

**SBS SUBMISSION TO THE AUSTRALIAN GOVERNMENT
ON THE MEDIA REFORM GREEN PAPER:
MODERNISING TELEVISION REGULATION IN AUSTRALIA
MAY 2021**

I. Key points

- For over 40 years, SBS has developed compelling and thought-provoking content that tells the stories of a truly diverse Australia. SBS content is delivered free across broadcast and online platforms to all Australians in multiple languages.
- In 2019-20, SBS broadcast over 1600 hours of local Australian content (including repeats). This includes news, current affairs and sport (1150 hours); commissioned content (295 hours); in-house productions (35 hours) and acquired Australian content (210) hours. These included documentaries, dramas, entertainment and food; and much-loved programs such as *Hungry Ghosts*, *The Tailings*, *Elements (Fire, Earth & Water)*, *Who Do You Think You Are*, *Mastermind*, and *The Cook Up*. SBS is proud of its local content slate and has consistently stated its ambition to create more.
- In recent years, SBS's Australian content output has grown, as we have invested additional commercial revenues and diversified the range of genres produced. SBS works carefully within its budgets to maximise its investment while delivering a broad suite of services for Australian audiences in line with our Charter.
- If the policy intention is to create a floor to ensure existing Australian content levels on SBS, then there is no need for intervention. SBS has demonstrated its commitment to increase Australian content output where capacity exists within its existing operational budgets, and will continue to do so.
- If the policy intention is to grow Australian content on SBS, then we would welcome this opportunity, however further funding would be required for this to be achieved.
- SBS's role is to tell Australian stories, and through this, the organisation supports the Australian screen industry and the creative sector. The introduction of obligations or quotas may support increased output, however this should be balanced with appropriate codification and funding.
- SBS's current output should be taken into account in determining any new quota requirements (whether legislative or via other means). It is also relevant to note that SBS's current Australian content investment levels rely in part on commercial revenues which can fluctuate and be

impacted by market forces. Any quota that exceeded current SBS outputs and was not fully funded would put other SBS services at risk.

Quota mechanism ('How')

- For SBS, any mechanism: must be flexible to allow SBS to respond to changing audience needs; must not value content quantity over content quality; must not restrict editorial independence; and must be funded.
- There are a range of mechanisms to impose a quota to increase (or place a floor on) on Australian content. If the intention is to increase Australian content output, then an increase in base funding would be the most preferred mechanism, followed by tied funding. Base funding provides the highest level of editorial discretion and flexibility to deliver content to audiences in line with changing expectations, and the SBS Charter.
- After base or tied funding increases, a statement of expectations would be the next best mechanism for setting a quota, such as that proposed for Subscription Video on Demand services (**SVODs**) and Advertising-based Video on Demand services (**AVODs**).
- Legislative obligations would be the least preferred mechanism, particularly if they are very prescriptive on matters such as genre. Legislative obligations also significantly reduce the capacity of the Government or SBS to respond to changing market and audience needs, as amendments need to go through the legislative process.
- In summary, the order of preference for the mechanism to impose a quota with the outcome of increasing Australian content on SBS is as follows:
 - Additional base funding;
 - Tied funding;
 - Statement of expectations (similar to arrangements proposed for SVOD and AVOD services);
 - Legislative obligation—proportion of expenditure;
 - Legislative obligation—hourly requirement.

Quota formula/structure ('What')

- In terms of quota formulation (regardless of the mechanism used to implement it), a quota based on proportion of overall content expenditure would be significantly preferable to a time-based content quota. This should be based on SBS's current proportion of content expenditure, and would still provide flexibility as to genre and platform mix.
- A time-based content quota in legislation would be the least preferred outcome, because it fails to take account of digital services, and limits editorial discretion and flexibility to meet audience and market needs. A time-based quota also risks preferencing quantity of content over quality of content.
- For SBS to meet the 55 per cent local content quota (6am to midnight) currently in place for commercial networks, additional direct funding to SBS of over \$160 million per annum would be required, for

implementation on SBS main channel only. On average, documentaries and dramas are ten times more expensive to commission than to acquire.

- Regardless of the mechanism applied, SBS does not support a quota formulation that prescribes a particular genre mix. SBS currently invests a significant proportion of its commissioning budget into documentary, factual, and scripted drama, but would seek to retain editorial discretion to review this mix year-on-year based on its Charter, strategic and content priorities, audience needs and expectations, and market conditions.
- The quantum and formula of any quota set should also take into account the respective Charter and funding appropriations of SBS.

Discoverability & prominence

- SBS strongly supports measures to improve the discoverability of Australian content on broadcast and digital platforms. SBS takes great pride in its locally commissioned Australian content, and the organisation already strongly promotes this content.
- Regulation of connected televisions (**CTVs**) and other intermediaries should be addressed as part of any suite of media reforms, including a 'must carry' requirement for public broadcaster apps.

Additional reporting

- Additional SBS reporting to the Australian Communications and Media Authority (**ACMA**) on Australian content is unnecessary, given the rigorous nature of the SBS Annual Report, which meets requirements under the *Public Governance, Performance and Accountability Act 2013* (**PGPA Act**) and the *Special Broadcasting Service Act 1991* (**SBS Act**).

Funding

- In order to increase Australian production levels, funding proposed for the Create Australian Screen Trust (**CAST**) should be directly distributed to broadcasters to fund broadcasting licence fees, with a portion also distributed to Screen Australia for direct investment in productions.
- If the funds are not available to be used for licence fees, then broadcasters will not be able to invest in additional productions, essentially removing the CAST as a funding and distribution stream from new Australian content.

Spectrum and technology

- The proposal for spectrum use and technology transition in the Green Paper is not preferred for a range of reasons. This includes the risk that broadcasters will have to drop some existing channels, or degrade their picture quality—with material adverse impacts for Australian audiences.
- The focus in the Green Paper proposal on the legacy MPEG-4 compression standard gives rise to serious concerns about the long-term sustainability of the technology transition proposed. Alternative technology options are available and will lead to better outcomes for audiences and broadcasters.
- A significant efficiency gain for free-to-air (**FTA**) broadcasters is the potential combination of coding efficiency with transmission efficiency—

essentially the marriage between HEVC and DVB-T2. This approach is preferred by SBS and other FTA broadcast industry participants.

- Decisions on spectrum and technology transition of public broadcasters should not rely on decisions made by commercial television broadcasting licence holders—as currently proposed in the Green Paper. National broadcasters must have a meaningful role in any transition decision making process, as it will fundamentally impact services. Any arrangements must also take into account existing contractual arrangements between the national broadcasters and their principal transmission supplier.
- In order to continue serving Australian audiences' evolving needs, SBS seeks an outcome where the current suite of its channels can be retained, quality can continue to be improved over time, and there is flexibility for the potential addition of new channels to SBS's suite of services. It is relevant to note that a number of SBS channels currently generate profit for the organisation, so the cessation of one or more of those services would result in a reduction in SBS budgets (which would in-turn impair our ability to invest in Australian screen content).
- Major changes to broadcasting spectrum will trigger technology changes that will have greatest impact on consumer equipment that is older. The Government should support affected audience members in the transition, including with subsidies to upgrade consumer reception equipment, where required.
- Transitioning to a shared multiplex, and related technology changes, would have significant costs. Any costs incurred by SBS for the transition and material ongoing costs must be fully funded by Government.
- A smooth transition, through an extended timeline, to alternative technology options, would yield greater spectrum efficiency benefits and better serve audience needs. This would also maintain the sustainability of the FTA platform and allow more audience members to upgrade their home equipment within the natural replacement life cycle.

II. Recommendations

1. Australian audiences must be at the heart of any media reforms to be implemented.
2. Government policy decisions arising from the Green Paper consultation should avoid adverse impact on audiences, SBS's independence, and the imposition of undue administrative burdens in relation to SBS's reporting obligations.
3. Policy intervention is not required unless there is an imperative to increase Australian content on SBS.
4. Any mechanism introduced to increase Australian content on SBS: must be flexible to allow SBS to respond to changing audience needs; must not value content quantity over content quality; must not restrict editorial independence; and must be funded.
5. If a content quota is introduced to support this outcome, this should be by way of additional base funding, tied funding, or a statement of expectations, rather than a legislative obligation.
6. In terms of how any content quota is formulated, an expenditure-based model is preferred over hours-based model.
7. Should SBS be required to produce more Australian content, adequate funding for it to do so must be sufficiently provided. Additional funding directly to SBS will ensure that its independence and efficiency are preserved.
8. Any content quotas placed on SBS should not be genre-specific, and be sufficiently flexible to allow SBS to vary its genre mix according to audience needs. In terms of setting the quantum of the quota, the Charter and operating budget of SBS must be considered.
9. Funds for the provision of Australian screen content, such as deposits from Government into the proposed CAST, should be available for direct distribution to broadcasters, to fund broadcaster licence fees.
10. The remit of the proposed PING Trust should include support for the expansion of SBS's regional news gathering services.
11. Availability of terrestrial linear broadcasting should continue for Australians who use or rely upon it.
12. Decisions on spectrum and technology transition of public broadcasters should not rely on the decisions made by commercial broadcasters. SBS should have an equal seat at the table in planning the future of terrestrial television; and existing contractual arrangements must be taken into account.
13. Should the Government be minded to pursue a major transition to new broadcasting technology settings, sufficient funding and lead time must be provided—to the Australian public for their home equipment upgrades, and to public broadcasters for delivery technology upgrades.
14. Should the Government be minded to pursue a major transition to new broadcasting technology settings, a government entity tasked for leading this transition should be established.

15. Evolution of Australia's broadcasting technology should allow for broadcasters' future enhancement of their services, to keep pace with audience demands and requirements.
16. For the Government to achieve its second digital dividend goals, Australia's potential transition to DVB-T2 broadcasting standards should be considered, with sufficient lead time.
17. To achieve maximum multiplex efficiency, HEVC coding technology should be considered. A combination of DVB-T2 and HEVC will provide Australian audiences with the best possible outcome should there be a transition to a shared multiplex environment.
18. Equitable availability and allocation of spectrum should be provided—to ensure that metro and regional markets are not divided by spectrum accessibility.
19. Future research must be undertaken by the ACMA and industry stakeholders to establish television receivers' capacity to adapt to multiplex sharing in Australia.

III. Table of contents

I. Key points	1
II. Recommendations	5
III. Table of contents	7
IV. Introduction	10
V. SBS is committed to Australian content	11
Children's content	12
Drama and documentary content	13
Creating a floor vs increasing investment—while taking account of SBS's Charter obligations	15
Content quotas on SBS	16
Quota mechanism—'How'	17
Increasing Australian content levels on SBS via base and/or tied funding (preferred)	17
Statement of expectations	18
Legislative obligations/SBS Act	18
Quota structure—'What'	19
Type of obligation	19
Obligations must contemplate differences in broadcasters	20
Alignment of obligations across the industry	21
Obligation models and their impact on SBS (in order of preference)	22
VI. Discoverability requirements	24
VII. Availability and access to services must form part of any reform agenda ..	25
VIII. Additional reporting requirements	26
IX. Content trust funds	28
Create Australian Screen Trust (CAST)	28
Public Interest News Gathering Trust (PING Trust)	28
X. Contribution of SVODs and AVODs	29
XI. Rationalisation of spectrum use and technology transition	29
Spectrum release is the trigger for change	30
Commercial broadcaster decisions	31
Impact on audience	31

(Table of contents, continued)

Consumer expectations	33
XII. The current SBS multiplex	33
Significant MPEG-4 efficiency benefits already realised	34
XIII. Shared multiplex scenarios—capacity implications	35
Australian digital television (DTV) receiver standard—legacy risks	37
XIV. Alternative solutions	38
Optimising overall spectrum efficiency	39
Coding efficiency and options	40
Transmission efficiency and options	40
Multiplex efficiency and options	42
XV. Transition and implementation	44
Impacts on receiver functionality	44
Risks and legacy issues	44
Transition scenarios—broadcast transmission infrastructure	45
Costs to SBS of transition	45
XVI. Implementation timing	46
XVII. Next steps	46
Appendix A—The current SBS multiplex	47
Appendix B—Chronology of SBS multiplex benefits already achieved	49
Appendix C—Statistical multiplexing	50
Sequestered multiplex and efficiency impacts	51
Remote statistical multiplexing	53
Australian market granularity—multiplex efficiency choices for SBS	54
Appendix D—FTA retransmission and an example of the network feed complexities	56
Retransmission impacts and options	56
Example of a complex retransmission configuration	56
Appendix E—Spectrum allocation 600 MHz, 700 MHz and 800 MHz MBB services and interference risk profiles	59
Appendix F—600 MHz international experience and adopted interference mitigation strategies	62

(Table of contents, continued)

600 MHz reallocation in the United States and implications for Australia	62
DTT interference mitigation in the United Kingdom	63
European Union mandates receiver and reception amplifier performance standards	63
Appendix G—Transition options for the implementation of DVB-T2	64
Audience support will be required	64
Support required will vary between transition scenarios	64
Appendix H—Legacy (Band V) antennas	66
Domestic antenna performance—'Band V' legacy antennas	66
Appendix I—Response to consultation questions	67

IV. Introduction

The Special Broadcasting Service Corporation (**SBS**) appreciates the opportunity to comment on the Australian Government's *Media Reform Green Paper: Modernising television regulation in Australia* (the Green Paper),

For over 40 years, SBS has developed compelling and thought-provoking content that tells the stories of a truly diverse Australia. SBS content is delivered free across broadcast and online platforms to all Australians in multiple languages.¹

SBS reaches almost 100 per cent of the population through its six FTA TV channels (SBS SD, SBS HD, SBS VICELAND, SBS World Movies, SBS Food and National Indigenous Television (**NITV**)) and seven radio stations (SBS Radio 1, 2 and 3, SBS Arabic24, SBS PopDesi, SBS Chill and SBS PopAsia). Servicing 63 languages, including via SBS Arabic24, SBS Radio is dedicated to the approximately five million Australians who speak a language other than English at home, while the three music channels (SBS PopAsia, SBS PopDesi and SBS Chill) engage all Australians through music and pop culture from around the world.

SBS's reach is being significantly extended through SBS's digital services, including SBS On Demand, the SBS Radio App and portals, which make online audio programming and information available to audiences at a time and place of their choosing.

Notwithstanding the growth of digital services, terrestrial linear broadcasting remains an essential part of SBS's offering, particularly for those who do not have access to online services, or those older Australians who often revert to the language of their home country as they age.

Continued provision of free-to-access television, which does not require payment by audiences of broadband connection and service fees, is and will remain an equity and inclusion issue. In times of crisis, such as during bushfires and pandemics, FTA services are essential to safety and public health; and, when it comes to news and current affairs, provide very important information to assist civic participation in Australia's democratic society.

SBS's terrestrial broadcasting services remain key to sustaining and strengthening democracy, and building the Australian national identity. In particular, the highly-trusted news, current affairs and information services provided by SBS inform and promote understanding among all Australians of different cultures, and maximise opportunities for people from diverse backgrounds to engage in social, political and cultural discourse. As the only nationally available Australian-based broadcaster providing news and current affairs services in a broad range of languages other than English, SBS provides Australians with an unparalleled diversity of international and Australian programming. Any reform of broadcasting in Australia must take account of this essential role.

¹ SBS has launched Simplified Chinese and Arabic logins and navigation across its digital services (soon to be expanded to Hindi, Korean, and Vietnamese), as well as the 'Chinese Collection' and the 'Arabic Collection' on SBS On Demand. These collections include subtitled news and current affairs content, as well as subtitled dramas and documentaries.

SBS has commented below on aspects of the Green Paper relevant to it as a national broadcaster. Responses to the consultation questions posed in the Green Paper are in **Appendix I**.

Government policy decisions arising from this consultation should be made through the lens of the following principles:

- **Audience interests should be paramount**—any transition to new spectrum arrangements should not result in adverse audiences impacts, such as losing channels or audiences with particular reception equipment losing access.
- **Preserving editorial independence**—a key principle of public broadcasting in Australia is its independence from Government. Under section 10 of the SBS Act, it is the role of the SBS Board to maintain the integrity and independence of the SBS, and to develop codes of practice relating to programming matters. In addition, section 11 of the SBS Act limits the matters on which SBS can be directed by the Minister.² SBS has previously argued that it can accept fully-funded quotas with sufficient flexibility, while maintaining independence on content decisions.
- **Avoiding undue administrative burdens**—reporting obligations should not be overly burdensome or result in commercial disadvantage by requiring disclosure of sensitive financial details.
- **Ensuring SBS has an equal seat at the table in planning the future of terrestrial television**—SBS's fate should not be at the behest of commercial media decisions which are made with no regard to SBS's Charter, operations or audiences. SBS should be actively involved in any decision to move to a shared multiplex, and not be compelled to follow, if commercial rivals choose to move to the proposed licensing regime to reduce their costs and regulatory obligations.

V. SBS is committed to Australian content

The Green Paper notes that '[t]he ABC and SBS are significant commissioners of Australian content and are also important providers of this content to audiences across the country. This is particularly the case for content that may not be commercially viable for other operators to deliver, such as children's programming.'³

In 2019-20, SBS broadcast over 1600 hours of local Australian content (including repeats). This includes news, current affairs and sport (1150 hours); commissioned content (295 hours); in-house productions (35 hours) and acquired Australian content (210) hours. This equates to around 25 per cent of the SBS main channel's 6am to midnight schedule. This also includes locally commissioned Australian content; locally acquired Australian content; and in-house productions.

Of locally commissioned content, in 2020–2021 SBS has commissioned and/or broadcast in excess of 220 hours across its platform portfolio. This includes much-loved programs such as *Hungry Ghosts*, *The Tailings*, *Elements (Fire, Water & Earth)*, *Who Do You Think You Are*, *Mastermind*, and *The Cook Up*.

² Subsection 11(3) of the SBS Act provides that the Minister must not give to the SBS Board direction in relation to the content or scheduling of programs to be broadcast.

³ Green Paper, page 36.

Children's content

SBS, particularly through NITV, has expressed strong interest, including in its July 2020 submission to the *Supporting Australian Content on Our Screens—Options Paper*⁴, in increasing its output of local Australian children's content. In its submission, SBS stated that:

'To address any decline in Australian children's programming by commercial broadcasters, SBS (through NITV) should receive additional tied funding to deliver additional Aboriginal and Torres Strait Islander children's content to all Australians. This content would embrace diversity across:

- its subject matter (it would offer an Aboriginal and Torres Strait Islander perspective);
- the screen professionals creating the content (2 out of 3 key creatives from the writer, director, producer team would be Aboriginal and/or Torres Strait Islander); and
- linguistic diversity (all content would be dubbed in multiple Aboriginal and Torres Strait Islander languages for increased accessibility).

This additional children's content would also help to create a sustainable Indigenous production industry. Further, increased representation of Aboriginal and Torres Strait Islander children on Australian screens contributes to a positive sense of identity, cultural continuity and ultimately social and emotional wellbeing for those children, whilst simultaneously providing all Australian children an opportunity to engage in these First Nations stories.⁵

SBS and NITV have had great success with children's content. Logie Award-winning *Little J & Big Cuz*—an animated children's series featuring Miranda Tapsell and Deborah Mailman—follows the adventures of Indigenous Australian kids Little J and Big Cuz, living with their Nanna and Old Dog. With the help of Nanna and their teacher Ms Chen they learn about culture, community and country. Two seasons of *Little J & Big Cuz* are available and a third is in production, with episodes available in First Nations languages.

For older children, AACTA-nominated *Grace Beside Me* is a 13-part coming-of-age drama, with an Indigenous teenager dealing with powers that can reveal a town's secrets.

NITV and SBS can also play a key role in Closing the Gap outcomes in the areas of education, childhood development and adult health. Screen content for Aboriginal and Torres Strait Islander children and young people contributes to early childhood development, a positive sense of identity and healthy outcomes.

Further, Aboriginal and Torres Strait Islander-led media informs and educates non-Indigenous Australians about Aboriginal and Torres Strait Islander cultures. The requirement for two of three key creatives to be First Nations screen practitioners also supports increased diversity and capacity building in the Australian screen sector.

SBS is uniquely positioned to deliver these outcomes.

⁴ <https://www.sbs.com.au/aboutus/supporting-australian-content-on-our-screens-options-paper>

⁵ SBS submission to the *Supporting Australian Content on Our Screens—Options Paper* (July 2020) https://www.sbs.com.au/aboutus/sites/sbs.com.au/aboutus/files/sbs_submission_-_supporting_australian_stories_on_our_screens_options_paper_final.pdf, pages 1–2.

