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| Fujitsu Services | Transaction Benchmark Service: Service Description | Ref: | CS/SER/010 |
| | | Version: | 2.0 |
| | Commercial in Confidence | Date: | 2nd July 2004 |

Document Title: Transaction Benchmark Service: Service Description

Document Type: Service Description

Release: BI3 onwards

Abstract: In compliance with Schedule 19, this document describes the Transaction Benchmark Service in terms of the type and level of service provision, the method of delivery and the targets against which the Horizon counter system is measured.

Document Status: Approved

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0.0 Document Control

0.1 Document History

| Version No. | Date | Reason for Issue | Associated CP/PinICL |
|-------------|----------|---|----------------------|
| 0.1 | 26/11/02 | Initial Draft | |
| 0.1a | 29/11/02 | Re-draft following informal discussion with Post Office | |
| 0.2 | 18/12/02 | Changes made following agreement with Post Office | |
| 0.3 | 20/12/02 | Fujitsu Services amendments | |
| 1.0 | 20/12/02 | Agreed version of 0.3 by Post Office with no changes | |
| 1.1 | 26/03/04 | Addition of two sections covering a description of method of service delivery and the counter system performance targets. | |

0.2 Review Details

| | |
|----------------------|--------------------------|
| Review Comments by : | 12 th July 04 |
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0.3 Associated Documents

| Reference | Ver. | Date | Title | Source |
|-----------|------|------|-------|--------|
|-----------|------|------|-------|--------|

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| | | | | |
|------------|-----|----------|---|------|
| BP/CON/319 | 1.0 | 31/12/02 | Schedule 19: Operational Services | PVCS |
| CS/PER/046 | 3.0 | 03/12/03 | Counter Transaction Performance - Measurement and Results | PVCS |
| CS/TSC/003 | 1.0 | 06/01/03 | Benchmarking Scripts | PVCS |
| BP/SPE/035 | 1.0 | 23/12/02 | NBS definition | PVCS |
| CS/PRP/001 | 3.0 | 30/10/02 | Counter Transaction Performance Measurement and Benchmarking. <i>(NB: To be withdrawn upon approval of this document)</i> | PVCS |
| VI/STR/064 | 1.0 | 15/08/03 | Testing Approach for the Horizon System | PVCS |

Unless a specific version is referred to above, reference should be made to the current approved versions of the documents.

0.4 Abbreviations/Definitions

| Abbreviation | Definition |
|----------------|---|
| Agreement | The Agreement between Post Office Ltd and Fujitsu Services Ltd, dated 28 th July 1999 as amended, in particular by CCN1100. |
| APS | Automated Payments Service |
| CCD | Contract Controlled Document |
| EPOSS | Electronic Point of Sale Service |
| Major Release | A release of software (as defined in Schedule 1 of the agreement) that the Service Management Forum decides is likely, upon its implementation, to have an effect on the system component times. If the Service Management Forum cannot agree whether a release is a Major Release, the matter will be escalated as a dispute in accordance with Annex 2 to Schedule 4 of the Agreement, commencing with the "Negotiators Review". |
| NBS | Network Banking Service |
| OBCS | Order Book Control Service |
| Target Time(s) | Contracted counter system component time(s) for the Horizon applications EPOSS, OBCS and APS, or contracted counter system component times at the aggregate level for the nominated NBS transaction types. |

0.5 Changes in this Version

| Version | Changes |
|---------|---|
| 2.0 | Detail added regarding method of service delivery (allowing withdrawal of CS/PRP/001 on approval of this document) and regarding the counter system Target Times. |

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0.6 Changes Expected

| Changes |
|--|
| Document to be updated as and when system-based performance measurement tools are made available and there use agreed by Post Office Ltd., or as and when system components are discontinued or introduced as agreed between Fujitsu Services and Post Office Ltd. |

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1.0 Service Provision

1.1 Summary

1.1.1 General

- 1.1.1.1 The Transaction Benchmark Service provides a measure of Horizon system performance for an agreed set of transactions (Section 2.0).
- 1.1.1.2 Measurement (or benchmark evaluation) is limited to the system components of the nominated transactions, no account being taken of any manual or human/computer interface components.
- 1.1.1.3 The service is provided for every Major Release.

