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# TRANSCRIPT OF PROCEEDINGS

**PRODUCTIVITY COMMISSION**

**INQUIRY INTO RADIOCOMMUNICATIONS**

**DR R. ROBERTSON, Presiding Commissioner**
**DR N. BYRON, Commissioner**

**TRANSCRIPT OF PROCEEDINGS**

**AT CANBERRA ON THURSDAY, 18 APRIL 2002, AT 10.31 AM**

**DR ROBERTSON:** Good morning, everyone. Welcome to the public hearings of the Productivity Commission inquiry into the management of radiocommunications spectrum. My name is David Robertson and my fellow commissioner is Dr Neil Byron. We started the inquiry back in July when we got the reference from the assistant treasurer, and we were required to review radiocommunications acts and the market-based reforms and activities undertaken by the Australian Communications Authority, and this review is part of the national competition policy legislation review process.

Our draft report was published in February, with the aim of promoting further public discussion. The draft report asked some specific questions and requested some specific information on a number of matters where we felt we perhaps didn't know sufficient to actually come to solid conclusions. The purpose of the second round of hearing is to provide an opportunity for interested parties to make further submissions and to place their views on the public record, and we shall take these into account in preparing our final report to the government, which we hope will be in the middle of the year.

Following these hearings in Canberra there will be further hearings next week in Melbourne. As you all know, but I'm required to repeat some information, we like to conduct all hearings in a reasonably informal manner, but I remind participants that a full transcript is being taken and for this reason comments from the floor are not appropriate because they wouldn't be heard properly. At the end of today's proceedings, time permitting, I will provide an opportunity for anyone who wishes to make a brief presentation on what's been heard or what they think should be heard.

Participants are not required to take an oath but are required under the Productivity Commission act to be truthful in their remarks. Participants are welcome to comment on issues raised in other submissions. The transcript will be available to participants and will be available from the commission's web site following the hearings. Copies may also be purchased using an order which is available from the staff here. Submissions are also available.

I invite speakers preferably to give a summary of their second submissions, picking on the main points rather than reading, because that will encourage discussion, which is what we really want to have. So now I'd like to welcome the Australian Broadcasting Authority representatives, led by Prof David Flint, Giles Tanner and Alastair Gellatly. Thank you, over to you.

**PROF FLINT:** Dr Robertson and Dr Byron, we do appreciate the opportunity in your process to comment on your excellent draft report. Our comments are set out in our letter of 15 April 2002 but I would like to refer briefly to some of these and then to ask the general manager, Mr Giles Tanner, to continue in a little more detail.

Ours are principally related to four points in the draft report: firstly, on page 228, which relates essentially to the proposal that the planning function of the ABA be transferred to the Australian Communications Authority; secondly, the statement on page 223 in relation to there being fewer analog services; thirdly, the statement on page 215 in relation to broadcasting licences being there to provide adequate and comprehensive services; and finally, on page 227, the proposal to divide licences for spectrum from licences for broadcasting or for content. So they are the four areas that we wish to refer you to, if I may just very briefly refer to each of those and then ask Mr Tanner to say a few more words.

First, in relation to the planning process, the planning functions of the Australian Broadcasting Authority, those are used by the authority to promote the objectives, which of course include technical, social, cultural objectives, and they are a very useful tool of the authority in attaining those objectives. We do not only use the objectives, we are not only directed by the objectives in relation to our supervisory role in relation to content; it's also used in relation to planning - for example, planning for the purposes of the provision of adequate community radio, planning for the purposes of providing diversity through narrowcasting niche services instead of commercial services.

There is in the report a consideration of the possibility of there being a merged authority, merging the ACA and the ABA into one single authority. This is not something which we propose but if there were a feeling that the planning functions are inappropriate to the ABA, we see difficulty in moving them to the ACA, given that the parliament's objectives for broadcasting planning are different from those objectives which parliament has given to the ACA, and our suggestion is that if you feel that the ABA should have a different role, perhaps you might reconsider your views on a merged authority, but we think that the less useful solution is to transfer broadcasting planning to the ACA - of all the different possibilities.

One of the possibilities, of course, is to stay as things are. The second one is in relation to fewer analog services, and the third is in relation to an adequate and comprehensive service, but in relation to both of those and also the final proposal - that is, the division of apparatus licences from content licences generally - these are matters which I think I should leave to Mr Tanner to expound.

**MR TANNER:** If I can perhaps expand on a few of those points, I think the first submission that the chairman has already summarised is perhaps the major one. The key sentences. I guess, in the case that the members would have me put are on page 3, where we reiterate from our first submission:

> The ABA accepts that it may be desirable in the longer term to merge the spectrum management functions, particularly having regard to expected improvements in spectrum productivity arising from digitalisation.

One could expand that, and the intention there is not to suggest that "in the longer term" means "never" or "a long way off". It really is intended to mean that there are compelling long-term reasons that are already in operation and already apparent to the ABA why it is awkward to completely separate this concept of broadcasting planning from the concept of other planning, and they are reasons at the managerial level but they are also at the policy level because of the increasing convergence of broadcasting with telecommunications.

The concern that the board has is that to do so in passing, and to do so by simply jettisoning the particular different and more content-orientated objectives that have traditionally and under the Broadcasting Services Act marked broadcasting regulation, is unrealistic and inadvisable, and I think the ABA's plea throughout this has been that the future of its planning function should be examined as part of an examination of the ongoing validity of those objectives and, if any merged planning body is to be created, the question needs to be answered: how are those unique policy characteristics or objectives of radiocommunications planning for broadcasting to be met going forward?

So, for example, some board members have looked with interest at the way that merged regulators overseas are attempting to bring together these at the price, as you point out, I think, of disparate goals, and yet it's a compelling model, as I think the example of larger English-speaking countries shows. Alternatively, there may be an issue about looking at other ways in which the ABA may need to be empowered so as to promote those roles or temper the objectives of the radiocommunications scheme in regard to broadcasting related issues. It seems to us, looking at the draft report, that this is an area of debate that the commission isn't even interested in opening up.

It's troubling to us that we see the wellsprings of broadcasting policy flowing from concerns about content, certainly, which you perceive and you validate, but also from concerns about access and diversity, which we also regard as fundamental characteristics of broadcasting regulation. Those characteristics of regulation are particularly important in regional Australia, and for that reason the board has seen its planning - planning and licensing functions, but I appreciate it's planning that you focused on and proposed to move out - as a key way that the ABA promotes those objectives.

So when we say "desirable in the longer term", we don't mean "desirable sometime-never". We mean "desirable", but there needs to be some thinking about the continuing validity and the options for taking into account in spectrum planning, in broadcasting access issues, the peculiar policy characteristics of broadcasting policy, with its concern about access to particular types of content and its concern about diversity, community access and so forth. So I guess that's the big picture

submission.

The other submissions I think were clarificatory, although I think that some of them are quite important so I might just comment on them. The idea that fewer analog services are available in Australia than otherwise might have been the case is an idea which at that sort of level - of I suppose bald statement is often bandied about. One hears lines like, "How come in X global city there are 60 FM services? I hear there are only 20 in Sydney." Close examination rapidly reveals there are far more than 20 in Sydney and that there might actually be some cost paid in terms of coverage by the FM services in that other city.

The point really is that the ABA is perfectly capable of planning desaturation and that the issue about number of services is just one axis. If you want to increase numbers of services, you do have some options. The ABA is well aware of them and is perfectly capable of planning for them. There are frequently trade-offs. We thought it was worth saying that because the bald statement that fewer analog services are available than otherwise might have been the case conceals a lot of misconceptions about the way we have planned the country and the opportunities that might or might not exist for further services. Once again, as I think we've done in the past to the commission, we've tried to set out an explanation of the kind of options and the kind of trade-offs that we confront in substantially increasing the number of services if that is the goal in particular areas.

Two examples we've given are the changing of protection ratios, in which you are basically trading off number against coverage. Having said that, protection ratios in Australia may well be conservative and the ABA is, in the ordinary course of things, this year proposing to review those protection ratios, and that may have the effect of making channels appear useable that we currently rate as unusable. The issue there is, though, that in doing that the ABA is also going to take account of whether or not planning new services is going to result in unwanted decreases in coverage of existing services. I guess our experience of dealing with the general public is that what they are most fond of is getting the services they most want, they enjoy, and they put a premium on that.

We've given another example of the way that one can increase services frequently at a cost. The cost is typically, in the case of radio, borne by incumbent broadcasters. In the case of television it's often equally borne or to a greater extent borne by the general public. One can plan additional channels at mounting cost. When the ABA says it's planned to saturation, what that means basically is that it's planned as many services as it can put in at what it regards as an acceptable price. If you regard a higher price as acceptable, you can generally put more services in. But at the end of this planning process there aren't going to be a lot of frequencies lying about, and there is plenty of evidence for that. You just need to look closely at the work that private sector consultants, using the latest planning tools, are doing to put

in solutions to black-spot problems for television.

Later this year we may very well see a policy for radio as well. They are having great difficulty finding additional frequencies except at low power and in regional and sheltered terrain serving small population centres, because basically the ABA are as capable as professionals of planning to saturation. I'm not sure, the Productivity Commission may have meant a number of things by that assertion, so I may be missing the point, but we have Alastair here and we're happy to talk about it if that's helpful to you.

The adequate or comprehensive point is merely a clarification. I think the point about spectrum access fees is not so much to criticise the notion of a fair rent for a scarce public resource and a rent based on amount of spectrum used rather than on some other factor; it was merely to point out the difficulty of bringing in such a scheme in isolation without looking at the way the broadcasting is regulated at present and, of course, the big problems that one confronts, given how broadcasting is regulated at present, are firstly that broadcasters currently already pay a very large licence fee tax which is not calculated on the amount of spectrum a year; it is actually calculated on their gross earnings.

However, in any move to a cost recovery regime for spectrum, one would expect the issue of the appropriateness of the television licence fee scheme to come into play, and you would find a number of political issues and sensitivities in the way that you did that - notably, as we have tried to point out here, because the government has to date massively subsidised regional commercial television and, of course, wholly subsidised the national sectors to extend coverage in regional areas considerably beyond where the market might have done it, left to itself.

So any change in taxation for the free-to-air broadcasting industry is going to have to take into account that current drift of policy towards subsidising extension of regional television - the most notable example - forget the black-spots program, which is relatively small - of course being the quarter of a billion dollars the government is contributing towards equalisation of digital services throughout regional Australia. That follows straight on a television aggregation scheme in which also very large amounts of money were expended in the way of subsidising extension of the commercial sector.

I suppose a point that hangs off that is that to realise the benefits of separation of content from carriage, there needs to be some kind of a freer market in that spectrum, and that to me presupposes that it's easier to obtain content licenses for the potential other users of this spectrum, if divested to obtain content licenses, and that it's going to be in some way politically simple for a television station to drop a few translators.

It seems to us we're looking quite a way down the track but you're not achieving much in isolation, given the general thrust of broadcasting policy at the moment, which is towards maximising coverage, towards politicising and having strong community concerns, if you in any way degrade that coverage, both in terms of its content or access to that content. Anyway, that is the final point that we're making. It's related to the first point because it's really a plea not to examine the objectives of the planning process as though they can be examined in isolation from the totality of the broadcasting regulatory scheme that we have.

**DR BYRON:** Thank you very much. I'd like to draw out a little bit more on the first and the fourth of those issues that you raise. I guess, to put it rather crudely, we're asking the question: would it be conceivable for a prospective broadcaster, radio or television, to go to the ABA and satisfy that they deserve to have a licence to be a broadcaster in terms of being an appropriate body or organisation meeting all the content requirements and so on, and then go to the ACA and acquire the appropriate spectrum to exercise the licence to broadcast? One of the things that I don't quite understand - how you cope with it in the current planning process - is the issue of coverage because, as you say, it seems to be a matter of great political concern to ensure that people in regional or remote areas get similar coverage to people in the CBD. So it seems to me your coverage requirement is trying to induce a business to behave in a way which is not in the business's commercial interest; you know, to go into areas that they wouldn't have done on strictly commercial grounds.

