

# **asserta home**

## iDTV Design Process

24 AUGUST 2000

<b>Colour</b>	<b>3</b>
General overview	
‘TV safe’ colour	
<b>Text and fonts</b>	<b>4</b>
Legibility	
Font colouring	
<b>Image formats</b>	<b>5</b>
GIF versus JPEG	
Image maps	
Image ratio	
<b>Viewable area</b>	<b>6</b>
Defining a safe area	
Scrolling	
<b>Brand issues</b>	<b>7</b>
<b>The finished service</b>	<b>8</b>



# Colour

## General overview

The most important thing to remember about designing for iDTV is that what you see on your Mac/PC monitor is not what you get. Obvious, yes, but often forgotten. It also cannot be stressed highly enough how much benefit is gained from viewing things on more than one television set. For Hamburg, we utilised two extremes – a 29-inch top of the range Sony Trinitron, and a old worn out 21-inch Hitachi. Not only did this allow us to compare and contrast picture quality, but also picture size. We found ourselves aiming for somewhere in the middle, but if it worked on the old Hitachi we knew it would work on anything else.

Colours that are used on any iDTV site need to be thought about carefully. Vivid, strongly saturated colours are unsuitable and cause serious visual disturbances, rendering information useless. As an example of this, #FFFFFF (white) should be knocked back to at least #d6d6d6. In addition to this a TV cannot display all colours combinations and patterns well, with 'Chroma crawl', colour bleed and flicker all common symptoms. It is, therefore, best to avoid high contrast and detailed patterns.

## 'TV safe' colour

All graphics require colour optimisation. There are various ways of doing this, but the simplest is to use 'Hue and Saturation' in Photoshop, and reduce the saturation by 15-20%.

For basic colour usage (fonts, table cell fills, backgrounds etc), we used the WebTV colour tool (<http://developer.webtv.net/design/tools/colorpick/>) to generate 'TV safe' colours (see fig 1).

Despite utilising both the above methods, colour combinations still need to be checked on screen. Certain combinations of 'TV safe' colours will still create bad results when actually viewed on screen.

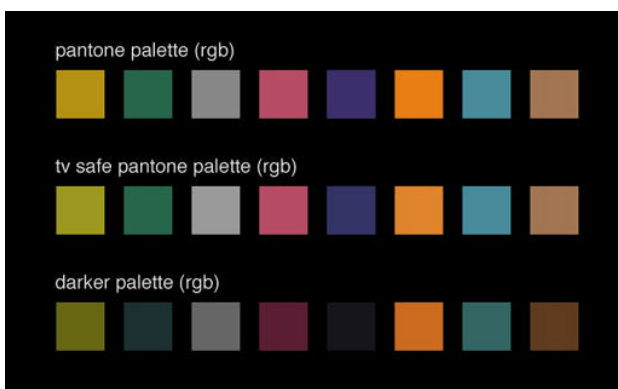


FIG 1

## Text and fonts

### Legibility

As television is usually a very passive medium, it is not often used for displaying a vast amount of textual information. Also viewers typically sit around six to ten feet away from their sets. It becomes very important then, to ensure that text is clear and concise enough to be easily read.

The Liberate platform that is used by both Telewest and Cable and Wireless (platforms that Hamburg was to be launched on), uses a font called Tiresias. This is a specially developed font optimised for usage on screen. Guidelines from both companies recommend that the minimum font size be 18pt on both graphics and in html. In our initial development work, we found this to be equivalent to `<font size=3>`. All html sizes below this were the same, equating to 16pt. The largest html size, `<font size=7>` was equal to 28pt (fig 2). In addition to this we found that, for visual purposes, it was necessary to make word spacing 150% to give some realistic indicator as to the way html text would flow.

For body copy/main content text on Hamburg, we chose `<font size=5>` (21pt). This was a good balance between legibility and quantity. Again, for visual purposes we found that auto leading (26pt) was the best simulation of html text.

The font relative font sizes we used are thus:

```
Headers = <font size=7>
Body copy = <font size=5>
Navigation = <font size=3>
```

`<font size=7>` was used for headers. This is because all `<header x>` tags were smaller than this.

