

Big Science - Big Data - Big Networks

GLIF Workshop
Singapore, October 2013

David Wilde
Network Architect
AARNet

t. +61 3 9211 8447
e. david.wilde@aarnet.edu.au
w. www.aarnet.edu.au



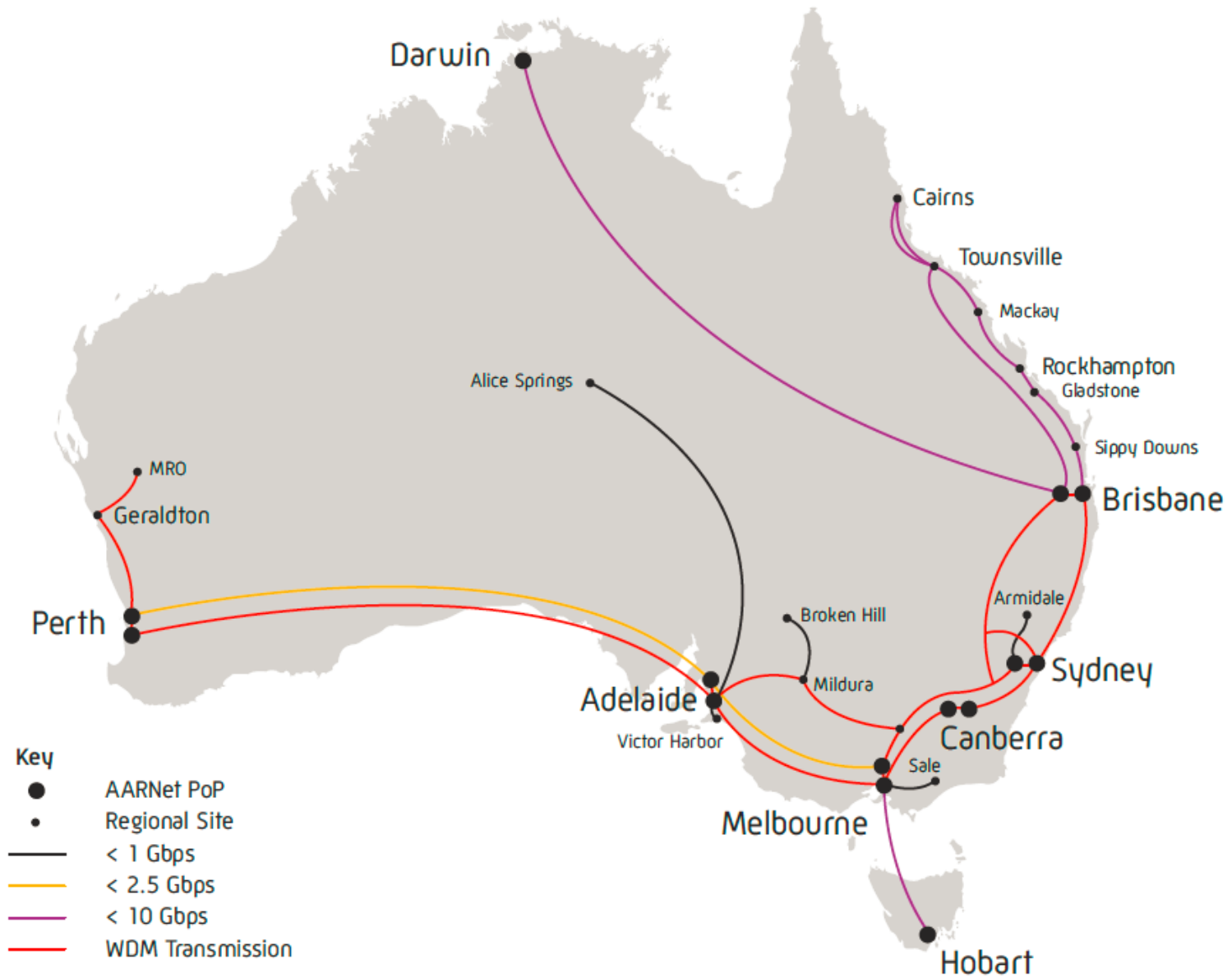
AARNet Today

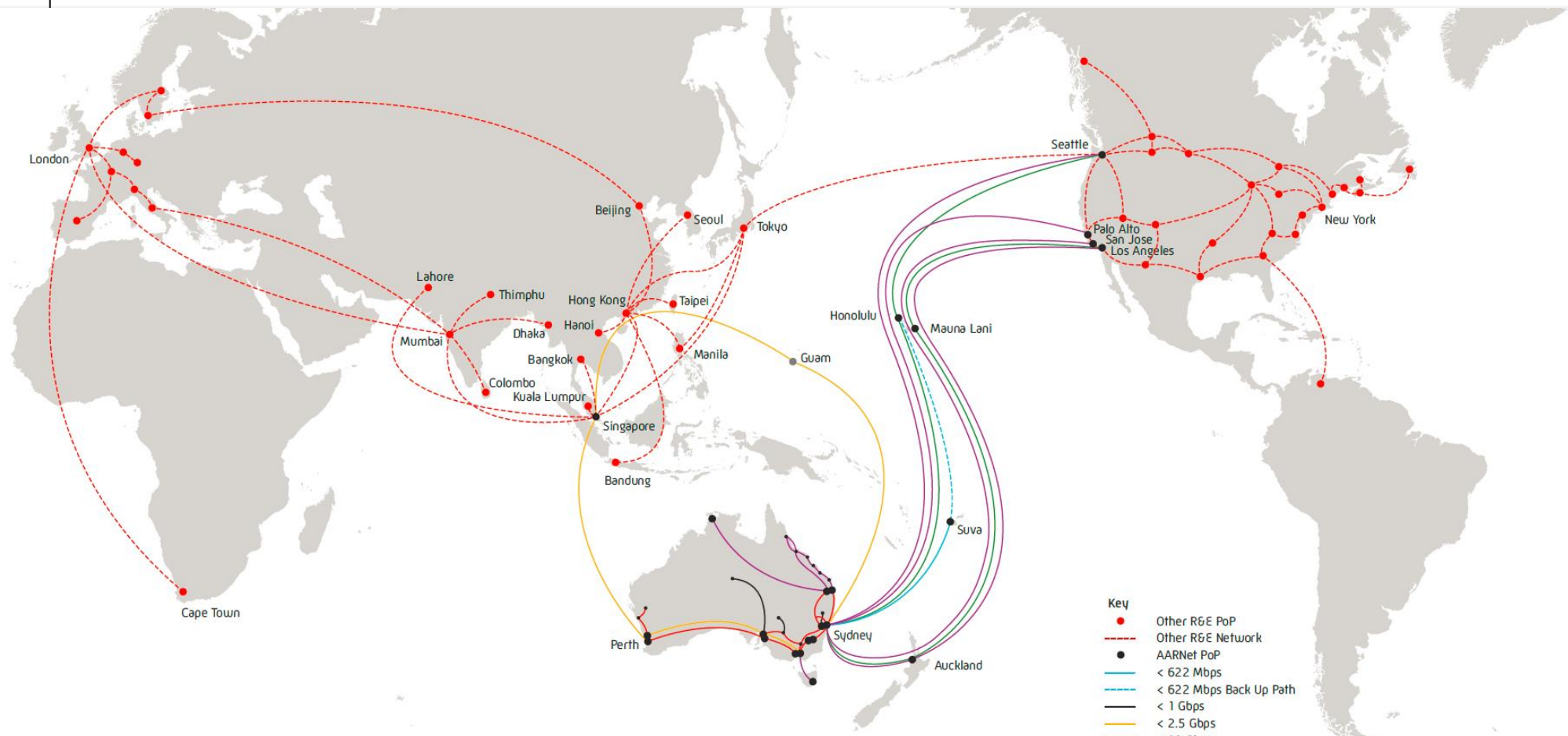
Connecting Research & Education Communities



