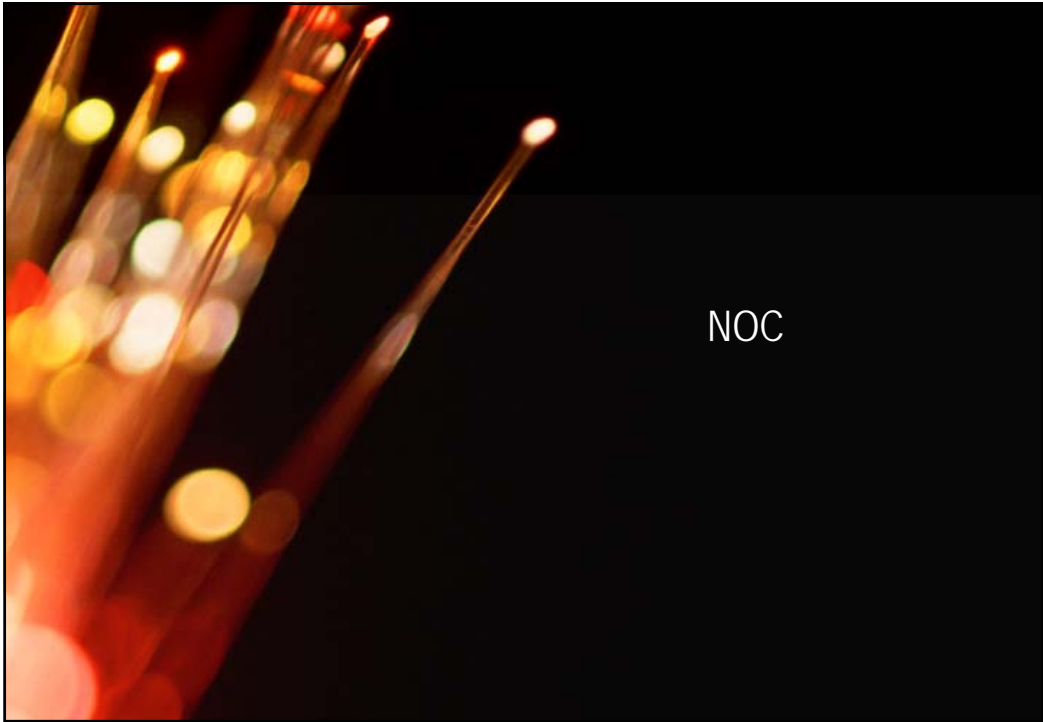




AARNet Network Operations

Customer Alerts & Maintenance

Questnet 2009
Mike Groeneweg



NOC

Network Operations

- NOC
24 hour phone service (1300 APL NOC or +61 2 9963 3538)
E-mail is monitored during business hours
noc@aarnet.edu.au

NOT

your_favourite_engineer@aarnet.edu.au

On-call engineer is from a pool of Network Engineers & Systems Administrators from AARNet Operations.

3

Copyright AARNet Pty Ltd 2009

NOC

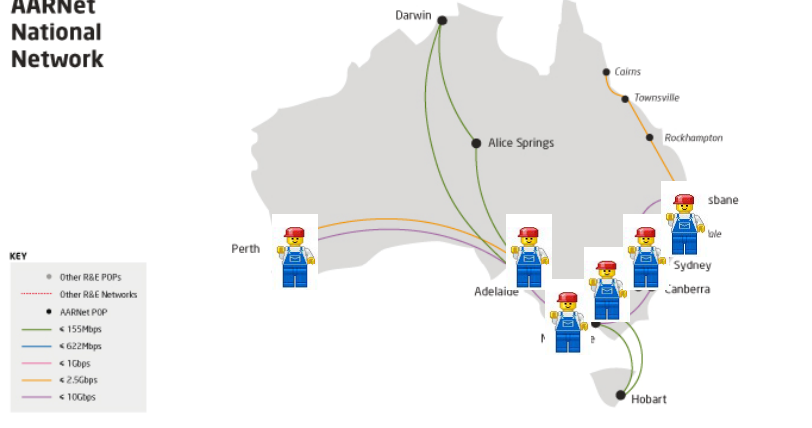
- IP Routing
- CPE Operations & Maintenance
- Peering
- Backbone Circuit Monitoring
- Optical Circuit Co-ordination
- Traffic Billing, Capacity Management & Planning
- New service development & deployments
- Maintenance scheduling & notifications
- Emergency fault notifications

4

Copyright AARNet Pty Ltd 2009

Network Engineers...

