JNCP Form Rev 9/97

CITY OF CHICAGO
DEPARTMENT OF PURCHASES.
CONTRACTS AND SUPPLIES
ROOM 403, CITY HALL, 121 N. LA SALLE ST.

JUSTIFICATION FOR NON-COMPETITIVE PROCUREMENT

COMPLETE THIS SECTION IF NEW CONTRACT(S)
For contract(s) in this request, answer applicable questions in each of the 4 major subject areas below in accordance with the Instructions for Preparation of Non-Competitive Procurement Form on the reverse side.

Request that negotiations be conducted only with NEC TECH (Name of Person or Firm) for the product and/or services described herein.
This is a request for: ___ (One-Time Contract per Requisition # _____, copy attached) or X Term Agreement
or ___ Delegate Agency (Check one). If Delegate Agency, this request is for "blanket approval" of all contracts within the _____ (Attach List) (Program Name)
Pre-Assigned Specification No. _____
Pre-Assigned Contract No. _____

COMPLETE THIS SECTION IF AMENDMENT OR MODIFICATION TO CONTRACT
Describe in detail the change in terms of dollars, time period, scope of services, etc., its relationship to the original contract and the specific reasons for the change. Indicate both the original and the adjusted contract amount and/or expiration date with this change, as applicable. Attach copy of all supporting documents. Request approval for a contract amendment or modification to the following:

Contract #: _____ Company or Agency Name: _____

Specification #: _____ Contract or Program Description: _____
Mod #: _____ (Attach List, if multiple)

MICHAEL PALUMBO	5-5794		POLICE	10/12/06
Originator Name	Telephone	Signature	Department	Date

Indicate SEE ATTACHED in each box below if additional space needed:

X PROCUREMENT HISTORY See Attached	
X ESTIMATED COST See Attached	S. S. R. B. DATE 10/23/06 APPROVED DWP CONDITIONALLY APPROVED RETURN TO DEPT DISAPPROVED
X SCHEDULE REQUIREMENTS See Attached	
X EXCLUSIVE OR UNIQUE CAPABILITY See Attached	
X OTHER See Attached	

APPROVED BY: _____ 10/17/06 _____ 10/23/06
DEPARTMENT HEAD OR DESIGNEE Marvin J. Glass — DATE — BOARD CHAIRPERSON — DATE

PROCUREMENT HISTORY (INCLUDING FUTURE PROCUREMENT OBJECTIVES)

1. **Describe the requirement and how it evolved from initial planning to its status.**
   The Chicago Police Department is seeking to engage in a new contract with NEC relative to the upgrade and maintenance of the Automated Fingerprint Identification System (AFIS) The upgrade will take place in 2007 and maintenance will be from 01 January 2007 – 31 December 2011 (three year maintenance agreement along with one two-year extensions).

   In 1985, then Superintendent Rice put together a project team of Police Department representatives to research the feasibility of obtaining a new criminal identification technology. A private sector oversight committee comprised of various business executives monitored the project.

   At the inception of this project, comprehensive benchmark procedures were developed that were used to identify the vendor that would answer the Police Department's requirements. Two of the three vendors performed benchmark testing for a two week period. The third vendor that was not benchmarked was non-responsive to the RFP. The RFP was authored at the Police Department in concert with MIS, and the Law and Purchasing Departments.

   Based on the benchmark results and a review by the oversight committee a recommendation from the Police Department project team was forwarded to Superintendent Rice and negotiations were initiated with NEC. The AFIS System was installed and operational in 1987.

   In 1999, the Chicago Police Department procured the newest AFIS technology (AFIS 21) from NEC. The implementation of AFIS 21 delivered a streamlined fingerprint process which greatly reduced the need for human intervention. This new technology also established and automated interface between the fingerprint identification process and CPD's new criminal history records management system called CHRIS.

   In 2002, the Chicago Police Department procured a database and fingerprint archive upgrade to the AFIS System which expanded the database storage capacity and improved archive functionality.

   In 2007, the current AFIS will reach its end of life cycle. The fingerprint database and matching components have reached their maximum capacity. The AFIS upgrade will increase CPD's existing fingerprint and Archive database records and increase fingerprint matching speed significantly. This will result in the reduction of prisoner detention duration.

   This upgrade will also provide the CPD with new functionality to include the storage and matching of Palm prints. It is estimated that 30-35% of all crime scene prints are

from the palm. The AFIS upgrade to include Palm matching will now allow the CPD the ability to search these previously unidentifiable prints. CPD expects to realize a significant increase in crime scene fingerprint identifications as a result of the palmprint matching capability; thereby reducing overall crime within Chicago.

Along with Palm matching and storage, the AFIS upgrade will also introduce "lights-out" wireless mobile fingerprint capture. Mobile fingerprint capture is a valuable identification tool that has been deployed by CPD in the form of a pilot project over the last year. Officers will no longer have to rely on a name-based search when checking for the identity and/or outstanding warrants on individuals they encounter in the field. Today, mobile fingerprint transactions to AFIS require human intervention to complete the identification process. The AFIS upgrade will allow CPD to deploy mobile fingerprint devices throughout the Department and the functionality to process mobile transactions without human intervention.

In addition to the functions stated above, the AFIS upgrade will provide a technology refreshment to include the latest industry standard servers, workstations, operating systems and middleware. The AFIS upgrade will introduce server clustering to AFIS to provide complete redundancy and automatic server fail-over in the event of a hardware problem. This redundant fail-over capability will keep the AFIS running even if there is a failure.

Since 1987, all components (hardware and software) have been serviced by NEC onsite customer engineers.

2. **Is this a first time requirement or a continuation of previous procurement from the same source? If so, explain the procurement history.**
   This request is a continuation of a previous procurement from NEC. The procurement history is noted in section 1 above.

3. **Explain attempts made to competitively bid the requirement. (Attach copy of notices and list of sources contacted)**
   The initial procurement of the AFIS system was procured via the RFP process. Since that time, the NEC system is proprietary in nature and involves proprietary fingerprint matching algorithms. No other AFIS vendor has ever maintained or upgraded an NEC AFIS system.

4. **Describe all research done to find other sources. (List other cities contacted, companies in the industry contacted, professional organizations, periodicals and other publications used).** Not applicable

5. **Explain future procurement objectives. Is this a one-time request or will future requests be made for doing business with the same source?**
   There will be future requests for new contracts that will be in relation to the maintenance of the AFIS System.

6. **Explain whether or not future competitive bidding is possible. If not, why not?**

Future competitive bidding, while possible, would be extremely costly.

ESTIMATED COST

1. **What is the estimated cost for this requirement (or for each contract, if multiple awards contemplated)? What is the funding source?**
   The estimated cost for the upgrade and maintenance is $3,930,753.00. The funding source is the Police Department Corporate Budget.

2. **What is the estimated cost by fiscal year, if the job project or program covers multiple years?**
   The following represents the estimated costs for each year:
   2007 - $3,471,658.00
   2008 – $ 91,819.00
   2009 – $ 367,276.00

3. **Explain the basis for estimating the cost and what assumptions were made and/or data used (ie. Budgeted amount, previous contract price, current catalog or cost proposal from firms solicited, engineering or in-house estimate, etc).**
   The basis for estimating the cost is derived from a cost proposal from the vendor.

4. **Explain whether the proposed Contractor or the City has a substantial dollar investment in original design, tooling or other factors which would be duplicated at City expense if another source was considered. Describe cost savings or other measurable benefits to the City which may be achieved.**
   The Chicago Police Department has a substantial dollar investment in the system design and multiple customized interfaces that would need to be duplicated at CPD expense if another AFIS vendor were considered. In 1999, CPD has invested 4.3 million dollars in system design, development, data conversion, customized interfaces, training and system implementation. In 2002, CPD invested $778,000 in a system upgrade to expand database capacity.

5. **Explain what negotiation of price has occurred or will occur. Detail why the estimated cost is deemed reasonable.**
   Based on the quotes received by sole source vendor NEC , the provided cost was deemed acceptable by the Chicago Police Department.

SCHEDULE REQUIREMENTS

1. **Explain how the schedule was developed and at what point the specific dates were known.**
   The schedule is based on the life cycle of the technology and the previously negotiated contract dates.

2. **Is lack of drawings and /or specifications a constraining factor to competitive bidding? If so, why is the proposed Contractor the only person or firm able to**

perform under these circumstances? Why are the drawings and specifications lacking? What is the lead time required to get drawings and specifications suitable for competition? If lack of drawings and specifications is not a constraining factor to competitive bidding, explain why only one person or firm can meet the required schedule. Not Applicable

3. **Outline the required schedule by delivery or completion dates and explain the reasons why the schedule is critical.**
   Due to the fact the current AFIS will reach its end of life cycle in 2007, it is critical that the system be upgraded as quickly as possible. Lack of system upgrade and thereafter maintenance will greatly jeopardize CPD's ability to identify subjects in custody thus negatively impacting the criminal justice system and jeopardizing the safety of police officers and citizens of Chicago. The CPD AFIS system also serves to identify arrestees processed by over 100 suburban police agencies. These agencies are dependent on the CPD CLEAR and AFIS systems for the arrest booking process and subsequent criminal identification. Additionally, without a system upgrade and maintenance, the CPD latent fingerprint section will be unable to process crime scene fingerprint lifts which is an invaluable tool in solving crimes within the City.

4. **Describe in detail what impact delays for competitive bidding would have on City operations, programs, costs and budgeted funds.**
   Competitive bidding is not possible since other than NEC; no vendor exists that is capable of upgrading as well as performing maintenance and system support of the NEC AFIS.

EXCLUSIVE OR UNIQUE CAPABILITY

1. **If contemplating hiring a person or firm as a Professional Service Consultant, explain in detail what professional skills, expertise, qualifications, other factors make this person or firm exclusively or uniquely qualified for the project. Attach copy of cost proposal and scope of services.** Not Applicable

2. **Does the proposed firm have personnel considered unquestionably predominant in the particular field?** Not Applicable

3. **What prior experience of highly specialized nature does the person or firm exclusively possess that is vital to the job, project or program?** Not Applicable

4. **What technical facilities or test equipment does the person or firm exclusively possess of a highly specialized nature which is vital to the job?** Not Applicable

5. **What other capabilities and/or capacity does the proposed firm possess which is necessary for the specific job, project or program which make them the only source who can perform the work within the required time schedule without unreasonable costs to the City?** Not Applicable

6. **If procuring products or equipment, describe the intended use and explain any exclusive or unique capabilities, features and/or function the items have which no other brands or models, etc. possess. Is compatibility with existing equipment critical from an operational standpoint? Explain why.** Not Applicable

7. **Is competition precluded because of the existence of patent rights, copyrights, trade secrets, technical data or other propriety data? Attach documentation verifying such.** See Attached

8. **Is procuring replacement parts and/or maintenance services, explain whether or not replacement parts and/or services can be obtained from any other sources? If not, is the proposed firm the only authorized or exclusive dealer/distributor and/or service center? If so, attach letter from manufacturer.**

   We are seeking an upgrade and maintenance of an existing system that is proprietary in nature which precludes any other vendor from providing the required system maintenance and system support.

MBE/WBE COMPLIANCE PLAN

1. All submissions must contain detailed information about how the proposed firm will comply with the requirements of the City's Minority and Women Owned Business program. All submissions must include a complete C-1 and D-1 form, Which is available on the Procurement Service page on the City's intranet site. MBE/WBE will be addressed and on-going.

OTHER

1. Explain other related considerations and attach all applicable supporting documents (an approved Information Technology Strategy Committee (ITSC)

DPS PROJECT CHECKLIST

For DPS Use Only	
Date Received	
Date Returned	
Date Accepted	
CA/CN's Name	

IMPORTANT: PLEASE READ AND FOLLOW THE INSTRUCTIONS FOR COMPLETING THE PROJECT CHECKLIST AND CONTACT THE APPROPRIATE UNIT MANAGER IF YOU HAVE ANY FURTHER QUESTIONS. ALL INFORMATION SHOULD BE COMPLETED, ATTACH ALL REQUIRED MATERIALS AND SUBMIT FOR HANDLING TO THE DEPARTMENT OF PROCUREMENT SERVICES, ROOM 403, CITY HALL, 121 N. LASALLE STREET, CHICAGO, ILLINOIS 60602.