### Font colouring

The Web convention is to use dark text on a light background, for various reasons. On TV this convention is reversed. Light text on a dark background is the most legible. This obviously created branding issues, but these are covered in the 'Branding' section of this document.

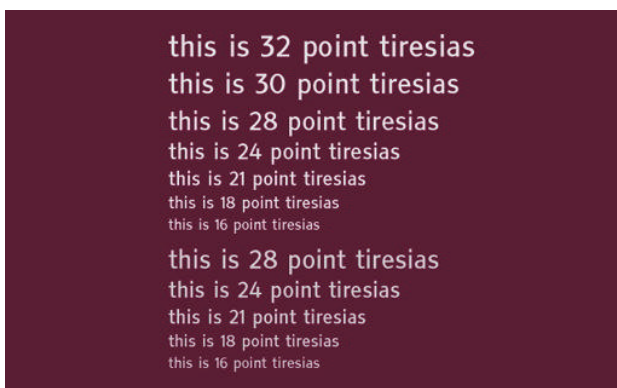


FIG 2



## Image formats

### GIF versus JPEG

The Liberate platform supported GIF and JPEG files. We had first-hand experience of the newly launched digital teletext on other platforms, where whole stories could be read before images loaded. This coupled with the known performance issues with the STBs (set top boxes) meant that we decided to build as much as possible with html and table cells, with only the bare minimum (i.e. the logo) as graphics. We also avoided background images, due to the STB processing them in a very longwinded way. Firstly the image would be fully loaded, then the covered areas would be calculated, and then blanked, and finally the foreground objects would be rendered.

As the STBs processed GIFs faster, we decided to use GIFs wherever possible. The time that we used JPEGs was for the large property images. All GIFs were processed using ImageReady, and most are 2 bytes or less, with between 12 and 6 colours. Even the 'Homepage' images were 12 colour GIFs. These images were deliberately monotone (shades of the background colour) so that the file size could be kept down. JPEGs can be used on as low settings as 20- 30% - images that look bad on a monitor may look okay on a TV set.

### Image maps

On the Hamburg website we had a lot of image-mapped graphics. On the iDTV Liberate platform image-maps are dealt with by first clicking on the image itself, then manipulating the cursor that appears, after a delay of about 5-10 seconds. This was obviously clunky and unfriendly, so a decision was made not to use image-maps at all. All graphics that were previously image-mapped became purely supportive, and not navigational elements.

### Image ratio

Pixels on television sets are not square as on monitors. The actual ratio is width=1, height=1.094. This means that, to appear in the correct ratio of 1:1 on a TV screen, all artwork, pictures, logos etc., have to be vertically stretched by exactly 109.4%. In tests we found that rounding up (110%) or down (109%) did make quite a lot of difference. Fig 3 below shows the differing ratios – 1:1 (left), 1:1.094 (middle) and 1.094:1 (right).

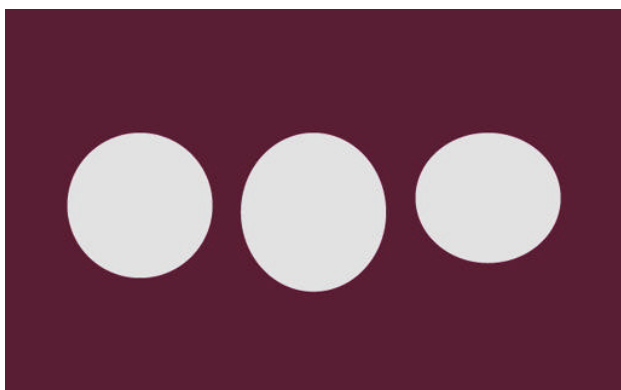


FIG 3

## Maximum viewable area

### Defining a safe area

The maximum area available to us, under the Liberate browser was 640 x 400 pixels. The rest of the screen real estate is taken up by the browser window.

Most television sets cut off part of the picture fed from the broadcaster. The exact amount varies from set to set and the picture is often not centred. Because of this it was necessary to perform a test to define the safe areas. This was done by creating a simple GIF (fig 4) with banded areas every ten pixels. Upon viewing the GIF on both our test TVs we were able to come up with borders/margins. These were defined as 30 pixels on the left, right and bottom. For the top we allowed a 10 pixel border area.

