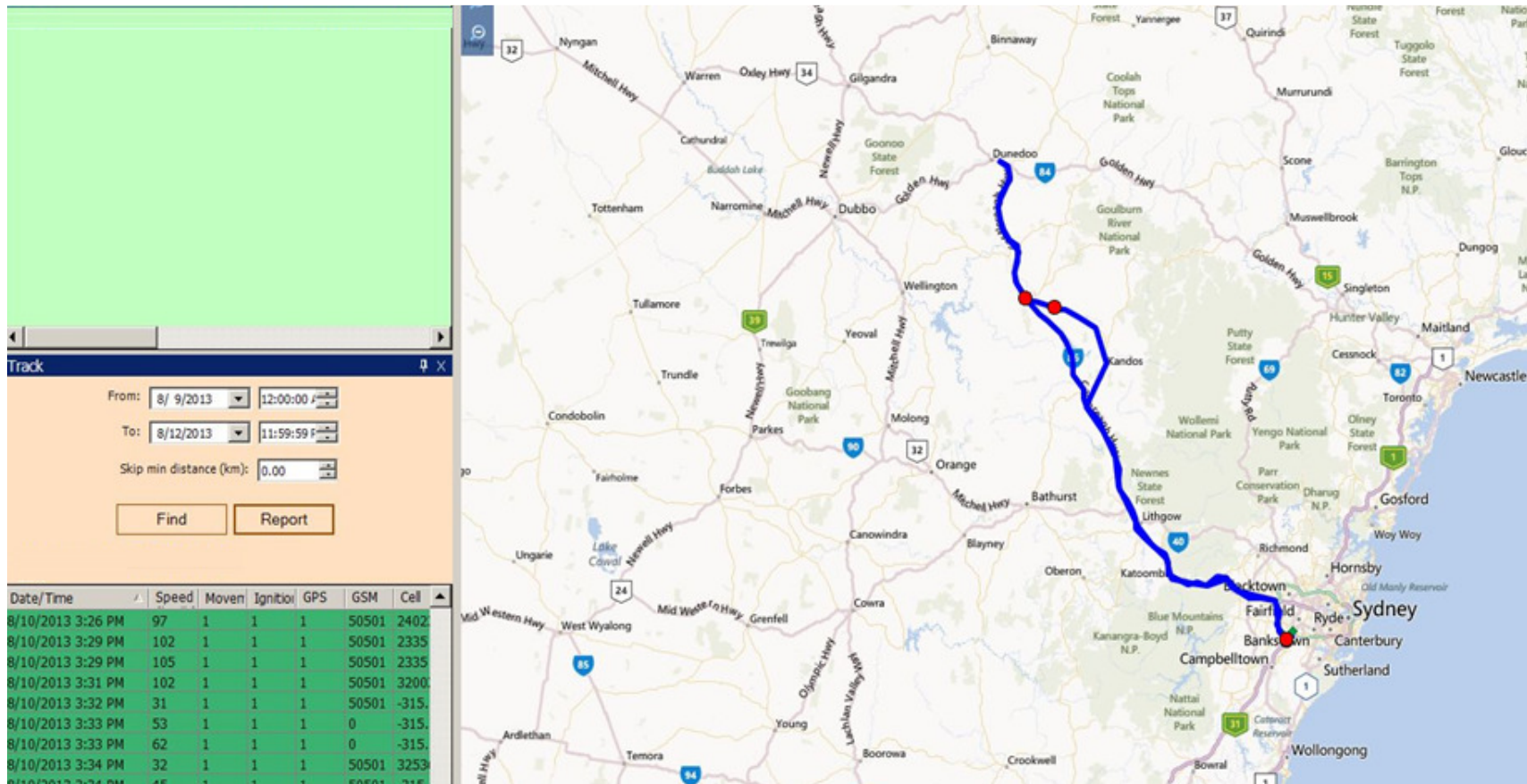


Testing product M33 on Telstra Networks GPRS, 3G & 4G (Date 9+10th August 2013)

By comparing the two products (M11 + M33) we could determine where the 2G/GPRS data coverage ends and the 3G and 4G networks start to work.

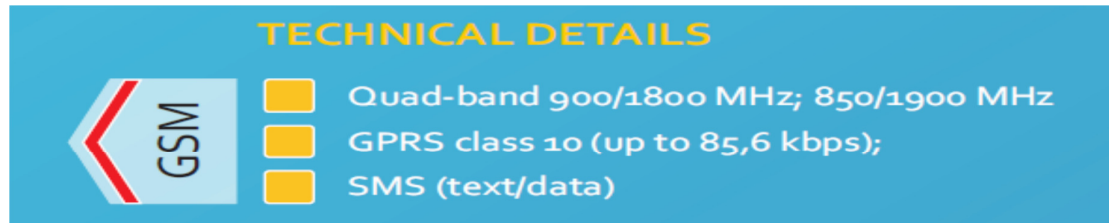


We compared two products (M11 and M33) by driving in the remote area with limited coverage.

Products are:

M11

M11 works on GPRS network.



