21 June 2021

Content Division
Department of Infrastructure, Transport, Regional Development and Communications
Email: content@communications.gov.au

MEDIA REFORM GREEN PAPER: MODERNISING TELEVISION REGULATION IN AUSTRALIA

The Australian Industry Group (Ai Group) and Consumer Electronics Suppliers' Association (CESA) welcome the opportunity to make a submission to the Department of Infrastructure, Transport, Regional Development and Communications (Department) on its *Media Reform Green Paper: Modernising Television Regulation in Australia* (Green Paper).

In relation to this consultation, our members include businesses representing the digital television (DTV) receiver manufacturer and supplier industry. Our views are therefore representative of these businesses and, most importantly, in the interests of their customers who are Australian consumers.

We note that the Green Paper covers a range of matters. However, our submission is particularly focused on chapters 4 and 8 of the Green Paper relating to technology and timeframes.

Overall, we support the objective of spectrum efficiency, which is raised in the Green Paper. However, this objective should not be implemented if it leads to a compromise in consumers' expectations of receiving improved (or at least undiminished) quality of service including reception, picture and audio quality, and consumer experience that consumers should reasonably expect when purchasing consumer goods in accordance with Australian Consumer Law.

We understand that the Department has not decided at this stage on proposals raised in its Green Paper and this Paper may only serve as opening the discussion about the future of television (TV) in Australia. If properly consulted and co-designed with relevant stakeholders, there is a strong opportunity to create positive outcomes for the benefit of industry and consumers.

To date, we have welcomed the consultative approach that the Department has undertaken in hearing our preliminary views. We would also welcome the opportunity to work closely with policy makers, regulators and other relevant stakeholders as the consultation progresses.

In the meantime, we would like to provide preliminary views. As further consultation is undertaken, there may be additional matters raised.

1. Preferred approach

Industry's preferred approach for the next evolutionary phase of TV would be to *not* modify the current DVB-T arrangements (in combination with using MPEG-4). Instead, industry prefers that DVB-T2 be used as a fresh basis for implementing a full upgrade path from DVB-T. Reasons manufacturers prefer DVB-T2 include that it is the next stage of technological evolution for DVB-T, recognised by industry around the world and consistent with international standards. DVB-T2 would also enable access to more advanced technological enhancements including High Efficiency Video Coding (HEVC) – the successor to MPEG-4 – which provides improved picture quality for consumers.

In contrast to DVB-T, we understand that HEVC has been implemented in a small number of countries using DVB-T2 modulation. These countries have receiver standards that specify the implementation of DVB-T2 and HEVC, and had a planned introduction schedule before any broadcast transmissions commenced. Test

transmissions were available for manufacturers to confirm receiver designs before commercial broadcasts began.

Nevertheless, implementation of HEVC and DVB-T2 may have spectrum implications. Service Information (SI) is critical for receivers to properly interpret broadcast transmissions. If HEVC were to be introduced into broadcast transmissions, broadcasters will likely need to transmit more SI with information such as the type of HEVC that is being transmitted.

There will also be ramifications for the timeframe to implement DVB-T2. For instance, the proposed timeframe included in the Green Paper's proposed reforms appears to be based on a shorter timeframe associated with modifying DVB-T only (in combination with MPEG-4).

Recommendations:

- ***Government leadership in this area could be similar to the role of its former DTV Switchover Taskforce that was responsible for coordinating with various industry stakeholders on the transition from analog TV to DVB-T.***
- ***Government should include development of a government-industry supported roadmap from DVB-T to DVB-T2. To facilitate this, Government could hold a series of relevant stakeholder roundtable meetings or workshops to flesh out the detail required for co-designing the roadmap.***

2. Caution against other proposed options

2.1 Modifying DVB-T

A question may arise as to whether HEVC could be included in DVB-T. Feedback from industry members suggest the following:

- HEVC is currently specified as optional and not completely defined in AS 4933. However, this reference to HEVC may need to be removed in an updated version of the standard, subject to CT-002 consideration.[1]
- HEVC is referenced in AS 4933 as a version and likely for the purposes of non-terrestrial services applications only i.e. not necessarily for DVB-T terrestrial services applications.
- Some manufacturers may have included HEVC in their products, but these are likely to have been tested for non-terrestrial applications.
- Industry is not aware of HEVC being implemented elsewhere around the world for DVB-T.
- Some products in the market may not have HEVC enabled at this point in time.
- Industry cannot provide estimates on HEVC capability.
- Early TVs will likely not recognise additional SI including for HEVC and especially where they have not been specified in standards.

