S. S. R. B.
DATE 02/02/10
APPROVED JNCP Form Rev 9/97 4-0
CONDITIONALLY APPROVED
RETURN TO DEPT.
DISAPPROVED

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

JUSTIFICATION FOR NON-COMPETITIVE PROCUREMENT

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

Request that negotiations be conducted only with Motorola . for the product and/or services described herein.
(Name of Person or Firm)

This is a request for: ✓ (One-Time Contract Per Requisition #_____, copy attached) or _ _ Term Agreement or ____ Delegate Agency (Check one). If Delegate Agency, this request is for "blanket approval" of all contracts within the _____(Attach List) Pre-Assigned Specification No._____
(Program Name) Pre-Assigned Contract No._____

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

Contract #: _____ Company, or Agency Name: _____

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

Originator Name	Telephone	Signature	Department	Date
Grafe Smith	773-894-5310	Grafe R. Smith	Chicago Dept. of Aviation	01-12-10

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

( ) PROCUREMENT HISTORY 1(a) See Attached: 2(a) See attached: 3(a) See attached 4(a) See attached 5(a) This is a one time redesign project with Motorola's proprietary hard/software. 6(a) See attached
( ) ESTIMATED COST 1(a) See attached parts & labor cost. Funding line 2076, fund 0740, Dept. 085, Appropriation 0162. 2(a) Same as above. 3(a) N/A. 4(a) N/A. 5(a) N/a
( ) SCHEDULE REQUIREMENTS 1(a) See attached: 2(a) N/A. 3(a) N/A. 4(a) N/A
( ) EXCLUSIVE OR UNIQUE CAPABILITY 1(a) See attached:
2(a) See attached. 3(a) See attached 4(a) See attached. 5(a) See attached
6(a) See attached: 7(a) Proprietary hard/software. 8(a) N/A.
( ) OTHER 1(a) See attached 2(a) See attached

APPROVED BY: _____ 2/1/10 _____ 02/02/10
DEPARTMENT HEAD OR DESIGNEE — DATE — BOARD CHAIRPERSON — DATE

Jamie J. Rhee by
Chief Procurement Officer — Date

INSTRUCTIONS FOR PREPARATION OF NON-COMPETITIVE PROCUREMENT FORM (Rev 9/97)

If a City Department has determined that the purchase of supplies, equipment, work and/or services can not be done on a competitive basis, a sole source justification must, be prepared on this ™ustification for Non-Competitive Procurement Form in which procurement is requested on a non-bid or non-competitive basis in accordance with 65 ILCS 5/8-10-4 of the Illinois Compiled Statutes. All applicable questions in each Subject Area below must be answered. The information provided must be complete and in sufficient detail to allow for a decision to be made by the Non-Competitive Procurement Review Board. The Board will not consider justifications with incomplete information or documentation. Also, attach Form F-7 (if One Time Contract); F-8 (if Delegate Agency Contract) or F-26 (if Term Agreement) to obtain a pre-assigned Specification and Contract Number for each contract in this request.

PROCUREMEN'T HISTORY (INCLUDING FUTURE PROCUREMENT OBJECTIVES)

1. Describe the requirement and how it evolved from initial planning to its present, status.
2. Is this a first time requirement or a continuation of previous procurement from the same source? If so, explain the procurement history.
3. Explain attempts made to competitively bid the requirement. (Attach copy of notices arid list of sources contacted).
4. Describe any research done to find other sources (List other cities contacted, companies in the industry contacted, professional organizationsperiodicals and other publications used).
5. Explain future procurement objectives. Is this a one-time request or will future requests be made for doing business with the same source?
6. Explain whether or not future competitive bidding is possible. If not, why not?

ESTIMATED COST

1. What is the estimated cost for this requirement (or for each contract, if multiple awards contemplated)? What is the funding source?
2. What is the estimated cost by fiscal year, if the job, project or program covers multiple years?
3. Explain the basis for estimating the cost and what assumptions were made and/or data used (ie. budgeted amount, previous contract price, current catalog or cost proposal from firms solicited. engineering or in-house estimate, etc).
4. Explain whether the proposed Contractor or the City has a substantial dollar investment in original design, tooling or other factors which would be, duplicated at City expense if another source was considered. Describe cost savings or other measurable benefits to the City which may be achieved.
5. Explain what negotiation of price has occurred or will occur. Detail why the estimated cost is deemed reasonable.

SCHEDULE REQUIREMENTS

1. Explain how the schedule was developed and at what point the specific dates were known.
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.
3. Outline the required schedule by delivery or completion dates and explain the reasons why the schedule is critical.
4. Describe in detail what impact delays for competitive bidding would have on City operations, programs, costs and budgeted funds.