Drama and documentary content

SBS is committed to sharing unique stories and voices through its documentary and drama content. As noted in SBS's submission to the *Supporting Australian Content on Our Screens—Options Paper*:

'To address any decline in Australian Premium Drama programming by commercial broadcasters, SBS should receive additional tied funding to deliver increased hours of Premium Drama programming reflecting Australia's diverse, multicultural and multilingual society. This content would also embrace diversity across:

- its subject matter (it tells stories of multicultural Australia);
- the screen professionals creating the content (2 out of 3 key creatives from the writer, director, producer team would represent backgrounds presently underrepresented in the Australian Screen sector); and
- linguistic diversity (all content would be subtitled in multiple languages).

This extra content would be comprised of longer running series which would attract substantial additional investment from the international marketplace to further grow sustainable Australian production businesses.⁶

Some of SBS's most popular dramas and documentaries have included: *Hungry Ghosts*, *The Hunting*, *Filthy Rich and Homeless*, *Every Family Has A Secret*, *First Contact*, and *Who Do You Think You Are*.

This content makes an impact on social cohesion in Australia beyond its broadcast. For example, *The Hunting* is SBS's most successful commissioned drama to date, and was accompanied by resources for teachers and parents/carers around online safety, particularly aimed at teenagers, in partnership with the eSafety Commissioner.

Another example is *Filthy Rich and Homeless*, SBS's documentary series which has generated a heightened awareness of issues around homelessness, a reported increase in public donations to homelessness causes and charities, and an on-going public discourse on important policy matters.

SBS continues to create content which provokes a national conversation. The recent series *See What You Made Me Do* explored domestic abuse in Australia through interviews with individuals and families. This documentary series also looked at international examples of managing this crisis. The series was supported by teaching resources; community service announcements; and special features across SBS and NITV current affairs programming.

The international success of SBS's drama commissions has led to increasing levels of interest from international partners looking to co-invest in SBS's unique storytelling. These investments have enabled SBS to leverage international funding partners to increase its Australian drama output. This export of Australian content directly benefits the production industry, bringing investment, exposure and additional employment opportunities to Australia's considerable talent, both on and off screen.

Increased drama investment will create more Australian jobs and return increased export value for Australian intellectual property.

Australian content on SBS is generally funded through three streams:

- SBS broadcasting licence fees (funded from SBS);

⁶ SBS submission to the *Supporting Australian Content on Our Screens—Options Paper* (July 2020) https://www.sbs.com.au/aboutus/sites/sbs.com.au/aboutus/files/sbs_submission_-_supporting_australian_stories_on_our_screens_options_paper_final.pdf, pages 1-2.

- tax offset (recouped by the independent producer SBS has commissioned at the end of the project);
- commercial pre-sales (such as in overseas markets); and
- third-party funds (such as funding from screen agencies).

The relative contributions are outlined below in indicative examples for documentary series and drama mini-series. In many cases, the broadcasting licence fees (the contribution from SBS) are the most significant percentage of production funding.⁷

Any additional funds being invested into local content in Australia should support these broadcaster licence fees—in the case of public broadcasters this means sufficient additional base funding or funding from other sources, such as proposed content trust funds. Increases to funding to other players in the content eco-system alone (such as independent producers or organisations like Screen Australia or the Australian Children's Television Foundation), where additional funding is not available for broadcasters to pay licence fees, will not lead to increased content production in Australia.

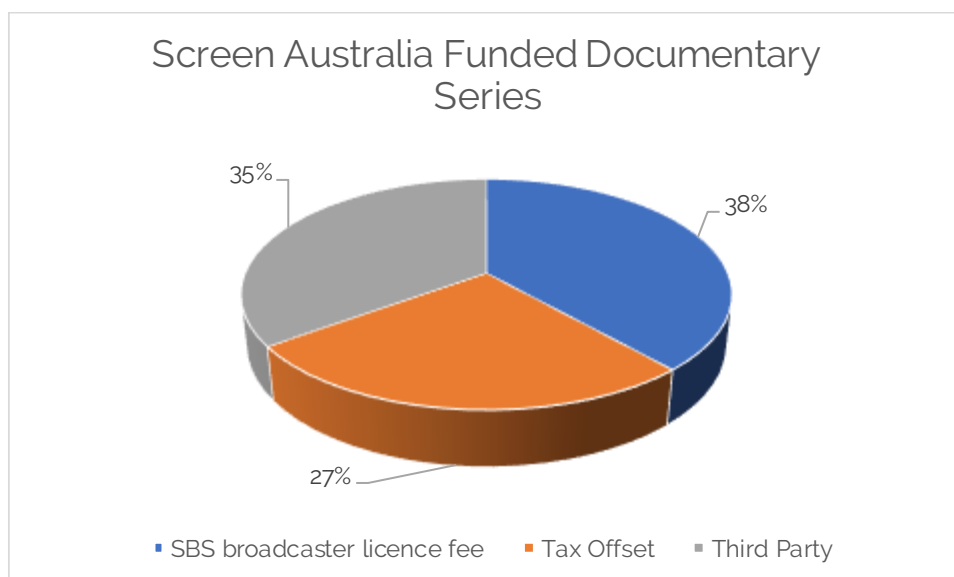


Figure 1—SBS's funding contribution—through broadcast license fees. Third-party funding refers to investments from parties other than SBS, including direct government investments and grants (such as from federal or state screen agencies), distribution advances, philanthropic support and commercial funding. (Source: SBS)

⁷ Broadcast licence fees are the amount payable by SBS to the licensor/producer in exchange for the grant of rights under its licensing and commissioning agreements to broadcast or stream a program.

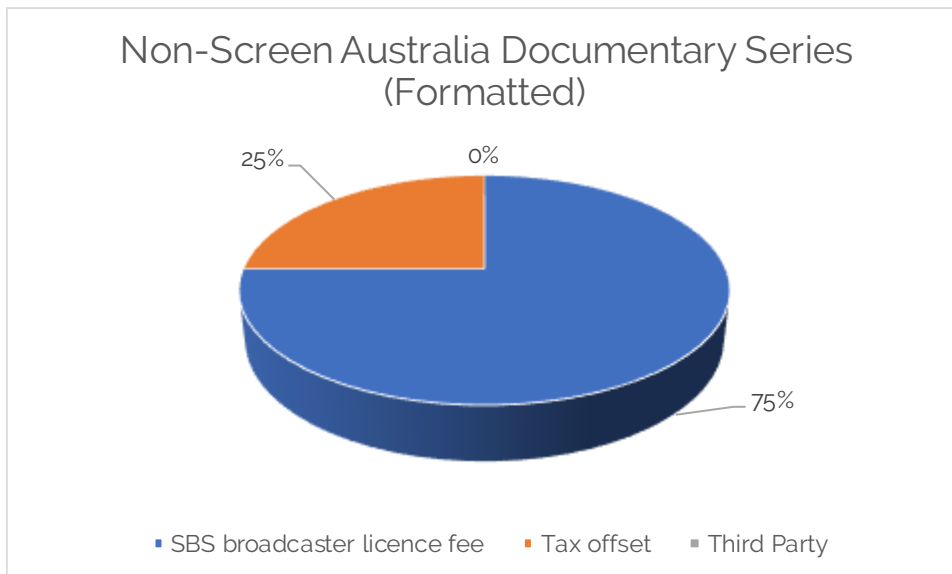


Figure 2— SBS's funding contribution—through broadcast license fees. Third-party funding refers to investments from parties other than SBS, including direct government investments and grants (such as from federal or state screen agencies), distribution advances, philanthropic support and commercial funding. (Source: SBS)

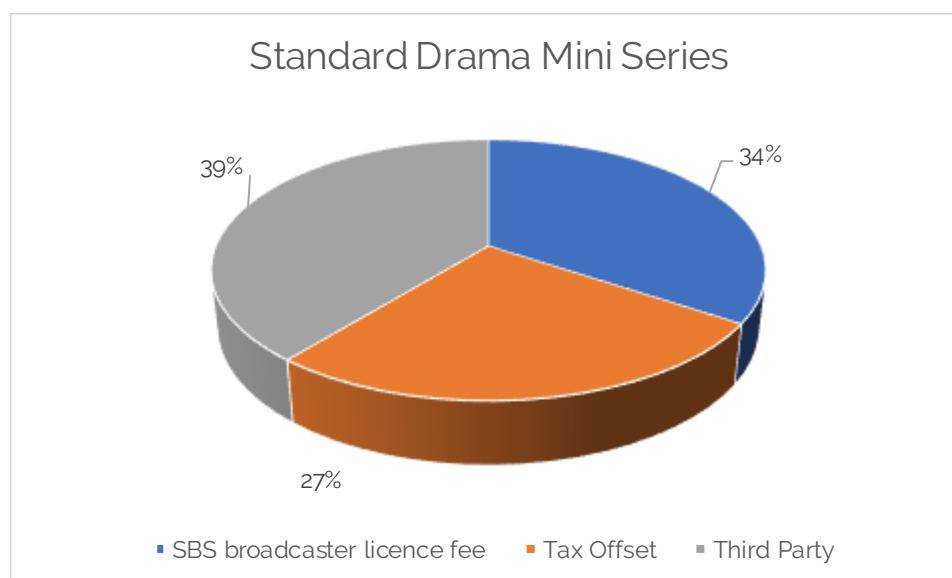


Figure 3— SBS's funding contribution—through broadcast license fees. Third-party funding refers to investments from parties other than SBS, including direct government investments and grants (such as from federal or state screen agencies), distribution advances, philanthropic support and commercial funding. (Source: SBS)

Creating a floor vs increasing investment—while taking account of SBS's Charter obligations

Clarification is required on the policy intention of the proposed introduction of quotas on public broadcasters—whether this be to ensure there is no reduction

to the current level of Australian content; or to increase current levels of Australian content. Any increase to current levels of Australian content will require additional funding as outlined below, and there are options for how this could be applied.

Should the Government instead be seeking to ensure no reduction to Australian content on public broadcasters, then current levels of production should be taken into account. Any such 'floor' should take into account potential variances including content creation costs; supply available through the Australian production industry; audience preferences for content; and SBS's commercial revenues. While SBS invests heavily in the production of Australian content, it is subject to SBS's commercial revenues, which vary year-on-year.

Policy development in this area must also take into account SBS's existing legislative obligations, particularly SBS's Charter obligation to provide multilingual and multicultural broadcasting and digital media services. This consideration is especially relevant when determining the quantum of any SBS Australian content obligation.

Content quotas on SBS

If the policy intention is to create a floor to ensure existing Australian content levels on SBS, then there is no demonstrated need for intervention. SBS has demonstrated its commitment to increase Australian content output where capacity exists within its existing operational budgets, and will continue to do so.

As noted by the Green Paper, SBS already has Charter obligations for its content offering, under the SBS Act. This includes an obligation to 'contribute to meeting the communications needs of Australia's multicultural society, including ethnic, Aboriginal and Torres Strait Islander communities', 'make use of Australia's diverse creative resources' and 'contribute to extending the range of Australian broadcasting and digital media services, and reflect the changing nature of Australian society, by presenting many points of view and using innovative forms of expression'.⁸

The Green Paper also notes that,

'[a]n Australian programming obligation for the national broadcasters would put a floor under the national broadcasters' commitment to producing and screening this content, codifying what they already do...[a]n obligation to provide Australian content would cement this role and provide greater certainty to the Australian production sector over time. It would also provide support for additional domestic and international co-productions, particularly when aligned with the proposed investment obligation for SVOD and AVOD services operating in Australia.'⁹

SBS is committed to producing and commissioning unique Australian content in fulfilment of its legislative Charter obligations. As an efficient and effective organisation, SBS already commits a significant proportion of its funding to Australian content. In recognition of this, and to preserve the editorial independence which is vital to SBS's role as a public broadcaster, content quotas to place a 'floor' on output are unnecessary.

⁸ SBS Charter <https://www.sbs.com.au/aboutus/sbs-charter>

⁹ Green Paper, page 38.

However, if the policy intention is to grow Australian content on SBS, then further funding would be required to support this outcome. A discussion of the preferred mechanisms and formula for growing Australian content on SBS is below.

Quota Mechanism—‘How’

Increasing Australian content levels on SBS via base and/or tied funding (preferred)

SBS has consistently stated¹⁰ its ambition and desire to create more Australian content, however further funding is required to do so. SBS has previously argued that it can accept fully-funded quotas with sufficient flexibility, while maintaining independence on content decisions.

SBS allocates its funding across its services on television, radio and online. These include news and current affairs services in 63 languages; SBS On Demand; and professional development programs for diverse and emerging Australian screen practitioners. Any television content obligation that exceeds SBS's current output, without increased funding, would put these existing services at risk.

Additional base funding would provide the greatest flexibility for SBS to allocate content investment according to audience data and preferences. Additional tied funding provided to SBS for the purpose of creating new Australian content, without introduction of new legislative obligations, would also achieve the desired outcome of increased Australian content, and stimulation of the production industry, while retaining editorial flexibility and independence across both genre and platforms.

Some SBS initiatives for emerging screen practitioners, for example, are specifically designed as content for the SBS On Demand platform—for example, *The Tailings*, filmed in Tasmania. It would be detrimental to the diversity of SBS's content investments if new content quotas were set in a way that did not facilitate or support such innovation.

Any new content funding must be sufficient to allow for expected increases in production costs. Direct funding to SBS (rather than funding through a screen agency or trust) would also provide certainty to ensure that SBS is able to fund the broadcaster licence fee for commissioned productions.

Tied funding

SBS is an efficient and effective Australian FTA network.¹¹ Any incremental tied funding given to SBS to commission local content would be directly invested in Australian production companies, including companies in regional and rural Australia.

Funding tied to Australian content production, rather than a legislative obligation, would achieve the policy outcome of increasing Australian content production while preserving SBS's statutory independence¹² as to the genre,

¹⁰ Content Options Paper, Convergence Review, previous funding submissions.

¹¹ SBS Annual Report 2019–20.

¹² Section 13 of the SBS Act states that (1) Except as otherwise provided by or under this or any other Act, the SBS and its Board are not subject to direction by or on behalf of the Commonwealth Government. (2) Section 22 of the *Public Governance, Performance and Accountability Act 2013*

production and delivery of content. It would provide flexibility for SBS to meet evolving audience expectations and preferences, enable innovation in screen content, and account for SBS strategic content priorities and market forces/pressures in the content production sector.

Statement of expectations

If a more structured approach to content quotas is determined by Government, then a statement of expectations, such as that proposed for SVODs and AVODs would be preferable to a legislative obligation.¹³

As noted below, an expenditure expectation, based on SBS's current proportion of content expenditure, would be significantly preferable to an hours-based obligation.

Should the public broadcasters, with additional, sufficient funding, still not meet the requirements of the statement of expectations, then alternatives may be considered.

An example of where this framework has worked effectively is the current Government expectations around the provision of audio description on SBS and ABC services. These arrangements ensure that SBS and ABC commit to using the funding solely for audio description purposes, without making amendments to the Acts of the organisations.

This has resulted in both organisations far exceeding the expectation in terms of hours of content with audio description, and very positive feedback from community, demonstrating SBS's commitment to efficiently delivering on its obligations, without the need for legislative amendment.

Legislative obligations/SBS Act

Legislative obligations would be the least preferred mechanism for content quotas, particularly if they are very prescriptive on matters such as genre.

This is because legislative obligations tend to be relatively inflexible in response to audience or market changes, and depending on the level of prescriptiveness, may impact editorial independence and flexibility. Co-regulatory approaches are preferred in the broadcasting sector, as set out in a range of Departmental and ACMA papers.¹⁴ Any quota imposition would also need to ensure compliance

(which deals with the application of government policy to corporate Commonwealth entities) applies in relation to the SBS and its Board to the extent that a government policy order mentioned in that section does not affect the content or scheduling of programs.

¹³ The Green Paper states that 'Under this proposal, the Minister would have the power to implement a formal expenditure obligation on SVOD and AVOD services that met the eligibility thresholds but did not meet their expected expenditure obligation over two consecutive years. This construction would be designed to provide SVOD and AVOD services with the opportunity to contribute to the commissioning and acquisition of Australian content, without facing any threat of regulatory sanction or penalty. However, if they fail to meet this threshold over a set period, the Minister would have the power to impose a formal regulatory obligation on the service.' (page 32)

¹⁴ For example, in 2014 the Department of Communications (as it then was) published *Regulating harms in the Australian communications sector – Observations on current arrangements*, a policy background paper which noted that the telecommunications and broadcasting legislative frameworks both enunciate a preference for co-regulation, and that there is an industry-wide assumption that co-regulation should be the first port of call when new concerns emerge (*Optimal conditions for effective self- and co-regulatory arrangements*, 2015 edition—available at <https://www.acma.gov.au/-/media/Regulatory-Frameworks-and-International-Engagement/Report/PDF/Optimalconditions-for-effective-self-and-co-regulatory->

with the United States-Australia Free Trade Agreement (**AUSFTA**) entered into force on January 1, 2005. It is arguable that the AUSFTA precludes the imposition of a formal quota on SBS, given it is a hybrid funded terrestrial FTA public service broadcaster established as an independent statutory authority under the *Special Broadcasting Service Act 1991*. Nevertheless, an increase in Australian content output for SBS could still be achieved via additional funding (including tied funding) or a statement of expectations.

Quota structure—'What'

Type of content

The Green Paper notes that the obligation could '...require the provision of specific genres of Australian content, such as Australian drama, children's content and documentary programming.'¹⁵

Genre-specific obligations are considered particularly undesirable as they limit SBS's capacity to respond to evolving audience and market variances. In the 2020–21 financial year, approximately 30 per cent of SBS's commissioning budget is directed towards local Australian drama, and a further 50 per cent is directed to factual content, with commissions in the genres of food and entertainment making up the remainder of the commissioning budget.

Retaining flexibility in relation to genre is also consistent with SBS's statutory and editorial independence.

SBS is committed to providing a wide range of content for Australian audiences. Importantly, there should be no obligation for Australian content put into place specific to SBS's multichannels (NITV, SBS Food, SBS World Movies, SBS VICELAND) or SBS On Demand. Each of these channels/platforms has specifically curated content from Australia and overseas, and the introduction of Australian content requirements on these channels would dilute the special nature of these services and the programming which they provide.

Type of obligation

The Green Paper proposes a number of ways in which a quota could be structured—including alignment with obligations on other industry players.

'The proposed obligation could require the ABC and SBS to provide, or invest in, new Australian programming, defined in a broad sense. This would be consistent with the obligations imposed on commercial television broadcasting licensees to broadcast 55 per cent Australian programming between 6 am and midnight. An alternative would be for the obligation on the national broadcasters to require the provision of specific genres of Australian content, such as Australian drama, children's content and documentary programming. In this regard, it would be relevant to accommodate the differing roles of the ABC and SBS, with the former having a broader remit and the latter having a primary focus on the provision of multilingual and multicultural content.'¹⁶

'There are a number of ways in which the obligation could be structured, including a quota or broadcast requirement, as is the case with the commercial television broadcasting licensees. Alternatively, the obligation could be focused on the level of investment in Australian programming, supported with discoverability requirements to make sure that the programming is made available to as wide an audience as possible across both broadcast and online.

[arrangements-2015-edition.pdf?la=en](#)). See also the ACMA's *Optimal conditions for effective self- and co-regulatory arrangements* papers, and the *Review of the Australian Communications and Media Authority – Final report*.

¹⁵ Green Paper, page 37.

¹⁶ Green Paper, page 37.

The latter would be more aligned with the existing expenditure requirements on subscription television broadcasting licensees and channel providers, and the proposed investment requirement for SVODs.¹⁷

Should a quota be introduced on SBS (whichever the means), there are two possible formats it may take—a time-based quota, or an expenditure-based obligation.

SBS strongly favours an expenditure-based quotas (based on a proportion of overall expenditure on content).

These could codify SBS's current content expenditure (with reasonable variances to account for commercial revenue fluctuations); or an increase to content expenditure in proportion to revenue, with additional tied funding.

Time-based quotas would not be fit-for-purpose

SBS does not support time-based content quotas (that is a set number of broadcast hours of Australian content per day) as they do not reflect the multi-platform nature of contemporary media. A focus on broadcast hours does not take into account the growing audiences consuming content on digital platforms.

SBS On Demand has over 9 million registered users¹⁸. Digital consumption is growing at a rate faster than the linear decline¹⁹, meaning SBS is connecting with more people than ever before through this platform. Digital initiatives also provide an invaluable training group for creatives in the industry, such as the successful 2021 production of *The Tailings*²⁰.

Time-based content quotas also fail to take into account changes in the cost of content production, the need for diversity of content genres across Australian screens, and the specific requirements of the SBS Charter. A blunt time-based quota also does not account for the substantially lower operating cost base of SBS when compared with other metropolitan FTA broadcasters (including the ABC).

SBS currently delivers approximately 25 per cent Australian content (on SBS main channel, from 6am to midnight). An obligation of 55 per cent, aligning with commercial networks would require SBS to more than triple its commissioned content in order to meet this obligation.