1.2 Service Principles

1.2.1 General

- 1.2.1.1 Benchmark evaluation shall be carried out in accordance with the method described in Section 2.0.
- 1.2.1.2 Benchmark evaluations shall be auditable at all stages of the process. Documents to be retained include:
 - The video recordings of the benchmark test transactions
 - A spreadsheet comprising the processed benchmark results, the data captured from the video recordings and the intermediate processing, including any revision made thereto following review by Post Office Ltd.
 - The test scriptsSuch documents shall be retained for a period of seven years.
- 1.2.1.3 Benchmark evaluations shall be supported by this document and the performance statement arising out of each evaluation, CS/PER/046, "COUNTER TRANSACTION PERFORMANCE - MEASUREMENT AND RESULTS".
- 1.2.1.4 The contracted Target Times against which the benchmark evaluation shall be measured are stated in Section 3.0.
- 1.2.1.5 CS/PER/046, "Counter Transaction Performance - Measurement and Results", shall be up-issued following every benchmark evaluation and shall include:

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- Amendment(s) to the Target Time(s) arising out of agreed system changes resulting from the implementation of a Change Request or Customer Work Package including reasons for any such adjustment
- The new benchmark system component and aggregate times relating to the release under examination
- The variance between the new benchmark times and the Target Times
- The variance between the new benchmark times and the previous benchmark times

1.3 Service Definition

1.3.1 The data recording part of the benchmark evaluation is carried out prior to the implementation of a Major Release. This is not to say that the software implementation is dependant in any way upon the benchmarking exercise or the results arising therefrom. It is the successful completion of end-to-end testing, which is conducted under the control and management of Post Office Ltd, that leads to the implementation of the software into the live environment (Ref. VI/STR/064 "Testing Approach for the Horizon System" para. 4.4.3.6).

1.3.2 The service comprises:

- Benchmark evaluation of individual system component times within:
 - Electronic Point of Sale Service (EPOSS)
 - Automated Payments Service (APS)
 - Order Book Control Service (OBCS)
- Benchmark evaluation of the transaction level aggregate of the counter system component times for the Network Banking Service (NBS) transaction types.

1.3.3 The system component times are generated from the execution of a representative set of transactions (Section 2.0 Table 1) on a test rig representing a real Post Office branch. Normal counter operation is assumed.

1.3.4 The outcomes of the benchmark evaluation are compared against the counter system component contractual times (Section 3.0) and the results of the previous benchmark evaluation. Any adverse variances are analysed and explained as far as is practicable.

1.3.5 The initial benchmark evaluation results shall be presented to Post Office Ltd for review within six weeks of the commencement of the implementation of the release in question.

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1.3.6 The final results are formally presented to Post Office Ltd. via CS/PER/046, "Counter Transaction Performance – Measurement and Results".

1.3.7 Regardless of whether the results of the benchmarking exercise have been delivered, in the event that a Major Release is implemented and there is an obvious degradation in performance in terms of transaction times and such degradation is visible to the branch and reported to the Horizon System Helpdesk, the incident identified by Fujitsu Services as causing the degradation will be resolved via the established incident and problem management process. To the extent that any such incident is caused directly by Fujitsu Services' actions, the resolution of that incident will be at Fujitsu Services' cost.

1.4 Service Availability

1.4.1 The Transaction Benchmark Service shall be provided for every agreed Major Release.

1.4.2 The rig exercise shall be scheduled in the release plan so that the data recording part of the exercise is completed before implementation of the software release.

1.4.3 The Transaction Benchmark Service shall be provided upon request by Post Office Ltd, (in a timescale to be agreed with Fujitsu Services) following the implementation of an agreed change resulting from a Change Request or Customer Work Package. Under such circumstances, the Transaction Benchmark Service shall be chargeable.