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 or other factors make this person or firm exclusively or uniquely qualified for the project. Attach copy of cost proposal and scope of services.
2. Does the proposed firm have personnel considered unquestionably predominant in the particular field?
3. What prior experience of a highly specialized nature does the person or firm exclusively possess that is vital to the job, project or program?
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?
5. What other capabilities and/or capacity does t-he proposed firm possess which is necessary for the specific job, project or program which makes them the only source who can perform the work within the required time schedule without unreasonable costs to the City?
6. If procuring products or equipment, describe the intended use and explain any exclusive or unique capabilities, features and/or functions the items have which no other brands or models, etc possess. Is compatibility with existing equipment critical from an operational standpoint? Explain why.
7. Is competition precluded because of the existence of patent rights, copyrights, trade secrets, technical data, or other proprietary data? Attach documentation verifying such.
8. If 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.

OTHER

1. Explain other related considerations and attach all applicable supporting documents (Information Technology Strategy Cornmittee (ITSC) Approval form, etc.)
2. Explain what opportunities of direct/indirect involvement of Minority or Women BLLsines-s Enterprises have been discussed and/or are available this contract- .

REV'IEW AND APPROVAL

This form must be signed by both the Originator of the request and approved by the Department Head or, authorized designee.

Page 1 of 1

CITY OF CHICAGO ALL PURPOSE REQUISITION FORM

APRF NO. 101611

DEPT USE 1 | DEPT USE 2

DATE	SECTION	BUREAU	SHIP CODE	SHIP TO: ATTN:	DATE NEEDED	PG/RX NUMBER	PV NUMBER
01/28/2010	SEC7	85	M01	DEPARTMENT OF AVIATION			

TERM LINE	COMMODITY CODE	DESCRIBE AND JUSTIFY GOODS OR SERVICES ITEM DESCRIPTON	CATALOG NAME/#	CATALOG DATE	CATALOG PAGE	CATALOG ITEM/PART #	UNIT PRICE	UNIT OF MEASURE	QUANTITY	TOTAL PRICE
0		Equipment is discounted 24% based on Motorola's parts contract with the City.					$130,082.36	DISCOUNT FROM LIST	1.000	$130,082.36
0		Other cost to be used only if needed					$8,028.64	EA	1.000	$8,028.64
0		Professional Services and expenses					$136,889.00	EA	1.000	$136,889.00

BRIEF DESCRIPTION: Motorola Centracom Dispatch of MCC to OCC

JUSTIFICATION:

CHECK OR COMPLETE ALL THAT APPLY

PARTICIPATING PO #

TASK ORDER/PROPOSAL #

BFYR	LINE	FUND	DEPT	ORGN	APPR	OBJT	DOA PROJECT	FMPS PROJECT	DOLLAR AMT
2009	5785	610	85	4345	0138	0138			$100,938.00
2009	12177	740	85	4025	0138	0138			$174,062.00

GRAND TOTAL (ALL PAGES) $275,000.00

NEW TA OR CONTRACT	SOLE SOURCE	FOR FINANCE OFFICE USE ONLY	
X		CONTRACT REVIEW	FINANCE DIRECTOR
PURCHASE ORDER	CONTRACT AMENDMENT	David Bowman Approved- 1/29/10	Nafees Ahmed Approved - 1/29/10
DIRECT VOUCHER	EMERGENCY REQUEST	CAPITAL FIN. DIRECTOR	FMPS APPROVAL DATE
7 DAY BID	REJECTED BY	Pending -	

VENDOR INFORMATION

Company Name: MOTOROLA C & E, INC
Address: 1309 E. ALGONQUIN RD
SCHAUMBURG, IL 60196
Vendor Code: 701949 70
Rep/Phone: 847 538-6617

INVOICE NUMBERS

CONTACT INFORMATION
Name: PIUS FERNANDEZ
Address:
Phone:

SECTION MANAGER
Name:
Phone:
Status: Pending

DEPUTY
Name: Grafe Smith
Phone:
Status: Approved 1/28/10

CIRCLE COPY TYPE: ORIGINAL BUREAU/DIVISION FINANCE DIVISION FILE

City of Chicago
Richard M. Daley, Mayor

Department of Aviation

Rosemarie S. Andolino
Commissioner

Chicago O'Hare International Airport
P.O. Box 66142
Chicago, Illinois 60666
(773) 686-2200
(773) 686-8333 (TTY)

