

UKMMG

Briefing Note on “Special Purpose Bandwidth”

What follows is my interpretation of where UKERNA and the community are in providing “Special Purpose Bandwidth” services. It has not been seen by UKERNA and so they may not agree with all my comments.

JCN Papers

UKERNA have produced two papers to JCN setting out their thoughts on this topic and asking for and receiving JCN approval for their proposal.

UKMMG should formally request sight of these papers.

Nomenclature

There is some confusion around the name of the service that is being proposed. What started off as *Special Purpose Bandwidth* became *JANET Managed Bandwidth* when discussed at JCN and may become a UKERNA service as *JANET Plus* or some variant thereof.

Services

There are two distinct services that may be offered to users.

Special Purpose Bandwidth / JANET Managed Bandwidth / JANET Plus

Point to point bandwidth channels at 1 Gbps or less provided over the basic JANET core.

These circuits will be free at the point of use to all JANET customers but will be time limited and subject to available budget.

A single 10 Gbps wavelength and SDH is used between UKERNA owned Ciena kit installed at one of each RNOs RNEPs.

The Ciena kit will Mux/Demux the 10 Gbps wavelength into multiple 1 Gbps or less Ethernet channels.

The RNO is responsible for delivering these channels over its own infrastructure to the end institution.

The end institution is responsible for delivering the channel over its campus network to the end user. As part of the application process the end institutions will have to commit to providing this transit.

RNOs should have put in place equipment capable of transmitting these channels to their end institutions using part of the SJ5 Exploitation funding.

RNOs were not expected to provide this capacity to all institutions but to make an educated guess as to which institutions were likely to require these channels. In the event that UKERNA approve a channel to an institution that the RNO cannot easily reach then additional funding will be provided by UKERNA to upgrade the RNO infrastructure or provide a dedicated circuit.

Where several channels are likely to be required in the same part of a region the most cost effective way of providing these is likely to be using xWDM over dark fibre.

UKLight

What started as a development project rapidly became a service that several organisations relied on for their e-science production work.

E.g. Jodrell Bank used UKLight to transfer data to the Netherlands at a true 1 Gbps as part of their e-VLBI work.

The 1 Gbps channels discussed above are the next stage of this original UKLight project.

The JANET Plus service as described is for up to 1 Gbps channels. There is a scientific requirement for channels at > 1Gbps. E.g. the e-DEISA project aims to connect all the national supercomputers across Europe to a single switch in Germany at 10 Gbps. This requires RNOs and NRENs to provide dedicated 10 Gbps channels. In the case of e-DEISA NNW will provide a 10 Gbps channel from Daresbury to Manchester, UKERNA will provide a 10 Gbps channel from Manchester to London and GEANT will complete the link across Europe.

The use of these channels will be a chargeable item as there are real additional costs to UKERNA, GEANT and in most cases the RNO.

RNOs were not expected to provide this 10 Gbps capability without additional funding. If the funding provided under the SJ5 Exploitation Funds is sufficient to put 10 Gbps capability in place then this is a legitimate use of the funds. E.g. in the case of NNW, with several major e-science projects in the region, the provision of a 10 Gbps dark fibre network at the core of the region was approved.

JANET Optical Development Programme

UKERNA are actively considering the next phase of the exploitation of optical networking. A JANET Optical Development Programme is being put in place. As well as UKERNA staff academic and network staff with an interest in this area are involved. There is a workshop on 16-Jan-2007 at UKERNA to discuss the programme to which Robin Tasker (Daresbury), Peter Clarke (Edinburgh), Dimitra Simeonidou (Essex) and I have been invited. I will report back to UKMMG on the implications for the RNOs.

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