PACIFIC MEDIA PARTNERSHIP CONFERENCE - 2015

DIGITAL TERRESTRIAL TELEVISION BROADCASTING IMPLEMENTATION:

NEW ZEALAND DTT UPDATE

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CASE STUDY OUTLINE

- TV Structure in NZ
  - Relationships, Freeview Stakeholders
- Timeline – Analogue to Digital
  - DVB-T, DVB-T2
  - Expanding sites and a 4th Multiplex
  - HbbTV (OTT)
- Analogue Switch Off Process & Challenges
- Digital Dividend – Restack/Retune – Spectrum Released
- Key Learning Relevant to the Pacific

TELEVISION IN NZ

PLATFORMS

- National free to air analogue network – switched off in 2013!

- Digital Satellite, subscription
  - 100+ channels
- Digital Satellite, free to air
  - Freeview - 15 channels, 4 radio stations

- Digital Terrestrial, free to air
  - Freeview HD, 4 multiplexes – 3 HD & 21 SD national channels, 8 regional, 3 radio stations, now Freeview Plus – HbbTV
- Digital Terrestrial, subscription
  - Igloo, 1 multiplex - 13 channels

- Digital Broadband/Cable in main centres
  - 100+ channels

TELEVISION IN NZ

DIGITAL FREE TO AIR TV

- Freeview – Terrestrial and Satellite
  - Terrestrial, 31 sites – 87% population – HD content – Four Multiplexes - OTT
  - Satellite for remaining infill – all SD content
- Owned and managed by commercial and public broadcasters
- Considered as one network
  - Common Transmission Parameters
  - Common Reception Equipment Standards
  - Common Brand, User Experience
  - Common SI (Service Information)
- Designed as ‘Green Field’
  - No incumbent STBs
  - Able to set Certification Standards – Code of Practice
  - Including Consistent Look and Feel EPG over Interactive Application (MHEG)
- Freeview DTT Parameters
  - H.264 / AVC from outset
  - DVB-T, 8k, 64QAM, FEC3/4 => 26 Mb/s

TELEVISION IN NZ

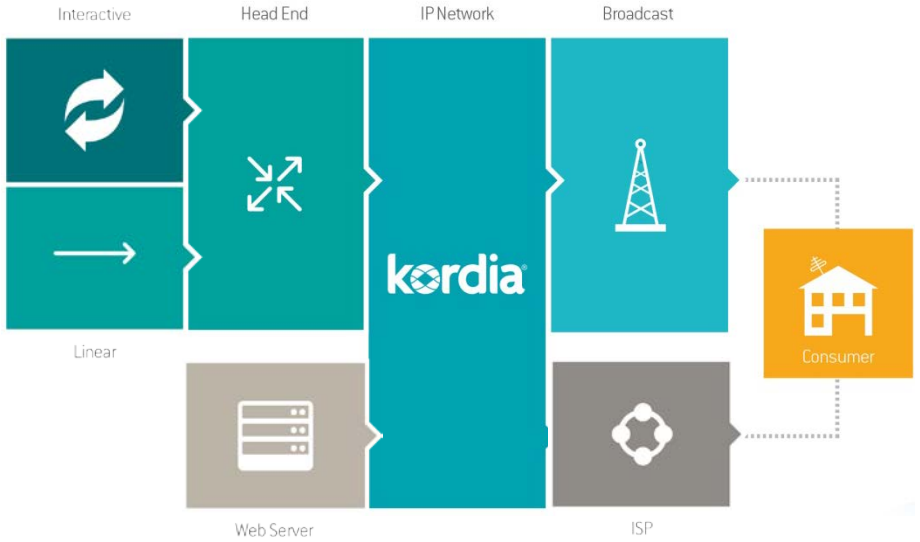
OTHER DIGITAL TV PLATFORMS

- Subscription Satellite
- Cable broadband TV
- Subscription DTT – DVB-T2
  - Joint Venture between Public broadcaster and PayTV operator
  - Single DVB-T2 multiplex: 32k, 256QAM, FEC2/3 => 38Mb/s
  - Single STB controlled by PayTV operator (not Freeview Approved)
  - STB also receives Freeview channels and marketed this way