O'Hare Modernization Program
P.O. Box 66848
10510 W. Zemke Road
Chicago, IL 60666
(773) 462-7300
(773) 462-8552 (Fax)

Chicago Midway International Airport
5700 South Cicero Avenue
Chicago, Illinois 60638
(773) 838-0600
(773) 838-0795 (TTY)

www.flychicago.com
www.OhareModernization.org

To: Jamie L. Rhee
Chief Procurement Officer

Attention: James McIsaac
Deputy Procurement Officer

From: Rosemarie S. Andolino
Commissioner

2/1/10

Subject: Request for New Sole Source Agreement
Vendor: Motorola, Inc

The Information Technology Division of the Chicago Department of Aviation (CDA) is requesting permission to enter into a new sole source agreement with Motorola, Inc.

The new agreement will allow the CDA the ability to interface the radio dispatch systems at Midway and O'Hare into one system. Currently each system is standalone requiring separate dispatch personnel at each location. Integrating the systems into one will allow CDA dispatch personnel the flexibility of operating from one location if necessary

Thank you for your assistance with this matter.

Procurement Type:	Sole Source	
Dollar Amount:	$275,000.00	
Funding:	09-610-85-4345-0138-0138	$100,938.00 (MDW)
	09-740-85-4025-0138-0138	$174,062.00 (ORD)
User Contact:	Pius Fernandez	773-686-3083
User Deputy:	Grafe Smith	773-894-5310

Reviewed By: Angela Manning, Managing Deputy Commissioner

CHICAGO AIRPORT SYSTEM

City of Chicago
Richard M. Daley, Mayor

Department of Aviation

Rosemarie S. Andolino
Commissioner

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P.O. Box 66142
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Chicago Midway International Airport
5700 South Cicero Avenue
Chicago, Illinois 60638
(773) 838-0600
(773) 838-0795 (TTY)

www.flychicago.com
www.OhareModernization.org

TO: Angela Manning
Managing Deputy

FROM: Grafe Smith 2/1/10
Deputy Commissioner

SUBJECT: New Sole Source Contract
Vendor: Motorola

Justification:

We have a Motorola Centracom system installed at both O'Hare and Midway airports that is used to dispatch security services. The systems are supported under an existing Motorola maintenance contract that does not cover enhancements.

We would like to relocate the Centracom dispatching functionality and people resources at Midway to O'Hare to provide better shift coverage and supervision.

The system relocation is required to allow the command center to dispatch Midway public safety resources from O'Hare. This project requires a new hardware and software installation along with hardware relocation and the addition of communication lines,

This change will allow the Midway Command Center staff to be reassigned to the O'Hare Command Center. The added resources at O'Hare will improve shift coverage, and reduce overtime.

Motorola's system hardware and software is proprietary and this engineering change, with ongoing maintenance can only be accomplished using either Motorola or Motorola approved subcontractors.

Estimated Dollar Value for Project:		$275,000.00.
Duration:		One year
Funding:	2009 5785 610 85 4345 0138 0138 (MDW) 2009 12177 740 85 4025 0138 0138 (ORD)	
User Deputy:	Grafe Smith	773-894-5355
Contact Person:	Pius Fernandez	773- 686-3083

Thank you for your assistance.

cc: Pius Fernandez

CHICAGO AIRPORT SYSTEM

MOTOROLA

January 29, 2010

Grafe Smith, Deputy CommissionerIT/Telecom
Chicago Department of Aviation
10510 West Zemke Road
Chicago, Illinois 60666

RE: Sole source justification for the O'Hare and Midway Airport Command Center integration

Dear Mr. Smith,

The Chicago Department of Aviation has requested a proposal from Motorola to connect the Motorola Centracom Gold Elite dispatch consoles located at the O'Hare Command Center (OCC) and Midway Command Center (MCC) together into one radio dispatch console system. The purpose of interfacing the console systems is to enable OCC dispatchers to transmit over the Midway radio system and the MCC dispatchers to transmit over the O'Hare system.

Both the O'Hare and Midway command centers utilize Motorola Centracom Gold Elite Consoles. Motorola is the sole manufacturer of the components of the Centracom Gold Elite Consoles that are required to interface the dispatch systems located at O'Hare and Midway.

Service and maintenance for the Motorola Centracom Gold Elite dispatch consoles located at both O'Hare and Midway fall under a Professional Services Agreement between the Department of Aviation and Motorola (PO# 19676). Under this agreement, Motorola is responsible for the maintenance and performance of these consoles. In order for Motorola to maintain responsibility for the radio dispatch consoles, any upgrades or modifications to the radios dispatch system need to be performed by Motorola and/or Motorola subcontractors.

