Call Signs: Common to all Licence Area Plans

The original use for ABC call signs was to indicate the location of the main transmitter for example ABGW 41, which is the main ABC transmitter in the Geraldton Region in Western Australia. The RF channel is 41. Originally this system was used because each main transmitter was separately fed terrestrially. It also meant that any off air translators ended up with the same call sign indicating the program source.

Since that time, satellite distribution has taken over as the means of program distribution for ABC & SBS, so the ACMA has decided to use ABC for all outlets. This decision ignores the useful part of call signs which is to identify the program source. As an example;

ABW is the ABC program feed for WA. It is unique to WA because it has news inserted from the capital city for the whole state. Other states have their own unique satellite feeds which are on different satellite channels. (See VAST satellite RF channel allocations)

Thus the ABC call sign should be replaced with one of the following ABN (NSW), ABV (Victoria), ABQ (Queensland), ABS (South Australia), ABW (Western Australia), ABT (Tasmania), ABD (Northern Territory). As an example in Deniliquin, NSW, the commercial translators transmit Victorian regional programs, but the ABC and SBS transmit the NSW programs from satellite. So if the ABC in Deniliquin is labelled as ABN you would know this. The Gold Coast is another example but in Queensland.

SBS also splits its signal on a state basis and should also change its call signs to SBN, SBV, SBQ, SBS, SBW, SBT, SBD.

There has to be a ministerial decision on the restack of community TV. One option is to multiplex (on site) the community TV signal into the main SBS transmitter for that licence area. This would make this signal unique to that site requiring a separate call sign such as SCSN (Sydney), SCMV (Melbourne), SCBQ (Brisbane), SCAS (Adelaide), SCPW (Perth) and SCRN (Richmond/Tweed). The advantage of this is that if off air translators are used then they will carry the same call sign rather than the generic state call sign. Now you will know which translators carry the community TV signal for that licence area.

Commercials should also do this for their digital feeds where they can be split for example North Queensland, gets a different program feed to the Sunshine Coast yet they are in the same Queensland Regional Licence area.
The call sign should be included in the program data stream to the transmitter to identify the program source.

In conclusion, the Call Sign should indicate the unique programs source which is radiated by that transmitter.

- Restacked Main transmitters in all State Capital Cities are all band 3 (Group A) and horizontally polarised

- The advantage of this approach is that all new antennas for main transmitters can be the least expensive Band 3 only.
- As an example compare the retail prices of antenna only of the following from the same brand.
  - Hills PHD2+ Band 3 gain 5 – 7 dB No Band 4 required. $167.20
  - Hills PHD1 Band 3 gain 4 – 6 dB No Band 4 required $114.40
  - Hills Trueband Metro Band 3 gain 5 – 8 dB No band 4 required $88.00
  - Hills DY4 Band 3 only 6 – 8 dB $66.50

- **Note** There is a significant number of antennas designed for band 5 in use, these will be sensitive to the new mobile services in the 700 MHz band and should be replaced with band 3 only antennas. Similarly old antennas designed for any analog channels below channel 6 should also be replaced.

- **A note needs to be added to the Digital Ready website for all searches of State capital cities saying that “The recommended antennas need to be band 3 only and that SBS and community TV will join the other stations on the analog switch off date.**

Antenna manufacturers and importers need to be told that only band 3 antennas are to be sold to 60 % of the Australian population for the viewing of main transmitters. There is now no requirement for antennas designed for “analog” ie any channel below channel 6 (band 1 and 2). With the exception of translator sites in the state capitals UHF is not required either. Pure UHF antennas are required for translators in these cities.
• **Simulcast of Restack Channels**

The ACMA is proposing no simulcasting for nearly all sites. So, this will mean that all viewers will have to do a channel rescan to regain reception on that day.  

• **The start of restacking main transmitters in mainland State Capital Cities**

SBS is not only switching off channel 28, but also restacking its digital UHF channel to channel 7 at the same time. Community TV is yet to be decided, but it cannot stay on UHF and conform to principle 5. *The restack must be done at the same time otherwise the community TV stations will be severely disadvantaged, because MATV systems will have to be revisited to retune the amplifiers and some viewers will not rescan their TVs.*

  - **Use back up transmitters if required**

    All mainland capital city sites have band 3 backup digital transmitters and these can be used to start SBS transmissions on the analog switchover day if it is not convenient to use a new main band 3 transmitter on that day.

    This will allow the commencement of any new translators allocated to SBS’s UHF analog and digital channels on that day also.

  - **Translator modifications in the licence area**

    This will mean that any existing off air translators will need the receiver’s channel to be changed during the analog switchover day. (A new channel 7 antenna will need to be installed prior to the switchover day.) If the translators are satellite fed this is not required.

  - **Master Antenna TV systems (MATV)**

    This applies to systems with channelised amplifiers (These usually contain <9 outlets.)