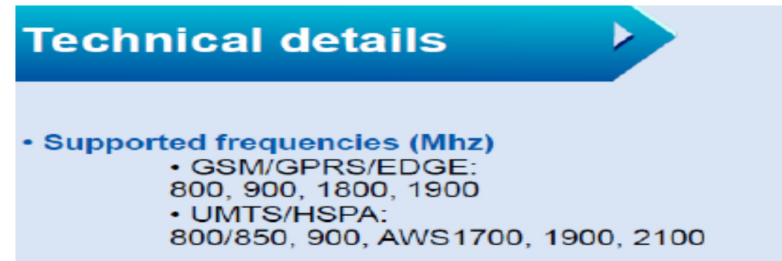
TECHNICAL DETAILS

- ◀ GSM
- Quad-band 900/1800 MHz; 850/1900 MHz
- GPRS class 10 (up to 85,6 kbps);
- SMS (text/data)

M33 works on GPRS + 3G + 4G networks..

M33

3G/GSM/GNSS vehicle tracker



Technical details

- **Supported frequencies (Mhz)**
 - GSM/GPRS/EDGE:
800, 900, 1800, 1900
 - UMTS/HSPA:
800/850, 900, AWS1700, 1900, 2100

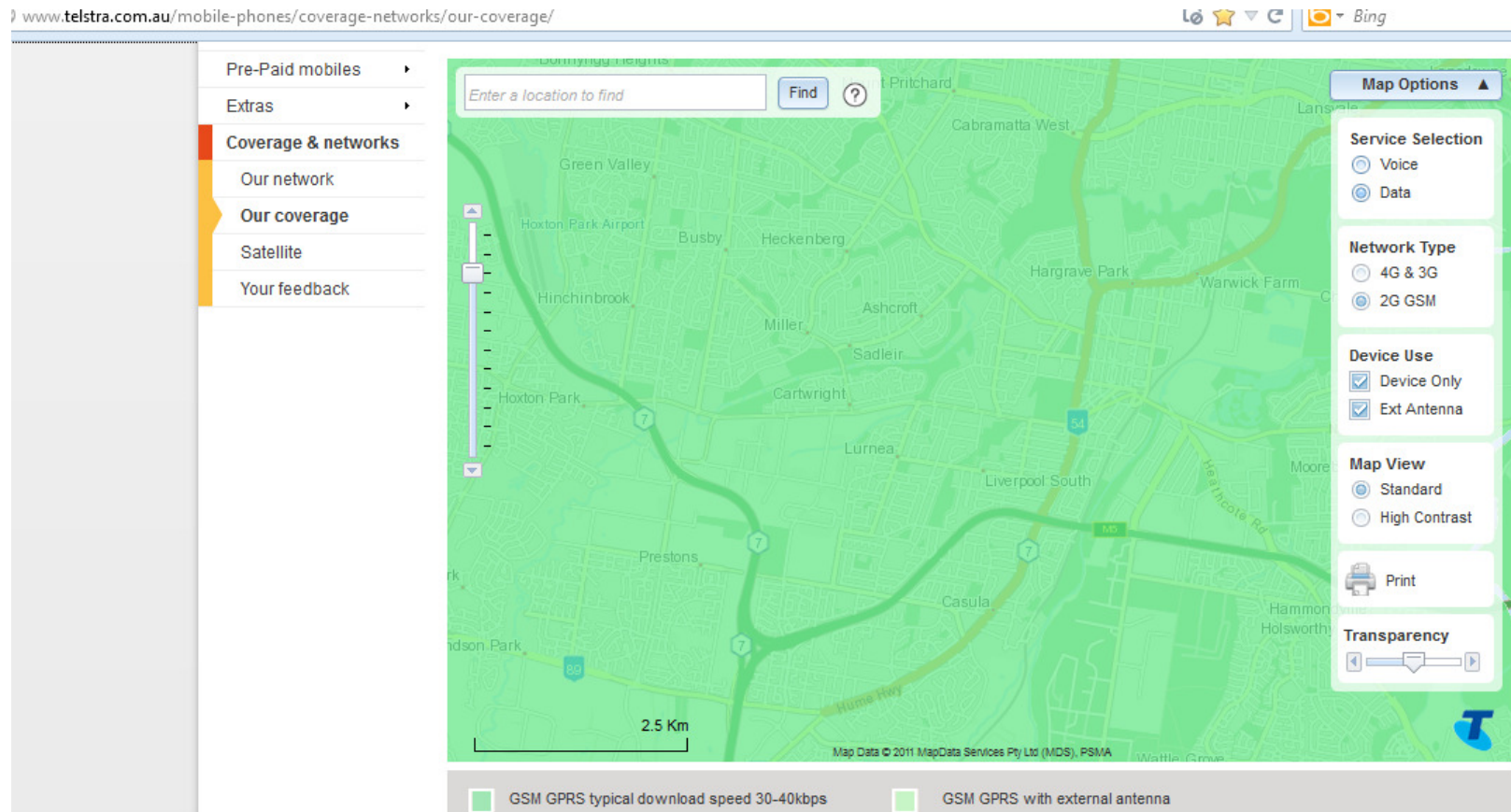
Note: product records parameters such as Operator , Cell ID, Area Code, Coordinates, Signal power and outputs in csv format. Results are as follows:

