

CITY OF CHICAGO  
DEPARTMENT OF PROCUREMENT SERVICES  
ROOM 403, CITY HALL, 121 N. LASALLE STREET

FOR NCRB USE ONLY	
Date	7-5-11
Recommend Approval	<input checked="" type="checkbox"/>
Return To Dept.	<input type="checkbox"/>
Reject	<input type="checkbox"/>
Vote	4-0

**NON-COMPETITIVE REVIEW BOARD (NCRB)  
JUSTIFICATION FOR NON-COMPETITIVE PROCUREMENT**

**COMPLETE THIS SECTION IF NEW CONTRACT**

For contract(s) in this request, fill in each of the four (4) major subject areas below in accordance with the Instructions for Preparation of Non-Competitive Procurement Form on the reverse side. Complete "Other" subject area if additional information is needed. Subject areas must be fully completed. Responses merely referencing attachments will not be accepted.

Request that negotiations be conducted only with NEC Corporation of America for the product(s) and/or service(s) described herein.

This is a request for:

One-Time Contractor Requisition #: 60840, copy attached or  Term Agreement or  Delegate Agency (Check one).

If Delegate Agency, this request is for "blanket approval" for all contracts within the 60840 (Attach List).

Pre-Assigned Requisition # **60840**

Pre-Assigned Contract No.: 60840

**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 #: **13750**

Company or Agency Name: 60840

Specification #: **52186**

Contract or Program Description: | Automated Fingerprint Identification System (AFIS)

Modification #: 60840

(Attach List, if multiple)

Perfetti, Joseph  
Originator Name  
(mm/dd/yr)

312/745-5620  
Telephone

  
Signature

Police  
Department

06/02/11  
Date

**PROCUREMENT HISTORY**

**1. Describe the requirement and how it evolved from initial planning to its status.**

The Chicago Police Department is seeking to engage in a 5 year contract with NEC relative to the maintenance of the Automated Fingerprint Identification System (AFIS). The current contract (Spec# 1375052186) expires on December 31, 2011. The maintenance period for this request is 01 January 2012 thru December 31, 2016. Also requested in this contract is an upgrade that will expand the storage capacity of the system. The System is nearing the capacity of 3.8 million records for storage. It is anticipated the system will exceed its storage capability by July 2012. The upgrade will increase the storage capacity to 7 million NIST records and will secure system storage for the remainder of the contract.

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 an 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 2008, The Field Services Section performed an upgrade and database expansion to the Automated Fingerprint Identification System (AFIS). The upgraded system has expanded the 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 (30% of impressions recovered at crime scenes are fractions of palm prints, this new technology will allow latent examiners to search suitable palm impressions against the palm print database.
- ✓ Slap print matching and storage
- ✓ New 10-finger Tenprint database to improve Tenprint accuracy (6 rolled and 4 slap; day one forward for slap). The old system only had two finger matching.
- ✓ Capacity for 1,800 Fingerprint submissions per day. Old system was designed for 1100 prints per day and CPD was hitting its capacity on a daily basis
- ✓ Mobile ID functionality for 1000, 1:N cold searches per day with a 3 minute response
- ✓ Enhanced Latent Matching Algorithm (ELMA)
- ✓ Web based Archive and Reporting System

In addition to the functions stated above, the AFIS upgrade provided a technology refreshment to include latest industry standard servers, workstations, operating systems and middleware.

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 current procurement from NEC. The current Contact number is 13750 and Specification number is 52186. This request is for a five year maintenance contract and archive storage expansion.

**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.



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.  
It is critical that the AFIS system be maintained to ensure it functions properly. Chicago Police Department relies entirely on the AFIS system to facilitate the criminal identification of persons taken into custody, processing of fingerprints for city applicant, crime scene latent processing, etc. Failure to properly maintain this equipment would negatively impact CPD's ability to process persons and create a legal liability for the Department.
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 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.

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

OTHER

APPROVED BY:

DEPARTMENT HEAD OR DESIGNEE

MARVIN J SHEAR

PRINT NAME

CHIEF PROCUREMENT OFFICER

5 JUL 11

DATE

Rich Butta

BOARD CHAIRPERSON

Rich Butta

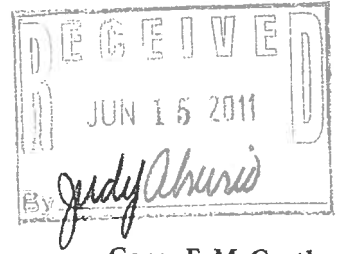
PRINT NAME

DATE OF APPROVAL

7.18.2011

DATE

7/22/11



Rahm Emanuel  
Mayor

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

Garry F. McCarthy  
Superintendent of Police

Jamie Rhee  
Chief Procurement Officer  
Department of Procurement Services  
121 North LaSalle Street - Room 403  
Chicago, Illinois 60610

June 14, 2011

*JMB*  
*JC* 6-16-11  
*RB*

Re: Request for a 5 year Sole Source contract Automated Fingerprint Identification System, NEC  
Req #: 60840

Ms. Rhee,

The Chicago Police Department upgraded it's Automated Fingerprint Identification System (AFIS) in January of 2008. The contract for the AFIS System maintenance expires on 31 December 2011. It is respectfully requested that a five year Sole Source maintenance agreement be procured with NEC.

The AFIS system is a mission critical component of the arrestee processing effort. AFIS is responsible for the positive fingerprint identification of all arrestees for Chicago and Cook County (Chicago is obligated to process all Cook County arrests per the Cook County Apprehension Booking System (CABS) Agreement). Every twenty four hours, the CPD AFIS system processes nearly 700 CPD arrests and 350 Cook County arrests. There are no other immediate means of positively identifying an Individual other than thru fingerprints. AFIS is responsible for the creation and maintenance of IR#. Most of the applications in the CLEAR system rely and require an IR# and the absence of an IR# would require a complete re-write of the application.

The AFIS system is comprised of proprietary matching hardware and software for extracting fingerprint minutia, creating multiple fingerprint databases and searching/matching algorithms for matching fingerprints.

It is critical that the AFIS system be maintained to ensure it functions properly. Chicago Police Department relies entirely on the AFIS system to facilitate the criminal identification of persons taken into custody, processing of fingerprints for city applicant, crime scene latent processing, etc. Failure to properly maintain this equipment would negatively impact CPD's ability to process persons and create a legal liability for the Department.

We respectfully ask that you approve our request.

Marvin J. Shear  
Assistant Deputy Superintendent  
Bureau of Administrative Services  
Chicago Police Department

## Scope of Services

Contractor must provide hardware and software maintenance and necessary system upgrades relating to the Automated Fingerprint Identification System.

