



*A Case Study on Supporting
Video Conferencing
in the Australian Research
and Education Community*

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Presented via VC
@ NETworkshop 39

What I will cover today

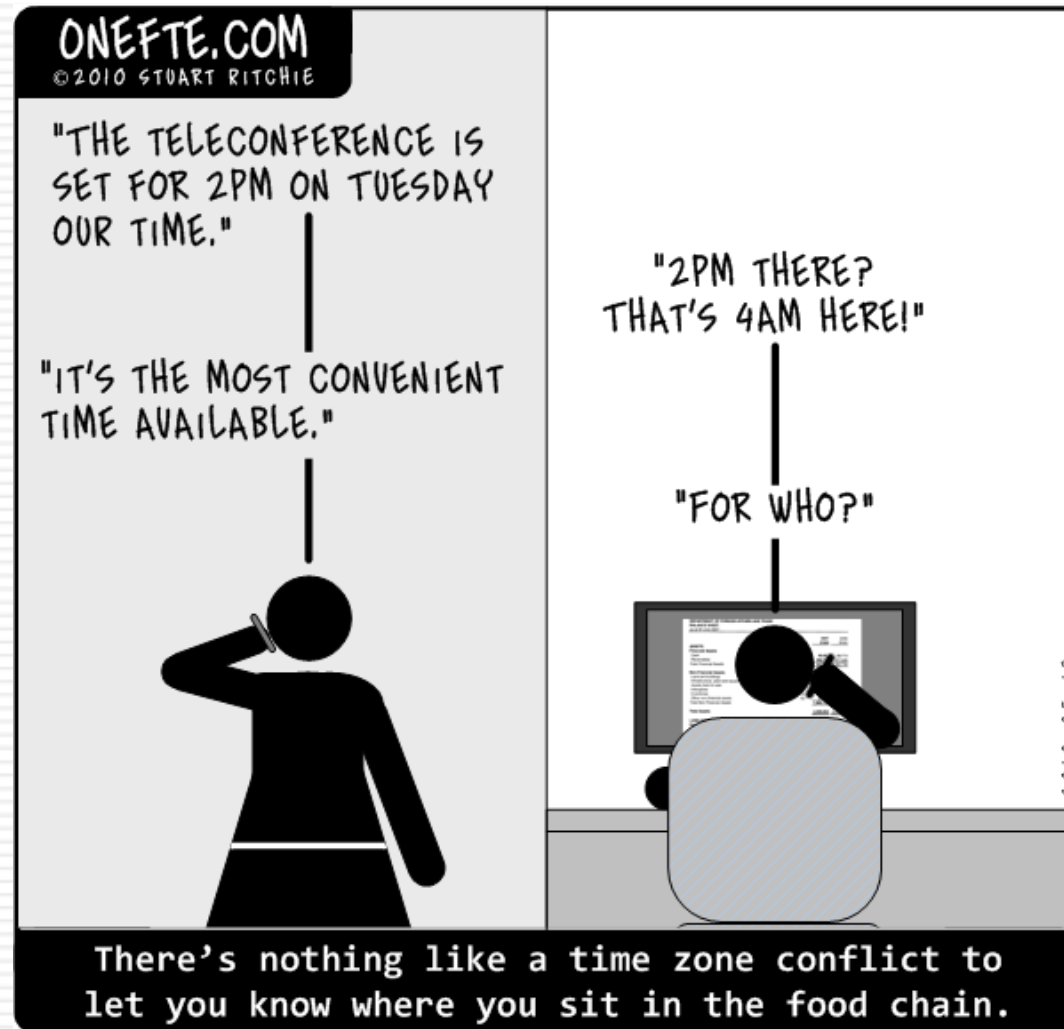
- AARNet – a background primer
- What the national backbone looks like
- Where the national backbone is headed
- Video services, today and tomorrow
- Desktop to telepresence, the journey so far
- Making systems ‘just work’ and the ‘big go button’ theory