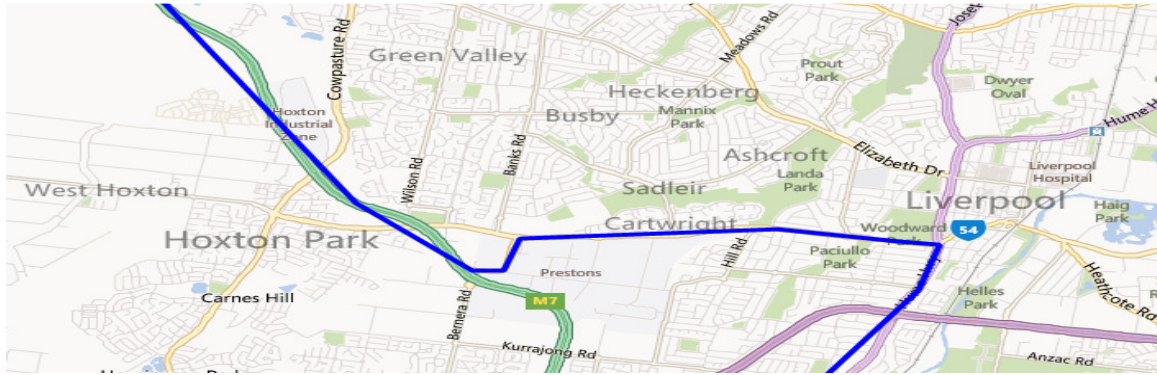
We tested both products in the GPRS coverage area and found both products to be sending back live data.

M33 + M11 working with **GPRS** (Telstra network)

(Image below shows GPRS coverage for 1st test taken)

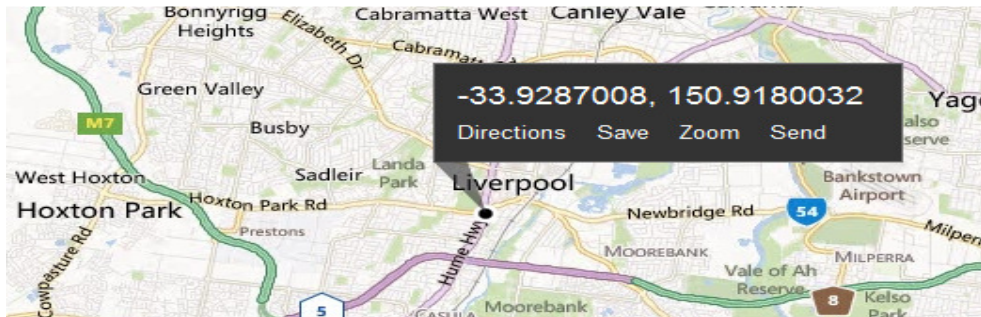
Colour codes are: **Green** = GPRS ; **Orange** = 3G ; **Blue** = 4G