### 1.1 Database Design

The following reflects the AFIS database capacities and transaction volumes.

#### 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 (7,000,000 after upgrade)	Current and new NIST Type 1,2,4 records
	NIST Type 15	1,400,000 (5,000,000 after upgrade)	New NIST Type 15 (Palm) data

### 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.)

### Fingerprint Workstation and other external Devices Design

Device	Upgrade Design	REMARKS
GWS-TV/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 Configuration includes the following functionality:

- ESSO (Extended Send Search to Other) which allows 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 automatically sends the NIST Type 1,2, 4 and 15 records to Illinois State Police (ISP). Type 10 will be included in the future.
- Livescan connectivity and all necessary customization
- CHRIS/CLEAR CCH interface (oracle queuing)
  - 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 are included:

- 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 has 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 provides a wide range of manual intervention levels, from complete lights-out to full manual QC review by tenprint technicians.

## **SEARCH ACCURACY**

The system contains 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 system incorporates 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 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 AFIS readily uses the newest matching technologies, including:

- Slap prints in the database for latent matching to increase latent accuracy
- Mobile ID Ready. The system is 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 comes 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**

AFIS consists 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 increases and improves 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 system uses “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 AFIS system maximizes 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 supports both locally and remotely connected workstations

---

## OPEN SYSTEM COMPLIANCE

AFIS is designed to operate in an open architecture environment and with commercially available software.

**Table-1 AFIS Software Platforms**

<b>Operating System (OS—Server)</b>	Linux, Windows 2003 Advanced Server
<b>Operating System (OS—Workstation)</b>	Microsoft Windows XP Professional
<b>Network</b>	TCP/IP
<b>Language(s)</b>	ANSI-C , C++ and C#
<b>On Line Transaction Processing</b>	TUXEDO

---

<b>Relational Database Management System</b>	ORACLE 10g
<b>Graphical User Interface</b>	MS-Windows

### **3.1 Database Backup Strategy**

The CPD AFIS Palm must use FC SAN-RAID disk drives with built-in redundancy to minimize impact on CPD operations should a failure occur. Netback up and Acronis will also be used with backing up all files.

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 AFIS system uses Oracle™ RDBMS as a key database engine. The backup software integrated with Oracle, enhances 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 is 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.

AFIS has 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 AFIS system will be delivered with Archivelog Mode ON (enabled).

As a baseline system protection solution, the 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) is stored on-site, and the copy set (inactive or previous generation sets) is 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 is distributed over a period of time (e.g., one week). This means that during one week the entire database is 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) are 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 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 1:1 match 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 AFIS system has 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 contains a NIST Archive. The NIST Archive allows for the storage of all incoming NIST records. The database stores demographic and original image data from all events submitted, based on the workflows set up for each type of transaction. The system has the ability 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 includes delete, change and consolidation functionality for all NIST components.

Archive Browse functionality is provided for each workstation and allows 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 AFIS system functionality which streamlines identification processing for the CPD.

### **AUTOMATED WORKFLOW MANAGER (AMF) - TENPRINT FUNCTIONS**

An Automated Workflow Manager (AMF) enables 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 automatically extracts 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) allows direct input of latent fingerprint images, resulting in accurate minutia extraction. In addition to direct entry, the GWS-L gives 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 delivers 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	

## 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) provides 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 AFIS system provides 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 gives 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) displays the following separate windows:

---

### **SERVER SERVICE STATUS**

The Server Service Status window displays 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 prevents delay in problem resolutions and facilitate smooth operations on a day-to-day basis.

---

## **AUDIT TRAIL**

The Audit Trail function provides the ability to display the processing history and results of transactions in a 24-hour time scale for a selected TCN. It has the ability 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 displays the current status of transaction processing. This display area assists in monitoring server throughput and operator workloads and efficiency. The monitoring tool is displayed 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 provides the ability to display fingerprint image of selected tenprint finger number, latent or both images side-by-side. All ten-finger images are 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 displays 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 displays 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 is displayed based on the processing phases on a 24-hour time scale.

---



## **I-MARS CAMERA**

This window displays 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 lets an operator view various video images. It offers Web connection capability and is fully customizable.

## **BROADCAST MESSAGING**

The I-MARS provides 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) provides the following functions:

## **ADMINISTRATOR**

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

---

## **DATABASE STATISTICS**

The following information is 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 displays statistics by dates, types and others and assists 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 offers detail information by selected dates and job type.

## **KNOWLEDGE BASE**

The knowledge base provides 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 is filled with knowledge based on the actual daily operations and will be useful for troubleshooting. It also provides a search engine capability to look for related information.

## **REPORT SCREEN**

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

## **DATABASE STATISTICS**

The same as in the Global Menu screen, the following information is 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 displays statistics by dates, types and others and assists 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 offers detail information by selected dates and job type.

## **JOBLOG STATUS BY OPERATOR**

It provides the ability to verify joblog status by inquiry, tenprint or latent. It displays the total number of joblog per operator. Job types are color-coded which makes the viewing of the status easier.

---

## **PEAK TRANSACTION REPORT**

This report displays a line chart to show the timeframe of peak transaction. The hourly-based chart assists 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 displays notifications when IPC data aborts or when an operator rejects data at VQA.

## **WORKLOAD DIAGNOSTIC REPORT**

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

## **ARCHIVE EXPANSION**

The following will be included in the Archive Expansion.

### **Database Expansion**

Expansion of Fingerprint from 3.8M to 7M Records\*

Expansion of Palmprint from 2M to 5M Records\*

12M Record Total Expansion

NEC Archive License

\*A typical record at CPD includes NIST Type 1,2,4,15 data.

### **Hardware Expansion**

(2) Disk Array Enclosure

(30) 450GB 15k RPM FC 4Gbps 3.5-in HotPlug Hard Drive

---



# NEC Corporation of America

NEC Corporation of America  
10850 Gold Center Drive, Suite 200  
Rancho Cordova, CA 95670

June 9, 2011

Joseph Perfetti  
Director, Records Services Division  
Chicago Police Department  
3510 S. Michigan Avenue  
Chicago, IL 60653

RE: NEC Document Archive System Database Expansion Request

Dear Mr. Perfetti:

On behalf of NEC Corporation of America's (NEC) I am pleased to provide you with pricing for the expansion of the existing NEC Document Archive System currently in use at the Chicago Police Department (CPD).