The AARNet Network







AARNet International Network

Please note this map is designed to be a conceptual representation of the international R&E Network

Supporting eResearch in Australia: RDSI & NeCTAR

eResearch infrastructure



connecting • sharing • collaborating

home projects news researchers documents about NeCTAR

about NeCTAR

News from sub-projects

What is the National eResearch Collaboration Tools and Resources (NeCTAR) project?

The National eResearch Collaboration Tools and Resources project (NeCTAR) is a \$47 million Australian Government, Super Science project, financed by the Education Investment Fund. The University of Melbourne (UoM) is the lead agent appointed by the Commonwealth Government. The Australian Research sector has committed \$54 million as co-investment to the NeCTAR project, resulting in NeCTAR injecting \$101 million to Australia's research infrastructure.

NeCTAR is building eResearch infrastructure in four areas:

- Virtual Laboratories;
- eResearch Tools;
- Research Cloud;
- A secure and robust hosting service (National Servers Program).

Who will create NeCTAR?

Australian researchers and their technical partners will create NeCTAR. In **September 2011** and **May 2012**, the Australian

FAIMS partner in the White H

21.06.13 **Adela Sobotkova**
It is my pleasure to report that Er Kansa, the director of Alexandria Archive Institute, and partner of FAIMS, is being distinguished as th Champion of Change in open scier He has been invited to the White House as a representative for archaeology and the humanities a social sciences in general.

Rendering Random Rasters - Yourself

21.06.13 **Adela Sobotkova**
You probably already know that t FAIMS app can render random ge (a geotiff is a scanned map or aer image in .tiff or .tif format that he been georeferenced and has

THE UNIVERSITY OF QUEENSLAND AUSTRALIA | Research Data Storage Infrastructure Project | Search this site

UQ HOME CONTACTS STUDY MAPS NEWS EVENTS L

HOME ABOUT RDSI PROJECT INFORMATION NEWS



RDSI

Research Data Storage Infrastructure

Contact

Dr Nick Tate, Director
Research Data Storage Infrastructure (RDSI) Project

The University of Queensland
Room 602, Building 69
Brisbane Queensland 4072
AUSTRALIA

Phone: +61 7 3365 2019
Mobile: +61 412 674010
n.tate@rdsi.uq.edu.au

Viviani Paz, Project Manager
Research Data Storage Infrastructure (RDSI) Project

The University of Queensland
Room 602, Building 69
Brisbane Queensland 4072
AUSTRALIA

Phone: +61 7 3365 2033
Mobile: +61 402 280257
v.paz@rdsi.uq.edu.au

FOLLOW ME ON [twitter](#)

About RDSI

RDSI is a \$50m federally funded project, for which UQ is the lead agent.

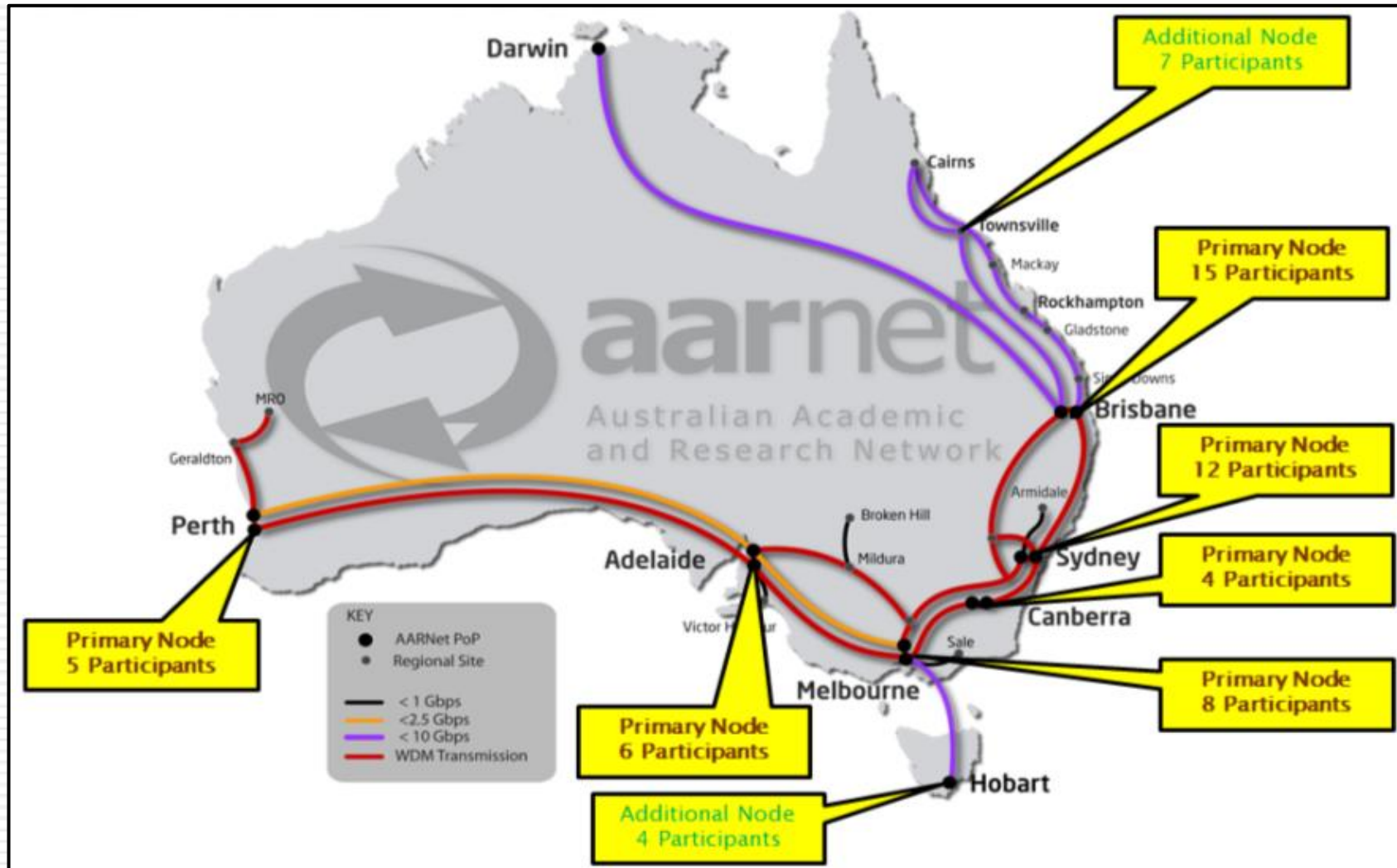
The Research Data Storage Infrastructure (RDSI) Project, an initiative of the Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education, is funded from the Education Investment Fund under the Super Science (Future Industries) initiative.