1.5 Service Targets & Limits

1.5.1 There are no Service Level Targets or limits relating to the Transaction Benchmark Service. For the avoidance of doubt, there are no Service Level Targets associated with counter system component times.

1.5.2 There are system performance targets (Target Times) and these are stated in Section 3.0.

1.5.3 The Target Times are subject to a 5% uplift with each Major Release to accommodate the likely increase in system contention arising from increased functionality and complexity inherent in the release.

1.5.4 The Target Times shall be changed whenever an agreed system change affects one or more of the measured system components.

1.5.5 The Target Times may also be changed as the result of an agreement to change the benchmarking method. Under such circumstances, credits gained under the previous benchmarking method shall be carried forward in an equitable manner.

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1.5.6 When, on completion of a benchmark evaluation, the counter system component timings prove to be greater than the Target Times, this shall be deemed a “Benchmark Time Discrepancy”.

1.5.7 In the event of Benchmark Time Discrepancy the following provisions shall apply:

1.5.7.1 The Post Office and Fujitsu Services shall agree (such agreement not to be unreasonably withheld) a method of rectification, including a timetable, (a “Rectification Plan”) for each Benchmark Time Discrepancy (which plan may involve the agreement of an adjustment to the Target Times). If the Rectification Plan requires changes to be made to the provisions of the Agreement (including any CCD), such changes shall be made pursuant to the Hard Change Control Procedure. Any changes to the Horizon Service Infrastructure required to rectify a Benchmark Time Discrepancy shall be made at no charge to the Post Office.

1.5.7.2 Each Benchmark Time Discrepancy shall not be a Default unless within 90 days after the identification of that Benchmark Time Discrepancy the Parties have failed to reach agreement upon a Rectification Plan and the Benchmark Time Discrepancy has not been rectified by Fujitsu Services. In such a circumstance that Benchmark Time Discrepancy shall become a Default upon expiry of that 90-day period.

1.5.7.3 A failure by Fujitsu Services to comply with a Rectification Plan shall be a Default.

1.5.7.4 This paragraph 1.5.7 shall be without prejudice to Post Office’s rights with respect to release authorisation.

1.6 Service Dependencies & Post Office Ltd. Responsibilities

1.6.1 Fujitsu Service responsibilities

1.6.1.1 Fujitsu Services Customer Service shall ensure that the benchmarking rig activity is inserted in the software release plan.

1.6.1.2 Fujitsu Services shall provide a test-rig configuration that will meet the scope of the benchmark activities any Rectification Plan.

1.6.2 Post Office Ltd. responsibilities

1.6.2.1 Post Office Ltd. shall review and approve the Transaction Benchmark Service results (reported in CS/PER/046, “Counter Transaction Performance - Measurement and Results”), such approval not being unreasonably withheld.

1.6.2.2 Post Office Ltd. shall review and approve any revision to the contracted targets or the latest benchmark, such approval not being unreasonably withheld.

2.0 Benchmarking Method

2.1 Introduction

This section describes the method by which Fujitsu Services undertake benchmark evaluation.

The Agreement, (ref. BP/CON/319, “Schedule 19: Operational Services”, effective as of 1st January 2003) introduces a new benchmarking philosophy whereby Fujitsu Services are no longer responsible for measuring and reporting performance in terms of end-to-end transactions.

Instead, performance is measured in terms of the system components only.

Then, for EPOSS, OBCS and APS, results are reported at individual system component level and, for NBS, the system component times are aggregated and reported by transaction type.

To reiterate, there is now no measurement or estimate made by Fujitsu Services of any manual activity present within any of the transactions under scrutiny.

2.2 Scope

Counter performance is measured across the four counter services:

- APS
- OBCS
- EPOSS
- NBS

using a representative set of transaction types (see Table 1), executed on a representative test rig.

Normal counter operation using best practice is assumed. In particular, fallback scenarios are not considered.