Per your request we have established expansion specifications to allow the CPD capacity for 5 years of growth based on current arrest transaction volumes. The following table illustrates the current design and the proposed expansion design.

Archive Storage (500 ppi)	Current Design Size	Expansion Design Size	Record Types
NIST Type 1,2,4	3,800,000	7,000,000	Fingerprint
NIST Type 15	2,000,000	5,000,000	Palm

The proposed expansion is based on the current NIST standards and does not add any new functionality to the existing Document Archive System or AFIS. The proposed expansion is also based on records received at a resolution of 500 ppi. The current Livescan at CPD submit records at a resolution of 500 ppi.

## Chicago Police Department Document Archive System Expansion

### One NEC Archive Upgrade:

#### Database Expansion

Expansion of Fingerprint from 3.8M to 7M Records\*

Expansion of Palmprint from 2M to 5M Records\*

12M Record Total Expansion

NEC Archive License



\*A typical record at CPD includes NIST Type 1,2,4,15 data.

**Hardware Expansion**

- (2) Disk Array Enclosure
- (30) 450GB 15k RPM FC 4Gbps 3.5-in HotPlug Hard Drive

**Professional Services**

- Installation & Integration
- Disk Configuration & Support
- 90 Day Warranty

---

<b>Archive License Fee</b>	<b>\$186,000</b>
<b>Strategic Discount</b>	<b>(\$93,000)</b>
<b>Expansion Total (h/w &amp; services)</b>	<b>\$132,257</b>
<b><u>Grand Total</u></b>	<b><u>\$225,257</u></b>

<b>Annual 24x7 Post Warranty Maintenance Support</b>	<b>\$39,358</b>
--	-----------------

Thank you for your continued interest and support of NEC products and services.

I hope this information is beneficial to you at this time. Upon receipt of this proposal please do not hesitate to contact me at any time with any questions or concerns.

Sincerely,

---

Chuck Thomas  
Sr. Sales Manager

NEC Corporation of America  
Phone: 630-694-5533  
Email: [Chuck.Thomas@necam.com](mailto:Chuck.Thomas@necam.com)

---



# NEC Corporation of America

NEC Corporation of America  
US Headquarters  
10850 Gold Center Drive, Suite 200  
Rancho Cordova, CA 95670

Mr. Joseph Perfetti  
Director, Records Services Division  
Chicago Police Department  
3510 S. Michigan Avenue  
Chicago, IL 60653

May 16, 2011

Re: Projected annual AFIS/Archive maintenance charges based on the current system.

Dear Mr. Perfetti,

I am pleased to provide you with projected annual maintenance pricing per your request. In the tables below is the projected maintenance billing amounts for the next five (5) years beginning 1/1/2012 and ending on 12/31/2016. This pricing is based on the current configuration and maintenance terms in place today. Any changes to the current system will affect this pricing and require re-calculation. This annual pricing has been broken down by quarter. This pricing does not include Foray maintenance charges.

Maintenance charges for the billing periods 1/1/12 – 12/31/12 total = \$401,332			
Q1 (January billing)	Q2 (April billing)	Q3 (July billing)	Q4 (October billing)
\$100,333	\$100,333	\$100,333	\$100,333

Maintenance charges for the billing periods 1/1/13 – 12/31/13 total = \$413,372			
Q1 (January billing)	Q2 (April billing)	Q3 (July billing)	Q4 (October billing)
\$103,343	\$103,343	\$103,343	\$103,343

Maintenance charges for the billing periods 1/1/14 – 12/31/14 total = \$425,776			
Q1 (January billing)	Q2 (April billing)	Q3 (July billing)	Q4 (October billing)
\$106,444	\$106,444	\$106,444	\$106,444

Maintenance charges for the billing periods 1/1/15 – 12/31/15 total = \$438,548			
Q1 (January billing)	Q2 (April billing)	Q3 (July billing)	Q4 (October billing)
\$109,637	\$109,637	\$109,637	\$109,637

Maintenance charges for the billing periods 1/1/16 – 12/31/16 total = \$451,704			
Q1 (January billing)	Q2 (April billing)	Q3 (July billing)	Q4 (October billing)
\$112,926	\$112,926	\$112,926	\$112,926

I hope this information is helpful to you. Please do not hesitate to contact me if you have any questions or concerns. NEC will bill according to the tables above on a quarterly basis per contract terms.

Sincerely,

Chuck Thomas  
NEC Corporation of America  
Sr. Sales Manager

**NEC**  
NEC Corporation of America

NEC Corporation of America  
Central Region  
500 Park Blvd., suite 901  
Itasca, IL 60143  
630-694-5533 Office  
630-293-1742 FAX

NEC Corporation of America  
US Headquarters  
10850 Gold Center Drive, Suite 200  
Rancho Cordova, CA 95670

April 6, 2011

Joseph Perfetti  
Director, Records Services Division  
Chicago Police Department  
3510 S. Michigan Avenue  
Chicago, IL 60653

RE: AFIS System and AFIS Maintenance Sole Source Justification

Dear Mr. Perfetti:

I am pleased to present the following information for your review and consideration with regard to NEC Corporation of America's (NEC) desire to retain the Chicago Police Department (CPD) as a strategically important and respected customer.

Both NEC and CPD recognize the need to expand and upgrade the current system to be at the cutting edge of biometric based identification technologies. This is required to not only meet the increasing capacity requirements over the next several years and the anticipated increase in mobile identification and applicant searching, but also to take advantage of the advancements in AFIS technology and AFIS algorithms as well as access to other biometric modalities which will provide additional functionality. This is certain to improve the system performance and accuracy and thus effectively increase public safety.

For over 23 years, NEC has provided the CPD with an Automated Fingerprint Identification System (AFIS) comprised of our proprietary matching hardware and software for extracting fingerprint minutia, creating multiple fingerprint databases, and searching/matching algorithms for fingerprint identification. The current CPD criminal electronic fingerprint databases, used for comparison and searching tasks, are integrated, proprietary, and use native data-exchange algorithms that interface exclusively with the NEC Fingerprint Matching Processor (FMP) hardware subsystem.

Should CPD be required to switch to a different vendor's AFIS system, the following issues should be carefully considered:

**Record Compatibility and Conversion** - The current system contains approximately 1.87 million searchable fingerprint records which are of a proprietary nature to the NEC AFIS system. NEC holds all patents and has exclusive proprietary software rights on all application programs, fingerprint matching algorithms and native fingerprint images, including the image quality improvements made to the system as well as the hardware operating system and design architecture of the AFIS system. No other vendor can convert proprietary data, provide database



### **Record Compatibility and Conversion – continued**

performance or storage expansion services, interfaces to external data sources or make modifications to products legally authorized to be marketed by NEC under penalty of patent infringement laws of the United States.