The 'hockey stick' of video growth

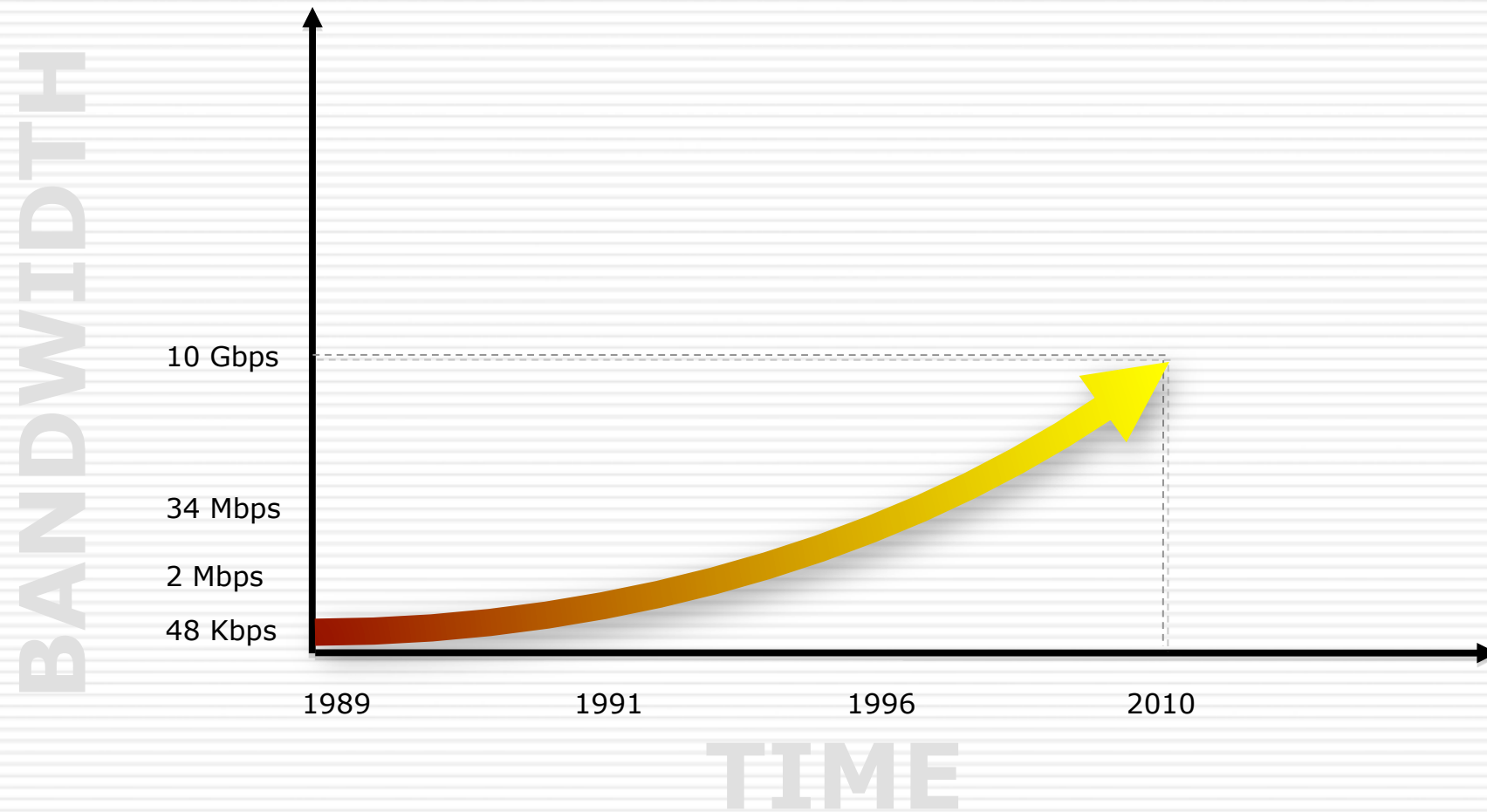
We laughed when computers started including "postage stamp" sized video in their "multi-media" applications.

Now we expect full High Definition playback on a tablet with 10 hour battery life.