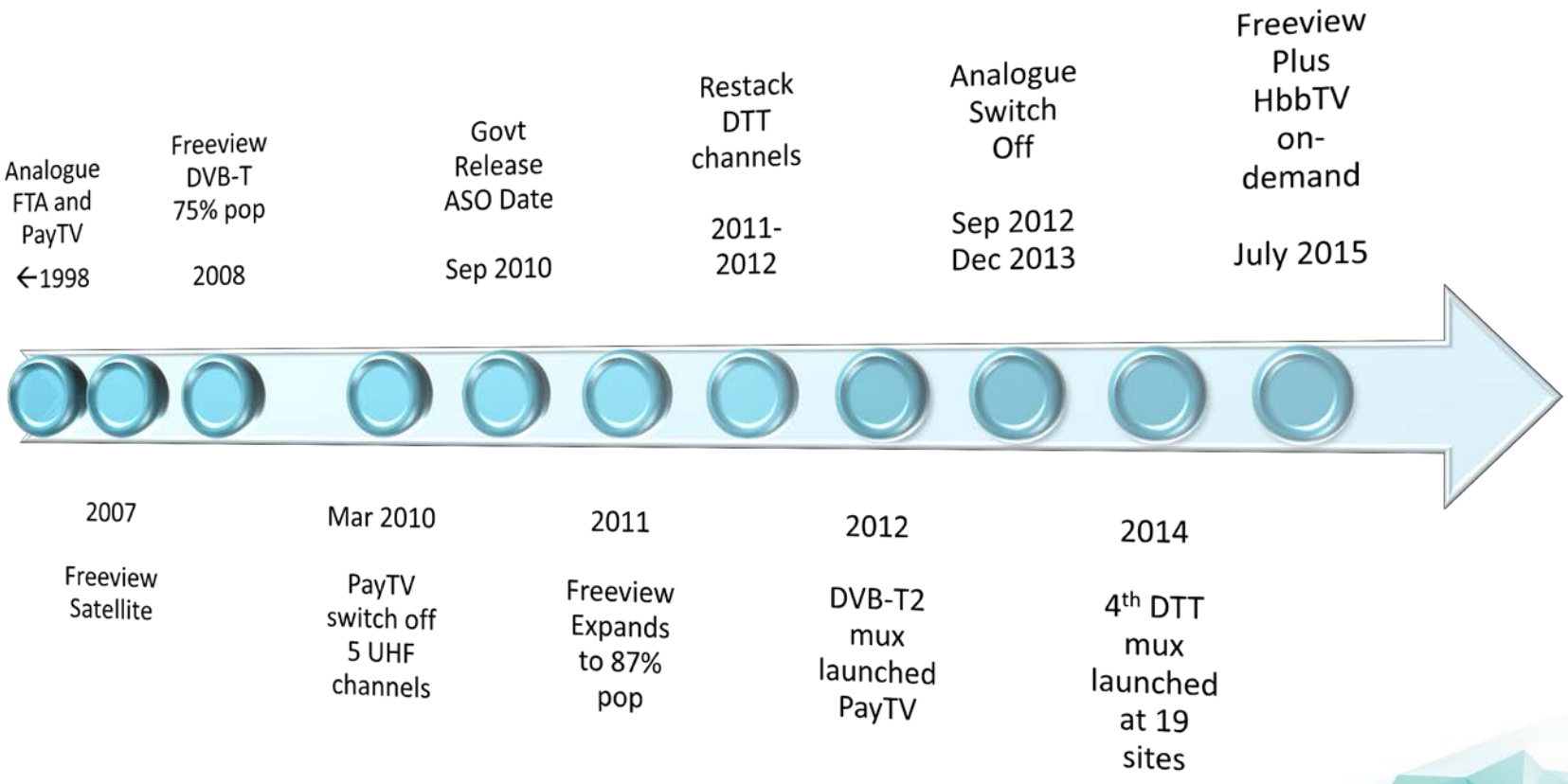
TELEVISION IN NZ

DIGITAL FREE TO AIR TV

- Common standard for broadcasters
- HbbTV (on demand / OTT / IPTV)
- Broadband connectivity required (1.5Mbs)
- Seamless Live TV & On Demand
- 8-day EPG forward and catch-up on 6 channels
- Browsing content libraries
- Available on many Integrated DTVs and STBs
- Counters the challenge of the fragmented TV audience of many free, subscription, and PPV services.