I guess with the alternative scenario I'm painting there, somebody satisfies the requirements to become a licensed broadcaster. They then go and shop around for the appropriate bits of spectrum in the broadcast bands to service whatever markets they choose to. Somebody says, "I would like to service North Sydney, West Perth", and, you know, something else. If they decide that there was a commercial business case for acquiring the appropriate bits of spectrum to be able to broadcast their content, is that a matter that the government as a whole or the ABA in particular needs to be concerned about? You know, the spatial dimension of where the licensed broadcaster chooses to do their business.

**MR TANNER:** We would argue that it clearly is, and we have encountered and dealt with these kinds of issues during our planning process. An interesting case in point was the television licence area plan for remote and regional Western Australia. For historical reasons that is formed of four licence areas but the reality that we found in the mid-90s, when we came to plan it, was that a single service with local inserts and a single owner, Golden West Network, basically provided it as a single service across those four markets.

The markets varied widely in viability. The Bunbury South-West corner was where half the people lived but a great deal of revenue was made. There were two small terrestrial markets, Geraldton and Kalgoorlie: very small television markets

indeed. There was a remote market which had enjoyed subsidies from various levels of government to provide a service as part of the late-80s policy to get television into the very remote areas.

The ABA called for submissions and looked for evidence of demand and it found plenty of indications of people that were prepared to put a second service into Bunbury South-West. It initially found very little evidence of interest in providing services through markets, and it became apparent to us that once we put a second service into Bunbury South-West that would be in it in terms of getting a service to those other areas. In the end, as the market for television licences improved as the 90s advanced and there was a marked warming of enthusiasm for investing in television as the 90s proceeded, we were able to plan a single licence area, regional and remote Western Australia-wide service, and also to mandate that that service rapidly achieve close to equivalent coverage to Golden West. We found there was a market for that service; in fact it sold for something like $30 million.

Our aim in holding out for a Western Australia-wide solution was that we believed the alternative scenario - apart from all those other people missing out on a second service, the more invidious effect would be the possibility of strong competition in the South-West corner resulting in a much greater emphasis on local production for and local relevance to Bunbury and the South-West on both licences. We believe that would have played very poorly in the deeper bush of Western Australia.

A very simple way of looking at it is like this: if you wanted to subsidise getting a phone service to a remote Australian, you don't really care who provides the phone service as long as the phone works. If you want to subsidise getting a television service to a remote Australian, that Australian actually will care what is on the service. They don't want just any service, they're going to want the service with the AFL or the service with the league or the service that has the popular programs. That perhaps is a non sequitur but there are considerations about content that are very important and integral to our planning decisions, and I think that's an example.

It was our concern that we not have a great battle for the richest part of the Western Australian market that led us to hold out for a Western Australia-wide solution, and the result now is that we have two networks in Western Australia, that they have roughly equal coverage and that the test of that - the harshest test I could imagine of that is that the AFL football group, popular in the West, has just transferred from the old to the newer network. And while there have been some ructions about which games are played and when, it has not come to my notice that there has been any big groundswell of concern about loss of access to that second service.

**DR BYRON:** But if the second service hadn't emerged, would it be arguable that

the people of the South-West around Bunbury had actually been denied a viable second channel because the operator wasn't willing to incur the costs of providing a remote - - -

**MR TANNER:** It could be argued, and I guess it's a microcosm for the large argument about Sydney and Melbourne versus the rest of Australia, and in broadcasting policy there is always going to be - or there always has been, anyway - a tension between allowing those very big lucrative markets to carry many services and the desire of successive governments to bring something like a suite of comparable services to other Australians. Government has traditionally, in their broadcasting policy - while I think it has in various ways catered to the power of the Sydney and Melbourne economies to carry many more services - also intended to try and equalise. It has done that in all kinds of ways. I think the ABA's planning powers is one of those ways, and an extreme example or a good example is the contrast between radio and television, if you look at the way the government in the 80s and the ABA in the 90s has planned radio and television.

In the case of radio, we have planned FM availability in such a way that there is differential allocation between areas on demographic and economic grounds, so we were planning for 60 to 80 in high-powered services in Sydney, Melbourne; we were planning for eight or 12 in small regional markets. To do that, to some extent you have to impoverish the immediate surrounds of the giant city. In the case of television, though, the government has gone over the last 15 years to maximise the number of TV services they can deliver to all. That number in analog technology terms was six. Our plan, which we inherited and didn't modify, for analog was for six channels available everywhere.

I don't believe that strong policy imperative towards equalisation, which is really manifest in that TV decision, has gone away. If you want evidence of that, just look at the way the government has approached digitalisation. We have continued efforts towards equalisation; that is, towards getting the three services to all Australians. That's government policy rather than ABA planning exclusively, and the ABA has been required by government to plan for same coverage for all existing services; to introduce new services in digital where that is needed to equalise the last remaining commercial markets that have less than three services.

We've also planned additional capacity in a way which attempts to secure the same amount of capacity in regional areas as in metro areas. I can see that one can run a totally different approach to an economy, and in many industries one will do that, but it's a characteristic of broadcasting that governments over the years have, almost without fail, felt a very strong political imperative towards helping the people in the less-settled areas come along behind and get access to at least a modicum of the services that are enjoyed in the metro areas.

**MR FLINT:** The West Australian second channel is an excellent example of the authority deliberately eschewing the possibility of a broadcaster just picking out the lucrative markets and not servicing the other markets. That was done, as Giles rightly says, by mandating coverage in a surprisingly short period of time but then saying that, "Our requirement was technologically neutral." How they achieved it was a matter for the broadcaster but it had to be achieved. That was then achieved, I understand, by WIN using quite innovative solutions in terms of aerials and so on in getting the signal down into vast parts of Western Australia. So we got really the best of both worlds, in that lucrative markets were serviced but so were the remote markets, which I think is the social objective we were trying to achieve and it's our interpretation of our obligations under the act.

**DR BYRON:** I think the commission is quite sympathetic to the objectives of access and diversity, particularly in rural and regional areas. It seemed odd at first that a restrictive licensing process was the best way to achieve greater access and diversity, and I imagine it must be difficult as a planning agency to know what might have occurred had your planning procedures not been in place - that something much more diverse and innovative might have appeared out of the woodwork, but it doesn't actually meet with the planning framework. So it's very hard to see what new innovative, diverse, widely-dispersed services might have appeared had it not been for something - - -

**MR FLINT:** The interesting thing was the market agreed with us, in that they paid a very high price, when you consider the number of people they could have access to and the rather difficult way they would get access to that. There was another comment that I thought I should add. That was in relation to the concept of people coming to us to get a licence or approval to become a broadcaster. Effectively, anybody can be a broadcaster, except those who fall into the proscribed areas - for example, foreign investors and those already owning media under the cross-media rules or where they're going to exceed the cap on licences in a given area.

But the suitability test is such that only the most obvious cases would fall foul of that, so it's really a free market in terms of new entrants, apart from the cross-media rules, foreign investment rules and the cap, and even in relation to the cap we do have a power to allow a temporary breach.

**MR TANNER:** I had a comment as well, which was that it's important to distinguish roles here. I think we did this during the first hearing. One of the problems with the assertion that there are few analog services available than might otherwise have been the case, and somehow relating that to the efficacy of our planning process, is that in the case of television the cap on three commercial services is a decision of the parliament, and parliament has held that line since the late 80s when I guess it first became relevant to consider whether or not there should be more.

There has been the planning means to have a fourth commercial network ever since the six-channel plan was formulated and, with the arrival of digital, the ABA received strong hints from the legislature that it should plan for further services while the moratorium on television was continued until 2006. The government said, "Well, we'll allow all sorts of other services called datacasting," and perhaps during the period of the tech boom there was some entrepreneurial interest in providing these kinds of services, perhaps a little bit like the American geocast which has now vanished, unfortunately.

But in response to that, the ABA has ensured that digital also is planned with a fair margin for additional services. Apart from the fact that those services we have already planned and allocated to commercial and national broadcasters can potentially technically carry a number of free-to-air standard definition services, we have planned a minimum of two additional services in every market and we've done so at some additional costs to viewers and broadcasters than would otherwise be the case if we had only planned for five. We could, indeed, have planned for more had we been prepared to inflict higher costs on viewers and industry. I can give you examples of that, if you're interested.

The point really is that the ACA offered those channels for auction and there was no market interest. So while it may very well be possible for there to be still more digital capacity built into our broadcasting services bands, at present, given the settings that the legislature has chosen to put, there is demand only from the incumbents for their channels. It's difficult to say, in your control with the freer controls, whether our planning has actually met the demand that might be there, because we actually haven't run that experiment and the ABA isn't able to run that experiment because the ABA has to administer the current moratorium.

I think the ABA has planned pretty productively and it has planned to give an extensive leeway for additional services which could be a major selling point for digital and I think could be of great economic importance in the future. But at present there is no demand for that and the legislature, rather than the ABA, is controlling those settings. The West Australian example I used because, although it's a much smaller part of the Australian economy than the whole country, that was an area where the ABA actually had the power to issue new licences, as it will presumably have after 2006, depending on what comes out of the reviews in 2005. So I think you have to continually distinguish between what the ABA had control of and what it doesn't have control of in evaluating its particular accountability for outcomes.

**MR FLINT:** There are really three models - that is, the present model where planning stays with the ABA; what is suggested in the draft report, which is planning moved to the ACA; or abolishing both the ABA and the ACA, which of course is not

in the interests of my members because there would be a spill of positions. But that may, I suspect, be a better solution than transferring planning to the ACA. I see difficulties, if parliament wishes to keep the different objectives, in the ACA having to do both functions while the ABA sits alongside it, and I think it might be better, if you were so minded to suggest that the planning functions of the ABA be lost, to reconsider whether or not the American or Canadian solution, and possibly the British solution - that is, of having a single body in a converged market - may well be another solution you might consider.

**DR ROBERTSON:** Yes.

**DR BYRON:** Logically, it seems rather odd to me to have some parts of a continuous spectrum being administered by a separate agency according to separate rules and separate criteria and charging on a quite different basis, and when I look at the problems that arise in the US with a large part of the spectrum being administered by the Defence Department, again on a completely different set of rules and completely different basis, and the problems that arise from having adjoining bits of spectrum managed by different parts of government, there seems to be a case that's not just sort of neatness but possibly also efficiency for having the spectrum planning and management, allocation, assignment functions grouped.

I don't believe that we were recommending that all the functions of the current ABA and the current ACA would be merged into one, but that might be an option that we need to look at a little further. You mentioned the digital conversion. I guess a lot of people have an interest in how well the digital conversion is going because of the lure out there of large amounts of analog broadcast spectrum being released when the digitalisation is successful. Even with an expansion of digital services in number and content, or even with multichannelling and all the rest of it, I gather there are still a lot of other users of spectrum who covet some of the current broadcasting space. Is there anything you can say about how well the process of conversion is going?

**MR TANNER:** I think we made the point in our first submission that, in terms of the potential for large amounts of new spectrum, the Holy Grail in the broadcasting services bands is undoubtedly successful digitalisation. It's an enormously more efficient technology and Australia, compared to a lot of European countries at least, has a great deal of it. Given our relatively undeveloped satellite and cable infrastructure and our small and dispersed population over an enormous land mass, it's of great potential and actual economic value.

The situation is that the planning of the spectrum - that is, the equipping of the broadcasters with the channels they need to convert to digital - is well on track and very far advanced. We have planned most major regional markets now and we will finish all the major markets this year, I hope, then we'll be going back and doing infill translators after that. The broadcasters are on track at this stage to achieve

same coverage, as we've defined it, with the analog network during the eight-year period that they have and, hopefully, in good time before the end of that eight-year period in most cases. There's more uncertainty about a small number of very remote markets which will probably require a different approach, but we're talking here about only a small fraction of the market.

From the point of view of the provision of the technical infrastructure and the provision of digital signals, things are on track and the initiatives such as the regional equalisation program should ensure that the regions finish the job pretty soon after the metro areas, which I think is the key to realising those really big savings. You have to turn everything off, not just turn off Sydney - though that would be great. Once you turn everything off, you have some extraordinarily interesting options that become available. Looking at work overseas - and bear in mind this typically is occurring in countries with a lot less broadcasting spectrum relative to their populations, such as European countries - some of the beneficiaries of that may be the broadcasters themselves in the form of being able to do other things such as in-band back channels or mobile reception of television.