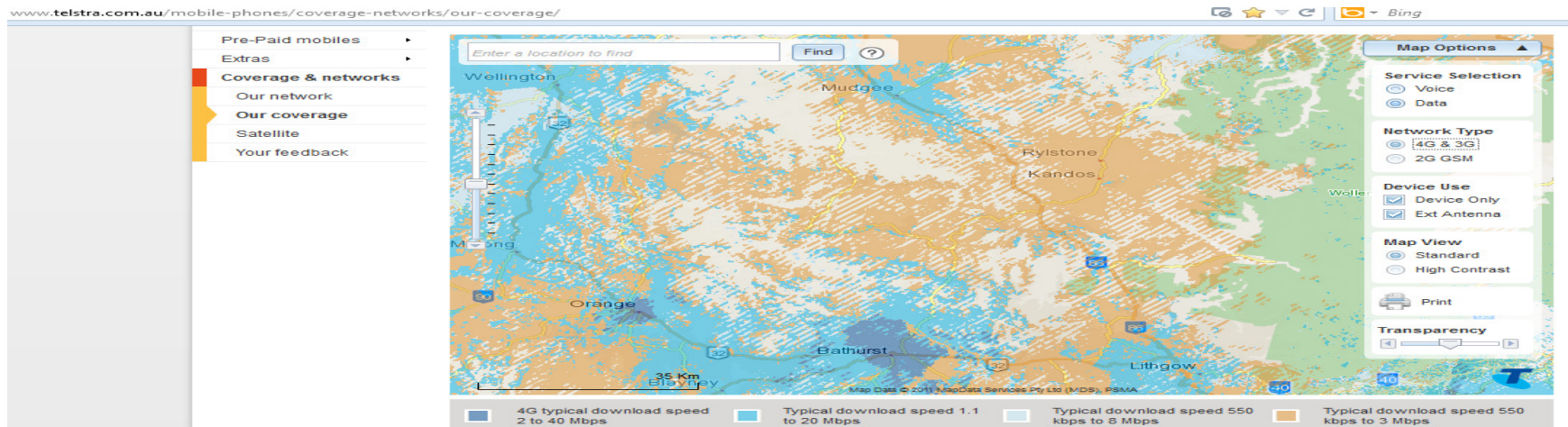
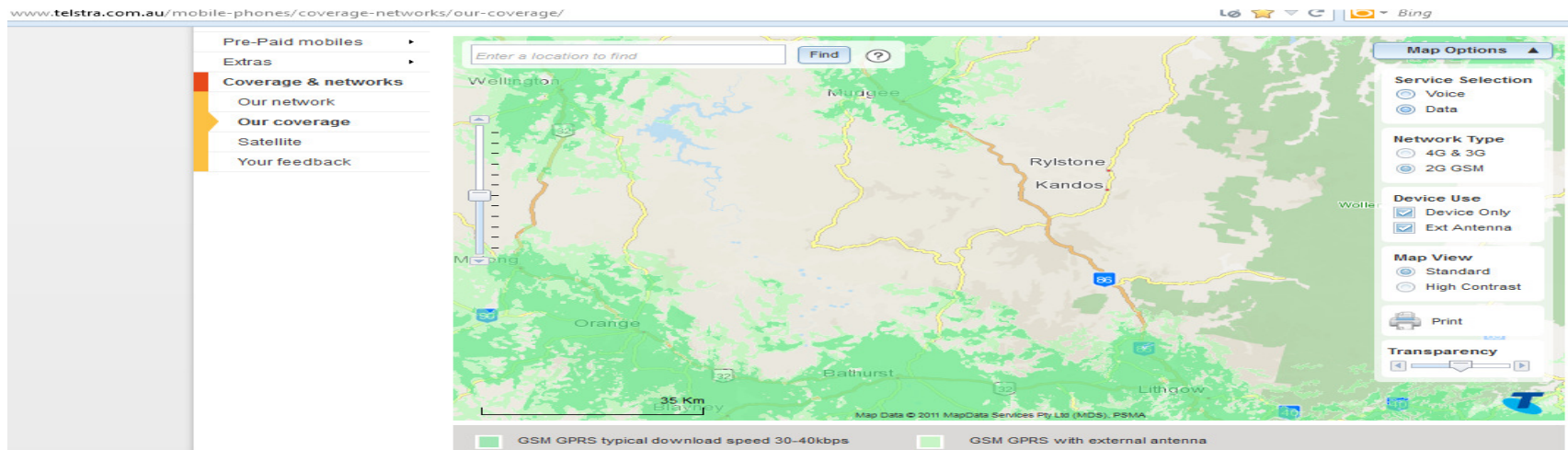


(image of tower Cell ID 30536 and location of test)

09/08/2013 15:43; Area Code= 336; Cell ID= 30536; Operator = 50501; Lat/Long=-33.9287008,150.9180032



We took the Telstra mobile phone and data coverage maps. We found the closest test site from Sydney is driving to Lithgow and onto Mudgee as the GPRS stops shortly out of Lithgow and there's a stretch of around 150km that is pure 3G network – Ben Bullen until Apple Tree Flat – just before Mudgee, Test site is Rylstone + Kandos. This is an exclusive 3G area. **Colour codes are: Green = GPRS ; Orange = 3G ; Blue = 4G**