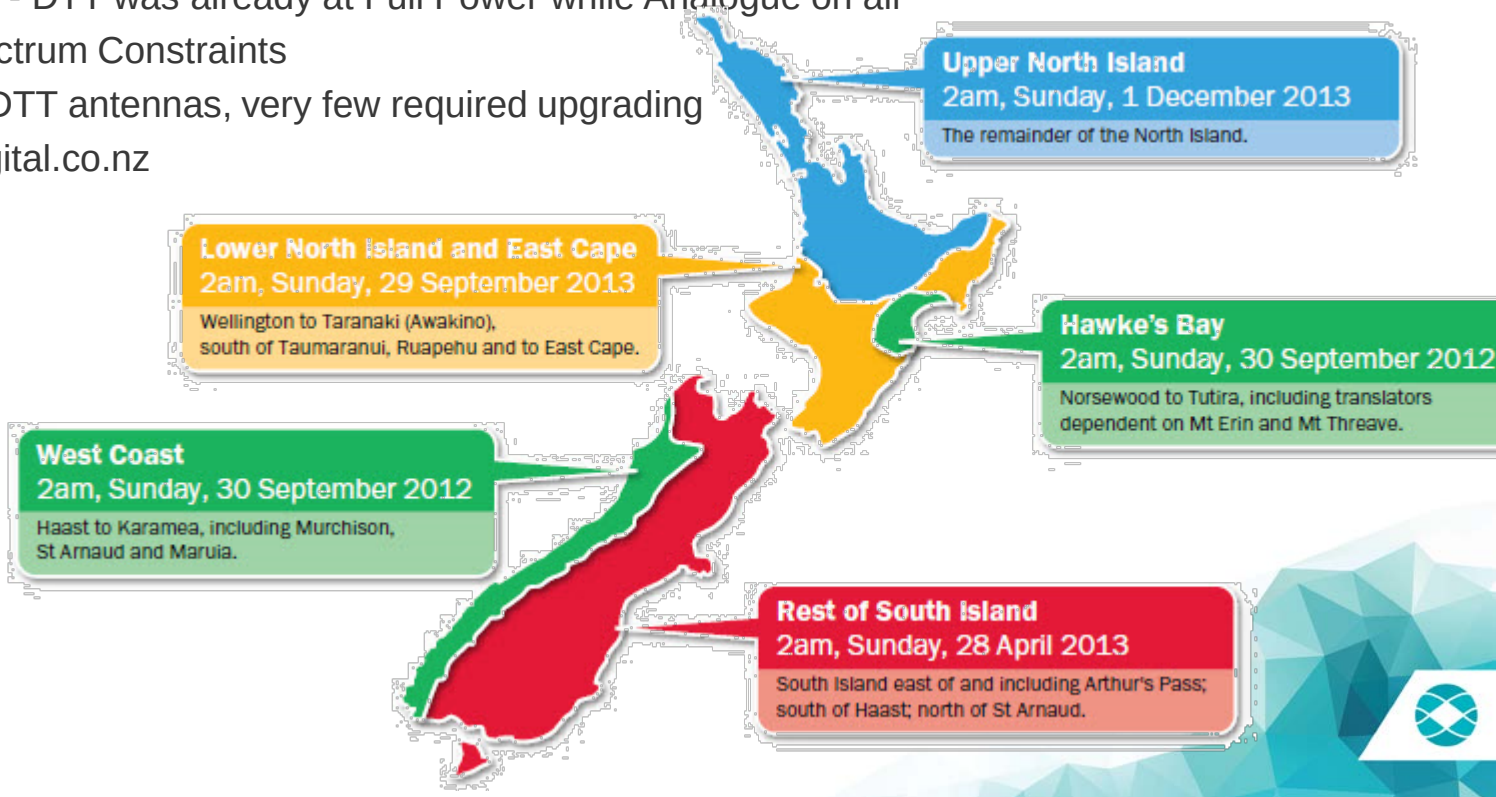


ANALOGUE TO DIGITAL TIMELINE



ANALOGUE SWITCH OFF PROCESS

- Timescale
  - Process around 14 months from Sept 2012 ended Dec 2013
  - Date announced by Govt in 2010: "…*when some form of Digital TV is available to more than 75% of NZ households"*
  - Announced 2 years earlier than expected
- Design
  - 4 Regional Dates (to aide marketing)
  - Low Risk - DTT was already at Full Power while Analogue on air
  - Few Spectrum Constraints
  - Reused DTT antennas, very few required upgrading
  - GoingDigital.co.nz