But, as you say, there are also - and I think particularly this is occurring in America - parts of the spectrum which are already developing potential other uses and we welcome that development, too, as anything which increases the value of the spectrum increases the incentive for industry and government to turn off the digital system. From the supply point of view, I think things are on track. From the demand point of view, the early indications are that the uptake of the receivers is not that fast. As of February the figure I was getting for digital broadcasting in Australia was that around 12,000 boxes had been sold and the feeling I have, talking around, is that the likely drivers in the near medium term of that perhaps uptaking are likely to be - well, there is a much touted possibility that we may see a roll-out of pay digital equipment which is able to take up the free-to-air signal. We're yet to see if that actually eventuates but the minister has certainly spoken strongly on behalf of that option, and I'm aware there is work going on between the pay providers and free to airs.

In the slightly longer term there are some new devices - digital personal video-recorders being a very good example - which would be able to make use of the electronic program guide that digital provides, to provide an extremely powerful alternative to the video cassette recorder. I think those sorts of devices may see a progressive increase in demand for the sets, but at the moment it's very slow. The government has said it can begin turning off as early as 2008 in legislation but I think the government has yet to really look at - and it will look in the course of those mid-decade reviews at what its criteria might be for turning off services, and my guess would be that those criteria would include extremely widespread ability to receive the digital signal; that is, a very high penetration into homes of receivers. So I'm not sure how achievable that 2008 date is looking at this stage, given the

indications that initial demand is low and that the devices that look likely to drive it up are yet to come.

I guess the other thing, looking around the world, is that we don't get much help from looking at other markets. We have what you might call a horizontal model; that is, it's a model in which digital is being used for free to air and so people will digitalise as they go to the shop and pay the full costs of a digital box. The possible exception to that is if there were some sort of deal which might see a pay TV digital decoder which also used the free-to-air signal. But unless we see that development, basically digital has to sell on its merits to you and I as an over-the-counter proposition.

This is in contrast with the British model which has been pay driven and, looking around the world, all the horizontal markets, of which there are a large number including the United States, are all at that very very early stage of digital penetration and all facing the problem that the digital value proposition at this stage isn't selling to vast numbers of people, but the opportunity that particularly I think falling cost of digital recording capacity to bring on a new generation of digital recorders and things - they will be ready when that comes and they are expecting an uptake in the course of the decade. I don't know if that's helpful. I guess the horizontal free-to-air digital markets are all at the very start of the curve and really at this stage are speculating about what's going to drive it up into the steep part of the S.

**PROF FLINT:** Change to colour was obvious to the consumer. What might be obvious here is the wider screen but as yet people haven't identified an immediate advantage in having a digital television set.

**MR TANNER:** I think the advantages of digital are incremental. It's a technology which I'd really stake my house on overtaking analog, given a medium amount of time, but its advantages are incremental. If you run through them, it now offers a wide screen, it offers an additional channel of children's programming on the ABC, though it has a technical capacity to offer much more. High-definition television is an absolutely splendid thing if you've seen it, but at present the cost of a high-definition set is very high, so we're not talking about a giant mass market and it might be different when I am a bit older.

Interactive television is under rapid development but there is an enormous task in developing an interactive television free-to-air model, and at present we don't even really have a clear path on the software system that we'll adopt or how the industry might administer interactivity and software downloads in a free-to-air environment where we own the box, rather than some company.

I've mentioned the electronic program guide and its potential relevance to digital video recorders. I suppose the point I'm making is that digital has a whole

mass of advantages, some of which are yet to really be mature or mass market applications, others of which are ready but are perhaps just marginal, and I think its advantages are going to accrue over time. I guess the issue - and we've done a bit of work on this, actually - will be releasing the results of a survey of experts in Australia about what they see the roll-out looking like at our conference in 10 days' time. I don't actually know the results of that survey myself, so I can't give you a sneak preview even if I wanted to, but certainly it's a matter of wide speculation what that uptake graph is going to look like. At this stage we're looking at quite slow early days uptake.

**DR BYRON:** It may be a small diversion, if I may, but you mentioned the personal digital video-recording devices, the Tivo and so on, and I've seen quite a few arguments, particularly from the US, that this basically could mean the end of the free-to-air broadcast business model in the sense that if people can automatically screen out all the advertisements, the concept of commercial television as we've known it for the last 80-odd years or 78 years may well be under threat. Does that sort of thing keep you awake at night?

**MR TANNER:** I think it keeps them very busy at the networks but I think they would probably put it to you - and there are people like perhaps Kim Anderson at Nine who are better able to say this than I am, but I think they see digitalisation as opportunities and threats, and the threats potentially include zapping, but I guess that really puts the wood on advertisers to entertain and not infuriate. But certainly there are also potential threats in terms - if people are not watching TV in real-time but are increasingly scheduling their TV, using much more powerful devices for recording, they're issues about how the networks prove what their ratings are.

I think they're grappling with all those issues but I think also that they're fighters, they're going to look at the opportunities as well as the threats, and there does seem to be a whole range of opportunities too, not the least of them - and, as I say, I'm not the expert. Perhaps you're better off talking to the networks, but not the least of them is that with what are still incipient applications, like interactivity, you have the scope for an entirely different relationship with your viewer, and it's early days yet but I wouldn't be counting them out.

**PROF FLINT:** Now that there are programs which feature certain types of advertising - for example, the world's sexiest advertisement or the world's most amusing advertisements - I suspect it will put greater pressure on the advertising agencies to come up with even improved advertising.

**DR BYRON:** Advertising that entertains.

**PROF FLINT:** Yes.

**DR ROBERTSON:** One of the curses is there seems to be more advertising at any given period of time, but that's a personal feeling. I trust you can see what's bothering us on this; which is when you take your West Australian example, the actual cost of spectrum to provide the service is zero, pretty well, because in remote areas the demand for spectrum of any range is going to be quite low, and so there is the question that you're putting a price on this in terms of the content and your role, which we fully understand and accept, but our reference is to the spectrum and the pricing of spectrum. Once you get into digitalisation and you release spectrum, which means you have more spectrum on your hands that you can distribute in this planned way, the question is: is that economically efficient or should that be made available for other uses as well outside broadcasting? Because you don't need it all any more, in which case the role of the ACA in delivery of services in the sense of the licensing of spectrum would tend to increase.

I appreciate your three-part model: we stay as we are, something gets passed to the ACA or we set up a new organisation, and I think we'll have to look at those, but we have to look at it in terms of the spectrum issue and the marketing and control of spectrum, as well as the government's other interest which is actually in broadcasting services, and getting our heads around that is difficult for us but you've helped us in what you've said this morning.

I'd like to change direction a bit, away from this sort of ABA-ACA confrontation to the question of interference. In your planning to saturate the spectrum you have at the moment, using current technology, do I take it that you have sufficient margins between all stations to avoid interference in the first place? Secondly, have you had any incidents of interference and how have you resolved them?

**MR TANNER:** In general we do have sufficient margins to avoid interference. There are a whole lot of different kinds of interference and realistically, when you turn on a new radiocommunications transmitter, there are numerous ways that you can actually cause interference, and that interference will fall into predicted and unexpected categories, basically because we plan using computer models and they're not perfect. Really there are bolts rusting on towers and there are all sorts of strange things which are likely to cause odd effects that we can't necessarily predict, though we can explain after the event.

I hardly know where to start. There is a whole range of different types of interferences that potentially arise when we turn on new services. Much the largest area of interference management that we've had to deal with in the last two or three years is in the area of television digitalisation. We've had several groups of problems there. The first problem we had was the wish to use VHF channels for capital city digital services because they were adjacent to the existing capital city channels and the broadcasters had good reasons for using the adjacent channel rather than moving

to UHF.

That would have caused interference to co-channel VHF services in the bush, and that would have manifested as people in the area between, say, Ballarat and Bendigo and Melbourne losing its signals. We dealt with that by first of all ensuring that there were adequate agreements in place between the broadcasters in Melbourne that wanted the channels - I'm using Melbourne as the big example. This has occurred elsewhere, too, but Melbourne was the big example - ensuring that there were adequate agreements between the affected broadcasters and the broadcasters that wanted these clear VHF channels, about how the problem would be managed.

We then secondly planned alternative channels adequate to restore coverage of those affected services and what we've then seen is a highly managed process in which, for example, people have been warned through a variety of media that they may experience problems. There are hotlines, there are truck rolls if, needed, and we have seen the largely non-controversial introduction of VHF services that do cause interference to existing regional services, but we've supervised the fixing of those problems by the industry. So I guess that's the group of problems that arose because of digital services interfering with analog services.

Digital services also potentially interfere with a range of other users of the spectrum that you might call secondary users. We have a lot of lower-priority users of the spectrum that have been traditionally occupying those interstitial channels. A fairly early example that got a fair bit of publicity, but I think was managed pretty well by the ACA and the ABA's engineers, was medical telemetry devices. We did have a few stories breaking out about people's pacemakers being wiped out by digital TV but I think in fact that was managed as well as it could be, given that those are class licence services, so we don't know the name and address of every operator.

**MR GELLATLY:** It wasn't pacemakers, it was monitors. They were monitoring, so they weren't actually actively keeping a person alive; they were just monitoring their heart rate.

**DR ROBERTSON:** It was the machines that were monitoring them?

**MR GELLATLY:** Yes, so it wasn't actually a threat to anyone's health.

**MR TANNER:** I was actually quoting the little talkback line rather than the reality. The really big interference issue that we've encountered with turning on digital - the really big users of those interstitial channels have occurred on UHF and they have required an extensive management program. There are video cassette recorders and other ancillary devices, notably pay television set top boxes. Those are all devices that tend to have a television signal which - I think it's a modulator they've got, haven't they?

**MR GELLATLY:** Yes.

**MR TANNER:** They feed a TV signal to the set in order to work and they use a UHF channel, typically, to feed that set, and they are typically tuned in the shop to a UHF channel which is known to be vacant. Video cassette recorders, for example, in very large numbers tend to use channels 36, 37 and 38, which are prime UHF channels and we needed them if we were going to achieve those quite bold targets in terms of spectrum productivity for digital, and what has happened to manage that is that industry itself, with a fair degree of assistance from government, both financial from the government and regulatory from the regulator, us, has developed and is administering a scheme which involves as its centrepiece a hotline and the provision of information, so wherever we plan a service and agree with the broadcasters on a switch-on date, and we have an issue of predicted interference. There is an interference management scheme administered by the Federation of Australian Commercial Television Stations, but in which we very actively participate and which has our imprimatur, to manage those problems. That scheme has operated successfully so far in a number of areas. It is currently very much a live issue in Newcastle where we are using 36, 37 and 38, and what we have seen over the last fortnight has been the progressive turning on of all the digital suite of transmitters, including those ones which we anticipate will cause most of the problems.

I think it began with a week of running during the daytime only and, of course, quite large numbers of people have telephoned the hotline and they have either received instructions on how to retune their VCRs and what channels to retune them to or, when needed, they have had advice from technicians or, if absolutely necessary, someone has gone out. That seems to have occurred to date, and according to the reports that we get, we are monitoring this daily and the report is going to the board, being handled very well. We will see the same issue arise in the Illawarra next and then on around regional Australia, as we fully exploit the UHF band.

So yes, you can cause interference any time you turn on a new high-powered transmitter and, yes, if you want to get the most out of the broadcasting services bands for digital we have to have fairly elaborate and thought-through schemes for predicting and managing often quite large-scale interference to the satisfaction of the public. The thing to remember here is, once again, coming back to the special characteristics of broadcasting, it is viewed by ordinary Australians as like hot water, it is an essential service, and they become quite ropable if you can't give a good account of why you're bringing snow to Newcastle or whatever.

**DR ROBERTSON:** When you said "industry" before, the first time you used the word "industry" I thought you were referring to producers, but in fact you were referring to the TV industry, the commercial facts.

**MR TANNER:** Yes.

**DR ROBERTSON:** Have you tried coordinating with producers in the sense - I mean, you just mentioned those three: 36, 37 and 38 for videos.

**MR TANNER:** Do you mean manufacturers?

**DR ROBERTSON:** Yes.

**MR TANNER:** Certainly. The issue of course though is that we have a legacy problem. I mean, what we would commend to any - I mean, if you get a TV set now and a video cassette recorder, you can get a particular type of cable which doesn't actually get interfered with and the problem vanishes. We are dealing with a legacy, and in fact some of the very early VCRs, which are now, thankfully, probably all boat anchors, only tuned to channels that were used for FM radio, which caused a lot of problems with extending FM in the 80s, but fortunately that legacy is gone. As you go through the current video cassette recorder population getting older you find decreasing channel flexibility, and as you go back with TV sets you find you're not able to use the cables that can screen you from these problems. So we're managing a legacy problem. I mean, going forward we don't have a problem. I understand that retailers played a role in this too. We're seeing retuning of VCRs occurring at shopfronts.

