



Digital television and datacasting plans

for Sydney, Newcastle and Wollongong

The ABA has released plans for digital television and datacasting services across the Sydney, Newcastle and Wollongong region. The variation to the original digital channel plan (that identified the main channels in each area), sets out the channels existing broadcasters will use for their local coverage digital retransmissions. It also identifies two channels, 29 and 35, that may be used for other purposes (including datacasting) in the combined coverage areas of Sydney and Newcastle.

'In the Sydney and Central Coast area, where broadcasting spectrum is at its most scarce, the ABA's groundbreaking use of single frequency networks has made a tremendous difference,' said Professor David Flint, ABA Chairman. 'Where otherwise there may have been limitations on regional services and viewers may have been required to buy new antennas, there will be now be continued regional programming, viewers will be able to use their existing antennas and there will be wide-scale delivery of datacasting services.'

By using a network of trans-

mitters, or repeaters, all using the same frequency or only two frequencies at most, the number of channels existing broadcasters require to transmit their digital television signal has been reduced and additional capacity has been made available for new services.

'The ABA has varied the digital channel plan with the interests of viewers foremost in mind,' said Professor Flint. 'Following submissions received, the ABA has decided that there is a public interest benefit of allotting additional channels for digital television to the Central Coast for the Newcastle broadcasters NBN, NEN and NRN, so that they can provide local programming. 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 from local coverage retransmission facilities.'

Planning for digital broadcasting

On 1 July 1999, the ABA determined the NSW: Part 1 Digital Channel Plans (Sydney,

Newcastle and Wollongong), identifying channel allotment and assignment for digital television and other services.

The ABA has prepared the variation to the digital channel plans in consultation with the Digital Television Channel Planning Consultative Group (DTCPCG). This group consists of representatives from the ABA, metropolitan and regional commercial television broadcasters, ntl Australia, the Australian Communications Authority, the Department of Communications, Information Technology and the Arts, the Australian Subscription Television and Radio Association, potential datacasters and the Federation of Australian Commercial Television Stations.

The ABA's channel plans for digital repeater services in the Sydney, Newcastle and Wollongong areas specify the same transmission sites used by existing analog television translator services, which are designed to assist viewers where reception from the main television transmitter sites is difficult. These are at Kings Cross, Manly/Mosman, Bouddi, Wyong and Gosford for the Sydney services; at

Merewether and Kotara for the Newcastle services; and Brokers Nose and Stanwell Park for the Wollongong services.

For the unassigned channels, 29 and 35, which may be used for other services such as datacasting, each service will be able to transmit on its one respective frequency from Sydney, Kings Cross, Manly/Mosman, Bouddi, Gosford, Wyong, Newcastle, Merewether and Kotara.

In May 1999 the ABA sought advice from the DTCPCG on the extent of the advantage to the community arising from the options for and the implications of implementing single frequency networks within the Australian digital terrestrial television broadcasting environment. Essentially, under the digital television standard (DVB-T), it has become possible to re-use the same frequency for a reticulated service, rather than needing to find alternative frequencies for retransmissions and thereby use up a limited number of available channels within any given market. A 'pure' single frequency network uses the same frequency at both the main transmitter and the retransmission sites.



Single frequency networks

The Single Frequency Network Consultative Group was established to consider the ABA's request and to report on options for implementing single frequency networks and on relevant related matters affecting digital television channel planning.

The group's report, *Report to the ABA on the Outcomes of the Studies by the Single Frequency Network Consultative Group—June 2000*, recommended that a pure single frequency network allocation should be the default for digital channel plans for metropolitan digital television services, but that a '1+1' channel plan should be implemented where use of a pure single frequency network approach would, on balance, be contrary to the public interest.

In certain circumstances, such as when there exists the legacy of existing transmission and reception infrastructure, i.e. transmitters and domestic antennas, it may prove preferable to have a different frequency from the main transmitter at all repeater sites, creating a 1+1, or dual frequency network.

In this variation to the digital channel plan, the ABA has planned both single frequency networks and dual frequency networks. The public interest consideration has been a defining criterion in using the 1+1 option in Sydney and Newcastle, where the main digital service will operate on a VHF channel (channels 6 to 12) and many viewers of existing analog services have UHF antennas directed at the local area transmitters. The digital channel plan explanatory paper indicates the potential numbers of people affected and antenna replacement costs. In some areas, such as in the Illawarra there is a greater use of combined VHF/UHF antennas.

Analog channel changes

The variation to the digital television channel plans for Sydney, Newcastle and Wollongong requires some changes to existing analog television services:

- a move of the existing Merewether ABC analog service from channel 35 to channel 50;
- the option of moving the existing Brokers Nose analog service from channel 35 to channel 30. The successful licensee of the channel 35 service would be required to negotiate this change; and
- the move of the Stanwell Park SBS analog service from channel 30 to channel 48, if the Brokers Nose option is implemented.

Digital channel summary

Table 1 Planned channels for digital repeater services in the Sydney area

Area served	Channel assignments					
	ABN	ATN	TCN	TEN	SBS	Unassigned
Kings Cross						
Analog	46	49	52	55	58	
Manly/Mosman						
Analog	42	60	63	66	39	
Kings Cross & Manly/Mosman						
Digital	30	48	33	45	34	29 35

Table 2 Planned channels for digital repeater services in the Newcastle area

Area served	Channel assignments					
	NBN	NEN	NRN	SBS	ABHN	Unassigned
Merewether						
Analog	41	44	47	32	35/50*	
Digital	36	53	51	38	37	29 35
Kotara						
Analog	61	64	67	55	58	
Digital	36	53	51	38	37	29 35

* To allow the use of channel 35 at Newcastle, ABHN35 Merewether is required to move to channel 50.

Table 3 Planned channels for digital repeater services in the Central Coast

Area served	Channel assignments								Unassigned	
	ATN	TCN	TEN	SBS	ABN	NBN	NEN	NRN		
Bouddi										
Analog	44	47	50	64	67	41	32	35*		
Digital	61	62	65	34/38#	37	68	59	56	29	35
Gosford										
Analog	49	52	55	58	46	40	43	61*		
Digital	61	62	65	34/38#	37	68	59	56	29	35
Wyong										
Analog	60	63	66	39	42	69	30	33		
Digital	61	62	65	34/38#	37	68	59	56	29	35

* Service not operating

The SBS can use either channels 34 or 38, but not both, at these sites.

Table 4 Planned analog channels for areas affected by the use of digital repeater services in the Wollongong area

Area served	Channel assignments					Unassigned
	WIN	CTC	CBN	SBS	ABWN	
Wollongong (Brokers Nose)						
Analog	3/41	44	47	32	35/30*	
Digital	36	37	38	54	51	50 57
Stanwell Park						
Analog	39	42	45	30/48#	33	
Digital	40	43	46	49	52	55 58

* May move to channel 30 as alternative to power restriction on Sydney channel 35 service.

To allow the use of channel 30 at Brokers Nose, SBS 30 would need to move to channel 48.