ANALOGUE SWITCH OFF PROCESS

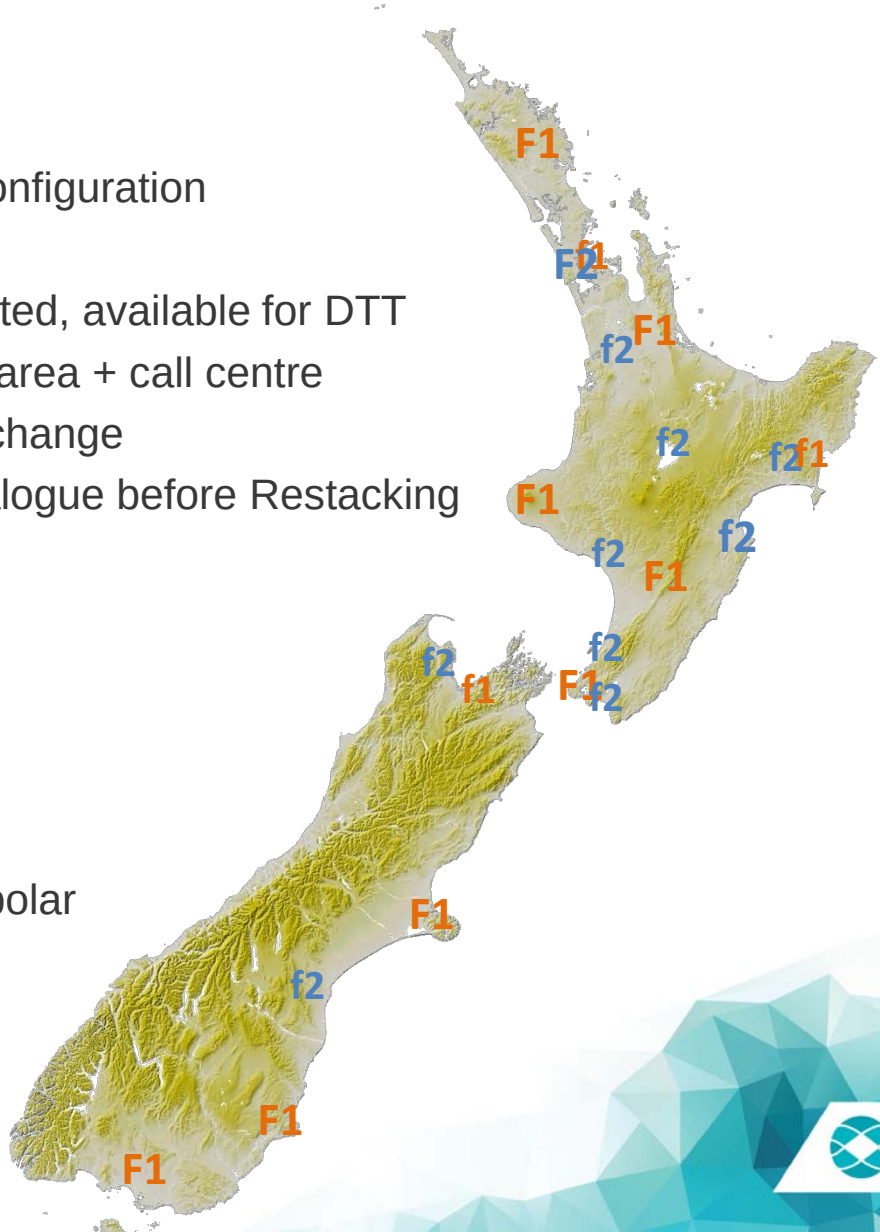
- Challenges
  - Communicating to viewers – edge of Switchover Regions
  - Some viewers not sure of which Region applies
  - Attention to areas where terrestrial signal is not replaced by DTT
  - Inter-regional anomalies
  - Network Alarms to disable/ignore
  - Targeted Assistance Package
  - Some VHF Regional broadcasters forced to UHF allocation poorer coverage than before (opting to new system, perhaps satellite)

- Manageable
  - STBs and TVs already well established in market
  - Retailers & installers well supported, websites, coverage check online
  - Digital transmissions already at full power
  - Minimal spectrum constraints, existing analogue on other bands

DIGITAL DIVIDEND SPECTRUM - *RETUNING*

- Restacking DTT for Digital Dividend
  - Site by site, planning ahead
  - Low risk, saved transmitter pretuned configuration
  - Swapped out a pre-tuned combiner
  - Majority of UHF analogue already vacated, available for DTT
  - Onscreen messages, localised in your area + call centre
  - Most boxes auto retuned, aware of SI change
  - Would normally need to Switch Off Analogue before Restacking (PayTV already switched off 5 UHF)

- New Frequency plan
  - 14 channels reduced to 5 Multiplexes
  - F1/F2 (odd/even) channel groups
  - Shared Frequencies Nationally, cross-polar
  - 510 to 586MHz (1 ch guard band)
  - Minimal spectrum constraints, existing analogue in other bands



SPECTRUM RELEASED

Bands	Band I	Band III		UHF (Band IV & V)				
Before	44-68	174	230	510				806
After	44-68	174	230	510		694	702	806
Actual	44-68	174	230	510	622	694	702	806

- Analogue and Digital Assigned:
  - VHF Band I 44 – 68 MHz
  - VHF Band III 174 – 230 MHz
  - UHF Band IV & V 510 – 806 MHz
- Total Assigned 376 MHz

- Spectrum Released:
  - VHF Band I 44 – 68 MHz
  - VHF Band III 174 – 230 MHz
  - UHF Band IV & V 702 – 806 MHz
- Total Released 184 MHz
  (104 MHz in UHF). *622-694 not available

KEY LEARNING FOR THE PACIFIC

- Driven by Government
- Investigate the STB marketplace
- Involve many types of stakeholders – radio, satellite, PayTV
- Ensure Broadcasters work together, plan ahead
  - Common Standards/Parameters
  - Equal Coverage
  - Share Content within Multiplex
  - Enables shared distribution costs
  - Single message for viewers
- Compatible with neighbouring countries' systems (Aus, NZ, Pacific)