Sponsor

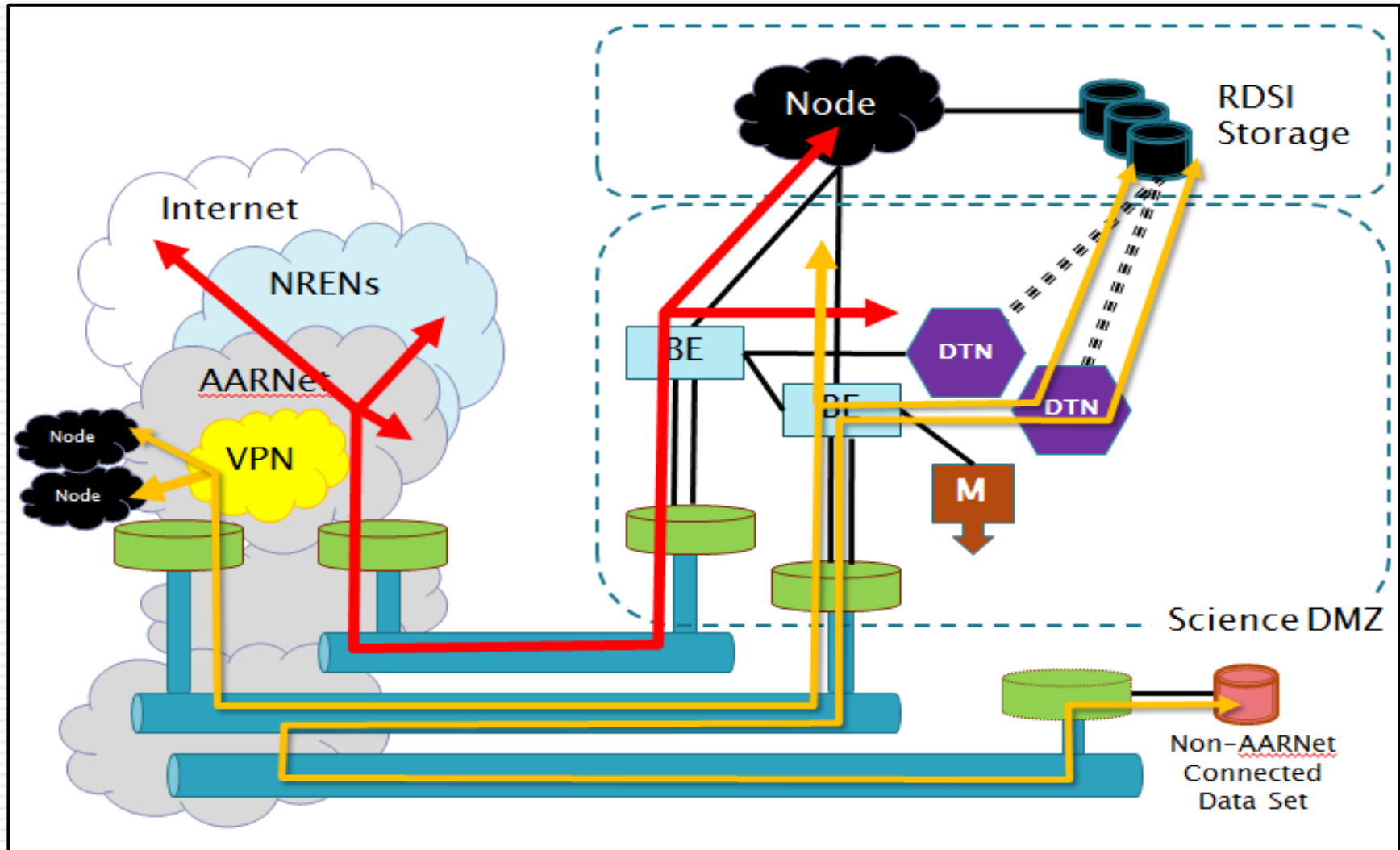


Australian Government
Department of Industry, Innovation,
Climate Change, Science, Research
and Tertiary Education