GENERAL INFORMATION:

Date:

REQ No.: T/B/D

Contact Person: M. Paluch

Tel: 5-5794 **Fax:** 5-6341 **E-mail:** @cityofchicago.org

Project Manager:

Tel: Same **Fax:** **E-mail:** @cityofchicago.org

PO No.: (if known):

Modification No.: (if known):

Previous PO No.: (if known):

Project Description:

FUNDING:

City:	☒ Corporate	☐ Bond	☐ Enterprise	☐ Grant*	☐ Other	
State:	☐ IDOT/Transit	☐ IDOT/Highway		☐ Grant*	☐ Other	
Federal:	☐ FHWA	☐ FTA	☐ FAA	☐ Grant*	☐ Other	

LINE	FY	FUND	DEPT	ORGN	APPR	ACTV	OBJT	PROJECT	RPTG	$ DOLLAR AMOUNT
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Estimated Value $

*IF GRANT FUNDED, A COPY OF THE APPROVED GRANT AND APPLICATION ARE REQUIRED and any other Terms and Conditions that may apply.

SCOPE STATEMENT:

☐ Attached is a Detailed Scope of Services and/or Specification

IMPORTANT: THIS IS A CRITICAL PORTION OF YOUR SUBMITTAL. IN ORDER FOR DPS TO ACCEPT YOUR SUBMITTALYOU MUST COMPLETE THE SPECIFIC SCOPE REQUIREMENTS AS SET FORTH IN THE SUPPLEMENTAL CHECKLIST FOR THAT UNIT.

The following is a general description of what should be included in a Scope of Services or Specification:

A clear description of all anticipated services and products, including: time frame for completion, special qualifications of prospective vendors, special requirements or needs of the project, locations, anticipated participating user departments, citation of any applicable City ordinance or state/federal regulation or statute.

TYPE OF PROCUREMENT REQUESTED (check all that apply):

NEW REQUEST
- ☒ Blanket Agreement
- ☐ Standard Agreement
- ☐ Small Orders

MOD/AMENDMENT
- ☐ Time Extension
- ☐ Vendor Limit Increase
- ☐ Scope Change/Price Increase/Additional Line Item(s)
- ☐ Other (specify):

FORMS: ☐ Requisition ☐ Special Approvals ☒ Non-Competitive Review Board (NCRB)

CONTRACT TERM: **Requested Term (number of months):**

PRE BID/SUBMITTAL REQUIREMENTS:

Requesting Pre Bid/Submittal Conference? ☐ Yes ☒ No Requesting Site Visit? ☐ Yes ☐ No

Scope of Work

General Scope

The Chicago Police Department (CPD) is performing an upgrade and database expansion for the Automated Fingerprint Identification System (AFIS). The upgraded system will expand system core functionality to include both enhanced fingerprint and palm print functionality. Listed below are the upgrades and expansions to the CPD AFIS .

- Palm print matching and storage to include:
  - 1,000,000 searchable palm subject database capacity
  - Conversion of 100,000 palm subjects
  - Capacity for 1,300 palm record submissions per day
  - Capacity for 1,300 palm records to unsolved latent palm database searches per day
  - Capacity for 15 palm latent inquiries / day in addition to 50 latent finger inquiries / day
  - Upgrade and expansion of the Archive System to accept and store Type 15 records

- Slap print matching and storage to include:
  - A day one forward approach to add Slap impressions to the AFIS rolled finger database.
  - The ability to search 20 fingers (10 rolled & 10 Slap) when doing latent searches (day one forward)

- Upgraded AFIS Finger matching and storage to include:
  - 2,400,000 searchable fingerprint records database capacity
  - 27,000 searchable Unsolved latent lifts (both finger & palm)
  - Capacity for 1,800 Fingerprint submissions per day
  - New 10-finger Tenprint database to improve Tenprint accuracy (6 rolled and 4 slap; day one forward for slap)
  - Improve response time from current 60 minutes to 5 minutes for Tenprint searches
  - Improve response time from current 24 hours to 1 hour for Latent searches.

- New Document Archive System:
  - Capacity to store 3.5 Million NIST fingerprint records in the Document Archive System
  - Capacity to store 1.4 Million NIST Palm print records in the Document Archive System
  - Web based DAS GUI to view, print, update, query any record in the Document Archive System

- Enhanced Latent Matching Algorithm (ELMA):
  - Provide optional search choices for latent matching utilizing relaxed tolerances for ridge direction and spacing. Proven to increase Latent accuracy by up to 5%.

- MID – Mobile ID Expansion. In addition to adding palm print capability and expanding the AFIS database, this upgrade will add Mobile ID functionality to the AFIS system and must add capacity for 1000 additional 1:N cold searches with a 3 minute response. The Mobile ID must enable field officers to capture a subject's fingerprints, verify their identity via 1:1 search, and run a complete 1:N identification check against the AFIS. This technology must enable CPD to increase officer efficiency by reducing unnecessary transport time to a booking facility (e.g., to verify a subjects

identity). CPD officers must be able to perform both 1:1 searches (closed searches) and 1:n searches (full AFIS searches) 24 hours/day without near zero central site human intervention.

Once the upgrade is complete, the new AFIS Palm print system, must process crime scene palm print evidence and offender palm print inquiries as per through put documents (See upgrade transaction volume design). This process must contain electronic interface to current Foray More Hits Application. CPD's existing 100,000 inked palm prints will be converted electronically and registered into the Palm print system. All open crime scene palm impressions from previously unsolved cases will be searched against this database and registered for future latent inquire/ palm hits.

Location

All work will be conducted at Chicago Police Department Headquarters, 3510 South Michigan, Chicago, IL 60653.

Compensation and Increases

Use standard City language.

Working Hours

During system installation, working hours will be determined by the Superintendent of Police or his designee.

Contract Terms and Extension

Three year initial term with one two-year extension.

MBE/WBE Compliance

Compliance will be negotiated.

Pricing Expiration

The above quoted pricing will remain in effect for six (6) months from the date of this cost proposal.

Proposed Configuration

Final configuration and quantities listed above are subject to change based on new best practices and the most current hardware and software models available at the time of final design acceptance and component ordering.

Implementation Estimate

NEC estimates that system implementation will occur approximately nine (9) months from final design acceptance for the upgrade and final system acceptance within approximately twelve (12) months from final design acceptance.

Warranty

The AFIS upgrade system comes with a full one (1) year total system warranty. Warranty services include 7X24-maintenance coverage with a 2-hour response from a dedicated NEC Customer Engineer. The warranty will commence upon completion of final system acceptance.

Maintenance

Post warranty maintenance services will be provided at the rates listed below. Maintenance services include 7x24-maintenance coverage with a 2-hour response from a dedicated NEC Customer Engineer.

Anticipated Upgrade System Annual Maintenance Pricing (Year 1)

Total Maintenance Year 1 (warranty) = $0

Anticipated Upgrade System Annual Maintenance Pricing (Year 2-5)

Total Maintenance Year 2 = $367,276

Total Maintenance Year 3 = $381,968

Total Maintenance Year 4 = $397,248

Total Maintenance Year 5 = $413,136

Anticipated 60 month Upgrade System Maintenance Grand Total = $1,559,628

Detailed Specification

1.1 Database Design

The following reflects the Upgraded AFIS database capacities and transaction volumes.

Upgrade Database Capacity Design

DATABASE		Total # of SUBJECTS IN DATABASE	REMARKS
AFIS	RDB-T	2,400,000	Searchable Tenprint database (10 finger)
	RDB-L	2,400,000	Searchable Latent database (10 rolled finger and day one forward 10 Slap finger)
	LDB	27,000	Unsolved Latent database (both finger and Palm)
Palm	RDB-L/P	1,000,000	Searchable Palm Print database ; (Thenar, Hypothenar, Interdigital, Writers and Upper Hand)
NIST Document Archive System	NIST Type 1,2,4	3,500,000	Current and new NIST Type 1,2,4 records
	NIST Type 15	1,400,000	New NIST Type 15 (Palm) data

Upgrade Transaction Volume Design

TRANSACTION	DAILY	RESPONSE	OP. HRS	REMARKS
10P Submission	1,800	-	24 HRS	From Livescan and Card Scan
TI	1,450	5 min.	24 HRS	Tenprint Inquiry
LI	50	60 min	16 HRS	Latent Inquiry finger (Includes SLAP matching)
LI-P	15	60 min	16 HRS	Latent Inquiry Palm
T/LI	1,800	60 min	24 HRS	Tenprint to Latent Inquiry
T/LI-P	1,300	60 min	24 HRS	Palm to Latent Palm Inquiry
L/LI & L/LI-P	15	60 min	16 HRS	Latent to Latent Inquiry (finger & Palm)
MID 1:N	1,000	3 min.	24 HRS	Two Finger Search from NIST Mobile ID device
Archive	250	N/A	24 HRS	Archive System queries (view, print, etc.)

Upgrade Fingerprint Workstation and other external Devices Design

Device	Upgrade Design	REMARKS
GWS-T/V/iNSW	1	Full function Tenprint, Verification and NIST Scan Workstation
GWS-T/iNSW	2	Tenprint and NIST Scan Workstation
GWS-V	2	Verification Workstation
GWS-L	2	Full function Latent input and Latent Verification Workstation (Finger& Palm)
Mobile ID	N/A	Using CrossMatch/CDI MV100 and CDI S&F that is in place today (Not included as part of this proposal) and interface capability with all other NIST compliant mobile ID devices.
IMARS	1	Web based AFIS Integrated Monitoring Administration & Reporting Server

The Upgrade Configuration will include the following functionality:

- ESSO (Extended Send Search to Other) which will allow the CPD to perform Latent searches against the Illinois State Police NEC AFIS (in place today)
  - The CPD AFIS has an ESSO interface the ISP AFIS that allows reciprocal **fingerprint** latent searches (LI only – does not include LI-P).
- Web based Print Server client to print cards from Archive at each workstation.
- Expanded 10 finger Tenprint database for Tenprint searching.
- Palm print matching and storage.
- Slap print matching and storage.
- NIST Tenprint submission to the ISP AFIS (in place today)
  - The CPD AFIS will automatically send the NIST Type 1,2, 4 and 15 records to Illinois State Police (ISP).
- Livescan connectivity and all necessary customization
- CHRIS/CLEAR CCH interface (in place today)
  - Allows an AFIS interface with the existing CLEAR Records Management Systems (i.e. RMS, CCH - computerized criminal history, booking system, mug shot system, etc.). This "lights out" (minimal human intervention) interface will eliminate duplicate data entry of arrest data and provide AFIS with potential 1:1 candidates, etc. In short, this interface will make the identification process faster, more accurate and more efficient.
- IMARS – Integrated Monitoring Administration & Reporting Server
- Workflow modifications to provide "Lights Out" processing for Mobile ID transactions
- Manual Tenprint functionality – Card Scan for work flows including tenprint errors, Dead prints and injured prints. Card scan must interface with AFIS to generated NIST record.
- Enhanced Latent functionality to include Palm and SLAP matching along with new editing tools
- ELMA (Enhanced latent Matching Algorithm) for both Rolled and Slap.

2.1 STANDARD FEATURES

The following capabilities must be included in the upgrade:

- Quality Control
- Search Accuracy
- Automatic Verification

- Automated Workflow
- NIST Archive
- New Matching Technologies
- Full Palm Print Matching Capability
- Easy to Use Workstations
- Open Systems Compliance

QUALITY CONTROL

When AFIS receives a tenprint transaction from a live scan or a card scan device, the system sends the image data to the Image Process Controller (IPC). The IPC performs the following processing.