The breakdown of searchable records in AFIS includes approximately 1,870,000 subjects (CPD IR) 10-Print record, of which over 700,000 are *not* in Archive\*, 370,000 Palm, 484,000 SLAP, 6,716 unsolved latent fingerprint and 957 unsolved latent palm records.

\* There were approximately 1,160,000 IR #'s 10-Print records in a NIST compliant format in the Archive as of March 31<sup>st</sup>, 2011. This represents over 700,000 subjects that are in AFIS but not in a NIST format in the Archive.

NEC can programmatically convert these records into the upgraded system using a proprietary process with zero loss of image quality or existing features (minutia placement, core/axis, zoning...etc). A new vendor would have to manually re-enter each record by scanning individual 10-Print cards and latent lifts which would be a costly and time consuming process. Additionally, there are a certain number of latent lifts that may not be present at CPD HQ so logistics would need to be arranged to release and transport or remotely re-enter the data.

In the absence of a fully restored latent database, 10-Print records would not receive the benefit of a full Tenprint to Latent Inquiry (TLI) search and would thereby miss any prospective matches that could potentially solve a crime.

The current CPD AFIS tenprint and palm print database represents a composite of the best quality images for each finger and palm thanks to the NEC RSS and RSS-P processes (rolled print substitution). This feature has been replacing poorer quality images with higher quality images since AFIS was first installed.

**Compatibility with Illinois State Police AFIS** - The CPD AFIS system interfaces with the Illinois State Police (ISP) AFIS system which is also provided by NEC. Currently CPD has the ability to do latent searches of ISP's database as well as ISP searching the CPD database. Because these records are also in NEC proprietary format, another vendor's system would not be able to search this database thus limiting the full potential to solve crimes through AFIS use.

**Interface to the CPD Criminal History Systems** – NEC has worked closely with the CPD Data Systems Group to develop a seamless integration between AFIS and CHRI. NEC can easily duplicate the interfaces for an upgrade where another vendor may have potential issues in creating the requisite integration in a timely and trouble free manner. Any unanticipated disruption to these systems working in harmony would have a significant negative effect on timely record processing operations.

*CPD AFIS Sole Source*

*April 6, 2011*

*Page 2*





CERTIFICATE OF FILING FOR

CITY OF CHICAGO ECONOMIC DISCLOSURE STATEMENT

EDS Number: 22136

Date of This Filing: 05/31/2011 02:33 PM

Certificate Printed on: 05/31/2011

Original Filing Date: 05/31/2011 02:33 PM

Disclosing Party: NEC Corporation of America Title: Contract Administration Manager, Sr.  
Filed by: Jennipher Choi

Matter: Automated Fingerprint Identification

System (AFIS) Maintenance Contract

Applicant: NEC Corporation of America

Specification #:

Contract #:

The Economic Disclosure Statement referenced above has been electronically filed with the City. Please provide a copy of this Certificate of Filing to your city contact with other required documents pertaining to the Matter. For additional guidance as to when to provide this Certificate and other required documents, please follow instructions provided to you about the Matter or consult with your City contact.

A copy of the EDS may be viewed and printed by visiting <https://webapps.cityofchicago.org/EDSWeb> and entering the EDS number into the EDS Search. Prior to contract award, the filing is accessible online only to the disclosing party and the City, but is still subject to the Illinois Freedom of Information Act. The filing is visible online to the public after contract award.

---

---



CITY OF CHICAGO  
ECONOMIC DISCLOSURE STATEMENT and AFFIDAVIT  
Related to Contract/Amendment/Solicitation  
EDS # 22136

**SECTION I -- GENERAL INFORMATION**

A. Legal name of the Disclosing Party submitting the EDS:

NEC Corporation of America

Enter d/b/a if applicable:

The Disclosing Party submitting this EDS is:

the Applicant

B. Business address of the Disclosing Party:

6535 North State Highway 161  
Irving, TX 75039-2402  
United States

---

C. Telephone:

408-844-1241

Fax:

214-262-5705

---

Email:

jennipher.choi@necam.com

D. Name of contact person:

Jennipher Choi

E. Federal Employer Identification No. (if you have one):

20-0665337

F. Brief description of contract, transaction or other undertaking (referred to below as the "Matter") to which this EDS pertains:

Automated Fingerprint Identification System (AFIS) Maintenance Contract

Which City agency or department is requesting this EDS?

DEPT OF PROCUREMENT SERVICES

Specification Number

Contract (PO) Number

Revision Number

Release Number

User Department Project Number

## **SECTION II -- DISCLOSURE OF OWNERSHIP INTERESTS**

### **A. NATURE OF THE DISCLOSING PARTY**

---

1. Indicate the nature of the Disclosing Party:

Privately held business corporation

Is the Disclosing Party incorporated or organized in the State of Illinois?

No

---

State or foreign country of incorporation or organization:

Nevada

Registered to do business in the State of Illinois as a foreign entity?

Yes

B. DISCLOSING PARTY IS A LEGAL ENTITY:

1.a.1 Does the Disclosing Party have any directors?

Yes

1.a.3 List below the full names and titles of all executive officers and all directors, if any, of the entity. Do not include any directors who have no power to select the entity's officers.

Officer/Director:	Paul Covington
Title:	Senior Vice President
Role:	Officer
-----	
Officer/Director:	Jeremy Kashian
Title:	Assistant Secretary
Role:	Officer
-----	
Officer/Director:	Darrell Kennemer
Title:	Corporate Compliance Officer, Vice President
Role:	Officer
-----	
Officer/Director:	Gerald Kenney
Title:	General Counsel, Secretary, Senior Vice President
Role:	Officer
-----	
Officer/Director:	Hiroyuki Matsukura
Title:	Chief Financial Officer, Treasurer, Senior Vice President
Role:	Officer
-----	
Officer/Director:	Masaaki Nakajima
Title:	Senior Vice President
Role:	Officer
-----	
Officer/Director:	Takayuki Okada
Title:	Chief Executive Officer, President
Role:	Both
-----	
Officer/Director:	Matthew Pierce
Title:	Senior Vice President

Role:	Officer
-----	
Officer/Director:	Deon Retemeyer
Title:	Assistant Secretary
Role:	Officer
-----	
Officer/Director:	Toshiyuki Mineno
Title:	
Role:	Director
-----	
Officer/Director:	Takashi Niino
Title:	
Role:	Director
-----	
Officer/Director:	Takao Ono
Title:	
Role:	Director
-----	
Officer/Director:	Takuji Tomiyama
Title:	
Role:	Director
-----	
Officer/Director:	Roger Tran
Title:	
Role:	Director
-----	
Officer/Director:	Masato Yamamoto
Title:	
Role:	Director
-----	
Officer/Director:	Junji Yasui
Title:	
Role:	Director
-----	

## 2. Ownership Information

Please provide ownership information concerning each person or entity having a direct or indirect beneficial interest in excess of 7.5% of the Disclosing Party. Examples of such an interest include shares in a corporation, partnership interest in a partnership or joint venture, interest of a member or manager in a limited liability company, or interest of a beneficiary of a trust, estate, or other similar entity. Note: Pursuant to Section 2-154-030 of the Municipal code of Chicago, the City may

require any such additional information from any applicant which is reasonably intended to achieve full disclosure.