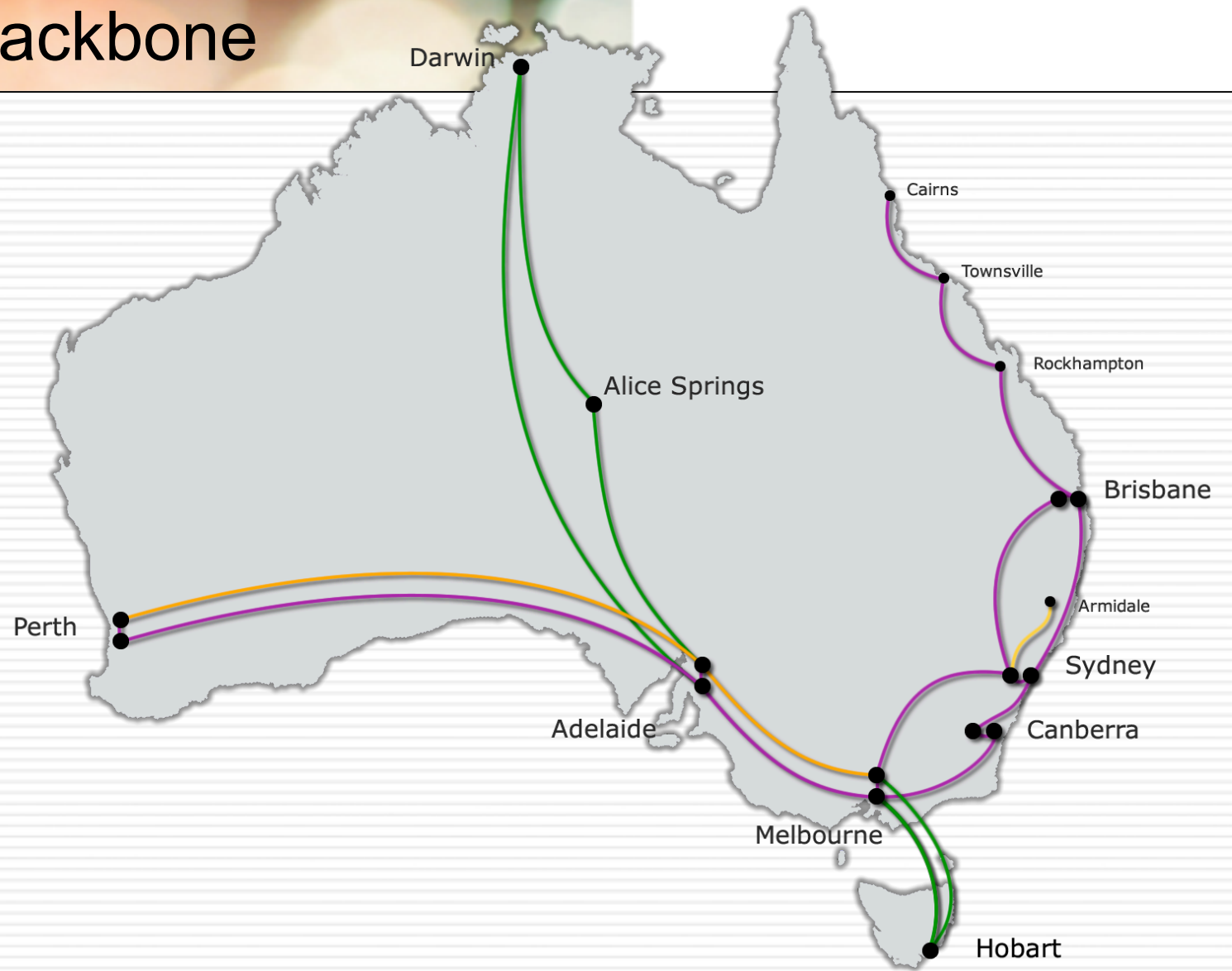
That didn't take long



