SCHEDULE F, PART 2 OPERATIONAL SERVICE LEVEL

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1 INTRODUCTION

This Part of Schedule F (Part 2) details the SLR for the IDENT1 Service, except for Livescan Services which are detailed separately in Part 3 of this Schedule.

The Schedule details the following aspects of the SLR:

- Service Level Metrics and the Target Service Levels applicable from the milestones (a) TOR NAFIS and TOR SAFR:
- (b) the changes in Service Level Metrics to be incorporated at subsequent program milestones as part of the continuous improvement process;
- the planned use of shadow metrics to evolve the SLR. (c)

The framework detailing how the different Service Categories interact is detailed in. Figure 1.0-1 below.

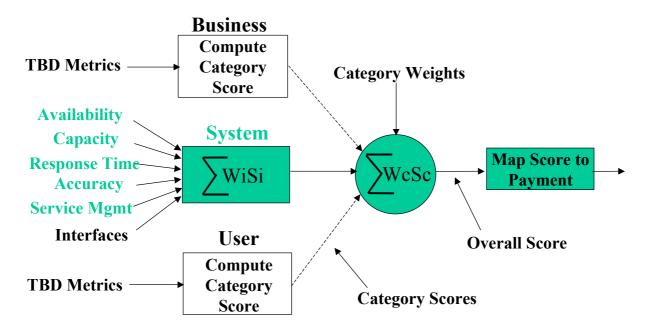


Figure 1.0-1. IDENT1 Service Level Structure

This Part of the SLR will evolve in accordance with the process and procedures documented in Part 1 of this Schedule to consist of three Service Categories that address respectively IDENT1 business values, system performance and user needs. Each Service category will contain a series of Service Criteria with respective Service Level Metrics.

Each Service Category will generate a category score based on monthly measurements of its defined Service Level Metrics. The Service Category scores are then weighted and summed to produce an Overall Score that can be used in conjunction with an agreed payment profile as detailed in Schedule E to determine the actual payment.

As Service Level Metrics within Service Categories are implemented, The Service Category weights that will affect the scoring and payment need to be negotiated and agreed with the Authority in accordance with Part 1 of this Schedule. The range of weighting for each Service Category is detailed in Figure 1.0-2 below.

Service Category	Minimum Weight	Maximum Weight
System Performance	50%	100%
Business Values	0%	50%
User Needs	0%	20%

Figure 1.0-2. Bounds for Service Category Weights

At the milestone TOR NAFIS this SLR will become effective and the SLR will be based only on the Service Category - System Performance. The Service Level Criteria implemented under this Service Category at this milestone are specifically availability, capacity/throughput, response time, service management, and search accuracy.

2 SERVICE LEVEL CRITERIA

This section defines the Service Level Criteria. The Service Level Criteria are indicative measures of the services supplied by the IDENT1 Contractor. This section defines the criteria to be measured, the formulae used to calculate the criteria, and the scores to be associated with the actual values for each service level criteria.

On a monthly basis, each IDENT1 site (i.e., Bureaux and IDENT1 Training Centres) will receive a Service Score. This Service Score will be used to assess the quality of the IDENT1 Service and computed as described in Figure 2.0-1 below and in Section 4 of this Part of this *SLR*. Figure 2.0-1 illustrates the steps that will be used to compute a score for each measure and how these scores will be used to compute the Site Service Score. Specifically, the steps are as follows:

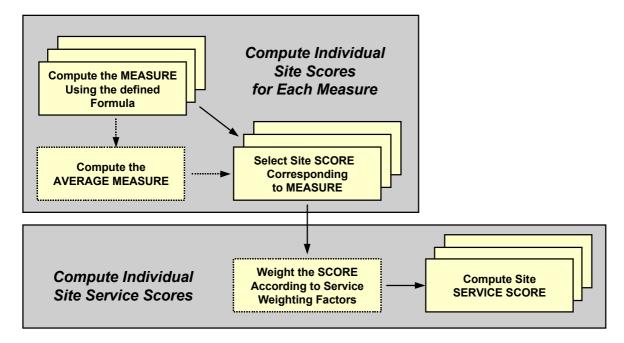


Figure 2.0-1 IDENT1 Measure Flow Diagram

Step 1 Compute individual Site SCORE for each MEASURE.

- (a) Compute each MEASURE for each Service Level Criteria using the formulae presented in Section 2.1 through 2.5 of this *SLR*.
- (b) Where appropriate, compute the AVERAGE MEASURE for that month. Note that this step does not apply to all service measures. In some instances, the MEASURE provides the singular value used to select the SCORE.
- (c) Select the SCORE that corresponds to the computed MEASURE.

Step 2 Compute individual Site SERVICE SCORE.

- (a) WEIGHT each SCORE by using the weighting factor assigned to each MEASURE. This weight is assigned as part of this *SLR*.
- (b) Compute the SERVICE SCORE by taking the summation of the product of each SCORE and its WEIGHT. This is shown in Equation 2.0-1.

Equation 2.0-1: Service Score =
$$\sum$$
 (Score × Weight)

The computation of an individual Site SCORE for each MEASURE (step 1 above) is presented in Section 2.1 through 2.5 of this *SLR*.

2.1 **Operational Availability**

2.1.1 Scope

This service level criterion defines metrics for the measurement of operational availability: availability of the IDENT1 service reflecting loss of service due to unplanned downtime. The service is defined in terms of serviceability of critical equipment.

2.1.2 Operational Availability Calculation

Operational Availability (A_o) will include the critical equipment, as defined in Section 2.1.3.1, 2.1.4.1, and 2.1.5.1. These characteristics will result in an A_o calculation for the Central Segment, Bureaux Segment and Training System(s) based upon total hours available monthly and downtime of unplanned interruptions. A_o will be calculated to two decimal places using *Equation 1*:

Equation 1:
$$A_o = \frac{\left(H_m - DT_m\right)}{H_m} \times 100$$

Where,

- (a) H_m will be defined as the total hours in a given month. This number will be determined each month as 24 hours multiplied by the number of days in the month.
- (b) DT_m will be defined as the unplanned downtime, i.e., the total number of hours in a given month that critical equipment is not available.

The IDENT1 Service will be available 24 hours per day, every day of the year. The exceptions to this will be

- (a) Planned system interruptions of up to 4 hours in any one day, to take place contiguously between the hours of 22:00 and 06:00. These planned interruptions may affect only a part of the service and will be planned at least four (4) weeks ahead of the scheduled time of the disruption with prior agreement between Authority, the relevant Bureaux and Contractor, or as agreed between the parties. The interruptions are described in terms of which of the described services will be impaired and to what degree.
- (b) Planned local outages of no more than 2 hours per day on any one workstation or local server to enable the switch to new versions of software to be achieved in an orderly fashion. These short outages will take place between the hours of 22:00 and 06:00 unless other arrangements are made between the Bureaux and the Contractor. The Contractor will notify the users at least two (2) weeks before these types of outages occur, or as agreed between the Contractor and the Site Point of Contact.

- (c) Emergency outages at any time of the day, by mutual agreement with the Contractor and the Authority or Site Point of Contact, to solve severe operational problems. Examples of such emergency outages may include, but may not be limited to: fire in the facilities, unexpected power outage within the central computer facility, or severe system malfunction that could jeopardise the National collections.
- (d) Other exceptions as defined in Part 1 of this *SLR*.

In the event that an emergency operational need arises before or during an interruption, the interruption may be postponed or service restored by the Contractor as soon as practical so as to allow IDENT1 services to operate.

For multiple, redundant items at site, downtime will commence when all of a given item are no longer available. For example, multiple, redundant processors are used within select Bureaux, ITMCS, AFRS, and ISRS. Downtime will not commence until all servers within the subsystem are unavailable, thereby halting normal operations. The same is true for fingerprint matcher banks. Downtime will commence when all banks of a given search type (e.g., Print-to-Print, etc.) are unavailable. Degraded performance as a result of a failure of a single item will not be considered downtime. However, such degraded performance may impact bureau operations and will be reflected in the throughput and system performance service level criteria as defined in Section 2.2 and 2.3 of this *SLR*.

Downtime will start and stop under the authorisation of the IDENT1 Help Desk and in consultation with the Site Point of Contact. Downtime will only include unplanned interruptions. Downtime is composed of administrative delays associated with coordinating personnel arrival time at a site (i.e., bureau personnel available for site technician to enter a site), travel time to the site (if applicable), service restoration time, and time to test corrective actions. Downtime excludes any bureau-originated administrative delays that impede service delivery or restoration of service.

Planned interruptions will be defined as all interruptions of services that take place as scheduled, and with prior agreement between the affected Head of Bureau(x) and the Contractor. Planned interruptions shall exclude any period of unavailability required to fix problems of functionality or throughput, which result from the Contractor's failure to meet IDENT1 requirements, irrespective of whether or not these interruptions are scheduled and undertaken with the prior agreement of the Authority or the bureau(x) involved

Planned Downtime will not reduce the hours available per month (H_m) nor increase the unplanned downtime per month (DT_m) . In all instances, the Contractor will declare the duration of a Planned Downtime Period, as defined above, prior to starting Planned Downtime. Planned Downtime in excess of the Planned Downtime Period will become Unplanned Downtime commencing at the end of the period.

When a critical component or all of the system becomes unavailable, the Contractor will inform the Bureaux and will continue to manage the Service in such a way as to ensure that the daily workload is completed within the working day. If this becomes impractical, the problem will be escalated within the Contractor for decisions on priorities, in accordance with the *IDENTI Maintenance Plan*.

Provisional Handback - Upon completion of significant work on the system, such as an ECP, Northrop Grumman may request a period of time during which the normal conditions of the SLR continue to be suspended. This time period will be referred to

as Provisional Handback of the system. The purpose of this is to ensure that there is no adverse impact of the change once the full operational workload is submitted to the system. Application of Provisional Handback will be agreed in advance with PITO, including a maximum duration.

The Disaster Recovery System will be available to support IDENT1 operations in the event of a disaster at the primary site. The DRS must be fully operational within 24 hours of a requested start. Those 24 hours will be considered planned down time. Time taken beyond 24 hours will be considered unplanned down time.

2.1.3 Central Segment Availability

2.1.3.1 Central Segment Critical Components

The Central Segment consists of equipment at the Primary Site at Hendon and at the DRS site. Central Segment A_o will be based on the total hours in a given month and unplanned downtime of the critical equipment in a given month at each of the sites. Critical and Non-Critical items for the Primary Site are identified in Figure 2.1-1 and for the DRS in Figure 2.1-2.

Critical Components Primary Site	Non-Critical Components
Servers (ITMCS-ISRS-AFRS)	Server Tape Jukebox (ITMCS-ISRS-AFRS)
Storage Controllers (ISRS)	Small SCSI Switch (ITMCS-ISRS-AFRS)
Storage Controller Tape Jukeboxes (ISRS)	
Network Routers	Server monitor, keyboard, and mouse (ITMCS-ISRS-AFRS)
	Text Printers
Network Switches	Computer Operator Workstations
Print-to-Print Search Engines	Central Segment Personal Computer
Print-to-Mark Search Engines	Network Management Server
Mark-to-Print Search Engines	Management Console Workstation
Mark-to-Mark Search Engines	Management LAN
Central Segment RAID Assemblies (ITMCS-ISRS-AFRS)	HSM Server
NIS+/LDAP/DNS servers	

Figure 2.1-1 Primary Site Critical and Non-Critical Components

Critical Components – Disaster Recovery Site	Non-Critical Components
Servers (ITMCS-ISRS-AFRS)	Server Tape Jukebox (ITMCS-ISRS-AFRS)
Storage Controllers (ISRS)	Small SCSI Switch (ITMCS-ISRS-AFRS)
Storage Controller Tape Jukeboxes (ISRS)	
Network Routers	Server monitor, keyboard, and mouse (ITMCS, ISRS, AFRS)
	Text Printers
Network Switches	Computer Operator Workstations
Print-to-Print search engines	DRS Personal Computer
Print-to-Mark search engines	Network Management Server
Mark-to-Print search engines	Management Console Workstation
Mark-to-Mark search engines	Management LAN
Replicated RAID Assemblies (ITMCS-ISRS-AFRS)	HSM Server
NIS+/LDAP/DNS servers	

Figure 2.1-2. Central Segment - DRS Critical and Non-Critical Components

2.1.3.2 Central Segment Ao Scoring

The Central Segment Primary Site and DRS Site A_o value will be computed monthly using *Equation* 1 of Section 2.1.2.

Once each A_o value has been computed, the SCORE will be selected from the Scoring Table presented as Figure 2.1-4 to produce the Central A_o Service Level Scores as shown in Figure 2.1-3.

	A _o	SCORE
Central A _o Primary		
Central A _o DRS		

Figure 2.1-3 Central Segment A_o Score

SCORE	Central Segment A _o	SCORE	Central Segment A ₀	SCORE
110.0	98.3	93.0	96.6	76.0
109.0	98.2	92.0	96.5	75.0
108.0	98.1	91.0	96.4	74.0
107.0	98.0	90.0	96.3	73.0
106.0	97.9	89.0	96.2	72.0
105.0	97.8	88.0	96.1	71.0
104.0	97.7	87.0	96.0	70.0
103.0	97.6	86.0	95.9	69.0
102.0	97.5	85.0	95.8	68.0
101.0	97.4	84.0	95.7	67.0
100.0	97.3	83.0	95.6	66.0
99.0	97.2	82.0	95.5	65.0
98.0	97.1	81.0	95.4	64.0
97.0	97.0	80.0	95.3	63.0
96.0	96.9	79.0	95.2	62.0
95.0	96.8	78.0	95.1	61.0
94.0	96.7	77.0	≤95.0	60.0
	110.0 109.0 108.0 107.0 106.0 105.0 104.0 103.0 102.0 101.0 100.0 99.0 98.0 97.0 96.0 95.0	Segment A ₀ 110.0 98.3 109.0 98.2 108.0 98.1 107.0 98.0 106.0 97.9 105.0 97.8 104.0 97.7 103.0 97.6 102.0 97.5 101.0 97.4 100.0 97.3 99.0 97.2 98.0 97.1 97.0 96.0 96.0 96.9 95.0 96.8	Segment A ₀ Segment A ₀ 110.0 98.3 93.0 109.0 98.2 92.0 108.0 98.1 91.0 107.0 98.0 90.0 106.0 97.9 89.0 105.0 97.8 88.0 104.0 97.7 87.0 103.0 97.6 86.0 102.0 97.5 85.0 101.0 97.4 84.0 100.0 97.3 83.0 99.0 97.2 82.0 98.0 97.1 81.0 97.0 96.0 96.9 79.0 95.0 96.8 78.0	Segment A ₀ Segment A ₀ 110.0 98.3 93.0 96.6 109.0 98.2 92.0 96.5 108.0 98.1 91.0 96.4 107.0 98.0 90.0 96.3 106.0 97.9 89.0 96.2 105.0 97.8 88.0 96.1 104.0 97.7 87.0 96.0 103.0 97.6 86.0 95.9 102.0 97.5 85.0 95.8 101.0 97.4 84.0 95.7 100.0 97.3 83.0 95.6 99.0 97.2 82.0 95.5 98.0 97.1 81.0 95.4 97.0 97.0 80.0 95.3 96.0 96.9 79.0 95.2 95.0 96.8 78.0 95.1

Figure 2.1-4 Central Segment A₀ Scoring Table

The Central A_o Service Level Scores will be allocated to each IDENT1 site on an equal basis, with each Site receiving the same value, in the Central A_o columns of Figure 4.1-1.

In the event of a disaster at the primary site and the use of the DRS to support IDENT1 operations, no Central A_o - Primary will be computed. Rather the A_o of the DRS site will be used as the Central A_o - Primary value in Figure 4.1-1 with a weight of 0.10, and the value of the DRS A_o will be set to zero (0). If there is a disaster at the DRS, the Central A_o - Primary value will be computed as normal but with a weight of 0.10 and a value of zero (0) will be used for the DRS A_o .

2.1.4 Bureau Segment Availability

2.1.4.1 Bureau Segment Critical Components

Bureau Segment A_0 will be based on the total hours in a given month and unplanned downtime of the critical equipment in a given month. Critical and Non-Critical items are identified in Figure 2.1-5.

Where a site has multiple instances of the same critical equipment item, as defined in Figure 2.1-5, (e.g., workstation(s)), the Contractor and the Head of Bureau(x) (or designated nominee) will determine whether or not the site is unavailable to process its work in order to compute a monthly downtime for that site. The results of this consultation will be recorded in the Help Desk Management System. At all sites, the text printer will be non-critical. However, where a site has a text printer and a graphics printer, the graphics printer may be critical if the Contractor and the Head of Bureau(x) (or designated nominee) determine that the site is unavailable to process its work without the availability of that printer. The results of this consultation will also be recorded in the Help Desk Management System.

The External Transaction Bureau (ETB) server is physically located at Central. However, it is considered a Bureau just as the Hendon Bureau is considered a Bureau. The critical component for the ETB bureau is the Transaction Server. This Bureau does not have printers or workstations.

Critical Components	Non-Critical Components
WAN	Tape Jukebox
Server(s)	Text Printers
Workstation(s)	Server monitor, keyboard, mouse, CD ROM and tape drive
Mark and Ten Print Scanner(s)	Graphic printer(s) unless agreed critical per left column
Network Router	
Network Hub	
Network Switch	
Bar Code Printer(s)	
Bar Code Reader(s)	
RAID Assembly	
PNC	
Satellcom Gateways	
Graphic Printer(s) under agreed exception conditions	
Operational Response Matchers	

Figure 2.1-5 Bureau Segment Critical and Non-Critical Components

2.1.4.2 Bureau Segment Ao Scoring

The A_o value for each Bureau will be computed monthly using Equation 1 of Section 2.1.2.