As the screen industry recovers from COVID-19, SBS is experiencing an increase in content production costs. Estimating future content production costs is challenging, and any funding based on 2021 production costs may not be sufficient to reach a similar time-based quota in future years, or may result in the production of simpler format content in order to acquit a quota requirement.

Obligations must contemplate differences in broadcasters

SBS is a unique public broadcaster in terms of both its funding model and legislative Charter obligations.

SBS is a hybrid-funded broadcaster, deriving its funding both from the Australian Government and through commercial activities. The majority of SBS funding,

¹⁷ Green Paper, page 37.

¹⁸ Internal SBS data.

¹⁹ *SBS Annual Report 2020*, page 6.

²⁰ SBS's diversity initiatives in relation to the production of content, are available here: <https://www.sbs.com.au/aboutus/content-initiatives>

around 70 per cent, comes from Government appropriation. The remainder of SBS's operating budget comes from commercial activities, including advertising and sponsorship.

SBS also operates a broad range of services on a budget that is much smaller than other broadcasters. By way of example, in 2019–20, SBS received a total appropriation of \$290.054 million from the Australian Government.²¹ By contrast, the ABC was allocated \$1,062.3 million in the April 2019 Federal Budget.²²

Differences between the SBS and ABC Charter obligations must also be taken into account. As noted above, SBS's Charter sets out its principal function of providing multilingual and multicultural programming. SBS is proud to be increasing its output of multilingual content, including versions of its local commissions subtitled in a range of languages other than English. However, SBS will always need to acquire overseas content, including content in languages other than English, to acquit its Charter obligations. This is not a relevant consideration for the ABC whose Charter obligations are more general.²³

Any quota obligations must take both the funding and Charter differences between SBS and the ABC into account—one size does not fit all in this context. In particular, it would not be equitable for SBS to have imposed on it an Australian content obligation that is equivalent to that of the ABC when the ABC receives more than three times the level of Government support that SBS receives. Comparison to levels of Australian content required of metropolitan commercial broadcasters must also take into account SBS's substantially lower operating budget.

Alignment of obligations across the industry

The Green Paper suggests that,

'[a] key objective would be to develop an obligation that is as consistent as possible with Australian content requirements imposed on other sectors of the industry, or are proposed, as in the case of SVOD and AVOD services.'²⁴

Establishment of a consistent quota obligation across sectors of the industry would not be appropriate for the diverse Australian media industry. For SBS to meet the 55 per cent local content quota (6am to midnight) currently in place for commercial networks, additional direct funding to SBS of over \$160 million per annum would be required, for implementation on SBS main channel only.

Furthermore, a review of commercial television schedules, shows for example that over 50 per cent of the Australian content quota on Networks 7, 9 and 10 main channels, is achieved through the morning shows which are high volume and inexpensive to produce per hour, relative to commissioned drama or factual programming (*Sunrise*, *The Morning Show*, and *Studio 10*).

²¹ *SBS Annual Report 2020*, page 76, available at https://www.sbs.com.au/aboutus/sites/sbs.com.au/aboutus/files/sbs_annual_report_2019-20_final.pdf

²² *Australian Broadcasting Corporation Annual Report 2020*, page 116, available at <https://about.abc.net.au/wp-content/uploads/2021/02/Annual-Report-2019-2020-UDATED.pdf>

²³ The ABC Charter includes the obligation, among other things, to broadcast programs that contribute to a sense of national identity and inform and entertain, and reflect the cultural diversity of, the Australian community; and, broadcast programs of an educational nature—available at <https://about.abc.net.au/how-the-abc-is-run/what-guides-us/legislative-framework/>.

²⁴ Green Paper, page 37.

As shown below, a time-based Australian content quota on SBS main channel aimed at achieving equivalence with the commercial networks may displace this important multilingual content and conflict with SBS's Charter. It will also result in less diversity of content across Australian screens during the day, which is not aligned with paragraph 6(2)(g) of the SBS Act, requiring SBS to contribute to the overall diversity of Australian television and radio services.

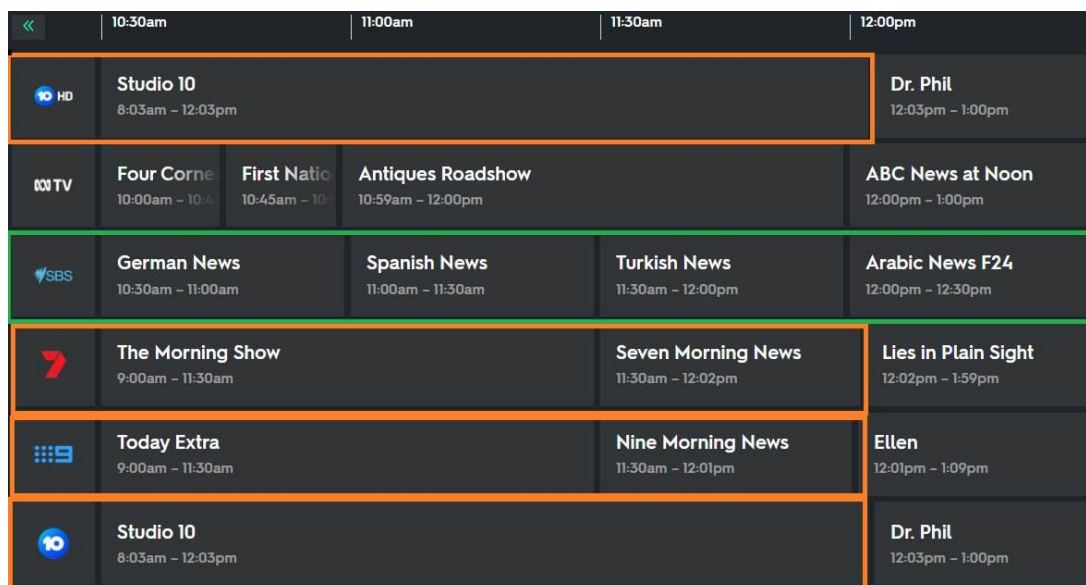


Figure 4—daytime main channel schedule from 11 May 2021 demonstrating that, in fulfilment of a time-based Australian content quota, the weekday morning schedule of commercial FTA networks includes long-format news, entertainment, and panel conversation programs. During the same period SBS main channel broadcasts four international news bulletins in fulfilment of its Charter.

The proposed obligation on subscription television is for 5 per cent of content spending on drama channels to be on new local drama (reduced from the existing level of 10 per cent). As SBS does not have a drama channel, this is not directly comparable. It should be noted, however, that over 30 per cent of SBS's commissioning budget is directed towards local Australian drama, so it is unlikely that imposing a requirement of this sort on SBS would result in any additional investment in the Australian screen production industry.

Likewise, while the Green Paper does not set a content target for SVODs and AVODs, it does suggest that 5 per cent of revenue may be an appropriate target²⁵. SBS already far exceeds this, so the implementation of this quota would not result in any further investment in the Australian screen industry.²⁶

Obligation models and their impact on SBS (in order of preference)

<i>Quota mechanism ('How')</i>		
Model	Positive impacts on SBS	Negative impacts on SBS

²⁵ 'As a guide to a potentially appropriate level, the Government has recently announced that the expenditure requirement for subscription television broadcasting licensees and channels under the New Eligible Drama Scheme (NEDE) would be set at five per cent.' Green Paper, page 32.

²⁶ A revenue-based model for SBS is not appropriate, given its hybrid-funding model.

1. Additional base funding for SBS	<ul style="list-style-type: none"> • Additional Australian content made available on SBS services • Australian audiences served according to their needs and preferences • Does not impact SBS editorial independence 	<ul style="list-style-type: none"> • None
2. Additional tied funding for SBS <i>(Like existing audio description funding)</i>	<ul style="list-style-type: none"> • Additional Australian content made available on SBS services • Does not impact SBS editorial independence 	<ul style="list-style-type: none"> • Some constraints on SBS in deciding on how best to serve audiences
3. Statement of Expectations <i>(As applied to entities like the National Broadband Network (NBN) and the ACCC, and proposed for SVODs)²⁷</i>	<ul style="list-style-type: none"> • Potential for additional Australian content to be made on SBS services, if accompanied by sufficient funding 	<ul style="list-style-type: none"> • If sufficient funding is not provided, existing SBS services could be lost, to achieve expectations • Risk that Government expectation perceived to impact editorial independence, especially if expressed with specificity
4. Legislative obligation	<ul style="list-style-type: none"> • Potential for additional Australian content to be made on SBS services, if accompanied by sufficient funding 	<ul style="list-style-type: none"> • Specific programming directions may impact editorial independence • Potential for negative impact on, or loss of, other SBS services due to diversion of funding to acquit obligation
Quota formula ('What')*		
Model	Positive impacts on SBS	Negative impacts on SBS
5. Expenditure-based obligation <i>(As applied to subscription television licensees)</i>	<ul style="list-style-type: none"> • Potential for additional Australian content to be made on SBS services 	<ul style="list-style-type: none"> • Specific programming directions may impact editorial independence • Potential for negative impact on, or loss of, other SBS services due to diversion of funding to acquit obligation

²⁷ <https://www.communications.gov.au/publications/nbnstatementofexpectations>;
<https://minister.infrastructure.gov.au/fletcher/media-release/statement-expectations-issued-accn-new-telecommunications-environment>

<p>6. Hours-based obligation</p> <p><i>(As applied to commercial FTA television licensees)</i></p>	<ul style="list-style-type: none"> • Potential for additional Australian content to be made on SBS services 	<ul style="list-style-type: none"> • Specific programming directions may impact editorial independence. • Negative impact on other SBS services • Risk to SBS of increased cost of production • Potential for an increased repeat ratio to meet the quota • Does not take into account digital services
<p>7. Genre based obligations</p>	<ul style="list-style-type: none"> • Potential for additional Australian content to be made on SBS services 	<ul style="list-style-type: none"> • Specific programming directions may impact editorial independence. • SBS limited in its ability to react to changing audience needs

Table 1—Obligation models and their impact on SBS (in order of preference)

* **Note:** Any quantum (hours or expenditure) must be set taking into account SBS's Charter, operating budget/appropriations and existing content levels

VI. Discoverability requirements

SBS strongly supports the discoverability of Australian content on broadcast and digital platforms. SBS takes great pride in its locally-commissioned Australian content, and the organisation strongly promotes this content, committing around two-thirds of its off-channel marketing spend to it. Given SBS already strongly supports Australian content in its promotional activity no obligations are required. SBS On Demand features 'SBS Originals'—exclusive Australian, locally-commissioned content. This content is featured on the SBS On Demand landing page to help audiences find this content, and makes prominent local stories and local voices.

However, 'discoverability' covers more than just the home page of a digital service. Being able to provide search, recommendations and personalisation based on consumer data and viewing preferences is also a key part of discoverability, and SBS's ability to provide this is reliant on the login feature to SBS On Demand.

On broadcast television, SBS's locally commissioned content is scheduled for prime time (6pm to midnight), to ensure it reaches the widest possible audience.

While SBS has control over discoverability on its own platforms, Australians are watching content on more devices and more platforms than ever before. A report from Venture Insights in February 2021 found that 'TV remains the most ubiquitous device to watch video. Almost all households surveyed had one or more TV sets. 88 per cent of the households also watch video on PC(s), 65 per cent on Tablet(s) and 88 per cent on Smartphone(s)'²⁸.

The Australian Competition and Consumer Commission's *Digital platform services inquiry Interim Report (March 2021)* found that there is a risk of self-

²⁸ Venture Insights, *Video viewing survey: household consumption across formats to remain stable in the near future*, February 2021.

preferencing on platforms owned by major digital services. For example, the ACCC found that:

- 'First-party apps benefit from being pre-installed or set as defaults
- First-party apps reportedly benefit from greater discoverability on the app marketplaces
- First-party apps benefit from greater access to functionality, or from a competitive advantage gained by withholding access to device functionality to rival third-party apps.²⁹

VII. Availability and access to services must form part of any reform agenda

SBS supports requirements to ensure that local Australian content, particularly that produced by Australian public broadcasters, with public funding, is not just discoverable but also available across platforms and devices it does not control.

With significant consumption of streamed content from Australian broadcasters, including SBS, occurring on CTVs, it is now a matter of policy urgency to ensure that these large international technology firms play their part in ensuring Australian audiences have ready access to content and services funded by their taxes to reflect Australian culture.

Manufacturers of CTVs should ensure that public broadcaster apps are prominently positioned within the user interface, and should be required to do this if necessary. Public broadcaster content should also be carried on these marketplaces and forums without charge.

This is a policy concern being addressed in other jurisdictions already. A relevant example is the United Kingdom's must carry regime and associated Code of Practice for Electronic Program Guides (**EPGs**), recommended in 2019 by the Office of Communications (**Ofcom**) in relation to the country's public broadcasters.⁴

SBS's position on the need for prominence requirements for connected televisions is set out in its submission to the ACCC inquiry into App Marketplaces.³⁰ SBS's view is that device and app marketplace providers should not restrict Australians' access to public broadcaster apps including because:

- public broadcasters are wholly government owned institutions providing services for the benefit of taxpayers in line with identified public policy objectives; and
- taxpayers have invested in the NBN which provides connectivity essential to the use of connected devices, which would otherwise not have been able to achieve nor sustain their level of sales and growth.

CTVs are an increasing mode of consumption for streamed content in Australia and globally. Consumers are purchasing CTVs to watch content made by media providers such as SBS. In addition to bearing all the costs of content production, those media companies are also bearing the entire cost of app development and evolution for the CTV platforms. The assertion by some CTV manufacturers that those media companies must then pay them a share of revenue is unsustainable and requires regulatory intervention. This is particularly the case

²⁹ App Marketplaces Interim Report, page 6.

³⁰ <https://www.sbs.com.au/aboutus/app-marketplaces-issues-paper>

in relation to SBS as a public broadcaster, whose content should be freely and readily available to all Australians.

Australian taxpayers should benefit from unimpeded access to public broadcasting content and services which they have funded. They should, without limitation, be able to access SBS content, including essential public interest journalism and distinctive television and radio content that reflects Australia's diverse multicultural, multilingual and First Nations communities.³¹

VIII. Additional reporting requirements

The Green Paper states that '[t]he Government would also require the ABC and SBS to provide annual data to ACMA on their provision of new Australian content, aligned with the mandatory obligation to provide such content.

Indicatively, this would include information about the genres of Australian programming made available, and the total expenditure on Australian content by genre. As with current or proposed reporting obligations for other sectors of the Australian media industry, the ACMA would publish reports outlining this information where appropriate, taking into account the commercial sensitivity of some data.³²

The SBS Annual Report³³ already provides extensive detail on locally commissioned, and in-house production, of Australian content, including:

'Broadcast hours by genre, run and source (FY2019–20, Appendix 2)

- Languages broadcast (FY2019–20, Appendix 3)
- Cultures represented (FY2019–20, Appendix 4)
- SBS-commissioned programs first run (FY2019–20, Appendix 5)'.

³¹ SBS Submission to Australian Competition and Consumer Commission Digital Platforms Inquiry—March 2021 Report on App Marketplaces—Issues Paper, https://www.sbs.com.au/aboutus/sites/sbs.com.au/aboutus/files/63_final_for_publication_-_sbs_submission_digital_platform_services_app_marketplaces_public_26_oct_2020.pdf, pages 3 to 4.

³² Green Paper, page 40.

³³ SBS Annual Report 2020 <https://www.sbs.com.au/aboutus/sbs-2019-20-annual-report>

SBS Television: SBS-commissioned programs first run

SBS, SBS VICELAND and SBS Food Commissioned First Run Hours Broadcast in FY2019-20¹

Genre/Title	Episodes	Hours
Comedy		
Robbie Hood	1	1.1
Sub-Total	1	1.1
Drama		
Amar ²	1	0.3
Hunting Series 1, The	4	4.3
Molly And Cara ²	3	0.5
Out Of Range ²	1	0.3
Tribunal ²	1	0.1
Sub-Total	10	5.4
Entertainment		
Celebrity Mastermind Series 1	5	5.1
Child Genius Australia Series 2	4	4.3
Eurovision – Australia Decides 2020	1	2.7
Eurovision – Europe Shine a Light	1	2.2
Eurovision 2020: Big Night In!	1	3.1
Mastermind Series 1	45	23.0
Mastermind Series 2	80	40.1
Raw Comedy Festival 2019	1	1.8
Sydney Gay And Lesbian Mardi Gras 2020	2	3.5
Sub-Total	140	85.7
Factual		
Chocolate Factory: Inside Cadbury Australia, The	1	3.0
Country Town Pride	1	1.0
Deafinition ²	1	0.1
Every Family has a Secret Series 1	2	2.0
Filthy Rich and Homeless Series 3	3	3.1
Ghosthunter	1	1.8
Going Places with Ernie Dingo Series 3	13	6.6
Limited Surrender ²	1	0.1
Lives in Action ²	1	0.2
Loop, The ²	1	0.2

Genre/Title	Episodes	Hours
Lost Daylight ²	1	0.3
Love Me As I Am: Untold Australia	1	1.0
Marry Me Marry My Family Series 2	3	3.3
Medicine or Myth? Series 1	2	2.0
Monsters of Many Worlds Series 1 ²	3	0.3
Secret Life of Death, The	1	1.1
Secrets of Our Cities Series 2	3	3.0
Sidelines ²	1	0.2
Small Town Drifter, The ²	1	0.1
Struggle Street Series 3	4	4.1
Turban Legend	1	1.0
Who Do You Think You Are? Series 11	7	7.0
Sub-Total	53	41.2
Food		
Ainsley's Market Menu Series 1	6	5.8
Asia Unplated With Diana Chan Series 1	10	5.0
Bananas Series 1 ²	3	0.3
Cook Like an Italian with Silvia Colloca Series 1	10	5.3
Flavour Swap ²	1	0.2
Gourmet Farmer Series 5	10	5.2
Jimmy Shu's Taste of The Territory Series 1	8	4.0
Loving Gluten Free Series 1	10	5.0
Luke Nguyen's Railway Vietnam Series 1	10	5.0
Sweet Life with Elise Strachan Series 1, The	2	2.0
Sub-Total	70	37.6
Grand Total	274	171.0

1. Excludes network repeats and in house production of News, Current Affairs and Sport (included in Appendix 2).
2. Programs commissioned exclusively for SBS On Demand, with no linear broadcast.

Figure 5—Excerpt from Appendix 5 of the SBS Annual Report 2019–20

Additional SBS reporting is unnecessary, given the rigorous nature of the SBS Annual Report, which meets requirements under the *Public Governance, Performance and Accountability Act 2013* and the SBS Act. While the Green Paper proposes reporting on 'total expenditure on Australian content by genre', the current ACMA reports on *Compliance with Australian Content Standard and Children's Television Standards*³⁴ do not include financial information. However, if

³⁴ <https://www.acma.gov.au/sites/default/files/2020-06/2019-Compliance-with-Australian-Content-Standard-and-Childrens-Television-Standards.pdf>

the Government is minded to impose new reporting requirements which include financial information, they must be suitably aggregated or remain confidential to ensure that SBS is not commercially disadvantaged, and not represent a significant administrative burden.

IX. Content trust funds

Create Australian Screen Trust (CAST)

SBS supports the investment of additional public funds into the provision of Australian screen content such as into the proposed CAST. The Green Paper suggests that 'using a share of the spectrum auction proceeds, the Government could make a one-off deposit to capitalise CAST'³⁵.

The Green Paper notes that the CAST would have two funding pools—'one pool to support projects of cultural significance (that is, broadly the same criteria as are presently used by Screen Australia in determining whether to fund productions)' and 'one pool to focus on making commercial investments (that is, investments where there is a prospect of commercial return)'.³⁶

In order to increase Australian production levels, this funding should be directly distributed to broadcasters to fund broadcasting licence fees, with a portion also being distributed to Screen Australia for direct investment in productions. If the funds are not available to be used for licence fees, then broadcasters will not be able to invest in additional productions, essentially removing them as a funding and distribution stream from new Australian content.

SBS should be able to access funding from the CAST whether or not a new requirement for Australian content is imposed on SBS. Should a requirement be introduced, the criteria for drawing funding from the CAST must be aligned with the requirement (via any mechanism). This will ensure that the funding is directed to achieving the desired policy outcomes.

The proposed structure of the CAST requires further consideration. The Green Paper notes that 'the trustees would be responsible for identifying projects to receive funding'³⁷. While SBS supports the investment of funds from spectrum sale into a trust, from which a percentage is drawn down each year, the addition of a board of trustees has the potential to create an unnecessary layer of administration and expense for this process. Equity investments in production are unlikely to yield positive outcomes for the Trust—funds would be better spent directly on production.

