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Abstract: The Deliverable should have described the work in the last year on the advantages of caching. For reasons given in the report, it was impossible to use the caches, and no activity is reported.

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1 PROGRESS

The preliminary report on caching, D8, was delivered in April 2004. It stated that we were using an old release of the caching code, and it was necessary to upgrade the software of the Content Engines (CE) at the NREN sites to the latest version to progress the work. This later version allowed much more control of how caching was done – including pre-fetch. Considerable time was spent during the following few months first obtaining permission from Cisco for, and then trying to install, that version. It was assumed that our difficulties in so doing on the Georgia CE was due to hardware faults. We were unable to mirror the problem in DESY, because its CE had been delivered without discs (it was only a spare). We then encountered problems in isolating whether it really was a hardware problem; this was partly because we did not dare return the equipment to DESY because of potential duty to pay, and partly because our maintenance agreement was still being agreed, so that assistance from Cisco staff was difficult to enlist. Eventually, in late 2004, all maintenance agreements questions were resolved. Cisco staff helped us to identify that hardware faults were not the problem; it was that the updates were being prevented from being installed by their internal checks!

The reason that the internal checks were preventing the installation, was that the later version included encryption software; this was not authorised for export to some of the Silk countries without special authorisation from the US Department of Commerce (DoC). These rules applied because the CEs were located in the Silk countries, even though only the DESY staff were able to access the code on the the CEs. There was a further delay, while the Cisco staff endeavoured to find versions of the new release without the encryption software; they were unable to do so.

Next, with the help of Cisco, we applied for export permission of the software; by the time of writing this report, that permission had not been granted. We have delayed this Deliverable as much as possible in the hope that we would be able to do the upgrade, and have something to report.

During most of this period, the CEs were turned off. There were increasing problems in running it with the evolving operating system software, and the whole system had become unmaintainable. That remains the situation until the export permission is granted.

This sorry tale is not due to any single reason. It should have been possible to isolate the problem faster – but no DESY staff were properly dedicated to this. It should have been possible to call in Cisco staff earlier – but this coincided with the equipment transitioning from being maintained by Cisco free under their donation, and being under contract. It should have been possible to have upgrades without encryption code – but clearly this need had not been foreseen by Cisco. It should have been possible to get export permission faster in these circumstances – but who knows how to argue with the US government!

In these circumstances, we have no choice but to admit complete defeat in our attempt to provide a useful Deliverable. This is the first time this has happened in all my dealings with the IST programme. We have learnt lessons from the incident, however; we have made sure that there is DESY staff under OCCASION control, so that at least future software problems will be diagnosed faster.