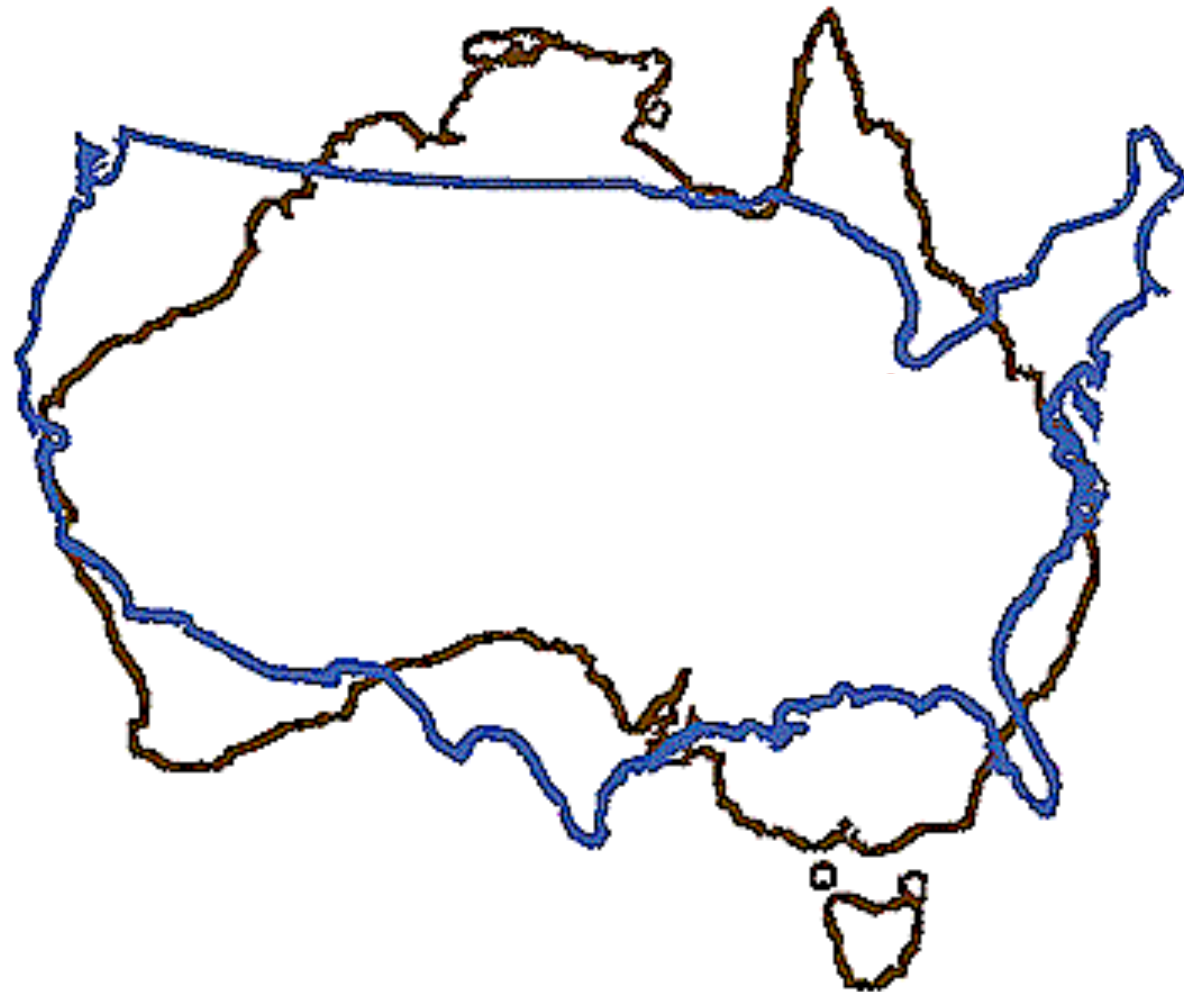
AARNet - massive growth from early beginnings