Public Interest News Gathering Trust (PING Trust)

The Green Paper proposes that 'the purpose of the PING Trust would be to provide a capital fund that could be drawn on over time for grant funding to support the provision of newspaper, radio, television and online news services in regional Australia.'³⁸ SBS is not eligible for the current Public Interest News Gathering program³⁹, referred to in the Green Paper, and seeks clarification on whether the same restrictions are expected to apply to this trust.

³⁵ Green Paper, page 27.

³⁶ Green Paper, pages 27–28.

³⁷ Green Paper, page 27.

³⁸ Green Paper, page 28.

³⁹ <https://www.communications.gov.au/what-we-do/television/relief-australian-media-during-covid-19>

The remit of the PING Trust should support the expansion of SBS's regional news gathering services. SBS is uniquely well placed to support Australians in regional Australia through its capability to create unique content which:

- assists with settlement needs specific to regional Australia (for example: through SBS Settlement Guides providing migrants with news and information on available career paths and support services—including health, language and education services); and
- fosters connections between migrants in more remote areas and their established communities.

With additional funding to SBS for regional newsgathering services, these may include but not be limited to:

- recruiting more journalists in regional areas, who would help focus on culturally diverse or First Nations communities in those areas;
- broadening the range of SBS Settlement Guide topics, with more coverage on regional issues; or having specific regional series of the Settlement Guide;
- extending the languages in which the Settlement Guide is available; and
- expanding SBS's in-language web pages to provide more regional content.

Further detail is required on the structure and decision-making processes of the proposed trust.

X. Contribution of SVODs and AVODs

Chapter Six of the Green Paper proposes that '...an Australian content investment obligation could be imposed on SVODs and AVODs that meet certain eligibility criteria.'⁴⁰ Obligations imposed on these commercial entities are a matter for Government, however it should be considered in the context and in proportion to any proposed obligations on the public broadcasters, noting the operating revenue and structures of those SVODs and AVODs.

The Green Paper proposes that '...the obligation would not apply to an individual SVOD or BVOD owned by the holder of a broadcast licence or a subscription television licence.'⁴¹ Any future papers should clarify that SBS On Demand is not captured by this requirement, given its similarities to broadcast licence holders. This is important given SBS operates under legislation, not a licence.

XI. Rationalisation of spectrum use and technology transition

The proposal for spectrum use and technology transition contained in the Green Paper raises a number of concerns for SBS. The proposed framework and technology pathway would:

- require broadcasters to drop services, and/or degrade the picture quality of service to the detriment of the audience;
- focus on MPEG-4, which is a legacy standard of which claimed efficiency benefits have largely been 'banked'; and

⁴⁰ Green Paper, page 30.

⁴¹ Green Paper, page 32.

- fail to provide long-term sustainability for broadcasters because it would neither provide the ability to retain, nor improve or expand channel offerings.

These issues are considered in further detail below. It is also relevant to consider existing contractual arrangements for SBS and the technology assumptions that underpin those arrangements.

Spectrum release is the trigger for change

The Green Paper envisages the move to more efficient use of spectrum for FTA television broadcasting 'which maintain[s] service levels at close to current levels with a minimal impact on viewers.'⁴²

The Green Paper proposes that, '[o]nce two commercial television broadcasting licence holders have elected to transition to a new licence in each commercial television licence area, the Government would then: mandate that the ABC and SBS also move to a shared multiplex arrangement.'⁴³

Through a more efficient use of spectrum, the Green Paper advocates that a second digital dividend in 600 MHz spectrum can be realised, with released spectrum auctioned for other uses, such as mobile broadband. It provides that '[t]he realisation of a viable digital dividend is likely to require the consolidation of the present five multiplexes on to three shared multiplexes as well as using the additional spectrum that is planned for television broadcasting but which is presently unused'.⁴⁴

The Green Paper proposes that the five existing multiplexes are consolidated into three multiplexes in each transmission market—in essence, a '*three everywhere*' model. This consolidation could lead to a sequential consolidation, or repacking as depicted below.

⁴² Green Paper, page 5.

⁴³ Green Paper, page 19.

⁴⁴ Green Paper, page 82.

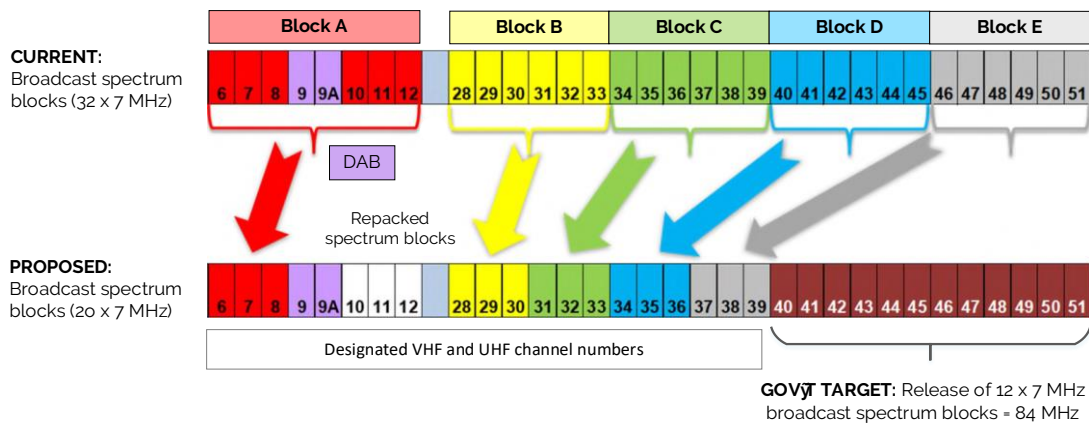


Figure 6—‘Sequential’ repacking of the very high frequency (VHF) and ultra high frequency (UHF) broadcasting service bands (BSB) as proposed in the Green Paper. Purple blocks are reserved for digital radio (DAB) services. (Source: BAI Communications Australia (BAI) & SBS)

However, the technology assumptions on which the Green Paper is predicated are outdated and not fit for purpose. The concept of service equivalence as envisaged in the Green Paper is unattainable using MPEG-4 coding and DVB-T transmission technologies.

To ensure that audiences continue to receive all services at current quality levels, other options must be considered.

Commercial broadcaster decisions

Decisions about any spectrum and technology transition of public broadcasters should not rely on the decisions made by commercial television broadcasting licence holders, as proposed by the Green Paper. SBS must be able to make decisions which best serve its audiences, and ensure that its public funding is used efficiently and effectively; not have its technology future be determined by commercial broadcaster decisions—which will not consider SBS’s operations, audiences or strategy.

Unlike commercial broadcasters, SBS and the ABC will not financially benefit from the proposed licensing scheme/tax relief for reduced spectrum use. SBS pays apparatus licence fees, but does not pay spectrum licence fees like commercial broadcasters.

A range of other relevant considerations must also be taken into account regarding this significant transition, including existing contractual arrangements and underlying technology assumptions.

Impact on audience

Any technology transition and restack/spectrum release must ensure that there is no loss of services, or provision of lower-quality services, for Australian audiences.

The Green Paper states that ‘[t]he changes to transmission arrangements would reduce the broadcasters’ dependence on radiofrequency spectrum for reaching

consumers while maintaining the range of services available to consumers.⁴⁵ However, all options that include multiplex sharing, without an upgrade from DVB-T to DVB-T2, would see a capacity deficit, leading to a loss of services and/or service quality for audiences.

Flexibility must be maintained for the potential addition of new channels to SBS's suite of services, in order to better serve Australian audiences' evolving needs. In addition to providing an important service, SBS's multichannels cross subsidise Australian content production, through the reinvestment of advertising revenue—so their retention is important to the operation of SBS's business model.

Currently, NITV and SBS Food are provided exclusively in Standard Definition (**SD**) in MPEG 2, while SBS main channel is also simulcast in SD. SBS audiences would benefit from having all services available in High Definition (**HD**) with enhanced audio capabilities for certain channels (for example, surround sound Dolby audio). This would provide a better quality of service, and would align SBS broadcasts with the quality of service offered by streaming platforms.

At the same time, it is important to recognise the ongoing importance of SBS's SD services. While there is a need for the Government to conduct research of reception equipment currently used in Australia, it is understood that many audience members have not yet transitioned to technology which allows for reception of high definition broadcasts. SBS is committed to being an accessible broadcaster, and will only make a full transition to HD broadcasting when it is appropriate for our audiences. Sufficient spectrum capacity is required for this transition.

Major changes to broadcasting spectrum will trigger technology changes that will have greatest impact on older consumer equipment, and may prevent individual audience members from accessing SBS content. Risks include:

- **Obsolescence risk:** video coding changes required to optimise SBS content and genre range in a reduced capacity environment will not be decodable by all older receivers, and may not be decodable by some newer receivers.
- **Functionality risk:** if broadcasters move to a shared multiplex, older receivers may not be able to access 'navigation signalling' alerting receivers to all available services.

Should the Government be minded to pursue wholesale transition to new transmission and compression technology, funding would be required for the Australian public to upgrade their home technology⁴⁶—this is particularly true for people living on low incomes and experiencing disadvantage (who may also not have reliable or affordable broadband access for online alternatives). This would also require a long lead-time, in order to educate audiences around the changes and requirements.

⁴⁵ Green Paper, page 20.

⁴⁶ The Government has previously provided support of this type to eligible households to assist viewers convert to the Viewer Access Satellite Television (VAST) scheme, and provided support for consumers as part of the Digital Switchover Taskforce as part of the first BSB spectrum restack.

Major changes to broadcasting spectrum also risk larger-scale issues, which will adversely impact audiences, including:

- **Interference:** if broadcasting spectrum is reassigned to mobile broadband (**MBB**) it has the potential to cause significant interference as 600 MHz base stations are progressively rolled out into urban and suburban areas.
- **Digital divide:** there is potential for differentiation of service offerings between 'metro' and the 'regional' dependent on the extent of released spectrum and the chosen multiplex sharing arrangements. As a result, there may not be equitable availability/allocation of spectrum, and equitable availability of services to all Australians regardless of where they live. Spectrum model choice would see a trade-off between aggregate multiplex capacity and digital dividend release. It will also be important for the Government to confirm the future availability of the Viewer Access Satellite Television (**VAST**) services for relevant regional and remote audiences as part of the next stage of the Green Paper media reform process.

Consumer expectations

Consumer demand for improved picture quality is driving the sales of high definition display devices, where '4K' is generally the entry level and '8K' displays are entering the Australian market.^{47, 48}

FTA services require additional capacity in the Broadcasting Services Bands (**BSB**) to evolve and keep pace with competitor platforms offering over-the-top streaming services—and maintain viability in the longer term.

The transition from analogue to digital television brought material advantages to the audience and broadcasters alike including quality enhancements, program navigation and interactive program-related information. Until recently, these enhancements broadly enabled FTA broadcasters to maintain pace with competitor developments, from SVOD and over-the-top (**OTT**) services, but more recently that gap has widened with the introduction of 4K and progressive scanned (for example, 1080P) streamed services. FTA broadcasters need to be able to continue to meet audience expectations, as set by OTT services.

XII. The current SBS multiplex

Each FTA broadcaster has exclusive use of a DVB-T multiplex and uses 23 Mbps of capacity over BSB spectrum to deliver its suite of services to Australian audiences. SBS utilises almost 99 per cent of its total multiplex capacity (of 23 Mbps) for program services (including audio description and captioning) and other essential components of the digital broadcast (such as Service Information (**SI**) and overhead).

⁴⁷ AP News press release <https://apnews.com/press-release/pr-businesswire/f4f288d609274a5db9eb72c986d0d203>; GfK (2019) <https://www.gfk.com/press/4k-is-becoming-the-standard-for-todays-tvs>

⁴⁸ Samsung, TCL, LG, Hisense 8K tvs available at major Australian electrical retailers (May 2021).

Currently SBS is the only FTA network to provide three HD services. Unlike the commercial FTA television broadcasters, SBS (and the ABC) carry radio services in the television multiplex.

SBS service	Video format	Audio format	Audio Description
SBS main channel	MPEG-4 HD	MPEG-4	Yes
SBS main channel (simulcast)	MPEG-2 SD	MPEG-2 ⁴⁹	Yes
SBS VICELAND	MPEG-4 HD	MPEG-4	Yes
SBS Food	MPEG-2 SD	MPEG-2	No
NITV	MPEG-2 SD	MPEG-2	Yes
SBS World Movies	MPEG-4 HD	MPEG-4	Yes
SBS Radio (x7)	N/A	MPEG-1, Layer II (x5) HE AAC v2 (x2)	N/A

Table 2—Content formats and components of the current SBS multiplex

A more detailed breakdown by service component (video, television audio, radio, subtitles and SI) and capacity allocation is presented at **Appendix A**.

Significant MPEG-4 efficiency benefits already realised

The Green Paper states that 'the relative costs and impacts of transitioning to new spectrum and broadcasting arrangements would likely be minimised if broadcasters provided services using the existing DVB-T standards coupled with the MPEG-4 compression technique, which is already used by all broadcasters for a subset of their channels.'⁵⁰

Since the commencement of digital television services in January 2001, the Australian regulatory framework has evolved to enable carriage of a greater number of services. In addition, parallel technological advances during the period have enabled broadcasters to provide more services within their available capacity at the same or improved level of picture definition.

SBS has taken significant advantage of this evolution and has already banked many MPEG-4 conversion efficiency benefits, as summarised at **Appendix B**, in particular, the capacity to provide more services and service enhancements (such as more HD services) than other broadcasters. For its current portfolio of services, with significant use of legacy MPEG-4 and DVB-T standards, SBS is already exploiting the full capacity of its multiplex at the highest levels of efficiency.

Further channel transitions to MPEG-4 would marginally reduce SBS's capacity use (by approximately 2.6 Mbps). However, the implementation timing of such change would need to consider the impact on viewers without an MPEG-4 capable receiver.

⁴⁹ Provided as MPEG-1, Layer II.

⁵⁰ Green Paper, page 25.

XIII. Shared multiplex scenarios—capacity implications

Even with a move to DVB-T2 technology, complete transition to MPEG-4 would not free-up sufficient spectrum for the Government to achieve its digital dividend goals without a diminution of services and/or quality for audiences. In addition to DVB-T2, HEVC coding must be a key component of the technology evolution.

The Green Paper envisages a consolidation of the present five exclusive broadcaster multiplexes into a shared multiplex configuration. It proposes the use of MPEG-4 coding and retaining the current DVB-T transmission standard in three radio frequency blocks, each of 7 MHz; a '**five-into-three**' multiplex scenario in each transmission area.

This five-into-three configuration can be realised in a number of ways as depicted below, including:

- **Option 1** depicts the scenario envisaged in the Green Paper where two commercial broadcasters share a multiplex and the national broadcasters share a second multiplex.⁵¹ This option would be notably inequitable as one broadcaster would fully retain its current capacity whilst others are reduced to 50 per cent capacity.
- **Option 2** depicts an equitable allocation of capacity between the broadcasters, although the per-broadcaster allocations could be distributed differently across each of the three multiplexes whilst maintaining an equitable split. Fragmentation of the multiplex can introduce material losses in overall spectrum efficiency unless managed in a holistic manner. Furthermore, multi-party sharing of a multiplex introduces increased complexity and costs. An outline explanation of these factors is provided at **Appendix C**.

Other sharing scenarios are technically feasible and would yield greater capacity as described in the Alternative Solutions section below.

⁵¹ Green Paper, page 18.



Figure 7—Multiplex configuration scenarios: current and example 'five-into-three' options (Source: SBS)

If SBS were to convert its remaining MPEG-2 services to MPEG-4 (SBS Food and NITV), and discontinue the SBS main channel MPEG-2 simulcast service, the aggregate capacity requirement would reduce from 23 Mbps to approximately 19.5 Mbps. However, the capacity benefit achieved would fall well short of what is required to facilitate the multiplex sharing scenarios and realisation of service equality foreshadowed in the Green Paper. This solution therefore does not meet the Government's objectives.

A *five-into-three* shared multiplex configuration (all MPEG-4, DVB-T) would result in a capacity shortfall of approximately 5.7 Mbps (or 41 per cent of an equitable share of multiplex capacity⁵²) for SBS and would necessitate a reduction in the SBS portfolio of services and/or a material reduction in the service quality (for example, from HD to SD).

Under the scenario envisaged in the Green Paper (all MPEG-4, DVB-T) and assuming an equitable capacity split, SBS sharing a multiplex with the ABC—a *two-into-one* shared multiplex configuration—would result in a capacity shortfall of approximately 8 Mbps (or 69 per cent of an equitable share of multiplex capacity) for SBS; the worst-case scenario outcome for SBS.

Both the *five-into-three* and *two-into-one* scenarios are depicted in the figure below.

A number of service enhancements, currently offered, or planned, would also be restricted, including:

- Improved audio-visual experience: higher definition video (planned), surround sound (planned);

⁵² Equitable capacity share allocation is 13.8 Mbps per broadcaster; 41% of 13.8 Mbps = 5.7 Mbps.

- Accessibility services: captioning (current) and audio description (current); and
- Additional services, including new channels

The application of this MPEG-4 'efficiency gain' is incongruent with the objective of 'service equivalence' envisaged by the Green Paper.⁵³

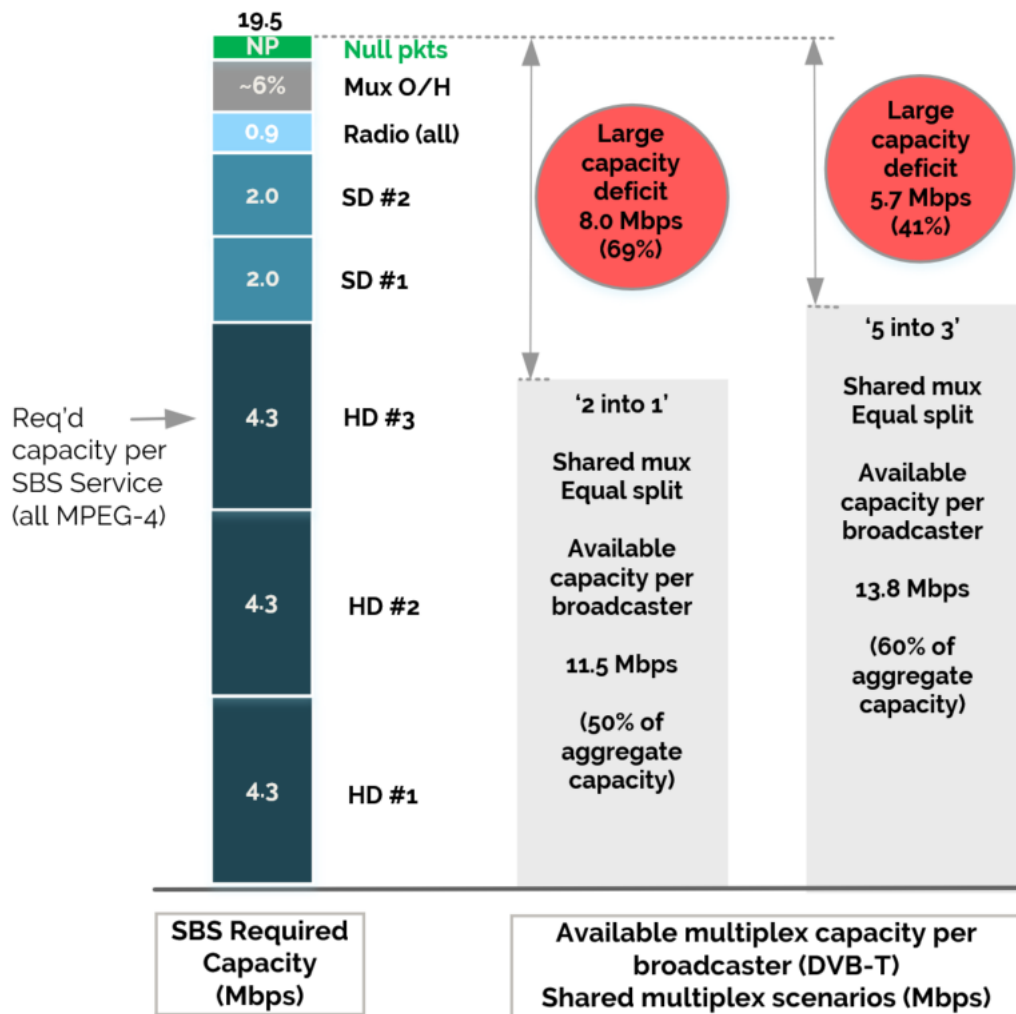


Figure 8—Shared multiplex capacity impacts on SBS (current portfolio of services, less simulcast) under a DVB-T scenario—all services encoded as MPEG-4 (Source: SBS)

The two scenarios, are predicated on no loss of multiplex efficiency, secured through the adoption of holistic multiplex management methods as described at **Appendix C**.

Australian digital television (DTV) receiver standard—legacy risks

It is not known how the established footprint of Australian based in-home receivers would behave on receipt of shared multiplex transmissions.