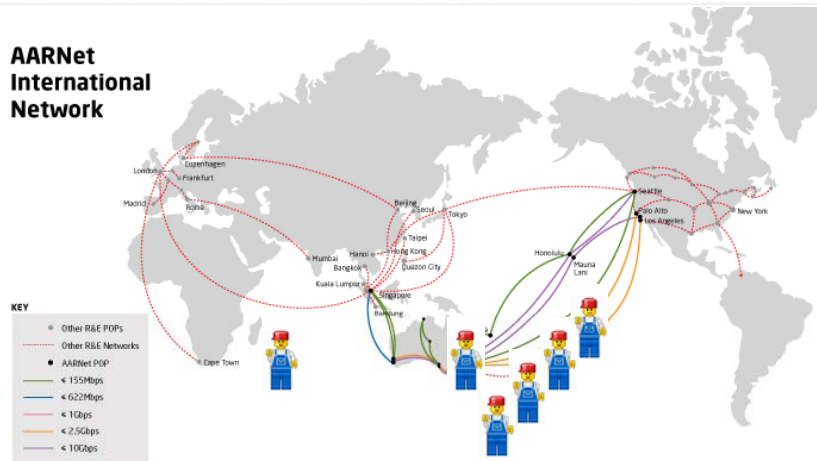
AARNet National Network



5 Copyright AARNet Pty Ltd 2009

20 Pops, 150+ routers

AARNet International Network



6 Copyright AARNet Pty Ltd 2009

NOC E-mail

We get a lot of mail, sometimes things get missed....

2008		2009		
July	4197	January	3038	
August	3471	February	2826	
September	4130	March	2327	
October	4554	April	4205	
November	4682	May	2318	
December	2391	June	1941	
			TOTAL*	40080

- Includes all Alarms, Notifications, Peering, SPAM & Customer e-mails...

7

Copyright AARNet Pty Ltd 2009

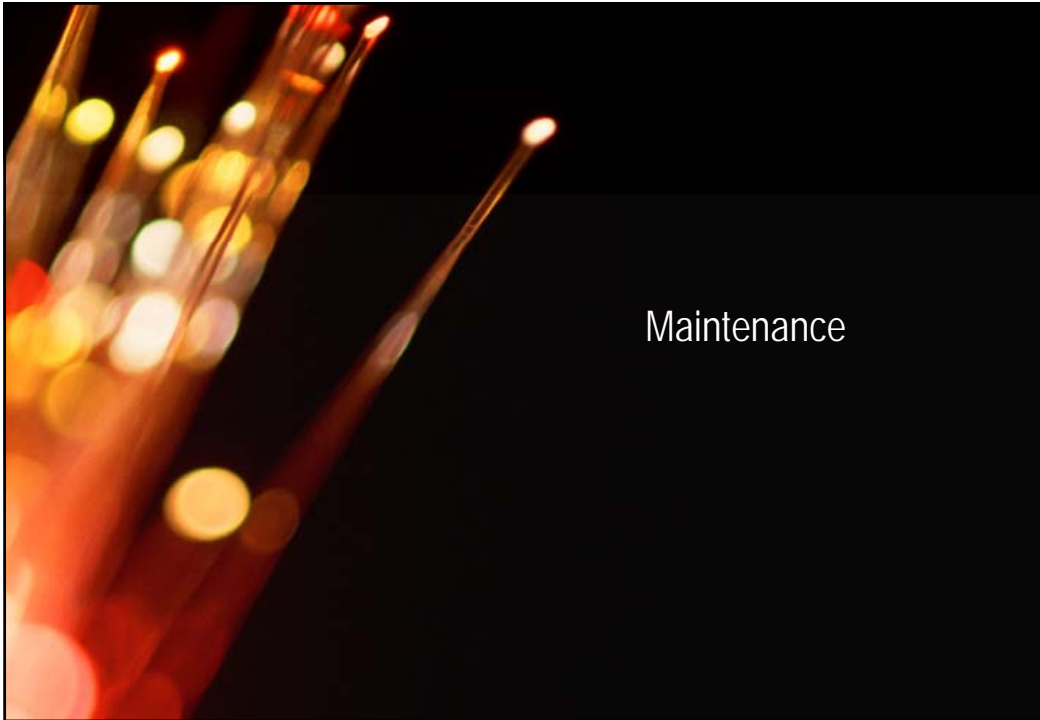
NOC E-mail

The screenshot shows a web browser window titled "The NOC 2009-June Archive by Date - Mozilla Firefox". The page content includes:

