

In addition to offering complete solutions for DVB-CI and MHEG, we also offer a wide range of standalone components that can be licensed individually. These components are typically available with an attractive royalty-free source code model. The available stacks include:

## **USB 1.1 / 2.0 stack**

The stack includes drivers for OHCI (1.1) and EHCI (2.0) host controllers and a number of class drivers for classes like HID (Keyboard & Mouse), Bluetooth HCI (Bluetooth USB dongles), Mass Storage (data sticks) and a few proprietary drivers for network cards.

## **Bluetooth stack**

The stack interfaces to RS232 or USB based RF modules and implements the lower protocol layers and the RFCOMM profile that typically provides a virtual COM-Port or data pipe between two devices.

## **DSM-CC data and object carousel engine (compliant to HBBTV, MHEG-5, MHP and DVB-SSU formats)**

Our DSM-CC core has already been deployed as basis of several interactive TV services. DSM-CC is used to deliver file and data streams together with the traditional broadcast signal. Our engine has been certified for compliance to MHEG-5. Content caching (including controlled cache-bypass), dynamic content updates and stream events are fully supported. There are independent APIs for data and object carousels. The slightly different DVB-SSU syntax is supported as well.

## **DVB-SSU (System software update)**

We have tools for creating DVB-SSU compatible streams and we have engines that can make use of these streams on the receiver side. In addition to the features defines by the standard itself, our tools also add another layer that implements compression, cryptographic signing or even encryption on top of the industry standard protocols. A free demonstration version of the SSU stream generator is available on request.

## **DVB Simulcrypt / Conditional access**

In order to exercise&demo our own CI/CI+ stacks, we implemented a DVB simulcrypt compliant basic (potentially cardless) CA system. This is available for licensing. The target hardware should be reasonably protected against firmware dumps if the cardless version is used.

## **DVB Subtitling decoder**

Our subtitling decoder closes the gap between an existing PES filter capturing the PES packets and the screen. The decoder decompresses the DVB subtitling packages and renders the resulting image(s) to the screen. HD subtitling (as defined by the UK D-Book) and ancillary pages are fully supported.

## **Teletext level 1.5 decoder**

The decoder fully implements Teletext level 1.5 which is still used in several european countries. The decoder fully supports the national option character table subsets, subtitling mode, caching and sub-pages.

### **General notes**

Our entire range of software components has been optimized for high portability. Integrating any of these components typically only requires an ANSI-C compiler and in some cases a minimal hardware- and OS-abstraction layer to maintain thread safety.

More information is available at <http://www.streamguru.de/>