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'The ABA has developed these digital channel plans with the interests of viewers foremost in mind,' said Professor David Flint, ABA Chairman. 'The ABA has sought to minimise the number of changes that viewers will have to make to their existing reception equipment to receive digital broadcasts. By the same token, the ABA has sought to reduce costs to broadcasters by maximising their ability to use their existing transmission facilities.'

The release of the plans is in accordance with the strict timetable the ABA has set itself in order to give broadcasters as much time as possible to test the technology and establish their infrastructure before the commencement of digital television broadcasting on 1 January 2001.

The ABA has done all it can to finalise all metropolitan market digital channel plans. However, it has delayed release of the plans for the remaining metropolitan markets of Adelaide, Canberra, Hobart, Melbourne and Perth because of concerns about the use of some VHF channels for digital services. Use of these channels would require viewers in adjacent regional markets to make changes to their analog reception equipment.

'Before it finalises these remaining metropolitan plans, the ABA wishes to assure itself that appropriate arrangements are in place to deal with interference and compensation issues relating to the reception of analog services in adjacent markets,' said Professor Flint. 'Accordingly, the ABA has asked broadcasters to satisfy it in this regard before it finalises the plans.'

An explanatory paper, which discusses issues raised in submissions and explains the reasons for each decision, accompanies each digital channel plan. Those issues that relate to more than one plan are addressed in *The*

ABA's General Approach to Digital Terrestrial Television Broadcasting Planning.

The ABA has also released the *Digital Terrestrial Television Broadcasting Planning Handbook*. The Handbook provides information about the technical assumptions used by the ABA in the digital channel planning process as well as the way in which technical assumptions on other matters have been decided.

Planning for digital broadcasting

The ABA is required (by Schedule 4 of the Broadcasting Services Act) to formulate legislative schemes for the conversion of commercial and national television broadcasting services from analog to digital mode.

The ABA determined the Commercial Television Conversion Scheme on 22 March 1999. The ABA expects to finalise the National Television Conversion Scheme shortly.

Digital transmissions must start on 1 January 2001 in metropolitan areas, and on a date to be determined by the ABA between 1 January 2001

and 1 January 2004 in regional areas.

As part of the implementation of the conversion schemes, in May 1999 the ABA invited comments on draft digital channel plans. The draft plans identified proposed channel allotment and assignment for digital television and other services for metropolitan and those regional markets which will be commencing digital transmissions on 1 January 2001 or soon afterwards.

These plans were prepared by the ABA in consultation with the Digital Television Channel Planning Consultative Group. This group consists of representatives from

Copies

The ABA's *General Approach to Digital Terrestrial Television Broadcasting Planning* and the *Digital Terrestrial Television Broadcasting Planning Handbook* are on the ABA web site, <www.aba.gov.au>.

Copies can also be obtained from the ABA, on Freecall 1800 810 241.

Printed copies of the Handbook are also available, price \$20.00.



IN THE NEWS

the ABA, metropolitan and regional commercial television broadcasters, national television broadcasters, the former National Transmission Agency, the Australian Communications Authority, the Department of Communications, Information Technology and the Arts Laboratory, the Australian Subscription Television and Radio Association, potential datacasters and the Federation of Australian Commercial Television Stations.

All issues raised in submissions have been taken into account in finalising the digital channel plans and are discussed in the accompanying explanatory statement to each digital channel plan.

As knowledge of digital television technology is continuing to evolve, the ABA has taken a staged approach in preparing digital channel plans. As a result, the plans do not identify additional 'translator' channels for local areas that may not receive good television reception from the main transmitter, as the precise need for these is not known at this stage.

The ABA wants to be satisfied that the best technical information is available to it, through programs of test transmissions and further studies, prior to finalising channels for these areas. This approach is aimed at achieving maximum spectrum productivity by optimising channel usage.

Changes from draft digital channel plans

The following changes to preliminary views set out in draft digital channel plans have been made:

Newcastle — NRN has been assigned channel 51 rather than channel 56, which is restricted in power towards Wollongong. This means that all existing television broadcasters, apart from NEN, will transmit on unrestricted channels.

Wollongong — The ABC has been assigned channel 51 rather than channel 57, which is restricted in power towards Newcastle. This means that the ABC and the existing commercial television broadcasters will all operate on unrestricted channels leaving the SBS and new operators on restricted channels.

Darwin — Three proposed unassigned channels: 37, 38 and 29, have been removed due to concerns raised about the potential to cause interference to VCRs by the use of the entire lower UHF band for analog and digital television services in Darwin. Three unassigned channels still remain in Darwin.

Batchelor (part of the Darwin digital channel plan) — Channel 68, which was proposed to be assigned to the ABC television service, has been removed from the proposed digital channel allotment for Batchelor and replaced with channel 47. The Australian Communications Authority has requested that channels 68 and 69 not be assigned to new digital services so that they can be used for radiocommunications, including land mobile services. The ABC television service in Batchelor, currently operating on channel 69 has been assigned channel 56. Three unassigned channels are available for Batchelor.

Digital channel summary

| Area served | | | | | | | Not assigned |
|-------------------|-----|---------|-----|-----|-----|-----|--------------|
| Sydney | | | | | | | |
| | ABN | ATN | TCN | TEN | SBS | CTV | |
| Analog | 2 | 7 | 9 | 10 | 28 | 31 | |
| Digital | 12 | 6 | 8 | 11 | 34 | * | 29 |
| Newcastle | | | | | | | |
| | NBN | ABHN | SBS | NEN | NRN | | |
| Analog | 3 | 5A & 48 | 45 | 54 | 57 | | |
| Digital | 36 | 37 | 38 | 53 | 51 | | 56 |
| Wollongong | | | | | | | |
| | SBS | ABWN | WIN | CTC | CBN | | |
| Analog | 53 | 56 | 59 | 62 | 65 | | |
| Digital | 54 | 51 | 36 | 37 | 38 | | 50, 57 |
| Brisbane | | | | | | | |
| | ABQ | BTQ | QTQ | TVQ | SBS | CTV | |
| Analog | 2 | 7 | 9 | 10 | 28 | 31 | |
| Digital | 12 | 6 | 8 | 11 | 36 | * | 38 |
| Toowoomba | | | | | | | |
| | SBS | ABQ | STQ | TNQ | RTQ | | |
| Analog | 53 | 56 | 59 | 62 | 65 | | |
| Digital | 52 | 55 | 58 | 61 | 64 | | 66, 67, 68 |
| Darwin | | | | | | | |
| | ABD | NTD | SBS | TND | | | |
| Analog | 6 | 8 | 28 | 34 | | | |
| Digital | 30 | 31 | 29 | 32 | | | 33, 35, 35 |

The Digital Conversion Act states that the digital transmission of community television services currently operating on the sixth analog channel, will be in spectrum allocated for use for the provision of datacasting services.

Planning tools

In carrying out its digital planning task, the ABA is using a sophisticated digital terrain model specifically designed for planning purposes in 1995. This effectively models the entire topography of Australia in digital form. For digital signals, as much as for analog signals, the nature of the landscape across which the transmissions occur is the one of the most significant influences on the signal quality.

The ABA is using a range of internationally accepted tools to predict the propagation path of digital television signals. These include well-established and still valid models such as ITU Recommendation 370, and those developed by Bullington and the BBC. They also include the most recent tools such as CRC-COV: a Canadian propagation model developed specifically to predict the behaviour of digital transmissions.

The use of a digital terrain model and the accurate analysis of the propagation path remain the most important factors in efficient digital planning.