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From: "alexander adolf" <alexander.adolf@condition-alpha.com>

To: "DEVENDRA DWIVEDI" <jadvisor-bcs@traf.gov.in>

Cc: "Anil Kumar Bhardwaj" <advbcs-2@traf.gov.in>

Sent: Saturday, December 14, 2019 1:31:24 AM

Subject: Re: TRAI consultation paper on Interoperability of Set Top Box - regarding

Dear Mr Dwivedi,

On 2019-12-11, at 13:20 , DEVENDRA DWIVEDI <jadvisor-bcs@traf.gov.in> wrote:

> [...]

> As you may be aware, TRAI has initiated a consultation process on Interoperability of Set Top Box seeking inputs from all stakeholders.

> [...]

> We have benefited from your earlier inputs in this regard towards getting a better understanding of the relevant issues.

> It is hereby requested to please go through the consultation paper at the above link and provide your comments to the issues raised therein and helping us in finding an appropriate solution/direction for interoperability.

> [...]

Thank you very much for your warm words and kind inquiry, and the confidence in my expertise you demonstrate with it.

To be frank, I have made mixed experiences at best in my endeavours in the Indian market. These resulted in substantial financial losses due to people not paying their invoices. I have hence come to the conclusion that I shall not be seeking any further business in India.

In this light, the effort of crafting a full response to your consultation would unfortunately not seem justified at my end. Sorry for not having better news at this point.

What I can suggest to you is to investigate the ETSI standard for downloadable CAS. The statement that it has not been implemented would not seem entirely factual to me. Foxtel are commercially deploying an implementation in Australia. This covers well over 90% of the ETSI standard. The reason that it's not 100% is owed to the fact that the implementation was done before the ETSI standard was finished. In all fairness, the characterisation would have to say that the ETSI standard has not been fully implemented yet, and that parts of it are successfully and commercially deployed today. I would also suggest that you be in touch with Mr Karsten Höllerer (karsten.hoellerer@bnetza.de) who is with the German regulatory authority and in charge of technical standardisation for broadcast. He has been actively participating in the ETSI standards process, and will be happy to support you. Please be sure to make reference to me when contacting him.

While mandating CI+ USB modules may seem a way forward, and a low hanging fruit, it will not succeed commercially IMO. As explained

before, a CAM module is a STB in a shrink-wrap package (only short of the tuner and the display interface). Hence, plugging a STB into a STB seems somewhat pointless. Also, even if the ex factory prices for USB CAMs should be expected to be below USD 10, they require additional resources in the hosting STB since it has to be able to seamlessly stream the video out and in again over the USB port. I.e. it may need a better USB root hub, and a better CPU in order to be able to cope with that data traffic. This additional cost will compensate for at least part of the savings from the USB CAM.

Honestly, in my view the only other way short of introducing the downloadable CAS, is to establish a rental model for operator-specific STBs. If you can't brute-force the service operators into offering one, you're not using enough. ;-)

Hoping to have helped, and all my best wishes,

--alexander adolf

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Condition-ALPHA Digital Broadcast Technology Consulting Alexander Adolf