Bureau	A _o	SCORE
Avon + Somerset		
Bedfordshire		
British Transport		
Police		
Cambridgeshire		
Cheshire		
City of London		
Cleveland		
Cumbria		
Customs and Excise		
Derbyshire		
Devon + Cornwall		
Dorset		
Durham		
Dyfed Powys		
Essex		
Gloucestershire		
Greater Manchester		
Gwent		
Hampshire		
Hertfordshire		
Humberside		
Kent		
Lancashire		
Leicestershire		
Lincolnshire		
Merseyside		
Metropolitan		
N.I.S./Residual Bureau		

Bureau	A _o	SCORE
Norfolk		
North Wales		
North Yorkshire		
Northamptonshire		
Northumbria		
Nottinghamshire		
South Wales		
South Yorkshire		
Staffordshire		
Suffolk		
Surrey		
Sussex		
Thames Valley		
Warwickshire		
West Mercia		
West Midlands		
West Yorkshire		
Wiltshire		
Ext. Transaction Bureau		

Figure 2.1-6 Bureau Segment A_o Score

Once the Bureau A_o value has been computed for each Bureau, the Service Level Score for each Bureau will be selected from the Scoring Table presented as Figure 2.1-7 to produce the Bureau A_o Service Level Scores as shown in Figure 2.1-6.

Bureau Segment A ₀	SCORE	Bureau Segment A ₀	SCORE	Bureau Segment A ₀	SCORE
100.0	110.0	98.3	93.0	96.6	76.0
99.9	109.0	98.2	92.0	96.5	75.0
99.8	108.0	98.1	91.0	96.4	74.0
99.7	107.0	98.0	90.0	96.3	73.0
99.6	106.0	97.9	89.0	96.2	72.0
99.5	105.0	97.8	88.0	96.1	71.0
99.4	104.0	97.7	87.0	96.0	70.0
99.3	103.0	97.6	86.0	95.9	69.0
99.2	102.0	97.5	85.0	95.8	68.0
99.1	101.0	97.4	84.0	95.7	67.0
99.0	100.0	97.3	83.0	95.6	66.0
98.9	99.0	97.2	82.0	95.5	65.0
98.8	98.0	97.1	81.0	95.4	64.0
98.7	97.0	97.0	80.0	95.3	63.0
98.6	96.0	96.9	79.0	95.2	62.0
98.5	95.0	96.8	78.0	95.1	61.0
98.4	94.0	96.7	77.0	≤95.0	60.0

Figure 2.1-7 Bureau A_o Scoring Table

The Bureau Segment A_o Service Level Score will be placed in the Site A_o column of Figure 4.1-1 for each IDENT1 Bureau.

2.1.5 Training System Availability

2.1.5.1 Training System Critical Components

Training System A_o will be based on the total hours in a given month and unplanned downtime of the critical equipment in a given month. Critical and Non-Critical items are identified in Figure 2.1-8.

When a critical equipment item, as defined in Figure 2.1-8, (e.g., workstation(s)), becomes unavailable at a Training Centre, the Contractor and the Head of the Training Centre (or designated nominee) will assess the impact on that centre's course schedule. If, because of a loss of an equipment item, the Training Centre is unable to continue with its training schedule, then the time that the item is unavailable will be recorded as downtime in order to compute a monthly downtime for that site. If the loss of an equipment item does not affect the Training Centre's training schedule, then no downtime will be recorded until such time as the loss affects the training schedule. The results of this consultation will be recorded in the Help Desk Management System. The text printer will be non-critical at the Training Centres. However, where a site has a text printer and a graphics printer, the graphics printer may be deemed critical if the Contractor and the Head of the Training Centre (or designated nominee) determine that the Training Centre is unable to continue with its training schedule without it. The results of this consultation will also be recorded in the Help Desk Management System.

Critical Components	Non-Critical Components
Server(s) (combined ITMCS, ISRS, AFRS, and Bureau)	Tape Jukebox
Workstation(s)	Text Printers
Mark and Ten Print Scanner(s)	Server monitor, keyboard, mouse, CD ROM and tape drive
Network Router	PNN
Network Hub	Graphic Printer(s) unless agreed critical
Network Switch	
Bar Code Printer(s)	
Bar Code Reader(s)	
Redundant Array of Independent Disks (RAID) assembly	
Graphic Printer(s) under agreed exception conditions	

Figure 2.1-8 Training System Critical and Non-Critical Components

2.1.5.2 Training System A₀ Scoring

The A_o value for each Training System will be computed using *Equation* 1 of Section 2.1.2

Training System	A _o	SCORE
Hendon		
Durham		

Figure 2.1-9. Training System A_o Score

Once the A_o value has been computed for each Training System, the SCORE for each Training System will be selected from the Scoring Table presented as Figure 2.1-10 to produce the Training System A_o Service Level Scores as shown in Figure 2.1-9.

Training Segment A ₀	SCORE	Training Segment A ₀	SCORE	Training Segment A ₀	SCORE
100.0	110.0	98.3	93.0	96.6	76.0
99.9	109.0	98.2	92.0	96.5	75.0
99.8	108.0	98.1	91.0	96.4	74.0
99.7	107.0	98.0	90.0	96.3	73.0
99.6	106.0	97.9	89.0	96.2	72.0
99.5	105.0	97.8	88.0	96.1	71.0
99.4	104.0	97.7	87.0	96.0	70.0
99.3	103.0	97.6	86.0	95.9	69.0
99.2	102.0	97.5	85.0	95.8	68.0
99.1	101.0	97.4	84.0	95.7	67.0
99.0	100.0	97.3	83.0	95.6	66.0
98.9	99.0	97.2	82.0	95.5	65.0
98.8	98.0	97.1	81.0	95.4	64.0
98.7	97.0	97.0	80.0	95.3	63.0
98.6	96.0	96.9	79.0	95.2	62.0
98.5	95.0	96.8	78.0	95.1	61.0
98.4	94.0	96.7	77.0	≤95.0	60.0

Figure 2.1-10 Training System A_o Scoring Table

The Training System A_o Service Level Score will be placed in the Site A_o column of Figure 4.1-1 for each IDENT1 Training Site.

2.1.6 Future Changes for Availability

Several changes to the availability service level criterion will be incorporated by no later than FOC. These include the following:

- (a) Updating the score tables to reflect score of 100 for measured availability Target Service Level of 99.5% at FOC and 99.6% at FOC+3 years
- (b) Updating the Critical and Non-Critical component list to reflect IDENT1 Service architecture and hardware
- (c) Deletion of separate scoring for Primary Central and DRS sites
- (d) Implementation of Planned Downtime metrics

2.1.6.1 Scoring Table Update

To reflect the increase of availability requirements from 99% for NAFIS applicable at TOR to 99.5% for the IDENT1 Service applicable at FOC when the full architecture is deployed, availability score tables for both the Central site and the Bureaux will be updated to provide a score of 100 when the Target Service Level for availability of 99.5% is met. The updated table, Figure 2.1-11, applicable for the Central site, the Bureaux and the training sites is shown below:

96.90 96.85	58.0
	57.0
96.80	56.0
96.75	55.0
96.70	54.0
96.65	53.0
96.60	52.0
96.55	51.0
□96.50	50.0
	96.65 96.60 96.55

Figure 2.1-11. Central Site and Bureaux Ao Scoring Table at FOC

To provide continuous improvement, the target value for availability will be further increased to 99.6% at FOC+3 years. At that milestone, the scores shown in Figure 2.1-11 will be shifted upwards to reflect a score of 100 for a measured Ao of 99.6% for the Central, Bureaux, and training sites. Further improvement in availability will be incentivised through the SLR scoring structure.

2.1.6.2 Critical Equipment

To support the availability measurement, the tables defining the critical and non-critical component lists for the Central site and the Bureaux will be updated at FOC. The updated tables will fully reflect the deployed IDENT1 Service architecture and hardware.

2.1.6.3 Deletion of DRS

At TOR, availability is measured on the NAFIS architecture with a Primary Central Site and a DRS. Separate measurements and scoring are performed for these sites with a weight of 7% for the Primary and 3% for the DRS. With the full deployment of the IDENT1 web service based architecture with load balancing at FOC, separation scoring becomes unnecessary due to the symmetry of the architecture. A single availability measurement of the central sites will be made with a weight of 10%.

2.1.6.4 Measurement of Planned Downtime

To support the goal of minimizing planned downtime in addition to unplanned downtime, shadow metrics will be defined and evaluated. The goal is for a single metric that incorporates both planned and unplanned downtime. As a minimum, separate metrics on planned downtime will be defined, agreed with the Authority and evaluated as shadow metrics prior to the FOC. These metrics will have target values derived from the DOR requirements of total planned downtime of 4 hours in a rolling 24-hour window, and frequency of occurrence of no more than two in a rolling 4-week period for the central services; and total planned downtime of 4 hours in a rolling 4-week window for each Bureau. If supported by the evaluation results, it is envisioned that these metrics will be implemented per the SLR change process defined in Part 1. The recommended weighting structure incorporating the planned downtime metrics is shown in Figure 2.1-12.

Availability Metrics and Weights						
('entral	Bur	eaux			
Ao	Planned Downtime	Ao	Planned Downtime			
0.075	0.025	0.075	0.025			

Figure 2.1-12. Availability Metrics and Weights

2.1.6.5 Scottish Bureaux

In addition to the above changes, at intermediate milestones prior to the FOC, i.e., when the Scottish Bureaux become operational, availability will be measured and scored for these Bureaux in a similar manner to existing Bureaux using the then applicable metrics and scoring tables.

2.2 Throughput

2.2.1 Scope

Ten Print and Mark processing will be measured in terms of throughput. Throughput will be defined as the percentage of Ten Print or Print Set and Mark transactions completed within a specified time period. These criteria will measure the throughput of the system while not restricting working practices. This section is subject to design limitations expressed in Section 5 of this SLR, Workload Assumptions.

2.2.2 Ten Print Throughput

Ten Print Throughput will be computed for each Bureau and the NIS. Ten Print Throughput will not be computed for the Training Centres.

All processing steps within Ten Print processing, from Ten Print form take-on through Ten Print close-out, will be included in the Ten Print Throughput measure as a means of capturing the overall throughput of the system. For this reason, Ten Print Throughput will be measured on an aggregate monthly basis and will not consider other factors affecting throughput such as working practices, search priority and search scope.

Equation 2.2-1 will be used to calculate the Bureau Ten Print Throughout (TP_t).

Equation 2.2-1:
$$TP_{t} = \left(\frac{TP_{c}}{MIN(TP_{a}, TP_{\max})}\right) \times 100$$

where

- (a) TP_c is the total number of Ten Print transactions processed through close-out during the month. Close-out is the final disposition of all Ten Print transactions.
- (b) TP_a is the total number of Ten Print forms received and processed during the month. This will be measured at the point of submission.
- (c) TP_{max} is the monthly number of Ten Prints received and processed as defined in Section 5 of this SLR for the respective bureau.

In Equation 2.2-1, the denominator will be the lesser of either TP_a or TP_{max} . Ten Print Throughput for each Bureau will be computed using Equation 2.2-1. This value will be the TEN PRINT THROUGHPUT value as shown in column 2 of Figure 2.2-1)

Transactions for the External Transactions Bureau will be considered closed out when the response to a search request has been transmitted to the requesting external system.

Bureau	Ten Print Throughput	SCORE
Avon + Somerset		
Bedfordshire		
British Transport Police		
Cambridgeshire		
Cheshire		
City of London		
Cleveland		
Cumbria		
Customs and Excise		
Derbyshire		
Devon + Cornwall		
Dorset		
Durham		
Dyfed Powys		
Essex		
Gloucestershire		
Greater Manchester		
Gwent		
Hampshire		
Hertfordshire		
Humberside		
Kent		
Lancashire		
Leicestershire		
Lincolnshire		
Merseyside		
Metropolitan		
N.I.S./Residual Bureau		

Bureau	Ten Print Throughput	SCORE
Norfolk		
North Wales		
North Yorkshire		
Northamptonshire		
Northumbria		
Nottinghamshire		
N.I.S./Residual Bureau		
South Wales		
South Yorkshire		
Staffordshire		
Suffolk		
Surrey		
Sussex		
Thames Valley		
Warwickshire		
West Mercia		
West Midlands		
West Yorkshire		
Wiltshire		
Ext. Transaction Bureau		

Figure 2.2-1 Ten Print Throughput Scores

In the event that no applicable ten prints are processed by the site in the reporting period, a fixed SCORE of 100 shall be applied to TEN PRINT THROUGHPUT for that site. Once the TEN PRINT THROUGHPUT value has been computed for each Bureau, the SCORE for each Bureau will be selected from the Scoring Table presented as Figure 2.2-2.

Ten Print Throughput	Score								
≥110	115	99	99	88	88	77	77	66	66
109	113	98	98	87	87	76	76	65	65
108	111	97	97	86	86	75	75	64	64
107	109	96	96	85	85	74	74	63	63
106	107	95	95	84	84	73	73	62	62
105	105	94	94	83	83	72	72	61	61
104	104	93	93	82	82	71	71	≤60	60
103	103	92	92	81	81	70	70		1
102	102	91	91	80	80	69	69		
101	101	90	90	79	79	68	68		
100	100	89	89	78	78	67	67	1	

Figure 2.2-2 Ten Print Throughput Scoring Table

The SCORE will be used for *SLR* reporting as shown in Figure 4.1-1. Ten Print Throughput will be reported on an individual Bureau basis.

2.2.3 Mark Throughput

Mark Throughput will be computed for each Bureau. Mark Throughput will not be computed for the Training Centres.

Mark Throughput will be measured on an aggregate monthly basis and will not consider other factors affecting throughput such as working practices, search priority and search scope.

Equation 2.2-2 will be used to calculate the Bureau Mark Throughput (M_t).

Equation 2.2-2:
$$M_t = \left(\frac{\left(M_{ni} + M_i + M_r + M_{pni} + M_{pi}\right)}{MIN(MP_a, MP_{max}) + M_{pr}}\right) \times 100$$

where

(a) M_{ni} is defined as the number of Mark-to-Print non-identification decisions made at the Bureau during the month as the result of a Mark-to-Print search submission. This decision is made after all images have been down-loaded to

the Bureau and the Fingerprint Officer has reviewed the respondent list to make the first-level identification determination. Second- and third-level identifications are excluded from the calculation as the Bureau may take some time to process the Mark through third-level identification.

- (b) M_i is defined as the number of Mark-to-Print identification decisions made at the Bureau during the month as the result of a Mark-to-Print search submission. This decision is made after all images have been down-loaded to the Bureau and the Fingerprint Officer has reviewed the respondent list to make the first-level identification determination. The remainder of the respondents after the Mark-to-Print identification is made are excluded from the calculation.
- (c) *Mr* is defined as the remainder of searches that remain in 'In Compare 1' four months after those searches were submitted. For example, searches that were launched and returned in January, which had not been idented or non-idented by May, would be *Mr* in the Mark Throughput calculation for May. If these searches were subsequently idented or non-idented, the statistical collection process will prevent them from being included in the calculation a second time.
- (d) MP_a is defined as the actual number of Mark-to-Print searches submitted at the Bureau during the month. Note that a re-launch or repeat of a search is considered a separate search.
- (e) MP_{max} is defined as the maximum number of Mark-to-Print searches submitted at the Bureau during the month. The maximum number of Mark-to-Print searches is defined, for each Bureau, in Section 5 of this SLR.
- (f) M_{pni} is defined as the number of Mark-to-Police Elimination Database non-identification decisions made at the Bureau during the month as the result of a Mark-to-Police Elimination Database search submission. This decision is made after all images have been down-loaded to the Bureau and the Fingerprint Officer has reviewed the respondent list to make the first-level identification determination.
- M_{pi} is defined as the number of Mark-to-Police Elimination Database identification decisions made at the Bureau during the month as the result of a Mark-to-Police Elimination Database search submission. This decision is made after all images have been down-loaded to the Bureau and the Fingerprint Officer has reviewed the respondent list to make the first-level identification determination.
- (h) M_{pr} is defined as the number of Mark-to-Police Elimination Database searches that are returned with one or more respondents.

In Equation 2.2-2, the denominator will be the lesser of either MP_a or MP_{max} plus M_{pr} . Mark Throughput for each Bureau will be computed using Equation 2.2-2. This value will be the MARK THROUGHPUT value as shown in column 2 of Figure 2.2-3.

Bureau	Mark Throughput	SCORE
Avon + Somerset		
Bedfordshire		
British Transport Police		
Cambridgeshire		
Cheshire		
City of London		
Cleveland		
Cumbria		
Customs and Excise		
Derbyshire		
Devon + Cornwall		
Dorset		
Durham		
Dyfed Powys		
Essex		
Gloucestershire		
Greater Manchester		
Gwent		
Hampshire		
Hertfordshire		
Humberside		
Kent		
Lancashire		
Leicestershire		
Lincolnshire		
Merseyside		
Metropolitan		
	-	-
		1

Bureau	Mark Throughput	SCORE
N.I.S./Residual Bureau		
Norfolk		
North Wales		
North Yorkshire		
Northamptonshire		
Northumbria		
Nottinghamshire		
South Wales		
South Yorkshire		
Staffordshire		
Suffolk		
Surrey		
Sussex		
Thames Valley		
Warwickshire		
West Mercia		
West Midlands		
West Yorkshire		
Wiltshire		
Ext. Transaction Bureau		

Figure 2.2-3 Mark Throughput Score

In the event that no applicable marks are processed by the site in the reporting period, a fixed SCORE of 100 shall be applied to MARK THROUGHPUT for that site. Once the MARK THROUGHPUT value has been computed for each Bureau, the SCORE for each Bureau will be selected from the Scoring Table presented as Figure 2.2-4. The Immigration and Nationality Directorate is not expected to submit any marks and the External Transaction Bureau score will be set to 100.

Mark Throughput	SCORE	Mark Throughput	SCORE	Mark Throughput	SCORE	Mark Throughput	SCOR E	Mark Throughput	SCORE
≥110	115	99	99	88	88	77	77	66	66
109	113	98	98	87	87	76	76	65	65
108	111	97	97	86	86	75	75	64	64
107	109	96	96	85	85	74	74	63	63
106	107	95	95	84	84	73	73	62	62
105	105	94	94	83	83	72	72	61	61
104	104	93	93	82	82	71	71	≤60	60
103	103	92	92	81	81	70	70		
102	102	91	91	80	80	69	69		
101	101	90	90	79	79	68	68		
100	100	89	89	78	78	67	67		

Figure 2.2-4 Mark Throughput Scoring Table

The SCORE will be used for *SLR* reporting as shown in Figure 4.1-1. Mark Throughput will be reported on an individual Bureau basis.

