



The New Zealand Television Broadcasters' Council  
Submission in Response to  
**DIGITAL FUTURES**  
**Planning for Digital Television and New Users**  
**A Discussion Paper**

Submitted by  
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## A. Background to Submission

The New Zealand Television Broadcasters' Council (TBC) represents the common interests of its members, the majority of the national free to air (FTA) broadcasters. The members of the TBC are TVNZ, MediaWorks TV and Maori Television (MTS).

The TBC's members have a strong interest in the development of a digital television platform that will provide the opportunity for a wide range of FTA television channels. This will provide viewers with more options at no direct cost to them and will provide advertisers with more options to target their clients and potential clients.

The increased bandwidth needed for High Definition (HD) and 3D broadcasts will also need to be provided for in the final spectrum plan.

We support the concepts of efficient spectrum planning and implementation and recognise the strong possibility of a "digital dividend" to the government if excess spectrum is created through efficient planning.

The planning taking place will set the parameters for the operation of television and other telecommunications platforms for the foreseeable future, likely fifty years or more. For that reason, we will be taking an extremely long term view of the spectrum needs of the television industry in this submission.

## B. Assumptions

Several assumptions will need to be made about the growth of the television industry and the capacity each channel will require. Twenty one years ago, New Zealand was served by two FTA channels, TV One and TV2. Currently, there are eleven national terrestrial services with an additional service committed to by MediaWorks for early next year and many more regional services currently operating. Three of these services are HD; TV One, TV2 and TV3, but a significant amount of television production is being done in HD, and consumers are buying HD sets in greater numbers. It is quickly becoming the standard for broadcast television, so it is reasonable to assume that all of the existing national services will become HD in the not too distant future. It should also be assumed that any new entrants will either launch in HD or will have plans to move to HD in the medium term.

In the past two years there has been considerable growth in 3D technology. So far this has been limited to cinema viewing, but Sony has recently announced the release of the first 3D consumer television, which will at first be used by "gamers" to experience 3D on their Sony PlayStation games. But with content now being produced in 3D it is reasonable to expect that at least the major channels will develop plans for 3D transmission in the next few years.

Trends in broadcasting suggest that, in the future, broadcasts will have more consumer options available, such as multiple languages and closed captioning for the hearing impaired or for translation purposes to other languages. These options will all add to the bandwidth required for each television service. The capacity assumptions made in the rest of this submission assume any HD or 3D signal will also have the bandwidth to carry three languages of audio and closed captioning in one language.

The cost of entry into the business of television is falling rapidly. The transmission and playback equipment is a fraction of what it was only a decade ago and, with the increase in niche channels worldwide, programme supply is increasing exponentially and that suggests there will be the potential for new entrants into the industry, along with the likelihood of existing operators adding new channels. As advertisers demand more precise targeting of their audiences, niche channels will provide the television industry with a way to reach those targeted audiences and allow FTA television to continue to experience advertiser growth.

Although the size of the New Zealand market will always limit the choice in mass media, the population will not likely remain static. Statistics New Zealand projects that the country will reach five million within 20 years and Auckland will be a city of 1.93 million. More population means an increased ability to sustain more FTA broadcasters.

### C. Capacity Analysis

The proposal from MCH contains 22 channels of spectrum in the UHF band, each capable of handling about nine Standard Definition (SD) signals. That suggests a possible universe of 198 broadcast services, which would seem to be very generous indeed. Of the 22 channels, 12 are full national coverage, the others are for urban areas only. There are also two guard band channels, one each at the high and low end of the spectrum, for a total of 24 channels.

Each national or urban licence requires two channels, one for main service and one for infill, so there are actually only 11 or 12 licences available, or a total of up to 108 SD services. Note that Kordia is shown on the MCH plan as having three licences, but no infill on two of them. In discussion with Kordia, we are informed that they have infill licences in place that can be used with the two full coverage licences so, under certain conditions, 12 national licences should be available.