- NEC Corporation - 100%

#### Owner Details

Name	Address
NEC Corporation	7-1, Shiba 5-chome Minato-ku Tokyo 108-8001, Japan

### **SECTION III -- BUSINESS RELATIONSHIPS WITH CITY ELECTED OFFICIALS**

Has the Disclosing Party had a "business relationship," as defined in Chapter 2-156 of the Municipal Code, with any City elected official in the 12 months before the date this EDS is signed?

No

### **SECTION IV -- DISCLOSURE OF SUBCONTRACTORS AND OTHER RETAINED PARTIES**

The Disclosing Party must disclose the name and business address of each subcontractor, attorney, lobbyist, accountant, consultant and any other person or entity whom the Disclosing Party has retained or expects to retain in connection with the Matter, as well as the nature of the relationship, and the total amount of the fees paid or estimated to be paid. The Disclosing Party is not required to disclose employees who are paid solely through the Disclosing Party's regular payroll.

"Lobbyist" means any person or entity who undertakes to influence any legislative or administrative action on behalf of any person or entity other than: (1) a not-for-profit entity, on an unpaid basis, or (2) himself. "Lobbyist" also means any person or entity any part of whose duties as an employee of another includes undertaking to influence any legislative or administrative action.

If the Disclosing Party is uncertain whether a disclosure is required under this Section, the Disclosing Party must either ask the City whether disclosure is required or make the disclosure.

1. Has the Disclosing Party retained any legal entities in connection with the Matter?

No

3. Has the Disclosing Party retained any persons in connection with the Matter?

No

## SECTION V -- CERTIFICATIONS

### A. COURT-ORDERED CHILD SUPPORT COMPLIANCE

Under Municipal Code Section 2-92-415, substantial owners of business entities that contract with the City must remain in compliance with their child support obligations throughout the contract's term.

Has any person who directly or indirectly owns 10% or more of the Disclosing Party been declared in arrearage of any child support obligations by any Illinois court of competent jurisdiction?

Not applicable because no person directly or indirectly owns 10% or more of the Disclosing Party

### B. FURTHER CERTIFICATIONS

1. Pursuant to Municipal Code Chapter 1-23, Article I ("Article I")(which the Applicant should consult for defined terms (e.g., "doing business") and legal requirements), if the Disclosing Party submitting this EDS is the Applicant and is doing business with the City, then the Disclosing Party certifies as follows:

- i. neither the Applicant nor any controlling person is currently indicted or charged with, or has admitted guilt of, or has ever been convicted of, or placed under supervision for, any criminal offense involving actual, attempted, or conspiracy to commit bribery, theft, fraud, forgery, perjury, dishonesty or deceit against an officer or employee of the City or any sister agency; and
- ii. the Applicant understands and acknowledges that compliance with Article I is a continuing requirement for doing business with the City.

NOTE: If Article I applies to the Applicant, the permanent compliance timeframe in Article I supersedes some five-year compliance timeframes in certifications 2 and 3 below.

I certify the above to be true

2. The Disclosing Party and, if the Disclosing Party is a legal entity, all of those persons or entities identified in Section II.B.1. of this EDS:

- a. are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from any transactions by any federal, state or local unit of government;
- b. have not, within a five-year period preceding the date of this EDS, been convicted of a criminal offense, adjudged guilty, or had a civil judgment rendered against them in connection with: obtaining, attempting to obtain, or performing a public (federal, state or local) transaction or contract under a public transaction; a violation of federal or state antitrust statutes; fraud; embezzlement; theft; forgery; bribery; falsification or destruction of records; making false statements; or receiving stolen property;
- c. are not presently indicted for, or criminally or civilly charged by, a governmental entity (federal, state or local) with committing any of the offenses set forth in clause B.2.b. of this Section V;
- d. have not, within a five-year period preceding the date of this EDS, had one or more public transactions (federal, state or local) terminated for cause or default; and
- e. have not, within a five-year period preceding the date of this EDS, been convicted, adjudged guilty, or found liable in a civil proceeding, or in any criminal or civil action, including actions concerning environmental violations, instituted by the City or by the federal government, any state, or any other unit of local government.

I certify the above to be true

3. Neither the Disclosing Party, nor any Contractor, nor any Affiliated Entity of either the Disclosing Party or any Contractor nor any Agents have, during the five years before the date this EDS is signed, or, with respect to a Contractor, an Affiliated Entity, or an Affiliated Entity of a Contractor during the five years before the date of such Contractor's or Affiliated Entity's contract or engagement in connection with the Matter:

- a. bribed or attempted to bribe, or been convicted or adjudged guilty of bribery or attempting to bribe, a public officer or employee of the City, the State of Illinois, or any agency of the federal government or of any state or local government in the United States of America, in that officer's or employee's official capacity;
- b. agreed or colluded with other bidders or prospective bidders, or been a party to any such agreement, or been convicted or adjudged guilty of agreement or collusion among bidders or prospective bidders, in restraint of freedom of competition by agreement to bid a fixed price or otherwise; or
- c. made an admission of such conduct described in a. or b. above that is a matter of record, but have not been prosecuted for such conduct; or
- d. violated the provisions of Municipal Code Section 2-92-610 (Living Wage Ordinance).

I certify the above to be true



4. Neither the Disclosing Party, Affiliated Entity or Contractor, or any of their employees, officials, agents or partners, is barred from contracting with any unit of state or local government as a result of engaging in or being convicted of

- bid-rigging in violation of 720 ILCS 5/33E-3;
- bid-rotating in violation of 720 ILCS 5/33E-4; or
- any similar offense of any state or of the United States of America that contains the same elements as the offense of bid-rigging or bid-rotating.