- Quality Control (QC)
- Automatic Classification (AC)
- Feature Extraction (FE)
- Finger Sequence Check (FSC)

Quality Control (QC) features that are built into Auto Classification (AC) and Feature Extraction (FE) will be tightly linked to the ultimate purpose of the matching accuracy. The automated QC process within AC/FE builds the ridge direction and zone quality map of the rolled impressions, slap (plain) impressions and palm print images. The term "zone" refers to a square of eight pixels by eight pixels image area, and QC assigns a quality rating (called zone quality) from the confidence rating of the ridge direction within the zone.

The end result of the automated QC process is to assign three levels of aggregate quality codes (A, B and C, with A being the best) to rolled and plain impressions. QC also assigns 5 levels of quality codes to palm prints (A, B, C, D, F, with A being the best). Low quality prints can be defined to be a submission of predominantly C quality for finger and F quality for Palm. For instance, if a majority of rolled and slap prints are of C quality, or the thumbs and index fingers are all of C quality, there is smaller probability that the search result is at an acceptable level of certainty.

The FE process automatically sets the axis for each incoming ten print image and also computes the confidence level of the axis detection.

The Finger Sequence Check (FSC) is a series of matches between the rolled and plain impressions, to detect the incorrect sequence of rolled prints in the submission. FSC consists of multiple one-to-one

minutia matches between rolled and plain impressions. Thus, it can detect if the same finger has been rolled twice or if any finger has been rolled in the wrong sequence.

When the FSC detects finger sequence errors, it flags the transaction with the low FSC confidence rating.

When the overall quality rating (minutia quality and FSC confidence rating) is below the threshold, the transaction will be sent to VQA for manual operator intervention and decision.

The system will have numerous parameters that are associated with QC processes that can be modified quickly and easily by a system administrator. By simply modifying these QC parameters AFIS will provide a wide range of manual intervention levels, from complete lights-out to full manual QC review by tenprint technicians.

SEARCH ACCURACY

The system will contain a relational encoding and matching algorithm. The term relation refers to ridge counts between minutia points. For each minutia point, ridge counts to its four nearest neighboring minutia points are recorded and used for calculation of the matching scores.

The AFIS tenprint-to-tenprint search consists of two steps: Pattern Search and Minutia Matching.

The Tenprint-to-tenprint search of the AFIS system uses a feature matching mechanism called the Pattern Search (PS). Pattern Search is a process that compares Pattern Set Record (PSR) of a search print and a given file print, and decides whether to send the file print to the minutia matching. Pattern Search is performed against the entire ten print database, and selected minutia data are sent to minutia matching.

PSR is generated for each incoming tenprint submission by the AC process, and stored in the ten print file when retention is indicated. PSR is a dataset that contains a set of fingerprint feature information that is separate and distinct from those used for the minutia matching. No demographic data is included in PSR.

As opposed to only the data used for minutia matching, such as the coordinates of ridge endings and bifurcations, PSR contains a unique feature metric called Eigenfeature value, calculated from ridge flow matrix. Accuracy of Pattern Search comes from the accuracy of Auto-Classification algorithm that generates the fingerprint feature metrics that are stored in PSR.

While the database contains minutia data of ten fingers, the system matches minutia data of selected fingers. Finger selection is based on the quality of minutia data of the search fingerprint and file print in the database. This is based on the general principal that better minutia quality provides more reliable match scores. The system includes the 10-finger Tenprint database and matches three fingers on average,

depending on the quality of the search print and file print. The number of selected fingers dynamically changes during the matching process. The matching process selects more fingers to match if the quality of the search print is marginal. Conversely, if the quality of a particular file print is marginal, the matching process tends to match more fingers for this file print. The 10-fingers will consist of rolled fingers 1,2,3,6,7,8 and slap fingers 1,2,6,7.

The term "quality" not only refers to the image and minutia quality, but also includes the fingerprint sequence confidence rating described previously. When the fingerprint sequence rating is below a threshold, then the matching range is increased.

Minutia matcher generates a candidate list along with scores. The matching score array is then sorted for analysis. The analysis that is applied to the score array is based on an algorithm called "Dynamic Threshold". Dynamic Threshold inspects the score array in the tenprint-to-tenprint search result, and determines the probability of matches based on the score spread, or score distribution, and according to the criteria, marks a candidate or candidates as potential for review. Dynamic Threshold logic has its own set of configurable parameters.

In addition, the upgraded system will incorporate a full hand palm which includes the Thenar, Hypothenar, Interdigital, Writers and Upper Hand (joint/phalanges) minutia database for latent print matching. This provides CPD the ability to search a latent print against the database of the full palm. Any area of Palm can be selected for matching or the all areas of the Palm can be selected.

Along with Palm matching the upgrade solution includes the Slap minutia database which is comprised of the feature sets and images for the Slap or plain impressions taken with the rolled impressions during fingerprint acquisition. This provides CPD the capability to search a latent print against the database of both rolled and slap impressions providing for up to 20 fingers per subject for latent searching. The population of the Slap minutia database will be a day one forward approach.

AUTOMATIC VERIFICATION

Coupled with the best selectivity resulting from relation-based matching, automated verification processing allows the system to make an automated hit/no-hit decision on tenprint search candidate lists. This is done through a combination of the dynamic threshold algorithm that evaluates fingerprint-matching score of candidate(s) and 1:1 matching of additional fingers. It is estimated that 98% or more of tenprint submissions can be auto-verified by the proposed AFIS system. This significantly reduces verification operator workload.

AUTOMATED WORKFLOW

AFIS receives fingerprint images, automatically extracts minutiae, automatically defines pattern types, searches the database, and reports accurate results without human intervention. CPD requires all fingerprint submissions to pass the quality control threshold. In the event a print does not meet this threshold, the AFIS system will send this print to a quality control operator.

NEW MATCHING TECHNOLOGIES

The CPD Upgraded AFIS will come ready to use the newest matching technologies, including:

- Slap prints in the database for latent matching to increase latent accuracy
- Mobile ID Ready. The system will be able to match transactions that contain 1 to 10 fingers (TPIS transactions), for either a one to one match (1:1) or a one to many (1: N) match in a lights out mode.
- Full Hand Palm Matching. The system will come ready for latent palm matching and the ability to store up to 1,000,000 palm sets. Increases in the palm database will need only increased storage and matching resources.

FULL PALM PRINT MATCHING CAPABILITY

The Upgraded AFIS will consist of a full Palm registration and matching. CPD must have the capability to search the full hand (Thenar, Hypothenar, Interdigital, Writers and Upper Hand). This functionality will increase and improve latent hit rates. AFIS receives the Type 15 record as part of the NIST package from Livescan or card scan and processes the record as part of the Automated Workflow.

The inquiry profile of each of the Latent Palm Inquiry (LI-P) includes not only the selection of 5 divisions, but also what is called the angle of rotation for the matching tolerance. For the complete cold search inquiry profile, the degree of this angle is taken to be 360 degrees (+ or - 180 degrees both directions).

AFIS WORKSTATIONS

The upgraded system must use "standard" AFIS verification workstations that can be utilized for job queue management, database maintenance functions and job verification, including those from the tenprint and unsolved latent searches.

The Upgraded AFIS system must maximize user efficiency and productivity while at the same time minimize operator error.

Features must include:

- GWS-TVN (Global Workstation – Tenprint Analysis, Verification & NIST Card Scan) layout customization
- Efficient input, using a mouse, keyboard, and icons
- Enhanced command/menu flow control to minimize the number of required screen changes
- A free-format capture capability for ten-fingerprint capture capability from fingerprints that lie outside the designated areas for flexible fingerprint capture and quality control
- An abundance of combination commands for smooth, seamless operation
- Efficient and effective monitoring and scheduling of transactions for priority processing flexible scheduling control
- A high-quality image display screen to facilitate verification productivity
- Microsoft Windows XP Professional or latest version based workstation
- AFIS must support both locally and remotely connected workstations

OPEN SYSTEM COMPLIANCE

The Upgraded AFIS will be designed to operate in an open architecture environment and with commercially available software.

Table-1 AFIS Software Platforms

Operating System (OS—Server)	Linux, Windows 2003 Advanced Server
Operating System (OS—Workstation)	Microsoft Windows XP Professional
Network	TCP/IP

Language(s)	ANSI-C , C++ and C#
On Line Transaction Processing	TUXEDO
Relational Database Management System	ORACLE 10g
Graphical User Interface	MS-Windows

3.1 Database Backup Strategy

The CPD AFIS Palm upgrade must use FC SAN-RAID disk drives with built-in redundancy to minimize impact on CPD operations should a failure occur.

RAID-5 is the industry standard storage practice, which offers a high level of reliability in data storage. In RAID-5 storage configuration, the data as well as the data parity is spread across all the drives that form one RAID-5 unit. In case of a single media failure in RAID-5, the defective drive will be replaced with the new drive and the data rebuilding occurs on the new drive from the data parity. This whole process is transparent to the overall system operation and is performed while the system is up and running (Hot swap). For the proposed CPD AFIS Palm upgrade the RAID-5 protection will provide data storage reliability.

FC-SAN storage and FC-LTO3 based tape library, along with the Legato Networker Backup and EMC SnapView software provide the back-up and recovery strategy for the CPD AFIS system.

The upgraded AFIS will use Oracle™ RDBMS as a key database engine. The backup software integrated with Oracle, will enhance the automated Oracle online backup features effectively. Oracle online backup feature (Hot backup) allows complete uninterrupted system operation even if the backup routine is in progress. The online backup capabilities not only permit transaction search processing to continue, but allows database updates (registrations, deletes) while the backup is in progress.

Due to the Daily Online (Hot) backup methodology the system will always be operational. The back up process will not affect the system uptime.

The new automated online backup methodology will be completely transparent from the user operations. The back up process is initiated through a preset scheduling function during non-peak workload hours.

The data backup software checks for the media availability, and checks if the appropriate 'Day' media is in the tape library. The logic does not allow for any overwrites unless the tape media is defined for reuse.

The Upgraded AFIS is to have multiple REDO log groups, with multiple members in each group, spread across different controllers and drives. The REDO log members in a given group are mirror copies of each other; in case of failure of any REDO log member, the database is still protected.

Archivelog files are the only means to the point of recovery of the database in case of failures. During the recovery process, backup must be restored using tape or mirror volumes, and the Archivelog journals are applied to roll forward. The Upgraded AFIS system will be delivered with Archivelog Mode ON (enabled).

As a baseline system protection solution, the Upgraded AFIS will contain a data and system recovery strategy, requiring all system saves and database saves to generate three generations of backup media. The master set (active set) will be stored on-site, and the copy set (inactive or previous generation sets) will be stored at a user designated off-site storage. System and application program saves are done on a periodic basis or at system update.

The database save utilizes three generations of incremental daily backups, each with master and copy dual backups. When one generation of backup completes its cycle, the copy set of the generation will be transported to off-site storage.

With the Oracle Archivelog feature and hot backups, database offline saves and system downtime are eliminated. With the Online backup process, the entire database backup will be distributed over a period of time (e.g., one week). This means that during one week the entire database will be backed up part-by-part while the application system is online and active. This potentially reduces the amount of data to be backed up daily and effective media management can be achieved.

Database constitutes the major storage area; if it is backed up as mentioned above, the remaining system area backup will be a small amount of data and will require less backup time.

The Oracle archive logs (journals) will be backed up twice daily on different media along with the part of the database. Any database updates or changes are recorded by Oracle in the Archivelog files through REDO logs.

AUTOMATIC FAIL-OVER HIGH AVAILABILITY

The Upgraded AFIS system must incorporate redundant clustered servers to provide immediate fail-over in the event of a problem. This fail-over must be transparent to the user and allow for high availability of the AFIS system and minimal downtime due to server component failures.

4.1 Tenprint Processing

The tenprint workflow begins when a transaction is sent to the Global Transaction Controller (GTC). A transaction can be generated from a variety of ways; from a Live Scan, the Card Scan System, Mobil ID Device or another AFIS system. The GTC verifies the transaction and initiates the workflow designed for that Type of Transaction (TOT). The GTC and AFIS workflow manages a transaction within the AFIS operational environment based on the TOT, priority and input device.