Using the assumptions in point B, however, reduces the number of services accommodated substantially. Each HD service takes about three times the bandwidth of an SD service, and 3D adds another 10% onto the bandwidth requirement of an HD service. That means each channel of spectrum could handle two 3D HD services or three HD services, a total of 36 HD services or 22 3D HD services.

If we look at the proposed 12 licences, and assume that four of the existing FTA services will be 3D HD and the other eight will be HD, five national licences will be required.

Of the 12 licences, five are leased to SKY, one to TVNZ, one to MediaWorks, three to Kordia, one to NZRB and one to the Crown which is unallocated. It is clear from the above analysis that the existing national FTA broadcasters have just enough spectrum capacity to move their existing services to HD or 3D, as only five licences are available for general use; the rest are controlled by the Crown, SKY or NZRB. That makes no allowance for new services that may want to enter the market. Should SKY decide to not renew some of the frequencies currently in use for its UHF service, those frequencies would provide expansion capability for FTA television. If SKY should determine it wishes to retain the licences, that expansion capability is much less certain. It cannot be assumed that they will join the pool of FTA broadcasters beyond providing Prime on a FTA basis. In fact, it is likely in their interest to ensure that the frequencies are used for anything but FTA, as more FTA choice weakens the SKY proposition and could harm their Pay TV business.

That leaves open the question of what uses would be permissible with the licences in Blocks A and B. Since the government is including the SKY licenses in the television block, it follows that all owners of such licences should be required to use them primarily for the propagation of FTA television signals.

To summarise, the plan has assumed five licences to FTA operators and Kordia, and those licences can accommodate a total of 15 HD signals, or nine HD and four 3D signals. Without some form of control over the use of the other licences, the FTA capacity in New Zealand will be constrained at those numbers. There is even some doubt that Kordia would use all of its licences for FTA television, as other options exist in the mobile broadcast area.

*RECOMMENDATION #1:*

*In response to questions 13 and 14, we recommend that all 12 licences (and any additional that are provided for) be regulated so as to require FTA services as the primary use on each licence and that each frequency is filled to reasonable capacity within two years of Digital Switch Over (DSO). Should the frequencies not be so occupied within that time period, the licences should revert to the Crown, which should then auction them off or hold them for use exclusively by new or existing FTA operators.*

D. Use of Guard Band Frequencies

The guard bands at the top and bottom end of the television spectrum are provided to avoid interference between television signals and other users in adjacent bands. We would suggest that a good use for those bands would be as low power infill. That would provide a much lower risk of interference with adjacent spectrum due to the low power and limited range of the transmission used for infill and could possibly make available another national frequency that is currently planned for infill use only. We believe it could be possible to get as many as 14 national licences out of the existing allocated spectrum with proper use of the guard band frequencies.

In order to use these frequencies, there will need to be appropriate restrictions on the uses of adjacent frequencies to avoid interference. If those restrictions can be applied, this would be a feasible way to expand the frequencies available for use by FTA broadcasting.

*RECOMMENDATION #2:*

*That channels 25 and 48 on the UHF spectrum are used as low power infill channels in order to free up more national licences for general FTA television allocation and that appropriate restrictions are developed for adjacent frequencies to allow this to happen without undue interference. If the guard bands cannot be provided as interference free, then other options such as adding more spectrum to the proposed television Block A should be pursued.*

## E. Maori Television Spectrum

The MCH discussion paper recognises the review of the Maori Television Service Act 2003 which has put forward several recommendations relating to the management rights held by MTS. Those include the preservation of the Management Rights to four channels of spectrum which could equate to two national sets of frequencies (two main sets and two infill sets). That is in conflict with the proposal which appears to suggest only one national set of frequencies. If the government continues to recognise the management rights of MTS to two national sets of frequencies, the proposed plan will come under further stress, as MTS has not been allocated any sets of frequencies under the plan and the Crown is retaining only one set, which could possibly be allocated to MTS. This issue clearly needs resolution before a final plan can be reached.