- Messages sorted by: [[unread](#)] [[subject](#)] [[author](#)]
- [More info on this list...](#)
- Starting: Mon Jun 1 00:05:27 2009
- Ending: Tue Jun 30 23:03:40 2009
- Messages: 1941
- A list of message subjects, including:
 - INOC: Your Cashback Bonus is Waiting For You - Commonwealth Bank of Australia
 - INOC: Ticket No. #1024 - Node Fail (Thailand) - FEIN2-NOC-TTS
 - INOC: Update: CT191034 - AARNET Carrier LOS on LAN SMC Sydney to Melbourne - SOUL Service Assurance
 - INOC: PROBLEM: cpe-svwd-es1.SSH is CRITICAL [58632:46] - Nagios Sydney
 - INOC: [PIPE-ROBOT] AS Path Filter change for aarnet brisbane ipv6 (AARNET) - root
 - INOC: BGP ACT - diff for AS7575 - ce-rumour@us.rrt.net
 - INOC: Your Cashback Bonus is Waiting For You - Commonwealth Bank of Australia
 - INOC: [CENIC #161011] Canyon Country Education Center OUTAGE RESOLVED - Mark Swank via RT
 - INOC: PROBLEM: cpe-svwd-es1.SSH is CRITICAL [58636:47] - Nagios Sydney
 - INOC: Ticket No. #1033 - Link Outage (HK, CN) - FEIN2-NOC-TTS
 - INOC: PROBLEM: cpe-svwd-es1.SSH is CRITICAL [58637:48] - Nagios Sydney
 - INOC: Update: CT191023 - 403 - NICTA Resolves to Canberra OARS-SET - Config issue LAN v6 403 - NICTA Reflow to Canberra - SOUL Service Assurance
 - INOC: PROBLEM: Host DOWN for cpe-plenw-sw1 [58641:1] - Nagios Sydney
 - INOC: RECOVERY: Host UP for cpe-plenw-sw1 [58642:2] - Nagios Sydney
 - INOC: PROBLEM: cpe-plenw-sw1.G0/1 is CRITICAL [58643:1] - Nagios Sydney
 - INOC: Special Diversion For Heads & Tails Cases - Must See!!! - info@nswstat.com
 - INOC: RECOVERY: cpe-plenw-sw1.G0/1 is OK [58644:2] - Nagios Sydney
 - INOC: [CENIC #161029] Modoc COE OUTAGE Resolved - Mark Swank via RT
 - INOC: PROBLEM: cpe-svwd-es1.SSH is CRITICAL [58645:49] - Nagios Sydney
 - INOC: PROBLEM: Host DOWN for svd-a-sp1 - Nagios Perth
 - INOC: RECOVERY: Host UP for svd-a-sp1 - Nagios Perth
 - INOC: PROBLEM: cpe-svwd-es1.SSH is CRITICAL [58649:50] - Nagios Sydney
 - INOC: FW: Welcome Pack AARNet Pty Ltd (770001912) - contract 0904080/NW - Ivan Phillips
 - INOC: [CENIC #161001] Canada CC OUTAGE Resolved - James Bellon via RT
 - INOC: PROBLEM: cpe-svwd-es1.SSH is CRITICAL [58651:51] - Nagios Sydney
 - INOC: Internet2 IP Network Peer GEANT (WASH) Available Issue=14208 - Internet2 Network Operations Center
 - INOC: [CENIC #160401] SoCal Maintenance 06:01 Completed - James Bellon via RT

8

Copyright AARNet Pty Ltd 2009



	<h2>Customer Maintenance Events</h2>
10	<p>The NOC would always like to be told about your upcoming maintenance event.</p> <p>But how? Currently an e-mail to noc@aarnet.edu.au with a subject of "Upcoming maintenance xx/yy at hh:mm"</p> <p>But what timezone is this?</p> <p>How long?</p> <p>Which CPE in particular, and is it the whole rack/room/building/site/state offline?</p> <p>Copyright AARNet Pty Ltd 2009</p>

Customer Maintenance Events

The NOC then will do the following:

- Create a ticket (NOCTTS-xxxx)
- Set a reminder in the Ops Diary
- Inform other NOCs
- Inform other affected parties (if any)
- Send back an acknowledgment

11

Copyright AARNet Pty Ltd 2009

Maintenance Event Notifications

- SITE-L mailing list *or*
- aarnet-ops-contacts@customer.edu.au

120 Site-L messages in 2008-09 (1/7/08-30/6/09)

100 topics

Is e-mail the best method?