Underlying network



The workings of an RDSI Node

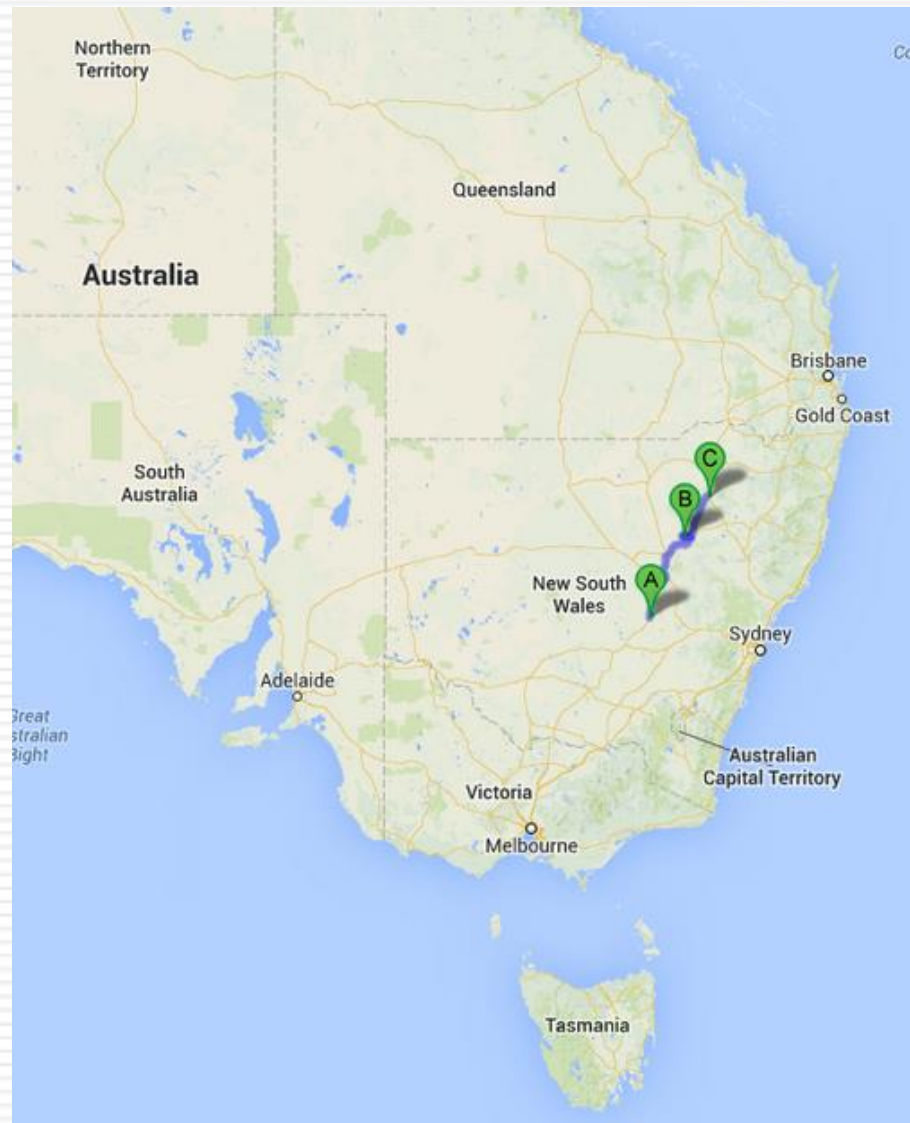


Dynamic Circuit Provisioning : the NEXPreS project

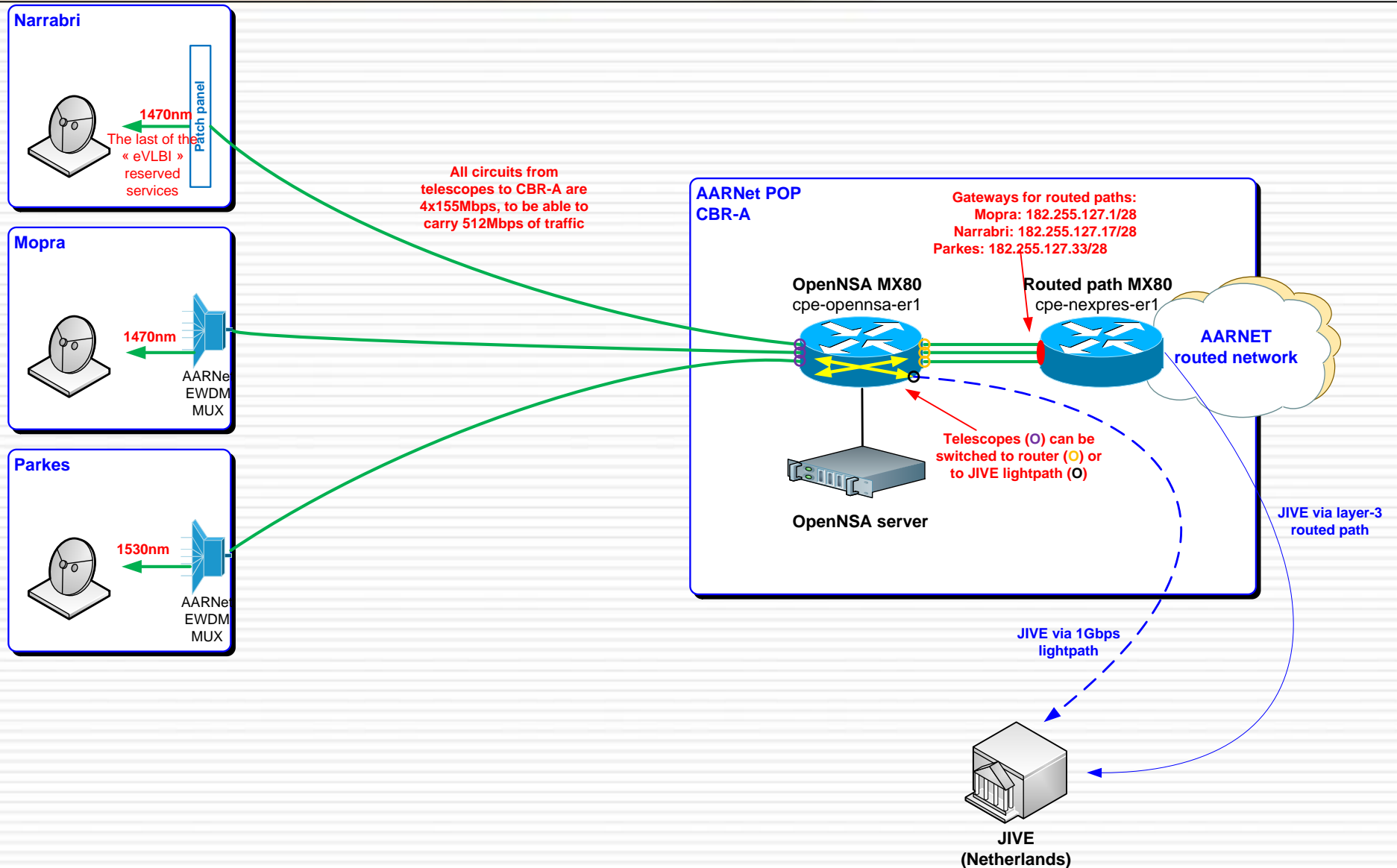