First the Type 1 and 2 text data is validated. If the data validation detects an error, then the transaction is rejected and a notification message is generated. Once the text data passes the validation check the GTC sends the transaction to image quality evaluation, automatic pattern classification and feature extraction at the Image Process Controller (IPC). If necessary, and depending on the parameter settings, a manual quality check is performed.

The GTC will request a name search from the CLEAR System. The CLEAR System would pass the IR# of the potential candidate(s) based solely on the name search. If there are name search candidates a 1:1 match is performed on those candidates. The system performs a 1:1 matching of the name search candidates (called Automatic Verification) and if the 1:1 can not determine the match, the transaction will be queued for manual verification. If the 1:1 match results in a positive identification, the GTC then sends an identification message back to CLEAR. If the 1:1match does not result in identification, the GTC sends the transaction for a full tenprint-to-tenprint search.

The verification process will result in either identification or non-identification and the proper message will be sent. The tenprint and palm print will be matched against the unsolved latent database. In the case of non-identification, the transaction will then be added to the AFIS and Archive database as a new record. When the subject is identified the record is added to the Archive database under that IR/CB number and a determination of rolled print substitution is performed. If the duplicate search identifies the need for a consolidation, the transaction will be sent to the consolidation queue.

5.1 Latent Processing

The latent process consists of scanning, capturing or importing a latent image. Importing functionality must include interface from Foray More Hits Application. The transaction goes to the image processing stage. The Upgraded AFIS will have an array of image processing tools available for the latent examiner to obtain the best results possible.

Once a latent image is processed and a minutia set created, the transaction is searched against the Rolled & Slap database. It can also be sent to the ISP AFIS for searching. After the verification process, the latent

can be added to the unsolved latent database. The Latent palm processing and matching is the same as Latent finger processing with the exception of searching the ISP AFIS.

6.1 NIST Archive

AFIS will contain a NIST Archive. The NIST Archive allows for the storage of all incoming NIST records. The database will store demographic and original image data from all events submitted, based on the workflows set up for each type of transaction. The system will be able to store information that comes in the NIST record envelope from NIST Types 1, 2, 4, and 15 records, display and print all images, and manage archived records using a variety of management tools. The system must include delete, change and consolidation functionality for all NIST components.

Archive Browse functionality is provided for each workstation and will allow the displaying of NIST images. Images from the archive can be downloaded and printed at the workstation so that all levels of detail (including level 3) can clearly be determined and used by latent operators in their identification process.

7.1 AFIS Functionality

The overall application architecture must provide real-time AFIS performance through three (3) primary software applications:

- Automated Tenprint Functions "minimal manual intervention" processing. Minimal manual intervention to include AFIS edits, verification and error correction operations.
- Manual tenprint functions – card scan for dead prints, injured prints and error processing
- Manual Latent Fingerprint and Palm print Functions
- Automated Latent print functions via Foray More Hits interface
- Mobile ID system for either 1:1 or 1: N matches

The following outlines the Upgraded AFIS system functionality that will streamline identification processing for the CPD.

AUTOMATED WORKFLOW MANAGER (AMF) - TENPRINT FUNCTIONS

An Automated Workflow Manager (AMF) will enable a "lights-out" identification processing for high volume tenprint operations. The AMF will deliver automated processing by providing search, launch and initiation

of subsequent processes based on your needs. This workflow handles all national fingerprint exchange inputs such as:

- NIST-compliant live scan submissions
- NIST-compliant card scan transactions (NSW)
- NIST-compliant Mobile ID input devices
- Roll print substitution

The Feature Extraction (FE) software will automatically extract core and axis for the rolled fingers without manual intervention or operator monitoring assistance and performs minutia count. The Automated Classification (AC) software identifies the fingerprint pattern type according to the NEC AFIS classification scheme and seamlessly searches the databases, returning a response to the operator.

Table-2 Automated Tenprint Functions

Function	Description
Tenprint capture	Captures 14 card fingerprint images with full hand and writers palm in WSQ, 8 bit grayscale from IQS compliant scanner device: live scan or card scan formatting record into NIST Type 1, 2, 4 and 15.
Automated Feature extraction	Automated ridge & minutia encoding, automated core detection, automated axis detection, automated minutia count & print quality class
Automated Classification	Automated pattern classification of input fingerprints
Automated Name search (optional)	Name search from AFIS is provided
Automated WSQ Compression	Automatically compresses the fingerprint record (14 NIST images) using the FBI certified compression algorithm
Automated Hit thresholds	Enables the system to determine "hit no-hit" decisions based on numerical setting thereby reducing manpower needs to review every match
Automated candidate lists	Searches & compiles database candidates with scores and fingerprint images
Automated Verification	Automatically determines "hit no-hit" by 1:1 match of search & database record and completes identification process without operator intervention.
Visual Quality Assurance	Automated quality control check of NIST tenprint: detection of poor quality prints routes job to quality control queue for operator review and action.
Tenprint re-inquiry	Enables an operator to re-initiate a tenprint search using the same input print with different demographic data.
Verification & charting	Displays side-by-side prints of search print and file print that are rank-scored through the database inquiry. Allows an operator to chart points of comparison between the prints.
Tenprint registration	Adds a rolled & slap tenprint and data elements to the rolled and slap print databases.
Tenprint inquiry against the unsolved crime database	Performs a tenprint inquiry against the unsolved latent database including the unsolved palm database, producing a candidate list, descending scores and respective images.
Tenprint update	Enables an operator to update the demographic or descriptive data registered in the rolled print databases.
Tenprint delete	Enables an operator to delete the registered file print from the rolled print databases, if authorized by the system administrator.
Tenprint combination command	Five-step process that streamlines "end-to-end" query and database registrations from a single entry screen.

Roll-print substitution	Enables automated finger substitution to ensure best quality database print

8.1 LATENT FUNCTIONS

The Global Workstation Latent (GWS-L) with Latent Examiner Software (LEXS) must allow direct input of latent fingerprint images, resulting in accurate minutia extraction. In addition to direct entry, the GWS-L will give the latent examiner complete interactive control over manual processing of the latent image. A camera connected to the GWS and will be used as the latent input device to capture latent images directly from lifts, photographs and crime scene evidence. The latent application software will deliver superior image processing tools, as well as the option to designate multiple axes for each latent search providing 360 degree searching.

Table-3 Latent Functions

Function	Description
Latent capture	Captures direct entry crime scene lift or tracing.
Latent enhancements	Latent Examiner Software (LEXS)
Latent inquiry	Searches a crime scene print against the rolled tenprint database.
Latent re-inquiry	Enables an operator to modify the demographic & image data in a stacked latent print and re-run the inquiry without re-entry of the image.
Latent to latent inquiry	Search a latent search print against the unsolved latent database.
Latent to latent inquiry #2	Search a file latent print against the unsolved latent database without re-entering the print.
Latent registration	Adds an unsolved latent print & data elements to the unsolved latent database.
Latent combination command	Three-step process that streamlines "end-to-end" query, database registrations, and subsequent search from a single screen entry.
Automated feature extraction	Automated ridge & minutia encoding, automated core detection, automated axis detection, automated minutia count.
Verification & Charting	Displays side-by-side images of search print and candidate file prints that are rank-scored through the database inquiry. Allows an operator to chart points of comparison between the prints.
Automated candidate lists	Searches & compiles database candidates with scores and fingerprint images
Latent Delete	Allows an operator to remove/delete any latent record in the unsolved latent database, if authorized by the system administrator.
Latent Update	Allows an operator to modify demographic data in the Control Database (CDB) database
Latent Search of Other NEC AFIS (ESSO)	Enhanced SSO - An AFIS latent connection between CPD AFIS and ISP AFIS. No re-scan or re-edit of latent needed. The same Latent is automatically sent to the ISP AFIS when selected. Candidate lists are sent back to the CPD GWS-L from ISP.
Illinois State Police Database Search	

FBI I-AFIS Database Search	

9.1 NEC NIST ARCHIVE FUNCTIONS

Table-4 NEC NIST Archive Functions

Function	Description
NIST Fingerprint	Types 1, 2, 4, and 15
Verify Document	Determines whether a specific document exists in Archive
Query on Document ID	Local queue (Stores locally when connectivity to GTC is not possible)
Consolidate Document	Called "Move" in Fingerprint Archive
Delete Documents	Delete only in Fingerprint Archive
Verify Folder	Determines whether a specific folder number exists in Archive
Create Folder Number	Allows the authorized user to create a new folder number in Archive
Retrieve Folder Contents (Document List)	Provides a list of documents contained within an existing, specified folder and allows the authorized user to select which documents to view
Modify Folder Number	Allows the authorized user to change the identification number of an existing folder
Consolidate Folder & Contents	Called "Move" in Fingerprint Archive
Delete Folder & Contents	Delete only in Fingerprint Archive
Name Search	Can perform full search on any demographic fields
Add User Profile	Allows the authorized user to create a new account number, enter profile information, and set access privileges for a new user
Edit User Profiles	Allows the authorized user to edit profile information and access privileges for an existing user account
Delete User Profiles	Allows the authorized user to remove an existing user account from Archive
Change Own Password	Allows the user to modify his/her Archive password

Function	Description
Change Password for User	Allows the authorized user to modify the Archive password of another user (e.g., when a password is lost/forgotten)
User Authorization Levels	The hierarchy of users within each Work Group in Archive: Basic User, Supervisor, Manager, or Administrator
Work Group/Unit Classification & Filtering	The grouping of users into separate classes, also known as the Bureau Code. Such classification prevents users in disparate departments from accessing information for users outside of their own Work Group.
Inquire Only and Inquire/Update Levels	Overall availability of Archive functionality to an individual user. Inquire only, allows the user to view Archive data, but disallows any action that may modify Archive content; Inquire/Update allows the user to view and modify Archive content.
Electronic User's Guide + Context-Sensitive Help	Availability of online and content-sensitive help to Archive users
Printing NIST Records to Compatible Print Servers	Functionality that allows the user to send Archive documents to a NIST print server. High-quality NIST image/data are reproduced on standard 8x8 fingerprint cards
Printing to Local Printers	Functionality that allows the user to send Archive documents to a local printer. Lower-quality NIST images/data are reproduced on standard office paper
WSQ Plug in Support (Aware, Inc.)	NIST document display
AccuPrint Plug in Support (Aware, Inc.)	For local printing of compressed images. Improved image quality over standard printer drivers.

DATABASE MAINTENANCE FUNCTIONS

The Global Workstation (GWS) will provide features and capabilities that allow an operator to display and enter text and image data and it streamlines the identification processing for efficiency. The GWS provides advanced operator functions for selecting and sorting displayed entries using various filters. The following features are required as operator tools and enhancements.

Table- 5 Database Maintenance Functions

Function	Description
Display a File Print	Displays a record registered in the database
Display a Search Print	Displays a record not yet registered in the database
Display a File Print vs. File Print	Displays two database records side by side
Display a Search Print vs. Search Print	Displays two input records side by side
Display a Search Print vs. File Print	Displays an input record and database record side by side
Display the Job List	Displays all jobs currently in the system
Display the Stack List	Displays all input records
Display Transaction List	Displays all jobs needing operator intervention

10.1 SLAP MATCHING & REGISTRATION

The Upgraded AFIS will provide the capability to incorporate automatic capture, storage and matching of slap prints. It is often noted that some slap (plain impressions) on a tenprint card are generally better quality than rolled prints of the same fingers.

Selectable database category (roll/slap)

- Automatic slap image cropping
- Rolled and slap image display
- Effective tool for latent and tenprint inquiry
- Improved latent and tenprint hit rates

Slap fingerprints (slaps) are taken by simultaneously pressing the four fingers of one hand onto a scanner or fingerprint card. Slaps are also known as four-finger simultaneous plain impressions.