2.2.4 Future Changes for Throughput/Capacity

The primary changes for the capacity/throughput service level criterion after TOR are threefold:

- (a) The yearly changes of the target values for monthly maximum Print Set submission (TPmax) and the mark-to-print searches (MPmax) for each Bureau
- (b) Measurement and scoring of the Scottish Bureaux when they go live
- (c) Inclusion of Palm marks in mark-to-print throughput measurement when palm search capability becomes available

In addition, the throughput scoring tables will be extended to reflect a minimum allowable score of 50 by FOC.

2.2.4.1 Throughput TPmax and MPmax Parameters

Released under FOI in full on 16th July 2009

As previously described, TPmax and MPmax are key parameters for calculating the throughput metrics for Print Set submissions and mark-to-print searches respectively. TPmax and MPmax for each Bureau will be calculated for each year using the DOR tables specified in Annex A. In particular, Tables 2.13 and 2.14 will be used for Print Sets submissions. Figure 2.2-5 below provides the TPmax table calculated for each Bureau for the year 2004 through 2006.

		Monthly Ten Print Submission (MPmax)			
Bureaux	Distribution	2004	2005	2006	
1. Avon & Somerset	2.30%	5,520	5,796	6,072	
2. Bedfordshire	2.60%	6,240	6,552	6,864	
3. Cambridgeshire	0.90%	2,160	2,268	2,376	
4. Cheshire	1.40%	3,360	3,528	3,696	
5. City of London	0.20%	480	504	528	
6. Cleveland	1.20%	2,880	3,024	3,168	
7. Cumbria	1.00%	2,400	2,520	2,640	
8. Derbyshire	1.40%	3,360	3,528	3,696	
9. Devon & Cormwall	2.30%	5,520	5,796	6,072	
10. Dorset	0.80%	1,920	2,016	2,112	
11. Durham	1.20%	2,880	3,024	3,168	
12. Dyfed Powys	1.30%	3,120	3,276	3,432	
13. Essex	1.90%	4,560	4,788	5,016	
14. Gloucestershire	0.80%	1,920	2,016	2,112	
15. Greater Manchester	5.20%	12,480	13,104	13,728	
16. Gwent	1.20%	2,880	3,024	3,168	
17. Hampshire	3.50%	8,400	8,820	9,240	
18. Hertfordshire	1.20%	2,880	3,024	3,168	
19. Humberside	1.70%	4,080	4,284	4,488	
20. Kent	2.90%	6,960	7,308	7,656	
21. Lancashire	2.40%	5,760	6,048	6,336	
22.Leicestershire	1.10%	2,640	2,772	2,904	
23. Lincolnshire	0.90%	2,160	2,268	2,376	
24. Merseyside	2.80%	6,720	7,056	7,392	
25. Metropolitan	9.30%	22,320	23,436	24,552	
26. Norfolk	1.10%	2,640	2,772	2,904	
27. North Wales	1.00%	2,400	2,520	2,640	

28. North Yorkshire	1.00%	2,400	2,520	2,640
29. Northhamptonshire	1.10%	2,640	2,772	2,904
30. Northumbria	4.10%	9,840	10,332	10,824
31. Nottinghamshire	2.10%	5,040	5,292	5,544
32. South Wales	2.60%	6,240	6,552	6,864
33. South Yorkshire	3.00%	7,200	7,560	7,920
34. Staffordshire	1.50%	3,600	3,780	3,960
35. Suffolk	0.80%	1,920	2,016	2,112
36. Surrey	1.00%	2,400	2,520	2,640
37. Sussex	1.90%	4,560	4,788	5,016
38. Thames Valley	3.00%	7,200	7,560	7,920
39. Warwickshire	0.80%	1,920	2,016	2,112
40. West Mercia	1.60%	3,840	4,032	4,224
41. West Midlands	6.60%	15,840	16,632	17,424
42. West Yorkshire	4.40%	10,560	11,088	11,616
43. Wiltshire	0.70%	1,680	1,764	1,848
44. Aberdeen		0	0	0
45. Dundee	Included in Glasgow below	0	0	0
46. Edinburgh		0	0	0
47. Glasgow	6.00%	14,400	15,120	15,840
48. British Transport Police	0.60%	1,440	1,512	1,584
49. HM Customs & Excise	0.10%	240	252	264
50. National Identification Service	3.50%	8,400	8,820	9,240
51. National Crime Squad		0	0	0
52. Specialist Crimes Bureau		0	0	0
Total (Upper Bound)		240,000	252,000	264,000

Figure 2.2-5 TPmax per Bureau

To account for minor variations from the DOR specified distribution, starting in year 2007, TPmax will be based on the actual distribution of the Print Set submissions between bureaux measured during a 12 month window in the year prior to the preceding year. For each bureau, the average monthly Print Set submissions will be calculated. These averages will then be used to compute the actual distribution between bureaux subject to the constraint that the total Print Set submission load is as specified in DOR Table 2.13.

MPmax for mark-to-print searches are calculated using DOR Tables 2.17, 2.18 and 2.19. The yearly values for each bureau are shown in Figure 2.2-6.

		Monthly Mark-to-Print Searches (MPmax)				
Bureaux	Distribution	2004	2005	2006		
1. Avon & Somerset	2.60%	4,872	5,278	5,685		
2. Bedfordshire	2.90%	5,434	5,887	6,341		
3. Cambridgeshire	1.20%	2,248	2,436	2,624		
4. Cheshire	0.80%	1,499	1,624	1,749		
5. City of London	0.10%	187	203	219		
6. Cleveland	0.70%	1,312	1,421	1,531		
7. Cumbria	1.30%	2,436	2,639	2,842		
8. Derbyshire	1.00%	1,874	2,030	2,186		
9. Devon & Cormwall	1.70%	3,185	3,451	3,717		
10. Dorset	1.50%	2,811	3,045	3,280		
11. Durham	0.70%	1,312	1,421	1,531		
12. Dyfed Powys	1.10%	2,061	2,233	2,405		
13. Essex	1.40%	2,623	2,842	3,061		
14. Gloucestershire	1.20%	2,248	2,436	2,624		
15. Greater Manchester	6.00%	11,242	12,181	13,119		
16. Gwent	1.10%	2,061	2,233	2,405		
17. Hampshire	2.50%	4,684	5,075	5,466		
18. Hertfordshire	1.10%	2,061	2,233	2,405		
19. Humberside	1.30%	2,436	2,639	2,842		
20. Kent	2.70%	5,059	5,481	5,904		
21. Lancashire	3.40%	6,371	6,902	7,434		
22.Leicestershire	1.40%	2,623	2,842	3,061		
23. Lincolnshire	0.60%	1,124	1,218	1,312		

				k-to-Print Searches (MPmax)	
Bureaux	Distribution	2004	2005	2006	
24. Merseyside	3.30%	6,183	6,699	7,215	
25. Metropolitan	17.10%	32,041	34,715	37,389	
26. Norfolk	1.30%	2,436	2,639	2,842	
27. North Wales	0.90%	1,686	1,827	1,968	
28. North Yorkshire	0.90%	1,686	1,827	1,968	
29. Northhamptonshire	1.80%	3,373	3,654	3,936	
30. Northumbria	1.90%	3,560	3,857	4,154	
31. Nottinghamshire	1.30%	2,436	2,639	2,842	
32. South Wales	1.70%	3,185	3,451	3,717	
33. South Yorkshire	1.10%	2,061	2,233	2,405	
34. Staffordshire	2.30%	4,310	4,669	5,029	
35. Suffolk	0.40%	749	812	875	
36. Surrey	1.10%	2,061	2,233	2,405	
37. Sussex	2.00%	3,747	4,060	4,373	
38. Thames Valley	3.30%	6,183	6,699	7,215	
39. Warwickshire	0.60%	1,124	1,218	1,312	
40. West Mercia	1.00%	1,874	2,030	2,186	
41. West Midlands	4.30%	8,057	8,729	9,402	
42. West Yorkshire	6.50%	12,179	13,196	14,212	
43. Wiltshire	0.70%	1,312	1,421	1,531	
44. Aberdeen		0	0	0	
45. Dundee	Included in Glasgow below	0	0	0	
46. Edinburgh		0	0	0	
47. Glasgow	6.50%	12,179	13,196	14,212	
48. British Transport Police	0.30%	562	609	656	
49. HM Customs & Excise	0.10%	187	203	219	
50. National Identification Service	1.30%	2,436	2,639	2,842	
51. National Crime Squad		0	0	0	

		MPmax)		
Bureaux	Distribution	2004	2005	2006
52. Specialist Crimes Bureau		0	0	0
Total (Upper Bound)	100.00%	187,374	203,011	218,648

Figure 2.2-6 MPmax per Bureau

To account for minor variations from the DOR specified distribution, starting in year 2007, MPmax will be based on the actual distribution of the Mark to Print searches between bureaux measured during a 12 month window in the year prior to the preceding year. For each bureau, the average monthly Mark to Print search load will be calculated. These averages will then be used to compute the actual distribution between bureaux subject to the constraint that the total Mark to Print search load is as specified by DOR Tables 2.17 and 2.18. Due to the changing nature of MPmax and TPmax, CIP will not be applicable to the Throughput service level criteria.

Note that in Figures 2.2-5 and 2.2-6, all Scottish workloads are grouped under Glasgow. Prior to the IOC of the Scottish Bureaux, workload allocation to individual bureaux will be defined and agreed.

2.2.4.2 Throughput Buffer Zone

When a Bureau exceeds its allocation of the workload as defined by these parameters, they can continue to process ten prints and submit mark-to-print searches. However, to compensate for potential degradation in system performance, the throughput metrics under these circumstances can exceed 100% and the score greater than the target score of 100. To allow for potential variation in bureaux workloads from those specified in the DOR, changes will be made to the throughput metric calculation equations (equations 2.2-1 of section 2.2.2 and 2.2-2 of section 2.2.3). These changes will be effective starting at TOR and are shown below.

Equation 2.2-3:
$$TP_{t} = \left(\frac{TP_{c}}{MIN(TP_{a}, 1.1xTP_{max})}\right) \times 100$$

Equation 2.2-4:
$$M_t = \left(\frac{\left(M_{ni} + M_i + M_r + M_{pni} + M_{pi}\right)}{MIN(MP_a, 1.1xMP_{max}) + M_{pr}}\right) \times 100$$

Note that the "1.1" multiplier for TPmax and MPmax effectively provides a 10% buffer zone above the maximum Ten Print and Mark workload allocated to each Bureau to account for potential variation in workload distribution.

2.2.4.3 Scottish Bureaux

Since the above tables include the workload allocations to the Scottish Bureaux, all that is needed when the Scottish Bureaux become operational is to start the measurement and scoring using the same throughput metrics defined for existing Bureaux.

2.2.4.4 Palm Searches

Palm marks are part of the total search load specified in Table 2.17 of DOR Annex A from which the MPmax parameter for each Bureau is calculated. Inclusion of the palm marks in throughput measurement of mark-to-print searches when the capability becomes available therefore will not require any changes to the metric.

2.3 Search Performance

System Performance will be measured by the search response time delivered to each Bureau. Response time will be measured at the Bureau Segment. The time will start when the search request is submitted by the user and the time will end when the requested transaction is available to the user. This will include image transmission time.

System performance is dependent on the distribution and type of search requests. Deviations outside the ranges specified in this *SLR*, stated as MAXIMUM, will influence performance levels. The major influences are:

- (a) Variation in inter-transaction arrival rate within a given hour. System performance is predicated on a statistical distribution of transactions within the hour. If more transactions are received than expected in a specified period of time, the system response will be slower than expected as the system attempts to process and clear the larger than expected queues of transactions.
- (b) Variation in the mix between Ten Print and Mark submissions. Mark processing consumes more system resources than Ten Print processing. If more Marks are submitted than expected during a given time period, system performance will decrease from nominal.
- (c) Variation in the distribution of transaction submissions across the bureaux. A larger than expected number of submissions from a single bureau could exceed the inherent capability of the Bureau Front End System in terms of the number of available workstations, number of fingerprint officers, and WAN bandwidth. All of these effects would contribute to a decrease in response performance.
- (d) Changes to the nominal search parameters. The search parameters expected over an average set of submissions have been established (see Section 5 of this *SLR*) which will result in a set of averaged response timings. In certain situations, it may be desirable for a Bureau to change the nominal values of search parameters in a manner that increases the number of candidate respondents. This would slow system response by causing additional image retrieval, transmitting more data over the WAN, and increasing the decompression processing time in the bureau.
- (e) Changes to the nominal assumptions of how work at the bureaux is distributed amongst the system resources (primarily workstations). The design of the system offers great flexibility in configuring and managing the bureau workload. However, nominal performance is based on the assumption of local work procedures that make efficient use of the system resources. Local work procedures may be implemented that do not fully utilise system resources, and thus have an adverse effect on response time for those processes performed at the local bureau.

System Performance will be measured for each of the four search types: Print-to-Print, Print-to-Mark, Mark-to-Print, and Mark-to-Mark. Print-to-Mark searches are performed on two National repositories, the National Unidentified Mark Collection and the Serious Crime Cache. These searches are separately measured; the Serious Crime Cache measurements are recorded but are unweighted. In addition, within each search type, system performance will be presented for each of the three available search priorities: Urgent, Fast, and Normal. Serious

Crime Cache, Operational Response, and External Transaction Bureau searches are all submitted as Normal priority. IND P-M searches have a priority of Low and these are presented in the P-M performance table.

The expected distribution of search scope by search priority for each search type is defined in Section 5 of this *SLR*. In the equations below, a premium will be placed on searches submitted in excess of the maximum allowed for the search priority.

2.3.1 Print-to-Print Performance

Equation 2.3-1 will be used to compute the PRINT-TO-PRINT PERFORMANCE value for each of the search priorities x within a Print-to-Print search type. Equation 2.3-1 will be applied once for each of the search priorities and once for Operational Response searches.

Equation 2.3-1:
$$P - P_x = \frac{X_c}{X_a} \times 100$$

where

- (a) $P-P_x$ is the PRINT-TO-PRINT PERFORMANCE value for each search priority x: Urgent, Fast, and Normal or Operational Response.
- (b) X_c is the number of searches, of the specified priority x, that complete within the Target Response Times defined in Figure 2.3-1.

Search Type	Category	Priority	Target Response Time (Mins)
Print-to-Print	Central	Urgent	3
	Central	Fast	5
	Central	Normal	7
	ORD	Normal	7

Figure 2.3-1 Print-to-Print Target Response Times

(c) X_a is the actual number of searches, of the specified priority x, that were submitted by the bureau during the accounting period. If X_a is zero during an accounting period, all expressions that include X_a will be set to zero in order to avoid undefined mathematical expressions.

The PRINT-TO-PRINT PERFORMANCE value for each search priority and Operational Response searches for each Bureau will be computed using *Equation 2.3-1*. These values will be presented for information and service analysis purposes.

Then the OVERALL PRINT-TO-PRINT PERFORMANCE value will be calculated and entered in Figure 2.3-2. This will be calculated by dividing the total number of Print-to-Print searches that complete within the Response Times defined in Figure 2.3-1, by the total number of Print-to-Print searches submitted during the accounting period.

Bureau	Print-to-Print Urgent Perf. Value	Print-to-Print Fast Perf. Value	Print-to- Print Normal Perf. Value	Print-to- Print ORD Perf. Value	Overall Print-to- Print Perf. Value	Print-to- Print SCORE
Avon + Somerset						
Bedfordshire						
British Transport Police						
Cambridgeshire						
Cheshire						
City of London						
Cleveland						
Cumbria						
Customs and Excise						
Derbyshire						
Devon + Cornwall						
Dorset						
Durham						
Dyfed Powys						
Essex						
Gloucestershire						
Greater Manchester						
Gwent						
Hampshire						
Hertfordshire						
Humberside						
Kent						
Lancashire						
Leicestershire						
Lincolnshire						

Merseyside			
Metropolitan			
N.I.S./Residual Bureau			
Norfolk			
North Wales			
North Yorkshire			
Northamptonshire			
Northumbria			
Nottinghamshire			
South Wales			
South Yorkshire			
Staffordshire			
Suffolk			
Surrey			
Sussex			
Thames Valley			
Warwickshire			
West Mercia			
West Midlands			
West Yorkshire			
Wiltshire			
Ext. Transaction Bureau			

Figure 2.3-2 Print-to-Print Performance Table

In the event that no applicable print-to-print searches are processed by the site in the reporting period, a fixed performance value of 90 (corresponding to a SCORE of 100) shall be applied to the OVERALL PRINT-TO-PRINT PERFORMANCE. Once the OVERALL PRINT-TO-PRINT PERFORMANCE value has been computed for each Bureau, the SCORE for each Bureau will be selected from the Scoring Table presented as Figure 2.3-3. The absence of searches of a particular priority has no effect on the OVERALL SCORE, but will be indicated in the Table with "N/A".

Print-to-Print Performance	SCORE	Print-to-Print Performance	SCORE
100	120	79	89
99.5	119	78	88
99	118	77	87
98.5	117	76	86
98	116	75	85
97.5	115	74	84
97	114	73	83
96.5	113	72	82
96	112	71	81
95.5	111	70	80
95	110	69	79
94.5	109	68	78
94	108	67	77
93.5	107	66	76
93	106	65	75
92.5	105	64	74
92	104	63	73
91.5	103	62	72
91	102	61	71
90.5	101	60	70
90	100	59	69
89	99	58	68
88	98	57	67
87	97	56	66
86	96	55	65

85	95	54	64
84	94	53	63
83	93	52	62
82	92	51	61
81	91	≤51	60
80	90		

Figure 2.3-3 Print-to-Print Performance Scoring Table

The OVERALL PRINT-TO-PRINT PERFORMANCE SCORE will be used for *SLR* reporting as shown in Figure 4.1-1. Print-to-Print Performance will be reported on an individual Bureau basis.