Three radio telescopes



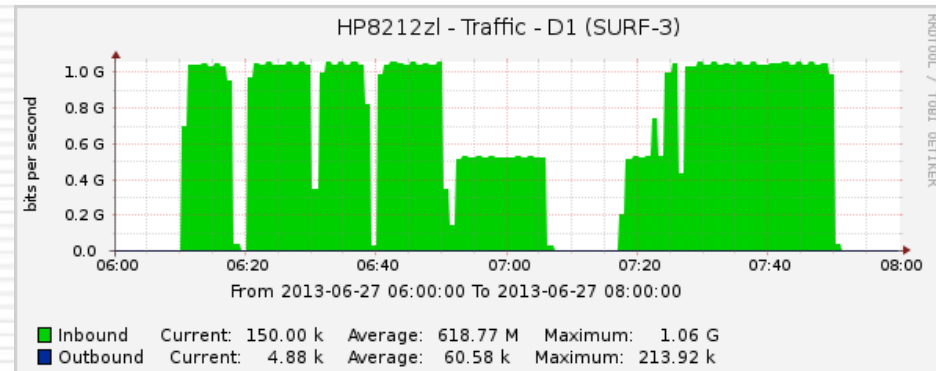
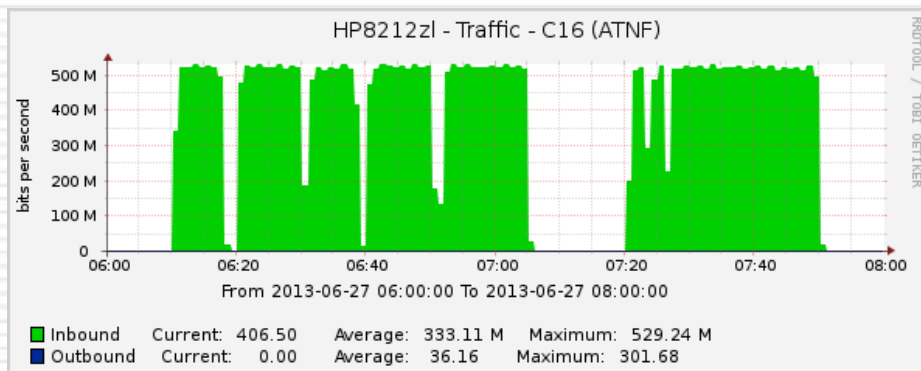
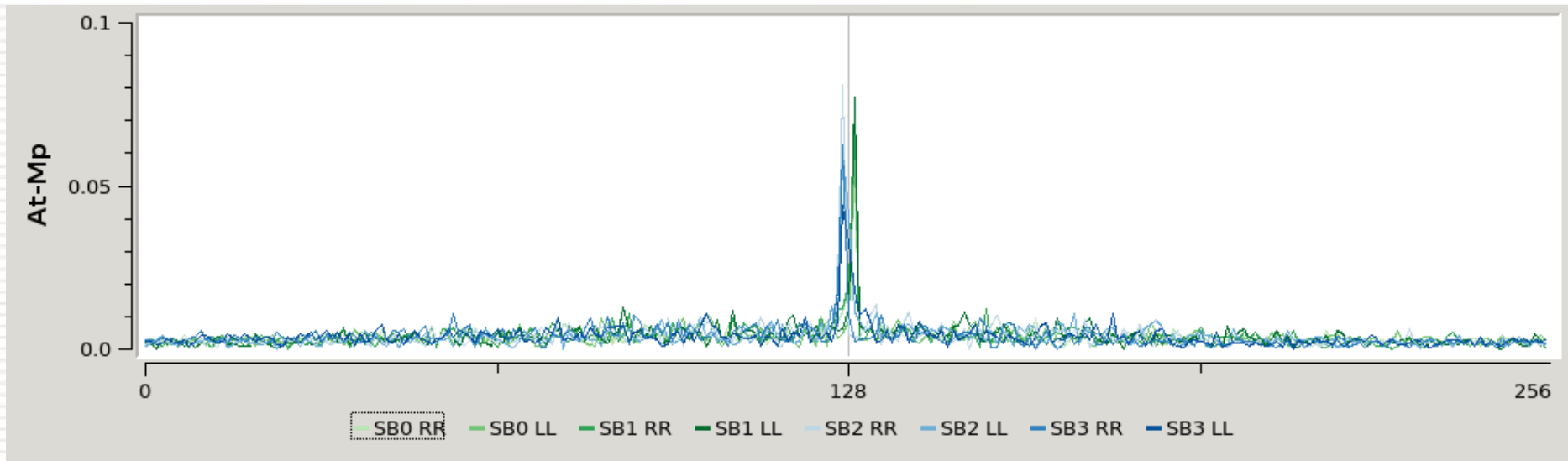
Three radio telescopes