With reference to Table 1, Post Office Ltd has accepted that the (system parts of the) EPOSS process for selling a 2nd class stamp is the same as that for selling a 1st class so only one of the transaction types is scripted and executed during the benchmarking data recording.

The same applies to: -

- EPOSS: Girobank Business Deposit - less than and more than £60
- EPOSS: National Savings - Deposit and Withdrawal
- APS: Magnetic Card Payments - with and without token

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| SERVICE | TRANSACTION TYPE |
|---------------|--|
| EPOSS: | 1 st Class Stamp |
| | 2 nd Class Stamp |
| | Postage Stamps (non-book) |
| | Stamp Book |
| | Girobank Business Deposit (less than £60) |
| | Girobank Business Deposit (more than £60) |
| | Transcash Payment |
| | Personal Giro Withdrawal |
| | DSS Green Giro |
| | Postal Order |
| | Colour TV Licence |
| | Motor Vehicle Licence (MVL) |
| | National Savings Deposit (Ordinary account) |
| | National Savings Withdrawal (Ordinary account) |
| OBCS: | Book Issue (Local) |
| | Book Issue (Foreign) |
| | Encashment (Local) |
| | Encashment (Foreign) |
| APS: | Magnetic Card (Cash, No Token) |
| | Magnetic Card (Cash, Token) |
| | SMART Card (Cash) |
| NBS: | Cash Deposit |
| | Cash Withdrawal (signature verification) |
| | Cash Withdrawal (PIN verification) |
| | Cash Withdrawal + Balance (signature verification) |
| | Cash Withdrawal + Balance (PIN verification) |
| | Cash Withdrawal to Limit (PIN verification) |
| | Balance Enquiry (signature verification) |
| | Balance Enquiry (PIN verification) |
| | Change PIN |

Table 1: Representative Transaction Types for Benchmarking Purposes

2.3 Requirement

Any transaction can be considered as comprising:

- manual components e.g. checking document validity, cash handling
- system components e.g. collection of data from input peripherals (keyboard, scanner, PIN pad, magnetic card reader, SMART card reader, touch screen), data processing, data communication, output of information via screen and/or printer.

The system components that feature and are reported against in the representative transaction types for EPOSS, OBCS and APS are summarised in Table 2, Table 3 and Table 4.

| Transaction Type | System Component | | | | | | |
|-------------------------------|---|---------------------------------------|----------------------------------|---|------------------------------------|---|-------------------------------------|
| | Prod ucts Displ ay- Othe r | Prod ucts Displ ay - Item | Fee Scre en Displ ay | Amo unt Scre en Displ ay | Prod uct Sale Displ ay | Settle ment Men u Displ ay | Mai n Men u Displ ay |
| 1 st Class Stamp | | | | | Yes | | Yes |
| Postage Stamps (Non-Books) | | | | Yes | Yes | | Yes |
| Stamp Books (Non-Vended) | | Yes | | | Yes | Yes | Yes |
| Girobank Business Deposit | Yes | Yes | | Yes | Yes | Yes | Yes |
| Transcash Payment | | | Yes | Yes | Yes | | Yes |
| Giro Withdrawal/Outpayment | Yes | Yes | | Yes | Yes | Yes | Yes |
| BT Bill Payment | | | | Yes | Yes | | Yes |
| DSS Green Giro | | | | Yes | Yes | | Yes |
| Postal Orders (All Fee Bands) | | Yes | | | Yes | Yes | Yes |
| Colour TV Licence | | | | | Yes | | Yes |
| MVL | | Yes | | Yes | Yes | Yes | Yes |
| NS Deposit (Ordinary Account) | Yes | Yes | | Yes | Yes | Yes | Yes |