⁵³ 'Service equivalence would be an objective but broadcasters would have flexibility in terms of the services they provide'—page 22.

Although the UK adopted the DVB-T standard in around 1996, there were a number of material differences in the 'local' implementation of the standard, compared to the DVB-T adoption made by Australia some two years later.

The UK adoption was predicated on a shared-multiplex from the outset for its public broadcaster service (**PBS**) multiplexes, together with a regulatory requirement to 'cross-carry' the SI of all other multiplexes (five) to ease receiver navigation and shorten the electronic programming guide (**EPG**) refresh time. The UK implementation included a 'bouquet allocation table' (**BAT**) to facilitate receiver functionality in the correct display of each network's services within the shared multiplex.

The Australian adoption of DVB-T did not include the BAT from the outset and this functionality is excluded from the Australian receiver standard. Some test streams have recently been developed by the industry to simulate shared multiplex signals with corresponding SI. However, at this stage, with testing across a very limited population of consumer electronic devices, it is too early to form a conclusive view of legacy receiver performance risks.

The Government and industry must gain a better understanding of the behaviour of legacy receivers in simulations of possible future transmission and compression scenarios, and more generally in response to shared multiplex transmissions. Otherwise, widespread disenfranchisement of the viewer base remains a material risk in any broadcast technology transition.

Consumer electronics devices are generally manufactured in compliance with the existing Australian Standard (AS4933) as updated, to warrant functionality, although the standard is not mandated.⁵⁴

SBS estimates that a minimum lead time of three years is required between the update of a receiver standard and the design, manufacture and release of new conforming product into the marketplace. A further lead time of approximately five years is likely to be required for consumer transition to new technologies and products.

The Green Paper proposes that the five existing multiplexes are consolidated into three multiplexes in each transmission market—in essence, a '*three everywhere*' model. This consolidation could lead to a sequential consolidation or repacking as depicted below.

XIV. Alternative solutions

Spectrum can be used more efficiently without adverse audience impacts by adopting different and evolving technologies. Technology continues to evolve at pace, and, as such, any sustainable proposal for FTA also needs the capacity to evolve, and not be unduly limited or frozen in time.

⁵⁴ <https://www.standards.org.au/standards-catalogue/sa-snz/communication/ct-002/as--4933-colon-2015>

Optimising overall spectrum efficiency

An anticipated reduction in available BSB spectrum will require the adoption of a number of inter-related mitigation strategies in order to realise the efficiency improvements set out as an underlying principle of the Green Paper. Overall, spectrum efficiency is optimised through three core components:

- **Coding efficiency**—the conversion of picture, audio and associated data into a digital form in a data-efficient manner for a defined quality standard without subjective loss of information to the human eye and ear when reconstituted into pictures and sound by the receiver/display device.
- **Transmission efficiency**—the delivery of the multiplexed signal in a robust form for over-air transmission to households in the designated coverage area with optimised capacity (throughput) and the ability to exploit spectrum re-use and increase network density.
- **Multiplex efficiency**—the aggregation of multiple channels of video, audio and associated data into a single, homogenous digital signal, also interoperating with the coder using statistical techniques (statistical multiplexing).

Unless all three factors are appropriately deployed and optimised at every opportunity for a defined quality level, set by the broadcasters, spectrum efficiency objectives will not be met.

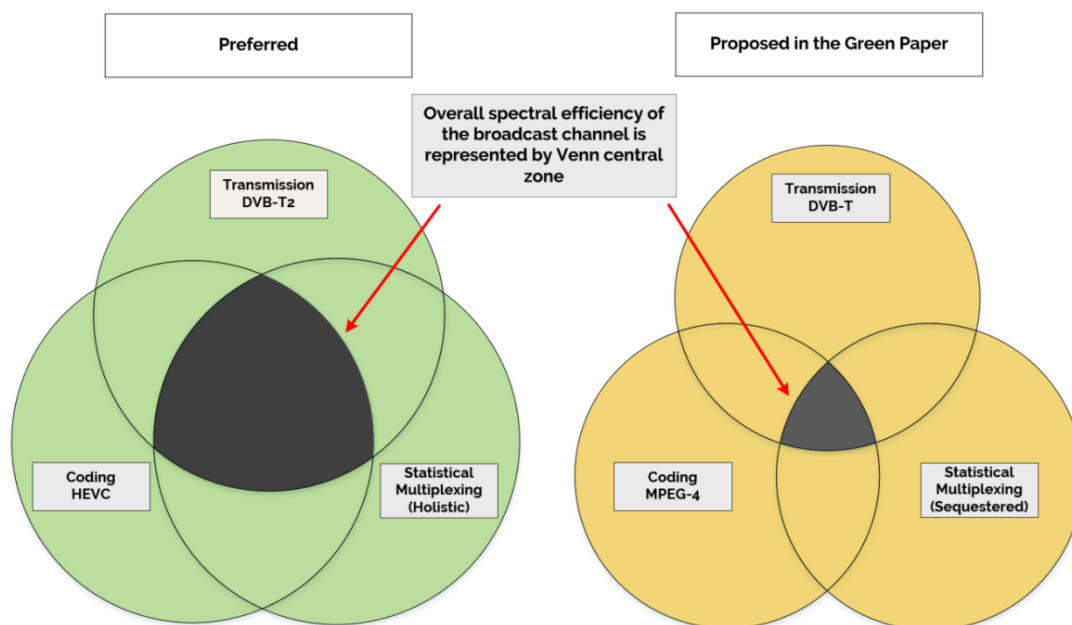


Figure 9—Representation of overall spectral efficiency across the 7 MHz broadcast channel (Source: SBS)

The efficient use of spectrum within any reduced BSB will determine the extent to which service equivalence can be achieved, and the capacity to provide additional services to meet audiences' evolving needs.

Coding efficiency and options

Coding efficiency generally improves over time due to the introduction of increasing computer processing power and some implementation refinement. However, MPEG-4 encoding efficiency improvement benefits have already been almost fully extracted. There is no meaningful return on investment to be gained from any residual improvements. Developers are now focused on extracting more material benefits from High Efficiency Video Coding (**HEVC**) and next-generation codecs.

There would be material benefit from the adoption of HEVC in Australia because of its ability to deliver improved video formats on par with those delivered by competitor over-the-top platforms. For example, use of HEVC for HD services in a 'progressive' format (1080P), would provide:

- improved picture quality for fast moving content (sport, movies);
- high-dynamic range (**HDR**) which improves the picture contrast ratio, particularly for dark, low-light scenes; and
- improved colour gamut which provides richer colour more closely resembling real-life images.⁵⁵

Furthermore, HEVC allows broadcasters to more fully utilise the features built in to large-screen display devices; features which are currently being utilised by competitor platforms to differentiate their service offering from FTA.

HEVC offers material coding efficiency improvements over MPEG-4 for HD material. HEVC is specified for HD (progressive format), 4K and 8K formats. HEVC has been incorporated into receivers and display devices imported into Australia since 2016, although some manufacturer devices, by design, only enable HEVC operation for streamed services and the HEVC capability is not featured for off-air reception in all cases.

A significant efficiency gain for FTA broadcasters is the potential combination of coding efficiency with transmission efficiency—essentially the marriage between HEVC and DVB-T2. This combination is SBS's preferred broadcast technology mix to free up spectrum and not result in service diminution.

A number of European countries have already implemented this transition, notably Germany and the Czech Republic;^{56, 57} while others are in the planning stage.

Transmission efficiency and options

The 'second generation' DVB-T2 transmission standard has two key attributes that are core to its potential to provide increased spectrum efficiency over its 'first generation' DVB-T predecessor. These are:

⁵⁵ Wide colour gamut encompasses a greater range of the visible colours (~76%) than conventional colour rendition (~36%).

⁵⁶ Czech Republic: <https://broadcast-networks.eu/transition-to-dvb-t2-completed-in-the-czech-republic/>

⁵⁷ Germany: <https://www.broadbandtvnews.com/2017/03/29/germany-starts-dvb-t2-introduction/>

- its greater payload capacity (of approximately +40 per cent); and
- its greater frequency re-use characteristic.

The technical characteristics of DVB-T2 facilitate the use of spectrally-efficient single frequency networks (**SFN**) over a much wider geographic area than is feasible for DVB-T at current capacity levels (of 23 Mbps).⁵⁸ This drives the potential to expand useable broadcaster capacity beyond the '*three everywhere*' model postulated in the Green Paper as expanded below.

Experience gained from Australian trials of DVB-T2 (in 2018 and 2019) to assess minimum performance characteristics, SFN performance, coverage equivalence and related technical parameters⁵⁹ are relevant. Learnings from these trials provide reasonable confidence that DVB-T2 can provide a 40 per cent increase in payload—approximately 32 Mbps compared to 23 Mbps for DVB-T—whilst achieving broadly the same coverage. Further detailed analysis would be required to determine appropriate transmitter planning guidelines as part of any future network transition, and to ensure edge of coverage margins are adequately provisioned.

Initial desktop studies⁶⁰ suggest that with the adoption of DVB-T2 it may be possible to increase transmission network density to achieve four multiplexes (each of 7 MHz) in each market and achieve a significant 600 MHz dividend.

A '*four-everywhere*' multiplex configuration using DVB-T2, compared to the '*three everywhere*' model (utilising DVB-T) as suggested in the Green Paper may be feasible in reduced BSB spectrum (that is, reduced by 84 MHz). However, further detailed assessment of daisy-chain fed retransmission sites in areas of dense spectrum re-use will need to be carefully examined on a case-by-case basis, as further described at **Appendix D**.

Where further study shows that there is insufficient BSB spectrum to accommodate the *four everywhere* scenario, particularly in congested areas, a fallback option could be to consider a hybrid solution of three multiplexes in the regional markets and four multiplexes in the metropolitan markets.

However, adoption of a hybrid option between metropolitan and regional markets would create a digital divide: potential for differentiation of service offerings between 'metro' and the 'regional' dependent on the extent of released spectrum and the chosen multiplex sharing arrangements. As a result, there may not be equitable availability/allocation of spectrum. Although acknowledging that a hybrid multiplex allocation is possible from a spectrum allocation perspective, SBS does not support a solution that materially differentiates capacity (and therefore the service offering) between metropolitan and regional audiences

⁵⁸ For example, initial desktop analysis indicates it would appear feasible to operate the Central Coast gap fillers together with Elan and Manly/Mossman as a single frequency network (SFN) using DVB-T2 without creating timing interference (that is, avoiding mush zone issues in target coverage areas).

⁵⁹ Conducted in Sydney (2018) and the Gold Coast (2019) by Free TV Australia, BAI and TXA.

⁶⁰ Evaluation undertaken, and ongoing, by the broadcast industry group (comprised of the commercial and national broadcasters) to assess the viability of alternative proposals for inclusion in the Green Paper submission.

Further investigation is warranted of alternative options beyond the *four everywhere* scenario. The alternatives have the potential to provide material capacity benefits to broadcasters and simplify multiplex sharing whilst retaining a substantial 600 MHz spectrum release.

Multiplex efficiency and options

Multiplex efficiency is the third core component in the realisation of overall spectrum efficiency improvement.

A *four everywhere* spectrum scenario translates into a 'five-into-four' multiplex sharing configuration⁶¹, that can be realised in a number of ways as depicted below, including:

- **Option 1** depicts an equitable allocation of capacity between the broadcasters, although the per-broadcaster allocations could be distributed differently across each of the four multiplexes whilst maintaining an equitable split.
- **Option 2** depicts an inequitable allocation of capacity between the broadcasters.
- **Option 3** presents an option for transmission delivery cost saving for three broadcasters and exclusive multiplex retention for the remaining two broadcasters. It will be for the industry to determine the extent to which this option may have merit.

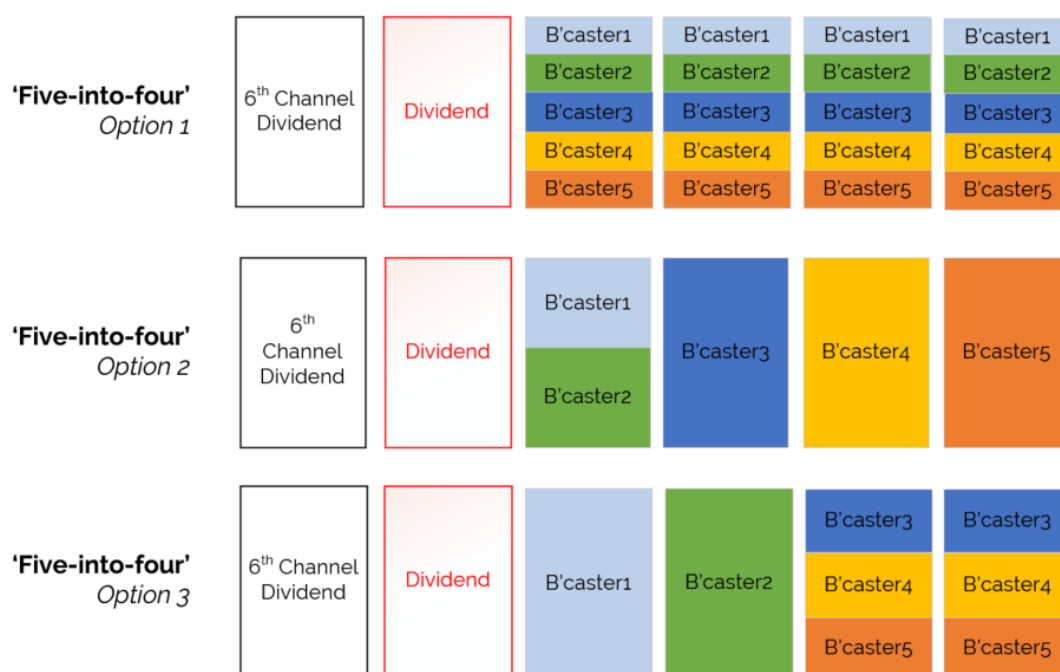


Figure 10—*Multiplex configuration scenarios: four everywhere options* (Source: SBS)

⁶¹ Five broadcasters sharing four multiplexes.

Unless the shared multiplexes are managed in a holistic manner (as described at **Appendix C**) then the significant benefits to be gained from enhanced coding and the improved payload capacity of DVB-T2, as described above, will be negated.

As previously described, the adoption of shared multiplexes in an all-MPEG-4/DVB-T environment would result in a material shortfall of multiplex capacity for SBS in the range 41 per cent to 69 per cent.

With the 40 per cent capacity gain of DVB-T2 over DVB-T, in an all-MPEG-4/DVB-T2 environment, for a limited number of shared multiplex configurations, the shortfall is recovered, as depicted in the figure below⁶², although not sufficient to serve Australian audiences' evolving needs. The multiplex capacity deficit/benefit to SBS under these scenarios would be in the range 22 per cent deficit to 24 per cent enhancement.

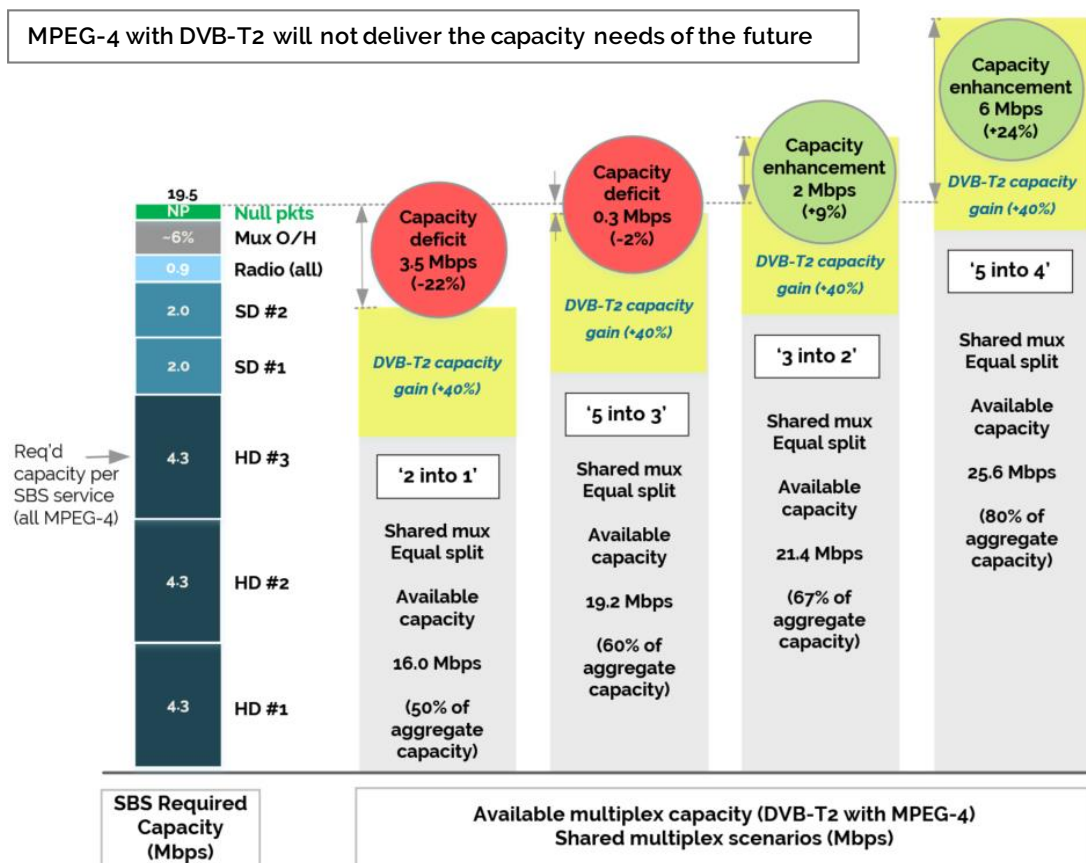


Figure 11—Shared multiplex capacity impacts on SBS (current portfolio of services, less simulcast) under a DVB-T2 scenario—all services encoded as MPEG-4. DVB-T2 capacity benefit depicted in yellow. (Source: SBS)

⁶² For the 'five-into-three' multiplex sharing scenario as proposed in the Green Paper, the capacity deficit is almost zero (deficit of 0.3 Mbps). For the scenario where the four everywhere spectrum model proves viable, a 'five-into-four' model would yield some capacity enhancement, although this would not be sufficient to support the evolving service requirements SBS will need to keep pace with competitor platforms offering over-the-top streaming services.

XV. Transition and implementation

Impacts on receiver functionality

Consumer electronic devices are manufactured in compliance with an existing Australian Standard (AS4933) as updated, to warrant functionality.⁶³

The current standard never provisioned for multiplex sharing. The functionality of existing receivers, particularly legacy devices in a shared multiplex environment, is being tested. Manufacturers, through representative groups, advise that a typical lead time of three to five years is required post-ratification of a new standard, before fully complying sets are available.

Significant technology transition would require updates to receiver functionality, as noted in the previous section. Australia is largely a 'taker' of global product and our imports are significantly based on other overseas products, generally adapted for the local market. However, where no Australian standard exists, additional features not currently specified for Australia may not prove to be compliant with Australia's future requirements.⁶⁴

Without a robust standard, Australia would be creating a new generation of legacy functionality issues.

Changes to the navigational signalling, video coding, shared multiplex EPG management, and other parameters that emerge as a result of policy outcomes will need to be defined in a next-generation receiver standard.

In the interim, further research must be undertaken of the functionality, penetration and growth rates of 'next generation' features that are available in the Australian market, although not specified in the current receiver standard (for example, DVB-T2, HEVC decoding of FTA broadcasts). It is recommended that the ACMA, together with industry stakeholders, undertake robust research of the Australian television receiver population to inform this process.

Risks and legacy issues

There are a number of key issues pertaining to the restack of broadcast services from the 600 MHz band into the remnant UHF BSB (in lower frequency 500 MHz spectrum) that will need appropriate consideration and mitigation planning. This planning should be undertaken to ensure there is no undue disruption or interference to reception of SBS services by audiences.

Domestic antenna legacy

Domestic antennas that were optimised, by design, for performance at the upper frequency zone of the original UHF BSB (above 700 MHz) and installed prior to the first restack will have degraded performance at lower frequencies (outside their intended operating range). This means there is likely to be an impact on reception reliability following a further restack in low signal level

⁶³ <https://www.standards.org.au/standards-catalogue/sa-snz/communication/ct-002/as--4933-colon-2015>

⁶⁴ Some manufacturer devices, by design, have only enabled HEVC operation for streamed services; the HEVC capability is not featured for off-air reception in all cases.

areas. The Government should support affected audience members in the transition, including with subsidies to upgrade consumer reception and antenna equipment where required.

Potential interference from MBB base station implementation in released spectrum

Audience reception is at material risk of interference from nearby MBB base stations licenced to utilise 600 MHz spectrum where base station development rolls out into urban and suburban areas. Detailed interference assessment and mitigation planning will be an essential prerequisite to ACMA spectrum replanning considerations for spectrum reuse. **Appendix E** provides an overview of the interference risk profile and **Appendix F** cites international experiences and regulatory mitigation strategies adopted in the UK and Europe.