    - Existing analog systems aimed at main transmitters are tuned to;

      Channels 2, 7, 9, 10, 28 perhaps 31 and may also have an FM amplifier. Ie 5 – 7 amplifiers. This ignores any pay TV amplifiers. (Channel 31 is now unused)

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• Existing digital systems aimed at main transmitters are tuned to;
  • Channels 6, 8, 11, 12, and one of the following 34, 29, 36, 33 and 29.
  • Possibly also community channels 29, 32, 38, 30 and 32.

○ Retuning MATV system amplifiers²

Since we now have DAB+ digital radio using TV channel 9A a new channelised amplifier should be tuned to channels;

6, 7, 8, 9A, 10, 11 and 12 which will cover all present and future transmissions. This requires a 7 channel amplifier. An FM amplifier can also be added to make 8.

(In the example referenced above a separate vertically polarised antenna can be fed into the channel 9A amplifier for DAB+ reception)

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A. Hughes dtvdrb@westnet.com.au

Draft Television Licence Area Plan: Mainland State Capitals
Conversion

- The ABC and all commercial channels can be converted to their channels now.
- Channel 7. Analog TV signals are 6 db stronger than digital transmissions. So this channel can be tuned to channel 7 now, as long as the measured analog signal level is set at 6dB higher than the other digital channels.
- Community TV after the restack is undecided at present. A similar alignment can be performed on a channel 10 amplifier. This will make it suitable for future use.
- Consideration should be given to installing an amplifier for DAB+ digital radio in place of FM.
- A lot of MATV systems distribute Pay TV in PAL VSB format which usually results in poor picture quality. For Pay TV, consideration should be given to either distributing the signal from the low noise converter on the dish or to use QAM-COFDM converter for each channel distributed.
### A Pre-restack channel processor for main transmitters, Mainland State Capitals

<table>
<thead>
<tr>
<th>Channel</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ch 6</td>
<td>DVB-T Modulator Optional</td>
</tr>
<tr>
<td>Ch 7</td>
<td>VSB Modulator for decoded Pay Satellite signals</td>
</tr>
<tr>
<td>Ch 8</td>
<td>FM</td>
</tr>
<tr>
<td>Ch 11</td>
<td>VSB Modulator for decoded Pay Satellite signals</td>
</tr>
<tr>
<td>Ch 12</td>
<td>FM</td>
</tr>
</tbody>
</table>

### A post restack channel processor for main transmitters, Mainland State Capitals

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<td>DVB-T Modulator Optional</td>
</tr>
<tr>
<td>Ch 8</td>
<td>FM</td>
</tr>
<tr>
<td>Ch 11</td>
<td>Optional</td>
</tr>
<tr>
<td>Ch 12</td>
<td>QAM-COFDM Converter for Satellite Pay TV Optional</td>
</tr>
<tr>
<td>Ch Au 9A = Ch EU 9 Vertically polarised Antenna</td>
<td>Programmer &amp; Power supply</td>
</tr>
</tbody>
</table>

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Band 1-4 Horizontally polarised Antenna

FM

AV

Band 3 Horizontally polarised Antenna

Ch Au 9A = Ch EU 9 Vertically polarised Antenna

FM

AV

Programmer & Power supply

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A. Hughes dtvdrb@westnet.com.au

6/14 | 2012-10-16
Timetabling

- **Prior to analog switch off.**
  - A ministerial decision is required to determine what will happen to community TV. Will it
    - Share local SBS transmitters or
    - Move to channel 10?
  - Upgrade and retune to channels 6, 8, 11 & 12
  - Select from the following options.
    - SBS tuned to channel 7. This gives no SBS reception until the analog switch off day. From then on SBS permanent reception. If Community TV shares SBS transmitter, permanent Community TV reception. Like all other viewers their receivers will have to be rescanned. **Cheapest option.**
    - SBS tuned to the present digital channel and the installer will return to retune this amplifier to channel 7 after analog switchoff day. This is the best option for hotels, hospitals etc where the installer will have to rescan all receivers to restore reception. The installer should include the second visit in the original quote.
    - Install a channel for the currently unallocated channel 10 or may be required for community TV.
    - Install an amplifier for Digital Radio (Channel 9A amplifier with a channel 9A antenna.)
    - Convert pay TV distribution to digital.

- **Duration of Digital Simulcast**

  On these main transmitter sites the switch off of 7 Network analog and the start of SBS on RF channel 7 needs to start of the same day. It is also possible for community TV if it does not share with SBS, to start transmission on RF channel 10 using a back up transmitter. (There will still be one spare backup transmitter).