Table 2: System Components arising from EPOSS transaction types

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| Transaction Type | System Component | | | | | | | | | |
|----------------------------|---|--|--|---|---|--|--|---|---|---|
| | O B C S S c a n B a r C o d e | M i l k T o k e n s - 1 | Q u e r y S t o p s | S c a n F o i l s | P r o d u c t s D i s p l a y - O t h e r | P r o d u c t s D i s p l a y - I t e m | I s s u e s I n s t r u c t | M o n e t a r y / F 1 | C u s t o m e r S e r v e r S c r e e n R e f r e s h | M a i n M e n u D i s p l a y |
| OBCS Book Issues (Local) | Yes | | | | Yes | Yes | Yes | | | Yes |
| OBCS Book Issues (Foreign) | Yes | | | | Yes | Yes | Yes | | | Yes |
| OBCS Encashment (Local) | Yes | Yes | | Yes | | | | Yes | Yes | |
| OBCS Encashment (Foreign) | Yes | Yes | Yes | Yes | | | | Yes | Yes | |

Table 3: System Components arising from OBCS transaction types

| Transaction Type | System Component | | | | | | | | |
|--------------------------------|---|---|---|---|--|---|--|---|---|
| | S w i p e M a g n e t i c C a r d | I n s e r t S M A R T C a r d | I n p u t M o n e t a r y A m o u n t | S e l e c t C a s h P a y m e n t | P r i n t O f f i c e R e c e i p t - 1 | T e a r O f P r i n t R e p o r t - 1 | P r i n t C u s t o m e r R e c e i p t - 2 | T e a r O f P r i n t R e p o r t - 2 | C u s t o m e r S e r v e r S c r e e n R e f r e s h |
| Cash, No Tokens, Magnetic Card | Yes | | Yes | | Yes | Yes | Yes | Yes | Yes |
| Cash, SMART Cards | | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

Table 4: System Components arising from APS transaction types

For EPOSS, OBCS and APS, Fujitsu Services are required to measure the time taken by the system components and report performance achieved for the system components averaged across all transaction types that use that system component.

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For NBS, only the aggregate of the system components for each transaction type is reported.

The results are then compared against:

- the Target Time
- the results achieved in the previous benchmarking exercise.

2.4 Measurement Method

2.4.1 Data Capture

Each transaction type is decomposed into a series of clearly identifiable system events, generally defining the start and end points of the system components of the transaction. These events could be, for example, the receipt of data from a peripheral, a screen change or output to the printer.

The sample transaction types for each service are executed on a test rig configured to represent three types of counter; a single counter branch, the slave of a two-counter branch and the gateway of a two-counter branch¹. Each transaction is executed four times on each counter configuration.

The process is recorded on videotape. The videotapes are then processed to expand the time frame by 25, so that each frame lasting 0.04 seconds in real time lasts 1 second when replayed, and the time and frame count superimposed.

The event-to-event times are then read from the expanded video. The maximum precision to which the event times can be read is 0.04 seconds.

NBS transactions are slightly different in that the authorisation part of the transaction, though technically a system component, is outside of Fujitsu Service's control, hence responsibility. Further there is no visible evidence of exactly when the start and end events (the Request and the Authorisation) occur. Instead the duration of this component (the [R]-to-[A] time) is recorded as a system message that can be downloaded after the data recording is completed.

2.4.2 Data Processing

The data recording exercise provides twelve values per system component per transaction type. To reduce the risk of skewing the results, the best and worst values for each system component are disregarded leaving ten values.

2.4.2.1 EPOSS, OBCS and APS

For EPOSS, OBCS and APS transaction types, the total sample size for each system component is given by:

$$10 \times N_{TT}$$

where N_{TT} is the number of Transaction Types using that system component.

¹ CS/TSC/003, "Benchmarking Scripts", specifies the steps to be followed for each transaction and states the system events that form the start and end of each system component.

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The system component benchmark time is then calculated as the average of all those samples. Appendix A: illustrates this point using a sample of data from the CSR+ results for OBCS.

2.4.1.2 NBS

For the NBS transaction types, the benchmark time is calculated as the sum of averaged system components comprising each transaction type.