I certify the above to be true

5. Neither the Disclosing Party nor any Affiliated Entity is listed on any of the following lists maintained by the Office of Foreign Assets Control of the U.S. Department of the Treasury or the Bureau of Industry and Security of the U.S. Department of Commerce or their successors: the Specially Designated Nationals List, the Denied Persons List, the Unverified List, the Entity List and the Debarred List.

I certify the above to be true

6. The Disclosing Party understands and shall comply with the applicable requirements of Chapters 2-55 (Legislative Inspector General), Chapter 2-56 (Inspector General) and Chapter 2-156 (Governmental Ethics) of the Municipal Code.

I certify the above to be true

#### C. CERTIFICATION OF STATUS AS FINANCIAL INSTITUTION

The Disclosing Party certifies that, as defined in Section 2-32-455(b) of the Municipal Code, the Disclosing Party

is not a "financial institution"

#### D. CERTIFICATION REGARDING INTEREST IN CITY BUSINESS

Any words or terms that are defined in Chapter 2-156 of the Municipal Code have the same meanings when used in this Part D.

1. In accordance with Section 2-156-110 of the Municipal Code: Does any official or employee of the City have a financial interest in his or her own name or in the name of any other person or entity in the Matter?

No

#### E. CERTIFICATION REGARDING SLAVERY ERA BUSINESS

If the Disclosing Party cannot make this verification, the Disclosing Party must disclose all required information in the space provided below or in an attachment in the "Additional Info" tab. Failure to comply with these disclosure requirements may make any contract entered into with the City in connection with the Matter voidable by the City.

The Disclosing Party verifies that the Disclosing Party has searched any and all records of the Disclosing Party and any and all predecessor entities regarding records of investments or profits from slavery or slaveholder insurance policies during the slavery era (including insurance policies issued to slaveholders that provided coverage for damage to or injury or death of their slaves), and the Disclosing Party has found no such records.

I can make the above verification

## **SECTION VI -- CERTIFICATIONS FOR FEDERALLY-FUNDED MATTERS**

Is the Matter federally funded? For the purposes of this Section VI, tax credits allocated by the City and proceeds of debt obligations of the City are not federal funding.

No

## **SECTION VII -- ACKNOWLEDGMENTS, CONTRACT INCORPORATION, COMPLIANCE, PENALTIES, DISCLOSURE**

The Disclosing Party understands and agrees that:

- A. The certifications, disclosures, and acknowledgments contained in this EDS will become part of any contract or other agreement between the Applicant and the City in connection with the Matter, whether procurement, City assistance, or other City action, and are material inducements to the City's execution of any contract or taking other action with respect to the Matter. The Disclosing Party understands that it must comply with all statutes, ordinances, and regulations on which this EDS is based.
- B. The City's Governmental Ethics and Campaign Financing Ordinances, Chapters 2-156 and 2-164 of the Municipal Code, impose certain duties and obligations on persons or entities seeking City contracts, work, business, or transactions. A training program is available on line at [www.cityofchicago.org/city/en/depts/ethics.html](http://www.cityofchicago.org/city/en/depts/ethics.html), and may also be obtained from the City's Board of Ethics, 740 N. Sedgwick St., Suite 500, Chicago, IL 60610, (312) 744-9660. The Disclosing Party must comply fully with the applicable ordinances.

I acknowledge and consent to the above

The Disclosing Party understands and agrees that:

- C. If the City determines that any information provided in this EDS is false, incomplete or inaccurate, any contract or other agreement in connection with which it is submitted may be rescinded or be void or voidable, and the City may pursue any remedies under the contract or agreement (if not rescinded or void), at law, or in equity, including terminating the Disclosing Party's participation in the Matter and/or declining to allow the Disclosing Party to participate in other transactions with the City. Remedies at law for a false statement of material fact may include incarceration and an award to the City of treble damages.
- D. It is the City's policy to make this document available to the public on its Internet site and/or upon request. Some or all of the information provided on this EDS and any attachments to this EDS may be made available to the public on the Internet, in response to a Freedom of Information Act request, or otherwise. By completing and signing this EDS, the Disclosing Party waives and releases any possible rights or claims which it may have against the City in connection with the public release of information contained in this EDS and also authorizes the City to verify the accuracy of any information submitted in this EDS.
- E. The information provided in this EDS must be kept current. In the event of changes, the Disclosing Party must supplement this EDS up to the time the City takes action on the Matter. If the Matter is a contract being handled by the City's Department of Procurement Services, the Disclosing Party must update this EDS as the contract requires. NOTE: With respect to Matters subject to Article I of Chapter 1-23 of the Municipal Code (imposing PERMANENT INELIGIBILITY for certain specified offenses), the information provided herein regarding eligibility must be kept current for a longer period, as required by Chapter 1-23 and Section 2-154-020 of the Municipal Code.

I acknowledge and consent to the above

The Disclosing Party represents and warrants that:

F.1. The Disclosing Party is not delinquent in the payment of any tax administered by the Illinois Department of Revenue, nor are the Disclosing Party or its Affiliated Entities delinquent in paying any fine, fee, tax or other charge owed to the City. This includes, but is not limited to, all water charges, sewer charges, license fees, parking tickets, property taxes or sales taxes.

I certify the above to be true

F.2 If the Disclosing Party is the Applicant, the Disclosing Party and its Affiliated Entities will not use, nor permit their subcontractors to use, any facility listed by the

U.S. E.P.A. on the federal Excluded Parties List System ("EPLS") maintained by the U.S. General Services Administration.

I certify the above to be true

F.3 If the Disclosing Party is the Applicant, the Disclosing Party will obtain from any contractors/subcontractors hired or to be hired in connection with the Matter certifications equal in form and substance to those in F.1. and F.2. above and will not, without the prior written consent of the City, use any such contractor/subcontractor that does not provide such certifications or that the Disclosing Party has reason to believe has not provided or cannot provide truthful certifications.

I certify the above to be true

## **FAMILIAL RELATIONSHIPS WITH ELECTED CITY OFFICIALS AND DEPARTMENT HEADS**

This question is to be completed only by (a) the Applicant, and (b) any legal entity which has a direct ownership interest in the Applicant exceeding 7.5 percent. It is not to be completed by any legal entity which has only an indirect ownership interest in the Applicant.