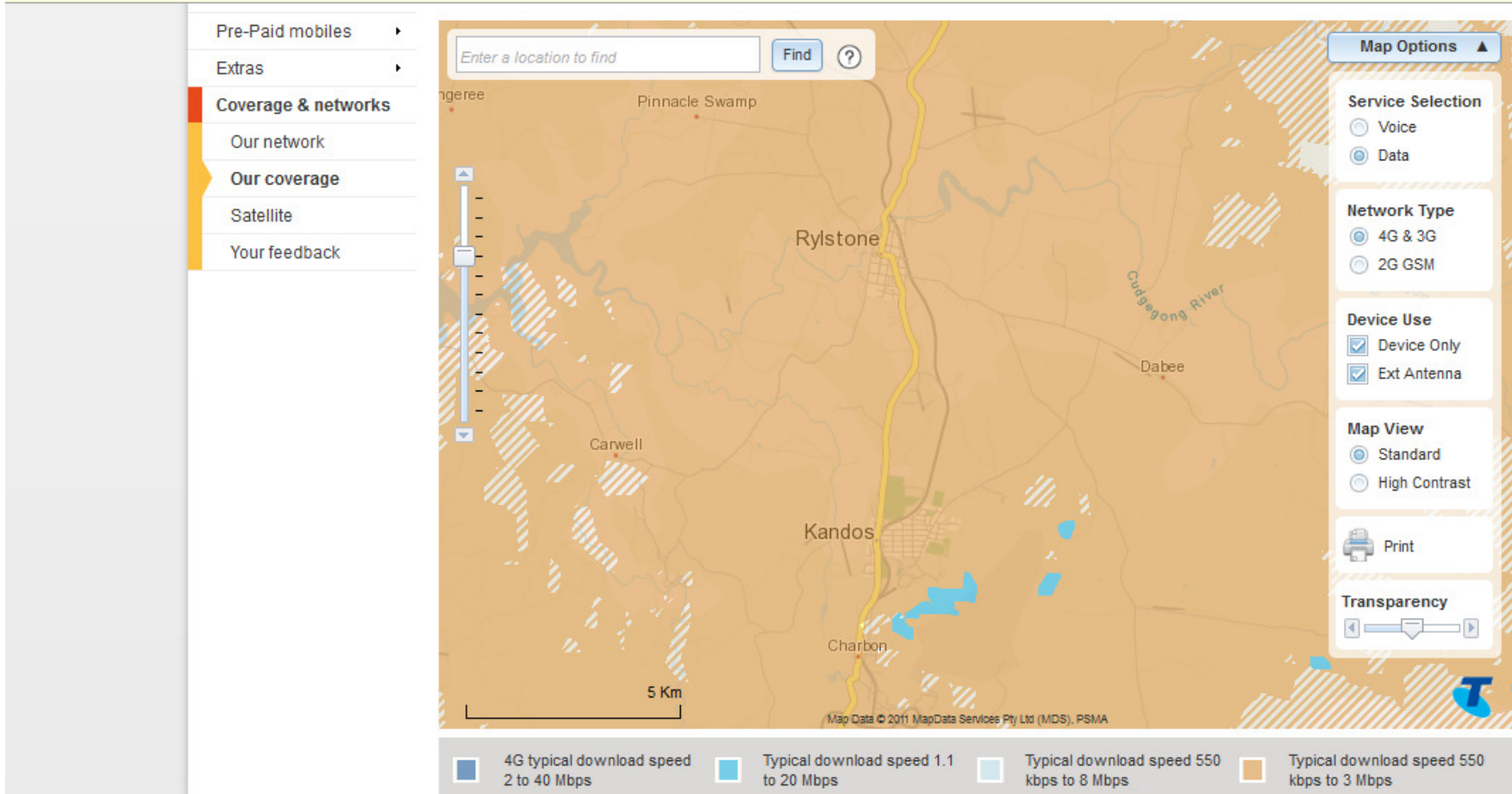


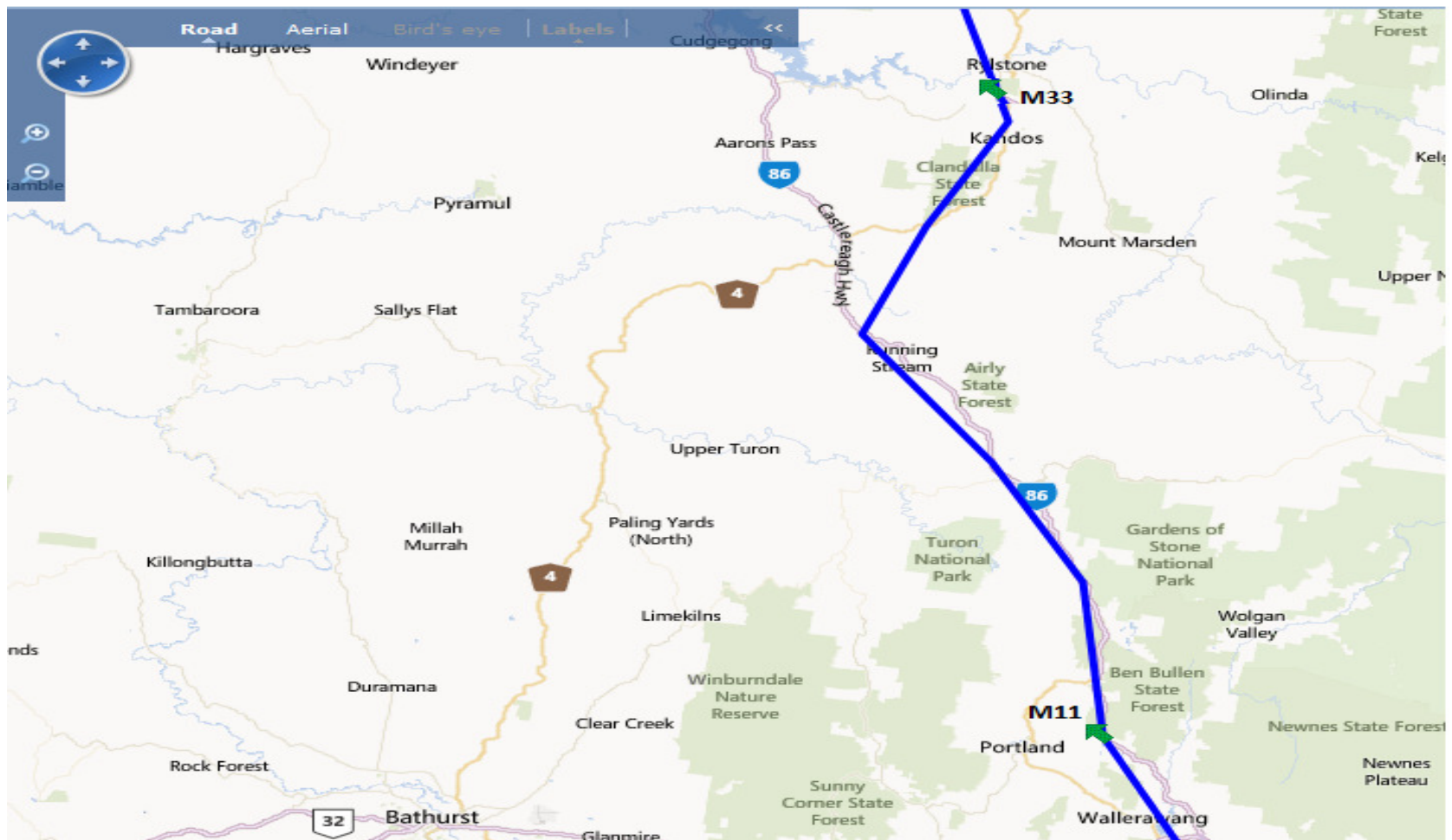
M33 working with the 3G Telstra network (9th Aug 2013) Colour codes are: Green = GPRS ; Orange = 3G ; Blue = 4G