Several local Motorola System Technologists have intimate knowledge of O'Hare's unique designs, equipment locations, and have access authorization in the event that a critical outage should occur. These System Technologists have supported the DOA system for years and have instant access to Motorola engineering resources, including the engineers who designed the DOA system, allowing them to respond quickly and effectively to any technical issue that may arise. No other contractor will have access to this engineering product information that is proprietary and available only directly from Motorola.

Motorola will be compliant with the City of Chicago's MBE/WBE goals of 30%. The MBE goal of 25% will be achieved by the MBE certified firm B & B maintenance. The WBE goal of 5% will be achieved by the WBE certified firm Global Capital. The necessary Schedule C-1 and Schedule D-1 forms for these firms will be submitted prior to project award. The total project cost remains $266,981.36.

Please feel free to contact me any time with any questions.

Sincerely,

Michael Cisar
Motorola, Inc.
Sr. Account Manager, City of Chicago Team
1301 E. Algonquin Rd, 4th Floor/F7
Schaumburg, IL 60196

630.453.8863 **mobile**
847.538.6020 **fax**
michael.cisar@motorola.com **email**

Sole Source Attachment:

* PROCUREMENT HISTORY

1(a)Chicago Dept. of Aviation purchased Motorola's CENTRACOM Gold Series in 2000, for both airports via a sole source contract. Since that time and at the present moment the two airports radio systems are being maintained by Motorola's sole source maintenance contract 2(a) This is the first time for this project. These two airport systems dispatched and operated independently of each other. However, at this time, we need Midway's Public Safety Dispatch operations performed from O'Hare Command Center. In order to accomplish this task, we need Motorola to redesign the CENTRACOM consoles to be operational from both airports via four T1 links provided by The Chicago Department of Aviation (CDA). Please note that all hardware and software are proprietary to Motorola. 3(a) Proprietary, no attempts were made. 4(a) Proprietary, no research was done to find other sources. 5(a) This will be a one time procurement for this project. 6(a) As long as Motorola keeps their hardware/software components proprietary, we have no choice in the competitive bidding process.

* COST

1(a)Equipment:

Quantity	Model Number	Description	Extended Cost
1	B1879	Gold software Pac	$0.00
4	X80	Refresh Software Ambassador	$12,986.88
4	B1844	Gold AMB Spare Module.	$32,464.16
2	B1792	Gold AMB Spare Module	$9,728.00
3	B1821B	Gold Spare Power Supply	$22,572.00
6	CA00301AD	INC: CABLE AC(BKN6071)	$0.00
1	B1879	Gold software Pac	$0.00
29	X69	Software Ref, COIM OR LOMI	$17,632.00
23	X03	Software Ref, ELITE/ADMIOD	$9,614.00
1	X03AB	Software Ref, ELITE/ADMIOD	$418.00
1	DSF1051000112	CSU Chassis	$1336.08
1	DSF1040000112	Dual 48 VDC Power Supplies	$1337.60
13	DSF2000101121	T1 Service unit PRISM 2000	$20,896.20
6	BKN6109	CABLE, EXT, Power Supply, 72	$27.36
8	DSTSJ100BT	8 Wire Prot Modules With R	$936.32
2	DSTSJADP	HORZT R BUS BAR FOR TSJ	$133.76
	Total Equipment cost		**$130,082.36**
	Professional Services & Expenses		**$136,889.00**
	Total One time Project Cost		**$266,971.36**

Fund Line

2(a) This will be a one time procurement cost, to be completed this year.
3(a) Proprietary, see attached cost proposal.
4(a) The City will save by shutting down Command Center operations at Midway, consolidating, and providing those same operations from O'Hare. This involves two dispatch operators and a supervisor around the clock at Midway.
5(a) None. We received a 24% discount based on Motorola's PARTS contract with the City.

* SCHEDULE REQUIREMENTS:

1(a) No schedule was developed.
2(a) No, proprietary.
3(a) Once installed Midway's emergency dispatch operations can be transferred and dispatched from O'Hare's Command Center. The sooner it's done, the LARGER the savings and productivity.
4(a) None, proprietary.

