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To whom it may concern,

RE: Public Consultation On The Technical Specification For The Integrated Receiver Decoder(IRD) For Use With The Second Generation Digital Terrestrial TV Broadcasting System (DVB-T2)

This letter shall provide on best effort unbiased comments and feedback on section:

4.3.4 Multi-Channel Audio

4.3.4.1 Format

- a) Enhanced AC-3 as specified in ETSI TS 102 366 [9]; and
- b) MPEG-4 HE AAC version 2 Level 4 as defined in ISO/IEC 14496-3 [8]

As consumer, we welcome the ability to have multi-channel audio feature but there are two primary concerns manifested out of these two audio formats.

Question 1: Is it a necessity to have two different audio formats for consumer?

Question 2: What is the level of multi-channels expected from consumer?

Regarding question 1,

MDA seeks to have a wide range of basic receivers that are affordable however by having two audio formats means an increase to the IRD cost for consumers. This should be highly taken into consideration as consumer has always been reluctant to spend and invest on Free-To-Air(FTA) broadcasting channels, making it harder for Digital TV technology to be accepted and be successful

From worldwide perspective, majority of US and European broadcasters more commonly implemented HE-AAC audio to achieve the benefits of bitrate efficiency/savings. While Dolby EAC3 may have the same benefit, the implementation rate is low. It is strongly advisable to research on the possible reasons why worldwide EAC3 implementation rate has been low and study further. One possible reason could be due to the need to have new license agreement and license fee costs with Dolby. The study can include but not limited to; How many broadcasters worldwide deployed Dolby E-AC3? Was it successful and the frequency used by consumer?

The minority broadcasters who implemented Dolby EAC3 for the last few years have not seen EAC3 greatly in used nor well received by consumer and this could be regarded as white elephant situation. We certainly want to avoid replicating the same scenario in Singapore.

With the above 3 points, it is crucial to revisit if two audio formats is a need or excess for consumer? And the value out from these audio formats.

Regarding question 2:

The main purpose to provide multi-channel audio is to allow surround sound audio entertainment rather than the bitrate efficiency (because T2 transmission is already more robust in handling higher bitrate, the two audio format's bitrate savings does not help much then).

In Singapore, most people know and experienced before 5.1 channel audio, be it in the cinema or home. In humble opinion, honestly speaking, how many household will have 7.1 speakers at home? The 5.1 channel audio is sufficient enough to enjoy home entertainment. To cater for 7.1 channel audio, it may be overkill.

Having travelled to India, Korea, ASEAN, Australia recently, partial regional broadcasters have even mentioned that they will not implement 7.1 because not many people/laymen can hear the differences between 5.1 and 7.1 unless one is a precise audio engineer. There is really not much value in having this feature for consumer. This is one of the reasons why many worldwide broadcasters still maintain only 5.1 multi-channel audio in their contents.

In conclusion, to have an affordable and not compromising IRD, it is strongly recommended to follow what majority broadcasters have implemented in their transmission, using HE-AAC. This way consumer can still enjoy multi-channel and may consider to invest in mass-market IRD. We definitely need to strike a balance between features, benefits and the costs involved in order to have country wide success in Digital Terrestrial TV broadcasting.

7.2.3 Languages and Fonts and

7.3 Multi-Language Support

By the order of priority, subtitle is recommended to as follow

- 1) English ENG
- 2) Chinese ZHO
- 3) Bahasa Melayu MSA
- 4) Tamil TAM
- 5) Original Audio QAA*

However to reduce the cost of the IRD and Broadcasters content transmission, I strongly recommended Tamil not to be included.

Reasons 1) Indian mother tongue or their native language does not contain only just Tamil. By having Tamil, means there will be Indian consumer request to add other India native language.

Reason 2) In Singapore, our population of Indians still remains as the minority and mostly of them English educated as well. Hence we should not see Tamil as a need but a "good-to-have" feature.

Please consider to remove Tamil language to reduce the cost for the benefit of the majority.

If you have any questions, feel free to contact me by e-mail, phone, or letter.

Sincerely,

Klaven Siow Wei Woon