www.telstra.com.au/mobile-phones/coverage-networks/our-coverage/

Bing

px prevented this site from opening a pop-up window.



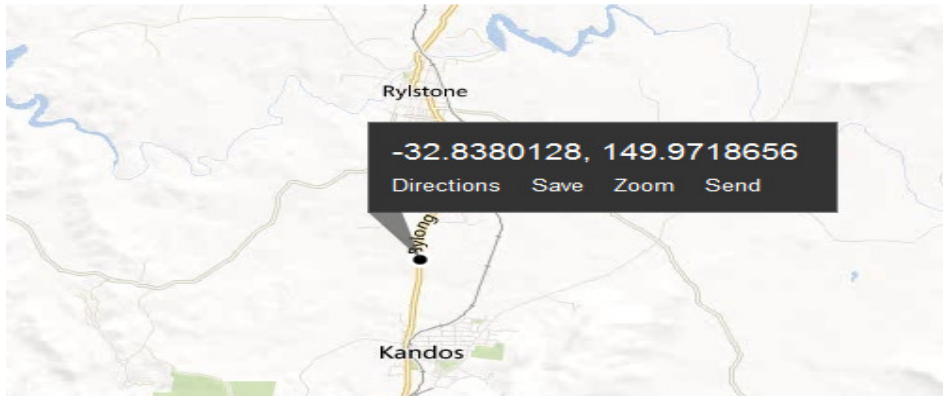


As you can see M11 stopped sending live data just after Portland / Lithgow . From this point M11 is a data logger and waits to come to the next GPRS network so it can upload saved info that's stored in the internal flash memory. It's still tracking but can't send a live feed back to the server as it has no network to work with. On the other hand M33 is sending live data and tracking live by switching over to 3G network.



(images of tower and location)