Multi-site customers & multiple engineers well co-ordinated?

12

Copyright AARNet Pty Ltd 2009

Site-L inconsistency

- Messages are manually generated – which leads to different styles & accuracy

```

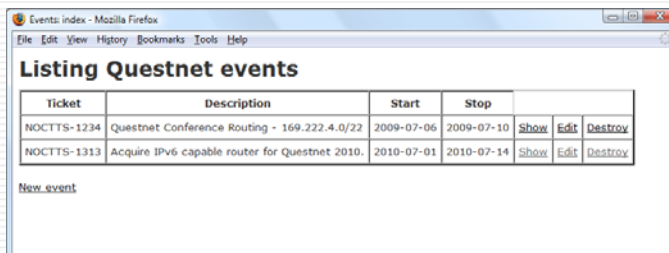
SUBJECT:      Outage - AARNet Hawaii to Seattle 10G SXTransport (North)
circuit
SCO SUBJECT:  Site Power Works
COR SCOPE:    AARNet Perth 'B' Pop (PER-B, CSIRO ARRC, Kensington)
DES COR
AAR STA      SUBJECT:    OUTAGE SB2 SYDNEY-BRISBANE
END          CORE NODES:  syd-a-bb1 bne-a-bb1
18/ DES      START TIME:  1:00 am,   21/04/09
AFF shu      END TIME:    06:00am,   21/04/09
TIC AFF      DESCRIPTION: Repairs to the carriers network ( next gen ).
CON TIC      AFFECTED:
COU CON      The 10 gig link between Brisbane and Sydney will be down for 5
COU          hours. IP traffic will re-route over another circuit. SDH circuits on this run ,
              L2 curcuits that span Sydney to Brisbane will be down for the period. There
              should be no outage of ip Traffic will re-route over SB1.

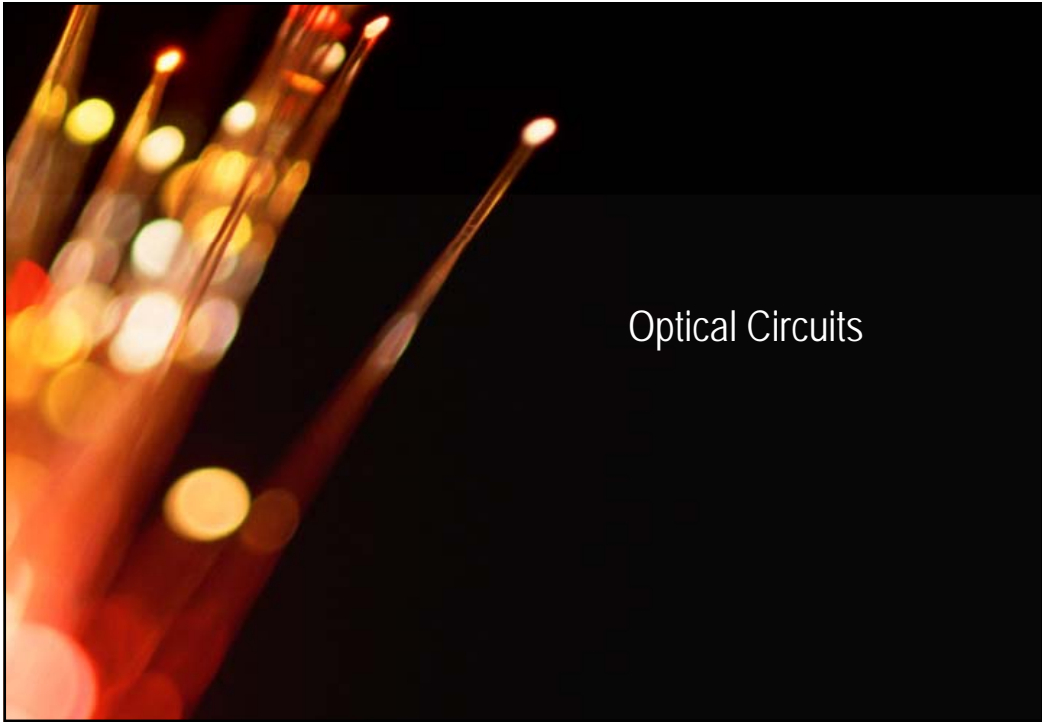
TICKET NO:   aarnet NOCTTS-2422
    
```