**DR ROBERTSON:** Okay, right.

**MR GELLATLY:** If I could give another example of some interference. In the Sydney area we have planned low-power community radio stations, a sort of patchwork quilt, I guess, of the whole of the Sydney area, breaking it up into little licensed areas serving probably 10 to 15-kilometre radius kind of areas, and to actually find enough spectrum to fit all that in we've placed them pretty close in terms of frequency. So of them are actually co-channelled with each other and some are on the next adjacent frequency, 200 kilohertz or .2 megahertz apart. When we do plan those services the objective is that we plan for our interference-free signal within that licence area, but sometimes the licence areas are more square and follow roads and things like that rather than being nice and circular, whereas the signal from a transmitter will often radiate in a nice circle. So you have got a circle fitting into the box and often the circle spills outside that box by some degree.

But when we do our interference calculations we protect the signal at the licensed area boundary and not the bit that goes beyond it. We often call that fortuitous reception if someone does pick up that signal beyond the licensed area boundary. In our planning there have been a few complaints where progressively a second station has switched on which has caused interference to that reception outside the boundary. So there is that sort of jamming the signals in very tightly in

the FM band to achieve the objective of getting one community service in each area.

**MR TANNER:** Alastair's fortuitous reception is maybe a listener or viewers wanted and enjoyed service. One of the hardest jobs in this business is to explain that someone that has perhaps spent $1000 on a mast and a masthead amplifier to enjoy television from far away, and has just lost that service - to discover that we actually aren't able to protect that service, because the reception is fortuitous. It can cause great offence. But of course, if we did protect fortuitous reception it would cause spectrum productivity to plunge, because we would, in effect, be planning for vastly larger markets without interference.

**DR ROBERTSON:** Yes, of course. Do you coordinate with the ACA on any of this?

**MR GELLATLY:** Yes, I guess - we have access to the ACA database. In fact we have a common licensing database. So what we do is, when we've planned a service particularly to take account of these rusty-bolt effects at particular sites, you've done the broadcasting planning against other broadcasting services, but then we have to look at the effect, "What does this channel I'm now proposing to use have on radiocommunication services?" So we do what we call compatibility checks to make sure that there is no interference. If our calculations do show there's a potential for interference it may not actually occur in practice, so what you do is you notify the licensee who is going to use that frequency that they need to be aware that there could be some issues that they will need to resolve in terms of their site engineering. They may actually have to go to extra lengths to fit filters to their own equipment, or even make modifications to the interfered-with parties' equipment to eliminate the interference.

**DR ROBERTSON:** Good, thank you. Look, we're running way over time. Neil, do you have any more questions?

**DR BYRON:** No. I think in the interests of time I should stop.

**DR ROBERTSON:** Yes, I think we've covered what were our main questions. I will just check. That has been very useful to us, thank you. We can modify our draft in accordance with the comments we've heard this morning. Thank you for coming in. That was very valuable to us.

**MR FLINT:** Thank you very much for the opportunity of speaking to you.

**DR ROBERTSON:** Thank you.

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**DR ROBERTSON:** We are turning to the second presentation of the morning, and that is by Mr Jim Weller from Airservices Australia. You were here for the first session, weren't you?

**MR WELLER:** Yes.

**DR ROBERTSON:** So I don't have to go through anything else about what you're doing and what we're doing.

**MR WELLER:** Yes, that's right.

**DR ROBERTSON:** Then I hand the floor to you, if you would care to introduce your submission.

**MR WELLER:** Thank you, Dr Robertson, for your introduction, and good morning, ladies and gentlemen. Airservices thanks you for the opportunity to contribute to this inquiry. As the commissioner has said, my name is Jim Weller and I am from the Spectrum Management Group in Airservices Australia. Airservices and its predecessor has managed Australia's civil airspace for more than 50 years. Our organisation provides air traffic control, air navigation support and aviation rescue and firefighting services.

Airservices was formed in 1996 with the splitting of the Civil Aviation Authority into two entities. Airservices took on service provision for the Australian airways, and the Civil Aviation Safety Authority took on the regulatory role. Airservices is responsible for approximately 11 per cent of the world's total airspace and it stretches from Indonesia, down to the south pole and from halfway to Africa to midway to New Zealand. We are the sole provider of civil air traffic control in Australia and the surrounding airspace in our flight information region.

Airservices takes a lead role in the consideration of issues relating to aviation spectrum in Australia. In this capacity, Airservices represents aviation spectrum interests at national and international radio frequency spectrum meetings. Australia's aviation industry, including Airservices as the air traffic service provider and aircraft operators, makes extensive use of mobile, fixed, radio navigation and satellite spectrum. It should be obvious, by its very nature of operation, that aviation relies almost entirely on the radio spectrum to provide safe operation for aircraft. Aeronautical services are recognised internationally to be the prime users of radio frequency, without which aircraft operations would neither be safe nor capable of meeting the global demand for rapid and cost-effective transport.

The prominent safety-of-life element of aircraft operations is given special treatment internationally, through agreed measures, to protect its radio services from harmful interference. The aviation industry is a true global user of radio spectrum.

The aircraft radiocommunications equipment and its associated ground equipment must be able to work globally, and that requires international standards. The need for special interference protection for aeronautical services, as well as their global nature, requires radio spectrum to be exclusively allocated, normally on a worldwide basis. The international civil aviation authority, ICAO, which is a specialised agency of the UN, specifies the type of services and the standards of performance the Airservices must provide to meet its international obligations to the aviation industry. Airservices operates an extensive airways system, which includes communications, navigation and surveillance facilities around Australia to provide this service.

In terms of radiocommunications, aeronautical mobile communication services are used during all phases of aircraft flight to provide reliable and immediate air-ground communication between pilots and air traffic controllers. In terms of radio navigation, aeronautical radio navigation services are provided on the ground to guide the aircraft and are used by the air traffic controllers to ensure the appropriate level of aircraft separation. Different navigation systems are used by aircraft, depending on their phase of flight and the type of aircraft. Highly accurate and reliable navigation systems are used to allow aircraft to land in poor weather conditions. For high traffic density areas, surveillance radars are used to provide positive control to air traffic controllers to enable reduced separation of aircraft that would otherwise not be possible.

In Australia and internationally we are seeing the gradual introduction of satellite-based services in accordance with the plans and policies approved by ICAO. The most significant change in air navigation is the transition from ground-based equipment to satellite-based navigation. The ICAO concept is for satellite-based navigation or the global navigation satellite system, that is GNSS, to be used in all phases of flight. Currently, many aircraft in Australia make use of GPS, which is a part of the GNSS system, for en route and non-precision approach phases of flight.

Turning now to the draft report, Airservices commends the Productivity Commission for some significant findings, particularly in relation to recognising the importance of international services like aviation, and suggesting improvements to the tenure of apparatus licences. Our public submission document provides Airservices' views on various findings in the draft report, as it relates to aeronautical spectrum. The significant issues, as they relate to the draft report, I've got four dot points here, which are really just a summary of our written document. The first one is that Airservices believes that aeronautical services receives a low profile in the report which does not reflect its actual use of radio spectrum. Aeronautical services are a major spectrum user, which could be better reflected in parts of the report. Airservices has provided additional information in the written report, including a table of aeronautical frequency bands which could be included in the report.

Secondly, the special recognition in the international radiocommunication

community of safety-of-life services, of which aviation is a significant contributor, we believe could be more accurately described by revising the definition, which is in the glossary of the report, to bring it into line with the understanding of the international community, particularly the ITU, the International Telecommunications Union. Thirdly, the aeronautical services are rightly recognised as a non-commercial user of spectrum, providing a public service to the community. We would support the inclusion of this guidance in the Radiocommunications Act, in regard to the importance of allocations in the spectrum plan for international safety-of-life services to meet international treaties. Finally, managing interference is a major concern for aeronautical services. We believe that the importance that aviation places on interference could be better represented by additional text in the report.

Just in terms of clarification, we note there was a practical example of our concern with interference in relation to ultrawide band devices, and of which there are some details in the report, box 2.6, page 31. There is a comment that ultrawide band services do not cause undue levels of interference. We direct the commission to some studies that the US have done, which are referred to in our submission. The study was done by the Department of Transport, together with the NTIA, that indicate that under some conditions interference to devices, including GPS and aviation systems, could occur. I know technical considerations like this are probably outside of the main aim of the inquiry, but I guess it just highlights the concern that aviation does have for the proper management of interference.

Airservices would thank the commission for their opportunity to provide this submission as part of the inquiry.

**DR ROBERTSON:** Thank you. I don't want you to get the wrong impression. I think we were probably guilty of assuming that Airservices did need protection and that's why we didn't give them great, detailed consideration. We had much broader issues to look at than to worry about something that seemed to us to be pretty obvious for everybody, since most of us fly one way or another. So it's not that we didn't think this was important - I don't want you to think that for one moment - but could we follow up with a few questions?

**MR WELLER:** Yes.

**DR ROBERTSON:** First of all, how effective has the ACA been, do you think, in representing Airservices in international negotiations and indeed in the way it's treated under the ACA charter?

**MR WELLER:** I believe that the ACA is guided by the Radiocommunications Act. That was one of the comments, I guess, in our document, that the recognition of international services that provide services such as aviation, is not recognised to a great extent. The ACA, in terms of recognising aviation spectrum, work very closely

with us - there's no doubt - and aviation is represented usually on the delegates for international meetings on radio spectrum. I guess that aviation would feel that, as you've rightly said - that aviation is a very important part of the - a very important user of radio spectrum and we just felt that it was probably not well reflected in the Radiocommunications Act. It might be by inference, and we've provided certain pointers just to improve that recognition.

In terms of the Australian radio frequency plan, it very much reflects the international plan, which is negotiated every two to three years. We're really wanting to maintain that recognition and clarify it, you know, for ACA.

**DR ROBERTSON:** Would you propose any changes to the Radiocommunications Act? As you know, we are looking at in fact simplifying the objectives of the act, because we think it gives equal weight to a number of things that maybe should not have equal weight.

**MR WELLER:** Yes, there were comments made in chapter 4 of your report and it is very broad. There is no recognition of international safety-of-life services to meet international treaties. I think there might have been a bit of misunderstanding of having a specific object in the act reflecting aviation. That wasn't our point at all. But the level of detail or the importance of these international services, such as aviation services, that provide safety of life, are not represented as part of the Radiocommunications Act.

The points made at your draft findings 5.2 and draft findings 5.4, I believe are very much supported by ourselves. We would suggest that they could maybe form a recommendation of some kind to highlight the need to recognise international safety-of-life services.

**DR ROBERTSON:** Yes, we did note that. Have you had any problem with specific allocations under the spectrum plan? In other words, has there ever been a conflict between what the ACA might want to do with something that you use? On the whole, I remember when we had our informal chat, that Airservices Australia - I mean, most of your frequencies have been run by you for a very long time. These are almost traditional frequencies that you use. But do you have any trouble with those frequencies in Australia? In other words, has there been interference - not from the new technologies necessarily - but from old technologies?

**MR WELLER:** Probably two examples which we could use: one is interference from adjacent allocations, which we would call boundary interference, where broadcasting services in what would be called the FM band - this is historical - have caused interference to sensitive receivers in the navigation band which is adjacent to the FM band.

**DR BYRON:** 108 to 118?

**MR WELLER:** The navigation band is, yes, 108 to 117, whereas the FM band is the 88 to 108. I guess partly because you're talking about high-powered transmitters being adjacent to sensitive receivers and the ITU have got recommendations of how that interference can be mitigated, so there was always those sorts of concerns of adjacent allocations. There is also the concerns that we are studying at the moment in international studies of, for example, the ultrawide band. Ultrawide band operates over a large span of frequencies which are already allocated to services, including aviation services. That's got the potential of raising the noise floor and, under some conditions, could cause interference to aviation systems.

**DR ROBERTSON:** Have you experienced any, or is this just still theoretical?

**MR WELLER:** Ultrawide band is not approved in Australia as yet, so we're really running off the US reports, which are practical studies, as well as theoretical studies.