### Scrolling

The Liberate browser handles scrolling in quite a counter-intuitive way – often leaving the user confused and lost, particularly if reading a large portion of text. Also the icons that appear when there is scrolling content, appear in a position on screen that is outside the safe area. On our smaller older television set they were completely invisible, being cropped by the set itself.

Because of this we made sure that all pages were designed and written to fit into a single screen, and if additional content was needed, further pages would be added, with next/previous buttons used to navigate between them.

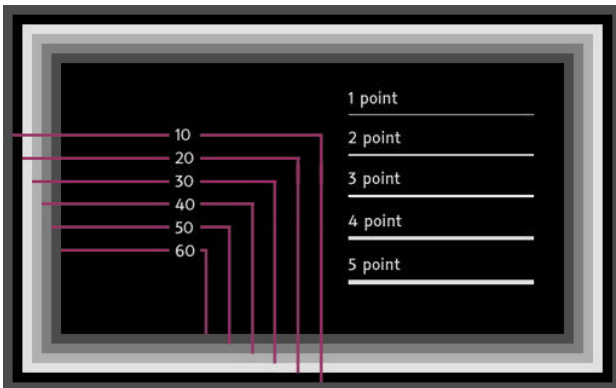


FIG 4

## Branding issues

Because of the need to have light content on dark backgrounds, the issue of how we would interpret the brand on the iDTV medium became an important one. The existing logo colouring was such that we could not use it on a dark background, nor use the colour as a background itself.

We realised that it would be best to avoid a generic black background, and it would be better to use darker versions of the original Hamburg scheme, as the original colours appeared pink on TV. This would also reinforce the branding. This colour scheme went through several evolutions until we found something that we were happy with. What we ended up with was several shades darker than the original Hamburg colour:

As with the web track, we had to utilise a logo designed by a third party. The logo, though being deployed on screen, appeared to have been designed only with print in mind. This led to numerous problems, particularly with sizing. A version of the logo was done for use on the website which, unlike the original, had the type at the side, rather than under the logo. On the web track this version of the logo was used on all content pages and the original was only seen on the homepage. We followed this model for the iDTV service.



FIG 5.1



FIG 5.2

Having set out at the start to produce a design that was light on dark backgrounds (fig 5.1), we then had to invert the logo, as previously it had only ever existed as purple on white. This threw up some new problems. At the size we wanted, or rather needed, to use the logo, the negative space between the three segments began to fill in. After various experiments adding strokes to the outside, we decided that we needed to redraw it to optimise it for the medium and size we were using (fig 5.2). The type itself was causing problems – again, at the size we required it was filling in and losing distinction. A lot of this was due to us merely cutting and pasting from Illustrator, so we chose to do the type in PhotoShop itself. There are four anti-aliasing techniques for type in PhotoShop (fig 5.3) and, after some testing, we found that the 'strong' setting provided the greatest clarity. Finally the whole logo itself had to be stretched vertically by 109.4%, so that it appeared in correct proportion (fig 5.4).



FIG 5.3

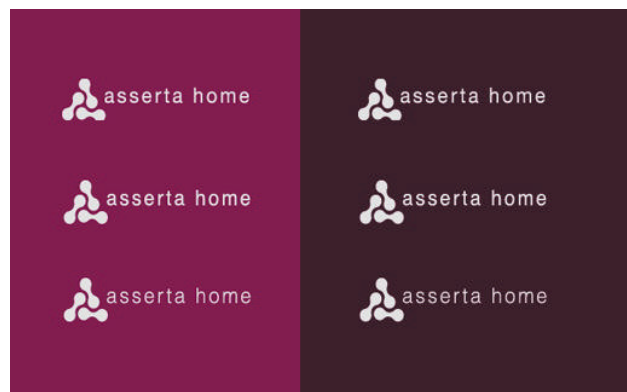


FIG 5.4



# The Finished Service

The images below show the final asserta home iTV service (fig 6.1-6.4).



FIG 6.1

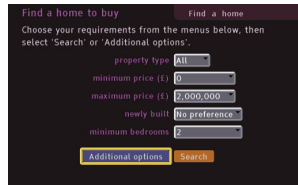


FIG 6.3



FIG 6.2



FIG 6.4



FIG 6.5