3.0 System Performance Targets

The change from transaction level reporting to system component level reporting necessitated the generation of a new set of contractual targets.

For EPOSS, OBCS and APS services, the targets were calculated by extracting the system component elements of the transaction target times used when benchmarking CSR+ (amended, where necessary, to reflect product changes implemented since CSR+).

For NBS, being a new type of service, completely new targets were generated using data from a variety of sources. NBS targets were originally stated (as “initial” targets) in BP/SPE/035, “NBS Definition”, and later ratified (as contractual targets) in CS/PER/044, “NBS Benchmark Counter Transaction Times for Release BI3”.

All the targets are restated here for completeness.

3.1 EPOSS, OBCS and APS Targets

The calculation of the new, system component, Target Times comprised three stages:

- Carrying forward of any credit/debit achieved at CSR+ (at transaction type level)
- Addition of the credit/debit to the individual system component measurements (within each transaction type) and averaging of the results at the system component level within each product.
- Addition of a 5% uplift, to allow for increased system contention arising from the increased functionality and complexity of the next software release².

3.1.1 Carrying Forward Credit

In order to generate the new Target Times at System Component level, it was necessary to carry forward any accumulated credits and debits gained under the previous contract. This was achieved by dividing the credit/debit for the transaction equitably among the system components according to how much the particular system component contributed to the transaction time, relative to the other contributing system components i.e.

| | | |
|-----|-------|--|
| Let | C_T | = Amount of credit gained at transaction level |
|-----|-------|--|

² This is in accordance with a principle established in calculating target times for network banking performance

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| Let | B_C | = System component benchmark |
| Let | B_A | = Aggregate of system component times for the transaction in question |
| Then | T_C | = Target time at system component level |
| | | = $B_C + (B_C/B_A) * C_T$ |

3.1.2 Averaging

The calculation in section 3.1.1 was carried out for each of the system component measurements selected under section 2.3. The results for each system component were then averaged across all contributing transaction types.

3.1.3 Target Uplift

The results produced under section 3.1.2 were then uplifted by 5% to provide the new system component level Target Times.

3.1.4 Target and Benchmark Values

The resulting contractual targets and the corresponding CSR+ benchmark are stated in Table 5, Table 6 and Table 7. All times are quoted in seconds.

| SYSTEM COMPONENT ELEMENTS | Target Time | CSR+ Benchmark |
|--------------------------------|-------------|----------------|
| Product Menu Display - Other | 0.45 | 0.26 |
| Product Menu Display - Item | 0.46 | 0.20 |
| Fee Screen Display - Item | 0.92 | 0.33 |
| Amount Screen Display - Item | 0.54 | 0.19 |
| Product Sale Display - Item | 0.85 | 0.26 |
| Settlement Menu Display - Item | 0.42 | 0.20 |
| Main Menu Display | 1.04 | 0.37 |

Table 5: EPOSS Target Times and CSR+ Benchmark

| SYSTEM COMPONENT ELEMENTS | Target Time | CSR+ Benchmark |
|------------------------------|-------------|----------------|
| Scan Bar Code | 5.36 | 2.47 |
| Milk Tokens | 0.75 | 0.53 |
| Query Stops | 3.77 | 3.30 |
| Scan Foils | N/A | N/A |
| Product Menu Display - Other | 0.62 | 0.21 |

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| Product Menu Display - Item | 0.36 | 0.12 |
| Issues Instruct | 0.28 | 0.09 |
| Monetary / F1 | 0.24 | 0.17 |
| Customer Serve Screen Refresh | 0.66 | 0.48 |
| Main Menu Display | 0.86 | 0.29 |