### *RECOMMENDATION #3:*

*That MTS management rights be resolved with government prior to any final development of the spectrum plan.*

## F. Rural Broadband

The discussion paper suggests two frequency blocks be reserved for rural broadband, and provides a portion of the television spectrum for urban areas only.

We suggest that the use of spectrum in that way may not be wise. It is not possible to fully predict population shifts in New Zealand in coming decades. If, as a simple example, mining exploration should be successful in finding unexpectedly large scale deposits of valuable mineral in a lightly populated area, a city and surrounding towns could develop to such an extent that broadcasters might feel it is commercially feasible to extend coverage to the area. If the frequencies were not available due to development of rural broadband in that area, the area could be disadvantaged by not having access to as many FTA signals as it otherwise would have.

### *RECOMMENDATION #4:*

*That Blocks A and B as designated in the MCH plan be combined into a single Block A for core television use.*

## G. Transition Costs

To achieve the most efficient use of bandwidth, and therefore the greatest possible digital dividend, many existing broadcast frequencies may need to be changed. There will be costs associated with this and, while these have not been identified at this time, it would seem a logical principle that either the government or the purchasers of the new licences in the block identified by MCH as Block D (694 – 806 MHz) should be responsible for those costs. These costs could include the actual work in altering the frequencies, the planning time required to determine what changes will need to be made, any consumer education that might be required and any other costs associated with the actual changing of frequencies.

*RECOMMENDATION #5:*

*That costs for frequency changes required for the efficient use of spectrum are the responsibility of either the government or purchasers of frequencies in Block D.*

## H. Regional Television

Currently, regional television stations operate in many areas of the country. Those within the geographic areas of Digital Terrestrial Television (DTT) coverage have an option to switch to digital transmission, but those outside the current DTT coverage area will have fewer options once digital switch over occurs.

While regional broadcasters have a very loyal following, most deliver an extremely limited audience. To provide access for all of these channels to either satellite or expanded terrestrial digital transmission coverage would be cost prohibitive. The TBC view is that regional broadcasters should not receive preferential funding agreements from NZ On Air or other government agencies, but that government funding be considered to expand the coverage area of the current DTT signal, which would take in more of the existing regional broadcasters, giving them a digital option, reducing the problem and providing more of the general population with access to the more robust DTT system.

Another option that is available to regional broadcasters is the use of vacated VHF spectrum once DSO is completed. There has been no identified use for this spectrum so it would seem feasible that some regional broadcasters could use VHF analogue delivery in their local areas. If this option is to be developed, some restrictions to ensure that the frequencies are not used for mass audience broadcasters would be necessary so as not to thwart the switch over process.

*RECOMMENDATION #6:*

*That the limited resources available through NZ On Air and other government funding agencies not be used to provide subsidies for transmission costs of regional broadcasters, but Kordia be encouraged to provide regional spectrum where available to enable those regional broadcasters within the DTT area to make the digital transition.*

*RECOMMENDATION #7:*

*That government consider the benefits of expanding the existing DTT network to reach up to 87% of the population, and that VHF frequencies be considered for use by those regional television stations that are outside the DTT coverage area.*

## I. In Closing

The spectrum planning that is occurring currently will affect all New Zealanders for decades to come. Not surprisingly, the planning is occurring with no input from the general public, the end users of the spectrum, as most people have little knowledge or understanding of the technical issues being dealt with.

That being said, we must all keep the public at the front of our minds when making these decisions. They are decisions that future generations will get the benefit of (or pay the price for).

Public benefit must be considered in the widest possible context, not only the immediate financial return to the government, but what the likely best outcome for the public will be in terms of services offered.

The TBC and its members remain committed to efficient use of spectrum and the expansion of FTA services within New Zealand, for the benefit of all New Zealanders. We support the government ministries in this process and remain willing and able to provide further input and assistance as appropriate.

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