

## Reports from Regional Networks for UKMMG Meeting of 26 June 2006

### ***AbMAN: John Linn***

We are waiting delivery of our new core routers; these are expected by the end of June. Although the SJ5 migration has been delayed, we plan to install these connected to SJ4 - this risk had been identified in the transition plan: an interface for the BAR will be required temporarily. For network management, we are planning to use "cacti" and INMON's "Traffic Sentinel" for netflow visibility.

I have appreciated the Cisco configurations from other RN's as it has helped to sort out draft configurations. As well as IPv4 unicast and multicast, we hope to have native IPv6 unicast and, possibly, multicast. QoS looks a bit more challenging.

The local SJ5 installation does not look like it would have been ready for a migration on 11th July so the delay to October seems reasonable.

Aberdeen Netsight will be moved to AbMAN from the BAR on the 15th June.

### ***FaTMAN: Mike Whitehead***

FaTMAN has taken delivery of two new 7609s which will form the backbone of the new resilient FaTMAN-5 configuration. The kit is at the premises of our suppliers where it is being built and tested. We have a new equipment room to house the second entry point and there are no known impediments to making a successful connection to SuperJANET5 within the planned timetable.

### ***MidMAN: James Hendry***

#### MidMAN REPLACEMENT

- The MidMAN due diligence exercise continues with the aim of demonstrating that MidMAN replacement requirements (and inter-alia the necessary SJ5 related aspects) are met by the reprocured regional network infrastructure.
- The detailed MidMAN analysis of the WMNC Ltd response continues with significant effort focused on financial aspects to establish the 'value for money' of the WMNC Ltd proposal to MidMAN.
- Discussion continues between UKERNA and MidMAN on the ongoing

status of the MidMAN replacement in the context of SJ5

## SuperJANET5

- Work continues apace to ensure that the two MidMAN RNEPS are ready for SuperJANET5 connection on the appropriate timescale.
- It is believed that fibre work (installation, termination, testing) and rack installation is complete at both RNEPs. UPS / DC power supply installation is in progress
- The current 'large' unknown factor is the timescale for Ciena equipment delivery and installation (and exactly what this work comprises at each RNEP).
- The two POS interfaces (for the regional routers) have been delivered, and the necessary router IOS upgrades and interface installation is being scheduled for early July.
- While recognising that SuperJANET5 is a large and complex project, MidMAN has been somewhat disappointed with the Verizon project arrangements. As an example, MidMAN was advised at 48 hours notice that Verizon wished to install new fibre from the public highway to the Birmingham machine room, Verizon having previously been advised that no such new fibre was to be installed. The Verizon timescale meant Saturday working had to be enabled (the various access permits obtained and relevant staff brought in to baby sit Verizon) and a planning meeting held (with Verizon) in advance of the Verizon work.

## DISASTER RECOVERY PLANNING

- In the context of Collaborative DRP, a well attended InTechnology presentation was held for MidMAN HEIs in early May 2006.
- MidMAN recently visited LMN (many thanks) to better understand the drivers and so forth for LMN engagement with InTechnology and the current status of this arrangement.
- A further 'best practice' sharing meeting of MidMAN HEIs is being arranged

## GOVERNANCE

- As noted in the previous report, the MidMAN Management Group has convened a Working Group to review its governance arrangements (currently

a Consortium, set up in 1998) to identify whether or not an alternative arrangement could now be more appropriate.

- Due to pressure of other activities, little progress has been made since the previous report on this activity.

### ***EaStMAN: George Howat***

Activities have been mainly SJ5 infrastructure related: rack installed at RNEP1 (KB), delivered but not installed at RNEP2; 16A power supplies are ready for use; the two RNEP sites are now connected by fibre pulled by Verizon through a University of Edinburgh owned duct (still to be terminated) - provides a degree of diversity from the Thus fibre and the EaStMAN link connecting the two locations. RNEP1 is also connected to its arc, and the RNEP2 arc is scheduled for end of w/c June 12th. No routing information on the arcs has been made available.