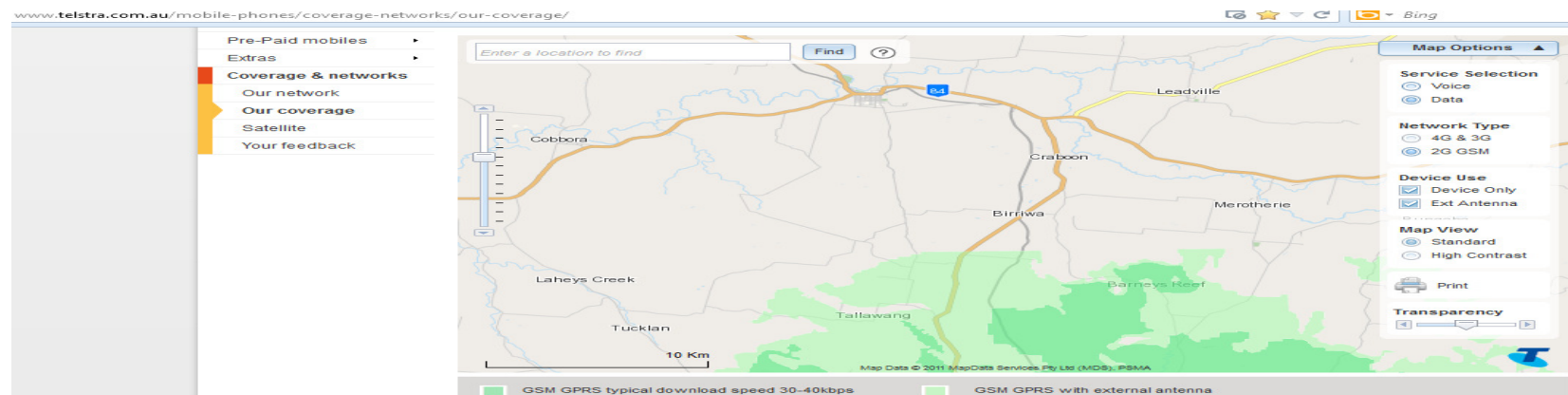
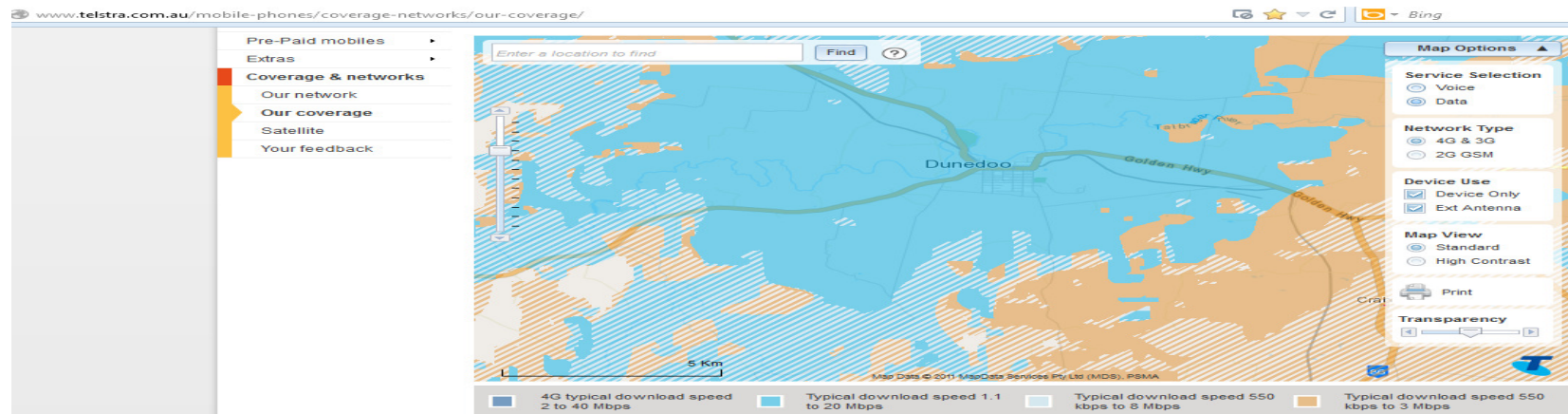
09/08/2013 13:32:31 Cell ID= 4859; Operator=50501; Lat/Long=-32.8380128;630,149.9718656



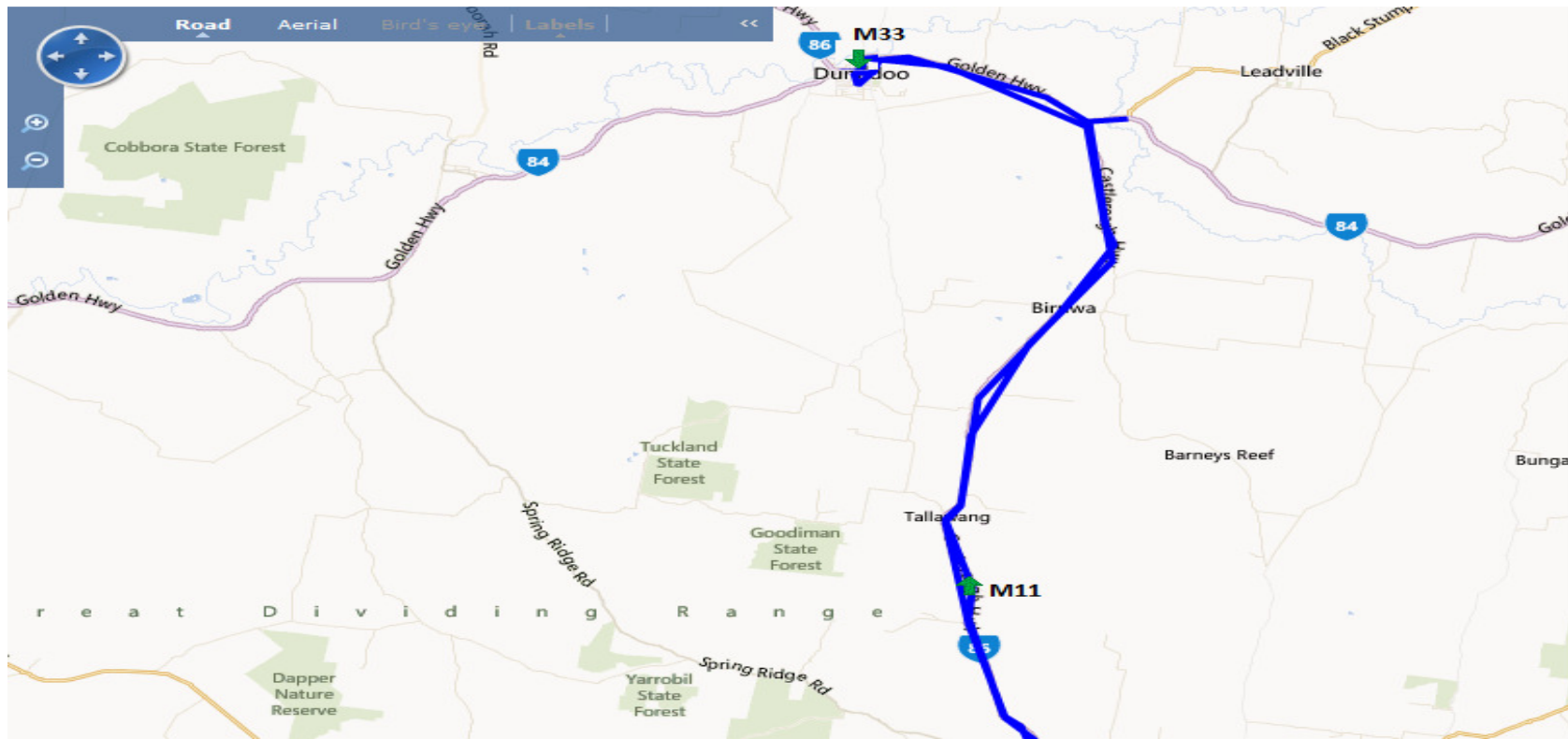
After we determined that the M33 is working with 3G network, we drove to Mudgee. In Mudgee both units switch over to GPRS. M11 could upload stored memory and started to work again as a live tracker. M33 switched from 3G to GPRS and kept reporting back live data.

