that the majority of broadcast content will remain SD for some time. Hence, another objective has been to ensure that interactive content described as part of an SD resolution service looks as good as possible on HD displays. Whilst it is straightforward to "stretch" a service rendered at SD resolution so that it fills a HD display, the quality of graphics and text is compromised. BBC R&I has researched an alternative approach called "intelligent rendering". The location and size information of each on-screen component (e.g. shapes, text, graphics) as described at SD resolution is mapped to its HD equivalent and rendered directly into the HD resolution, thus promoting the maximum quality of presentation.



Intelligent rendering of an SD description into an HD resolution offers an improved quality of presentation over rendering into an SD resolution and up-scaling.

Future work

As HD video broadcasts become increasingly prevalent, the argument for authoring iTV services using an HD co-ordinate system is likely to gain credence. Research is needed to explore how the extra real-estate of an HD co-ordinate system could be used to best effect. One suggestion is to use smaller fonts to squeeze more text on a screen. Given typical viewing distances and screen resolution, is it practically possible and aesthetically desirable to do this?