With regard to equipment, all requirements ready and waiting - 2 x 10G links between RNEPs, SUP720-3Bs in place, the 2 x 2.5G POS interfaces have been up and running since end of January, but unconnected to anything.

The EaStMAN Board have welcomed EaStMAN's transition date of 3rd October since it avoids any network intervention during Clearing and start of term. We hope to perform some interop testing in July.

Other interventions on the infrastructure have been resilience related: we are currently in procurement for new fibre links to reduce the risk of any high impact fibre breakages on the main fibre core ring; Etherswitches which support LES and megastream connections on EaStMAN have been dually connected (CWDM) to both EaStMAN RNEP systems in order to provide RNEP independence; some diplexer purchases have been made to address fibre shortages in providing resilience to some fibre (spur) connected sites as well as UKlight connections. At this time only 1 PoP and 1 institution are dependent on a single RNEP, this will be addressed.

The two Netsight systems and ancillary equipment have been detached from SJ4's BAR and are now supported on EaStMAN.

### ***WNL (running the SWMAN and LLNW): Roger Williams***

VERIZON's subcontractors keep on popping in to do the odd job in connection with the commissioning of our two RNEPs. All the fibre cables are in and terminated in the cabinets which are now powered up.

Our access to SJ5 will be via the Welsh Assembly Government's (WAG) Lifelong Learning Network (LLNW) which is a ring running round Wales. The LLNW already runs into RNEP1 but not to RNEP2. Orders have been placed for the LLNW ring to be re-engineered to include RNEP2, and for the extra

interfaces needed to connect the SWMAN routers to the LLNW routers. The SWMAN PoP Sites at Aberystwyth, Carmarthen and Newport have been migrated over to the LLNW. Glamorgan, Swansea and Cardiff will follow over the next 6 weeks.

Orders have been placed to replace two of our three remaining microwave links with land lines.

Planning by the WAG for the scheduled replacement of the LLNW (which will probably also replace SWMAN) in 2007 continues to make slow but sure progress with the appointment of consultants to organise a procurement.

***LeNSE: Mike Byrne***

No operational changes or issues to report, and the network service remains very reliable and stable. We are concerned about the slippage of the SJ5 migration dates.

LeNSE has commenced its re-procurement exercise to replace the current core/HEI network service by Sept 2007. The OJEU notice has been placed (using the new Competitive Dialogue procedure) , and we're currently waiting for PQQ responses. Our intention is to award contracts by December.

Because of this, we're not able to specific how we might distribute any SJ5 special bandwidth services, but obviously hope to procure the most appropriate means to do so with the procurement.

***YHMAN: Ed Carter***

**FE:** All FE upgrades are now complete although two colleges in NE Lincs are temporally connected by 10ME radio tails. For resilience the former 2Mbps YHMAN access circuits to the two colleges also remain in place. The two colleges in Scarborough are being aggregated through a new YHMAN mini-PoP in the Scarborough.

**Broadband Access:** Within Yorkshire (North, West and South) three superBroadband projects are being progressed by the local authorities with support from Adit-North. North Yorkshire is the most advanced and at BAFO stage. YHMAN is investigating inter-connection with the resulting network (at the YHMAN Scarborough PoP) to provide resilience in connection to Scarborough.

**ACL:** Many more local authority ACLs have been connected during the period with two authorities are being provided by YHMAN at layer-2 only with UKERNA providing a managed multi-homing BGP layer-3 service. Barnsley local authority has been provided with a 100ME bearer and is looking to take bandwidth for its schools.

**WEA:** A 10ME connection has been installed to the WEA in Leeds.

**Lambdas:** A second wavelength has been lit, Leeds-York, to allow Leeds-Lancaster & York-Birmingham universities to participation in UKLight supported projects.