* EXCLUSIVE OR UNIQUE CAPABILITY

1(a) No, its proprietary.
2(a) Yes, Motorola employs specialized personnel that develop, designs and installs all their proprietary hardware and software components.
3(a) Motorola has been providing the entire city with trunked radio communications that are highly specialized and exclusive for the past thirty years.
4(a) Every hardware/software component of our trunked radio systems was designed developed, tested and installed by Motorola's highly specialized resources.
5(a) All Motorola's hardware/software components are proprietary.
6(a)CENTRACOM Elite is especially easy to use with its intuitive graphical user interface. It operates under Microsoft Windows XP. All Public Safety Dispatches performed by Midway MCC will now be dispatched from O'Hare's OCC eliminating the need to staff the Midway MCC. In addition, tasks will be made quicker and easier. Channel/talk groups are displayed in onscreen "folders" for prioritization. Flashing red indicators easily identify incoming emergencies. The tools our Midway Public Safety operations dispatchers use at O'Hare will be readily available information such as, who is calling, call type, call alert and caller Ids.
Additionally, the CENTRACOM's enhanced configuration tools include an Admin program that allows supervisors to better manage the system and maximize the performances of their dispatchers. This program can easily customize screen configurations for individuals, and various situations such as storm plans, various types of emergencies, or shift changes.
7(a) Proprietary.
8(a) No, proprietary.

* OTHER

1(a) No other consideration were made, all Motorola trunked radio systems are proprietary.
2(a) This may exist. Please see attached compliance letter.

DETAILED SPECIFICATIONS

SCOPE OF SERVICES

Motorola must redesign Midways existing CENTRACOM Gold Elite Dispatch system to enable dual dispatch capabilities for the Midway system at O'Hare's OCC.

This must enable Chicago Department of Aviation (CDA)/ Office Emergency Management Communications (OEMC) dispatchers at O'Hare to dispatch Midway emergency radio communications via CDA provided T1 lines.

For this to happen, Motorola must customize their Central Electronic Banks for both systems to tie together so that CENTRACOM dispatch console operators are able to access any system connected to any CEB connected to Ambassador Electronic Bank (AEB) this is connected to each airport via CDA provided T1 circuits.

This customization can only be achieved through Motorola with their proprietary hard/software.

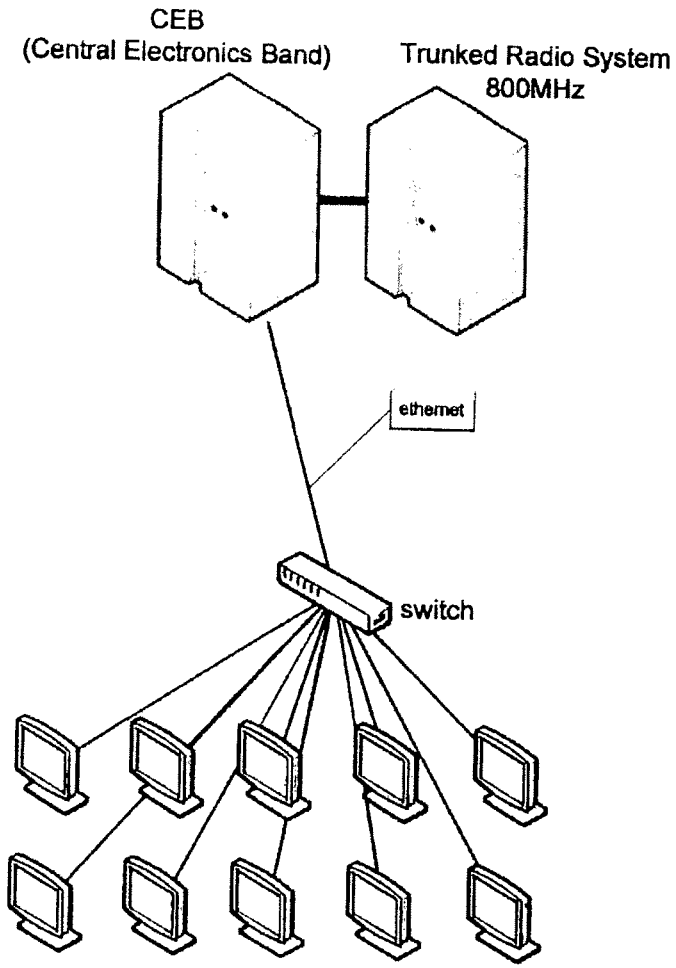
Qualifications:
N/A

Tasks:
1. Redesign Central Electronic Banks (CEB) from both systems to tie together and connect to with Ambassador Electronic Bank (AEB)
2. Software upgrade/add additional software for both airports CEB and O'Hare AEB
3. Add additional communications equipment to provide connectivity between both airports via four CDA provided T1 circuits.
4. Add additional communications equipment to provide connectivity between redundant AEB switches at O'Hare for interoperability between the airports via four CDA provided T1 circuits.
5. Provide back up console operations from either airport at any given time.
6. Provide electrical requirements for any equipment to be installed.
7. Provide heat load for any equipment to be installed.
8. Install all console interface equipment.
9. Optimize all equipment to ensure it is operating properly and that all electrical and signal levels are set accurately.
10. Test all features and functionality of operations at both airports.
11. Provide training only if needed at Motorola contract rates.
12. Create a site evaluation report that the site meets/exceeds the requested requirements.
13. Resolve any and all minor task failures, and documented punch list items.