Under Municipal Code Section 2-154-015, the Disclosing Party must disclose whether such Disclosing Party or any "Applicable Party" or any Spouse or Domestic Partner thereof currently has a "familial relationship" with any elected city official or department head. A "familial relationship" exists if, as of the date this EDS is signed, the Disclosing Party or any "Applicable Party" or any Spouse or Domestic Partner thereof is related to the mayor, any alderman, the city clerk, the city treasurer or any city department head as spouse or domestic partner or as any of the following, whether by blood or adoption: parent, child, brother or sister, aunt or uncle, niece or nephew, grandparent, grandchild, father-in-law, mother-in-law, son-in-law, daughter-in-law, stepfather or stepmother, stepson or stepdaughter, stepbrother or stepsister or half-brother or half-sister.

"Applicable Party" means (1) all corporate officers of the Disclosing Party, if the Disclosing Party is a corporation; all partners of the Disclosing Party, if the Disclosing Party is a general partnership; all general partners and limited partners of the Disclosing Party, if the Disclosing Party is a limited partnership; all managers, managing members and members of the Disclosing Party, if the Disclosing Party is a limited liability company; (2) all principal officers of the Disclosing Party; and (3) any person having more than a 7.5 percent ownership interest in the Disclosing Party. "Principal officers" means the president, chief operating officer, executive director, chief financial officer, treasurer or secretary of a legal entity or any person exercising similar authority.

Does the Disclosing Party or any "Applicable Party" or any Spouse or Domestic Partner thereof currently have a "familial relationship" with an elected city official or department head?

No

### **ADDITIONAL INFO**

Please add any additional explanatory information here. If needed you may add an attachment below.

NEC Corporation of America is a wholly-owned subsidiary of NEC Corporation, a Japanese Corporation

List of vendor attachments uploaded by City staff

None .

List of attachments uploaded by vendor

Officers and Directors for NEC Corporation (parent company)

### **CERTIFICATION**

Under penalty of perjury, the person signing below: (1) warrants that he/she is authorized to execute this EDS on behalf of the Disclosing Party, and (2) warrants that all certifications and statements contained in this EDS are true, accurate and complete as of the date furnished to the City.

/s/ 05/31/2011

Jennipher Choi

Contract Administration Manager, Sr.  
NEC Corporation of America

This is a printed copy of the Economic Disclosure Statement, the original of which is filed electronically with the City of Chicago. Any alterations must be made electronically, alterations on this printed copy are void and of no effect.



Attachment to City of Chicago Economic Disclosure Statement & Affidavit  
NEC Corporation  
FEIN: Not Applicable – Japanese Corporation

[Corresponds to Section II.B.1.a.]

**CORPORATE OFFICERS**  
(As of October 1, 2010)

Kaoru Yano	Chairman of the Board
Nobuhiro Endo	President
Toshimitsu Iwanami	Senior Executive Vice President
Yukihiro Fujiyoshi	Senior Executive Vice President
Takao Ono	Executive Vice President
Junji Yasui	Executive Vice President
Kuniaki Okada	Senior Vice President
Masaki Fukui	Senior Vice President
Takayuki Okada	Senior Vice President
Toshiyuki Mineno	Senior Vice President
Takemitsu Kunio	Senior Vice President
Takuji Tomiyama	Senior Vice President
Fujio Okada	Senior Vice President
Tadashi Higashino	Senior Vice President
Manabu Kinoshita	Senior Vice President
Takashi Niino	Senior Vice President
Tomonori Nishimura	Senior Vice President
Masato Yamamoto	Senior Vice President

Masaki Kidowaki	Associate Senior Vice President
Takayuki Morita	Associate Senior Vice President
Noboru Wakita	Associate Senior Vice President
Tomonori Nishimura	Associate Senior Vice President
Naoki Yoshimura	Associate Senior Vice President
Yasujiro Ryuno	Associate Senior Vice President
Takashige Mouri	Associate Senior Vice President
Masahiro Annaka	Associate Senior Vice President
Nobuyuki Yanaginuma	Associate Senior Vice President
Masamichi Imai	Associate Senior Vice President
Norimitsu Tomonaga	Associate Senior Vice President
Shunichiro Tejima	Associate Senior Vice President
Masao Wada	Associate Senior Vice President
Hirokazu Takahara	Associate Senior Vice President
Takaaki Shimizu	Associate Senior Vice President
Masanobu Yamaguchi	Associate Senior Vice President
Takemi Hosaka	Associate Senior Vice President
Takao Maruyama	Associate Senior Vice President
Yasushi Abe	Associate Senior Vice President
Kunio Kondo	Associate Senior Vice President
Katsumi Emura	Associate Senior Vice President
Yasuyuki Nakae	Associate Senior Vice President

**DIRECTORS**  
(As of June 22, 2010)

<u>Kaoru Yano</u> <sup>*</sup>	Chairman of the Board (Representative Director)
<u>Nobuhiro Endo</u> <sup>**</sup>	President (Representative Director)
<u>Toshimitsu Iwanami</u> <sup>**</sup>	Senior Executive Vice President and Member of the Board (Representative Director)
<u>Yukihiko Fujiyoshi</u> <sup>*</sup>	Senior Executive Vice President and Member of the Board (Representative Director)
<u>Takao Ong</u> <sup>**</sup>	Executive Vice President and Member of the Board
<u>Junji Yasui</u> <sup>*</sup>	Executive Vice President and Member of the Board
<u>Toshiyuki Mineno</u> <sup>**</sup>	Senior Vice President and Member of the Board
<u>Takemitsu Kunio</u> <sup>**</sup>	Senior Vice President and Member of the Board
<u>Takuji Tomiyama</u> <sup>**</sup>	Senior Vice President and Member of the Board
<u>Manabu Kinoshita</u> <sup>**</sup>	Senior Vice President and Member of the Board
<u>Toshio Morikawa</u> <sup>**</sup>	Member of the Board (Advisor, Sumitomo Mitsui Banking Corporation)
<u>Yoshinari Hara</u> <sup>**</sup>	Member of the Board (Chief Corporate Adviser, Daiwa Securities Group Inc.)
<u>Sawako Nohara</u> <sup>**</sup>	Member of the Board (President, IPSe Marketing Inc.)
<u>Kenji Miyahara</u> <sup>**</sup>	Member of the Board (Honorary Adviser, Sumitomo Corporation)
<u>Hideaki Takahashi</u> <sup>**</sup>	Member of the Board (Professor, Keio University Graduate School of Media and Governance)

\* Concurrently appointed as Corporate Officer.

\*\* Messrs. Toshio Morikawa, Yoshinari Hara, Kenji Miyahara, Hideaki Takahashi and Ms. Sawako Nohara are outside Directors, as stipulated in Item 15, Article 2 of the Company Law of Japan.