**UPS & On-Line Management:** YHMAN Operations are progressing the replacement of all PoP UPS, remote power management and out-of-band monitoring equipment.

**SJ5:** Both SJ5 dual-entry points have fire gas-suppression and are ready (and waiting) for Verizon! Both Leeds and Leeds Met are ready to support the new SJ5 racks. Fibre routes have been agreed and method statements have arrived from Verizon. YHMAN has received the two 10G POS cards, and is discussing with our Cisco supplier the upgrades that will be necessary on the 6509's to support the new POS cards. We have recently discovered the IOS and Supervisor 7 engines on the 6509's will need to be upgraded to version 7X. The original YHMAN-SJ5 transition timetable for October has been rescheduled to November. The YHMAN-TAG has a sub-group to produce a testing plan to cover the quarterly tests required by UKERNA regarding the connection to SJ5. YHMAN has a commitment from UKERNA that live testing will not commence until multi-cast resilience is in place.

**Schools:** A second 100ME connection has been installed to a physical separate connection point to offer resilience to Leeds Learning (Schools) Network. These currently connect to the SJ4-BAR. Two 100ME connections are being progressed to connect the YHGfL Regional Broadband Consortium to the SJ4-BAR and later the YHMAN-SJ5 dual-entry points.

**Access Resilience:** The YHMAN-TAG is reviewing resilience connection for YHMAN clients by providing a second connection to a single YHMAN PoP, by connection to a 2nd existing PoP; by connection to a 2nd potential physically discrete PoP at the current PoP sites. Technical pre-requisites for connection are being defined eg. the 2nd campus-net connection point must be physically separate to the primary connection, for non-POP sites the demarcation would be a 2nd YHMAN managed boundary router. YHMAN technical requirements

are also being defined e.g. would YHMAN normally load share/balance traffic or only use the 2nd link for resilience?

**IPv6:** The universities of Leeds and York have been trialling IPv6 internally. Both sites are now ready to consider going native with it. Other universities indicated that they are approaching this point also.

**Multi-Cast:** Several universities have already got Multicast in place on their networks, most of these are using the UKERNA recommended set up and no one at this point is using the YHMAN rendezvous point for PIM [1] as the main one for their network. YHMAN strongly recommends to its clients that a device on the client's intranet becomes a rendezvous point (RP) for PIM and an MSDP peer with the RP on the YHMAN.

### ***NWMAN: David Stedham***

We are in the middle of tendering for necessary circuits, equipment and maintenance for our migration to the Assembly Lifelong Learning Network. Tenders have been received and are being evaluated. A decision expected within the next two weeks. If all goes well, migration will be complete by December.

### ***SWERN: Kit Powell & Andy Mason***

We are encountering serial problems with Verizon's work at our RNEPs, including appointments missed. (This is not to mention evidence of Verizon's internal logistical disorganization.) However, we are not due to connect to SJ5 until October, so this is more of an irritation than a concern.

Our rebuild of the regional backbone is proceeding to plan.

We are looking at Crannog's network management suite to improve our staff's operational, diagnostic, and planning activities, and upgrading the remote management equipment at PoPs.

Issues of fibre pinch points continue to cause concern, with SJ5 and RN fibres in the same bundle, and diverse routes converging into a common duct once off site.

### ***ClydeNET: Linda McCormick***

POS interfaces and core routers delivered, configured & tested. We have installed and commissioned the core routers at RNEP1 and at Strathclyde (a major PoP site) and are operating our backbone at 10G.

Our router for RNEP2 awaits handover of room from our Estates people who are undertaking significant refurbishment in the building and have found

asbestos.... We have a contingency plan but with the slippage in SJ5 it looks as if we won't need to invoke it (fingers crossed).

Verizon have installed, terminated and tested the fibre at both our RNEPs. We believe that we will not have the duct sharing of the RNEP links that was concerning us earlier but we are still awaiting the documentation from Verizon to confirm this.