11.1 FULL HAND REGISTRATION & MATCHING

This functionality will give the CPD the capability to search the full hand (Thenar, Hypothenar, Interdigital, Writers and Upper Hand).

12.1 IMARS

MAIN SCREEN

The I-MARS Main screen ("Home" tab) will display the following separate windows:

SERVER SERVICE STATUS

The Server Service Status window will display the status of system components. The window prompts the administrator immediately if there is an error. It also provides detail information of the status if you double click the image of error component displayed in the window. This instant notification functionality will prevent delay in problem resolutions and facilitate smooth operations on a day-to-day basis.

AUDIT TRAIL

The Audit Trail function will provide the ability to display the processing history and results of transactions in a 24-hour time scale for a selected TCN. It will be able to display the start/end time of the activity with status. It also will display operator ID, terminal ID and activity report if you click on the processing status.

TRANSACTION MONITOR

The Transaction Monitor window will display the current status of transaction processing. This display area will assist in monitoring server throughput and operator workloads and efficiency. The monitoring tool will display in green, yellow and red so that a trend of increase of throughput and workloads can be detected easily.

TENPRINT AND LATENT BROWSE SEARCH

This Browse Search function will provide the ability to display fingerprint image of selected tenprint finger number, latent or both images side-by-side. All ten-finger images will be displayed when selecting tenprint only. It also displays zone, core/axis and minutia and provides the ability to change the color of background, axis and others.

EVENT BROWSER

The Event Browser window will display error notifications from system application. There are five levels of notifications: 1) message notification to inform of the activity status, 2) warning notification, 3) alert notification, 4) error notification, however, it is possible to continue normal operations, and 5) critical error notification to inform of a system critical problem. Double clicking the notification will display a separate window with knowledgebase to let you know what caused the error and what action to take to resolve the problem.

REJECT NOTIFICATION

The Reject Notification window will display notifications when IPC data aborts or when an operator rejects data at VQA. TCN will be entered to the Audit Trail window from the JobNo. in the Reject Notification screen. Then, the transaction status will be displayed based on the processing phases on a 24-hour time scale.

I-MARS CAMERA

This window will display images from the web camera that can be set up in various locations of a customer site and enables monitoring of daily operations.

I-MARS VIDEO

This function will let an operator view various video images. It will offer Web connection capability and will be fully customizable.

BROADCAST MESSAGING

The I-MARS will provide an electronic bulletin board to flash special announcements or important news. This screen can be customized to select what to display.

Global Menu Screen

The I-MARS Global Menu screen ("Global Menu" tab) will provide the following functions:

ADMINISTRATOR

The administrator function will offer the following: 1) Auth Administrator, 2) Command Administrator and 3) UAF Report. The auth administrator function allows centralization of UAF management by providing the ability to modify operator permissions, create new operators, change user ID and password, and many other UAF management tasks. The command administrator provides the ability to execute various commands without accessing the system component itself to type the command lines. The UAF report displays the current operator information for verifications.

COMMUNICATION

The Bulletin Board function will provide the ability to send and receive message notifications between operators and administrators, using the Internet Explorer browser. This instant message functionality will provide a more effective tool for the operations staff to communicate much easier.

DATABASE STATISTICS

The following information can be obtained from the Database Statistics: 1) Transition of Workload (joblog status), 2) Database Information and 3) AMR Information. The joblog status report provides the ability to verify operators' joblog status by selected dates and job functions. The database information will display statistics by dates, types and others and will assist in monitoring workload status. A bar chart can also be displayed in a table format and it will provide printable joblog detail report. The Average Matching Ratio report will offer detail information by selected dates and job type.

KNOWLEDGE BASE

The knowledge base will provide information to assist with daily operations of system administration and management. If there is an error, the knowledge base window can be displayed. An operator can obtain the error code, cause of the error and what action to take to resolve the problem quickly. This database will be filled with knowledge based on the actual daily operations and will be useful for troubleshooting. It will also provide a search engine capability to look for related information.

REPORT SCREEN

The I-MARS Report screen ("Yesterday Report" tab) will provide the following information of the activities performed the day before:

DATABASE STATISTICS

The same as in the Global Menu screen, the following information can be obtained from the Database Statistics: 1) Transition of Workload (joblog status), 2) Database Information and 3) AMR Information. The joblog status report will provide the ability to verify operators' joblog status by selected dates and job functions. The database information will display statistics by dates, types and others and will assist in monitoring workload status. A bar chart can also be displayed in a table format and it also provides printable joblog detail report. The Average Matching Ratio report will offer detail information by selected dates and job type.

JOBLOG STATUS BY OPERATOR

It will provide the ability to verify joblog status by inquiry, tenprint or latent. It will display the total number of joblog per operator. Job types will be color-coded and will make the viewing of the status easier.

Peak Transaction Report

This report will display a line chart to show the timeframe of peak transaction. The hourly-based chart will assist in verifying changes in the amount of transaction volume throughout the day. It will also be displayed by inquiry, tenprint or latent.

Reject Notification

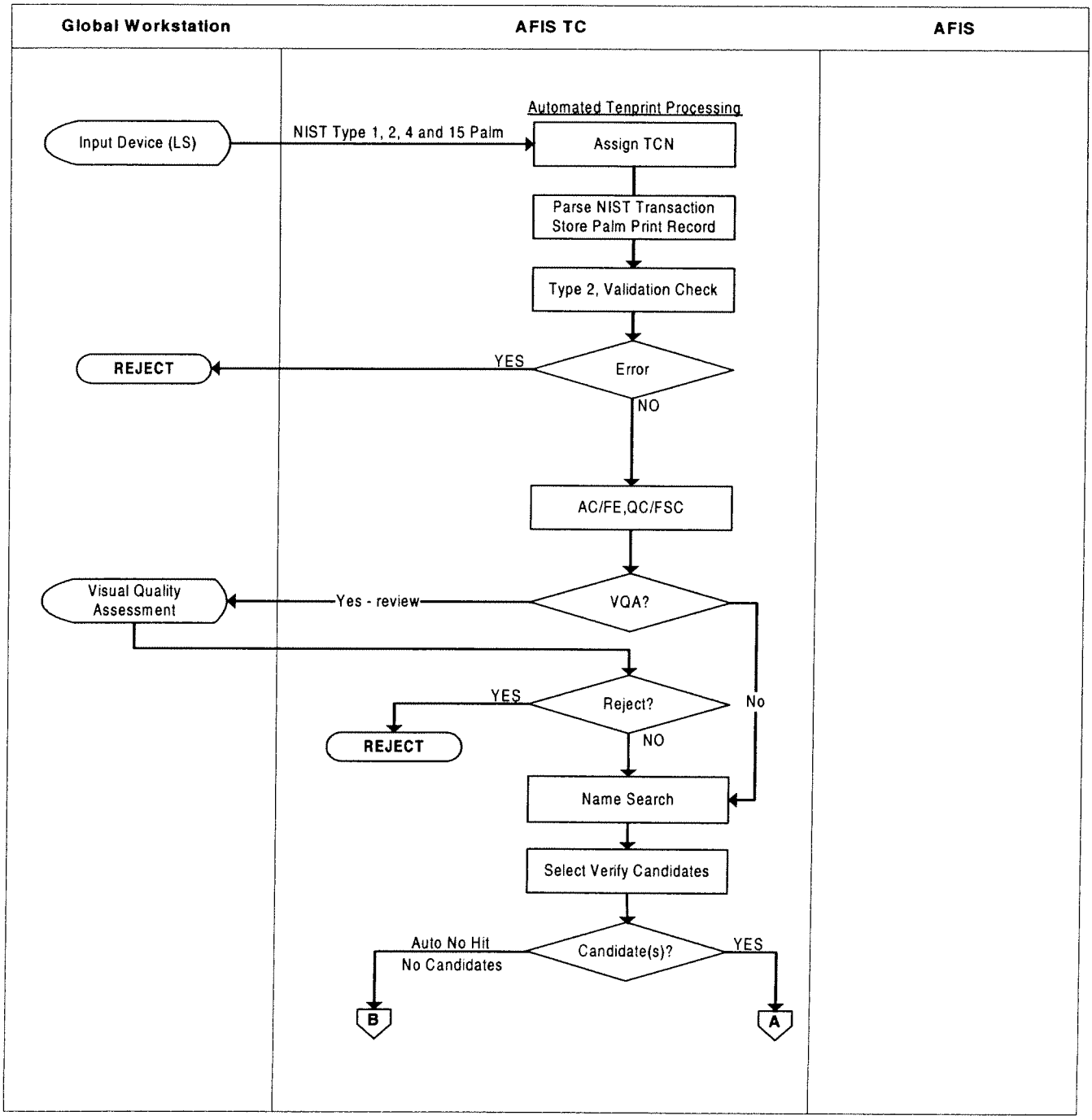
This will be the same as in the main screen, the Reject Notification window will display notifications when IPC data aborts or when an operator rejects data at VQA.