National Backbone

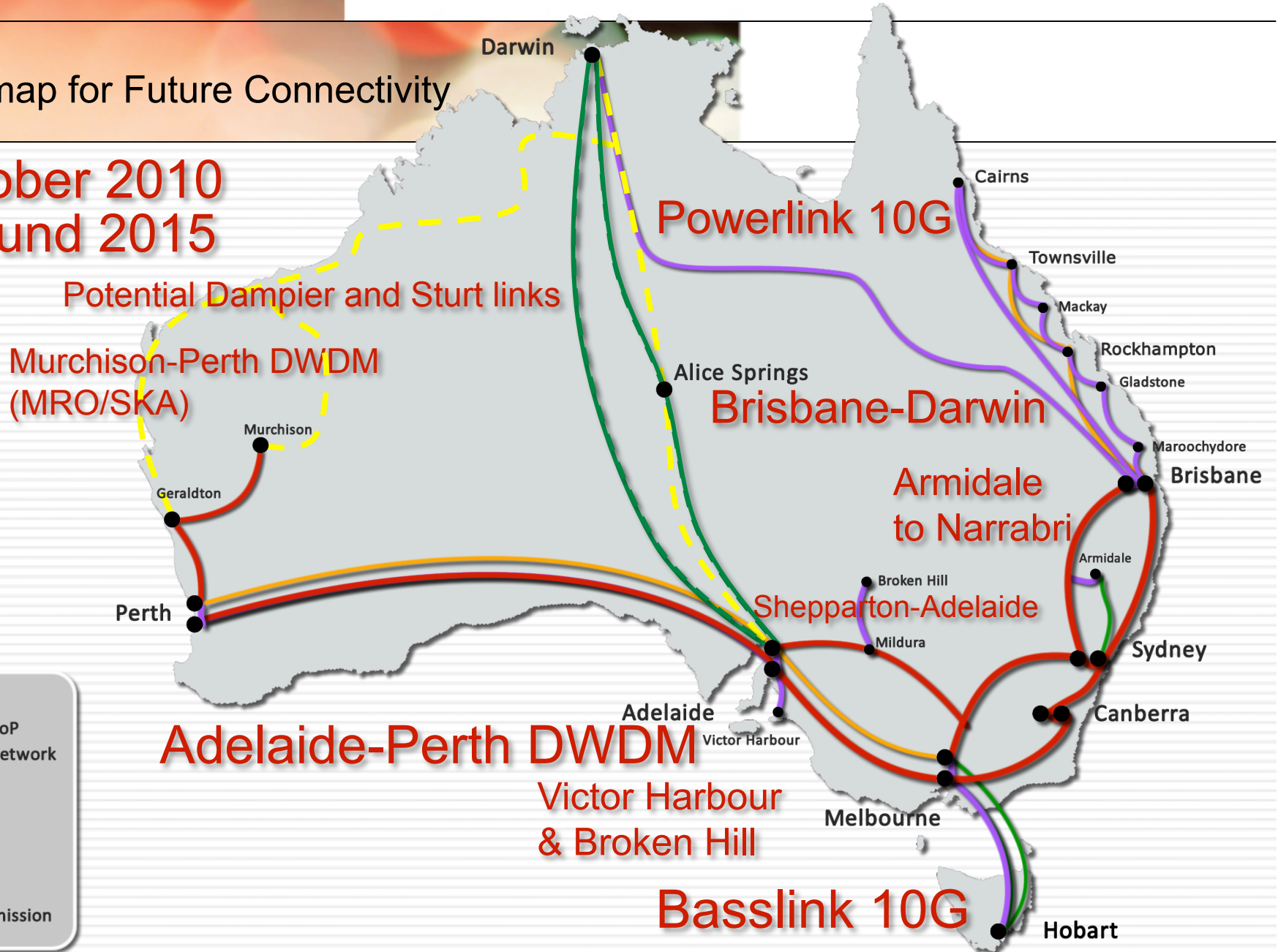


The tyranny of distance



Roadmap for Future Connectivity

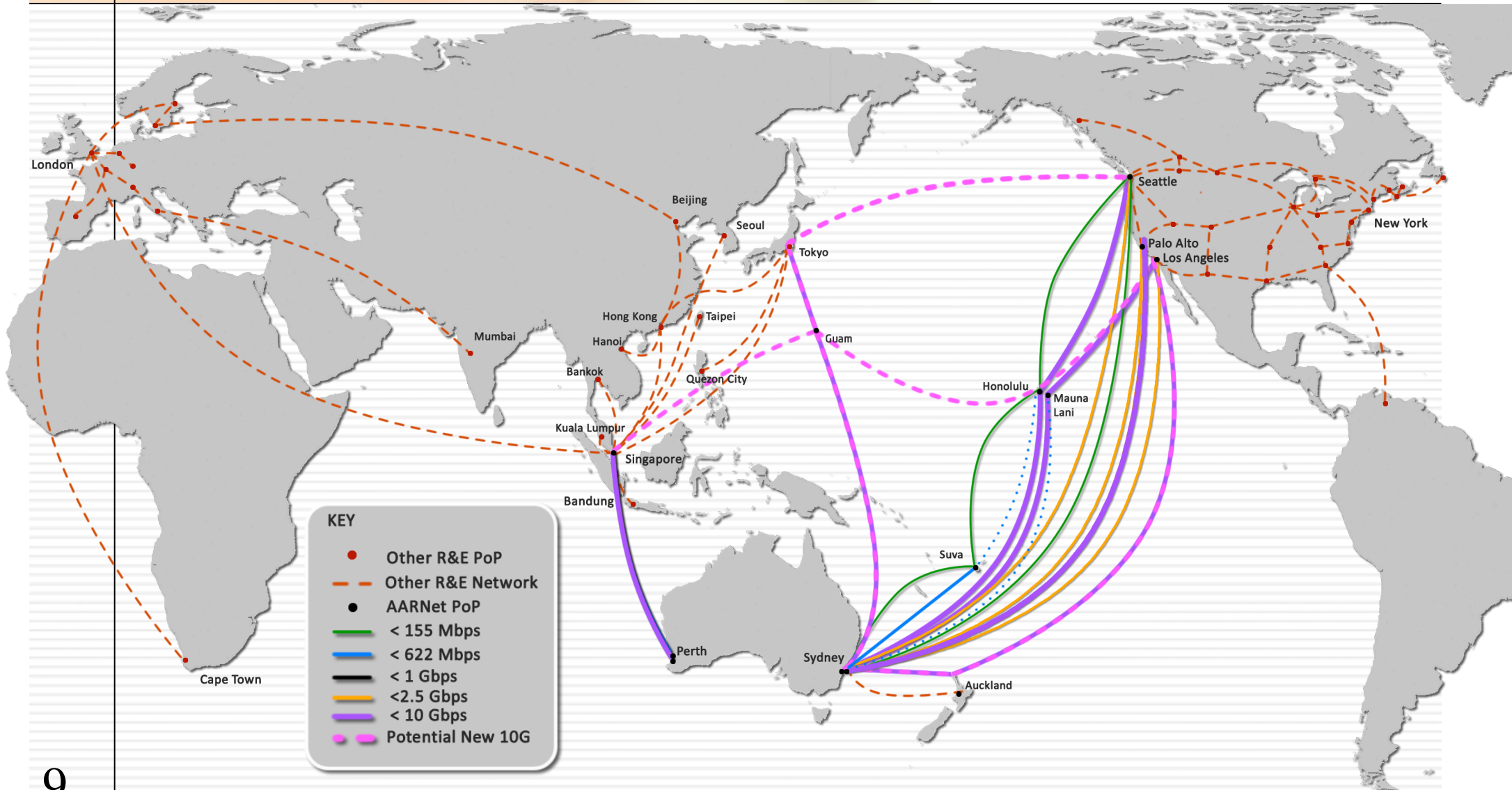
October 2010
Around 2015



