

Fujitsu Services

COMPANY IN-CONFIDENCE

Ref: PA/TEM/004
Version: 13.0
Date: 03-Apr-2002

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| CHANGE PROPOSAL | | CP NO: 3240 |
| CP TITLE: Replace the proposed tape silo with EMC Centera cubes | | DATE RAISED: 10 th May 2002 |
| DATE BY WHICH CP TO BE IMPACTED: 15 th May 2002 | | ORIGINATOR: Simon Fawkes |
| TARGET RELEASE FOR CP TO BE IMPLEMENTED: B13 | | SPONSOR: Jan Holmes Graham Hooper |
| | | TECHNICAL SPONSOR: Simon Fawkes (RECEIVED) |
| CP CLASSIFICATION: FAST TRACK/URGENT/ROUTINE | | Line Manager Approval Gill Jackson (RECEIVED) |
| CP CATEGORY: ARCHITECTURE | | |
| RELATED PinICLs: None | | |
| RELATED CPs: None | | |
| MAESTRO SCHEDULE CHANGE REQ'D: YES | | |
| <p>1. Description of Change Proposed:</p> <p>EMC have recently announced a new product, Centera, that uses massive disc arrays, known as Cubes, to provide a secure, mirrored, self-maintaining and self-repairing storage capability at a Mb cost equivalent with tape.</p> <p>It is proposed that this technology is incorporated into the audit solution instead of the proposed tape silo. Work on the tape silo introduction it is at a very early stage; no effort will be wasted by making this change. The tape silo is included in the overall Network Banking solution to support the increase in audit retrieval requests brought about by the introduction of the Network Banking Service. The following changes are required to achieve this proposal:</p> <ul style="list-style-type: none"> ▪ Installation of the Centera API and management software on the audit server. ▪ Enhancement of the audit application: Centera store, retrieve and purge functions will need to be added to appropriate points within the audit application. ▪ The Fujitsu Services Core Services group in Manchester, under the direction of the IPDU system test group, will carry out the system test implementation. The Core Services – Enterprise Infrastructure Solutions group in Manchester offer integration and test services supporting EMC in the introduction of the Centera technology. The cost of this activity will be covered by the tape silo introduction consultancy budget. The current plan anticipates the Core Services consultancy budget would be consumed in May, this will be moved to a July / August timeframe; the activity is referred to as ‘HPS services support’ within the current plan. ▪ The purchase of a number of Centera cubes for both the live system and test rigs. To meet the full audit requirement to keep 7 years of audit data 2 cubes will be required at each data centre. Up front costs can be saved by not purchasing the second cube until it is required; it is estimated this will not be required until after contract renewal in March 2005. One cube will be purchased to support the development and test activities. The purchase of the tape silo will be cancelled. ▪ It may be necessary to purchase two small tape libraries, one per data centre audit server, replacing the current 3 Compaq tape libraries (the tape silo would have replaced these in the current plan). Whether to purchase the additional libraries depends upon whether the introduction of service pack 6a improved the reliability of the current tape libraries. The current tape libraries have proved unreliable, causing greater than expected operational | | |

support call outs. Core Services are asked to comment on the need for the tape library replacement. The new tape library will support the Audit server backup activities. The total cost of two tape libraries will be ~ £30,000.

- It is expected minor changes will be required to the Audit Maestro schedule in support of:
 - Changes made as a result of this CP to the audit application;
 - Gathering performance data from the Centera cube forwarding to the Short Term PDB.
- The Centera cube will be connected to a private campus network, access to which will be restricted to just the audit servers.

This CP has been approved for raising by the 12:05 club.

2. Reason for Change:

The audit solution has suffered from a number of tape corruption problems, one incident resulted in a break in the audit trail which put Fujitsu Services (Pathway) in breach of contract, and required a rectification plan to be put in place:

- Keeping 4 copies of the audit trail. This entails creating cloned copies of the tapes once produced by the normal process.
- Manual procedures to replace corrupted tapes once they are detected.

The Fujitsu Service Core Services Enterprise Infrastructure Solutions group have advised that in addition to the current rectification plan it will be necessary to refresh our audit tapes 3 times during a 7 year period. The refresh activity requires all audit data is read and written to new tapes. This activity has not been designed or planned and will require supporting development within the audit application, as well as being a manually intensive activity.

The replacement of the tape silos by Centera cubes totally mitigates the risks associated with relying on tape media to hold the Horizon audit data, and allows the project to make savings in terms of effort to implement both the current rectification plan and avoid the cost of developing and implementing the tape refresh program. Technology employed within the Centera product minimises the risk of data loss by continuously monitoring internal components, effecting automatic recovery on fault detection. This process includes a data integrity check that will detect and repair corrupt audit data files.

A secondary but nonetheless important benefit to accrue will be improved audit retrieval time – no tape load and seek times with Centera.

Current indicative costs from EMC show the Centera product to be cheaper than the tape silo. The budget for the tape silo is £700,000. The indicative price provided by EMC is £70,000 per 5 TB cube. Live hardware cost estimate is £280,000 and test will be £70,000. Up front costs will only be £140,000 as the second cube at each data centre is not required until after contract renewal in 2005.

The budget for this CP is containable within the current tape silo budget and frees up some budget for a proposed further improvement, which will be the subject of a separate and secondary change proposal.

3. Consequences if Not Approved:

The current solution does not fully mitigate the continuing risk of audit data loss as a consequence of tape failure.

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| <p>Fujitsu Services will be unable to realise the cost savings associated with the change in technology.</p> <p>Additional costs will need to be spent in implementing a tape refresh strategy.</p> |
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| 4. Internal Impact Assessment Distribution: Business Development, APDU, IPDU, ASD, PTU, Q & A, Customer Service, Commercial & Finance, Software Configuration Management. | | | | |
| 5. External Impact Assessment Distribution: | | | | |
| Name: | Organisation: | Contact No: | | |
| Janet Reynolds | ISD (CS) | | | |
| 6. Impact On Pathway | | | | |
| Man-days (CP Analysis) | Man-days (CP Implementation) | Non Labour Cost | Schedule | |
| N/A | TBA | TBA | TBA | |
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| TOTAL | | | | |
| 7. Impact On Documents | | | | |
| Document Reference | Title | Version to be Changed | Version to be Delivered | Schedule |
| | To be advised by Impactors | | | |
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| Change Administration Use Only | | | | |
| SCP No: TBA | CR No: N/A | | CCN No: N/A | |