The pilot



Results



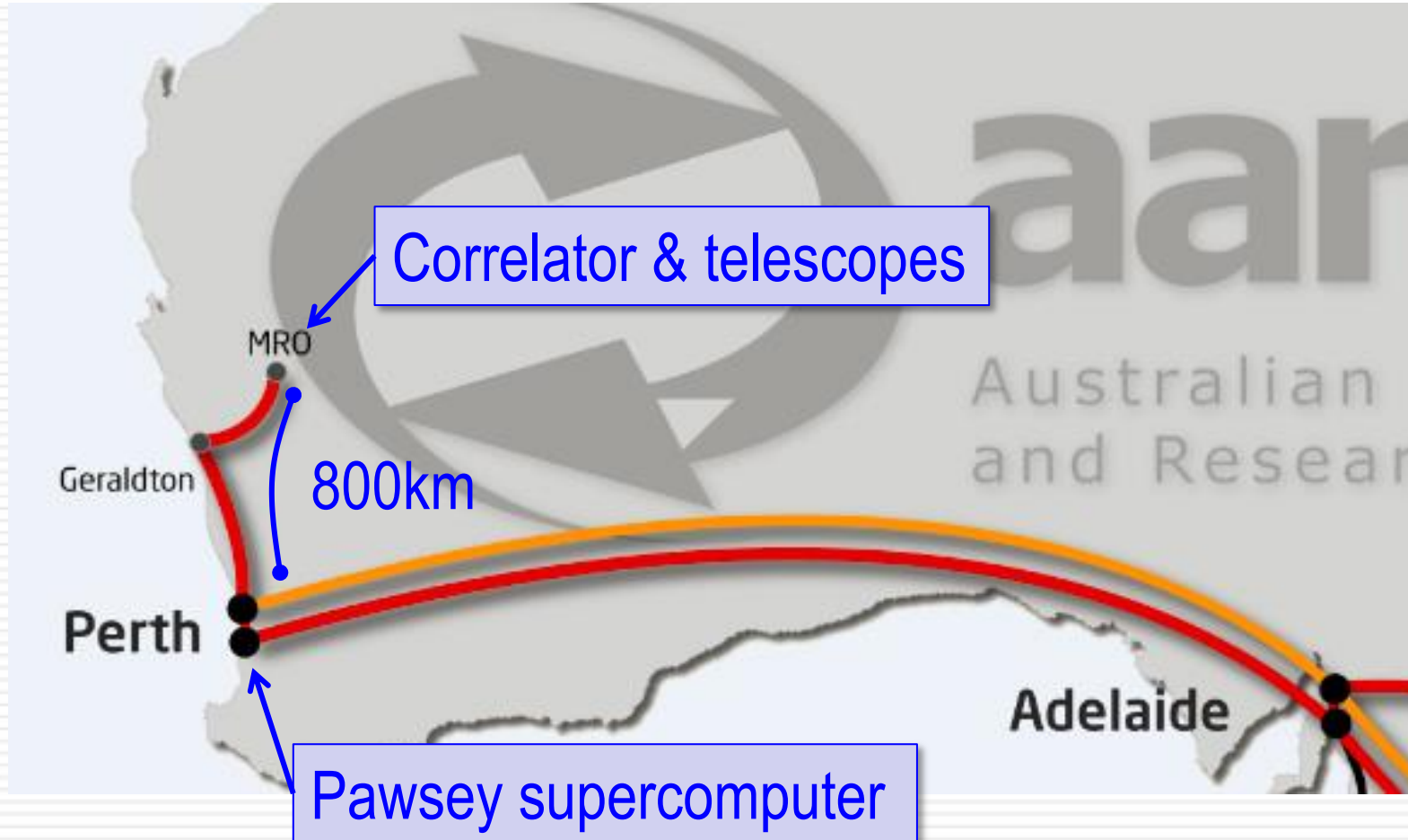


Example project:
100Gbps to Murchison for the SKA

Square Kilometre Array (SKA)



Adelaide to Perth to MRO

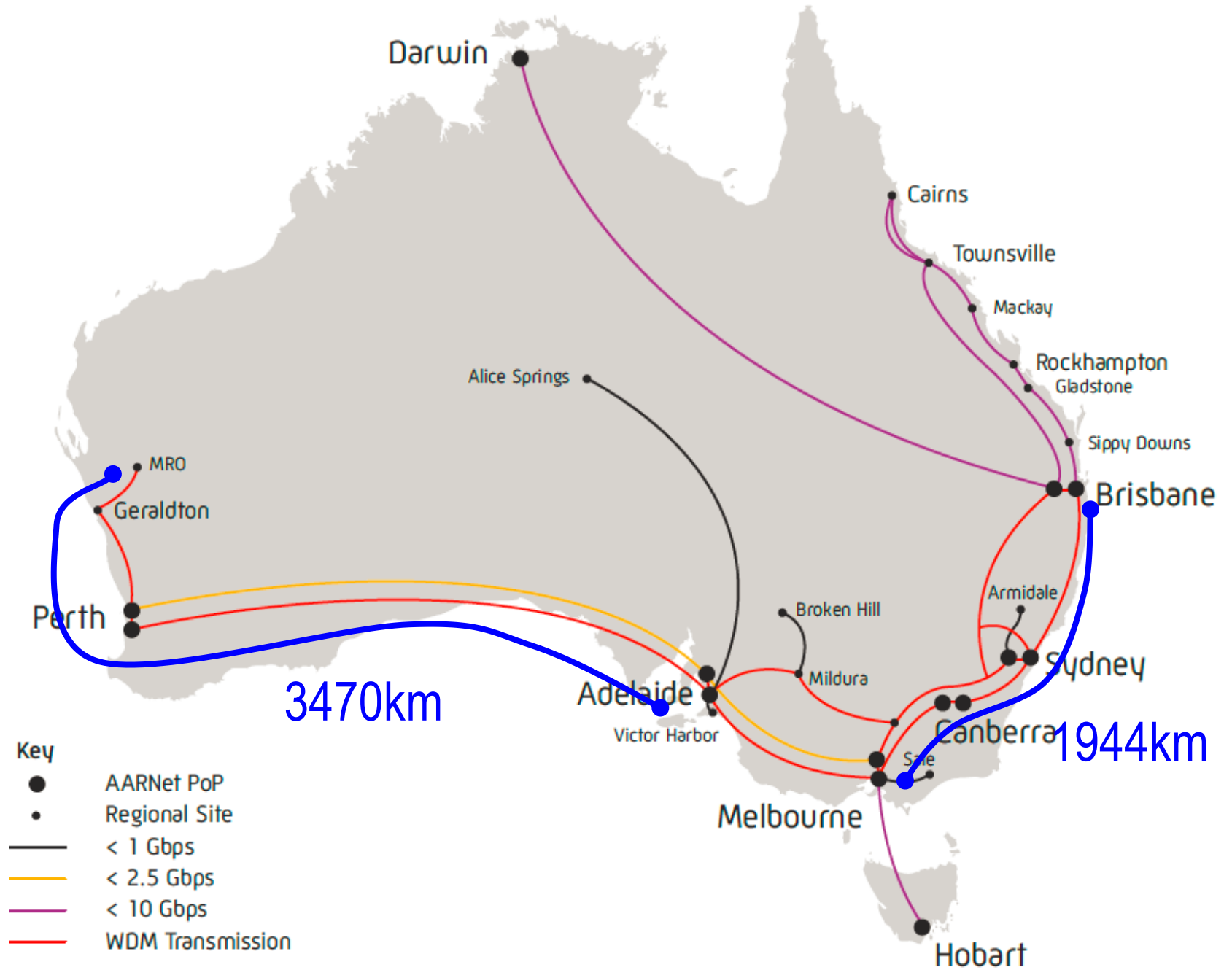


Bandwidth demands...