14. Add all installed equipment and software to the existing maintenance contract at no additional cost. Only T1's will the responsibility of CDA.

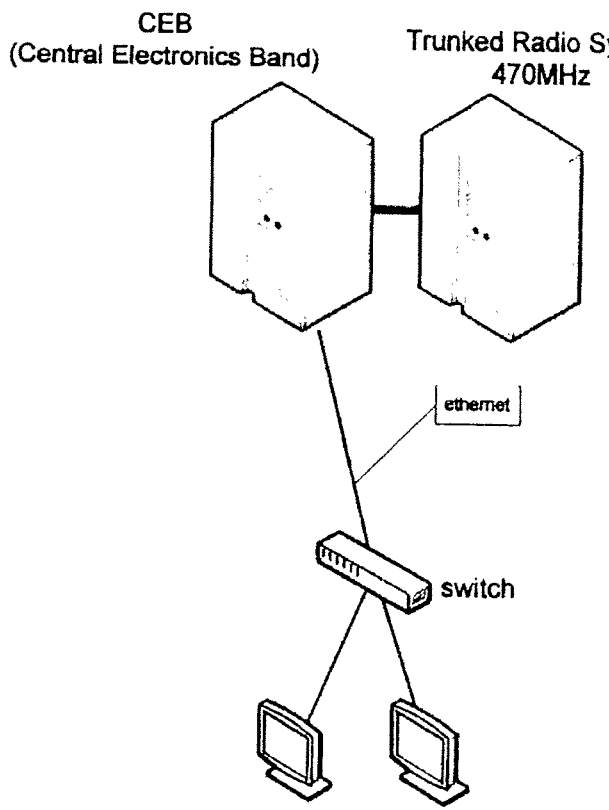
Chicago Department Of Aviation Existing System (Stand-Alone)

ORD



ORD Public Safety Dispatch ONLY
(10 Consoles)