**Dedicated On-Site Support and Local Support Resources** – NEC provides dedicated on-site support and has employed the same on-site engineer since the inception of AFIS at CPD approximately 23 years ago. This individual not only has intimate knowledge of the AFIS system but also the CPD Records Services Division operation as a whole. Additionally the NEC Software Engineer who helped design and develop many of the interfaces to other CPD systems and workflow features of the CPD AFIS is based in the Chicago area and directly supports the CPD AFIS. We believe that this level of support resources is unparalleled by other vendors and is crucial in maintaining the system uptime standards and prompt resolution to issues in the mission critical role of AFIS.

**NEC's Superior Fingerprint Matching Technology** – All other considerations aside, NEC remains a leader in fingerprint matching accuracy. Regardless of cost and features, the matching accuracy of the AFIS system should remain of primary consideration. NEC's commitment to be at the forefront of fingerprint matching technology and continuing leadership in the innovative and accurate algorithms has been demonstrated by several tests conducted by National Institute of Standard and Technology (NIST).

If you have any questions or comments please contact me at 630-319-3477 or via e-mail at [chuck.thomas@necam.com](mailto:chuck.thomas@necam.com). Thank you for your time and consideration.

Sincerely,

A handwritten signature in cursive script that reads "Chuck Thomas".

Chuck Thomas  
NEC Corporation of America  
Client Solutions Manager

May 31, 2011

VIA FEDERAL EXPRESS

Joseph Perfetti  
Director, Records Services Division  
Chicago Police Department  
3510 S. Michigan Avenue  
Chicago, IL 60653

**Re: Chicago's Police Department Sole Source AFIS Agreement (Pending)  
MBE/WBE Waiver Request**

Dear Mr. Perfetti:

As a part of the Sole Source requirement with the City of Chicago, this correspondence serves as our formal request for relief in the form of a waiver of the MBE/WBE percentages required by the City of Chicago. We respectfully request the following reduced percentages instead:

- 0.13% WBE; and
- 5.08% MBE

Also, NEC currently utilizes the following firms meeting the MBE/WBE requirements and would like to request to use them continuously for the Sole Source.

- Executive Decisions (WBE); and
- KOI Computers (MBE)

Due to the customized nature of the Automated Fingerprint Identification System ("AFIS"), locating direct subcontractors with the ability and expertise to provide products or services is not possible for the above-referenced agreement. NEC Automated Fingerprint Identification System ("AFIS") AFIS are proprietary architecture, single-purpose computer systems that are specifically designed, both from hardware and software perspectives, to provide a solution to law enforcement agencies. These systems are custom-designed, manufactured, implemented and supported by highly trained and specialized technical personnel.

NEC Corporation of America is a wholly owned subsidiary of NEC Corporation, a Japanese corporation. NEC Corporation holds all patents and has exclusive proprietary software rights on all NEC application programs, fingerprint matching algorithms and native fingerprint images. NEC Corporation of America is the only vendor in the United States authorized to convert proprietary data or provide database upgrade services, interfaces to external data sources or make modifications thereto.

NEC Corporation of America is a federal prime contractor, primarily through our GSA Multiple Award Schedule. NEC has a stated Affirmative Action Plan and it is our intent and commitment to utilize MBE/WBE and other minority vendors in connection with our operations wherever and whenever possible.

It is our hope that you will find NEC's efforts meets the MBE/WBE requirements. Thank you for the support, guidance and consideration in this matter.

Sincerely,



Raffie Beroukhim  
Vice president, Sales  
NEC Corporation of America



# CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YY)  
03/31/2011

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an **ADDITIONAL INSURED**, the policy(ies) must be endorsed. If **SUBROGATION IS WAIVED**, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

<b>PRODUCER</b> Aon Risk Services Northeast, Inc. New York NY Office 199 Water Street New York NY 10038-3551 USA	<b>CONTACT NAME:</b> PHONE (A/C. No. Ext): (866) 283-7122      FAX (A/C. No.): (847) 953-5390		
	<b>E-MAIL ADDRESS:</b>		
<b>INSURED</b> NEC Corporation of America 6555 N. State Highway 161 Irving, TX 75039-2402 USA	<b>INSURER(S) AFFORDING COVERAGE</b>		<b>NAIC #</b>
	<b>INSURER A:</b> Mitsui Sumitomo Insurance USA Inc.		22551
	<b>INSURER B:</b> Mitsui Sumitomo Insurance Co of America		20362
	<b>INSURER C:</b>		
	<b>INSURER D:</b>		
	<b>INSURER E:</b>		
<b>INSURER F:</b>			

**COVERAGES**      **CERTIFICATE NUMBER:** 570042000451      **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS. **Limits shown are as requested**

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
B	<b>GENERAL LIABILITY</b> <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC			GL2000022 General Liability	04/01/2011	04/01/2012	EACH OCCURRENCE \$1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$250,000 MED EXP (Any one person) \$10,000 PERSONAL & ADV INJURY \$1,000,000 GENERAL AGGREGATE \$2,000,000 PRODUCTS - COMP/OP AGG \$1,000,000
A	<b>AUTOMOBILE LIABILITY</b> <input checked="" type="checkbox"/> ANY AUTO ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS			BVR 8000052 Business Auto Coverage -A BVR 8302206 Business Auto PA BVR 8405080 Business Auto-Massachuset	04/01/2011	04/01/2012	COMBINED SINGLE LIMIT (Ea accident) \$1,000,000 BODILY INJURY ( Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) Comp/Coll Ded \$0,000
B	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$10,000			UMB5000098 Excess Umbrella Coverage SIR applies per policy terms & conditions	04/01/2011	04/01/2012	EACH OCCURRENCE \$5,000,000 AGGREGATE \$5,000,000
B	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> <input checked="" type="checkbox"/> PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A	WCP9102225 Workers Compensation (NEC)	04/01/2011	04/01/2012	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$1,000,000 E.L. DISEASE-EA EMPLOYEE \$1,000,000 E.L. DISEASE-POLICY LIMIT \$1,000,000
B	E&O-ProfLiabPri			GL2000022	04/01/2011	04/01/2012	Per Claim/Agg Deductible \$2,000,000 \$100,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)  
Certificate Holder is included as Additional Insured as their interest may appear.

**CERTIFICATE HOLDER****CANCELLATION**

City of Chicago Department of Procurement Services 121 N. LaSalle Street City Hall - Room 403 Chicago IL 60602 USA	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. <b>AUTHORIZED REPRESENTATIVE</b> 
--	--

Holder Identifier :

Certificate No : 570042000451