From correlator (at MRO) to supercomputer (in Perth):

SKA (Australia)	Pre Phase 1	Phase 1	Phase 2
Dist: 800km	2017	2020	2025
Bandwidth required	400Gbps	44Tbps	160Tbps

Current network - Total capacity : $80 \times 100 \text{Gbps} = 8 \text{Tbps}$
 Lit capacity : $4 \times 100 \text{Gbps}$



The network goes everywhere



MRO-Geraldton-Perth-Adelaide



©2010 Google - Imagery ©2010 TerraMetrics - Map data ©2010 Europa Technologies - MapData Sciences Pty Ltd - PSMA - Terms of Use

Adelaide to Perth







Rawlinna Heights, Ballajura, Western Australia, Australia



David Wilde

0

+ Share



Get directions

My places



A

perth

B

Rawlinna, Western Australia, Australia

Add Destination - Show options

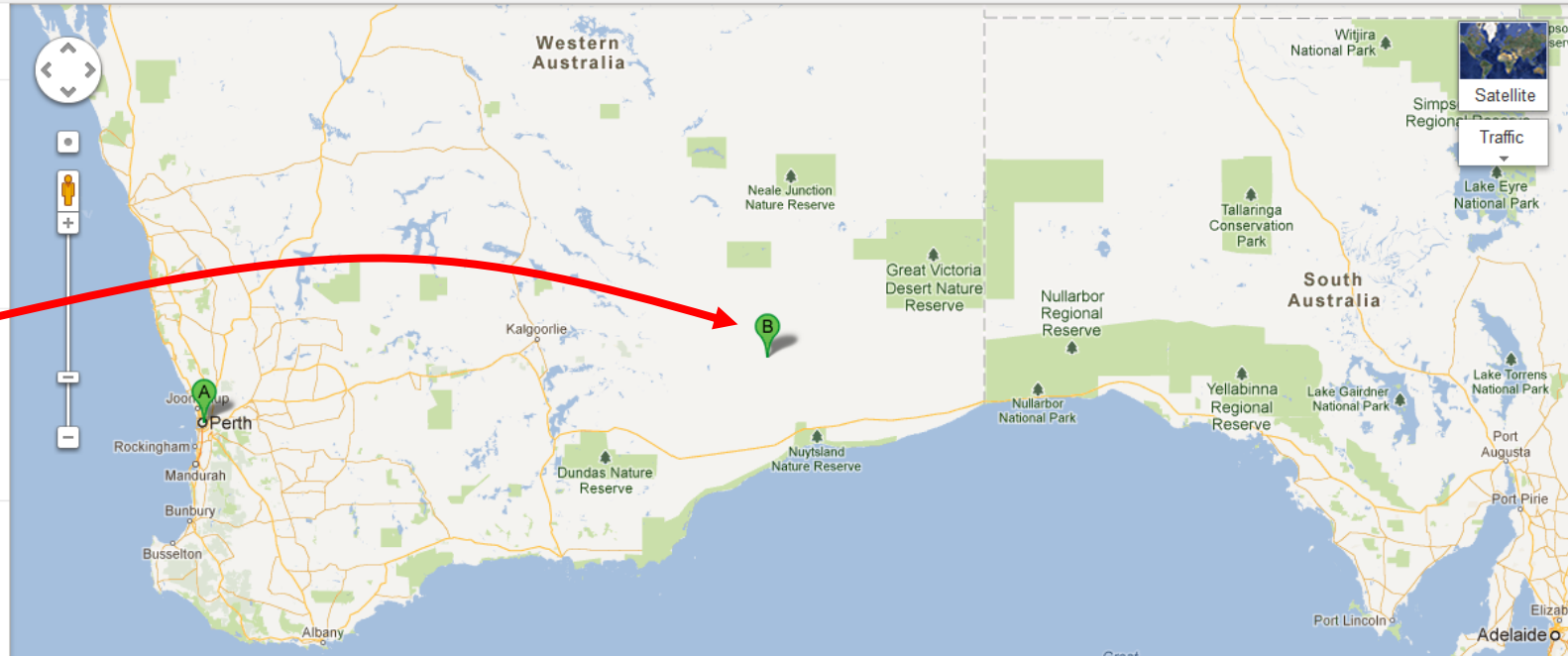
GET DIRECTIONS

We could not calculate directions between Perth WA, Australia and Rawlinna WA, Australia.