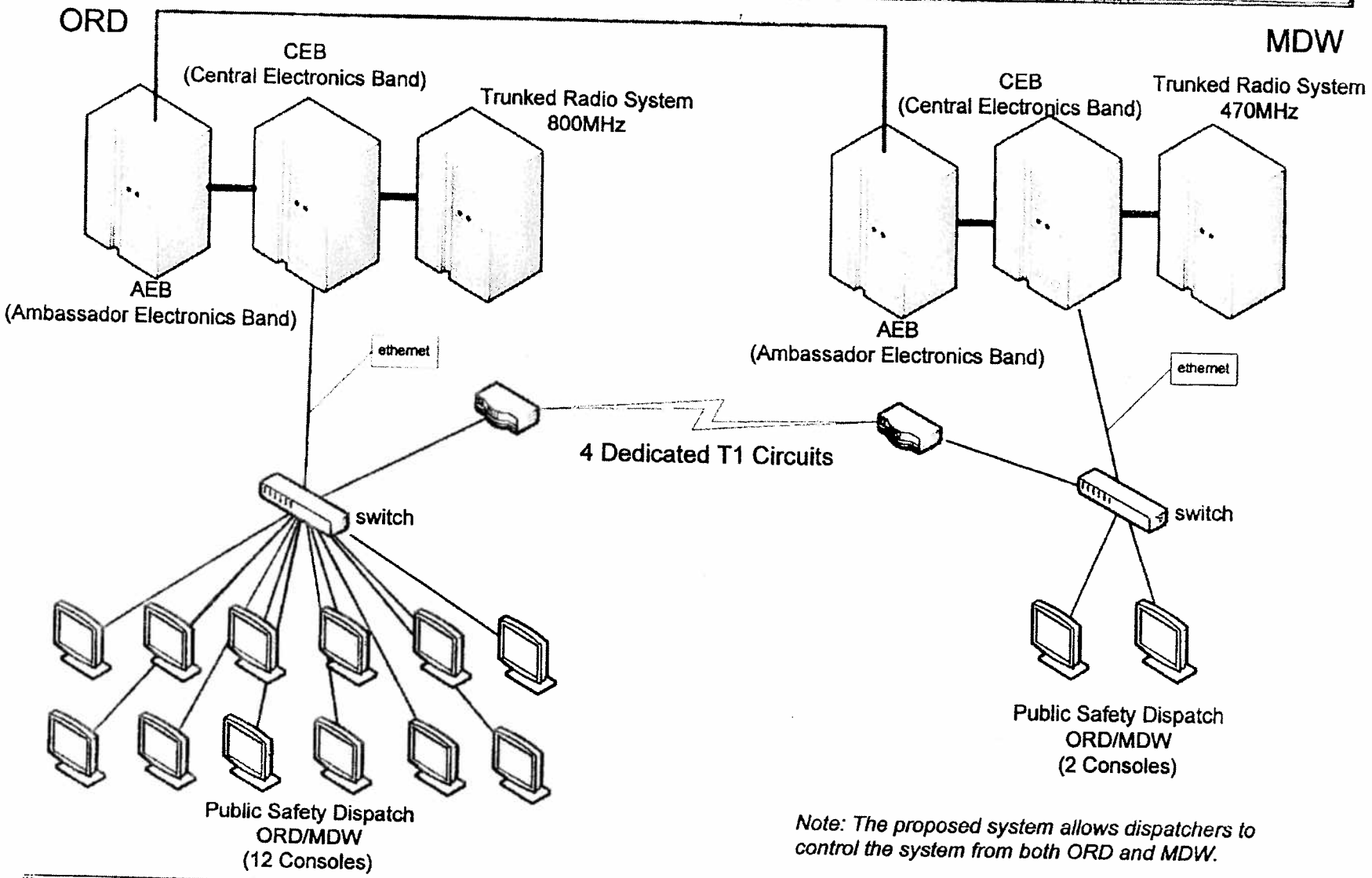
MDW



MDW Public Safety Dispatch ONLY
(2 Consoles)

Note: The existing system DOES NOT allow dispatchers to control both systems (ORD and MDW).

Chicago Department Of Aviation Requested Dual Operations



Note: The proposed system allows dispatchers to control the system from both ORD and MDW.

MOTOROLA

October 23, 2008

Grafe Smith, Deputy Commissioner, IT/Telecom
O'Hare International Airport
10510 W. Zemke Blvd.
Chicago, Illinois 60666

RE: O'Hare/Midway Airport Console Interface Project

Dear Grafe,

Motorola Inc., by and through its Networks and Enterprise Business Unit ("Motorola"), is pleased to have the opportunity to provide the Chicago Department of Aviation] with quality communications equipment and services. The Motorola project team has taken great care to propose a solution that will meet your needs and provide unsurpassed value.

To best meet the functional and operational specifications of this solicitation, Motorola's solution includes a combination of hardware, software, and services. Specifically, this solution provides:

- Console dispatch capability between O'Hare and Midway Airports

This proposal consists of this cover letter and the Communications System Agreement ("CSA") together with its Exhibits. This proposal shall remain valid for a period of 60 of days from the date of this cover letter. The Chicago Department of Aviation may accept the proposal by delivering to Motorola the Communications Agreement signed by The Chicago Department of Aviation. Alternatively, Motorola would be pleased to address any concerns may have regarding the proposal. Any questions can be directed to

As a global leader in providing integrated communications solutions and embedded electronic solutions, Motorola appreciates your interest in our company, products, and services. We look forward to implementing this project and maintaining a long-term relationship with. The Chicago Department of Aviation.

Sincerely,
MOTOROLA, INC.