**DR ROBERTSON:** So they do have instances of where there has been this interference?

**MR WELLER:** Yes, I believe so. Yes, as part of the reports. Obviously with all these there are ways of mitigating it, whether it's the bands that they're used in, or geographical separation of equipment. I guess because the radio spectrum is a limited spectrum there are always going to be new services that make use of the spectrum, and so it's an ongoing requirement for studies into effects, especially when we're looking at services wanting to either be adjacent or to be within the aeronautical bands.

**DR BYRON:** It really is a question for more research, isn't it, about how much and under what conditions the ultrawide band might cause interference?

**MR WELLER:** Yes.

**DR BYRON:** It would seem to me a bit premature to prohibit a whole new class of technology just because we're afraid that it might, under some circumstances, increase the noise floor too much.

**MR WELLER:** That's right.

**DR BYRON:** But we'd also need to be looking at ways of making - you know, would it be worthwhile making the affected receivers somehow less sensitive to that interference, or more robust, rather than - I mean, I don't know whether ultrawide band is going to generate tremendous benefits to society in some other ways that we haven't even thought of yet, but I don't think we were trying to say that ultrawide

band does not or will not under any circumstances cause interference. I think what we meant to say was that it's not supposed to generate any unacceptable interference.

**MR WELLER:** It's designed for that reason - not that - yes.

**DR BYRON:** That's the idea behind it, but as David said, as a frequent user of these devices both as a passenger and as a private pilot, you don't have to emphasise to me how important it is to have very little interference on all these communications and navigation devices.

**MR WELLER:** Yes. Aviation is very supportive of studies. We have no problems with studies into the effect of new services. The only concern we have is that services are introduced before the studies are done. Our policy or line is that studies should be done before services are introduced, to look at the potential for interference. Some of the outcomes, like you say, may be changes to the design of either services, either systems or equipment, to make them compatible. Part of the studies look at that.

**DR BYRON:** The cost of adjusting some of the Airservices equipment might be much less than the cost of doing without ultrawide band.

**MR WELLER:** That's right.

**DR BYRON:** That needs to be examined, doesn't it?

**MR WELLER:** Yes, that's right.

**DR ROBERTSON:** I take it most of your licences at present are in fact apparatus licences.

**MR WELLER:** Yes.

**DR ROBERTSON:** How would you feel about some of those being changed to spectrum licences? Would that create a problem?

**DR BYRON:** With the ASA as the band manager.

**MR WELLER:** Yes. The difficulties that we have with them being converted to spectrum licences is probably the cost - well, there are two things: one is the cost and one is the unknowns of its impact on aviation. Globally there's really no information to give us a feel for the likely impact and, indeed, the problem of spectrum licence is that there is the potential that it could fall into the wrong hands and also that, as we said in our submission, we look for common bands internationally to operate aircraft - the global operation of aircraft.

**DR ROBERTSON:** We're assuming those ITU standards clearly would not be infringed.

**MR WELLER:** Yes. We don't see any benefits then if the same spectrum is there and it's offered to just the one person or the one organisation.

**DR BYRON:** I guess the question is, would it actually change anything if, instead of you having apparatus licences over all of these bands, they were covered by spectrum licences and you were the LAN manager? Nobody else would get to use them unless you sold them or sublicensed somebody else to use them. So would it actually change anything in practice if you had a 15-year spectrum licence over these aeronautical safety service bands?

**MR WELLER:** The benefit of apparatus licences is that individual frequencies are allocated by the ACA and therefore there is better interference management, and interference is of prime importance to the aviation industry. As we probably said at the start, we would see the ACA as the regulator of radiocommunications and continuing their role as controlling interference for those licences. We have no problems with that on an ongoing basis. One of their comments in the report was that being able to identify and remove interference for safety advice services was seen as a high priority. We support that. So that the structure of apparatus licences and the interference protection that it provides, or the control there, suits aviation services better than the spectrum licence method of operation.

**DR ROBERTSON:** It's a question of boundary management, I guess.

**DR BYRON:** Could I just follow up on that interference issue, because I think that may come up again this afternoon - the concept of a spectrum licence where the licensee is responsible for sorting out interference issues as they affect others or as others affect them, whereas with apparatus licences it's the ACA who sorts out all of these sorts of things. The New Zealand equivalent to the ACA was saying that even though they tried to hand over the interference management issues to the band managers, the band managers kept coming back to them and saying, "We can't sort this out. Only you the government can track it all down," particularly because they said, "We don't have the powers of search and entry and all these sorts of things that a government agency does." Is one of your concerns about having the same spectrum under a spectrum licence, rather than hundreds of apparatus licences, your ability to actually police the interference issues?

**MR WELLER:** Yes. Presently - we can't talk about the future - we wouldn't have the ability to do that. That's not our main role as an aviation or air traffic services provider. We see the regulator of the spectrum as better able to do that with the resources and the technology that they have, and they are recognised as the regulator

from an international perspective as well so that, if there are interference problems that are outside of Australia, they have those connections which they are able to make use of. From a resource or management point of view, they are better equipped to do that for both aviation and for other users of spectrum. As an example, I am part of the spectrum group, of which there are only two of us, so in terms of resources that's nothing compared to what the ACA is able to bring to bear with their international infrastructure.

**DR BYRON:** Just to clarify one thing, when it comes to interference on the aeronautical safety bands, you're not saying that there's a zero tolerance for interference, are you?

**MR WELLER:** No.

**DR BYRON:** But it's a pretty low tolerance.

**MR WELLER:** That's right. There's the ITU definition which is called "harmful interference," which is interference that will cause potential problems to the communications. It may not be continuous, it may just be spasmodic, but when you're looking at safety-of-life services, you've got immediacy sort of issues where you can't wait for interference to disappear. You need information there straightaway. Loss of information could be very important. I think we made a point about a comment that mobile communications could handle interference to a higher degree than some other services. We would say that there is probably a subset, or all mobile communication isn't the same, and aviation requires better protection than maybe some others because of the potential for safety issues that can result.

**DR ROBERTSON:** The equipment would operate on different frequencies, so you could switch, couldn't you, if you suddenly hit a problem on one?

**MR WELLER:** There are backups but there have been situations where intentional interference has meant that they have had to reduce the efficiency of operations because they haven't been able to communicate effectively through their standard procedures.

**DR ROBERTSON:** But you must have a margin for these kinds of errors built in.

**MR WELLER:** Yes, that's right. There are backup systems but the threshold of interference for aeronautical communications would be lower than maybe some other company communications for just transferring information - that don't have a safety-of-life input.

**DR ROBERTSON:** Do you anticipate any new demands from air travel; in other words, in the future are you likely to need anything special, or are you going to stick

with the sort of frequency ranges that you have been using, or will you be introducing new technology? These are all futuristic questions but, given that we know there are all these new technologies around, some of which you've mentioned as being a potential problem, is there any prospect of major changes in air safety?

**MR WELLER:** There is a continued growth of demand for communications. The aviation industry is continuing to grow, and so there is demand - - -

**DR ROBERTSON:** Not just recently.

**MR WELLER:** No, that's right. We're hoping that it will improve.

**DR BYRON:** A short-term hiccup.

**MR WELLER:** Yes, a short-term hiccup. But the aviation community is moving across to more efficient uses of their existing spectrum and a lot of these are digital-type systems which provide better capacity for bandwidth. One of the examples is in the mobile communications area, where we use VHF analog AM systems and we're moving across to digital systems. In Europe and the US - probably more in Europe - they have real congestion problems for the VHF band, which is 118 137 megahertz, and even with reducing the spacing of analog channels to 8.33 kilohertz, they're predicting by the end of this decade that they will have reached the capacity that that spacing allows. They're looking at the digital realm to be able to improve that capacity within the existing bandwidth that's provided.

**DR ROBERTSON:** So it's a change of equipment rather than a change of frequency.

**DR BYRON:** Are there any of those bands that are likely to be surplus to requirements because the particular technology has become obsolete or redundant? I'm thinking particularly of VORs and things like that, that may not be needed soon with the GNSS.

**MR WELLER:** Yes. Historically there were some bands that were relinquished in the low-frequency omega systems and that. There is a move away from the MF bands which are used by NDBs - non-directional beacons - although there are no hard and fast dates for that to happen. In terms of VORs which are operating in the VHF NAV band, the numbers of them will gradually reduce over time as there is the take-up of the GNSS - the global navigation system - and as part of that is a ground-based augmentation system which is planned to be operating in the VOR band - VOR and ILS. So what the aviation community tries to do is to reuse the existing bands rather than looking for other bands to try to replace the - as new and more efficient systems come in, we try to make them compatible with existing services and then phase out the old systems. So the ground-based augmentation

system will eventually be used for precision landing systems, which are the instrument landing systems at the moment.

**DR BYRON:** I was wondering whether there were any sort of pressures or incentives from the Department of Finance for you to make efficiency dividends or find savings by handing back any bits of spectrum or apparatus licence that becomes surplus to requirement.

**MR WELLER:** Part of our view has to take in a global perspective, and although Australia in some bands may not use the bands to the same capacity as might be used in, say, Europe or the US or up in Asia, part of the need for compatibility between systems is to have the same bands.

**DR BYRON:** So a compatibility requirement basically means that none of this really does become surplus to requirement; that you need to have that band.

**MR WELLER:** Yes. If there is a redundancy identified in some of the more heavily congested regions, that would then get reflected back into the Australian spectrum plan. The other side of the coin is Australia used to operate a piece of equipment called a domestic DME - distance measuring equipment - which was given an allocation in a band that was outside of the international allocation. It worked very well in Australia; in fact, the technology was better than the internationally agreed technology, a bit like the VHS and the other technology - - -

**DR BYRON:** The Beta system.

**MR WELLER:** - - - but the domestic DME, the Australian designed system, has now been phased out because of the cost of trying to maintain a system and have equipment that was not compatible and had to be manufactured for a special use. So the balance of having bands that are different versus the costs that come from having aviation systems that are not compatible is the fine balance that needs to be there. Certainly ICAO and Airservices, who are, I guess, the Australian representatives of ICAO for spectrum, are mindful of the need to operate spectrum efficiently, and that's certainly reflected in decisions like being able to reuse the spectrum as the demand increases, without wanting to go to other spectrum.

**DR ROBERTSON:** Is there anything else you want to add before we close?

**MR WELLER:** No, I think we have covered all the comments there.

**DR ROBERTSON:** Thank you for your comments and rest assured we will give them every consideration. I adjourn the meeting until 1.30.

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**DR ROBERTSON:** The meeting is reopened. This afternoon's session is with Unwired Australia and Market Dynamics. We have Suzanne Campbell, general manager from Unwired, and Ian Hayne, managing director of Market Dynamics. Would you like to introduce your submission?

**MS CAMPBELL:** On behalf of Unwired Australia I'd like to thank you for the opportunity to address you this afternoon and to bring you our few comments in relation to the draft report of the Productivity Commission. Unwired Australia is a licensed carrier. We hold radiocommunications spectrum licences; those licences were either won at auction or acquired in the last 12 months from parties who participated at auction. These licences have been commercialised by Unwired through the deployment of fixed wireless access services. The fixed wireless access services will be for both voice and data and will provide services in cities and towns and regional centres for a combination of SME customers - small, medium enterprise customers, SOHO and residential customers.

The comments that we have this afternoon address some six different aspects of the commission's report, and they relate to spectrum auctions, perpetual tenure, spectrum leasing, market reporting and device registration.

**MR HAYNE:** I think we'll just walk through each of the issues very briefly.

**DR ROBERTSON:** Yes, sure.

**MR HAYNE:** You've got the written submission that we have and it's part of the public record. We might just start with the competition limits issue that the commission made a recommendation on. Unwired agrees with most of that recommendation. You're really suggesting that competition limits be removed entirely, and I've been advised not very long ago that the minister has made an announcement, or is about to make an announcement, about doing just that in respect of a forthcoming auction. We welcome that but there is one caveat and that is in the situation where you have a dominant incumbent operator who has an economic interest in preventing new players coming in to assault their dominant position. I think it's fair to say that if Unwired had faced a situation of no limits, such as the commission has recommended, during the initial capital raising for the 3.4 gig auction, it wouldn't have flown.