2.3.2 Print-to-Mark Performance

Equation 2.3-2 will be used to compute the PRINT-TO-MARK PERFORMANCE value for each of the three search priorities x within a Print-to-Mark search type. Equation 2.3-2 will be applied once for each of the three search priorities, and once for Operational Response searches. In addition, a priority of LOW with a response time of 24 hours supports P-M searches from IND. All P-M searches from IND will be submitted with a LOW priority. Equation 2.3-2 will be applied a fifth time for these IND searches.

Equation 2.3-2:
$$P - M_x = \frac{X_c}{X_a} \times 100$$

where

- (a) $P-M_x$ is the PRINT-TO-MARK PERFORMANCE value for each search priority x: Urgent, Fast, Normal, and Low or Operational Response.
- (b) X_c is the number of searches, of the specified search priority x, that complete within the Target Response Times as defined in Figure 2.3-4.

Search Type	Category	Priority	Target Response Times
Print-to-Mark	Central	Urgent	12 minutes
	Central	Fast	18 minutes
	Central	Normal	50 minutes
	Central	Low	24 hours
	ORD	Normal	12 minutes

Figure 2.3-4 Print-to-Mark Target Response Times

(c) X_a is the actual number of searches, of the specified search priority x, that were submitted by the bureau during the accounting period. If X_a is zero during an accounting period, all expressions that include X_a will be set to zero so as to avoid undefined mathematical expressions.

The PRINT-TO-MARK PERFORMANCE value for each search priority for each Bureau will be computed using *Equation 2.3-2*. These values will be presented for information and service analysis purposes. The British Transport Police (BTP), Customs and Excise Service (CAE), and ETB Bureaux may perform all national searches rather than the mix of local/regional/national searches indicated in Section 5. For these three Bureaux, the Print-to-Mark Performance value will be calculated for each search priority using *Equation 2.3-3*.

Equation 2.3-3:
$$P - M_x = \frac{X_c}{X_a} \times 100 + 10$$

In the event that *Equation 2.3-3* results in a Performance value greater than 100, the Performance value shall be set to 100.

Then the OVERALL PRINT-TO-MARK PERFORMANCE value will be calculated and entered in Figure 2.3-5. This will be calculated by dividing the total number of Print-to-Mark searches of all search priorities and Operational Response searches that complete within the Response Times as defined in Figure 2.3-6, by the total number of Print-to-Mark searches submitted during the accounting period. For BTP, CAE, and ETB, the Overall Print-to-Mark Performance value will be calculated by dividing the total number of Print-to-Mark searches completed within the required Response Times by the total number of Print-to-Mark searches submitted, multiplying by 100, and then adding 10.

Bureau	Print-to- Mark Urgent Perf. Value	Print-to- Mark Fast Perf. Value	Print- to- Mark Normal Perf. Value	Print- to- Mark Low Perf. Value	Print-to- Mark ORD Perf. Value	Overall Print-to- Mark Perf. Value	Print-to- Mark SCORE
Avon + Somerset							
Bedfordshire							
British Transport Police							
Cambridgeshire							
Cheshire							
City of London							
Cleveland							
Cumbria							
Customs and Excise							
Derbyshire							
Devon + Cornwall							
Dorset							
Durham							
Dyfed Powys							
Essex							

Bureau	Print-to- Mark Urgent Perf. Value	Print-to- Mark Fast Perf. Value	Print- to- Mark Normal Perf. Value	Print- to- Mark Low Perf. Value	Print-to- Mark ORD Perf. Value	Overall Print-to- Mark Perf. Value	Print-to- Mark SCORE
Gloucestershire							
Greater Manchester							
Gwent							
Hampshire							
Hertfordshire							
Humberside							
Kent							
Lancashire							
Leicestershire							
Lincolnshire							
Merseyside							
Metropolitan							
N.I.S./Residual Bureau							
Norfolk							
North Wales							
North Yorkshire							
Northamptonshire							
Northumbria							
Nottinghamshire							
South Wales							
South Yorkshire							
Staffordshire							
Suffolk							

Bureau	Print-to- Mark Urgent Perf. Value	Print-to- Mark Fast Perf. Value	Print- to- Mark Normal Perf. Value	Print- to- Mark Low Perf. Value	Print-to- Mark ORD Perf. Value	Overall Print-to- Mark Perf. Value	Print-to- Mark SCORE
Surrey							
Sussex							
Thames Valley							
Warwickshire							
West Mercia							
West Midlands							
West Yorkshire							
Wiltshire							
Ext. Transaction Bureau							

Figure 2.3-5 Print-to-Mark Performance Table

In the event that no applicable print-to-mark searches are processed by the site in the reporting period, a fixed performance value of 90 (corresponding to a SCORE of 100) shall be applied to the OVERALL PRINT-TO-MARK PERFORMANCE. This shall also apply to the BTP, CAE, and ETB bureaux. Once the OVERALL PRINT-TO-MARK PERFORMANCE value has been computed for each Bureau, the SCORE for each Bureau will be selected from the Scoring Table presented as Figure 2.3-1. The absence of searches of a particular priority has no effect on the OVERALL SCORE, but will be indicated in the Table with "N/A".

Print-to-Mark Performance	SCORE	Print-to-Mark Performance	SCORE	Print-to-Mark Performance	SCORE
100	120	89	99	68	78
99.5	119	88	98	67	77
99	118	87	97	66	76
98.5	117	86	96	65	75
98	116	85	95	64	74
97.5	115	84	94	63	73
97	114	83	93	62	72
96.5	113	82	92	61	71

96	112	81	91	60	70
95.5	111	80	90	59	69
95	110	79	89	58	68
94.5	109	78	88	57	67
94	108	77	87	56	66
93.5	107	76	86	55	65
93	106	75	85	54	64
92.5	105	74	84	53	63
92	104	73	83	52	62
91.5	103	72	82	51	61
91	102	71	81	<51	60
90.5	101	70	80		
90	100	69	79		

Figure 2.3-6 Print-to-Mark Performance Scoring Table

The PRINT-TO-MARK PERFORMANCE SCORE will be used for *SLR* reporting as shown in Figure 4.1-1. Print-to-Mark Performance will be reported on an individual Bureau basis.

2.3.3 Print-to-Mark Serious Crime Cache Performance

Print to Mark Serious Crime Cache performance is reported but does not contribute to the SLR Scoring from the milestone TOR – NAFIS onwards.

Equation 2.3-4 will be used to compute the PRINT-TO-MARK PERFORMANCE value for the Print-to-Mark Serious Crime Cache search type.

Equation
$$P - M_x = \frac{X_c}{X_a} \times 100$$

where

- (a) $P-M_x$ is the PRINT-TO-MARK SERIOUS CRIME CACHE PERFORMANCE value.
- (b) X_c is the number of searches that complete within the Target Response Times as defined in Figure 2.3-7. All Print-to-Mark Serious Crime Cache searches are submitted as Normal priority.
- (c) X_a is the actual number of searches that were submitted by the bureau during the accounting period. If X_a is zero during an accounting period, all expressions that include X_a will be set to zero so as to avoid undefined mathematical expressions.

Search Type	Priority	Target Response Times
Print-to-Mark Serious Crime Cache	Normal	8 minutes

Figure 2.3-7 Print-to-Mark Serious Crime Cache Target Response Time

The PRINT-TO-MARK SERIOUS CRIME CACHE PERFORMANCE value for each Bureau will be computed using *Equation 2.3-4*. These values will be presented for information and service analysis purposes.

Then the OVERALL PRINT-TO-MARK SERIOUS CRIME CACHE PERFORMANCE value will be calculated and entered in Figure 2.3-8. This will be calculated by dividing the total number of Print-to-Mark Serious Crime Cache searches that complete within the Response Times as defined in Figure 2.3-8, by the total number of Print-to-Mark Serious Crime Cache searches submitted during the accounting period.

Bureau	Print-to-Mark Serious Crime Cache Normal Perf. Value
Avon + Somerset	
Bedfordshire	
British Transport Police	
Cambridgeshire	
Cheshire	
City of London	
Cleveland	
Cumbria	
Customs and Excise	
Derbyshire	
Devon + Cornwall	
Dorset	
Durham	
Dyfed Powys	
Essex	
Gloucestershire	
Greater Manchester	
Gwent	
Hampshire	
Hertfordshire	
Humberside	
Kent	
Lancashire	
Leicestershire	
Lincolnshire	
Merseyside	

Bureau	Print-to-Mark Serious
Вигеаи	Crime Cache Normal
	Perf. Value
	1 cm. value
Metropolitan	
Trick oponium	
	_
N.I.S./Residual	
Bureau	
Norfolk	
North Wales	
North Yorkshire	
Northamptonshire	
N. d. 1 '	
Northumbria	
NI - 44 1 1	
Nottinghamshire	
South Wales	
South wates	
South Yorkshire	
South Torkshire	
Staffordshire	
Starrorasinic	
Suffolk	
Surrey	
Sussex	
Thames Valley	
Warwickshire	

West Mercia	
West Midlands	
w est iviidiands	
West Yorkshire	
W CSt 1 OIKSIIIC	
Wiltshire	
11 11611110	
Ext. Transaction	
Bureau	
<u> </u>	•

Figure 2.3-8 Print-to-Mark Performance **Serious Crime Cache Table**

In the event that no applicable print-to-mark serious crime cache searches are processed by the site in the reporting period, a fixed performance value of 90 shall be applied to the OVERALL PRINT-TO-MARK SERIOUS CRIME CACHE PERFORMANCE.

2.3.4 Mark-to-Print Performance

Equation 2.3-5 will be used to compute the MARK-TO-PRINT PERFORMANCE value for each of the three search priorities x within a Mark-to-Print search type. Equation 2.3-5 will be applied four times, once for each of the three search priorities, and once for Operational Response searches.

Equation 2.3-5:
$$M - P_x = \frac{X_c}{X_a} \times 100$$

where

- (a) $M-P_x$ is the MARK-TO-PRINT PERFORMANCE value for each search priority x: Urgent, Fast, and Normal or Operational Response.
- (b) X_c is the number of searches, of the specified search priority x, that complete within the Target Response Times as defined in Figure 2.3-9.

Search Type	Category	Priority	Target Response Times
Mark-to-Print	Central	Urgent	6 minutes
	Central	Fast	10 minutes
	Central	Normal	20 minutes
	ORD	Normal	10 minutes

Figure 2.3-9 Mark-to-Print Target Response Times

(c) X_a is the actual number of searches, of the specified search priority x, that were submitted by the bureau during the accounting period. If X_a is zero during an accounting period, all expressions that include X_a will be set to zero so as to avoid undefined mathematical expressions.

The MARK-TO-PRINT PERFORMANCE value for each search priority for each Bureau will be computed using *Equation 2.3-5*. These values will be presented for information and service analysis purposes. The British Transport Police (BTP) and Customs and Excise (CAE) Bureaux may perform all national searches rather than the mix of local/regional/national searches indicated in Section 5. For these two Bureaux, the Mark-to-Print Performance value will be calculated for each search priority using *Equation 2.3-6*.

Equation 2.3-6:
$$M - P_x = \frac{X_c}{X_a} \times 100 + 10$$

In the event that *Equation 2.3-6* results in a Performance value greater than 100, the Performance value shall be set to 100.

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Then the OVERALL MARK-TO-PRINT PERFORMANCE value will be calculated and entered in Figure 2.3-10. This will be calculated by dividing the total number of Mark-to-Print searches of all search priorities and Operational Response searches that complete within the Response Times defined in Figure 2.3-9, by the total number of Mark-to-Print searches submitted during the accounting period. For BTP & CAE, the Overall Mark-to-Print Performance value will be calculated by dividing the total number of Mark-to-Print searches completed within the required Response Times by the total number of Mark-to-Print searches submitted, multiplying by 100, and then adding 10.

Bureau	Mark-to-Print Urgent Perf. Value	Mark-to-Print Fast Perf. Value	Mark-to- Print Normal Perf. Value	Mark-to- Print ORD Perf. Value	Overall Mark- to-Print Perf. Value	Mark- to-Print SCORE
Avon + Somerset						
Bedfordshire						
British Transport Police						
Cambridgeshire						
Cheshire						
City of London						
Cleveland						
Cumbria						
Customs and Excise						
Derbyshire						
Devon + Cornwall						
Dorset						
Durham						
Dyfed Powys						
Essex						
Gloucestershire						
Greater Manchester						
Gwent						

Bureau	Mark-to-Print Urgent Perf. Value	Mark-to-Print Fast Perf. Value	Mark-to- Print Normal Perf. Value	Mark-to- Print ORD Perf. Value	Mark- to-Print SCORE
Hampshire					
Hertfordshire					
Humberside					
Kent					
Lancashire					
Leicestershire					
Lincolnshire					
Merseyside					
Metropolitan					
N.I.S./Residual Bureau					
Norfolk					
North Wales					
North Yorkshire					
Northamptonshire					
Northumbria					
Nottinghamshire					
South Wales					
South Yorkshire					
Staffordshire					
Suffolk					
Surrey					
Sussex					
Thames Valley					

Bureau	Mark-to-Print Urgent Perf. Value	Mark-to-Print Fast Perf. Value	Mark-to- Print Normal Perf. Value	Mark-to- Print ORD Perf. Value	Mark- to-Print SCORE
Warwickshire					
West Mercia					
West Midlands					
West Yorkshire					
Wiltshire					
Ext. Transaction Bureau					

Figure 2.3-10 Mark-to-Print Performance Table

In the event that no applicable mark-to-print searches are processed by the site in the reporting period, a fixed performance value of 90 (corresponding to a SCORE of 100) shall be applied to OVERALL MARK-TO-PRINT PERFORMANCE. This shall also apply to the BTP and CAE Bureaux IND is not expected to submit any Mark-to-Print searches and the ETB SCORE will be set to a performance value of 90 (corresponding to a SCORE of 100). Once the OVERALL MARK-TO-PRINT PERFORMANCE value has been computed for each Bureau, the SCORE for each Bureau will be selected from the Scoring Table presented as Figure 2.3-11. The absence of searches of a particular priority has no effect on the OVERALL SCORE, but will be indicated in the Table with "N/A".

Mark-to-Print Performance	SCORE	Mark-to-Print Performance	SCORE	Mark-to-Print Performance	SCORE
100	120	89	99	68	78
99.5	119	88	98	67	77
99	118	87	97	66	76
98.5	117	86	96	65	75
98	116	85	95	64	74
97.5	115	84	94	63	73
97	114	83	93	62	72
96.5	113	82	92	61	71
96	112	81	91	60	70
95.5	111	80	90	59	69
95	110	79	89	58	68
94.5	109	78	88	57	67
94	108	77	87	56	66
93.5	107	76	86	55	65
93	106	75	85	54	64
92.5	105	74	84	53	63
92	104	73	83	52	62
91.5	103	72	82	51	61
91	102	71	81	(51	60
90.5	101	70	80		1
90	100	69	79		

Figure 2.3-11 Mark-to-Print Performance Scoring Table

The MARK-TO-PRINT PERFORMANCE SCORE will be used for *SLR* reporting as shown in Figure 4.1-1. Mark-to-Print Performance will be reported on an individual Bureau basis.

2.3.5 Mark-to-Mark Performance

Equation 2.3-7 will be used to compute the MARK-TO-MARK PERFORMANCE value for each of the three search priorities *x* within a Mark-to-Mark search type. Equation 2.3-7 will be applied four times, once for each of the three search priorities, and once for Operational Response searches.

Equation 2.3-7:
$$M - M_x = \frac{X_c}{X_a} \times 100$$

where

- (a) $M-M_x$ is the MARK-TO-MARK PERFORMANCE value for each search priority x: Urgent, Fast, and Normal or Operational Response.
- (b) X_c , is the number of searches, of the specified search priority x, that complete within the Target Response Times defined in Figure 2.3-12.

Search Type	Category	Priority	Target response times
Mark-to-Mark	Central	Urgent	3 minutes
	Central	Fast	7 minutes
	Central	Normal	20 minutes
	ORD	Normal	10 minutes

Figure 2.3-12 Mark-to-Mark Target Response Times

(c) X_a is the actual number of searches, of the specified search priority x, that were submitted by the bureau during the accounting period. If X_a is zero during an accounting period, all expressions that include X_a will be set to zero so as to avoid undefined mathematical expressions.

The MARK-TO-MARK PERFORMANCE value for each search priority for each Bureau will be computed using Equation 2.3-7. These values will be presented for information and service analysis purposes. The British Transport Police (BTP) and Customs and Excise (CAE) Bureaux may perform all national searches rather than the mix of local/regional/national searches indicated in Section 5. For these two Bureaux, the Mark-to-Mark Performance value will be calculated for each search priority using Equation .2.3.8.

Equation 2.3-8:
$$M - M_x = \frac{X_c}{X_a} \times 100 + 10$$

In the event that Equation 2.3-8 results in a Performance value greater than 100, the Performance value shall be set to 100.

Then the OVERALL MARK-TO-MARK PERFORMANCE value will be calculated and entered in Figure 2.3-13. This will be calculated by dividing the total number of Mark-to-Mark searches of all search priorities and Operational Response searches that complete within the Response Times as defined in Figure 2.3-12, by the total number of Mark-to-Mark searches submitted during the accounting period. For BTP & CE the Overall Mark-to-Mark Performance value will be calculated by dividing the total number of Mark-to-Mark searches completed within the required Response Times by the total number of Mark-to-Mark searches submitted, multiplying by 100, and then adding 10.