One more issue : **Would the M33 work with 4G Telstra network?** (Colour codes are: **Green** = GPRS ; **Orange** = 3G ; **Blue** = 4G)

We found an area 70 north of Mudgee called Dunedoo on the way to Dubbo. Below are the Telstra coverage maps for this area:

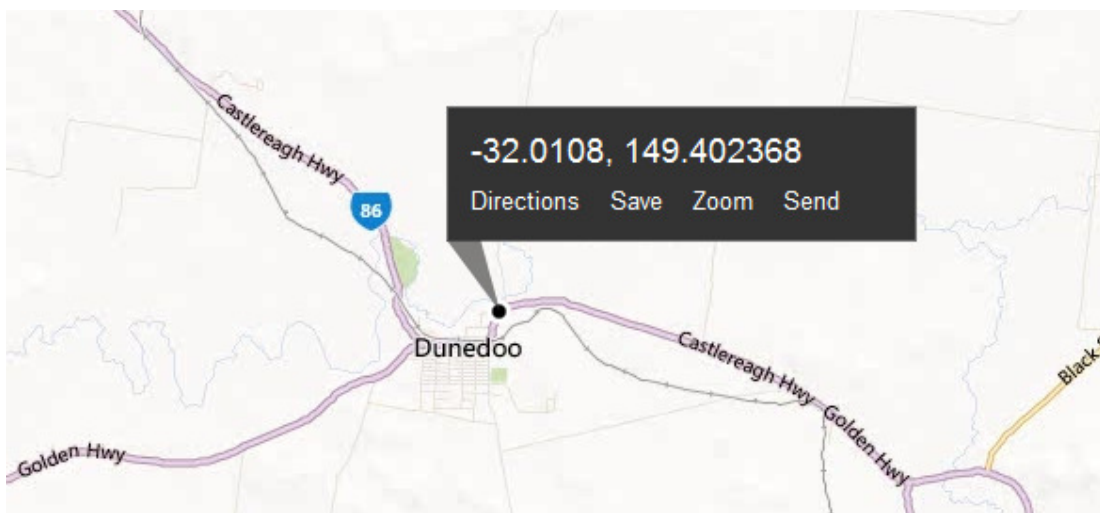


M33 working with the 4G Telstra Towers (10th Aug 2013)





10/08/2013 10:57:14; Area Code-22192;1; Cell ID=3344; Operator=50501; Lat/Long=-32.0108,149.402368



As you can see from these images the M33 was working fine with the 4G network. M11 stopped reporting back live as soon as the GPRS network ended just before a town called Birriwa. From this point onwards M11 was a data logger and would not be able to upload any information until it was back in GPRS coverage. M33 had full coverage all the way to the town Dunedoo and back to Mudgee. On the way it had GPRS, 3G and 4G networks and worked perfectly.

Technical notes:

M33 is a 5-band 3G/4G GPS Tracker that supports HSPA+, HSDPA, UMTS, EDGE, GPRS (Class 12), and GSM technologies and integrated high-sensitivity GPS receiver rated at -147 dBm autonomous. This GPS Tracker is among the smallest and most lightweight in the market today. M33 GPS Tracker supports the top five frequency bands used in 3G globally: 850, 900, 1700, 1900, and 2100 MHz. The M33 GPS Tracker also supports 2G coverage with quad-band GPRS and EDGE class 12.

Summary:

M33 is a new tracker that works in most populated areas of Australia. By using the best network in Australia provided by Telstra, coverage should not be an issue if you stay on sealed roads.

Thankyou note:

Thank you Telstra for providing maps of your network coverage areas.

Without these maps we couldn't have performed these tests.