Transition scenarios—broadcast transmission infrastructure

There are potentially two components to the transition:

- restack changes associated with spectrum clearance and release; and
- in the event of a technology change to introduce DVB-T2, a migration from the legacy DVB-T standard.

Appendix G provides a high-level outline of potential transition options for the introduction of DVB-T2.

Costs to SBS of transition

Transitioning to a shared multiplex, and related technology changes, would have significant costs. Any costs incurred by SBS for the transition and material on-costs must be fully funded by Government.

Current SBS and ABC transmission agreements with BAI would be significantly impacted by the Government's timeline of a spectrum restack occurring from mid-2024. Even after this date, although the impact of contract change diminishes over time, the cost implications remain significant.

The transition costs will fall into the following categories:

- **Capital outlay:**
 - Restack of services to clear spectrum
 - Additional encoders and associated headend/playout systems (required to facilitate multiplex sharing)
 - Transmitter systems upgrades to DVB-T2 capability (subject to policy outcomes)
- **Ongoing operational costs**, including those arising from the potential need for additional telecommunications facilities to:
 - provide links to transmission sites; and
 - increased content contribution/distribution to and from new multiplex headends.⁶⁵

⁶⁵ It is too early to attempt to quantify these costs until details of likely policy outcomes are known.

XVI. Implementation timing

The timeline for reforms and transmission⁶⁶ proposed by the Green Paper is very optimistic and includes some misalignments.

In particular, the timeline has the CAST and PING trusts established in 2021, and envisages new content obligations from FY23. However, the spectrum auctions, which provide the funding for these trusts, do not commence until 2025.

This means the trusts cannot be capitalised with spectrum proceeds until well after new obligations commence, which means the Government would have to fund broadcasters another way in the interim.

Any significant increase in production of locally commissioned content would also need a long lead-time from initial funding. The process of pitching to development to broadcast is a multi-year process.

XVII. Next steps

SBS would welcome further consultation opportunities, particularly in relation to content quotas, spectrum arrangements and technology transition. This consultation must be conducted on a broad industry basis, as there is much common ground between stakeholders.

⁶⁶ Green Paper, page 42.

Appendix A—The current SBS multiplex

Key point:

For its current portfolio of services, with significant use of legacy MPEG-4 and DVB-T standards, SBS is exploiting the full capacity of its multiplex at the highest levels of efficiency.

The service make-up of the current SBS multiplex (May 2021) is tabulated below. The television services are separated into:

- Video components, aggregated for the six services;
- Audio, including AD for the six services; and
- Subtitles and captions

The SI is the navigational signalling that is used by the receiver to determine how to decode the incoming signal, including EPG and other programming enhancements.

The structure of the DTV signal requires that there are no empty spaces, so any unutilised capacity is filled with 'packing'—the 'null packets'.

Service component	Aggregate capacity (Mbps)	% of total capacity	Mux grouping
Video	19.1	83	Multiple variable video services are aggregated into fixed capacity—a statistical multiplex 'pool'
TV Audio (incl. AD)	1.62	7	Constant bit rate
Radio services	0.88	4	
Subtitles	0.23	1	
Service Information (SI)	0.94	4	
Residue ('null packets')	0.29	1	
TOTAL	23.0	100	

Table A1—Service components and capacity of the current SBS multiplex

The video component accounts for the major part of the total multiplex capacity at approximately 83 per cent. The allocation of capacity (that is, digital bits—**bits**) to the video components of each television service, predicated on the formats listed at **Table 2**, is determined on a statistical basis according to demand and priority parameters (as defined by the broadcaster)—refer to **Appendix C**.

These parameters determine the relative picture quality the broadcaster wishes to allocate to each of its services, with the HD channels having the premium allocation. Although the instantaneous capacity allocated to each service will

vary between broadcaster-defined minima and maxima, in aggregate, the sum (for the depicted SBS scenario above) will always equal 19.1 Mbps—the 'pool'.

The other components are relatively constant and consume a relatively small part of the overall multiplex capacity (approximately 17 per cent); these components are carried at a constant bit rate, regardless of the small demand variation. Any unused capacity is filled with 'null packets' so as to 'fill the gaps' and maintain the defined structure of the digital signal.

SBS utilises almost 99 per cent of its multiplex capacity for program services and essential components of the delivered services.

The capacity allocation by SBS service (average values) is shown in **Figure A1** below. SBS (and other FTA broadcasters) use a statistical technique to optimise subjective picture quality in the available capacity as described below and in more detail at **Appendix C**. The video capacity values cited below is typical average values.

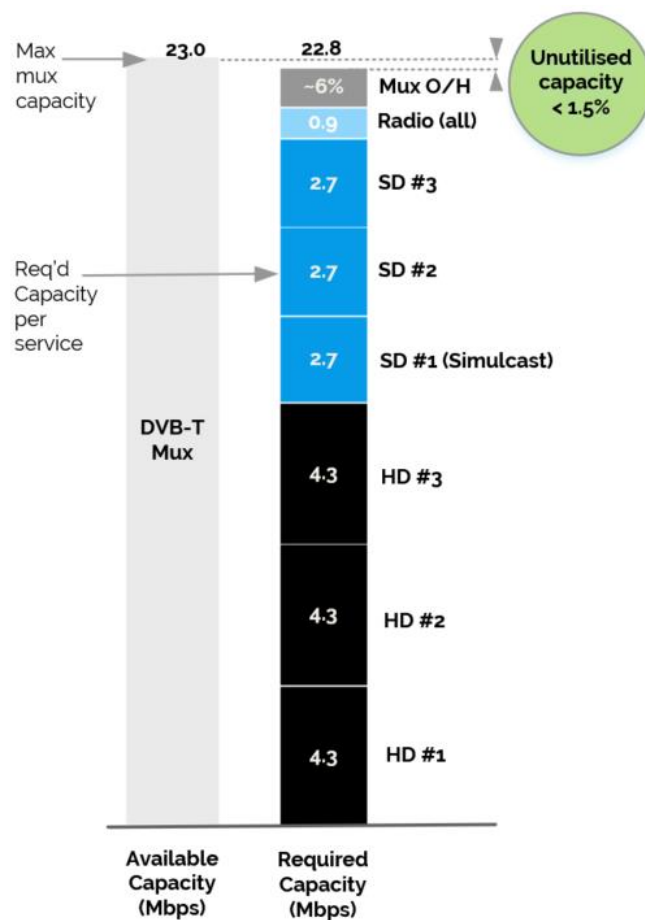


Figure A1—Current make-up of the SBS multiplex (May 2021). Each television service includes video, audio and subtitles. (Source: SBS)

Appendix B—Chronology of SBS multiplex benefits already achieved

Key point

SBS has taken significant advantage of technology advancements and has already banked many MPEG-4 conversion efficiency benefits, creating the capacity to provide additional services and service enhancements such as the introduction of new services, accessibility features and increased HD content.

- 8 Apr '17 Cessation of SBS HD in MPEG-2 format and commencement of SBS HD in MPEG-4 format (LCN30)
(SD simulcast continues unchanged on LCN3)
Commencement of MPEG-4 HD format carriage of SBS VICELAND (LCN31)
- 18 Jun '19 Cessation of SBS VICELAND MPEG-2 SD simulcast (LCN32)
Promotional pre-launch—SBS World Movies in HD MPEG-4 format (LCN31)
- 1 Jul '19 Full service launch of SBS World Movies in HD MPEG-4 format (LCN32)
- 22 Jun '20 SBS launch of AD services on SBS and SBS VICELAND services for blind or vision impaired audiences
- 16 Apr '21 SBS extension of AD to the NITV service
- 18 Apr '21 SBS extension of AD to the SBS World Movies service

Appendix C—Statistical multiplexing

Key points

Maximum multiplex efficiency is only achieved if all services (regardless of source) are statistically multiplexed as a holistic group.

Loss of multiplex efficiency translates into reduced useable multiplex capacity for program services.

A shared multiplex between SBS and regional commercial broadcasters would materially increase SBS's headend and content distribution (telecommunications) costs.

Introduction

To gain further efficiency in the process of digitising video streams, statistical techniques are applied across the SBS multiplex (and others). Instead of each service being encoded at a constant bit-rate, where each service would need to be allotted sufficient capacity, including headroom, for the most demanding (that is, fast-moving) periods for coding, a statistically-based allocation is made from within the available pool, as shown in the example below. The difference between the aggregate values of the constant bit-rate approach and the statistical approach is described as the statistical multiplex efficiency gain, or 'stat mux gain'.

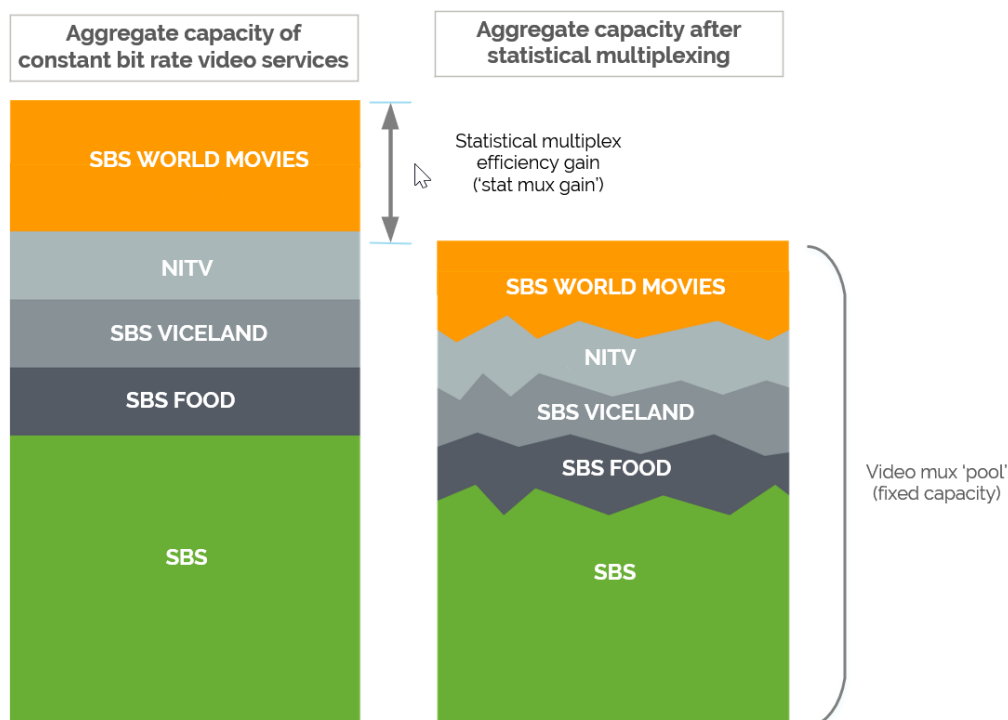


Figure C1—Efficiency benefit gained from the use of statistical multiplexing
(Source: SBS)

The efficiency savings are broadly independent of the resolution of the video (for example, SD or HD formats) and the choice of coder algorithm (for example, MPEG-2, MPEG-4).⁶⁷ The overall efficiency benefit increases with the number of statistically multiplexed services, as depicted in the chart below.

From the chart, SBS estimates it is achieving a multiplex efficiency gain of approximately 17 per cent from the statistical multiplexing of its five discrete television services.⁶⁸

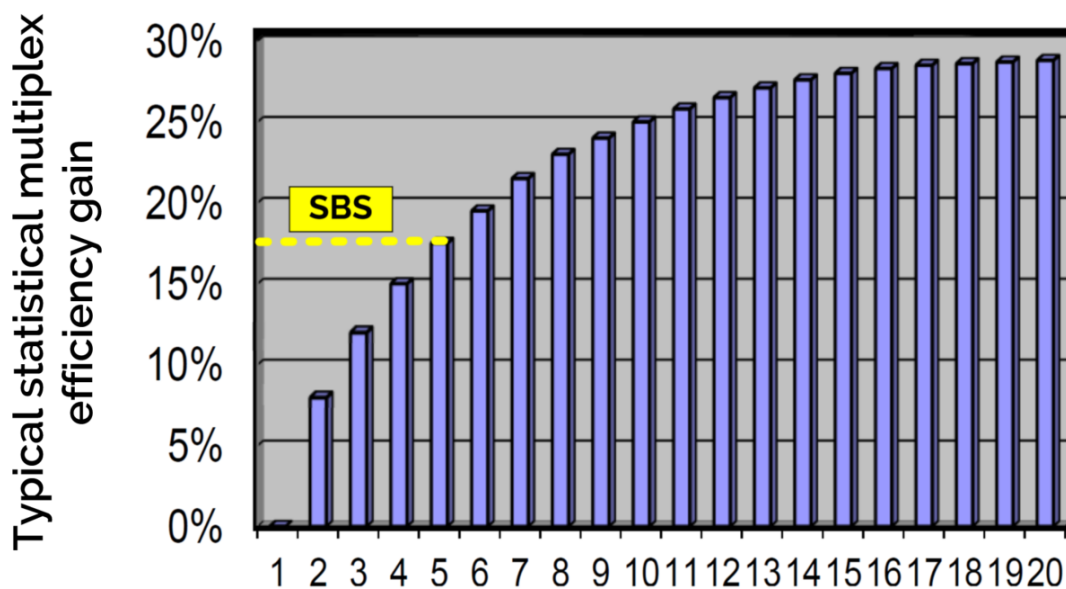


Figure C2—Typical efficiency gain achieved through statistical multiplexing
(Source: Ofcom/ZetaCast—2012⁶⁹)

However, the indicative efficiency benefits are only realised when all the services within the multiplex are statistically managed in a holistic manner. For a 'sequestered' multiplex (that is, a multiplex divided into smaller fixed capacity segments):

- each segment will contain a reduced number of video streams; and
- the stat mux efficiency gain in each of the segments will be reduced.

An illustrative example of multiplex efficiency losses arising from the adoption of a sequestered multiplex is set out below.

Sequestered multiplex and efficiency impacts

The configuration of a shared multiplex has a material impact on the overall multiplex efficiency (that is, the stat mux gain).

The model below compares the statistical multiplex efficiency gain between:

⁶⁷ Ofcom–ZetaCast report 'Local Television Capacity Assessment'—2012 https://www.ofcom.org.uk/_data/assets/pdf_file/0028/23896/zetacast.pdf

⁶⁸ The current SD simulcast of the SBS HD service is excluded as a sixth video service; due to the contemporaneous commonality of the content, any additional statistical efficiency benefit is reduced.

⁶⁹ https://www.ofcom.org.uk/_data/assets/pdf_file/0018/27324/zetacast.pdf

- A shared multiplex where the statistical multiplexing is applied across all constituent video services (that is, holistic application)—see **Figure C3a** below; and
- A sequestered multiplex, where the multiplex is fragmented into segments each of fixed capacity and where the statistical multiplexing is separately applied to the video services within each of the segments; see **Figure C3b** below.

The efficiency values for the examples shown in the figures below are derived from the chart (see **Figure C2**) which shows a typical multiplex efficiency gain of approximately 20 per cent for the holistic statistical multiplexing of six discrete video services (see **Figure C3a**) and approximately 8 per cent for two discrete video services aggregated in a sequestered manner from each of three broadcasters (see **Figure C3b**).

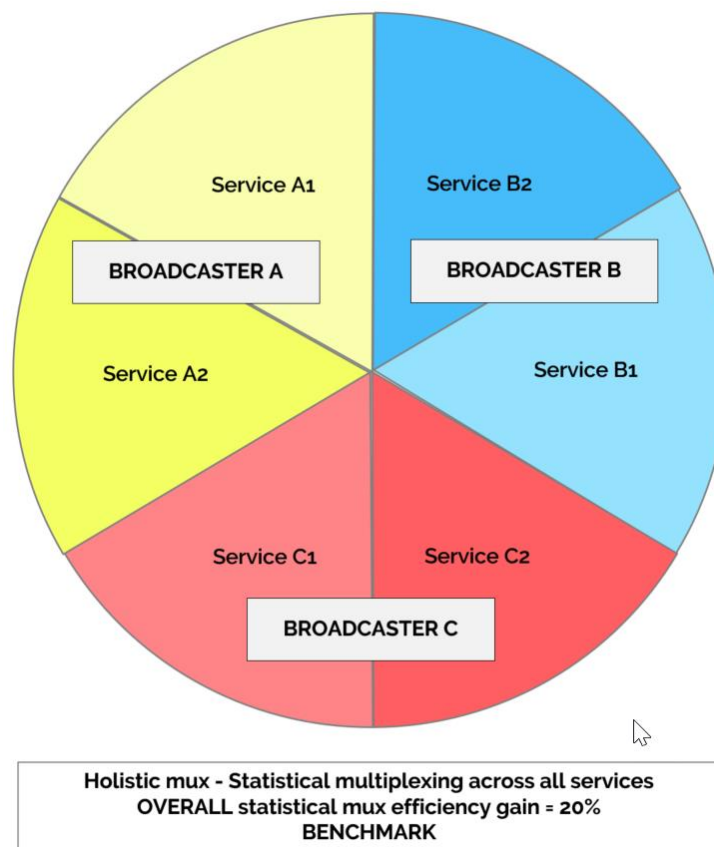


Figure C3a—Multiplex efficiency gain comparison between holistic application and sequestered application of statistical multiplexing to program service groups (Source: SBS)

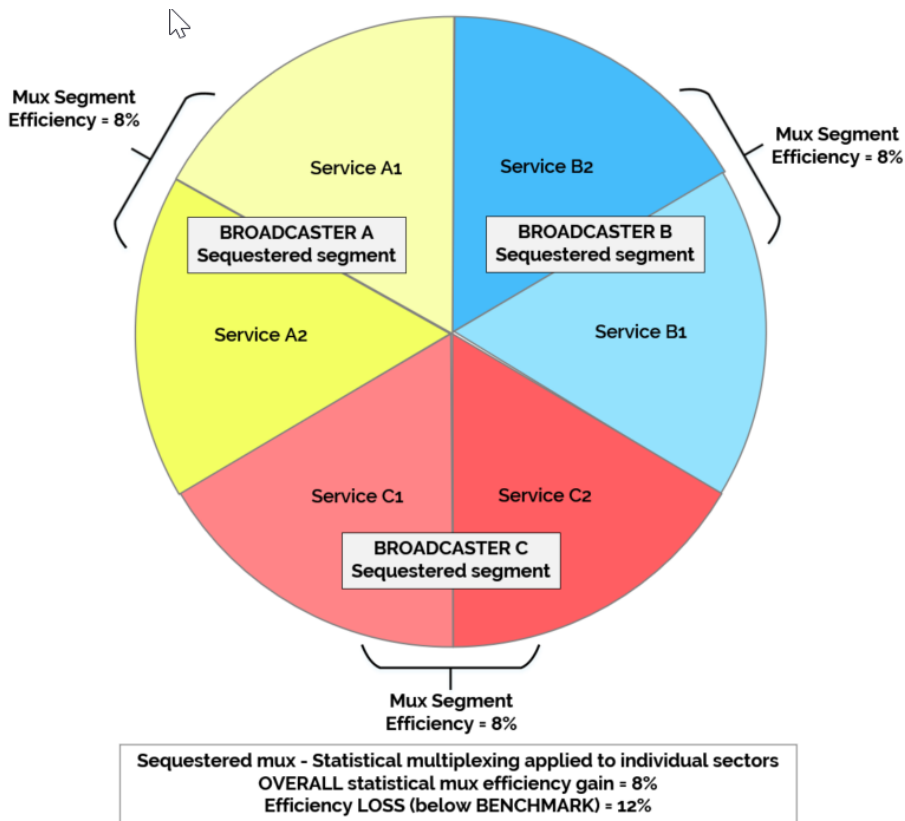


Figure C3b—*Multiplex efficiency gain comparison between holistic application and sequestered application of statistical multiplexing to program service groups*
 (Source: SBS)

In the modelled example, statistical multiplexing of only two services within each of the sequestered segments results in a multiplex efficiency reduction of 12 per cent of the overall multiplex capacity when compared with statistical multiplexing of all the video services in the multiplex (the 'benchmark' example—see **Figure C3a**) as is currently the case for the exclusive multiplexes.

This efficiency reduction is material and is equivalent to the loss of one SD MPEG-4 channel within the multiplex. Maximum multiplex efficiency is only achieved if all services (regardless of source) are statistically multiplexed as a holistic group.

Remote statistical multiplexing

The application of statistical multiplexing across all video sources in a configuration has been feasible for a number of years. This is the case even where regional encoders, in separate locations (for example, playout centres), are configured to feed a centralised multiplex—a technique described as 'remote statistical multiplexing'. This configuration retains the efficiency benefits of holistic multiplex management.