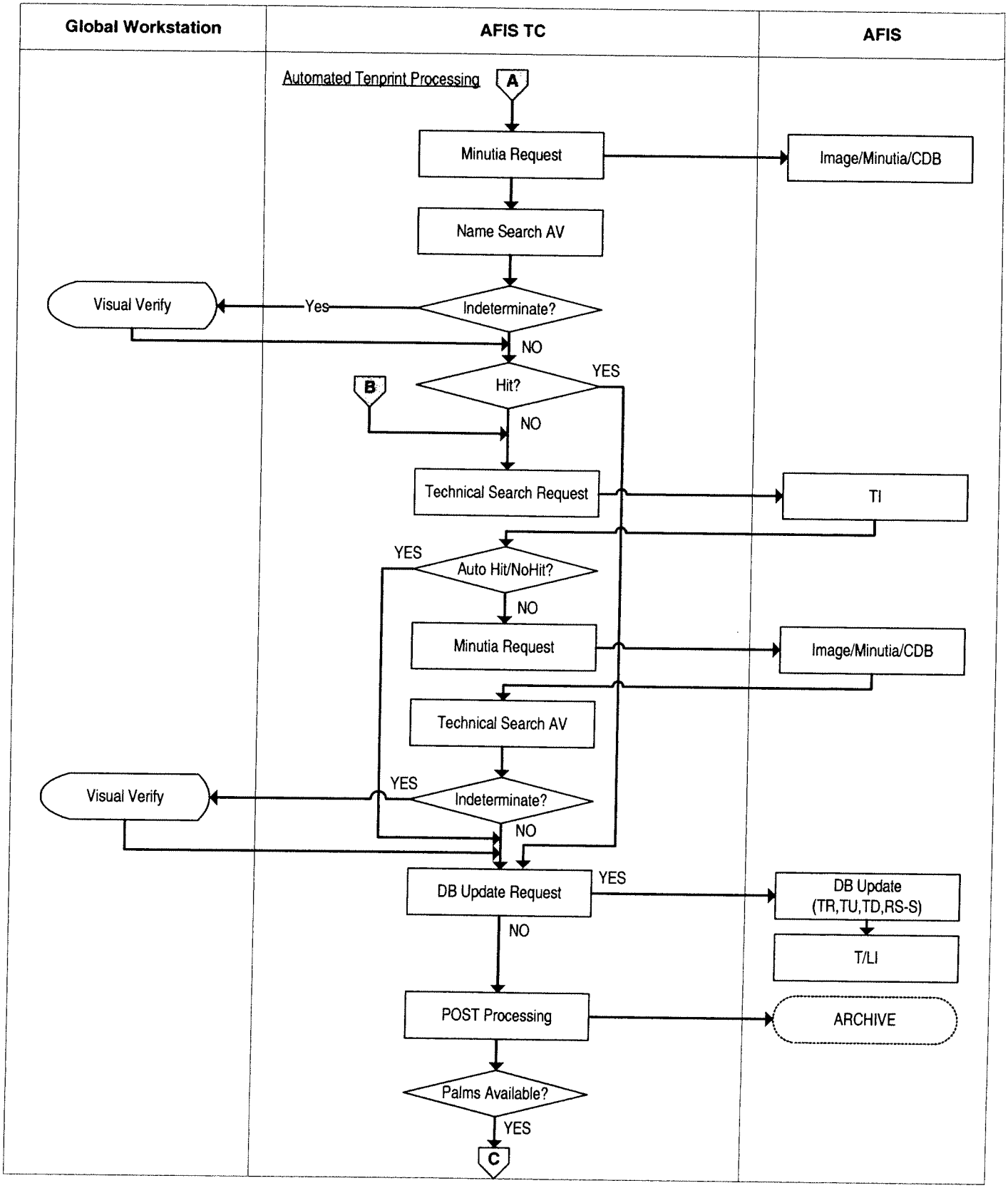
Workload Diagnostic Report

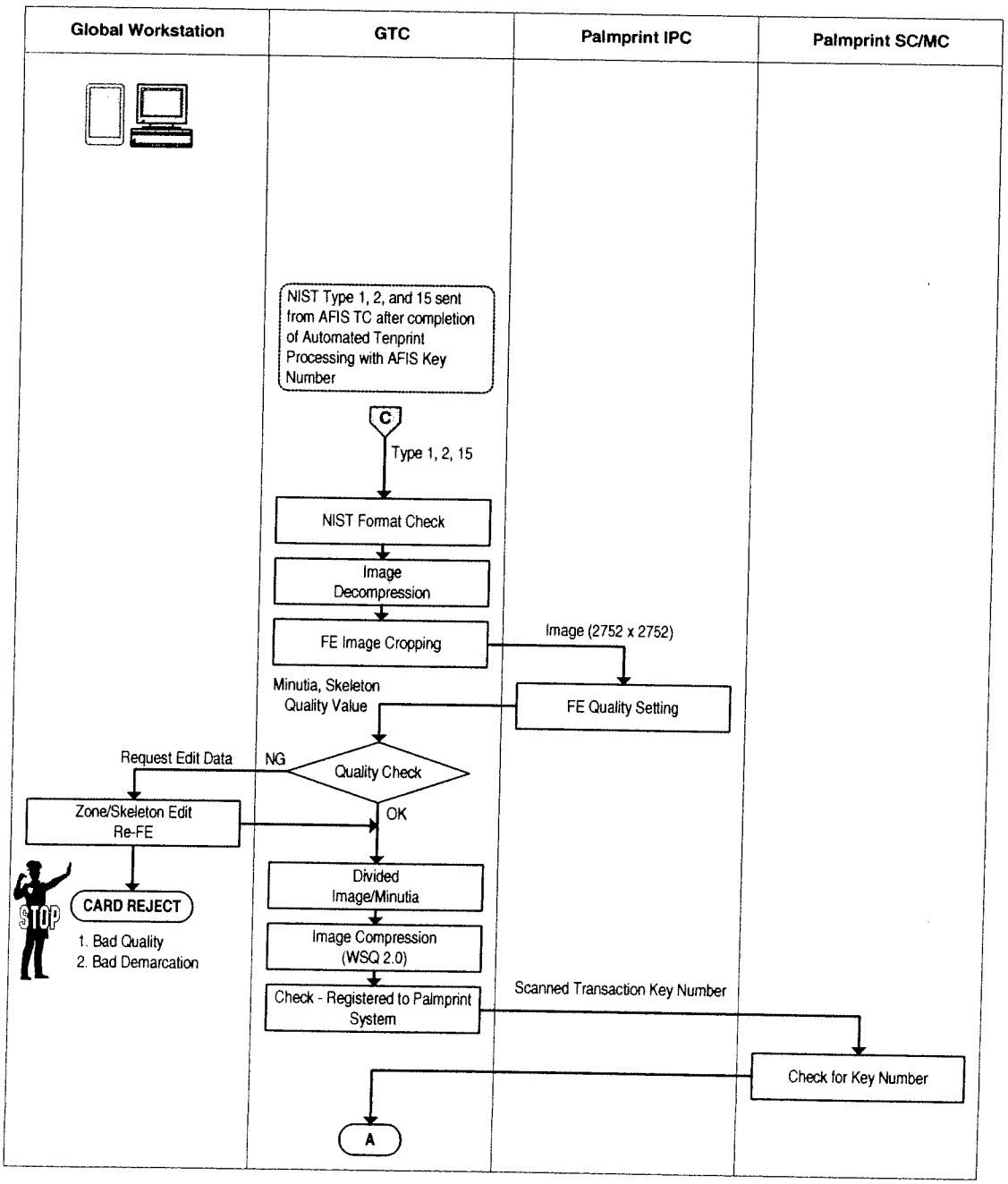
This report will provide the information of workload by displaying the ratio analysis, compared with the contracted amount. It will also assist in monitoring the system throughput and performance of the day-to-day operations.

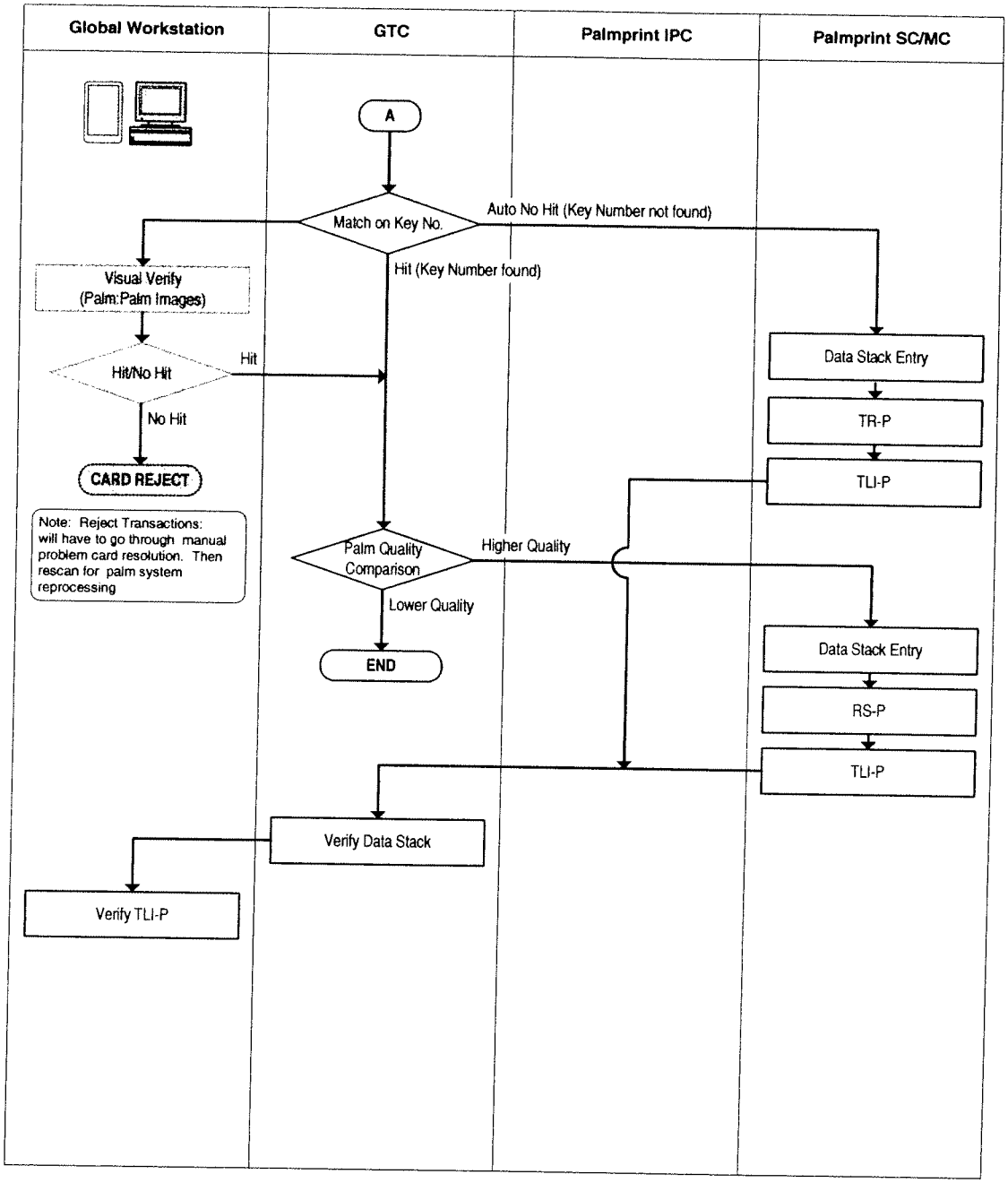
13.1 Operating Concept (Workflow)

Integrated Tenprint Palm print Workflow (conceptual)

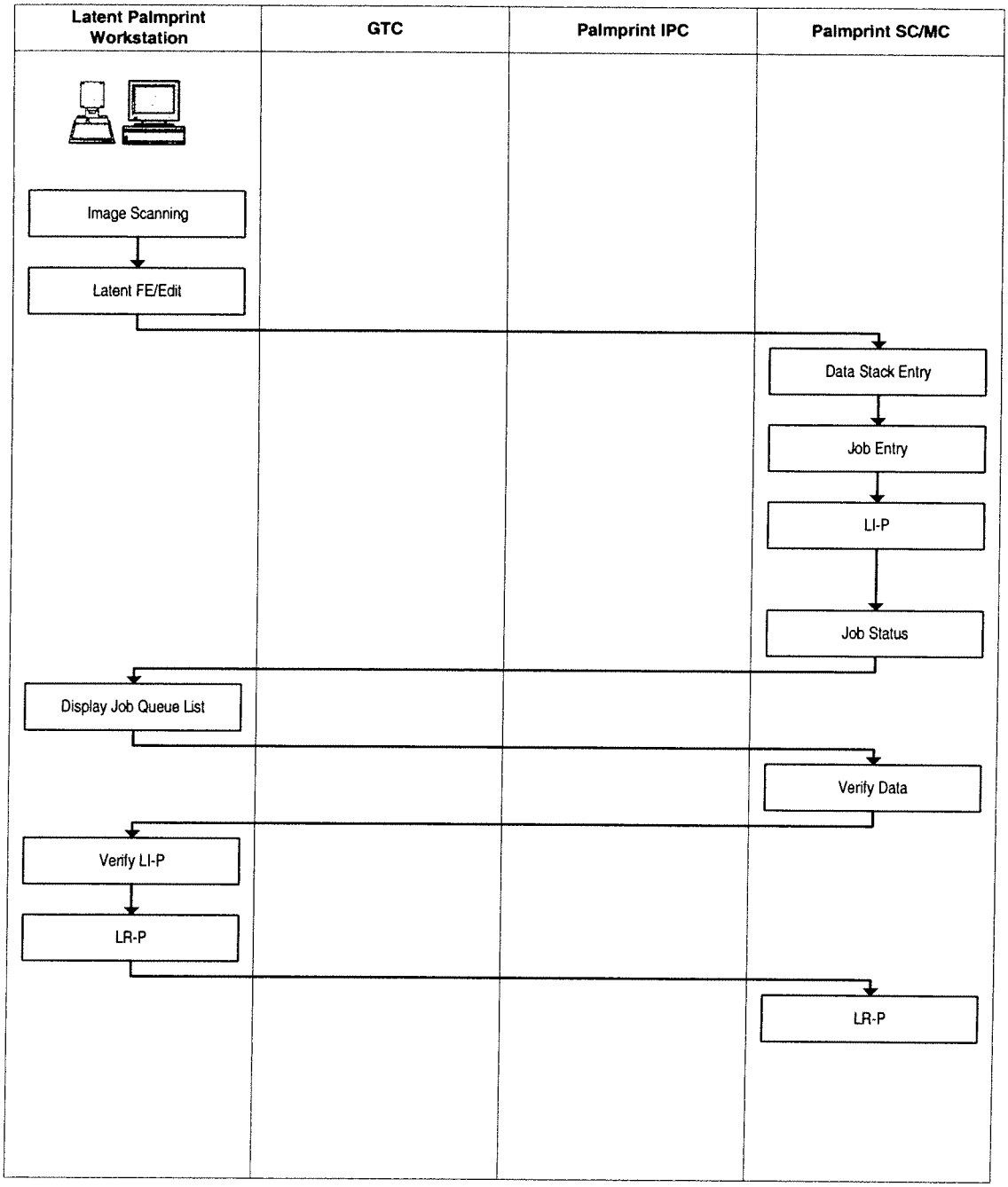



Global Workstation
AFIS TC
AFIS
Automated Tenprint Processing
A
Minutia Request
Image/Minutia/CDB
Name Search AV
Visual Verify
Yes
Indeterminate?
NO
YES
Hit?
B
NO
Technical Search Request
TI
YES
Auto Hit/NoHit?
NO
Minutia Request
Image/Minutia/CDB
Technical Search AV
Visual Verify
YES
Indeterminate?
NO
DB Update Request
YES
DB Update
(TR,TU,TD,RS-S)
NO
T/LI
POST Processing
ARCHIVE
Palms Available?
YES
C