Maintenance Event Portal?

CPE portal improvement – an event list?

Any customer engineer can see what's happening, if they missed the original notification or reminder..





Optical Circuits

<h2>Optical Circuits</h2>	
<p>Most circuits on single leg.</p> <p>But some circuits on 2 sections...</p> <p>...and a few go the long way around.</p>	
<p>16</p>	<p>Copyright AARNet Pty Ltd 2009</p>

Optical Circuits - Notifications

Operations works with Infrastructure Group to Identify Optical Circuits that will be affected. Currently a manual process.

Automation will happen.

AARNet is deploying Connect Master to track the devices & fibres – but we're still a way off yet.

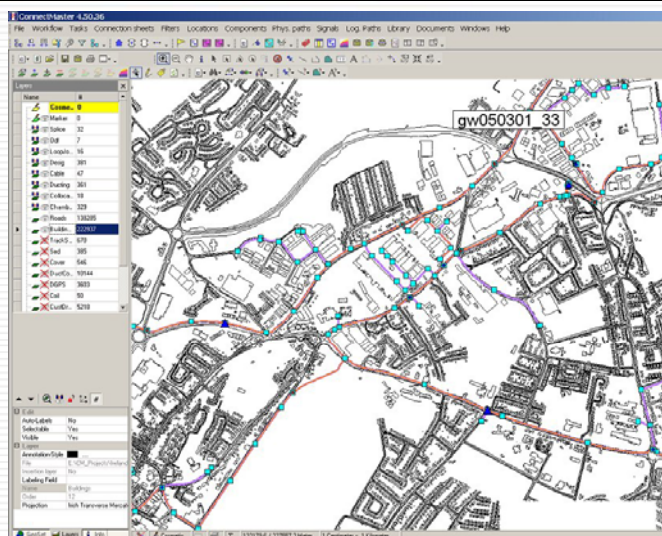
www.connectmaster.org

CONNECT MASTER[®]
Resource Management for Telecom Networks

17

Copyright AARNet Pty Ltd 2009

ConnectMaster



18

Copyright AARNet Pty Ltd 2009



	<h2>Customer Contacts</h2>
	<p><i>Who to ring, and when?</i></p> <p><i>Are they on leave, sick, no longer associated with the organisation?</i></p> <p><i>Up to date contact information, is sometimes, not very up to date.</i></p> <p><i>E-mail doesn't work, if you've got a network emergency.</i></p> <p>20 Copyright AARNet Pty Ltd 2009</p>

Customer Contact Portal?

Would a customer contact portal, per organisation be useful?

E-mail?

SMS?

Phone call?

Twitter?

Name	Email	Phone	Phone2	Mobile	Active	
Mike Groeneweg	mike.groeneweg@aar.net.edu.au	08 9289 2213	02 6222 3513	0414 360 766	true	Show Edit Destroy
Tim Rayner	tim.rayner@aar.net.edu.au	+61 2 6222 3573		+61 423 820 595	true	Show Edit Destroy

What is the preference? And when to ring?

21

Copyright AARNet Pty Ltd 2009

After-hours?

To call or not to call?

"the brown-out tripped the chilled water system, cutting chilled water to the hospital campus. As it wasn't monitored, the datacentre support team didn't notice the loss of the chilled water. A datacentre employee came on scene to check everything was running, but being happy that there wasn't anything wrong, he left."



<http://www.zdnet.com.au/news/hardware/soa/Horror-story-Old-Health-datacentre-disaster/0,130061702,339297206,00.htm?feed=rss>

22

Copyright AARNet Pty Ltd 2009



Questions?

mike.groeneweg@aarnet.edu.au