Remote statistical multiplex configurations have been established in the United States⁷⁰ (for example, Sinclair Broadcast Group⁷¹) and elsewhere; however, this arrangement adds complexity and cost.

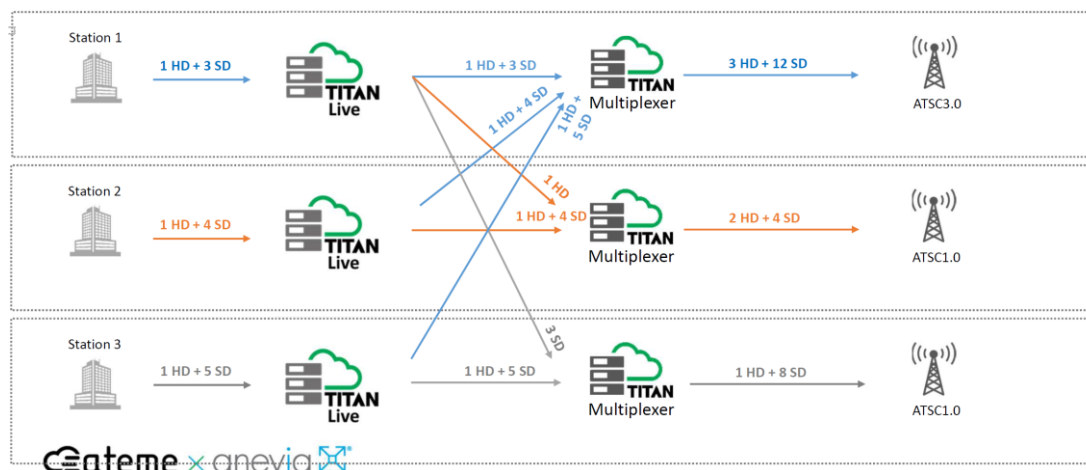


Figure C4—Example deployment of a remote statistical multiplex configuration at Sinclair Broadcast Group (Source: Ateme)

In the example configuration above, 'Station 3' aggregates three SD services obtained from 'Station 1', together with its own services, and comprises one HD and five SD services. 'Station 1' is configured to have discrete encoders for each of the three SD feeds and each of these is linked to multiplexer at Station 3 via low-latency data links. Under this configuration, the remote encoders are holistically managed in the same manner as the Station 3 on-site encoders.

In this configuration, additional costs accrue from the service contribution costs (that is, ingest of Station 1 source at Station 3) plus the additional multiplexer control low-latency circuits. The minimum technical specification, for the low latency links implemented in this example, is a data-rate capacity of not less than 2 Mbps, and latency not greater than 250ms.

Australian market granularity—multiplex efficiency choices for SBS

Under a shared multiplex scenario, SBS gains optimum capacity where multiplex sharing is equitably distributed between broadcasters over the number of multiplexes licensed in each market, and where holistic statistical multiplexing is applied.⁷²

For SBS, holistic statistical multiplexing could require a material increase in market granularity from its current 12-market structure to a '42-plus'-market

⁷⁰ <https://www.broadcastandcablesat.co.in/ateme-titan-live-in-over-half-of-all-north-america-at-sc-3-0-deployments/>

⁷¹ <https://sbqinet/>

⁷² A 50:50 share of multiplex capacity represents a worst-case outcome for SBS under an equity-share multiplex configuration. Furthermore, multiplex efficiency, and therefore capacity, is lost under a sequestered multiplex configuration.

structure.⁷³ This configuration would impose significant additional headend costs and distribution costs on SBS to carry content:

- from the SBS playout centres to the (42 or more) multiplexers; and
- SBS's share of the carriage costs of each multi-broadcaster multiplexer output to the designated transmitters for that market.

Simplified configuration solutions would reduce cost but at the expense of material loss of multiplex efficiency.⁷⁴ A cost vs efficiency/capacity trade-off would need to be considered.

⁷³ The commercial television market structure currently comprises five metropolitan markets and nominally 37 regional markets; noting that not all regional markets are fully aligned between commercial regional broadcasters, potentially creating an increase in uniquely defined markets.

⁷⁴ Refer to 'Sequestered multiplex and efficiency benefits' section above.

Appendix D—FTA retransmission and an example of the network feed complexities

Key points

Highly cost-effective 'off-air' sources for retransmission are utilised by SBS at 51 per cent (or 274) of current digital television transmission facilities.

Increased compacting of BSB spectrum will render many of the off-air retransmission sources unviable, necessitating alternative telecommunication feeds with associated capital and on-costs.

Retransmission impacts and options

The progressive roll-out of the digital terrestrial transmission (**DTT**) network has utilised the signal from a 'parent' site (usually, a high-power site) to feed a number of 'child' retransmission sites within the designated market, where the parent signal is reliable and free from interference, off-air retransmission is very cost effective, and overcomes the need to procure a microwave, satellite or fibre feed to the site. Some remote retransmission facilities receive their source signal via a tandem chain of retransmission sites.

Currently, SBS utilises off-air retransmission at 51 per cent (or 274) of its transmission facilities. In many cases, the viability and reliability of these fortuitous reception arrangements will be greatly reduced if BSB spectrum is compacted.

Example of a complex retransmission configuration

There are several geographic areas where complex feed arrangements have been implemented and optimised to provide DTV delivery into difficult terrain-limited areas.

Figure D1 below is one example, showing the current complex feed arrangements utilised by SBS (and ABC) in the Newcastle, Hunter Valley and Central Coast. **Figure D2** shows the configuration adopted by the commercial broadcasters for the same market/sub-markets.

Extensive use is made of SFNs—off-air inputs to child sites and 'daisy chain' delivery to child sites beyond reliable range from the originating parent source. To minimise co-channel interference, planning for these television services has made full use of the BSB spectrum available in the UHF band (Blocks B, C, D and E).

The following diagrams also show how television sub-markets differ between national and commercial broadcasters, as well as between commercial networks, as broadcasters focus their programming and advertising on particular sub-markets. The example also shows the different market affiliation in the Central Coast between SBS (Sydney market) and ABC (Regional NSW market).

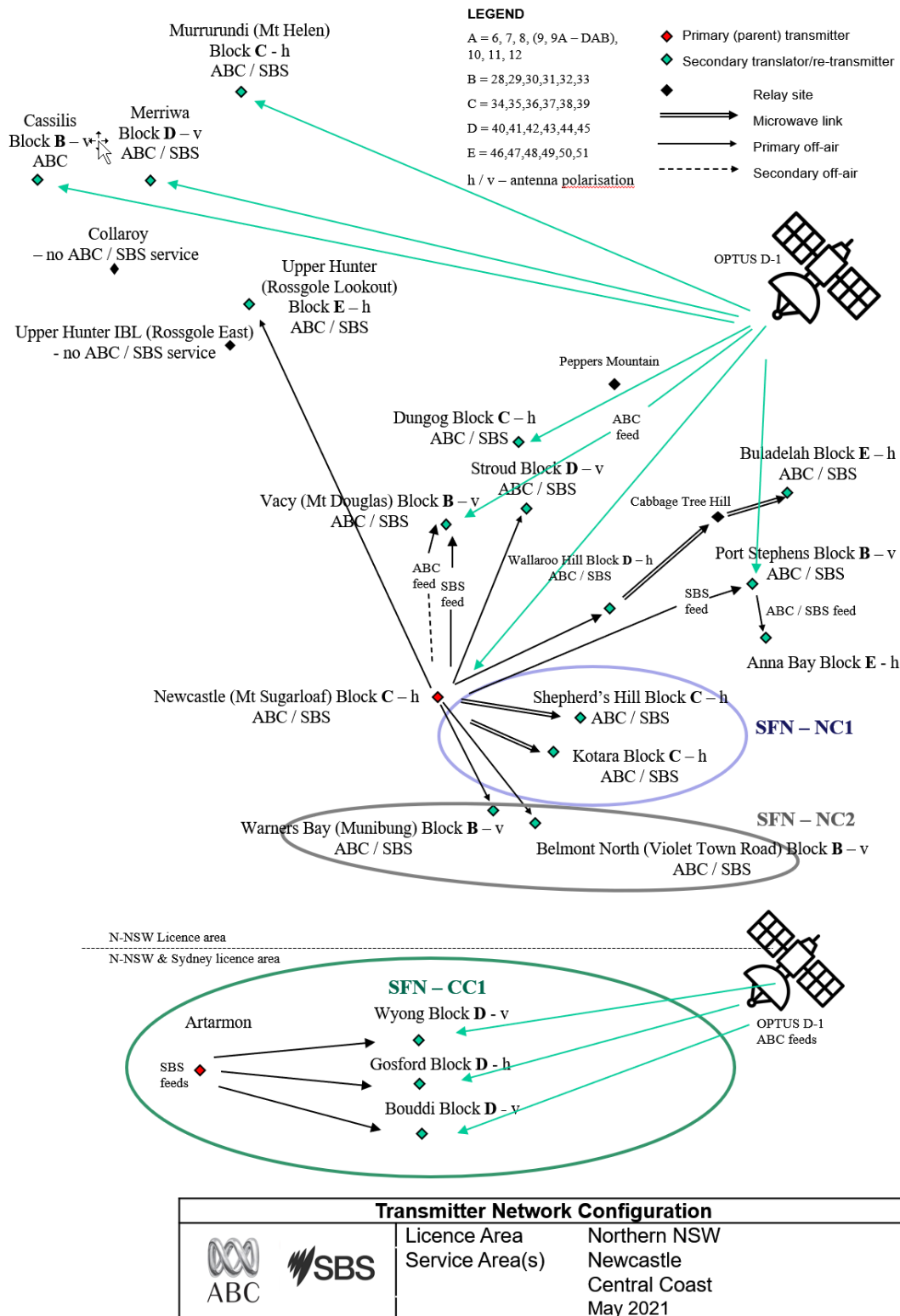


Figure D1: National network transmission configuration in the Central Coast, Newcastle and Hunter regions (NSW) (Source: Free TV Australia)

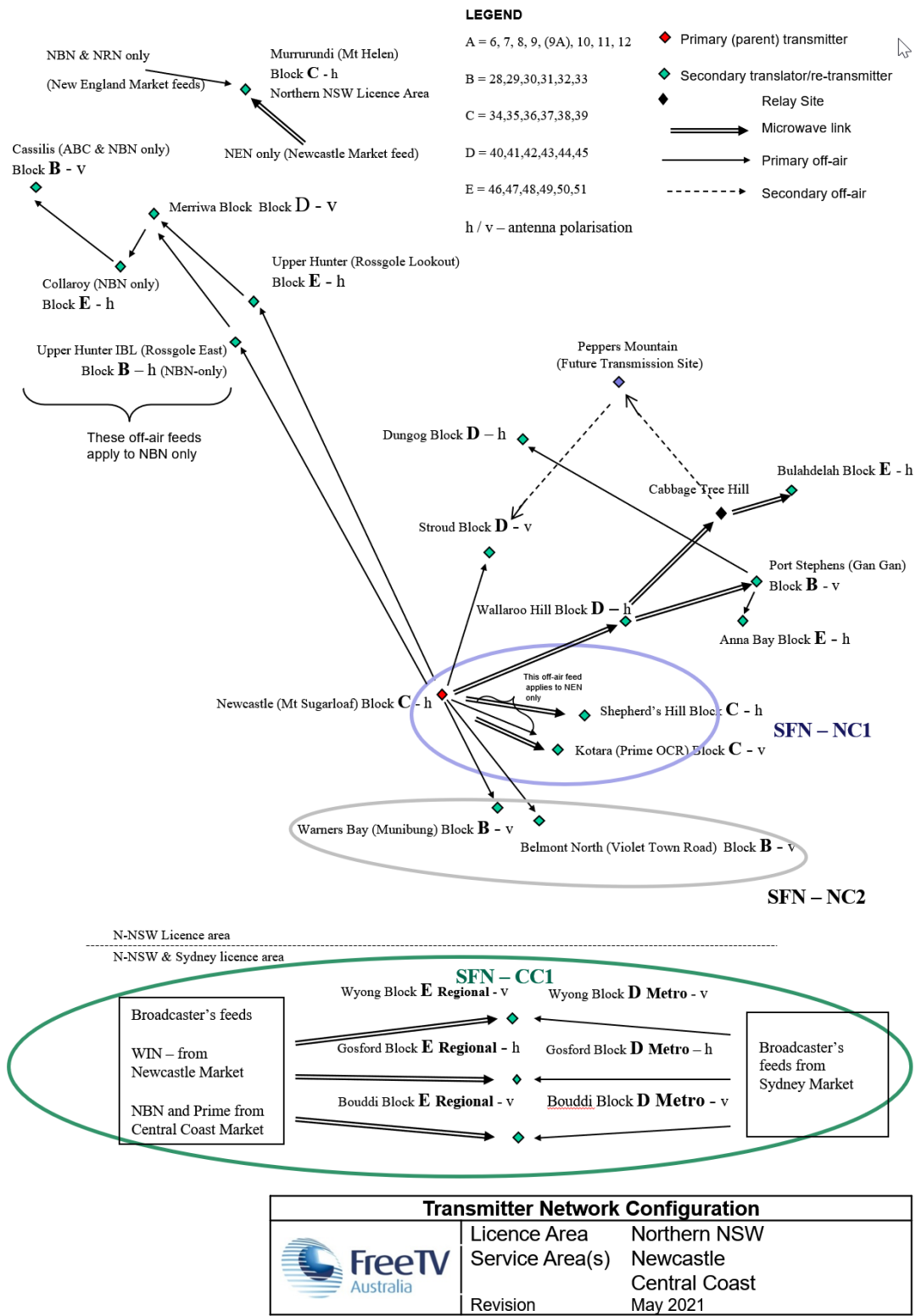


Figure D2: Commercial network transmission configuration in the Central Coast, Newcastle and Hunter regions (NSW) (Source: Free TV Australia)

Appendix E—Spectrum allocation 600 MHz, 700 MHz and 800 MHz MBB services and interference risk profiles

Key points

If the 600 MHz MBB band plan is allocated to MBB services as a 'reverse duplex' frequency division duplex (**FDD**) configuration in Australia this will place significantly greater demands on domestic DTV receivers. These demands include capacity to discriminate between low-level 'wanted' DTV signals and strong 'unwanted' MBB signals, which is more demanding than was required in relation to the 700 MHz 'conventional duplex' allocation.

Where 600 MHz low-pass filters are required to mitigate interference to DTV reception, the technical specifications under a reverse duplex MBB spectrum allocation will demand much steeper 'roll-off' which will increase filter complexity and cost to the viewer.

Where 600 MHz MBB base stations are co-located with existing 700 MHz MBB systems, for those nearby domestic premises that previously required the installation of a 700 MHz filter to overcome interference, it is highly likely that each of these filters will need to be replaced—to filter out unwanted 700 MHz and 600 MHz signals.

FTA broadcast infrastructure comprises a low-density DTT network, predicated on a 'high-tower, high-power' network of sites, with low-power infill as required. In contrast, MBB telecommunication networks are configured as dense networks.⁷⁵ Many MBB towers have been developed in suburban areas, in close proximity to domestic dwellings. The presence of strong local MBB signals, particularly those in spectrum blocks close in frequency to UHF BSB spectrum, can cause overload to, and/or desensitisation of, DTV receivers attempting to decode much weaker signals from a more distant broadcast tower.

Where MBB spectrum has been allocated on a FDD basis, the global standards developed to date for 700 MHz and 800 MHz band spectrum have adopted a convention whereby the base station 'downlink' and the handset (user equipment) 'uplink' spectrum is allocated on an alternating basis between adjacent bands as illustrated below.

Extrapolating the alternating principle to the possible future Australian environment—a 600 MHz 'reverse duplex' FDD configuration—the figure below shows the potential 600 MHz base station spectrum adjacency to UHF BSB spectrum as potentially envisaged by the Green Paper.

⁷⁵ In late 2017, the MBB network across Australia was estimated at over 21,000 towers (Statista data published May 2018—<https://www.statista.com/statistics/792991/australia-number-of-mobile-towers-by-provider/>), each of which typically houses several base stations. As at April 2021, the terrestrial FTA broadcast network delivering SBS services (including licensed retransmission self-help facilities) stands at 533.

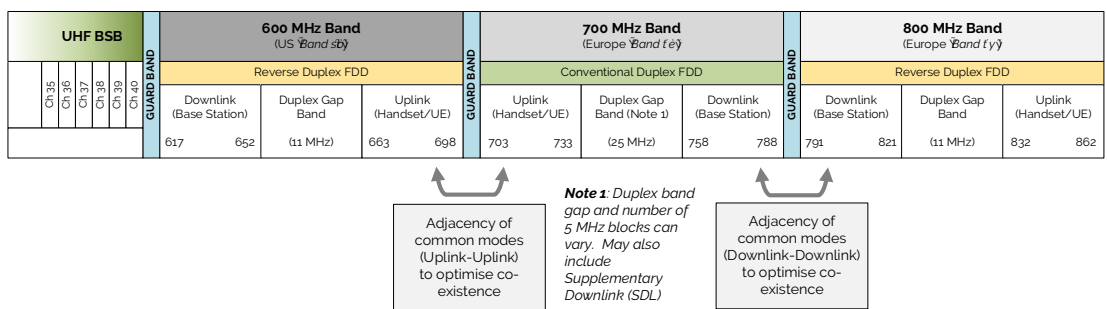


Figure E1—Conventional MBB configurations in UHF spectrum for frequency division duplex (FDD) operation (Source: SBS)

The re-farmed spectrum release following the first Australian digital dividend—the 700 MHz Band—placed lesser demands on domestic DTV receiver performance, given the alternating duplex arrangement (implemented as a 'conventional duplex allocation'), due to a frequency separation of over 60 MHz between the MBB base station and the DTV BSB. As a result, the frequency separation was sufficient in the majority of cases for the domestic receiver to discriminate between the wanted DTV signal and the unwanted MBB signal.

The figure below depicts the spectrum allocation relationships for the 700 MHz MBB band, showing significant frequency separation between the MBB base station and the UHF BSB spectrum, representing channel 51 at 694 MHz.

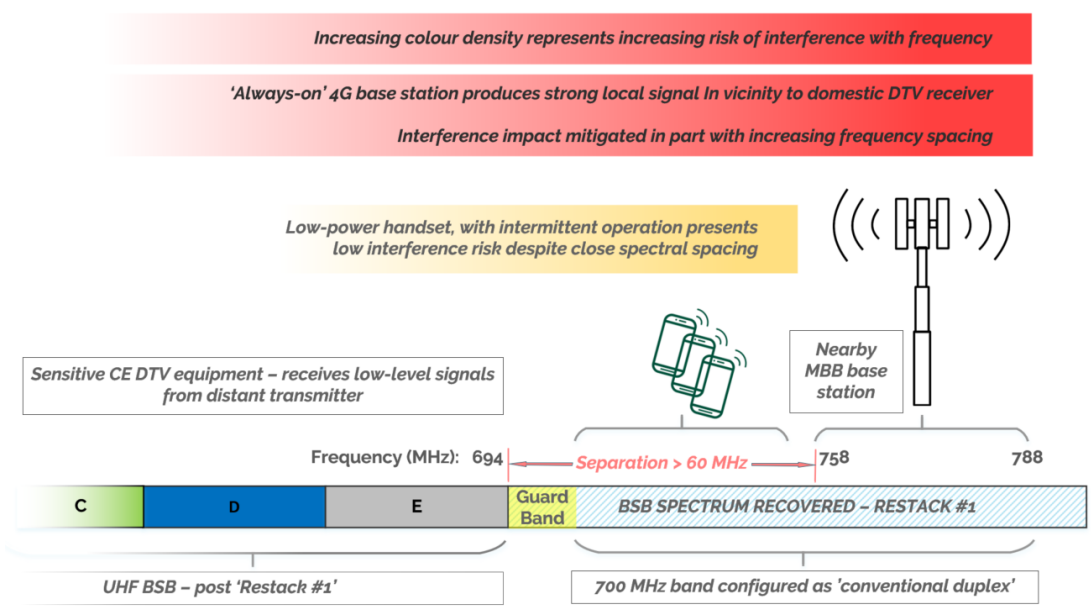


Figure E2—700 MHz band and UHF BSB spectrum proximity—interference risk relationships (Source: SBS)

At domestic locations where interference occurred following the roll-out of 700 MHz base stations, interference was mostly attributable to physical proximity and receiver overload. Low-pass filters were installed to attenuate the unwanted out-of-band MBB signals in higher frequency spectrum. In the majority of cases, this significant frequency separation has meant that low-cost

domestic filters could be fitted in the antenna download or built into the antenna or masthead amplifier; the latter cases required procurement of replacement items. Where the overload was more extreme, a more complex 'professional' filter, at materially greater cost, has been required.