Global Workstation
GTC
Palmprint IPC
Palmprint SC/MC
NIST Type 1, 2, and 15 sent from AFIS TC after completion of Automated Tenprint Processing with AFIS Key Number
C
Type 1, 2, 15
NIST Format Check
Image Decompression
FE Image Cropping
Image (2752 x 2752)
FE Quality Setting
Minutia, Skeleton Quality Value
Request Edit Data
NG
Quality Check
OK
Zone/Skeleton Edit Re-FE
STOP
CARD REJECT
1. Bad Quality
2. Bad Demarcation
Divided Image/Minutia
Image Compression (WSQ 2.0)
Check - Registered to Palmprint System
Scanned Transaction Key Number
Check for Key Number
A


Global Workstation
GTC
Palmprint IPC
Palmprint SC/MC
A
Match on Key No.
Auto No Hit (Key Number not found)
Hit (Key Number found)
Visual Verify
(Palm:Palm Images)
Hit/No Hit
Hit
No Hit
CARD REJECT
Note: Reject Transactions: will have to go through manual problem card resolution. Then rescan for palm system reprocessing
Palm Quality Comparison
Higher Quality
Lower Quality
END
Data Stack Entry
TR-P
TLI-P
Data Stack Entry
RS-P
TLI-P
Verify Data Stack
Verify TLI-P

4.1 Latent Palm print Workflow



NEC

NEC Corporation of America
1785 Winnetka Circle
Rolling Meadows, IL 60008

October 11, 2006

Joseph Perfetti
Manager of Field Services
Chicago Police Department
3510 S. Michigan Avenue
Chicago, IL 60653

Re: Chicago Police Department AFIS / Palm upgrade

Dear Mr. Perfetti,

NEC Corporation of America is pleased to provide a cost proposal and SOW for the upgrade and expansion of your existing AFIS to include Palm matching.

NEC is the sole manufacturer/provider of the AFIS solution for the Chicago Police Department. NEC uses patented and copyrighted matching relational formulas (algorithms) for matching and proprietary encoded minutia data formats for the storage of fingerprint and palm print records. These patent rights and copyrights exist in Japan. The NEC Fingerprint Matching Processor (FMP) uses proprietary hardware that is only available from NEC.

No other company can access or modify the NEC algorithms source code or convert the proprietary data format.

NEC will make every effort to comply with the Chicago MBE/WBE contract requirements either directly or in-directly.

NEC has provided an Economic Disclosure Statement.

Sincerely,

Chuck Thomas

Chuck Thomas
Client Solutions Manager

NEC Corporation of America
Phone: 847-590-4613
Email: Chuck.Thomas@necam.com

cc: Barry Fisher VP
Greg Uher ESM
Vishnu Gangumalla SE

5 Cost Information

5.1 AFIS Palm Print Upgrade System Component Pricing

SC/RM DB Server Hardware				
Model	**Description**	**Qty**	**Unit**	**Amount**
DELL	PowerEdge2950 (Rackmount) - DUAL CPU Model	2	$9,904	$$19,808
DELL/EMC	Qlogic Fiber Channel HBA (included in H/W)	4	$0	$0
DELL	PowerVault 124T LTO-3 TapeDrive for backup (includes 10 pack of LTO3 media)	1	$11,256	$11,256
			Total	**$31,064**
SC/RM DB Server OS Middleware				
Model	**Description**	**Qty**	**Unit**	**Amount**
Redhat	Redhat Enterprise Linux AS 3.0 (included in H/W)	2	$0	$0
Oracle 10g	Oracle 10G Database Standard Edition	30	$251	$7,530
Oracle 10g	Oracle Database Standard Edition RAC Option (included in Std. Edition)	30	$0	$0
NEC	Express Cluster	4	$3,650	$14,600
BEA	BEA-Tuxedo Run-time Concurrent User License(30) (V8.1)	30	$629	$18,870
NetVault	Backup Software	1	$2,314	$2,314
			Total	**$43,314**

SMS Hardware

Model	Description	Qty	Unit	Amount
DELL	PowerEdge2950 (Rackmount) - DUAL CPU Model	4	$10,931	$43,724
DELL	Emulex FC interface for FMP-7	4	$1,375	$5,500
DELL	Mounting H/W for FMP	4	$473	$1,892
NEC	FMP-7 Model -3 Fingerprint Matching Processor	4	$120,000	$480,000
			Total	**$531,116**

SMS OS/MiddleWare

Model	Description	Remarks	Qty	Unit	Amount
REDHAT	Redhat Enterprise Linux AS 3.0 (included in H/W)		4	$0	$0
				Total	**$0**

Global Image Processing Controller G-IPC Hardware

Model	Description	Qty	Unit	Amount
DELL	PowerEdge 1950 (Rack Mount)-DUAL CPU	4	$8,700	$34,800
			Total	**$34,800**

Global Image Processing Controller G-IPC OS/MiddleWare

Model	Description	Qty	Unit	Amount
Microsoft	Windows 2003 Server Std. Edition (Included in the HW)	4	$0	$0
AWARE	WSQ	4	$500	$2,000
			Total	**$2,000**

GTC Hardware

Model	Description	Qty	Unit	Amount
DELL	PowerEdge2950 (Rackmount) - DUAL CPU Model (GTC Front-End Windows Server)	2	$10,946	$21,892
DELL	PowerEdge2950 (Rackmount) - DUAL CPU Model (GTC Database Linux Server)	2	$10,806	$21,612
DELL	Rack 42U with 16 port KVM, 24 port network switch	1	$12,383	$12,383
DELL	Rack 42U for FMP and SAN	1	$4,375	$4,375
DELL/EMC	Qlogic Fiber Channel HBA (included in H/W)	8	$0	$0
			Total	**$60,262**

GTC OS/MiddleWare (2 Front-End servers, 2 DB Servers)

Model	Description	Qty	Unit	Amount
MICROSOFT	Microsoft Windows 2003 Server (included in hardware)	2	$0	$0
REDHAT	Redhat Enterprise Linux AS 3.0 (included in H/W)	2	$0	$0
Oracle 10g	Oracle Database Standard Edition	10	$251	$2,510
Oracle 10g	Oracle Database Standard Edition RAC Option (included in Standard Edition)	10	$0	$0
NEC	ExpressCluster	4	$3,650	$14,600
AWARE	NISTPackServer	2	$4,370	$8,740
			Total	**$25,850**

DAS DB Server Hardware (NIST Archive including DAS Web Server))

Model	Description	Qty	Unit	Amount
DELL	PowerEdge2950 (Rackmount) - DUAL CPU Model (includes MS SQL)	1	$21,498	$21,498
DELL	PowerEdge2950 (Rackmount) - DUAL CPU Model	1	$13,700	$13,700
DELL/EMC	Qlogic Fiber Channel HBA (included in H/W)	4	$0	$0
			Total	**$35,198**

DAS DB Server OS/MiddleWare (2 servers in cluster)

Model	Description	Qty	Unit	Amount
MICROSOFT	Microsoft Windows 2003 Server (included in hardware)	2	$0	$0
MICROSOFT	Microsoft SQL Server 2005 (included in hardware)	1	$0	$0
EMC	Backup Software	1	$17,500	$17,500
AWARE	NISTPack Server	2	$4,370	$8,740
			Total	**$26,240**

Storage Hardware

Model	Description		Qty	Unit	Amount
DELL/EMC	CX3-20	• CX3-20 SAN Storage • SAN Base drives 73GB (10K RPM FC-2) x 6 – Reserved for SAN FLARE code • 300GB (10K RPM FC-2) x 60 drives • Qlogic FC-HBA with RHN Linux AS 4.0 drivers – 8, Qlogic FC-HBA with Microsoft drivers - 8 PowerPath for Windows – Qty 4 PowerPath for Linux – Qty 4 FC SAN switch 16 ports – 2 FC cables (3M) - 25 , SnapView License	1	$231,001	$231,001
DELL	PowerVault 132T (includes 15 pack of LTO3 media)		1	$22,686	$22,686
				Total	**$253,687**

IMARS Server Hardware

Model	Description	Qty	Unit	Amount
DELL	PowerEdge1420 SC (Tower)	1	$6,491	$6,491
DELL	20" Flat Panel Monitor	1	$563	$563
			Total	**$7,054**

IMARS Server OS/MiddleWare

Model	Description	Qty	Unit	Amount
MICROSOFT	Microsoft Windows 2003 Server (included in hardware)	1	$0	$0

GWS Hardware (GWS-V x 2, GWS-TVN x 1, GWS-TN x 2, GWS-L x 2) (Total of 7 GWS)

Model	Description	Qty	Unit	Amount
DELL	Optiplex GX-620 Mini Tower w/ Dell 20 inch UltraSharp™ 2001FP Flat Panel Monitor (GWS-V x 2, GWS-TVN x 1, GWS-TN x 2)	5	$1,960	$9,800
DELL	Optiplex GX-620 Mini Tower w/ Dell 20 inch UltraSharp™ 2001FP Flat Panel Monitor (GWS-L x 2)	2	$2,024	$4,048
EPSON	Flatbed Scanner (Epson Professional 4990 PRO) (GWS-TN)	3	$549	$1,647
SONY	SONY CCD Camera with accessories (GWS-L)	2	$2,936	$5,872
Integral Tech.	Flashbus MV LITE PCI for Camera Interface	2	$494	$988
HP	HP B/W LaserJet Printer 2420 HP LaserJet 2420 or latest available in the same category [NON IQS Certified Printer]	7	$749	$5,243
			Total	**$27,598**

GWS OS/MiddleWare

Model	Description	Qty	Unit	Amount
MICROSOFT	Microsoft Windows® XP Professional, SP2, with Media (included in H/W)	7	$0	$0
Mentalix	Runtime API for the Epson 4990 PRO For NSW IQS Compliance (GWS-N)	3	$1,813	$5,439
AWARE	NISTPack Workstation - GWS application	7	$548	$3,836
AWARE	WSQ Plugin Web Archive Viewer	7	$500	$3,500
AWARE	AccuPrint Plugin Local printing from Archive	7	$625	$4,375
			Total	**$17,150**