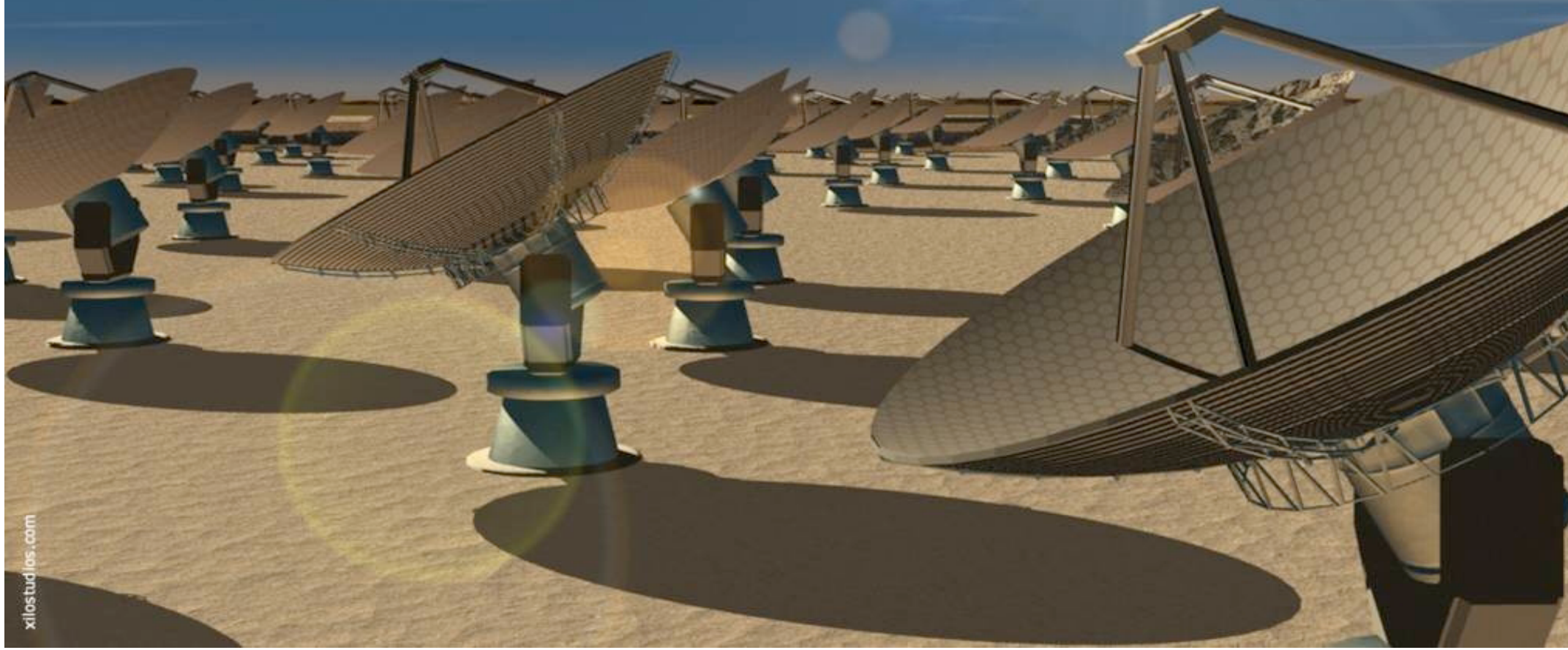
KEY

- Other R&E PoP
- - - Other R&E Network
- AARNet PoP
- < 155 Mbps
- < 622 Mbps
- < 1 Gbps
- < 2.5 Gbps
- < 10 Gbps
- WDM Transmission