If the 600 MHz MBB band plan is allocated on a 'reverse duplex' configuration in Australia, this will place significantly greater demands on the inherent ability of the domestic DTV receiver to discriminate between wanted DTV signals and unwanted MBB signals in near-adjacent spectrum as depicted below. As a result, the receiver overload and desensitisation risks will be materially greater. Where 600 MHz low-pass filters are required, the technical specifications will demand much steeper 'roll-off' which will increase cost and complexity.

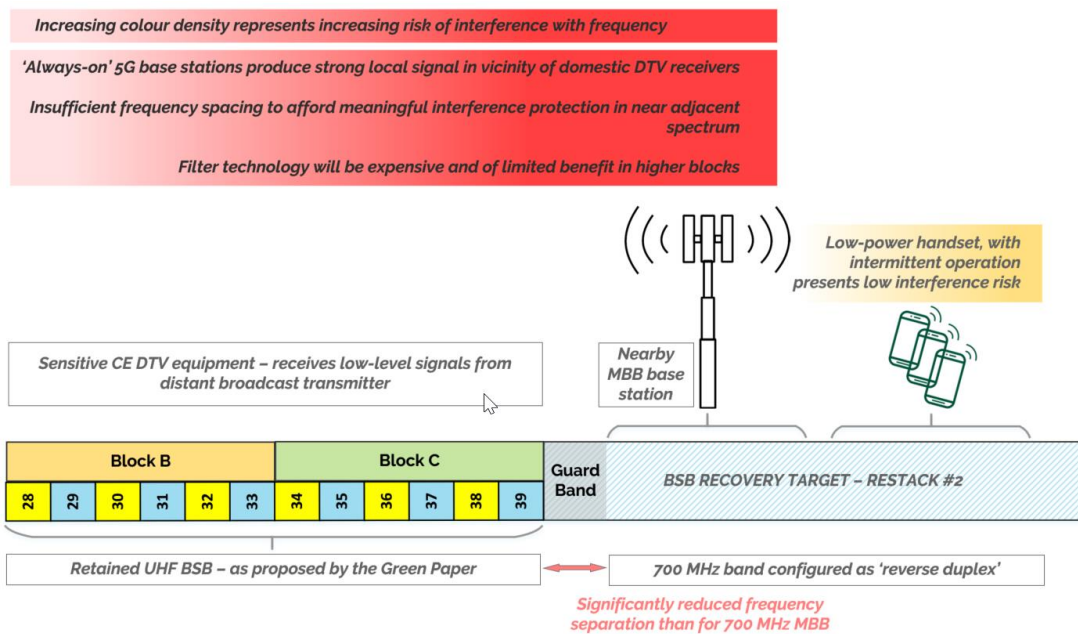


Figure E3—600 MHz band and UHF BSB spectrum proximity—increased interference risk relationships (Source: SBS)

Where 600 MHz MBB base stations are co-located with existing 700 MHz MBB systems, for those nearby domestic premises that previously required the installation of a 700 MHz filter to overcome interference, it is highly likely that each of these filters will need to be replaced so as to filter out unwanted 700 MHz and 600 MHz signals.

Appendix F—600 MHz international experience and adopted interference mitigation strategies

Key point

Prior to any decision to reallocate some UHF BSB spectrum below the current upper limit of 694 MHz for telecommunications use, further research to assess the extent of interference impacts and the development of mitigation strategies will be essential.

The UK (Ofcom) licence conditions for 800 MHz Band MBB included setting the precedent for interference remediation obligations on successful bidders encompassed in the establishment of a Single Consumer Help Scheme.

European Union Directives mandate technical specifications for equipment performance in the presence of strong out-of-band signals for televisions, masthead amplifiers and associated product manufactured or imported for sale in the European Single Market.

600 MHz reallocation in the United States and implications for Australia

Although the United States and some other nearby administrations (notably Canada and Mexico) have adopted their band plans for 5G reallocation in 600 MHz spectrum^{76,77}, there is, as yet, no agreed defined spectrum reallocation for a 600 MHz band to MBB services at a global level or in the Asia-Pacific Region.

T-Mobile is reporting wide-area coverage across the United States through its 600 MHz deployment of base stations⁷⁸, while the 600 MHz infrastructure is also being deployed by other major telecommunications carriers in the United States (for example, by AT&T and Verizon).

As yet, SBS has been unable to ascertain the extent or materiality of potential interference to DTT reception in lower-adjacent spectrum arising from 600 MHz 5G base station deployment in the US. However, the greater provision of cable/satellite services and 'must-carry' provisions⁷⁹ mean that off-air reception is at a much lower level of audience share⁸⁰ in the United States than it is in Australia.

In the event of a Government decision to reallocate some UHF BSB spectrum below the current upper limit of 694 MHz (currently allocated as UHF television channel 51) for telecommunications use, further research to assess the extent of

⁷⁶ Downlink: 617–652 MHz (comprises 7×5 MHz segments), 'Duplex', or mid-band gap: 652–663 MHz, and Uplink: 663–698 MHz (with 7×5 MHz paired segments).

⁷⁷ FYSO 2021–26—page 29

⁷⁸ https://www.t-mobile.com/news/_admin/uploads/2020/06/5G-Fact-Sheet-Original-File.pdf

⁷⁹ Must-carry rules, first instituted by the Federal Communications Commission (FCC) in 1965, require cable systems to carry local broadcast television stations. These rules were originally designed to protect the local stations, which were competing with cable networks for a limited number of cable channels, from losing market share.

⁸⁰ Ofcom/IHS Markit/Broadcasters Audience Research Board (BARB).

interference impacts will be essential, including for the development of mitigation strategies. This assessment will need to be undertaken prior to determining the re-use allocation of released spectrum.

DTT interference mitigation in the United Kingdom

In planning for the UK's first digital dividend of UHF BSB spectrum in the 790–862 MHz block, Ofcom, the UK regulator, commissioned a number of detailed studies to assess and proactively mitigate the risks to DTV reception in the presence of 'new neighbours' prior to the development and award of the UK's 800 MHz Band MBB licences.^{81, 82, 83, 84, 85} Ofcom subsequently awarded released 800 MHz band spectrum to MBB telecommunications services (4G LTE) under a 'reverse duplex' FDD configuration.⁸⁶ The Ofcom licence conditions for 800 MHz Band MBB included setting the precedent for a 'polluter pays' interference remediation obligation, encompassed in the establishment of a Single Consumer Help Scheme.⁸⁷

In the UK, in relation to the 800 MHz band, a 'reverse duplex configuration resulted in a frequency separation of only 1 MHz between the highest UHF BSB channel and MBB base stations.

European Union mandates receiver and reception amplifier performance standards

The European Union has established 'Harmonised European Standards' under article 3.2 of Directive 2014/53/EU that mandate standards of performance for all television receivers that are available for import into the European Single Market. These standards mandate the performance and behaviour characteristics of receivers, masthead amplifiers and other devices in the presence of strong out-of-band signals (for example, MBB).⁸⁸

⁸¹ The UK first digital dividend released spectrum in the range 790–862 MHz.

⁸² Mitigation provisions included technical specifications to limit MBB out-of-band emissions, and imposed licence conditions to remediate interference caused—such as, the provision of filters to all households within a defined radius of the base station, and beyond as necessary.

⁸³ Ofcom Information Memorandum 'The award of 800 MHz and 2.6 GHz spectrum—Annexes' https://www.ofcom.org.uk/_data/assets/pdf_file/0022/32872/im.pdf

⁸⁴ ERA Technology Report: Assessment of LTE 800 MHz Base Station Interference into DTT Receivers (July 2011)—https://www.ofcom.org.uk/_data/assets/pdf_file/0027/33939/ite-800-mhz.pdf

⁸⁵ ERA Technology Report: TV Distribution Amplifier Performance when Interfered with by LTE Base Station and Subsequent Filter Testing (Feb. 2012)—https://www.ofcom.org.uk/_data/assets/pdf_file/0020/28073/era.pdf

⁸⁶ Frequency Division Duplex configuration—Downlink: 791–821 MHz (comprises 6×5 MHz segments), 'Duplex', or mid-band gap: 821–832 MHz, and Uplink: 832–862 MHz (with 6×5 MHz paired segments). Refer Appendix E.

⁸⁷ The Ofcom licences required pre-payment into a fund which would be used to offset the cost of interference remediation rectification (that is, 'pollution'). Refer: Ofcom Information Memorandum 'The award of 800 MHz and 2.6 GHz spectrum—Annexes'—pages 77 to 84 (of 174 pages). https://www.ofcom.org.uk/_data/assets/pdf_file/0022/32872/im.pdf

⁸⁸ ETSI EN 303 354—https://www.etsi.org/deliver/etsi_en/303300_303399/303354/01.01.01_60/en_303354v010101p.pdf and ETSI EN 303 340 —https://www.etsi.org/deliver/etsi_en/303300_303399/303340/01.01.02_60/en_303340v010102p.pdf

Appendix G—Transition options for the implementation of DVB-T2

Key points

In the event DVB-T2 is adopted as part of a technology upgrade, utilisation of the unallocated (sixth) channel spectrum in the transition from DVB-T will be less disruptive to the audience than a transition using the existing five-channel block.

Utilisation of the unallocated channel need not have any implementation delay impact on the overall program of work.

Audience support will be required

As was the case with the first UHF BSB spectrum restack, some disruption to television reception is inevitable as channels are re-channelled/re-tuned. In today's delivery environment, there is a much wider choice of viewing sources, meaning that viewers may be less inclined to invest—to address reception issues (for example, antenna replacement/repoint, interference mitigation) than was previously the case—some may choose not to return to FTA viewing.

A detailed communications strategy, including the provision of audience assistance/advice will be essential to support and retain audiences, noting that issues will vary between localities. If a technical upgrade to a new encoding and/or transmission standard is to be implemented, there will be an additional tier of potential audience issues to resolve for audiences with older receivers.

Support required will vary between transition scenarios

BAI has developed a suite of very high-level transition scenarios which have been shared with the broadcasters and are expected to be presented in more detail in BAI's response to the Media Reform Green Paper consultation.

The scenarios fall into two general categories: a '5-channel option' and a '6-channel option':

- The 5-channel option does not utilise new spectrum (that is, the unallocated sixth channel), but results in greater impact on existing services; for example, a reduction of services or reducing HD services to SD in DVB-T mode whilst retaining the HD services on the DVB-T2 multiplex.
- The 6-channel option takes advantage of the unallocated channel in each market, which eases the service impacts carried on the remaining DVB-T multiplexes, during the staged transition.

The 6-channel option provides a transition that reduces audience disruption in terms of program content impacts during the transition process, but requires additional infrastructure and upgrades at some transmission sites to facilitate use of the unallocated (sixth) channel. The associated incremental cost increase is estimated by BAI to be nominally in the range of ten to fifteen per cent of the

DVB-T2 upgrade component overall. Provided that infrastructure upgrade works of a similar nature at a site are concurrently implemented, these extra works will not impact the overall implementation period of the overall program.⁸⁹

⁸⁹ BAI advice, citing for example, all new DVB-T2 transmitters would be installed concurrently, even though some would not be immediately utilised because of the anticipated staged approach to cut-over.

Appendix H—Legacy (Band V) antennas

Key points

Assessment of the performance of legacy Band V domestic antennas in 500 MHz spectrum would need to be reviewed and managed as part of the communications plan to assist viewers in the lead up to a second restack program.

Replacement of the domestic antenna system, where necessary, would resolve reception deficiencies.

Domestic antenna performance—‘Band V’ legacy antennas

Many domestic antennas in use today were installed before the first restack, and in many cases, would have been optimised by manufacturer design for operation in the 700–820 MHz range of frequencies (‘Band V’ UHF spectrum). These antennas were capable of operation in the 600 MHz band, albeit with minor loss of performance, and in most cases would not have required replacement.

In the event of a second restack, these same antennas would be required to operate in the 500 MHz band. Based on advice received from Australian antenna manufacturers⁹⁰, as part of the industry engagement discussions, this would likely result in further performance degradation for some viewers.

For viewers in range of a strong signal from the designated transmitter, there would likely be no material impact on reception. However, for more distant viewers, reduced antenna performance may result in signal drop-outs or a complete loss of a decodable signal. Furthermore, the directionality of the antenna would reduce, potentially providing less discrimination from co-channel interference in some cases. Replacement of the legacy antenna system would resolve these reception deficiencies but at a cost to viewers.

Assessment of the impact of potential Band V antenna issues would need to be reviewed as part of the communications plan to assist the audience in the lead up to a second restack program.

⁹⁰ As part of the industry engagement discussions (January–April 2021) in preparing responses to the Green Paper.

Appendix I—Response to consultation questions

Chapter 3	
Is the deregulatory benefit on offer sufficient to encourage commercial television broadcasters to take up this offer?	This is a matter for commercial television broadcasters.
Are there any other features which could attach to a new licence that would assist in broadcasters transitioning to a new and more sustainable business model?	This is a matter for commercial television broadcasters.
What elements of the existing regulatory framework should continue to apply?	The SBS Act provides for the editorial independence of SBS. This must be maintained.
Should the new licence arrangements be uniform for all commercial television broadcasting licensees, or should there be differences for metropolitan and regional/remote broadcasters?	This is a matter for commercial television broadcasters.
When do you think the new licence framework should come into effect?	This is a matter for commercial television broadcasters. To the extent that this timing is related to, or impacts, new spectrum arrangements for all broadcasters, SBS should be fully consulted.
What further measures should be considered that would assist regional commercial broadcasters in remaining sustainable?	This is a matter for commercial television broadcasters.
Chapter 4	
Should Australia continue to operate digital television systems using the DVB-T standard and the MPEG-4 compression technique? Are there other options that should be considered?	<p>The focus in the Green Paper on the legacy MPEG-4 compression standard gives rise to serious concerns about the long-term sustainability of the technology transition proposed. Alternative technology options are available and will lead to better outcomes for audiences and broadcasters.</p> <p>A significant efficiency gain for FTA broadcasters is the potential combination of coding efficiency with transmission efficiency—essentially the marriage between HEVC and DVB-T2.</p>

<p>How should the new multiple transmitter licences operate? Should broadcasters be required to form a company for the purposes of holding the new multiplex licences?</p>	<p>This is an implementation decision that should be made once preliminary decisions about future spectrum and technology arrangements have been made.</p>
<p>How can Government work with industry to minimise disruption for households during the proposed transition?</p>	<p>Major changes to broadcasting spectrum will trigger technology changes that will have greatest impact on older consumer equipment. The Government should support affected audience members in the transition, including with subsidies to upgrade consumer reception equipment where required. Significant consumer education should be undertaken ahead of any transition, and be led by Government in close consultation with industry.</p>
<p>Is it important for free-to-air broadcasters to maintain the precise number and picture quality of channels currently offered?</p>	<p>Yes—broadcasters must be able to continue to provide at least the same services, with the same picture quality.</p> <p>Further to retaining SBS's current suite of channels, and improving their quality where relevant over time, flexibility must be maintained for the potential addition of new channels to SBS's suite of services, in order to better serve Australian audiences' evolving needs.</p>
<p>Should the transition model prioritise the capacity for broadcasters to provide significantly more services, or services of a significantly higher audio-visual quality (such as UHD)?</p>	<p>As above, further to retaining SBS's current suite of channels, and improving their quality where relevant over time, flexibility must be maintained for the potential addition of new channels to SBS's suite of services, in order to better serve Australian audiences' evolving needs.</p>
<p>What would the cost savings be for broadcasters? Over what period would these potential savings be realised?</p>	<p>There is likely to be a high cost for technology transition for broadcasters. The removal of some channels may also result in a fall in revenues for SBS (not savings).</p>
<p>What would be the impact on owners of transmission facilities?</p>	<p>This is a matter for the owners of transmission facilities.</p>

Chapter 5	
Do you consider that revenue from the sale of spectrum could be used to support public policy initiatives for media?	SBS supports the investment of additional public funds into the provision of Australian screen content and public interest journalism.
Are there examples of best practice in providing sustainable and targeted support in other jurisdictions?	Further research would need to be undertaken to establish international best practice.
Chapter 6	
Should the investment obligation apply to all types of SVODs, BVODs and AVODs including those that specialise in content such as sport?	This is a matter for Government.
Would a rate of investment of five per cent of Australian revenue be reasonable? Is there an alternative rate that is more appropriate?	This is a matter for Government.
Should alternative models, such as a percentage of overall programming expenditure, be considered?	This is a matter for Government.
Is the proposed revenue threshold of \$100 million reasonable?	This is a matter for Government.
Should the investment obligation be able to be fulfilled with any genre of Australian content, or genres such as drama, children's programming or documentaries?	This is a matter for Government.
Should the investment obligation be geared to commissioned content, or broadened to permit the acquisition of Australian content that would satisfy the first release requirement?	This is a matter for Government.
Should the investment obligation capture broader categories of content investment, such as pre- and post-production?	This is a matter for Government.
Chapter 7	
Is the current amount of Australian content produced and commissioned by the ABC and SBS appropriate?	Yes. SBS is committed to producing and commissioning unique Australian content in fulfilment of its legislative Charter obligations. As an efficient and effective organisation, SBS already commits a significant proportion of its funding to Australian content and has increased its output in recent years. SBS would

	welcome the opportunity to make more Australian content, however this could not be achieved without additional funding.
How should a statutory obligation for the ABC and SBS to provide Australian content be constructed?	<p>If there is no intention to increase Australian content on SBS, then there is no demonstrated need for regulatory intervention.</p> <p>If an increase in Australian content on SBS is desired, then additional base funding would provide the greatest flexibility for SBS to allocate content investment according to audience data and preferences. Additional tied funding provided to SBS for the purpose of creating new Australian content, without introduction of new legislative obligations, would also achieve the desired outcome of increased Australian content. It would also grow the production industry, while allowing SBS to retain editorial flexibility and independence. If a legislative obligation is contemplated, it should:</p> <ul style="list-style-type: none"> • be set as a proportion of expenditure on content; • not specify particular content genres; • not exceed the current proportion of spend by SBS (unless additional funding is to be provided, in which case this must be proportionate to the increased obligation); and • take into account the SBS Charter and operating budgets.
Should this focus on the investment in Australian programming, or require the provision of certain levels of Australian programming?	Funding tied to Australian content, rather than the imposition of quotas or a legislative obligation, would ensure more Australian content is produced while preserving SBS's independence as to the production and delivery of content. Of the two options, an investment-based model is preferred for the reasons set out in the submission.
Should the obligation focus on Australian programming broadly, or target particular genres such as drama and children's programming?	Genre-specific obligations are considered particularly undesirable as they limit SBS's capacity to respond to evolving audience and market variances.

<p>To what extent should the obligation differ for the ABC and SBS to accommodate their differing roles and remit?</p>	<p>SBS is committed to producing and commissioning unique Australian content in fulfilment of its legislative Charter obligations, including the need to ensure a diversity of media services. The unique Charter obligations of each organisation should be taken into account.</p> <p>For example, SBS provides multilingual content in fulfilment of its Charter. This content, such as international news services, should not be displaced to fulfil a time-based quota for Australian content.</p> <p>Any obligations must also be calibrated with reference to the substantially different operating budgets of the public broadcasters.</p>
<p>What impact would the imposition of a clear Australian content obligation for the ABC and SBS have on the Australian screen production industry, and the provision of Australian content more broadly?</p>	<p>Additional base funding would provide the greatest flexibility for SBS to allocate any increased content investment according to audience data and preferences.</p> <p>Additional tied funding provided to SBS for the purpose of creating new Australian content, without introduction of new legislative obligations, would also achieve the desired outcome of increased Australian content, and growth of the production industry, while retaining editorial flexibility and independence.</p>
<p>Chapter 8</p>	
<p>Is the timeframe proposed in this chapter realistic?</p>	<p>The timeline proposed in the Green Paper is optimistic and contains some misalignments. Appropriate time for consideration of further options, and further engagement and consultation should be given.</p>

	<p>A smooth transition, through an extended timeline, to alternative technology options, would yield greater spectrum efficiency benefits and better serve audience needs. This would also maintain the sustainability of the FTA platform and allow more audience members to upgrade their home equipment within the natural replacement life cycle.</p> <p>Any additional Australian content, assuming it is sufficiently funded, would need a multi-year lead time of at least two to three years to reach Australian screens.</p>
<p>Are there any particular stages that would require a greater or lesser period of time?</p>	<p>Both spectrum rationalisation and the production of additional Australian content would require a longer period of time than outlined in the timeframe in this chapter.</p>
<p>Are there particular risks and factors that need to be taken into account in terms of the timing for the transition to the new licensing and regulatory model?</p>	<p>A smooth transition, through an extended timeline, to alternative technology options, would yield greater spectrum efficiency benefits and better serve audience needs. This would also maintain the sustainability of the FTA platform and allow more audience members to upgrade their home equipment within the natural replacement life cycle.</p>

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