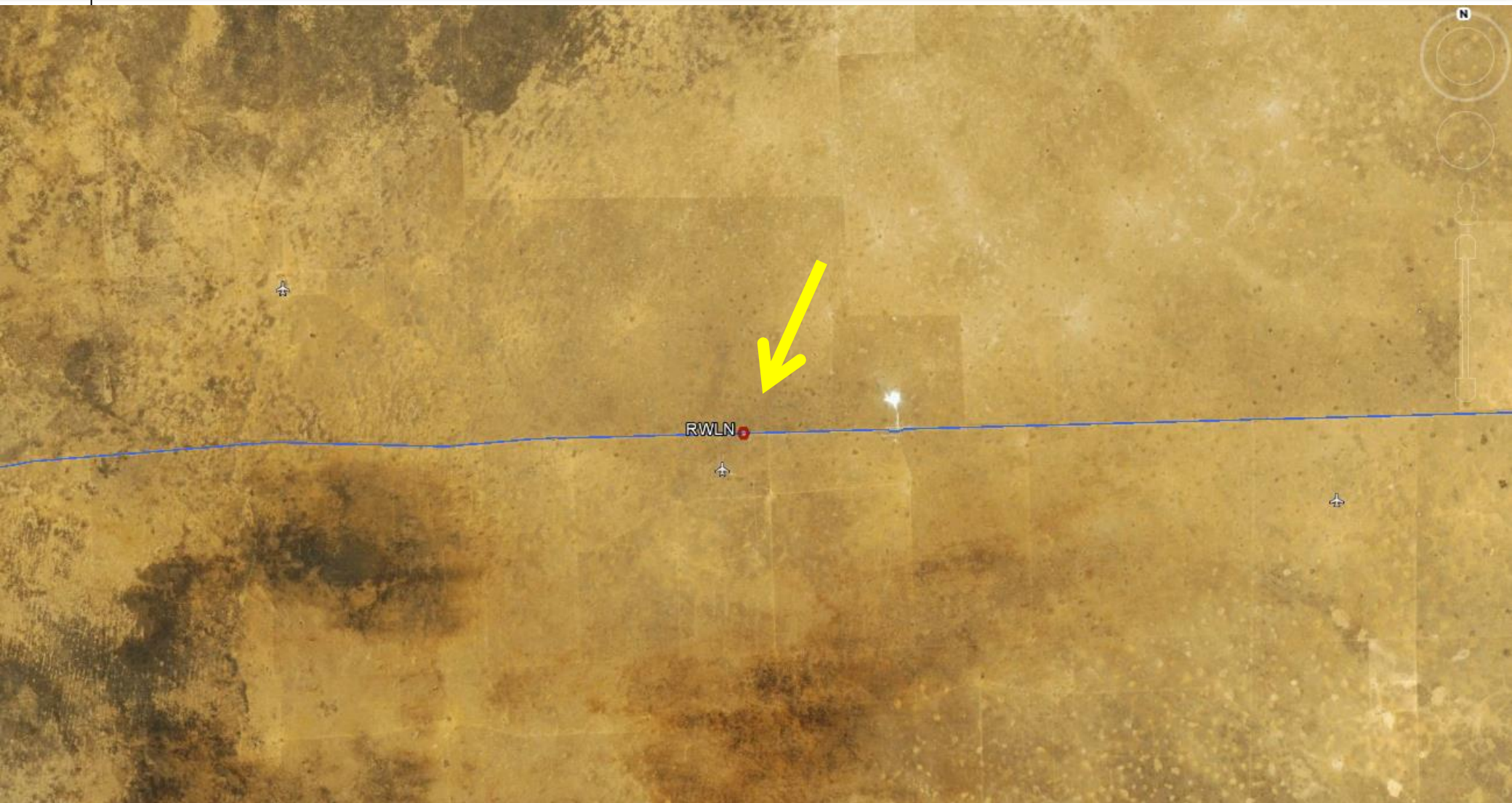
Map data ©2013 Google

Maps Labs - Help

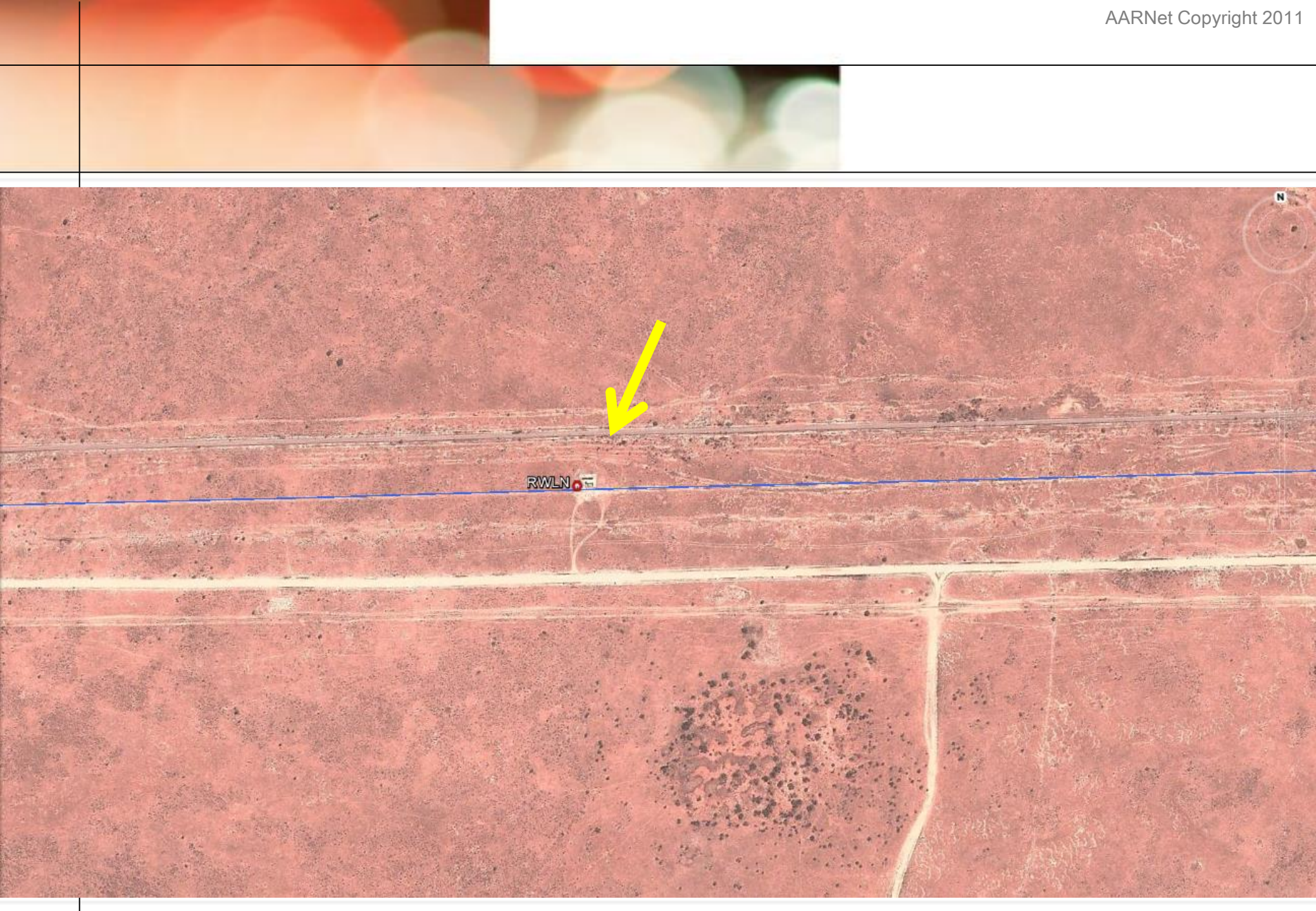
Google Maps - ©2013 Google - Terms of Use - Privacy

















Thank you



Questions?