Bureau	Mark-to- Mark Urgent Perf. Value	Mark-to-Mark Fast Perf. Value	Mark-to- Mark Normal Perf. Value	Mark-to- Mark ORD Perf. Value	Overall Mark- to-Mark Perf. Value	Marl-to- Mark SCORE
Avon + Somerset						
Bedfordshire						
British Transport Police						
Cambridgeshire						
Cheshire						
City of London						
Cleveland						
Cumbria						
Customs and Excise						
Derbyshire						
Devon + Cornwall						
Dorset						
Durham						
Dyfed Powys						
Essex						
Gloucestershire						
Greater Manchester						
Gwent						

Bureau	Mark-to- Mark Urgent Perf. Value	Mark-to-Mark Fast Perf. Value	Mark-to- Mark Normal Perf. Value	Mark-to- Mark ORD Perf. Value	Overall Mark- to-Mark Perf. Value	Marl-to- Mark SCORE
Hampshire						
Hertfordshire						
Humberside						
Kent						
Lancashire						
Leicestershire						
Lincolnshire						
Merseyside						
Metropolitan						
N.I.S./Residual Bureau						
Norfolk						
North Wales						
North Yorkshire						
Northamptonshire						
Northumbria						
Nottinghamshire						
South Wales						
South Yorkshire						
Staffordshire						
Suffolk						
Surrey						
Sussex						
Thames Valley						

Bureau	Mark-to- Mark Urgent Perf. Value	Mark-to-Mark Fast Perf. Value	Mark-to- Mark Normal Perf. Value	Mark-to- Mark ORD Perf. Value	Overall Mark- to-Mark Perf. Value	Marl-to- Mark SCORE
Warwickshire						
West Mercia						
West Midlands						
West Yorkshire						
Wiltshire						
Ext. Transaction Bureau						

Figure 2.3-13 Mark-to-Mark Performance Table

In the event that no applicable mark-to-mark searches are processed by the site in the reporting period, a fixed performance value of 90 (corresponding to a SCORE of 100) shall be applied to OVERALL MARK-TO-MARK PERFORMANCE VALUE. This shall also apply to the BTP and CAE Bureaux. IND is not expected to submit any Mark-to-Mark searches and the ETB SCORE will be set to a performance value of 90 (corresponding to a SCORE of 100). Once the OVERALL MARK-TO-MARK PERFORMANCE value has been computed for each Bureau, the SCORE for each Bureau will be selected from the Scoring Table presented as Figure 2.3-14. The absence of searches of a particular priority has no effect on the OVERALL SCORE, but will be indicated in the Table with "N/A".

Mark-to-Mark Performance	SCORE	Mark-to-Mark Performance	SCORE	Mark-to-Mark Performance	SCORE
100	120	89	99	68	78
99.5	119	88	98	67	77
99	118	87	97	66	76
98.5	117	86	96	65	75
98	116	85	95	64	74
97.5	115	84	94	63	73
97	114	83	93	62	72
96.5	113	82	92	61	71
96	112	81	91	60	70

95.5	111	80	90	59	69
95	110	79	89	58	68
94.5	109	78	88	57	67
94	108	77	87	56	66
93.5	107	76	86	55	65
93	106	75	85	54	64
92.5	105	74	84	53	63
92	104	73	83	52	62
91.5	103	72	82	51	61
91	102	71	81	<51	60
90.5	101	70	80		-
90	100	69	79		

Figure 2.3-14 Mark-to-Mark Performance Scoring Table

The MARK-TO-MARK PERFORMANCE SCORE will be used for *SLR* reporting as shown in Figure 4.1-1. Mark-to-Mark Performance will be reported on an individual Bureau basis.

2.3.6 Quoted CRO Image Retrieval

Equation 2.3-9 will be used to compute the QUOTED CRO IMAGE RETRIEVAL PERFORMANCE value. Quoted CRO Image Retrievals are not like AFR searches in that no AFR Search of the Central Data Bases is required. Instead, the user's request for image data, as requested as the result of a receipt of a Quoted CRO Ten Print form, initiates the transaction. The QUOTED CRO IMAGE RETRIEVAL PERFORMANCE equation shown in Equation 2.3-9 does not include provisions for retrievals based on priority.

Within IDENT1, the Quoted CRO Image Retrieval Transaction will start when the user "accepts" the transaction at the end of Demographic Data Check (to include the Quoted CRO entered into the screen by the user). The transaction will end when the image data is available on the Bureau Server. At this point, the user may view the data.

Equation 2.3-9 will be applied once.

Equation 2.3-9:
$$QUOTED = \frac{X_c}{X_a} \times 100$$

where

- (a) *QUOTED* is the QUOTED CRO IMAGE RETRIEVAL PERFORMANCE value.
- (b) X_c , is the number of Quoted CRO Image Retrieval transactions that complete within the Target Response Times as defined in Figure 2.3-15.

Search Type	Target Response Times (seconds)
Quoted CRO	60

Figure 2.3-15 Quoted CRO Image Retrieval Target Response Times

(c) X_a is the actual number of Quoted CRO Image Retrieval transactions that were submitted by the bureau during the accounting period. If X_a is zero during an accounting period, all expressions that include X_a will be set to zero so as to avoid undefined mathematical expressions.

The QUOTED CRO IMAGE RETRIEVAL PERFORMANCE value for each Bureau will be computed using Equation 2.3-9. This value will be placed in Figure 2.3-16.

Bureau	QUOTED CRO IMAGE RETRIEVAL PERFORMANCE VALUE	QUOTED CRO IMAGE RETRIEVAL PERFORMANCE SCORE
Avon + Somerset		
Bedfordshire		
British Transport Police		
Cambridgeshire		
Cheshire		
City of London		
Cleveland		
Customs and Excise		
Cumbria		
Derbyshire		
Devon + Cornwall		

Bureau	QUOTED CRO IMAGE RETRIEVAL PERFORMANCE VALUE	QUOTED CRO IMAGE RETRIEVAL PERFORMANCE SCORE
Dorset		
Durham		
Dyfed Powys		
Essex		
Gloucestershire		
Greater Manchester		
Gwent		
Hampshire		
Hertfordshire		
Humberside		
Kent		
Lancashire		
Leicestershire		
Lincolnshire		
Merseyside		
Metropolitan		
N.I.S./Residual Bureau		
Norfolk		
North Wales		
North Yorkshire		
Northamptonshire		
Northumbria		
Nottinghamshire		
South Wales		
South Yorkshire		

Bureau	QUOTED CRO IMAGE RETRIEVAL PERFORMANCE VALUE	QUOTED CRO IMAGE RETRIEVAL PERFORMANCE SCORE
Staffordshire		
Suffolk		
Surrey		
Sussex		
Thames Valley		
Warwickshire		
West Mercia		
West Midlands		
West Yorkshire		
Wiltshire		
Ext. Transaction Bureau		

Figure 2.3-16 Quoted CRO Performance Table

In the event that no applicable quoted CRO image retrievals are processed by the site in the reporting period, a fixed SCORE of 100 shall be applied to QUOTED CRO IMAGE RETRIEVAL PERFORMANCE VALUE. This shall also apply to the BTP, CAE and ETB Bureaux. Once the QUOTED CRO IMAGE RETRIEVAL PERFORMANCE value has been computed for each Bureau, the SCORE for each Bureau will be selected from the Scoring Table presented as Figure 2.3-17.

QUOTED Performance	SCORE	QUOTED Performance	SCORE	QUOTED Performance	SCORE
100	120	89	99	68	78
99.5	119	88	98	67	77
99	118	87	97	66	76
98.5	117	86	96	65	75
98	116	85	95	64	74
97.5	115	84	94	63	73
97	114	83	93	62	72
96.5	113	82	92	61	71
96	112	81	91	60	70
95.5	111	80	90	59	69
95	110	79	89	58	68
94.5	109	78	88	57	67
94	108	77	87	56	66
93.5	107	76	86	55	65
93	106	75	85	54	64
92.5	105	74	84	53	63
92	104	73	83	52	62
91.5	103	72	82	51	61
91	102	71	81	<51	60
90.5	101	70	80		ı
90	100	69	79		

Figure 2.3-17 Quoted CRO Image Retrieval Performance Scoring Table

The QUOTED CRO IMAGE RETRIEVAL PERFORMANCE SCORE will be used for *SLR* reporting as shown in Figure 4.1-1. Quoted CRO Image Retrieval Performance will be reported on an individual Bureau basis.

2.3.7 Future Changes for Search Response Time

There are several changes for the response time service level criteria after TOR.

These changes are described below. Response time measurements for marks (using existing metrics) will include palm marks when the palm search capability becomes operational.

2.3.7.1 Improved Target Response Times

In addition to the significantly improved TOR target response times (vs NAFIS) specified in the previous sections, faster target response times for most search types will be implemented for FOC and FOC+3 to provide continuing incremental improvements. These 90 percentile target values are summarised in Figure 2.3-18. Note that due to the fast response times, the Fast priority has been eliminated.

In addition, a new search priority category for searches that can take advantage of the off-peak processing capacity may be introduced if agreed by the Authority and Contractor.

Search Type	Database Penetration	Category	Priority		et Response Minutes)
				FOC	FOC+3
Print-to-Print	100%	Central	Urgent	3	2
		Central	Normal	4	3
		ORD	Normal	4	3
Print-to-Mark	100%	Central	Urgent	30	22
		Central	Normal	40	30
		ORD	Normal	10	8
Finger Mark-to-Print	100% for 15% of searches and 30% for 85% of searches	Central	Urgent	5	4
		Central	Normal	15	11
		ORD	Normal	8	6
Palm Mark-to-Print	100% for 15% of searches and 30% for 85% of searches	Central	Urgent	15	12
	≤ 30%	Central	Normal	15	12
		ORD	Normal	8	6
	> 30% and ≤ 100% for up to 15% of searches	Central	Normal	45	36
		ORD	Normal	15	10

Mark-to-Mark	100%	Central	Urgent	5	4
		Central	Normal	10	8
		ORD	Normal	5	4

Figure 2.3-18 90% Target Response Times at FOC and FOC+3

Note that faster response times for searches against the ORD can be obtained with optional upgrade of the Bureau search capacity.

2.3.7.2 Average Response Time

To complement the 90 percentile response time metrics, average response times will also be measured and scored starting at FOC. Figure 2.3-19 provides the initial average response time target values for FOC and FOC+3 years.

Search Type	Database Penetration	Category	Priority	Average Target Response Time (Minutes)	
				FOC	FOC+3
Print-to-Print	100%	Central	Urgent	1.5	1.2
		Central	Normal	2.5	2.0
		ORD	Normal	2.5	2.0
Print-to-Mark	100%	Central	Urgent	20	15
		Central	Normal	30	22
		ORD	Normal	7.5	6
Finger Mark-to-Print	100% for 15% of searches and 30% for 85% of searches	Central	Urgent	3	2
		Central	Normal	5.5	4.5
		ORD	Normal	4	3
Palm Mark-to-Print	100% for 15% of searches and 30% for 85% of searches	Central	Urgent	8	6
	# 30%	Central	Normal	10	8
		ORD	Normal	5	4
	> 30% and # 100% for up to 15% of	Central	Normal	30	24

	searches				
		ORD	Normal	10	8
Mark-to-Mark	100%	Central	Urgent	4	3
		Central	Normal	6	4
		ORD	Normal	4	3

Figure 2.3-19 Average Target Response Times at FOC and FOC+3

In Figures 2.3-19 and 2.3-18, database penetration refers to geographic penetration (100% penetration for National searches). The response times reflect search parameters such as finger allowance and priority currently used in operational environments. Bureau search loads for the ORD are not specified in the DOR.

The metric for average response time will be the percentage deviation from the target value ie ([average response time target value - measured average response time]/average response time target value). For each search type, this metric will be computed for each priority and search category within the search type. The values will then be averaged to obtain a composite metric value for the search type. The calculation of the average response times will exclude searches that are directly effected by the failure of critical components where the Service Failure is being fully measured under the Service Availability category. Figure 2.3-20 provides the table for translating the metric values into scores.

Average Response Time Metric (%)	Score	Average Response Time Metric (%)	Score	Average Response Time Metric (%)	Score
+50.0	120	-10.0	96	-70.0	72
+47.5	119	-12.5	95	-72.5	71
+45.0	118	-15.0	94	-75.0	70
+42.5	117	-17.5	93	-77.5	69
+40.0	116	-20.0	92	-80.0	68
+37.5	115	-22.5	91	-82.5	67
+35.0	114	-25.0	90	-85.0	66
+32.5	113	-27.5	89	-87.5	65
+30.0	112	-30.0	88	-90.0	64
+27.5	111	-32.5	87	-92.5	63
+25.0	110	-35.0	86	-95.0	62
+22.5	109	-37.5	85	-97.5	61
+20.0	108	-40.0	84	-100.0	60
+17.5	107	-42.5	83	-102.5	59
+15.0	106	-45.0	82	-105.0	58
+12.5	105	-47.5	81	-107.5	57
+10.0	104	-50.0	80	-110.0	56
+7.5	103	-52.5	79	-112.5	55
+5.0	102	-55.0	78	-115.0	54
+2.5	101	-57.5	77	-117.5	53
0.0	100	-60.0	76	-120.0	52
-2.5	99	-62.5	75	-122.5	51
-5.0	98	-65.0	74	≤ -125.0	50
-7.5	97	-67.5	73		

Figure 2.3-20 Average Response Times Score Table

The overall response time service level score for each search type will be computed

as a weighted average of the scores for the 90 percentile and the average response times, with a weight of 0.6 for the 90 percentile and a weight of 0.4 for the average response time.

In addition to the average response time metrics, shadow metrics for 99.9 percentile response times will be defined and evaluated for potential implementation after FOC.

2.3.7.3 Non-Verified Live ID Response Time

Since Live ID non-verified searches require much faster response than the other print-to-print searches, separate measurements will be made and scored. Shortly after TOR, a live ID shadow metric will be defined and evaluated. The initial target value will be 120 seconds. The implementation and scoring of the metric for Live ID non-verified searches will commence as soon as the IDENT1 web server architecture is deployed. The proposed weighting for its inclusion is shown in Figure 2.3-21.

	Search Response Time Weights					
Print-t	o-Print	Print-to-Mark	rint-to-Mark Mark-to-Print Mark-to-Mark		Quoted CRO	
Paper	Live ID					
0.05	0.05	0.10	0.10	0.02	0.03	

Figure 2.3-21 Search Response Time Weights

On implementation and scoring of the Live ID non-verified search Service Level Metric, the weighting between other Service Level metrics within the Search Performance Service criteria will be adjusted in accordance with Figure 2.3-21 above.

2.3.7.4 Serious Crimes Cache

At FOC the target response time for searches of the serious crimes cache will be reduced to a target of 5 minutes. This target is for review purposes and will not be included in the scoring mechanism.

2.3.7.5 Operator Task Times

While end-to-end search response time will continue to be defined from the time a search is submitted by the Bureau to the time the search results are available for comparison at the Bureau, significantly improved target operator times for various Bureau tasks have been defined for audit purposes to ensure improved system responsiveness. These are shown in Figure 2.3-22.

Tasks	Description	Time at TOR (seconds)	Time at FOC (seconds)			
Print-to-Print Processing						
Capture Images in a Batch	Average number of seconds required to scan a two- sided Ten Print form through the Improvision scanner, display it to the Ten Print Technician, and have the technician move the delineation boxes if	First one 78.2 sec Others 56.6 sec	First one 34 sec Others 18 sec			

Tasks	Description	Time at TOR (seconds)	Time at FOC (seconds)
	needed, and accept the form into the system		
Check Demographics in a Batch	emographics in Batch spends checking demographics for one form in a batch		First one 7 sec Others 6 sec
Check Prints initialisation for a batch	Time to start the check prints function from request to display of the first images	2.1 sec	2.1 sec
Check Prints Visual Sequence/Quality Check	Time per suspect finger for an FPO to inspect and decide on action		12 sec
Check Prints Replace a roll with a flat	Time for an FPO to replace a poor quality rolled impression with a flat per finger replace	6.3 sec	6.3 sec
Check Prints Exchange Fingers	Time for an FPO to exchange two fingers placed in the wrong box	6.3 sec	6.3 sec
Check Prints Fingerprint Edit	Time for an FPO to manually edit a finger (per finger edited)	80 sec	80 sec
Check Prints Exchange Hands	Time for an FPO to interchange hands that have been place in the wrong position	50 sec	10 sec
Check Prints Accept and Next	Time to accept a form and if any remain in the batch, display the next form	0.8 sec	0.8 sec
Set parameters for default search	This function is automated	0 sec	0 sec
Request Non- Default Search	Time for Ten Print Technician to set parameters and start non-default search	50 sec	30 sec
Print-to-Print Respondent image viewing time (first check)	respondent image against an enquiry image during a first level check (Compare 1) when viewed in a		First one 29.5 sec Others 26 sec
Print-to-Print Respondent image viewing time (second check)	Time for a FPO to view a respondent image against an enquiry image during a first level check (Compare 1) when viewed in a batch	First one 64.4 sec Others 60.9 sec	First one 64.4 sec Others 60.9 sec

Tasks	Description	Time at TOR (seconds)	Time at FOC (seconds)
Finger Mark-to-	Print Processing	<u> </u>	1
Case Control	Time for FPO Create a case and enter details	58.2 sec	58.2 sec
Capture Lift	ture Lift Average time for FPO to capture a lift image		11.5 sec
Clip Mark from Lift	Time for FPO to define and clip the image for one mark from a lift	48 sec	10 sec
Edit Image	Average Time for FPO to manually edit minutiae for an image	155 sec	155 sec
Request Search	Time for FPO to set parameters and start search	14.6 sec	5 sec
Mark-to-Print Respondent Viewing Time (Compare 1)	print respondent for a mark to print search at the first		First one 18.2 sec Others 8.2 sec
Mark-to-Print Respondent Viewing Time (Compare 2/3)	Average Time for FPO to view a single finger ten- print respondent for a mark to print search at the second or third level	First one 98.8 sec Others 85.8 sec	First one 78.5 sec Others 71.5 sec
Palm Mark-to-P	rint Processing	<u> </u>	1
Case Control	Time for FPO Create a case and enter details	N/A	58 sec
Capture Lift	Average time for FPO to capture a lift image	N/A	11.5 sec
Capture Mark from Lift	Time for FPO to define and clip the image for one mark from a lift	N/A	20
Edit Image	Average Time for FPO to manually edit minutiae for an image	N/A	280 sec
Request Search	Time for FPO to set parameters and start search	N/A	5 sec
Mark-to-Print Respondent Viewing Time (Compare 1)	ondent print respondent for a mark to print search at the first level		Others 30.2 sec
Mark-to-Print Respondent Viewing Time (Compare 2/3)	Average Time for FPO to view a single finger ten- print respondent for a mark to print search at the second or third level	First one 78 sec Others 91.2 sec	Others 81.2 sec

Figure 2.3-22 Operator Task Times

Note that the "TOR times" are applicable after the Linux workstations have been deployed. This is scheduled to occur shortly after TOR.