  **The aim is to ensure that when a rescan of a receiver is done it can display all broadcasters** (using the standard Logical Channel Numbers). **No return visits from installers will be required** (except perhaps MATV).
This will release 2 or 3 channels for translators in the respective licence areas. It means that new translators in the licence area allocated to the old SBS/community TV channels can also start on the same day.
Adelaide Draft Television Licence Area Plan

Elizabeth South

This site started out when there was no digital TV. It was one of the sites installed due to reflected signals which are not rejected by the poorer directivity of antennas on channel 2. Now that ABC digital is now on channel 12 this is no longer a factor.

The licences of ABS64 and SBS61 at Elizabeth South should be cancelled on 2\textsuperscript{nd} April 2012. If this is not done there will be a repeat of ABHN5A in Newcastle. When a pair of UHF commercial stations and with SBS on UHF the ABC started broadcasting in analog on channel 48. For this reason the ABC wasted 22 years of transmitting on channel 5A when the audience equipped themselves with UHF for commercial & SBS TV. As you say the Craigmore/Hillbank and Mt Lofty covers this area making Elizabeth South redundant. It would be informative to drive through the coverage area and look for band 5 UHF antennas pointed at the water tower.

Duration of the Simulcast of SBS33/CTS30

On 2\textsuperscript{nd} April 2012, SBS28 analog will be switched off in Adelaide. When will SBS33 digital stop transmission? It is preventing the suggested CTS moving to channel 33. This however does not match the restack principle which is to put all transmissions on a site in the same channel group and on the same polarisation. Community TV either has to share transmission with SBS7 or buy a band 3 transmitter to transmit on channel 10. This is to conform to the restack rules.

The very high power WIN SA’s RTS in the Riverland cannot be restacked until CTS vacates channel 30.
Perth Draft Television Licence Area Plan


You will note that the WA Government regards Lancelin, Toodyay and Mandurah to be outside the Perth Metropolitan area. In fact these sites are very close to the WA Regional Licence area boundary. (Mandurah has its own Radio Licence area).

The map shows that Singleton is the southern edge of the Perth Metropolitan area. The ACMA has recognised this by making the radiation pattern of the Singleton/Mandurah transmitters to be pointed at Singleton and north. This set of translators contains Perth programming. On the same transmitter site is another set of translators which are fed with South West licence area signals. The radiation pattern is southwards of Singleton. Yes, there is some overlap.

Toodyay is very close to Northam is in the South West WA Licence area so it should be fed with the same signals as Northam.

Lancelin

It currently has analog translators from the Perth stations. It was installed when the WA regional Licence area only has ABW, SBS, WAW (GWN7) and later WOW (WIN) was added. Thus the residents wanted the 3 commercial stations which are available to those in Perth.

Now the WA regional Licence area has ABW, SBS, WAW (GWN7), WOW (WIN WA), WDW (TENWest). This is the same number of programs available. These programs are also available in Moora which is the nearest high powered transmitter site.

“Note that the grid-pak antenna at Two Rocks that is to provide an input signal to Lancelin may be vertically polarised to minimise its potential to affect coverage of the Two Rocks services;”


VAST satellite receivers can be used as a program feed instead. This will provide a more reliable program feed. This can also apply to Toodyay, but SSW is used instead of WAW.
Brisbane Draft Television Licence Area Plan

Currumbin and Southern Hinterland are using groups C for commercials and E for the national broadcasters. These groups are not even adjacent channels requiring a much wider channel range than any other site in Australia. This will make the receiving antenna requirements unique, which is poor planning.

The restack planning for the Sunshine Coast/Brisbane/Gold Coast/Richmond Tweed is very complex. It is aggravated by the need to provide 8 transmitters per site compared to the group of 5 transmitters per site used over most of Australia.

<table>
<thead>
<tr>
<th>Sunshine Coast North</th>
<th>Sunshine Coast South</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Network</td>
<td>Pre-</td>
</tr>
<tr>
<td></td>
<td>restack</td>
</tr>
<tr>
<td>ABQ</td>
<td>62</td>
</tr>
<tr>
<td>SBQ</td>
<td>36</td>
</tr>
<tr>
<td>STQ</td>
<td>65</td>
</tr>
<tr>
<td>RTQ</td>
<td>68</td>
</tr>
<tr>
<td>TNQ</td>
<td>47</td>
</tr>
</tbody>
</table>

Please note that all of these transmitters are on the same site: Bald Knob.

<table>
<thead>
<tr>
<th>Gold Coast Main (Mt Tambourine)</th>
<th>Gold Coast (Supplementary)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Network</td>
<td>Pre-</td>
</tr>
<tr>
<td></td>
<td>restack</td>
</tr>
<tr>
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</tr>
<tr>
<td>SBQ</td>
<td>36</td>
</tr>
<tr>
<td>BTQ</td>
<td>65</td>
</tr>
<tr>
<td>QTQ</td>
<td>68</td>
</tr>
<tr>
<td>TVQ</td>
<td>47</td>
</tr>
<tr>
<td>NEN</td>
<td></td>
</tr>
<tr>
<td>NBN</td>
<td></td>
</tr>
<tr>
<td>NRN</td>
<td></td>
</tr>
</tbody>
</table>

The colour scheme shows common ownership. RTQ is owned by WIN TV and NEN is owned by Prime.