I was working at the ACA in the early part of that planning and a great many people came to me when I was in that role and said, "Well, we're not going to bid if Telstra is allowed to bid." I think, therefore, there is a case for some specific deliberate pro-competitive stance in some instances to deal with the prospect of a dominant entrenched powerful incumbent. I don't want to mention any carriers by name but there are some situations where that comes about. Would you like to add anything to that?

**MS CAMPBELL:** Just a couple of additional comments in relation to that. Our investors are a combination of Australian private investors and US institutional investors. Certainly their contribution to the establishment of Unwired has been predicated on what they see as a relatively free and open opportunity to do so in this market at this time. Nevertheless, their willingness to continue investing is about the perpetuation of that regime, not some reversion of form. So I think it's true to say, certainly on behalf of our current investors, the recommendations that have been put by the commission at this time are generally acceptable except in the circumstance that Ian has described.

**DR ROBERTSON:** Do you think that is going to occur again? In future auctions are there going to be many cases where the incumbent is likely to be a problem?

**MR HAYNE:** From Unwired's perspective I think we're through the barrier and we're in a position now where the company can raise the capital, roll a network and establish a very successful compelling business, but there are other possible new approaches to telecommunications being developed all the time. Some of them are service concepts and some of them are technology concepts. As they come along the government will have to think very, very seriously about whether it wants to foster these by creating an environment where they may flower and blossom, if I can use that analogy, or whether or not there is the possibility for dominant entrenched incumbent interests to frustrate that.

It's an important forward policy issue and I think to close it off by saying - or to recommend to government that there should just be no limits I think doesn't quite get there. There will be circumstances into the future where some active pro-competitive measure is worthwhile in a public policy sense.

**DR BYRON:** My understanding is not that we were against pro-competitive measures but we were asking whether it made sense to have a different ex ante measure from the ex post measure.

**MR HAYNE:** Yes, that's true.

**DR BYRON:** And whether one might not achieve exactly the same pro-competitive outcome by simply reminding all bidders that section 56 would apply.

**MR HAYNE:** Section 56 would apply, yes.

**DR BYRON:** At the very least, even if you were going to have ex ante and ex post restrictions, they should be consistent to the same standard and using the same definition of market and so on. I realise there are all sorts of problems like that but I don't think we were suggesting that there should be no - - -

**MR HAYNE:** I agree, and I might address that because we specifically talked about the ex post/ex ante idea in our submission. We believe to do it after the auction, using the current provisions of section 50, would be to effectively or potentially shut the gate after the horse has bolted. In terms of trying to raise capital to build a network, it's not really a very persuasive argument to take to investors that there is a thing called section 50 and the ACCC, if poked and prodded, may ultimately order divestiture. I don't think that's a compelling case to put to investors. In the 3.4 example we did have a compelling case to put to investors, and that was there were some controls on the dominant incumbent that made it worthwhile in thinking about the opportunity. I don't think the ex post idea would have flown with those investors at the time.

**DR BYRON:** Is the 3.4 spectrum the only conceivable alternative to the current copper can or are there others?

**MR HAYNE:** No, it's not, but it's the one that has current international recognition.

**MS CAMPBELL:** The demonstration of that recognition is the ITU in its recommendations on the best spectrum bands for the purpose of deploying fixed wireless access has recently come out with a recommendation supported by both the United States and Canada of 3.4 to 3.6. So there's a sense in which this spectrum will be able to provide services which will have global scope and scale vendor support. The market here in Australia of course can't generate those kinds of advantages in its own right just simply because of its size.

**MR HAYNE:** There's a second issue there and that's the characteristics of the 3.4 band. It's very, very amenable to the sorts of service, the fixed wireless access service that we're talking about. It's at the very high end of what's feasible for mobile services and, because it's very low in the fixed services bands, it has the sorts of range propagation characteristics that make it very suitable for the sort of fixed wireless access deployment that we're talking about.

**DR BYRON:** But if the ITU recognises 3.4 to 3.6, then could 3.5 and 3.6 conceivably be alternatives or additional expansion?

**MR HAYNE:** They are. It's potential expansion for what we have, but you have to recognise that this spectrum that was awarded to Unwired at auction is historically a Defence band, and the bits that haven't been recovered and allocated remain available to Defence for capability, and I'm sure Defence would fight tooth and nail to preserve what they have left after what has been carved out. In fact I know that from my previous life.

**DR BYRON:** Thank you.

**DR ROBERTSON:** The point we were looking at is that the setting of competition limits tends to lengthen the period during which an auction is being prepared and takes place; in other words, widening the gap between auctions and spectrum. We were trying to think of a way in fact where you could shorten that so you could get things out quicker.

**MR HAYNE:** I'd be happy to recommend a way for you, and that's to recommend to government that it introduces statutory time limits, like 28 days for example, in which to take these sorts of decisions. The only reason that they take six or nine or 12 months to come about is because they're able to sit in the in-trays of various levels of the administration - and they do. There are always lots and lots of priorities in government, and again I know that from a previous life. One way to deal with that is to put statutory time limits on it. That would do a hell of a lot to hasten the process of spectrum auctions.

**DR ROBERTSON:** And you would prefer that to the idea of checking on the incumbency.

**MR HAYNE:** I'm sorry, I don't - - -

**DR ROBERTSON:** What you're suggesting in your submission is that somebody should look at each auction and see if there is in fact a dominant potential owner.

**MS CAMPBELL:** Yes.

**MR HAYNE:** Yes, I think that's right.

**DR ROBERTSON:** Okay.

**MR HAYNE:** You're right to point out that the process of bringing a band into the spectrum licensing regime is long and drawn out and administrative. There are a number of statutory triggers, but the response to those statutory triggers isn't prescribed; it's open ended. I know from experience that those sorts of things have led to delays of six, nine, 12 months and even longer in the planning for various auctions that have taken place. So a very concrete recommendation that could be made to government is to introduce some statutory time limits, as well as having those statutory triggers.

**DR BYRON:** Just to follow up on that one, am I right in understanding that in the preparation of a spectrum licence the documentation needs to go backwards and forwards to the minister's office two or three times or something like that?

**MR HAYNE:** Yes, and the minister is responsible for some of the key decisions

that take place, and so there is usually public consultation, a framing of some recommendations, a testing of those recommendations with ministers and government, and sometimes this is done informally, not following any statutory formula but just as good administrative practice; testing the water, if you will. Every time you do that it takes time. Ministers have - especially in a portfolio like communications - an enormous diversity of important high-profile issues to deal with and spectrum auctions in an agency called the ACA sometimes don't have a priority.

**DR BYRON:** Yes, I think it's an interesting question for us to look at - just why they need to go to the minister on a number of occasions. If that turns out to be a major impediment in the release of spectrum for special licences - sorry, I think we're getting off the subject of your submission.

**MR HAYNE:** I think that's right. If the commission was interested we could talk separately and offline about some of those processes and how they work in practice.

**DR BYRON:** Yes. Your second point.

**MR HAYNE:** The next issue that we've dealt with is licence tenure. Unwired, of course, is very grateful for the recognition of perpetual rights in the commission's draft report. We'd like to note that, as this is the first time in any government document that the idea has actually been entertained. In the past it's always been cast in the context of fixed term, fixed tenure rights. I think the commission has made a good case, a very good case in fact, for introducing long-term tenure of spectrum licences at some stage.

I suppose the disappointment from Unwired's point of view is that, having said all of that, and said it's a great objective and a great goal, the commission hasn't mapped out a road map for dealing with the sorts of impediments that exist, so that that goal can ultimately be fulfilled. My observation in reading the commission's draft report was that in fact you've identified a couple of issues that happen when you actually get to the current 15-year term and put forward some options on how to deal with that, rather than mapping a road map to get all of the conditions in place where perpetual rights can be introduced.

We, in this submission, have made one very small recommendation there, and that is to basically consider changing the onus of proof. At the moment the onus of proof is very much in favour of apparatus licensing. Apparatus licensing is the default condition and spectrum licensing is the exception which has to be public policy justified to government and a whole lot of statutory triggers have to be passed before you can move to spectrum licensing. I've said in public forums before - and it's been noted by people within the ACA - that it would be possible to change the onus and to say, "Well, as a matter of public policy we believe that spectrum licensing, spectrum property rights and those sorts of ideas should be the default

licensing condition. The state intervention, the centrally planned approach to spectrum management should be the case that is identified and specifically justified on public policy grounds."

If you were to make that sort of recommendation it would suddenly legitimise spectrum licensing over much larger tracts of spectrum than is currently the case. I think that is one of the important preconditions for a viable trading exchange, a trading market and those sorts of things that would, in turn, be a precursor for perpetual rights.

**MS CAMPBELL:** Particularly in relation to the perpetual tenure we're proposing to invest, over the life of our licences, not tens of millions but hundreds of millions in capital, and to deploy that capital not on a single location basis but nationally. To do that with confidence means that we have to have a very clear understanding and expectation about the life of the licences and to be able to adjust and manage our investment going forward on the basis of any change in that regard. Or, on the flip side, noting that it's a 15-year licence, we'll begin to moderate our investment some time well before the end of that licence period so that we have a good return to our investors on the investment through that whole of the 15-year period. It's a very important issue for us to be able to manage our business going forward.

**MR HAYNE:** The network is going to grow over time. This is not a network that we will light up tomorrow and have instant coverage. Some of that investment we're talking about is actually programmed for about the mid-year term of the licence. Nevertheless, our willingness to invest is going to be tempered by how much certainty we have about the end term of the licence and whether or not we'll actually get a return on the investment.

In terms of how the network grows from Unwired's perspective, we will obviously want to be hitting the major population centres first, but you can see that the network will grow out from that over time. If we have to reign in capital expenditure because of a risk that we would lose licences at some point in the future, then it's actually the areas that are crying out for broadband most of all in a policy sense that run the risk of not getting it.

**DR ROBERTSON:** We tried to actually suggest a bit of a program. I think it's very difficult to jump straight to perpetual licences.

**MR HAYNE:** Indeed.

**DR ROBERTSON:** Particularly since there are so many apparatus licences. A lot of people want those extended to 10 or even 15 years, which seems to us unnecessary for a number of reasons that we can talk about later, if you like.

**MR HAYNE:** Yes.

**DR ROBERTSON:** We actually included in our report a sort of program to deal with the next couple of years, leading up to the arrival of the renewal time for the first spectrum licences. We suggested sale of vacant spectrum, sale of incumbent spectrum - both those are quite big steps compared with what has been happening - more conversions, which involves a lot of dealing with existing apparatus licences, and, indeed, more reallocations. So we actually do have a bit of a program there.

**MR HAYNE:** Which we support, by the way, and support enthusiastically.

**MS CAMPBELL:** There's nothing there that we would - - -

**DR ROBERTSON:** No, I thought that would be true.

**MR HAYNE:** That's true.

**DR ROBERTSON:** But you can see that those are steps that we would hope the government would consider and implement. If we jump in and say, "Forget all this, we're going straight for - - -"

**MR HAYNE:** We would encourage you not to forget all of that. We'd like to see all of that in place.

**DR ROBERTSON:** But the government is going to react if we start saying that all new licences should be in perpetuity. This seems to us to be a program that has the same end object as yourselves, but just in a manner that might be more acceptable.

**MR HAYNE:** We understand that. We were concerned about the focus in the report on the four, I think it was, options for dealing with what happens when the current licences actually get to their term. The position that we're putting here is that none of those are really acceptable because they don't address the fundamental problem. The fundamental problem, from where we sit, is about confidence in infrastructure investment. It's something that we need to have today because we're trying to raise capital today to roll the network into the future. It's like a continuum of investment that we're about to enter into. We have to get the foundations right in order to get the first part of it, but that first part of it really doesn't have a lot of value unless it's backed into the future.

**DR BYRON:** Wouldn't a program of continuing to invest in infrastructure and the roll out best position you to win a subsequent spectrum licence auction, rather than disinvesting or opting deliberately to not maintain and let the hardware run down?

**MR HAYNE:** It does have some issues, I understand that. I think, though, that in

terms of presenting a case to investors it's very difficult to argue that way. That's what we're trying to do at the moment.

**DR BYRON:** In terms of the duration of licences, a number of people in a number of different contexts have said that it's more important to get the rollover conditions right than whether it's five, seven or 13 and a half years, or pick a number.