By FOC, Figure 2.3-22 will be updated to include operator task times for Print to Mark searches, searches against the Police Elimination Database and the Operational Response Database, and the Livescan processes. In addition a tabulation of search response times for Police Elimination Database, the Operational Response Database and Serious Crime Cache searches will be added for audit and reporting purposes as needed rather than SLR scoring, if agreed between the Contractor and the Authority.

2.4 Technical Support Service

Technical Support Service will be measured in terms of response time for trouble calls made to the Contractor Help Desk. Response time is defined as the Contractor's level of responsiveness to any Bureaux, Central, DRS and training incident, see Figure 2.4-1 for the definition of each response level.

Response Level	Title	Description
1	Receive incident call	Answer the incoming call at the help desk and resolve or escalate.
2	Respond with Status Update	Resolved incident over the phone or escalate to next level.
3	Restore service to faulty item	Site support sent to correct incident and/or restore service to sufficient IDENT1 functional and performance capability to process their normal workload within the measures defined within this <i>SLR</i> .
4	Global Changes	Deploy hardware or software fixes to all sites to restore IDENT1 operational functionality. This response level is not applicable to all incidents, but only those incidents which cause a loss of operational services (as defined in Section 2.1 of this document) at Central, Bureaux, or Training Centres.

Figure 2.4-1 Definition of Response Levels

The Help Desk, at the first level, will determine the severity of the incident through the information provided by the caller and in accordance with the Help Desk calling procedures defined in the *IDENT1 Maintenance Plan*. In some cases, where sites have only one workstation, it may be determined that those sites may not employ a level 1 fault severity but fall into a level 2 fault severity. Figure 2.4-2 defines each fault severity rating for IDENT1.

Fault Severity Level	Title	Description
0	Non-fault	All system or service matters that do not equate to a fault. This will include all calls to the Help Desk that do not fall into one of the other severity levels.
1	Single User Fault or Non Critical Fault	 a single user account or workstation non-critical equipment as defined in Section 6.1 of this <i>SLR</i> non-essential IDENT1 software capabilities that do not cause a loss of Site Services.
2	Bureau Site Fault	Faults causing a loss of Bureaux Site services involving critical IDENT1 equipment as defined in Section 6.1 or

			essential IDENT1 software capabilities.
3a	3b	(a) Central Segment - Primary Fault (b) Central Segment - DRS Fault	Faults causing a loss of Central Segment - Primary services involving critical IDENT1 equipment as defined in Section 2.1 or essential software capabilities Faults causing a loss of DRS services involving critical IDENT1 equipment as defined in Section 2.1 or essential IDENT1 software capabilities
4		Global Fault	Faults causing a loss of services between Central and Bureaux Sites, or between Central and PNC, due to one or more faults.

Figure 2.4-2 Definition of Fault Severity Levels

Non-fault Calls

Some calls received by the Help Desk may not relate to an actual fault but refer to other system or service matters. Examples are queries about use of the system, user account changes and calls in connection with user training. The Help Desk will record these calls under one of the following categories - for analysis and reporting purposes:

- Unconfirmed faults (i.e. problems/suspected faults which, upon examination, do not represent a failure of the system)
- User queries
- User training (calls in connection with training centre or other recognised training sessions).

Based on the Response Levels defined in Figure 2.4-1 and the Fault Severity Levels defined in Figure 2.4-2, the target response times in Figure 2.4.3 have been established.

Fault Severity Levels	1	2	3	4
0 Non Fault	1 Minute	30 Minutes	Not Applicable	Not Applicable
1 Single User Fault/Non Critical Fault	1 Minute	30 Minutes	24 Hours	6 Months
2 Bureau Site Fault	1 Minute	30 Minutes	4 Hours	6 Months
3a Central Segment - Primary Fault 3b Central Segment - DRS Fault	1 Minute 1 Minute	30 Minutes 30 Minutes	2 Hours 8 Hours	6 Months 6 Months
4 Global Fault	1 Minute	30 Minutes	3 Hours	6 Months

Figure 2.4-3 Target Response Times

Restoration of Service is defined as restoration of sufficient IDENT1 functional capability to enable Bureaux to process their normal workload within the measures defined within this *SLR*. This will be agreed between the Help Desk and the bureau. Technical Support Service will be measured with respect to response times for each Response Level to trouble calls as defined in Figure 2.4-1. In view

of the variable nature of Non-faults (Fault Severity Level 0), Target Response Times for Response Levels 3 and 4 will not be applicable and will not be scored

Once the response times for each level is computed, a SCORE can be calculated for each response level. This score is calculated on a monthly basis and is illustrated in Section 2.4.1 through 2.4.4. To compute an OVERALL SCORE for Technical Support Service each response level measure Score will be computed and applied to Figure 2.4-4. The following steps are used to compute an Overall Service Support Score:

- 1. The SCORE for each Measure within Technical Support Service is applied to Figure 2.4-4. These scores are computed from the scoring tables defined in Section 2.4.1 through 2.4.4 of this *SLR*.
- 2. The Sum of the Scores is calculated and then divided by the total number of Measure Scores to obtain an Overall Service Support Score as shown in Figure 2.4-4.

Measure	SCORE	OVERALL SCORE
Receive Incident Call		
Respond with Status Update		
Restore Service to Faulty Item		
Global Changes		
Overall Service Support Score		

Figure 2.4-4 Technical Support Service Score

The OVERALL Service Support SCORE will be applied to Figure 4.1-1 for *SLR* reporting.

2.4.1 Receive Incident Call

The first level of maintenance response is provided by the Contractor's Help Desk which is located at the Central Site. For any Bureau question or maintenance problem that is beyond user's level of expertise, an incident call, which can originate as a telephone call, electronic mail, or FAX, will be placed to the Contractor's Help Desk. Each IDENT1 Site is provided a Problem Reporting Checklist developed for IDENT1 operations which is defined in the *IDENT1 Maintenance Plan*. This Problem Report Checklist includes the required information needed by the Help Desk to assess the Incident's severity.

To compute a measure for Incident Calls the following equation and steps will be used:

Equation 2.4-1: Receive Incident Call =
$$\left(\frac{Number\ of\ Calls\ Re\ sponded\ to\ in\ 1\ min}{Number\ of\ Incident\ calls\ received}\right) \times 100$$

where

(a) The *Number of Incident Calls responded to in 1 minute* is defined as the Help Desk's answering any incoming incident calls within 1 minute.

(b) The denominator of the equation is the total *Number of Incident Calls received* at the Help Desk.

The *Receive Incident call* measure value will be computed using *Equation 2.4-1*.

Once the value has been computed, a Service Level Score will be selected from the Scoring Table presented as Figure 2.4-5. In the event that no applicable incident calls are made to the help desk in the reporting period, a fixed Service Level Score of 100 shall be applied.

Receive Incident Call	SCORE								
100	110	89	94	78	83	67	72	56	61
99	108	88	93	77	82	66	71	≤55	60
98	106	87	92	76	81	65	70		
97	104	86	91	75	80	64	69		
96	102	85	90	74	79	63	68		
95	100	84	89	73	78	62	67		
94	99	83	88	72	77	61	66		
93	98	82	87	71	76	60	65		
92	97	81	86	70	75	59	64		
91	96	80	85	69	74	58	63		
90	95	79	84	68	73	57	62		

Figure 2.4-5 Receive Incident Call Scoring Table

Once a Service Level Score has been selected, it will be applied to the Technical Support Service table, Figure 2.4-4, in order to compute an overall support service score.

2.4.2 Respond With Status Update

Once the Incident call details are entered into the Help Desk Management System, the Help Desk Operator will then try to either resolve the incident call or escalate the incident as follows:

(a) Provide telephone support using a series of scripts residing within the Help Desk Management System. If telephone support provides a solution for the Incident, and the user concurs with the corrective action, the status information will be logged within the Help Desk Management System, and the incident report closed.

- (b) If telephone support does not provide a satisfactorily resolution, the Help Desk Operator will then prioritise and categorise the incident, and pass the incident on to the most appropriate third party provider in accordance with the *IDENTI Maintenance Plan*. The Help Desk Operator will then provide a status update to the user as to what the next step is in correcting the incident.
- (c) Non-fault calls (Fault Severity Level 0). If the Help Desk Operator is unable to resolve a Non-fault call over the telephone, the call will be escalated within the Contractor or Authority service organisation, as appropriate, to be dealt with and a status update provided to the user. This will represent close-out of the call as far as the *SLR* is concerned. It will be for the person to whom the call is escalated to respond to the caller and/or agree a suitable response time although the Help Desk will continue to track the call until resolved

In computing a value for the "Respond With Status Update" measure the following equation and steps will be used:

$$\textbf{\textit{Equation 2.4-2:}} \qquad \text{Re \textit{spond with Status Update}} = \left(\frac{\left\{\left(Number \textit{resolved} \times 1.1\right) + Number \textit{statused}\right\}\right) \times 100}{Number \textit{of Incident calls}}\right) \times 100$$

where

- (d) The *Number resolved* and the *Number statused* is defined as the Help Desk either resolving the incident or escalating the incident and providing the Bureau updated status within 30 minutes. Calls that are resolved within 30 minutes are awarded a premium by multiplying the *Number resolved* by 1.1
- (e) The denominator of the equation is the total *Number of Incident Calls received* at the Help Desk.

The *Respond with status update* measure will be computed using Equation 2.4-2.

Once a value has been computed, a Service Level Score will be selected from the Scoring Table presented as Figure 2.4-6. In the event that no applicable status updates are required by the help desk in the reporting period, a fixed Service Level Score of 100 shall be applied.

Respond with Status Update	SCORE										
110	120	99	104	88	93	77	82	66	71	55	60
109	118	98	103	87	92	76	81	65	70		
108	116	97	102	86	91	75	80	64	69		
107	114	96	101	85	90	74	79	63	68		
106	112	95	100	84	89	73	78	62	67		
105	110	94	99	83	88	72	77	61	66		
104	109	93	98	82	87	71	76	60	65		

103	108	92	97	81	86	70	75	59	64
102	107	0.1	0.6	00	0.5	(0)	7.4	50	(2
102	107	91	96	80	85	69	74	58	63
101	106	90	95	79	84	68	73	57	62
100	105	89	94	78	83	67	72	56	61

Figure 2.4-6 Respond with Status Update Scoring Table

Once a Service Level Score has been selected, it will be applied to the Technical Support Service table, Figure 2.4-4, in order to compute an overall support service score.

2.4.3 Restore Service to Faulty Item

For those Incident calls not resolved by the Help Desk, escalated to a third party provider, and a status update provided to the user, as discussed in Section 2.4.2, a third party technician will be dispatched to the site reporting the incident. The technician will follow the response procedures defined in the *IDENT1 Maintenance Plan*. To restore service of a hardware or software faulty item, the dispatched technician will perform the following maintenance tasks:

- (a) Verification
- (b) Fault Isolation
- (c) Remove/Replace or Repair the faulty item (hardware or software) as appropriate
- (d) Operational Check-out.

Once the hardware or software fault has been corrected, the on-site technician will coordinate the incident call close-out with the Site personnel and the Contractor's Help Desk, prior to leaving the site.

Restore Service to a Faulty Item measure may be one of five (5) severity levels as defined in Figure 2.4-2. The response time for each is slightly different, leading to slightly different values. In computing a value for each severity level the following equation and steps will be used five (5) times, once each for each severity level:

Equation 2.4-3: Restore Service to a Faulty Item =
$$\left(\frac{Number of Incident calls resolved}{Number of Incident calls escalated}\right) \times 100$$

where

(e) The *Number of Incident Calls resolved* is defined in terms of those calls resolved within the times shown in Figure 2.4-7. The time taken to resolve a call will be measured from the moment the third party provider receives a call from the Contractor's Help Desk until the moment when all parties involved agree that the incident call has been resolved and the incident is closed. The threshold for the numerator is based upon the severity of the faulty item as defined in Figure 2.4-2. In the event of a disaster at the Primary Site and the use of the DRS to support IDENT1 operations, the 2 hour restore service to faulty item value shall apply to the DRS.

Fault Severity	Restore service to faulty item
1 Single User Fault/Non Critical Fault	24 Hours
2 Bureau Site Fault	4 Hours
3a Central Segment Primary Fault	2 Hours
3b Central Segment - DRS	8 Hours
4 Global Fault	3 Hours

Figure 2.4-7 Restore Service to Faulty Item Response times

(f) The denominator of the equation is the total *Number of Incident Calls* escalated by the Help Desk for each of the severity levels defined in Figure 2.4-2.

The Restore Service to a Faulty Item measure will be computed using *Equation 2.4-1* five (5) times, once for each severity level defined in Figure 2.4-2. The value calculated for each severity level will be applied to Figure 2.4-8.

	Severity Level						
	% Single User Fault/Non Critical Fault	% Bureau Site Fault	% Central Segment Fault		% Central Segment Fault Global Fault		Score
			Primary	DRS			
Weight	.25	.25	.20	.05	.25		
Restore Service to Faulty Item							

Figure 2.4-8. Measured Restore Service to Faulty Item Score

The five (5) values will be multiplied by their weights and summed to produce a weighted average for the Restore Service to Faulty Item measure.

Once an Average has been computed, a Service Level Score will be selected from the Scoring Table presented as Figure 2.4-9 and applied to Figure 2.4-8. This Service Level Score will be carried forward and applied to Figure 2.4-4. In the event that no applicable service incidents are made during the reporting period, a fixed Service Level Score of 100 shall be applied.

Restore Service to Faulty Item	SCORE	Restore Service to Faulty Item		Restore Service to Faulty Item	SCORE	Restore Service to Faulty Item	SCORE	Restore Service to Faulty Item	
100	110	89	94	78	83	67	72	56	61
99	108	88	93	77	82	66	71	≤55	60
98	106	87	92	76	81	65	70		
97	104	86	91	75	80	64	69		
96	102	85	90	74	79	63	68		
95	100	84	89	73	78	62	67		
94	99	83	88	72	77	61	66		
93	98	82	87	71	76	60	65		
92	97	81	86	70	75	59	64		
91	96	80	85	69	74	58	63		
90	95	79	84	68	73	57	62		

Figure 2.4-9 Measured Restore Service to Faulty Item Scoring Table

In the event of a disaster at the primary site and the use of the DRS to support

IDENT1 operations, no % Central Segment Fault-Primary will be computed. Rather the % Central Segment Fault of the DRS site will be used with a weight of .25 in Figure 2.4-8. If there is a disaster at the DRS, the % Central Segment Fault- Primary value will be computed as normal and a weight of .25 will be used in Figure 2.4-8.

2.4.4 Global Changes

In addition to incident calls related to problems discussed in Section 2.4.3, some incidents may be referred to the Contractor's engineers for resolution in future system releases. These escalated incidents will be considered global changes as they constitute changes that need to be applied to IDENT1 as a whole. Incidents that affect operational services at Central, Bureaux, or Training Centres will be resolved by the Contractor's development/test group and included in new releases within the time scales specified in Figure 2.4-3. Incidents that do not affect operational services will not be included in global changes and will not subject to the time scales specified in Figure 2.4-3. The status of all applicable escalated incidents will be tracked separately, with status reporting on a monthly basis, as a minimum, and a resolution target as defined in Figure 2.4-3.

To compute a measure for Global Changes the following equation and steps will be used:

$$\textit{Equation 2.4-4:} \qquad \textit{Global Changes} = \left(\frac{\textit{Number of Incident calls resolved}}{\textit{Number of Incident calls}}\right) \times 100$$

where

- (a) The *Number of Incident Calls resolved* is defined as the number of calls escalated to the Contractor's development/test group and resolved, installed, checked out, and closed out in 6 months.
- (b) The denominator of the equation is the total *Number of Incident Calls* escalated to the Contractor's development/test group for resolution.

The Global Changes measure will be computed using Equation 2.4-4.

Once a value has been computed, a Service Level Score will be selected from the Scoring Table presented as Figure 2.4-10. The resulting score will be applied to Figure 2.4-4. In the event that no applicable incidents are outstanding or scheduled to be fixed at the time of the Service Review, a fixed Service Level Score of 100 shall be applied to Global Changes.

Global Changes	SCORE								
100	110	89	94	78	83	67	72	56	61
99	108	88	93	77	82	66	71	≤55	60
98	106	87	92	76	81	65	70		
97	104	86	91	75	80	64	69		

96	102	85	90	74	79	63	68
95	100	84	89	73	78	62	67
94	99	83	88	72	77	61	66
93	98	82	87	71	76	60	65
92	97	81	86	70	75	59	64
91	96	80	85	69	74	58	63
90	95	79	84	68	73	57	62

Figure 2.4-10 Measured Global Changes Scoring Table

2.4.5 Future Changes for Service Management

No changes of the target values for the helpdesk response times are currently planned. The mechanism for faster response time will continue to be the incentive built into the SLR scoring structure.

The focus for this service level criterion after TOR will be on the definition, evaluation of shadow metrics that reflect user service satisfaction both from a helpdesk perspective and the overall service support. Depending on the evaluation results, it is a goal that at or prior to FOC, one or more user oriented metrics will be implemented and integrated into the IDENT1 SLR structure described in Section 1.0

2.5 Search Accuracy

AFR Accuracy will be measured in terms of matcher performance. Matcher performance is defined as the systems' accuracy when performing a search. The Contractor and the Authority will establish a background database called a Quality Assurance (QA) Collection database located at the Central Site. The objective of this QA Collection database is to ensure that search accuracy is not degraded due to changes, enhancements, or upgrades to system equipment or matcher algorithms. This database will consist of Ten Prints and Marks, enquiry Ten Prints and Marks, identification of the correct match (ident) for each enquiry, and sets of respondent IDs and scores from previous runs. Maintaining the ident information allows the QA run results to be measured in terms of the position on each respondent list. Improvements in accuracy from one QA run to the next is then measured as the amount that the ident has moved towards the top of the respondent list.

