

## Slideshow

Slideshow adds synchronised visual content (slides) to radio broadcasts on DAB or DAB+. Slideshow makes it easy to enhance your digital radio broadcasts with visuals using standard web image formats, and standard web publishing tools. Anything that you can turn into a JPEG, PNG or APNG (Animated PNG) can be broadcast over DAB and accurately triggered to appear in time with the audio.

Slideshow is transmitted in either X-PAD (where data capacity is allocated within your existing audio stream) or MSC (where data capacity is allocated in a separate channel on the multiplex), and can be effective at data rates from 8kbit/s upwards. Slides can be shown at any frame rate, from 1 frame per second upwards; faster frame rates (up to 10fps) are supported through use of APNG (Animated PNG) files.

Slides can be compiled manually or through an automated process, drawing in contact your existing digital assets such as news, presenter information, artist images, weather, travel, promotional items and of course advertising information. The slides can be compressed using JPEG (which typically favors photographic content) or PNG (which favors text content). By setting the target image size, you can dynamically control the image quality versus speed of image updating.

The recent addition of APNG (Animated PNG) as a supported file type allows for slow-frame animation (at up to 10 frames per second) which can produce a visual effect similar to "Flash". Receivers that can't support animation will gracefully fall back to displaying the specified still image within the APNG file.

### **You can control the display of images onto the receiver screen in three ways:**

- Transmit and display a slide immediately
- Transmit a slide with a specific time for it to be displayed at (accurate to 100ms)
- Transmit a slide, and then separately trigger its appearance on the screen (such as the beginning of a commercial)



The newest version of the Slideshow specification (published Q2 2008) allows for up to 64 images (or 450kBytes) to be cached on the receiver, which means you can pre-send slides in the background and trigger them accurately and quickly for display.

If Slideshow is transmitted with dynamic bandwidth (where the bandwidth can be increased in bursts), the cache can be quickly filled prior to a series of closely timed events on-air. Older slideshow receivers continue to support caching of a single image.

### **Implementation Details**

The Slideshow specification is published by ETSI (TS 101 499) and can be openly implemented.

All DAB/DAB+ multiplex manufacturers provide support for Slideshow in their multiplexing software, usually at no additional cost.

### **Slideshow in receivers**

<http://www.flickr.com/search/?w=all&q=dab+slideshow&m=text#null>