More generally, if the Government introduces technical requirements that are unique to Australia, there will likely be a need for new TVs and new set top boxes to be developed for every existing TV (assuming this can be done). This would be an unpalatable outcome for consumers. That is, as manufacturers have moved where possible to "common" or "worldwide" chassis design, unique Australian requirements would likely not be readily implemented and come at a cost to the consumer. There may also be broader Australian Consumer Law issues if legacy TVs were impacted by the proposed government reforms.

In light of the above, as well as absence of testing, HEVC cannot be guaranteed to work with DVB-T and applied in a form that will be transmitted by the broadcasters. And without proper consideration of the above issues, there is a risk that many products in the market will not work, with some DVB-T receivers potentially

[1] The current DVB-T standard for DTV receivers supplied in Australia is AS 4933:2015. Standards Australia committee CT-002 *Broadcasting and Related Services* is responsible for managing this standard.

going black (i.e. not display). This demonstrates that modifying DVB-T to use HEVC would be a highly complicated option that will likely be disruptive to not only broadcasters, but also manufacturers and consumers. There are various material technical barriers that would need to be overcome, as well as other barriers such as cost implications to viewers, potential regulatory non-compliance issues with Australian Consumer Law, and potential inconsistencies with international standards. Modifying DVB-T to incorporate HEVC should therefore not be an option.

2.2 Shared multiplexing

The Government's proposed shared multiplexing for all terrestrial TV broadcasts (in combination with modifying DVB-T and using MPEG-4) in theory may offer increased spectrum efficiency. However, it will likely lead to a sacrifice in the provision of picture and audio quality, and other quality of service issues such as loss of TV services and therefore negatively affecting consumers. That is, a worst case is that the quality of service could become diminished in order to reduce spectrum bandwidth through shared multiplexing. While this issue will likely occur across all Australian regions, it will likely become an even greater issue in regional and remote areas where there are a mix of regional and metropolitan services, and mix of terrestrial and satellite TV services.

Action that causes degradation of picture and audio quality, and other quality of service issues on the terrestrial platform may be counterproductive as all platforms strive to deliver higher levels of quality of service.

2.3 Other practical and technical considerations

There are also other practical and technical considerations that need to be factored in, including the following feedback provided by industry members:

- Hardware (including chipsets) and software are important components to a TV – each manufacturer develops these differently.

- Software upgrades will likely not solve the Government's proposals/issues – it will likely depend on the hardware and TVs that may not have the capability. Software upgrades are normally only available in recent models and generally designed for fixing bugs in the system; they are not for enabling major technological changes, which will likely require hardware changes (amongst other things).

- Huffman Coding has been used as a data compression technique in NZ, but has not been done (and technically cannot be retrofitted) for terrestrial TV applications in NZ or anywhere else in the world. It should therefore not be considered an option for use in Australia for either DVB-T or DVB-T2.

Recommendations:

- ***Government should not consider any form of software upgrade as part of their plans.***
- ***Government should not consider as an option modifying DVB-T to implement HEVC.***
- ***Government should not consider implementing shared multiplexing if it leads to a loss in picture and audio quality, and other quality of service issues such as TV services that negatively impact on consumers.***

3. Testing

As noted above, testing is a critical component of standards development before a product is released to the market. In the case of DTV, testing should take into account the following:

- Provision of test transport streams and live test broadcast channels that will require spectrum.

- Test transport streams will need to be vetted by all relevant broadcasters for quality assurance and endorsement before manufacturers receive them.

- Testing will have its limitations. The results from testing does not necessarily mean that it will work for all brands and models currently available in the market. There should therefore be caution about making generalisations or assumptions that testing of several TV brands and models would be representative of the capability of all brands and models available in the market.

- Receivers will need to be tested in handling both DVB-T and DVB-T2. Manufacturers would be particularly concerned about inconsistency between DVB-T and DVB-T2 reception coverages.

- Transport streams are not only required for testing HEVC on DVB-T and DVB-T2, but also with respect to MPEG-4 and Logical Channel Number (LCN) numerical ordering.

Recommendations:

- ***Test transport streams and live test broadcast channels are fundamental to considering any proposed changes to broadcast transmissions and need to be factored in by Government.***

- ***Government policy in this area should be informed by substantiated evidence. Government could undertake a research study on the penetration of TV sets in the market including whether they have HEVC capability etc. An appropriate body such as the ACMA or ABS might have the relevant capability to conduct such a study.***

If you would like clarification about this submission, please do not hesitate to contact us: for Ai Group, Charles Hoang (02 9466 5462, charles.hoang@aigroup.com.au); and for CESA, Robert Wooley (robert.wooley@cesa.asn.au).

Yours sincerely

Louise McGrath
Head of Industry Development and Policy
Ai Group

Ian McAlister
Chief Executive Officer
CESA