Australia's advanced R&E Network envisaged in 2015



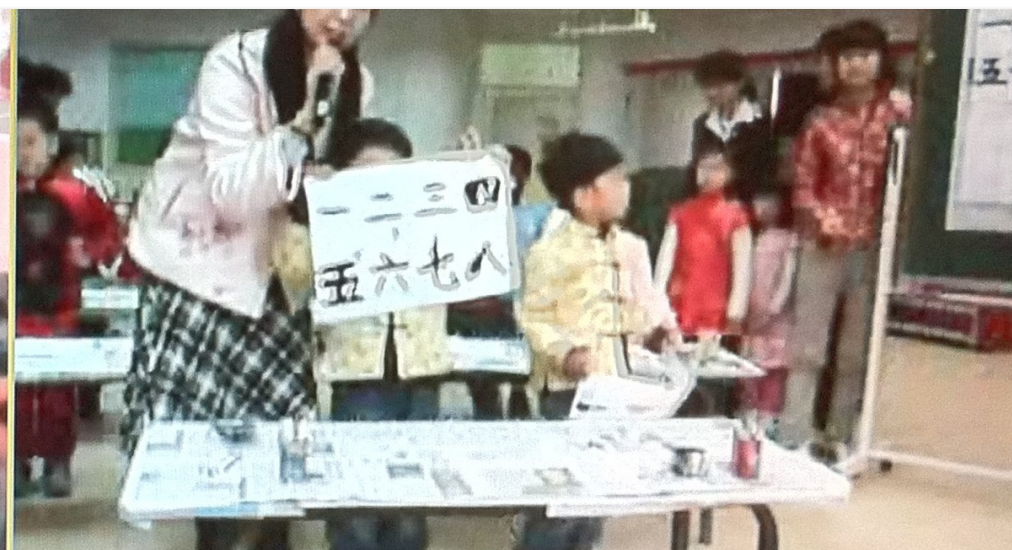
Australia's Bid to host the Square Kilometre Array:



Trends in Unified Communications

- Providing “Communications as a Service” since 2006
 - Online service booking system to shared services
 - Video Rooms > Telepresence
- Unified Communications - ACME
- Personal Video – Vidyo, ViVu, EVO
- Hi-Res video – Polycom, LifeSize, Cisco, Sony etc
- Infrastructure and Telepresence developments

Cloud based video services to Schools



“The Great Debate” - in real time!



Should Australia have a mandatory internet filter...?













































ACT v Tasmania

From Video to Telepresence

- Polycom TPX306M
- Installed at AARNet Sydney, AARNet Canberra, Curtin University (customer site)
- Use
 - Point-to-Point
 - Via Multipoint via Polycom RMX4000 HD MCU
 - Via Multipoint via Codian HD MCU
 - Via Cisco Telepresence – in detailed discussions on latest offer

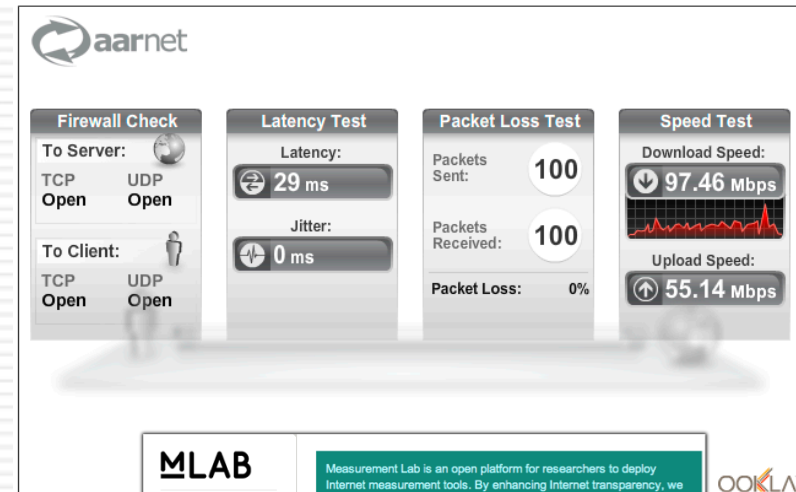


Communications Interoperability is the key!