In measuring matcher performance, a limited number of known searches will be run. These known searches are run to ensure that the system provides the same score as established with the baseline database, should no changes have been made. In addition, if changes have been made the QA run of known searches should yield the same results and not degrade the baseline search accuracy. See Section 2.5.1 of this *SLR* for a description of how AFR Accuracy will be measured.

2.5.1 Matcher Performance

Matcher Performance Accuracy will be assessed monthly from each QA Collection database run. A QA run consists of running searches using each enquiry item. The top portion of the respondent list is retained as the baseline, see Figure 2.5-1. The

initial baseline QA Collection database will be implemented from data obtained at previous AFR trials and augmented with data to be provided by the Authority.

Search Type	Enquires	Background Database	Respondent IDs & Scores to Save
Print-to-Print	500	50,000	Top 3 (All 3 fingers searched)
Mark-to-Print	400	50,000	Top 15
Print-to-Mark	125	5,000	Top 10
Mark-to-Mark	125	5,000	Top 5

Figure 2.5-1 Search Type Data Saved

Search accuracy will be measured for each search type as defined in Figure 2.5-1. Data obtained for each search type will be compared for both the QA run (Test Set) and the existing baseline (Baseline Set) as shown in Figure 2.5-2.

The data resulting from each search type will be a percentage value of idents in the Nth position as shown in Figure 2.5-2, based on the definitions of each search type below:

1. Print-to-Print: N is $1, \le 2, \le 3, >3$

2. Mark-to-Print: N is $1, \le 10, \le 15, >15$

3. Print-to-Mark: N is $1, \le 10, >10$

4. Mark-to-Mark: N is $1, \le 5, >5$.

Matcher	Quality	Assurance	Report
---------	---------	-----------	--------

Test Data Set:ref_num, run_num, date

Baseline Data Set: ref num, run num, date

Print to Print

	Test Set	Baseline Set
Idents in top position	00%	00%
Idents in top 2 positions	00%	00%
Idents in top 3 positions	00%	00%

Idents not in top 3 positions 00% 00%

Mark to Print

	Test Set	Baseli	ne Set
Idents in top position	00%	00%	
Idents in top 10 positions	00%	00%	
Idents in top 15 positions	00%	00%	
Idents not in top 15 positi	ons	00% (00%

Print to Mark

	Test Set	Basel	ine Set
Idents in top position	00%	00%	
Idents in top 10 positions	00%	00%	
Idents not in top 10 positi	ons	00%	00%

Print to Mark Serious Crime Cache

		Test Set	Baseline Set
Idents in	top position	00%	00%
Idents in	top 10 positions	00%	00%

Idents not in top 10 positi	ons	00% 00%
Mark to Mark		
	Test Set	Baseline Set
Idents in top position	00%	00%
Idents in top 5 positions	00%	00%
Idents not in top 5 position	ons	00% 00%

Figure 2.5-2 Matcher QA Report

The monthly assessment will be run based on one of the following:

- (a) Should there be no changes to the baseline IDENT1 design configuration, a subset of the enquiries will be searched for each search type to ensure that percentages for both the Baseline Set and Test Set remain the same.
- (b) For Intermediate cases where a new version of the UNIX operating system, new version of the compiler is installed, there may be slight changes (i.e., rounding off changes). These will be considered as scores remaining the same.
- (c) For situations where a known IDENT1 configuration is brought down and then rebuilt, a subset of the enquiries will be searched for each search type to verify that percentages for both the Baseline Set and the Test Set remain the same.
- (d) For the situation where a matcher upgrade is installed, the entire set of searches would be re-searched. For the upgrade to pass, accuracy must not be degraded for any search type. For Print-to-Print, accuracy must not decrease for top 1, top 2 and top 3 respondent positions. For Mark-to-Print, accuracy must not decrease for top 1, top 10, and top 15 positions. For Print-to-Mark, accuracy must not decrease for top 1 and top 10 positions. For Print-to-Mark Serious Crime Cache, accuracy must not decrease for top 1 and top 10 positions. For Mark-to-Mark, accuracy must not decrease for top 1 and top 5 positions.

These criteria may be relaxed with Authority approval. If the QA run passes, then the new set of scores becomes the new Score baseline.

2.5.2 Matcher Score

In computing a monthly measure for AFR Performance the data collected and compared in the Matcher QA Report, shown in Figure 2.5-2 within this *SLR*, will be used. The Service Level Score will be determined by comparing the Baseline Set percentages and the Test Set percentages for each measure in Figure 2.5-3:

	Test Set	Baseline Set	Difference	Score
Print to Print	-			
Idents in top position	0%	0%	0.0%	
• Idents in top 2 positions	0%	0%	0.0%	
• Idents in top 3 positions	0%	0%	0.0%	
• Idents not in top 3 positions	0%	0%	0.0%	
Mark to Print				
• Idents in top position	0%	0%	0.0%	
• Idents in top 10 positions	0%	0%	0.0%	
• Idents in top 15 positions	0%	0%	0.0%	
• Idents not in top 15 positions	0%	0%	0.0%	
Print to Mark				
Idents in top position	0%	0%	0.0%	
• Idents in top 10 positions	0%	0%	0.0%	
• Idents not in top 10 positions	0%	0%	0.0%	
Print to Mark Serious Crime Cache				
Idents in top position	0%	0%	0.0%	
• Idents in top 10 positions	0%	0%	0.0%	
• Idents not in top 10 positions	0%	0%	0.0%	
Mark to Mark				
• Idents in top position	0%	0%	0.0%	
• Idents in top 5 positions	0%	0%	0.0%	
• Idents not in top 5 positions	0%	0%	0.0%	
				1

Figure 2.5-3 Matcher QA Report

The Difference will be computed by subtracting the Baseline Set percentage from the

Test Set percentage. If the Difference is 0.0 then a score of 100 will be applied to Figure 2.5-3 and carried forward to Figure 4.1-1 for each Bureau. If a Difference other than 0.0 is obtained for any of the measures in Figure 2.5-3, then a score of 0 will be applied to Figure 2.5-3 and carried forward to Figure 4.1-1 for each Bureau.

2.5.3 Future Changes for Search Accuracy

Significant changes for the search accuracy service level criterion will be made after TOR. These include the benchmark measurement of accuracy improvement and the integration of the results with the existing quality control metric to determine the service level score for the search accuracy criterion.

2.5.3.1 Accuracy Improvement Metrics

To support the need for continuing accuracy improvement for IDENT1, search accuracy metrics are defined to measure planned improvements using benchmarking every 2 or 3 years. To facilitate the benchmarking process, three search types, print-to-print, finger mark-to-print, and palm mark-to-print are used to represent the overall search accuracy of the system. In all cases, the most important Top 1 accuracy will be used as the metric. Figure 2.5-4 shows the planned evolution of the target accuracy levels from FOC to FOC+1 and FOC + 4 years.

Search Type	Metrics	Targe	et Accuracy Levels	
		FOC	FOC+1	FOC+4
Print-to-Print	Top 1	T1=99.8%	No Change	No Change
Finger Mark-to- Print	Top 1	T2=54.2%	T2+5%	T2+10%
Palm Mark-to- Print	Top 1	T3=76.2 %	T4+3%	T4+5%

Figure 2.5-4 Search Accuracy Target Values

Where the target accuracy levels for the searches are specified in terms of the IDENT1 benchmark results, T1, T2, T3 and T4 as defined below:

T1 = Northrop Grumman IDENT1 ITT Benchmark Print-to-Print accuracy

T2 = Northrop Grumman IDENT1 ITT Benchmark Finger Mark-to-Print accuracy

T3 = Northrop Grumman IDENT1 ITT Benchmark Palm Mark-to-Print accuracy based on a 80K subject dataset

T4 = Northrop Grumman IDENT1 Benchmark Palm Mark-to-Print accuracy on a 1 million subject dataset measured at FOC

Note that the target accuracy levels assume searches against a 1 million-person background database unless indicated otherwise. For the Mark to Print (Palm) search accuracy measurement there does not currently exist a background data set of 1 million subjects for benchmarking purposes. The Accuracy figure for T4 for a 1 million database at FOC will be measured concurrent with the search accuracy

measurement on the 80k subject database at FOC as part of the same benchmark. All benchmarking for subsequent milestones for the search accuracy measurements based on T4 will use a 1 million subject database.

For each search type, the search accuracy for SLR purposes is calculated as the percentage of searches for which the specified mate (or any duplicate) is identified in the top one position, ie (Number of top one Idents/Total number of searches) * 100.

For finger mark-to-print searches, the accuracy improvement at FOC will be based primarily on the fusion of SAGEM and NAFIS matcher results. Improvements at FOC+1 will derive from the use of multi-rolls and flats. Note that although these are FOC functionality, they will be benchmarked at FOC+1 to ensure that the benchmark background database will contain adequate representation of these prints. Further accuracy improvements at FOC+4 will be based on future algorithm enhancements.

The benchmark search accuracy measurement will be made against a standard 1 million subject background database, for example, the IDENT1 benchmark database. The same edited mark search prints will be used to eliminate variations due to operators. To avoid algorithm tailoring, additional tests can be conducted using marks that are identified during operation with the background database appropriately seeded with the identified mates.

The approach to each search accuracy benchmarking event will be agreed between the Contractor and Authority and documented prior to the start of the associated benchmark.

Further accuracy improvements beyond the target values specified in Figure 2.5-4 for Mark to Print Searches will be through the scoring tables that provide appropriate incentives for superior performance. Accuracy improvement for Print – Print Search Accuracy are not readily distinguishable within the constraints of these benchmarks and appropriate confidence intervals. The T1 Accuracy will be validated at FOC through the benchmark test. Successful completion of this benchmark, within confidence limits agreed as part of the benchmark, will result in the re-base lining of the QA test as described in section 2.5.1. Benchmarking events for Print to Print search accuracy at milestones after FOC will be used for information purposes only.

The scoring tables, for mark-to-print searches are provided in Figure 2.5-6. The table is normalized to provide a score of 100 for the specified target accuracy level for the specific milestone.

Finger Mark-to-Print Accuracy	Score	Mark-to-Print Accuracy	Score
TL > 5.0%	120	TL - 2.0%	92
TL + 5.0%	120	TL - 2.5%	90
TL + 4.5%	118	TL - 3.0%	88
TL + 4.0%	116	TL - 3.5%	86
TL + 3.5%	114	TL - 4.0%	84
TL + 3.0%	112	TL - 4.5%	82

TL + 2.5%	110	TL - 5.0%	80
TL + 2.0%	108	TL - 6.0%	75
TL + 1.5%	106	TL - 7.0%	70
TL + 1.0%	104	TL - 8.0%	65
TL + 0.5%	102	TL - 9.0%	60
Target Level (TL)	100	TL - 10%	55
TL - 0.5%	98	TL - 11%	50
TL - 1.0%	96	<(TL - 11%)	50
TL - 1.5%	94		

Figure 2.5-6 Mark-to-Print Accuracy Scoring Tables

The scoring table for palm mark-to-print search accuracy is provided by Figure 2.5-7

Palm Mark-to-Print Accuracy	Score	Mark-to-Print Accuracy	Score
TL > 5.0%	120	TL - 2.0%	92
TL + 5.0%	120	TL - 2.5%	90
TL + 4.5%	118	TL - 3.0%	88
TL + 4.0%	116	TL - 3.5%	86
TL + 3.5%	114	TL - 4.0%	84
TL + 3.0%	112	TL - 4.5%	82
TL + 2.5%	110	TL - 5.0%	80
TL + 2.0%	108	TL - 6.0%	75
TL + 1.5%	106	TL - 7.0%	70
TL + 1.0%	104	TL - 8.0%	65
TL + 0.5%	102	TL - 9.0%	60
Target Level (TL)	100	TL - 10%	55
TL - 0.5%	98	TL - 11%	50
TL - 1.0%	96	<(TL - 11%)	50
TL - 1.5%	94		

Figure 2.5-7 Palm Accuracy Scoring Table

2.5.3.2 Integration with Quality Control Metric

As previously described, the NAFIS quality control metric on search accuracy will be retained for IDENT1. This metric measures rank consistency using a small database to ensure software and system changes will not adversely impact the search performance. For IDENT1, data on score consistency though not used for scoring purposes, will also be made available for review purposes.

The integration of the accuracy improvement metrics and the existing QC metric will be accomplished in the following manner. Currently, the QC metric is measured monthly. Depending on if the consistency check is successful or not, a target score of 100 or zero is assigned. With the inclusion of the accuracy improvement metrics, this scheme will be retained except the target score will be determined by the accuracy levels and therefore scores achieved during the last benchmark for the T2, T3 and T4 accuracy measures, as above in Figure 2.5-4.

For each accuracy benchmark, separate scores will be calculated for finger mark-to-

print and palm mark-to-print searches based on the measured accuracy levels. For the print to print search accuracy a score of 100 will be assigned. The overall benchmark score is then calculated as the weighted sum of these individual scores. The weights for the print-to-print, finger mark-to-print and palm mark-to-print scores are 0.1, 0.6 and 0.3 respectively (these weight will be re-normalized if one or more of the search types is not benchmarked). This benchmark score will serve as the target score for monthly QC until it is modified during the next benchmark.

The monthly derived QC score using this target value will be the service level score for the search accuracy criterion. A 10% weight will be used for this Service Criteria score in calculating the overall service level score.

3 SHADOW METRICS

Shadow metrics are new metrics proposed to enable the SLR to achieve a better reflection of system performance, business value and user satisfaction. As previously described, they are the means for evolving the initial IDENT1 system-centric SLA structure to a structure that also measures and addresses business values and user needs.

Prior to the implementation of these new metrics, they need to be carefully measured and evaluated to determine the utility and also to establish the baseline values. Figure 3.5-1 provides the initial list of shadow metrics that have been identified in each metric category and their implementation time frames.

Category	Shadow Metrics	Implementation Timeframe
System Performance	Live ID Response Time	No later than FOC
	Planned Downtime	No later than FOC
	Interface Metrics	Post FOC
Business Values	Number of Idents	Post FOC
	Number of Idents per Search or Labor Hour	Post FOC
	User Effort per Transaction or Business Thread	Post FOC
User	Helpdesk Service Satisfaction	No later than FOC
	Overall Service Support Satisfaction	No later than FOC

Figure 3.5-1 Initial Shadow Metrics

The listed shadow metrics will be further defined, agreed with the Authority and evaluated after TOR for potential implementation depending on the evaluation results. The process for evaluating, implementing the shadow metrics and changes to the SLR will be in accordance with the change control process defined in Part 1 of this Schedule.

4 SERVICE SCORE

4.1 SERVICE PROVISION SCORES

This section defines how the various Service Level Metrics measured for each individual IDENT1 site or centrally are summated to derive an overall Service Scores for individual sites and how the Overall Score for the Service is derived from the individual site Service Scores.

The Monthly Service Charge for the IDENT1 Service is detailed in Schedule E (**Pricing**). The adjustment to the Monthly Service Charge (Service Credits or Service Incentivisation Payments) are based on the quality of service delivered to the individual IDENT1 Sites (Police Force and Training Centres) and measured under the SLR.

Monthly, the Contractor will present the Service Score associated with each Service Level Metric and the summary Service Score for each IDENT1 site. The computation of the Service Score from the Measure for each Service Level Metric is detailed in Section 2.0, step #1 and the computation of the Service Score for the individual IDENT1 site is detailed in Section 2.0, step #2. The calculated Service Scores will be presented in tabular format based on Figure 4.1-1. The agreed weightings between each Service Level Metric and Service Criteria are detailed in the header of the row of the figure. In addition, the Contractor will present the individual Service Measures for each Service Level Metric in tabular form as defined and detailed in Section 2 and 3 of this Part.

The Service Scores for individual IDENT1 sites are taken through to Schedule E (**Pricing**) to derive the Service Credit or Service Incentive Payment for each site, which are then aggregated to form the Actual Service Charge for the month.

The Actual Service Score for the IDENT1 Service is derived from the individual site service scores. Each individual site is allocated to a tier based on its associated workload/ throughput. The Overall Score is calculated from the aggregate of Service Scores for the individual site multiplied by the weighting associated with the tier it is in. The allocation of bureaux to Tiers and the normalised weighting is detailed in Section 3 of Schedule E (**Pricing**).

In addition to the summary scoring tabulation and weighting given in Figure 4.1-1, the Site Scores and Overall Score for the preceding 6 months as illustrated as a spreadsheet in Figure 4.1-2 will be presented monthly for the purposes of identifying any trigger conditions described in Section 5 Escalation of Service Related Failure of Part 1 of this Schedule and to identify ongoing trends.

Figures 4.1-1 and 4.1-2 will be updated as additional bureau are deployed under the Contract and in line with the identified changes in the preceding Sections of this Part.