Table 6: OBCS Target Times and CSR+ Benchmark

| SYSTEM COMPONENT ELEMENTS | Target Time | CSR+ Benchmark |
|--------------------------------------|--------------------|-----------------------|
| Swipe Magnetic Card | 1.25 | 1.06 |
| Insert SMART Card | 5.22 | 4.95 |
| Input Monetary Amount | 0.13 | 0.12 |
| Cash Payment Select | 4.44 | 4.21 |
| Print Office Receipt -1 | 5.18 | 4.59 |
| Tear Off Print Report - 1 | 5.26 | 4.65 |
| Print Customer Receipt - 2 | 4.55 | 4.00 |
| Tear Off Print Report - 2 | 0.16 | 0.14 |
| Customer Serve Screen Refresh | 0.58 | 0.52 |

Table 7: APS Target Times and CSR+ Benchmark

3.2 NBS Targets

The contractual targets presented in Table 8 are reproduced from CS/PER/044. The units are seconds.

| NBS Transaction Type | Target Times |
|---|---------------------|
| Cash Deposit | 9.30 |
| Cash Withdrawal, Signature verification | 15.16 |
| Cash Withdrawal, PIN verification | 15.61 |
| Cash Withdrawal, with Balance, Signature verification | 15.77 |
| Cash Withdrawal, with Balance, PIN verification | 16.22 |
| Cash Withdrawal, with Limit, PIN verification | 15.45 |
| Balance Enquiry, Signature verification | 14.59 |
| Balance Enquiry, PIN verification | 15.17 |

| | | | |
|-------------------------|---|-----------------|---------------------------------|
| Fujitsu Services | Transaction Benchmark Service: Service Description | Ref: | CS/SER/010 |
| | | Version: | 2.0 |
| | Commercial in Confidence | Date: | 2nd July 2004 |

| | |
|---------------|-------|
| Change of PIN | 15.25 |
|---------------|-------|

Table 8: NBS Contractual Targets

Fujitsu Services

Transaction Benchmark Service: Service
Description

Ref: CS/SER/010

Version: 2.0

Commercial in Confidence

Date: 2nd July 2004

4.0 Future Developments

Fujitsu Services and Post Office Ltd. shall keep the benchmarking activity under review with a view to:

- reducing the time required for each benchmarking activity
- allowing a greater scope and/or increased focus of analysis
- reducing costs
- reducing the risk of errors occurring in the measurements
- enabling easier integration of benchmarking into the release programme
- making benchmarking business specific rather than sampled product specific
- providing simplification in both processes and application
- facilitating variable remuneration opportunities for the Post Office Ltd
- integrating benchmarking with performance and sizing process

Such review may cover, for example, an investigation into the appropriateness and usefulness of system diagnostic and other software-based testing and measurement tools.

Fujitsu Services

Document Template (TITLE)