**MR HAYNE:** Yes, that's the point we make as well.

**DR BYRON:** If it's quite clear that the criteria, the timing, the renewal process et cetera - if that's quite explicit then in some senses it's almost as good as a perpetual right. At least you know what the rules are. One of the things that concerns us is if there is still some element of ambiguity in terms of what happens at 15 years plus one day. We're trying to bring forward the time where the initial licensee has certainty about what happens post year 15. We thought three years before the expiration may not be an unreasonable time to hold the auction. But if you said, "Well, let's hold the auction to decide who holds it for the second period," say in year 10 or year 9 of the first licence, then it may well be that some of the companies and some of the applications of technologies don't even exist yet.

**MR HAYNE:** Aren't existing. They won't exist, that's right, and that's the point we've made in the submission.

**DR BYRON:** So you've got to get the optimal lead time to balance the opportunity for new entrants to come in, while at the same time giving a suitable lead time for incumbents, if they need to get out. It's balancing the interests - both incoming and outgoing.

**MS CAMPBELL:** There's distinct tension in getting that balance right. There are investors in both situations. Our interest here is in getting to a point of very great confidence - your words - about what is going to be the future. That is a fundamental requirement.

**MR HAYNE:** The prospect for new alternative uses doesn't disappear if you have a perpetual right, providing that you have the ability to trade it. In fact, in Unwired's case I'm sure that if a brand-new technology came along at year 15 that wanted to have a go in our spectrum, and it was economically efficient for us to support that, we would be more than happy to think about leasing some surplus capacity to that technology. If the spectrum was genuinely surplus to our requirements, we have the opportunity to sell the portion - that is surplus - to the new technology - take some money, reinvest it in the network. We have all of those options open to us if we have a perpetual right.

At the moment we have no alternative than to front up at another auction and

potentially stump up a lot more money, potentially be held to ransom by competitors, potentially have our business compromised in those sorts of ways. So I still think that what happens at the end of 15 years is an issue that needs to be resolved in a public policy sense much sooner rather than later, and anything the commission can do to recommend a road map to get the right conditions in place to move to perpetual rights we would welcome and support.

**DR ROBERTSON:** Okay, thanks.

**DR BYRON:** We'll move on to the next one.

**MR HAYNE:** The next one is spectrum leasing. We noted in the draft report that there was a little reference to there not being a lot of information about spectrum leasing around. I don't know that we want to say very much on the public record except to say that Unwired is currently able to lease spectrum. We have already entered into a fairly interesting, very agreeable contract with another carrier. They're going to operate some devices in our radio frequency spectrum for a fee and that's what we believe the whole leasing idea is all about. We will get some revenue from that, which is good, and we also have the ability to develop a longer-term business relationship with this carrier, which is also very important to us.

**MS CAMPBELL:** Indeed.

**MR HAYNE:** We are basically a private band manager and so we applaud the idea of private band management in the draft report. We're doing it. We would like to place on public record the fact that we are doing it. We are able to do it. We've got the skills to do it and, to the extent that it is an additional business for the company, we'll be very happy to engage in it.

**DR ROBERTSON:** But you don't support registering?

**MR HAYNE:** No. We believe we can do this under contract ourselves. Contract law ought to prevail. There really is no public policy need to register it because, at the end of the day, Unwired as a company remains fully accountable in terms of radiocommunications law for the spectrum management of that spectrum, and there really is no public policy need for the ACA or anybody else to know about it. That's our view.

We're quite open about the fact that we can do it and if anybody wanted to come to us and explore that opportunity, we would happily entertain it. We might have different terms and conditions on their contract to the one that is in place and we would like to be able to reserve the right to do that with anybody who comes to talk to us, but we wouldn't want to have it registered because it's sort of open to everybody to have a look.

**MS CAMPBELL:** We've struck the commercial arrangement with one other carrier. It takes effect the day after we have access to the spectrum. It was struck late last year. It was commercially negotiated. It's understood by both sides to be fair. It would not be the same agreement for any other party that came to us. It's about time; it's about the scale of the relationship; it's about the strategic importance of the relationship to both the parties that have entered into it. It's a commercial matter; it has been settled commercially. We don't see it as the last, but we're delighted that it's the first such agreement.

We've had in the last three months some half dozen other approaches in relation to spectrum leasing, particularly in some regional locations where there is currently a very poor perception of data service availability, and the parties that have approached us have wanted to construct their own fixed wireless access networks, so those communications are ongoing.

**DR BYRON:** Presumably the argument that the ACA or others would make for registration of the subcontract or agreement is for tracking interference, or do they just want - - -

**MR HAYNE:** It's a relevant issue because Unwired registers all of the devices - - -

**DR BYRON:** And you are responsible?

**MR HAYNE:** - - - and it is up to us to determine whether or not we will in fact register them, whether or not they are compatible with our own operations and compatible with any other operations. In a radiocommunications law sense we are absolutely responsible and accountable for the operation of the devices and so the ACA has no call. I am aware of the ACA's interest in some of this because it did come out when I was there.

**MS CAMPBELL:** I think that in addition to there being the radiocommunications management responsibility on us, there's also enlightened self-interest. This is leasing of spectrum where we wish to operate as well and we have a very compelling business reason to manage this in a fashion which will not in any way, shape or form disrupt service to our customers. I think the balance of responsibility is in the right place on this occasion; it's with the owner of the spectrum.

**DR ROBERTSON:** What about interference with the boundary, because you said earlier that 3.5 and 3.6 are Defence frequencies? Supposing there was a dispute there. How would you handle that?

**MR HAYNE:** As would any other boundary dispute be undertaken. The ACA has powers under the act to look at those sorts of issues. It's a boundary issue between us

and another player. We're only responsible for what happens inside our tent. We're not responsible for what happens outside our tent or our relationship with other tent-holders, and so the ACA has the power, the authority; it has the statutory tools to deal with it, and I think both Defence, if it was Defence, and us, would be looking to the ACA's technical resources to solve the interference problem.

That's an important issue and I know it almost came up in the evidence from Airservices Australia earlier today. As a spectrum licensee we're responsible for what is happening inside our tent, coordination of all of the devices within our tent. We're not responsible for interference that goes beyond that. We have to look at the boundaries, we have to police the boundaries, but I think we all accept in radio terms that the boundaries are porous and there will be instances of radio interference that can never be predicted by engineering models. At the end of the day you need an experienced radio technical officer with investigative skills to go in and run a meter over it, if that's what it takes. I think we and Defence and other spectrum licensees and apparatus licensees willingly submit to that. I always have held the view that the ACA has a role in making sure that the spectrum management framework works for everybody, but that doesn't mean that it gets in the way of the role and obligations of private band managers to do it.

Trading spectrum licences. As the commission is aware, Unwired as a company has been involved in the secondary market. Players and friends of Unwired, including myself in my own capacity, have also been involved in other trades around the place. They are going on. There's quite a dynamic secondary market for radio frequency spectrum resources, or spectrum licences in particular, given the number of licences and the number of licensees. Those occur. When they do occur the trade has to be registered with the ACA because of the public registration requirements about who owns what and where, but we don't really see any need for other information to go on the record, and the reason for that is that quite often these negotiations are private, bilateral negotiations.

They don't happen through a trading exchange for the most part - they're done privately - and the terms and conditions of those may not be amenable to reporting to the ACA. I know that the ACA has grappled with this issue before, as well. It's just not possible to get good, accurate understandings about prices and volumes when you're dealing with these private negotiations. Some of them are reported publicly anyway, and we note that in the situation of publicly-listed vehicles there will be some mandatory reporting under stock exchange rules.

We don't have a problem with that, but where you have two private companies doing it, I don't know that there is any requirement on them to report the trade nor would there be in many other types of tradeable assets that they might have under their control, and so why is radio frequency spectrum different? I think we also note that we would support trading exchanges, trading markets, and happily submit to the

rules of those trading exchanges with regard to reporting between the members on prices and volumes, but we don't believe that there's any statutory need for such a measure.

**DR BYRON:** I guess we were thinking in terms of reporting information from the exchanges rather than reporting of all private, bilateral trades, but maybe we should have made that a bit more explicit. I guess we were looking at the example of how the stock exchange or real estate markets or any other secondary asset markets generate information that informs the market and helps it work better, but I guess with off-market exchanges of equities they're relatively small compared to the on-market trades.

**MS CAMPBELL:** Yes.

**MR HAYNE:** Yes, that's right.

**DR BYRON:** And it's the on-market that actually sets the trading patterns.

**MR HAYNE:** I just thing that if there is an on-market exchange created it will inevitably have to establish its own rules for market reporting. Let's leave it to that particular function rather than have statute law become involved.

**DR BYRON:** Do you want to add anything?

**MS CAMPBELL:** No. I think it's best not to.

**DR BYRON:** Thank you.

**MR HAYNE:** The last one we wanted to put on the record was about the register of spectrum licences and the registration of devices under spectrum licences. Unwired recognises the need to have information about the devices that are radiating in a public register. There is public benefit in that and we don't resile from it, but there are some things about the way that it is currently done that need to be addressed and I am heartened to acknowledge on the record that the ACA has already agreed to look at some of these issues and look at them very, very carefully, so I'm sure there will be some internal review and some sensible recommendations coming from the ACA, but we're going to input to that process, as we will now.

At the moment, in a fixed wireless access system in our particular framework, we are required to register all of the base stations and all of the subscriber transmitter terminals. We had a very close look at the rules and we don't see that there is any way around that and we've actually taken that up with the ACA as a substantial issue. The public policy issue there is that all other spectrum users need to know about both transmit frequencies and the fact that they are being used in a particular location. We

believe that it's possible to achieve that public policy objective by registering the base transmitter and the base receiver rather than the subscriber terminal transmitter because they are in fact the same frequency.

The only issue is that you need to associate a locality with the registration of a base receiver so that you are capturing the potential for these subscriber terminals to exist anywhere within that radius, and they will exist anywhere in that radius in a way that we can't predict today - we will only have a snapshot of from time to time - because we will be putting customers into areas, we'll be pulling them out, we'll be moving them, all of those sorts of things, dynamically, and so the prospect of having to register potentially hundreds of thousands of subscriber terminals and maintain the integrity of that database as we pull customers in, pull them out, move them and so on, is really a bit of a nonsense. So we believe the public policy objective can be achieved by registering the base transmitter and the base receiver. We've put that to the ACA and we hope that they'll respond very shortly to that.

**DR BYRON:** Wouldn't that be consistent or analogous with the way mobile phones are treated?

**MR HAYNE:** It's not quite, because at the moment these devices are specifically exempted from device registration in the terms of the spectrum licences that have been issued. No such exemption exists for subscriber terminals in the 3.4 band. That's the difference, but you are quite right, in terms of radio planning and radio engineering for these sorts of things it makes good sense to register the base receiver because, by definition, you are capturing the fact that there are these things roaming around, transmitting. We believe that's a simple, effective mechanism, and I am heartened that the ACA has agreed to have a very close look at that.

The next one relates to interference impact certificates and the section 145 proposal. I had a lot of chuckling in my heart as I read the commission's reporting on this issue, particularly the colourful language of some of the consultants in the field, the "technical farce of the device boundary polygon". Unwired agrees with that. We mightn't use the words "technical farce" but we certainly agree with the sentiment. The methodology as it's currently prescribed is deeply flawed. It needs to change. Even if it were to be retained as a mechanism, it really needs to change because it's substantially flawed, but we wonder at the use of it in any event.

Let's explain Unwired's position. We are a band manager. We're responsible under our own licence conditions for coordinating all of the devices that exist within our spectrum space. We've already acknowledged on the public record that we not only have our own devices but we have devices being operated by another client, so we are a spectrum manager. We're responsible for the coordination. We have a compelling economic interest to do that well, because if we get it wrong we're going to suffer interference in our own business that makes our own business

compromised. We can't afford that.

Similarly, in our spectrum leasing business we can't afford to have those people who are using our spectrum badly affected by interference in our spectrum either because then they won't want to do business with us any more, they'd rather go and do business with the ACA. We firstly have a very strong, very compelling economic interest in getting it right, but the people who are going to be building our network are also very well qualified to do it. They are, for the most part, ISO certified quality assured companies. They do this thing for a living. They do it well.