The programming for the networks is virtually identical except for the insertion of Gold Coast News into NBN and for different advertising. The other difference is a 1 hour time difference when NSW goes to daylight saving time and Queensland does not.

Note that the Southern Hinterland and Murwillumbah are both on Bilbrough Lookup SPRINGBROOK site.
A much better solution is to create a new licence area of Gold/Sunshine Coast. This area has population of 860,000. The Tasmanian TV licence area has a population of 495,000 and it has a pair of networks and a supplementary licence.

A new licence area would contain the following transmitter sites;

<table>
<thead>
<tr>
<th>Sunshine Coast</th>
<th>Gold Coast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nambour</td>
<td>Gold Coast (Mt Tambourine)</td>
</tr>
<tr>
<td>Gympie town</td>
<td>Currumbin</td>
</tr>
<tr>
<td>Gympie district</td>
<td>Southern Hinterland</td>
</tr>
<tr>
<td>Noosa/Tewantin</td>
<td>Canungra</td>
</tr>
<tr>
<td>Port Arkwright</td>
<td></td>
</tr>
<tr>
<td>Peregrain Beach</td>
<td></td>
</tr>
</tbody>
</table>

If a new licence area was formed it would look like this

<table>
<thead>
<tr>
<th>Network</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABQ</td>
<td>1 transmitter less</td>
</tr>
<tr>
<td>SBQ</td>
<td>1 transmitter less</td>
</tr>
<tr>
<td>Southern Cross-Austereo</td>
<td>4 transmitters less</td>
</tr>
<tr>
<td>Regional 7/Prime</td>
<td>4 transmitters less</td>
</tr>
<tr>
<td>NBN/WIN</td>
<td>4 transmitters less</td>
</tr>
</tbody>
</table>

Perhaps a pair of licences can be granted with a supplementary combined licence for the 3rd network.
Sydney Draft Television Licence Area Plan

As for the Gold & Sunshine Coast the Central Coast has a population of 312,000. This compares with the Spencer Gulf TV licence area with a population of 106,000 and has a single broadcaster with a pair of supplementary licences.

The Wyong, Gosford and Bouddi transmitter sites can be reduced from 8 channels to 5 each.

Melbourne Draft Television Licence Area Plan

Geelong

The current site is in a Montpellier Service Basin Highton. It is 107 m above sea level and a 10 m tower. Considering that Geelong is at sea level and rises from there. The 110 metre 3BAY-FM tower is at Founds Road, MURRADOC HILL (Altitude is 25 m) is in full “view” of Geelong. This broadcaster must have selected this site for the best coverage in the Geelong Radio Licence area. Has this option been investigated?

This may remove the need for the Ocean Grove and perhaps the Anglesea/Airey’s Inlet translators as well, depending on the power and height of the tower.

Current antennas in the Geelong area\(^3\) are designed for group B. for the reception of SBS29 and MGV32 from Mt Dandenong. The Murradoc Hill is in a similar direction to Mt Dandenong, whereas Highton is in the opposite direction (West of Geelong CBD).

If the group B channel group which is allocated to Anglesea/Airey’s inlet was used in the Murradoc Hill (instead) just a rescan would be required to get much more reliable reception. It will require the simulcasting of SBS29 to stop, as has been required in Adelaide.

The transmitting antenna will have maximum radiation to the west and south west and little radiation towards Mt Tassie and Mt Alexander.

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\(^3\) Geelong CBD to Murradoc Hill bearing 94°, Geelong CBD to Mt Dandenong 68°
Conclusion

- Ministerial decisions
  - A decision on community TV ie share with SBS or use of channel 10 is required urgently
  - A decision on making the Gold/Sunshine Coasts a licence area
  - A decision on making the Central Coast NSW a licence area.
- No simulcasting of digital signals after the analog switch off. Particularly SBS and Community TV. Translator locations exempted where all stations will disappear.
- Plenty of publicity on the need for a rescan after the switchoff date and the options for MATV as outlined above.
- On the digital ready website for each enquiry which returns a main transmitter in a state capital city the advice that if you have unreliable reception or a new installation only use an antenna for Group A (Band 3) for the lowest price and best reliability.
- Move translator locations on the edges or outside the metropolitan licence area to their regional neighbour’s licence area.
- Close the Elizabeth South translator site.
- Use call signs which indicate the program source
- Check out more effective options for the poorly served Geelong area.

Lastly the decisions in these licence area cover around 60 % of our population. That’s nearly 13 million people.