Service Level Criteria		erationa ilability		Throu	ıghput	System Performance				ee	Technical Support	AFR	MONTHLY SERVICE SCORE	
Measure	Central A _o - Primary	A _o -	Site A _o	Ten Print Throughput	Mark Throughput	P-P Perf.	P-M Perf.	P-M SCC Perf.	M-P Perf.	M- M Perf.	Quoted CRO Perf.	Service Support	AFR Accuracy	7
Weight	0.07	0.03	0.10	0.10	0.10	0.10	0.05	0.0	0.10	0.05	0.05	0.15	0.10	
Avon + Somerset														
Bedfordshire														
British Transport Police														
Cambridgeshire														
Cheshire														
City of London														
Cleveland														
Cumbria														
Customs and Excise														
Derbyshire														
Devon + Cornwall														
Dorset														
Durham														
Dyfed Powys														
Essex														
Gloucestershire														
Greater Manchester														
Gwent														
Hampshire														
Hertfordshire														
Humberside														

Service Level Criteria		erationa nilability	y		ıghput				erfor		ee	Technical Support	AFR	MONTHLY SERVICE SCORE
Measure	Central A _o - Primary	A _o -	Site A _o	Ten Print Throughput	Mark Throughput	P-P Perf.	P-M Perf.	P-M SCC Perf.	M-P Perf.	M- M Perf.	Quoted CRO Perf.	Service Support	AFR Accuracy	
Weight	0.07	0.03	0.10	0.10	0.10	0.10	0.05	0.0	0.10	0.05	0.05	0.15	0.10	
Kent														
Lancashire														
Leicestershire														
Lincolnshire														
Merseyside														
Metropolitan														
N.I.S./Residual Bureau														
Norfolk														
North Wales														
North Yorkshire														
Northamptonshire														
Northumbria														
Nottinghamshire														
South Wales														
South Yorkshire														
Staffordshire														
Suffolk														
Surrey														
Sussex														
Thames Valley														
Warwickshire														
West Mercia														
West Midlands														

Service Level Criteria	Ava	erationa ilability	7	Throu	System Performance					e	Technical Support	AFR	MONTHLY SERVICE SCORE	
Measure	Central A _o - Primary	A_0 -	Site A _o	Ten Print Throughput	Mark Throughput	P-P Perf.	P-M Perf.	P-M SCC Perf.	M-P Perf.	M- M Perf.	Quoted CRO Perf.	Service Support	AFR Accuracy	
Weight	0.07	0.03	0.10	0.10	0.10	0.10	0.05	0.0	0.10	0.05	0.05	0.15	0.10	
West Yorkshire														
Wiltshire														
Ext. Transaction Bureau														
Weight □	0.25	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.05	
Hendon Training Centre														
Durham Training Centre														
Monthly Service Score														

Figure 4.1-1 Service Scores for Individual Bureaux

IDENT1 Site Bureaux	Service Score Month CM - 5	Service Score Month CM - 4	Service Score Month CM -3	Service Score Month CM - 2	Service Score Month CM - 1	Current Month (CM) Service Score
Avon + Somerset						
Bedfordshire						
British transport Police						
Cambridgeshire						
Cheshire						
City of London						
Cleveland						
Cumbria						
Customs and Excise						
Derbyshire						
Devon + Cornwall						
Dorset						
Durham						
Dyfed Powys						
Essex						
Gloucestershire						
Greater Manchester						
Gwent						
Hampshire						
Hertfordshire						
Humberside						
Kent						
Lancashire						
Leicestershire						

Lincolnshire				
Merseyside				
Metropolitan				
N.I.S./Residual Bureau				
Norfolk				
North Wales				
North Yorkshire				
Northamptonshire				
Northumbria				
Nottinghamshire				
South Wales				
South Yorkshire				
Staffordshire				
Suffolk				
Surrey				
Sussex				
Thames Valley				
Warwickshire				
West Mercia				
West Midlands				
West Yorkshire				
Wiltshire				
External Transaction Bureau				
Hendon Training Centre				
Durham Training Centre				
Overall Service Score				
S. Stati Sel vice Section	1	1		

Figure 4.1-2. Service Scores for Individual Bureaux

4.2 Score Adjustment

At the Monthly Service Review, the Contractor shall present to the Authority any score adjustments that must be made. The charges awarded to the Contractor as a result of these scores are established in Schedule E (**Pricing**). Score adjustments may be made as a result of:

Under Performance. If, in any monthly reporting period, the Service Level Score for any of the five Service Level Criteria at any site is at the minimum allowable Service Level Score, then the Contractor will not be awarded a charge above 100% in that month even if Service Level Scores in other Service Level Criteria at other sites are above 100%. This is to ensure adequate levels of service in all areas.

Excessive Bureau Workload. If, in any monthly reporting period, the workload generated by a Fingerprint Bureau is above its Bureau Maxima by volume, priority, or geographic search scope (identified in Section 5), then the bureau's performance value will be adjusted as follows:

(a) Print-to-Print Searches

- (i) If the monthly Bureau Maximum is exceeded, and the achieved performance is lower than 90, adjust the performance value to 90.
- (ii) If the excess workload is greater than 20% of the Bureau Maximum adjust the performance value to 100.

(b) Print-to-Mark, Mark-to-Print, Mark-to-Mark Searches

- (i) If the monthly Bureau Maximum is exceeded, and the achieved performance is lower than 90, adjust the performance value to 90. For those bureaux that may perform 100% National searches, this adjustment is made before adding the ten print National search compensation value.
- (ii) If the excess workload is greater than 20% of the Bureau Maximum, adjust the performance value to 100.
- (iii) If National searches are more than 5% for any of the search priorities and the achieved performance is lower than 90, adjust the performance value to 90. This does not apply to those Bureaux that may perform up to 100% National searches.
- (iv) If National searches are greater than 10% of the monthly Bureau Maximum, and the monthly Bureau Maximum has been exceeded adjust the performance value to 100. This does not apply to those Bureaux that may perform up to 100% National searches.
- (v) Post TOR, this section will be rewritten as the table at Figure 5.2- is updated.

Excessive National Workload. If, in any monthly reporting period, the workload generated by the Fingerprint Bureaux collectively is above the National Maxima by priority or geographic search scope (identified in Section 5, Figure 5.2-), then the Service Level Score will be adjusted to a level of at least 100% for the Search Performance Service Level Criteria. If the unadjusted aggregate Service Level Score for the Search Performance Service Level Criteria is above 100%, that computed, unadjusted score will remain.

Other Exceptions.

- (c) If, in any reporting period, Bureau(x) working practices or other exceptions detrimentally affect a Service Measure, the Authority may, at its discretion, adjust the final Service Score (and thus the Service Charges computed as a result of the Service Score adjustment) of any Service Level Criteria based on a documented claim for Charge Adjustment provided by the Contractor.
- (d) If, in any reporting period, occurrence of a disaster renders a Bureau inoperable, then the Disrupted Bureau's Monthly Service Score (and thus the Service Charges computed as a result of the Service Score adjustment) will be set to 100. This score adjustment for the Disrupted Bureau will continue as long as the Bureau is inoperable and will continue should the Disrupted Bureau choose to operate in a Reciprocal Bureau arrangement.

(e) Reciprocal Bureau Operations

(i) If, in any reporting period, a Disrupted Bureau operates in a Reciprocal Bureau arrangement, then the Monthly Service Score (and thus the Service Charges computed as a result of the Service Score adjustment) for the Reciprocal Bureau processing transactions from both the Disrupted Bureau and the Reciprocal Bureau will be set to the maximum score. The Monthly Service Score of the Disrupted Bureau will be set to 100.

(f) Emergency Bureau Operations

(i) If, in any reporting period, a Disrupted Bureau operates at the Emergency Bureau, then the Disrupted Bureau's Monthly Service Score (and thus the Service Charges computed as a result of the Service Score adjustment) will be set to the maximum score.

It will be the responsibility of the Authority to inform a bureau of any excess workload submitted by the bureau and to make policy changes to reduce the excess workload, if necessary. The Authority may elect to initiate a formal change with the Contractor to accommodate the excess workload. In the event that a loss of Availability in one measurement period (as defined in Section 2.1) causes a bureau to exceed its maximum workloads in a following period, the Contractor will not receive any service score above 100% in respect of that period

5 IDENT1 WORKLOAD

5.1 National Workload and Sizing Data

The installed IDENT1 configuration will meet the service levels necessary to support actual Police Force workloads, up to the annual Contract Maximum. IDENT1 may be expanded to support workloads in excess of the Contracted Maximum, albeit with additional charges.

The annual Contracted Maximum workload for each Bureau is expressed as the number of Ten Prints and Marks processed by the system and the number retained in the Unified Collections. These figures are defined below for 2004 (figures are derived from the IDENT1 Detailed Operational Requirement as stated).

Annually, the figures in 5.1-1 and 5.2-1 will be refreshed using the source figure for the new year given in the DOR tables stated in Figure 5.1-1.

Certain aspects of the IDENT1 service are determined by sizing data inherent in the nature of fingerprint processing. The service provided, as specified in this *SLR*, takes into

consideration these maximum workloads and sizing data. Engineering margins have been built into the IDENT1 design to accommodate minor variations of the distribution of the total search load between the search types from that specified in DOR Table 2.18.

Year of Operation	2004	Derivation (ITT DOR references)
Total Ten Print Database Size	7,529,000	Table 2.7
Total Ten Prints Received and		
Processed		Table 2.13 distributed according to Table 2.14
Total Mark Database Size		Table 2.10
Total Marks submitted	889,500	Table 2.16 distributed according to Table 2.11
Total Searches	7,570,680	Table 2.17
Unverified Identity Check	469,382	Table 2.18
Other P-P	1,559,560	Table 2.18
Total P-M	3,278,104	Table 2.18
Total M-P		Table 2.18
Total M-M	15,141	Table 2.18

Figure 5.1-1. National Workload

The maximum National workloads in Figure 5.1-1 are represented as yearly totals for 2004. The Service Level Criteria presented in Section 2 are based on monthly workload values. The monthly workload values presented in Section 5.2 of this SLR are assumed to be one twelfth (1/12) of those shown in Figure 5.1-1. Actual Bureau workload may vary.

Note that the figures in this section provide capacity for Scottish Bureaux at TOR, albeit that the Bureaux won't be added to the SLR until a later milestone.

5.2 Bureau Workload

This section defines Bureau workload as a proportion of the National Ten Print and Mark workloads presented in Section 5.1. Figure 5.2-1 presents the Maximum Monthly Workload figures for each Bureau. Taken together, these values represent one-twelfth (1/12) of the annual National Workload as presented in Figure 5.1-1.

				_		_	
	Total Prints Submitted Monthly	Monthly non- verified identity check			Total Marks Submitted Monthly	Monthly M- P Searches (MPmax)	MonthlyM M Searches
Avon & Somerset	5,520	1,017	3,379	7,103	4,670	4,872	33
Bedfordshire	6,240	1,134	3,769	7,922	815	5,434	37
Cambridgeshire	2,160	469	1,560		1,112	2,248	15
Cheshire	3,360	313	1,040	,	667	1,499	10
City of London	480	39	130	273	445	187	1
Cleveland Cumbria	2,880	274	910	1,912	1,186	1,312	9
	2,400	508	1,690		148		16
Derbyshire Devon and Cornwall	3,360	391	1,300	2,732	593	1,874	13
Devoir and Contwall	5,520	665	2,209	4,644	815	3,185	21
Dorset	1,920	587	1,949			2,811	19
Durham	2,880	274	910	· · · · · · · · · · · · · · · · · · ·		1,312	9
Dyfed Powys	3,120	430	1,430	3,005	222	2,061	14
Essex	4,560	548	1,819	3,824	1,705	2,623	18
Gloucestershire	1,920	469	1,560	3,278	371	2,248	15
Greater Manchester	12,480	2,347	7,798		6,078	11,242	76
Gwent	2,880	430	1,430	3,005	519	2,061	14
Hampshire	8,400	978	3,249			4,684	32
Hertfordshire	2,880	430	1,430	3,005		2,061	14
Humberside	4,080	508	1,690	- ,			16
Kent	6,960	1,056	3,509	7,376		5,059	34
Lancashire	5,760	1,330	4,419		2,298	6,371	43
Leicestershire	2,640	548	1,819		1,334	2,623	18
Lincolnshire Merseyside	2,160 6,720	235 1,291	780 4,289	1,639 9,015	222 1,483	1,124 6,183	8 42
Metropolitan	22,320	6,689	22,224	46,713		32,041	216
Norfolk	2,640	508	1,690		593	2,436	16
North Wales	2,400	352	1,170			1,686	11
North Yorkshire	2,400	352	1,170			1,686	11
Northamptonshire	2,640	704	2,339	4,917	1,483	3,373	23
Northumbria	9,840	743	2,469		297	3,560	24
Nottinghamshire	5,040	508	1,690	3,551	1,038	2,436	16
South Wales	6,240	665	2,209	4,644	890	3,185	21
South Yorkshire	7,200	430	1,430	3,005	1,260	2,061	14
Staffordshire	3,600	900	2,989			4,310	29
Suffolk	1,920	156	520	1,093			5
Surrey	2,400	430	1,430	3,005	741	2,061	14
Sussex	4,560	782	2,599		815		25
Thames Valley	7,200	1,291	4,289	- ,	,		42
W arwickshire W est Mercia	1,920 3,840	235 391	780 1,300				8 13
W est Midlands	15,840	1,682	5,588			8,057	54
W est Yorkshire	10,560	2,542	8,448	· · · · · · · · · · · · · · · · · · ·	,		82
Wiltshire	1,680	274	910				9
Aberdeen	14			.,,		.,	
Dundee	14	1.	ncluded below		1.	ncluded below	
Edinburgh	19	· ·	nciuded below		· ''	iciaded below	
Glasgow	14,112		ı	_		_	
Scottish Fingerprint Service		2,542	8,448	17,756	4,522	12,179	82
British Transport Police	1,440	117	390	820	0	562	4
HM Customs &	1,770	117	530	320		332	7
Excise	240	39	130	273	0	187	1
National Identification							
Service	8,400	508	1,690	3,551	890	2,436	16
National Crime	5,400	308	1,090	3,331	090	2,430	10
Squad	240	0	0	0	0	0	0
Specialist Crimes							
Bureau	0	0	0	0	0	0	0
TOTAL	240,000	39,115	129,963	273,175	74,347	187,374	1,262
- OTAL	240,000	J9,110	123,303	213,173	14,547	107,374	1,202

Figure 5.2-1 Bureau Maximum Monthly Workload

The figure above shows the Bureau Monthly Maximum Ten Print and Mark workloads based on each Bureau's proportion of the National Ten Print and Mark workload at 2004. As stated above, these figures will be refreshed annually. The workload is then distributed according to search type: non-verified Live ID, Print-to-Print, Print-to-Mark, Mark-to-Print, and Mark-to-Mark. Note that engineering margins have been built into the IDENT1 design to accommodate minor variations of the distribution of the total search load between the search types from that specified in DOR Table 2.18.

Bureau workload is based on a set of assumptions presented in Figure 5.2-2. These assumptions are derived from the DOR and the NAFIS SLA, were used in the design of IDENT1 and establish the operational limits of the system. The assumptions are valid at TOR. At FOC, the FAST priority will be eliminated and its allocated percentages combined with those of the NORMAL priority. In addition, the geographically based search scope will be adjusted to meet the Authority's database penetration requirements as stated in the DOR (Table titled "Authority Indicative Response Times for Searches of the Unified Collection")

TEN PRINT PROCESSING	
Quoted CRO Image Retrievals	69%
Print-to-Print AFR Searches	
o % URGENT Submissions	10.90%
o % FAST Submissions	22.20%
o % NORMAL Submissions	66.90%
Print-to-Mark AFR Searches	
o % URGENT Submissions	2.60%
o % FAST Submissions	32.40%
o % NORMAL Submissions	65.00%
MARK PROCESSING	
Mark-to-Print AFR Searches	
o % URGENT Submissions	2.60%
o % FAST Submissions	32.40%
o % NORMAL Submissions	65.00%
M-M AFR Searches	
o % URGENT Submissions	2.60%
o % FAST Submissions	32.40%
o % NORMAL Submissions	65.00%
SEARCH SCOPE	
P-M, M-P, and M-M Searches	
o National	5.00%
o Regional	50.00%
o Local	45.00%

Figure 5.2-2 National Work Profiles

This *SLR* has used this set of assumptions to estimate the workloads expected during normal operations. Assumptions 1 through 12, 14 and 15 apply only from TOR until FOC.

(1) Quoted CRO Image Retrieval quantities will be at least 60% of the total Ten Prints received and processed by the Police Forces. (derived from DOR (Inf-NF-640) "Of the Print Sets received, current statistics indicate that approximately 69% are Recidivists, with an existing

- criminal record, and 31% have no prior entry on the existing system.")
- (2) Print-to-Print Urgent priority AFR search quantities will be no more than 10.90% of all Ten Prints submitted for a Print-to-Print AFR search.
- (3) The combination of Print-to-Print Urgent and Fast priority AFR search quantities will be no more than 33.10% of all Ten Prints submitted for a Print-to-Print AFR search.
- (4) Print-to-Mark Urgent priority AFR search quantities will be no more than 2.60% of all Ten Prints submitted for a Print-To-Mark AFR search.
- (5) The combination of Print-To-Mark Urgent and Fast priority AFR search quantities will be no more than 35.00% of all Ten Prints submitted for a Print-to-Mark AFR search.
- (6) Mark-to-Print Urgent priority AFR search quantities will be no more than 2.60% of all Marks submitted for a Mark-to-Print AFR search.
- (7) The combination of Mark-to-Print Urgent and Fast priority AFR search quantities will be no more than 35.00% of all Marks submitted for a Mark-to-Print AFR search.
- (8) Mark-to-Mark Urgent priority AFR search quantities will be no more than 2.60% of all Marks submitted for a Mark-to-Mark AFR search.
- (9) The combination of Mark-to-Mark Urgent and Fast priority AFR search quantities will be no more than 35.00% of all Marks submitted for a Mark-to-Mark AFR search.
- (10) National search scope quantities will be no more than 5.00% of each priority search type within Print-to-Mark, Mark-to-Print, and Mark-to-Mark AFR searches.
- (11) Regional level search scope quantities will be no more than 50% of each priority search type within Print-to-Mark, Mark-to-Print, and Mark-to-Mark AFR searches.
 - (a) A local search is defined as a search of the 'home' force area only.
 - (b) A regional search is defined as a search involving a minimum of one station and a maximum of five police force areas. This may include the 'home' force but other forces selected do not have to be contiguous with it.
 - (c) A national search is defined as a search of the full unified database (i.e., all forces)
- (12) Local level search scope quantities will be at least 45% of each priority search type within Print-to-Mark, Mark-to-Print, and Mark-to-Mark AFR searches.
- (13) All Operational Response searches will be processed as Normal priority.
- (14) British Transport Police searches may be 100% National searches rather than the percentages defined above.
- (15) Customs and Excise Service searches may be 100% National searches rather than the percentages defined above.
- (16) All Immigration and Nationality Directorate P-P searches will be processed as Normal priority.
- (17) All Immigration and Nationality Directorate P-M searches will be processed as Low priority.

PITO

The workload from the Immigration and Nationality Directorate will be 10% CRO retrievals (18)and up to 90% Print-to-Print searches.