Why, we ask, is it necessary for us - after having planned all these devices, got it right from our business point of view - to have to go to an accredited person and get this interference impact certificate to certify that the device complies with a demonstrably flawed procedure? That's an absolute nonsense and so we say, "Hey, we're doing all the radio planning. We're doing it well." We've got professionals on board. It's in our economic interests to do it well. We believe that the ACA should simply register the devices that we ask to be registered because we've already done the radio planning. We know they're going to be okay. We don't need to have interference impact certificates to tell us that they comply with a procedure that does nothing to certify that they really are going to be okay in a radio engineering sense.

I'm sure you've had a look for section 145 determinations and seen how they work. Privately and offline, if you want a briefing on why they're flawed, I'll invite Peter Hilly in and we'll come and have a chat with you but we certainly believe, in a radio engineering and management sense, that there are some problems.

**MS CAMPBELL:** In respect of managing the business, the problems are separable from the technical farce problem. There's a problem about unnecessary cost process, duplication of effort. These are things that we as a business and any other business in fact could well do without.

**MR HAYNE:** The ACA will probably point out when you raise this that the cost of actually issuing a device registration with interference impact certificates and so on has fallen for bulk registration, and we'd like to applaud that but that's not the cost issue. Every time we go to an accredited assigner to say, "We'd like you to do the work on this device, they're going to bill us by the hour," that's the cost overhead that we have to face, and it simply duplicates effort that is already being done in our existing radio plan for an entirely different purpose and using different radio methodologies.

**DR ROBERTSON:** Let me see if I understand this. If you register a device, isn't that registration sufficient to cover all those devices of the same type?

**MR HAYNE:** No, it's not, because the device registration is geography-specific.

**MS CAMPBELL:** And so we'll have a population of devices scattered around a base station and on a strict reading of the current regulations we understand that we'll be required to register each device.

**DR ROBERTSON:** Because of the location which is associated with it?

**MS CAMPBELL:** The geography, yes.

**MR HAYNE:** They have different locations, different antenna heights, all of these sorts of things and, as we move closer to our boundaries with our neighbours, they have different potential to cause problems at the boundary. Our approach to solving that is to wrap all of that into our radio planning exercise using our radio planning methodologies, and we don't believe it's desirable or sensible to have to duplicate that effort using an entirely different set of methodologies mandated by the ACA just to get one of these ticks.

**DR ROBERTSON:** And this applies across the board, does it?

**MR HAYNE:** It does. We're not the only spectrum licensee. Every spectrum licensee is affected in this way.

**DR ROBERTSON:** I'm thinking about what they call themselves, AEEMA, the industry association. They produce equipment and each time a piece of that equipment is located somewhere, it has to be registered separated because, although it's the same equipment, it has different conditions.

**MR HAYNE:** It has a different relationship to the radio frequency spectrum boundary of the licence, and that's the issue, but we would argue that if it is the same equipment it's got the same technical characteristics. The only thing that changes from instance to instance is the coordinates of the device and its antenna height.

**DR ROBERTSON:** And the height of the aerial?

**MR HAYNE:** Yes, essentially.

**DR ROBERTSON:** That sort of adds a complication because I've been believing that if you've got equipment registered then that was probably all you needed to do, but now I can see why you would need more or why the ACA thinks it needs more.

**MR HAYNE:** As I said, David, we don't object at all to having information in a public database about the fact that specific radio frequency bands are being used in a particular way at particular locations, but we firstly don't believe it's necessary to register subscriber terminal transmitters to do that, and secondly, if we've planned it

to work well and we certify that it complies with the licence conditions, why do we need this additional process of a section 145 review? So that's one area where we have taken a different view to the one that the commission is saying, where I think you made a comment that there was nothing particularly wrong with the IRC process, there was no sufficient reason to get rid of it, and we encourage you to review that recommendation.

**DR ROBERTSON:** And we shall.

**MS CAMPBELL:** Thank you.

**DR BYRON:** Is it simply a question of lack of time, lack of experience, that there haven't been enough cases yet where spectrum licensees have done all their modelling and planning work and are seen to have got it right and so in the early days the ACA was making sure that the bases were covered by having a fall-back arrangement - - -

**MR HAYNE:** Yes, I think there's no doubt - - -

**DR BYRON:** - - - in case the special licensees didn't do it thoroughly, competently and professionally, and that over time, as there is more and more evidence that special licensees are doing it all, then the redundancy of the other back-up system may well be imminent and the ACA would - - -

**MR HAYNE:** We would hopefully expect that they will change - - -

**DR BYRON:** In which case it may be just insufficient time and accumulated evidence, the problem being the first.

**MS CAMPBELL:** The technology evolution issue as much as any.

**MR HAYNE:** Look, I think that's right, and I think it's fair to say that the ACA and spectrum licensees are all learning about these things. They are new, they're different, they have some interesting features on them. But can I relate for the record how the GSM 900 spectrum is currently managed. The GSM 900 spectrum is notionally allocated to the three GSM 900 carriers but it's done under apparatus licensing, and what happens with these carriers is they go and plan their GSM 900 system and they put them into the register.

They don't have to do section 145 checks to make sure that these devices comply with a demonstrably flawed procedure. The ACA accepts these companies are able to properly plan a GSM 900 system and it puts them into the database and away they go. We're asking that the law more generally recognise that spectrum licensees are competent to do these sorts of things. That's why we spent

$120 million-odd to buy some spectrum and we're good at this stuff.

**DR ROBERTSON:** That sort of leads on to something which is going back in terms of what you've been talking about, which is this idea of making the spectrum licence the licence of default and reducing the apparatus licence, in particular just leave class licences on one side. One of the most serious problems we face in doing this study is the multitude of apparatus licences that exist.

**MR HAYNE:** Yes, there are a lot of them.

**DR ROBERTSON:** And the variety of them, and trying to turn the thing on its head is going to be very difficult, but you can see where in the draft report our sympathies lie.

**MR HAYNE:** Yes.

**DR ROBERTSON:** But we still have some pretty serious practical problems in dealing with apparatus licences.

**MR HAYNE:** Yes.

**DR ROBERTSON:** We've talked about selling incumbent spectrum, which is one way of doing it, but you can only do that to a limited extent because a lot of people are going to object, for one reason or another, and as long as the ACA is able to issue apparatus licences to anybody who asks for one, it's often the easiest way to get a licence.

**MR HAYNE:** It is, yes.

**DR ROBERTSON:** And so that's one of the huge barriers we have in moving forward on spectrum licences in the marketplace - that a lot of people actually like apparatus licences, and you heard the reply this morning that we got from Airservices when I asked this question. Do you have any response to that? You've proposed that we should be heading towards spectrum licences, which on the whole we would agree with, but there are some huge difficulties there.

**MR HAYNE:** There are some difficulties, and it's also important to note that even if you have to justify in a public policy sense apparatus licensing in a particular band, you're still going to be justifying a lot of apparatus licence bands. I've not got a problem with that and I think that's a very sensible way to go. The ACA also is opening up new territory at increasingly higher frequencies as well, and sometimes they default as an organisation to apparatus licences and band plans as a response to that, so that's another way that we could start chipping away at the edges.

There will always be a place for centrally planned licensing. I don't agree with the comments of my colleague from Airservices this morning. I don't see any of the disadvantages that he saw in spectrum management in terms of having a spectrum licence. The ACA is still going to be responsible for interference issues to their spectrum licence. I don't see how that can possibly be avoided. They have the advantage, though, within that spectrum space of being able to manage it for themselves to authorise who goes into it, what sort of channel plans are used, and he talked in his comments about how there are changes of technology over time, changes of bandwidth. They're able to do that in their own time and in response to their own drivers if they have a spectrum licence over the whole band, so I don't think the disadvantages that were read in this morning actually exist. I think they're cultural rather than actual.

**DR ROBERTSON:** I think there is still an attitude - people believe that the apparatus licence is exactly what they want, lets it go from A to B in some particular way, and of course they seem to be looked upon as being virtually in perpetuity in the sense that they pay each year and they get the same thing.

**MR HAYNE:** They do.

**DR ROBERTSON:** And in the past technology has not moved as fast as it has in the last decade or so, at least in terms for the layman, and that seemed to work. You probably didn't change your equipment very often and just renewed the licence and went on and on forever, and that's one of the reasons why, for the reasons you've just said, we see advantages in spectrum licences, economising in the use of spectrum, increasing the number of uses in a given range - all those positive things that are good about the market. But, nevertheless, there are still a lot of people who have told us that they want to stick with apparatus licenses.

**MR HAYNE:** I've got no doubt about that, David, but why does it necessarily follow that the only licensing authority is this Australian Communications Authority, and this is where the idea of private band management comes in? We believe, in the 3.4 gig band, we can do a better job than the ACA can. I'm sure there are other people in the spectrum management business who would also be able to claim that they could manage a band at least as well as the ACA can and, in my dealings with the ACA, it's clear that they are conscious of a deskilling in their own ranks because in the private sector there is such demand for skilled radio people that it pays a lot more, and that's happening.

The ACA will recognise that, or does recognise that, and so you can see that the ability of the ACA as an organisation to continue fulfilling this role may become compromised over time, and so why should it always be done within government? The mechanisms exist to do it outside government and there may be people who are willing to do that outside government. From Unwired's point of view, we would be

more than happy to issue one-year annual renewable accesses to our spectrum for a fee.

**DR BYRON:** Is it possible to turn that around and say, "Well, the ACA is just a band manager for all the bands that haven't been sold off as spectrum licences"?

**MR HAYNE:** Absolutely, Neil, and I think my original submission to the commission under the market dynamics banner said exactly that.

**DR BYRON:** Sorry, I forgot. I thought that was original.

**MR HAYNE:** It was. We thought of it together.

**DR ROBERTSON:** Nice try! I need to tell you there are also a lot of people in the community at large who believe that apparatus licences are the way to go because they like to know they have property right.

**MS CAMPBELL:** Yes, that's understandable.

**DR ROBERTSON:** And a lot of people who don't want to see spectrum sold off to capitalists like yourselves, on the grounds that - - -

**MR HAYNE:** We're good capitalists.

**DR ROBERTSON:** I know. I realise you're probably in debt up to your ears. But there are a lot of people who actually still see positive things out of having the government give them a piece of paper. It's a common enough problem, being serious about this. We run into it in all aspects of policy. We don't deal with policy, but we know that the opposition is out there to market-oriented strategies, and it's not going to be easy. We have had a number of submissions - which are on the web site and you can see them yourselves - which are in favour of the government maintaining control. That's largely based on our privacy concerns.

**MR HAYNE:** Yes, it is. No problem with any of that. It's a difficult issue to reconcile.

**DR ROBERTSON:** Which is one of the reasons why we try to do it gradually. It doesn't give you your licence in perpetuity, but we hope that we can at least give you 15 years, plus the chance of renewal; by next time maybe you'll get it in perpetuity, but maybe you won't be interested.

**MS CAMPBELL:** Thank you for the offer, but what we would clearly like to achieve is a clear understanding of what the circumstances will be well before year 15 and to be able to manage our business and our investments in relation to that

clear information. Perpetual tenure is something that we would regard as an optimal outcome. Undoubtedly there are, as there always are, fall-back positions from that. Clarity around rollover, for example, would be something that would be a highly desirable fall-back from perpetual tenure.

**DR ROBERTSON:** Neil, do you have any more questions?

**DR BYRON:** Not at the moment. I'm sure I'll think of some tomorrow.

**MS CAMPBELL:** You can always call.

**DR ROBERTSON:** Is there anything you would like to add? I think you have made your points very clearly and precisely and usefully.

**MS CAMPBELL:** Neil asked a question at the beginning of the proceedings around 3.4 and it being prospectively the only alternative to copper as a way of providing service. I thought it might be useful to go back to that. We've done a detailed analysis of the cost of deploying alternative technologies for the provision of local access services, and we believe that fixed wireless access is highly competitive and that it's definitely most competitive with ADSL services; that in respect of most other competitive alternatives today, that exist today, that are within our grasp today, these are the two ways that you can provide services on a local access basis competitively to end user customers. We think it's very important that 3.4 be recognised as a competitive provider of fixed wireless access and a very vital part of a competitive landscape going forward. Thank you very much for your time.

**DR ROBERTSON:** Thank you for coming in. Does anybody else want to speak? We do have time. No? I declare these hearings closed.

AT 2.36 PM THE INQUIRY WAS ADJOURNED UNTIL
TUESDAY, 23 APRIL 2002

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