AFIS Programming Products (PP)				
Model	**Description**	**Qty**	**Unit**	**Amount**
UPG-SC-CORE-LIN	UPGRADE SC CORE(LINUX)	2	$28,000	$56,000
UPG-IIC-CORE-LIN	UPGRADE IIC CORE(LINUX)	2	$24,000	$48,000
AFIS PP	SLAP Matching	1	$50,000	$50,000
UPG-SMS-SW	UPGRADE SMS SW Package	4	$32,000	$128,000
GTC-CR - BASE	GTC Core Module	1	$32,000	$32,000
GTC-IQM -BASE	Integrated Queue Manager	1	$38,000	$38,000
GTC-MRA- BASE	Matching Resource Allocater	1	$25,000	$25,000
GTC-EWC - BASE	Enhanced Workstation Controller	1	$28,000	$28,000
GTC-JCM - BASE	Job Control Module	1	$18,000	$18,000
GTC-ATUC - BASE	Automatic Table Update Controller	1	$25,000	$25,000
GTC-CR - CLUSTER	GTC Core Module	1	$16,000	$16,000
GTC-IQM - CLUSTER	Integrated Queue Manager	1	$19,000	$19,000
GTC-MRA - CLUSTER	Matching Resource Allocater	1	$12,500	$12,500
GTC-EWC - CLUSTER	Enhanced Workstation Controller	1	$14,000	$14,000
GTC-JCM - CLUSTER	Job Control Module	1	$9,000	$9,000
GTC-ATUC - CLUSTER	Automatic Table Update Controller	1	$12,500	$12,500
UPG-IPC-CORE	UPGRADE IPC-CORE	4	$16,000	$64,000
IMARS	IMARS Core Software 03	1	$20,000	$20,000
IMARS	IMARS System Monitor Component	1	$12,000	$12,000
IMARS	IMARS Report Generation Package	1	$15,000	$15,000
IMARS	IMARS Server Support License Upgrade	14	$600	$8,400
IMARS	IMARS Client Support License Upgrade	7	$100	$700
NEC-DAS	NIST Archive Application	1	$107,143	$107,143
GWS-V (FP) Upgrade	GWS - Verification Upgrade (FP)	2	$14,400	$28,800
GWS-T (FP) Upgrade	GWS - Tenprint Upgrade (FP)	2	$18,000	$36,000

GWS-L (FP) Upgrade	GWS - Latent Upgrade (FP)	2	$18,000	$36,000
GWS-TV (FP) Upgrade	GWS - Tenprint / Verify Upgrade (FP)	1	$24,300	$24,300
NSW (FP)CORE	NSW CORE (FP)	3	$15,000	$45,000
NEC-ELMA	NEC Enhanced Latent matching Algorithm	1	N/C	N/C
			Total	**$928,343**

Upgrade System Totals		
	HW/OS Total	**$1,095,333**
	AFIS PP Total	**$928,343**
Services		
NEC Customization, Coding		$475,343
NEC Specifications/ Requirement Analysis		$67,200
Data Conversion Development and DB build		$140,000
Offsite (NEC HQ) System Testing		$60,000
Onsite System Installation & Testing		$67,200
Project Management		$38,256
Documentation		$13,200
Training (Tenprint, Latent, System Administrator)		$15,625
	Services Total	**$876,824**
Sub Total		**$2,900,500**
Preferred Customer Discount		**($52,000)**
Upgrade System Total		**$2,848,500**
Palm Card Conversion Services (100,000 Palm subjects)		**$250,000**
Upgrade System Grand Total		**$3,098,500**

NEC

NEC Corporation of America
1785 Winnetka Circle
Rolling Meadows, IL 60008

September 21, 2006

Mr. Joseph Perfetti
Manager of Field Services
Chicago Police Department
3510 S. Michigan Avenue
Chicago, IL 60653

Re: Current Equipment List and Updated Price Schedule

Dear Mr. Perfetti,

Per your request, below is the Equipment List reflecting your current install base as well as a revised schedule of maintenance pricing to cover the first three quarters of 2007. This pricing is dependant on the upgrade system warranty starting 9/1/07. The monthly pricing quoted here will remain in effect until the upgrade system warranty begins as warranty may begin after 9/1/07.

I have also included a table that shows the quarterly maintenance pricing for the upgrade system based on the upgrade proposal dated 9/18/06. This pricing and the equipment list in the upgrade proposal are subject to change based on final design decisions and equipment availability at the time of contract signing. All other terms and conditions in the Maintenance Agreement shall remain unchanged.

Current System Equipment List				
Item	Description	Qty	Unit	MMC
N4500-83F	Basic Unit (UP4800/790)	5	285.00	1425.00
N4501-76	EPU Expansion	14	54.00	756.00
N4501-13	512 MB Memory Expansion	2	48.00	96.00
N4501-14	1 GB Memory Expansion	9	96.00	864.00
N4502-04	Memory Expansion Card	10	16.00	160.00
N7690-82	Cartridge Tape Unit	5	20.00	100.00
N7615-85	DAT Unit	4	21.00	84.00
N7823-21E	Display	5	10.00	50.00
N7959-924	FMP5 (4MU)	2	1,000.00	2,000.00
N7959-921	FMP5 (1MU)	2	250.00	500.00
N4022-13	Basic unit (EWS4800/420)	1	61.00	61.00
N7832-32	Display	1	25.00	25.00
	Laser printer	1	20.00	20.00
	NEC Quick Scan System	1	850.00	850.00
C972ULDG-A	9GB 7200rpm disk drive	40	10.00	400.00
C1872ULDG-A	18GB 7200rpm disk drive	130	15.00	1950.00
C3200R-R	30 Slot Component	2	157.00	314.00
C2900R-A	20 Slot Component	14	154.00	2,156.00
AC-99401022	VLSDLT700	4	125.00	500.00
	VLSDLT800	2	265.00	530.00

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Rolling Meadows, IL 60008

AC-39102911	DLT Tape CRT IC+V	44	10.00	440.00
	FW-T (bundled maint)	3	575.00	1725.00
	FW-L (bundled maint)	2	780.00	1560.00
	IPC NT-Server	4	85.00	340.00
	IPC Display	1	10.00	10
UB3045-H22A	UX/4800 UPOS license	9	58.00	522.00
NS120000555	NT Archive Server	1	128.00	128.00
AMS-5512-IN-00	512 MB Memory Expansion	2	40.00	80.00
BDH-1832-IN-00	18GB Ultra 180 SCSI HDD	2	36.00	72.00
AIF-0677-IN-16	SecuRAID Controller	1	54.00	54.00
ADT-4010-IN-00	DDS-4 DAT	1	25.00	25.00
C7210FD-A	73GB FC Disk	35	34.00	1190.00
C5301R-J	NEC K1 Rack 2SP 30 drives	2	382.00	764.00
	Oracle 8i RDBMS	1	825.00	825.00
	Base NT Archive	1	394.00	394.00
UB3000-21A	UX/4800 WSOS license	1	4.00	4.00
UG1006-N420	VxVM	5	30.00	180.00
UG1001-N420	VxFS	5	40.00	200.00
UB3520-111	BEA Tuxedo license	4	48.00	192.00
UB2651-L51	TP-TUX/WS	2	40.00	80.00
AMB101-01	Base MC	2	50.00	100.00
UB4500-241C1	Oracle RDBMS	2	26.00	52.00
UB4501-241C1	Oracle SQL*Net	2	26.00	52.00
UB4507-241A	Oracle Distributed Option	2	30.00	60.00
ASB101-01	Base SC	1	225.00	225.00
ASD201-02	Image DB Manager	1	60.00	60.00
ASF101-01	Base NATMS	1	415.00	415.00
ABA101-01	1:1 Matching	1	235.00	235.00
ASF202-01	RAF	1	115.00	115.00
ASF201-02	AMF	1	115.00	115.00
ASF205-01	MMF	1	235.00	235.00
	AFIS/CHRIS Gateway	1	425.00	425.00
ASF203-01	LS Interface	1	145.00	145.00
ALB101-01	Base IIC	1	225.00	225.00
	WSQ (Aware)	1	18.00	18.00
ALB102-02	Image Archive	1	225.00	225.00
ADB101-02	AFIS DB Software ver. 7	3	825.00	2,475.00
AMM301-01	Search/Match Supervisor	2	210.00	420.00
UB36XX-XXX	OpenView/SystemScope	1	300.00	300.00
AIN101-01	INAS Manager	1	80.00	80.00
AIN201-01	INAS Agent (UP)	5	8.00	40.00
AIN201-02	INAS Agent (Client)	5	18.00	90.00
	Windows NT (ws)	4	4.00	16.00
	Windows NT (Server for 10)	1	110.00	110.00
	Quickscan CSS	1	38.00	38.00
	Qucikscan QC	1	15.00	15.00
	NIST Scan	1	300.00	300.00
	Dedicated Onsite Engineer	1	10,000.00	10,000.00
	7X24 (2hr response)	1	3,250.00	3,250.00
	Current System Monthly Maintenance Pricing Total			$41,462.00

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NEC Corporation of America
1785 Winnetka Circle
Rolling Meadows, IL 60008

Current System Quarterly Maintenance Pricing			
Maintenance charges for the following 3-quarter billing periods (1/1/07 – 12/31/07)			
Jan 1, 2007	Apr 1, 2007	Jul 1, 2007	Sep 1, 2007
$124,386	$124,386	$124,386	**Anticipated Upgrade System Warranty**

Upgrade System Maintenance Pricing

Anticipated Upgrade System Quarterly Maintenance Pricing			
Maintenance charges for the following 4-quarter billing periods (1/1/08 – 12/31/08)			
Jan 1, 2008	Apr 1, 2008	Jul 1, 2008	Sep 1, 2008
warranty	warranty	warranty	$91,819

Anticipated Upgrade System Quarterly Maintenance Pricing			
Maintenance charges for the following 4-quarter billing periods (1/1/09 – 12/31/09)			
Jan 1, 2009	Apr 1, 2009	Jul 1, 2009	Sep 1, 2009
$91,819	$91,819	$91,819	$91,819

Please do not hesitate to contact me with any questions you may have.

Sincerely,

Chuck Thomas

Chuck Thomas
Client Solutions Manager

cc. D. Sheahan
G. Uher
S. Funk

NEC Corporation of America
1785 Winnetka Circle
Rolling Meadows, IL 60008

October 11, 2006

Joseph Perfetti
Manager of Field Services
Chicago Police Department
3510 S. Michigan Avenue
Chicago, IL 60653

Re: Chicago Police Department AFIS / Palm upgrade

Dear Mr. Perfetti,

NEC Corporation of America is pleased to provide a cost proposal and SOW for the upgrade and expansion of your existing AFIS to include Palm matching.

NEC is the sole manufacturer/provider of the AFIS solution for the Chicago Police Department. NEC uses patented and copyrighted matching relational formulas (algorithms) for matching and proprietary encoded minutia data formats for the storage of fingerprint and palm print records. These patent rights and copyrights exist in Japan. The NEC Fingerprint Matching Processor (FMP) uses proprietary hardware that is only available from NEC.

No other company can access or modify the NEC algorithms source code or convert the proprietary data format.

NEC will make every effort to comply with the Chicago MBE/WBE contract requirements either directly or in-directly.

NEC has provided an Economic Disclosure Statement.

Sincerely,

Chuck Thomas

Chuck Thomas
Client Solutions Manager

NEC Corporation of America
Phone: 847-590-4613
Email: Chuck.Thomas@necam.com

cc: Barry Fisher VP
Greg Uher ESM
Vishnu Gangumalla SE

Richard M. Daley
Mayor

Department of Police • City of Chicago
3510 S. Michigan Avenue • Chicago, Illinois 60653

Philip J. Cline
Superintendent of Police

October 12, 2006

Barbara A. Lumpkin
Chief Procurement Officer
Department of Procurement Services
City Hall Room 403

ATTN: **CHRISTINE SMITH**

SUBJECT: **OCTOBER 19, 2006 SOLE SOURCE AGENDA**
NEC AFIS UPGRADE

Attached please find one Justification for Non-Competitive Procurement for NEC Technologies. Please schedule this for the next Sole Source meeting to be held on October 19, 2006. The attachments consist of:

1) One Justification for Non-Competitive Procurement.

2) One DPS Project Checklist.

3) One Scope of Work and Detailed Specification.

4) One quote from the vendor.

5) One letter from the vendor stating they are the sole provider of this requirement.

Please note that the requisition cannot be submitted at this time as Police is awaiting the assignment of the 10-digit commodity code. It will be forwarded upon generation.

Sincerely,

Michael P. Palumbo
Contract Administrator
Police Department