

## Re: TV stream and scrambled channels

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"David Olsson" <[david.olsson@xxxxxxxxxx](mailto:david.olsson@xxxxxxxxxx)> schrieb im Newsbeitrag

I've writing an application which is able to communicate with my program card/smart card provided to me by my DVB TV distributor so that I can subscribe to Pay TV channels. This application is able to query the smart card for key to descramble the TV channels I subscribe to.

If I understand you correctly, you're communication with your smart-card by some kind of SC-Interface `_other_` than a CA-Module?

I do  
however have no connection between my "software CA-module" (as one might call it) and the TV-tuner (its a DVB-T tuner). The DVB-T tuner I have come with BDA driver so it should work fine with DirectShow. My question is however this; is it possible to access the scrambling information sent in the mpeg2 transport stream's PES packets through the DirectShow API somehow so I can send it to the smart card?

It certainly is possible, e.g. using the sample-grabber or a custom transform-filter. You would have to insert it after your BDA-capture-filter (not the bda-tuner), or possibly behind the MPEG2-Demux-filter, but certainly before any MPEG2/Audio-Decoder.

This way you can access the raw TS (including all information scrambling-information ca-sections, scrambled packets) or only specific PIDs (if you insert your filter behind the demux).

You will however have to "read" any information you need out of the "raw" ts-packets - MS-Digital-TV infrastructure knows nothing about ca-systems/scrambling.

And is it futhermore  
possible to feed the descramble key returned by the smart card back to

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the mpeg2 decoder so that the scrambled channels gets decoded correctly?

No. In a regular (and possibly the only legal) scenario the CA-Module will do all that – talking to the smart-card, reading CA-information, determining the correct descrambling-key and descrambling the affected packets (or at least telling the demux the CW for descrambling packets – not sure who actually does the XORing) – you are not expected to get access to any descrambling CWs anywhere along the TS-data-path.

But definitely neither the ms-mpeg2 demux nor \_any\_ mpeg2-decoder know about descrambling any data/pes-packets. They simply expect correct data at their input-pins. (however the demuxer is able to pass through scrambled packets, since it doesn't actually care about the embedded data). So with DVB-cards supporting CI-slots the driver will ensure that the data that gets out of the BDA-capture-filter is already processed correctly (by passing though the CAM beforehand).

So for your "software CI" to work you will also have to do the actual descrambling yourself (which is basically nothing but a simple xor-operation) – there are some dvb-s programs out there that implement an interface for software-cams – you could have a look at their source-codes (basically they take each 188byte-packet coming in with the TS, examine it if it has to be processed/process it and then pass on the modified packet)

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Be aware that legally you're on very thin ice (if not to say that you're already under water;)

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