	CMP123	<u>MCU's</u>	<u>Vidyo</u>	AARNet Anywhere	EVO	Adobe Connect	IPVCR
CMP123							
<u>MCU's</u>							
<u>Vidyo</u>							
AARNet Anywhere							
EVO							
Adobe Connect							
IPVCR							

Communications Interoperability is the key!

- Ookla LQ-Test
 - Firewall (to/from)
 - Latency & Jitter
 - Packet loss figures
 - Upstream/downstream
- Measurement Labs
 - Network Diagnostic Tool (Java browser + Android)
 - Glasnost traffic blocking test
 - Raw bandwidth/shaping test



The screenshot shows the M-Lab website interface. On the left, there is a navigation menu with links for About, Who We Are, FAQ, Additional Resources, and Contact. The main content area features the M-Lab logo and a mission statement: "Measurement Lab is an open platform for researchers to deploy Internet measurement tools. By enhancing Internet transparency, we help sustain a healthy, innovative Internet. Find out more". Below this, there are sections for "for Internet users" (Test your Internet connection) and "for researchers" (Get involved). A "Updates" section lists several recent articles with their publication dates. At the bottom, there are logos for BitTorrent, PlanetLab, Amazon Web Services, New America, Google, and AARNet.

Automated VC Booking Systems

AARNet Conferencing Booking Form - Mozilla Firefox

http://cde-b-wsp1.aarnet.net.au/cgi-bin/booknow_30242006

Google dict.lee.org W Wikipedia C Cheseer WorldTime AARNet Unifiteboume News Conferen

Manage Addresses Codan Management Platform: Inbox (...) AARNet Conferencing B

- Telephones (no practical limit)
- H.239 (slides in separate stream)
- Use VNC to put content from a desktop into the conference (you will need a C

The defaults set below will support a telephone and/or video

The following time is when you would like to have your mee

Meeting start: 16:00 16 May 2007.
(local NSW, VIC and ACT time)
click the date to change it.

Initial video screen layout:

What initial screen format would you like?:
Most **CAVE** persons can change the layout (even during the c
layouts such as for remote teaching.

Contact Information:

This enables us to contact you in the event of a problem and

name1 name2
 email1 email2
 phone1 phone2

Phone number during meeting: optional

Codian

Find: in Email Messages Google Advanced Search

Save Cancel Add Attachment Spell Check Format

Video Conference Details Schedule Find Attendees Find Rooms Find Resources

Details

* Subject:

Room(s):

Show as: Busy

Time

Australia/Brisbane

Start: 9/17/2011 @ 1:30 PM

End: 9/17/2011 @ 2:30 PM

Repeat: None

Attendees:

Resources:

September 2010

S	M	T	W	T	F	S
29	30	31	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	1	2

RENOVO SOFTWARE

RESERVATION | create or edit reservation with time(s), date(s) and attendees

GENERAL INFORMATION

Enter General Information

Requested By: Renovo, Renovo

Title: Reservation with Clearing House

Additional Information

Clearing House Parameters

Clearing House

Restrictions

MAX Number of Rooms: 5

MAX Number of Participants: 40

Join by Date/Time: 08/31/2007 12:00 AM

Administrators

User Groups: New User Group, Test Group

Has Waiting List

next >> finish

Making real world events – on the road



Could access to video services drive collaborations better?

A report from the
AARNet Desktop Video Conference
Project Group – July 2010



DVPG - <http://tinyurl.com/aussiedvpg>

Objective

- Interoperability/compatibility with existing standards such as H.323/SIP.
- Scalability - whether the products would run well for one institution or many.
- Low bandwidth requirements/sensing to be able to run on asymmetric links.
- Firewall and NAT traversal for use outside of the University campus/no VPN.
- Multi-platform experience and usability factors - 'easy for all' deployment.
- Usability factors - single sign on authentication or guest access as required.
- Hardware requirements to be minimal - run with most webcams/headsets.

Subjective

- Ease of Deployment (simple), Access to training materials
- Quality of resellers / Support channel – National, Local Support Network
- High responsiveness of support, Business Hours Support from vendors
- Video Resolution / Frame Rate, Audio Quality

NREN Video services – considerations

- 1. Consider the need for ad-hoc vs scheduled solutions*
- 2. Bridge the gap between standards based (H323/SIP) and others (Skype, DimDim, Nefsis, FaceTime etc)*
- 3. Provide a robust and secure infrastructure*
- 4. Provide repeatable and personable support structures (not forgetting self help resources for 24/7 access)*
- 5. Innovate, iterate and excite!*