Ref: CS/PER/046

Version: 1.0

SECURITY CLASSIFICATION

Date: 16-MAY-2003

Appendix A: Illustration of Benchmark Calculation Parameters

| Transaction Type | System Component | Single Counter - Gateway PC | | | | Two Counter - Gateway PC | | | | Two Counter - Slave PC | | | |
|-------------------------|---|-----------------------------|------|------|------|--------------------------|------|------|------|------------------------|------|------|------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Issues (Local) | Other products screen (Products Display -Other) | 0.16 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.24 | 0.20 | 0.20 | 0.24 | 0.20 | 0.24 |
| | Display P&A menu (Products Display - Item) | 0.16 | 0.16 | 0.12 | 0.20 | 0.16 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 |
| | Issues screen (Issues Instruct) | 0.12 | 0.12 | 0.08 | 0.12 | 0.12 | 0.08 | 0.08 | 0.08 | 0.12 | 0.12 | 0.08 | 0.08 |
| | Scan Bar Code (OBCS Scan Bar Code) | 3.24 | 1.28 | 0.76 | 0.56 | 1.40 | 3.60 | 0.84 | 3.72 | 2.06 | 4.28 | 0.76 | 4.16 |
| | Main Menu Display | 0.32 | 0.28 | 0.28 | 0.28 | 0.32 | 0.28 | 0.28 | 0.28 | 0.27 | 0.28 | 0.32 | 0.28 |
| Issues (Foreign) | Other products screen (Products Display -Other) | 0.20 | 0.20 | 0.20 | 0.24 | 0.20 | 0.20 | 0.24 | 0.20 | 0.20 | 0.20 | 0.24 | 0.24 |
| | Display P&A menu (Products Display - Item) | 0.12 | 0.08 | 0.08 | 0.12 | 0.12 | 0.08 | 0.12 | 0.12 | 0.08 | 0.08 | 0.08 | 0.12 |
| | Issues screen (Issues Instruct) | 1.88 | 0.08 | 0.12 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 | 0.08 |
| | Scan Bar Code (OBCS Scan Bar Code) | 1.88 | 2.60 | 3.68 | 2.80 | 5.52 | 8.08 | 5.40 | 5.52 | 5.32 | 5.32 | 4.64 | 4.48 |
| | Main Menu Display | 0.28 | 0.28 | 0.28 | 0.32 | 0.32 | 0.28 | 0.28 | 0.32 | 0.28 | 0.28 | 0.28 | 0.24 |
| Encash (Local) | Scan Bar Code (OBCS Scan Bar Code) | 5.72 | 0.72 | 1.24 | 0.88 | 5.24 | 1.48 | 8.48 | 1.04 | 1.64 | 0.88 | 0.92 | 1.48 |
| | Scan Foils | 0.24 | 0.08 | 0.08 | 0.56 | 0.12 | 0.16 | 0.12 | 0.12 | 0.24 | 0.12 | 0.16 | 0.12 |
| | 500 enter / F1 (Monetary / F1) | 0.20 | 0.20 | 0.16 | 0.16 | 0.16 | 0.20 | 0.12 | 0.16 | 0.16 | 0.16 | 0.24 | 0.16 |
| | Enter '1' milk token (Milk Tokens - 1) | 0.52 | 0.52 | 0.44 | 0.48 | 1.08 | 0.52 | 0.40 | 1.20 | 0.88 | 0.48 | 0.52 | 0.56 |
| | Customer serve screen refresh (CS Screen Refresh) | 0.64 | 0.44 | 0.32 | 0.40 | 0.44 | 0.52 | 0.44 | 0.48 | 0.56 | 0.60 | 0.32 | 0.44 |
| Encash (Foreign) | Scan Bar Code (OBCS Scan Bar Code) | 1.56 | 1.20 | 1.40 | 1.60 | 1.40 | 0.88 | 0.76 | 0.84 | 0.76 | 1.44 | 0.76 | 1.00 |
| | Query stops screen (Query Stops) | 3.20 | 0.96 | 2.48 | 4.00 | 3.08 | 3.24 | 3.36 | 5.92 | 3.48 | 3.40 | 3.40 | 3.32 |
| | Scan Foils | 0.12 | 0.16 | 0.12 | 0.16 | 0.12 | 0.16 | 0.16 | 0.16 | 0.92 | 0.12 | 0.16 | 0.12 |
| | 500 enter / F1 (Monetary / F1) | 0.20 | 0.20 | 0.12 | 0.20 | 0.16 | 0.16 | 0.16 | 0.12 | 0.16 | 0.16 | 0.20 | 0.12 |
| | Enter '1' milk token (Milk Tokens - 1) | 0.48 | 0.44 | 0.44 | 0.44 | 0.72 | 0.44 | 0.44 | 0.36 | 0.52 | 0.48 | 0.44 | 0.40 |
| | Customer serve screen refresh (CS Screen Refresh) | 0.40 | 0.64 | 0.36 | 0.44 | 0.48 | 0.52 | 0.56 | 0.44 | 0.56 | 0.64 | 0.28 | 0.48 |

In calculating the system component benchmark time, the highest and lowest values in each set of twelve (shaded) are disregarded.

Then for each system component the average is taken from the remainder. For example, for the “Milk Tokens – 1” system component, the average of the un-shaded values in the two indicated (◀) rows is calculated giving a value of 0.53 (to 2 decimal places).