Jack Molloy
MSSI Vice President & Director Sales

MOTOROLA

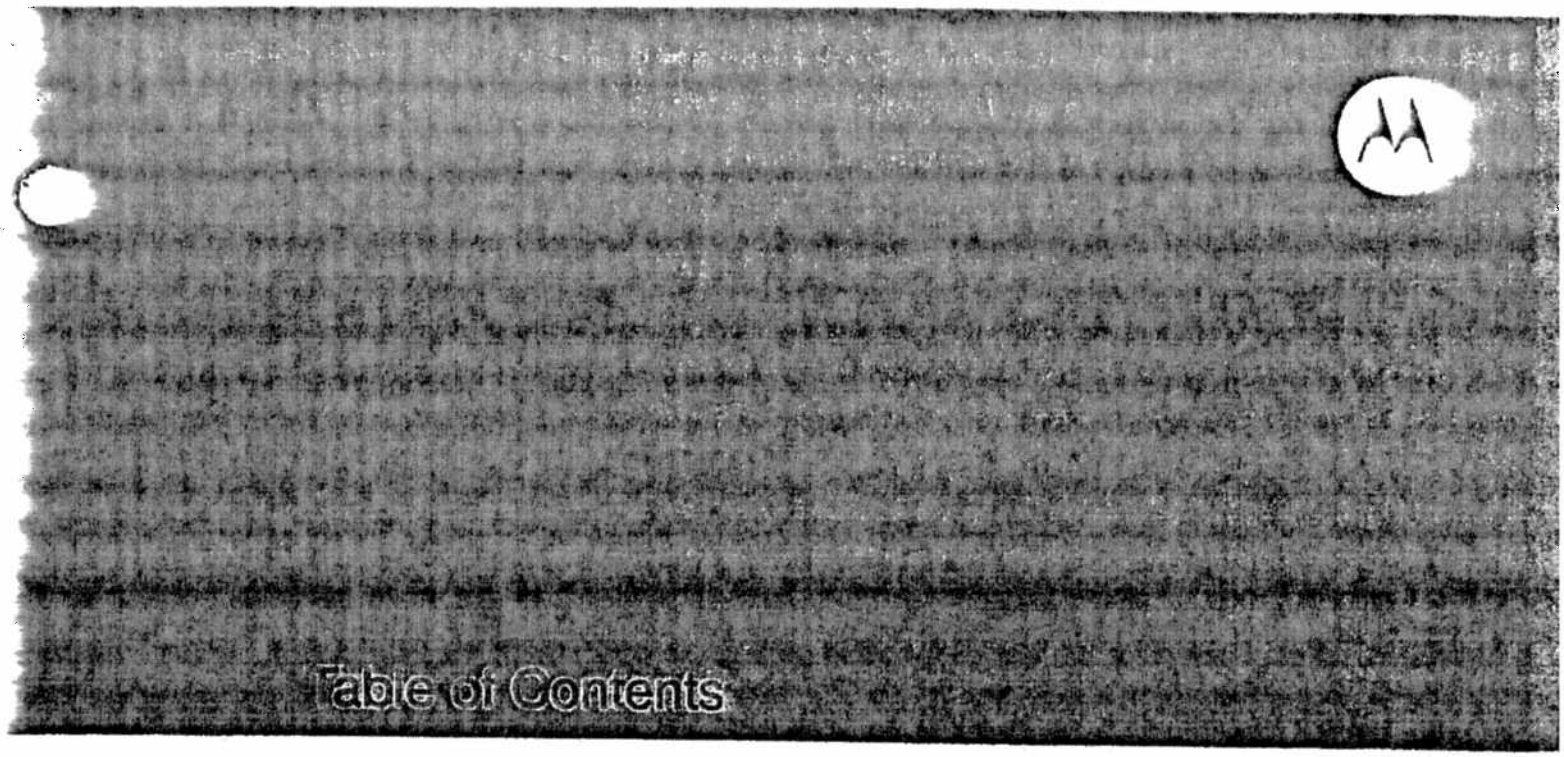
Chicago Department of Aviation

O'Hare-Midway Console Interface Project

October 23, 2008

Data Restrictions

Motorola, Inc.
6450 Sequence Drive
San Diego, CA 91202



SECTION 1. EXECUTIVE SUMMARY 1-1

1.1 UNDERSTANDING THE CHALLENGES 1-1
1.2 PROVIDING THE SOLUTION 1-2
1.3 WORKING TOGETHER 1-2
1.4 BENEFITING FROM MOTOROLA'S EXPERIENCE 1-3
1.5 COMMITTING TO YOUR SUCCESS 1-4

SECTION 2. SYSTEM DESCRIPTION 2-1

2.1 SYSTEM OVERVIEW 2-1
2.2 BACK UP OPERATION AND AEB SWITCHING 2-1
2.3 LAN 2-2
2.4 CENTRAL ELECTRONICS BANK 2-2
2.5 AMBASSADOR ELECTRONICS BANK 2-3
2.6 CENTRACOM GOLD-SERIES ELITE™ RADIO CONTROL CENTERS 2-3
2.6.1 Development of CENTRACOM Elite 2-3
2.6.2 CENTRACOM Elite Features/Technical Description 2-3
2.7 SUMMARY 2-6

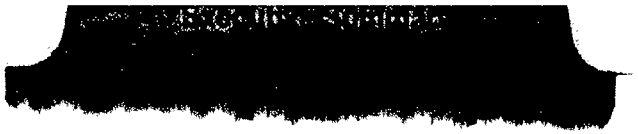
SECTION 2A. SYSTEM DRAWING 2-1

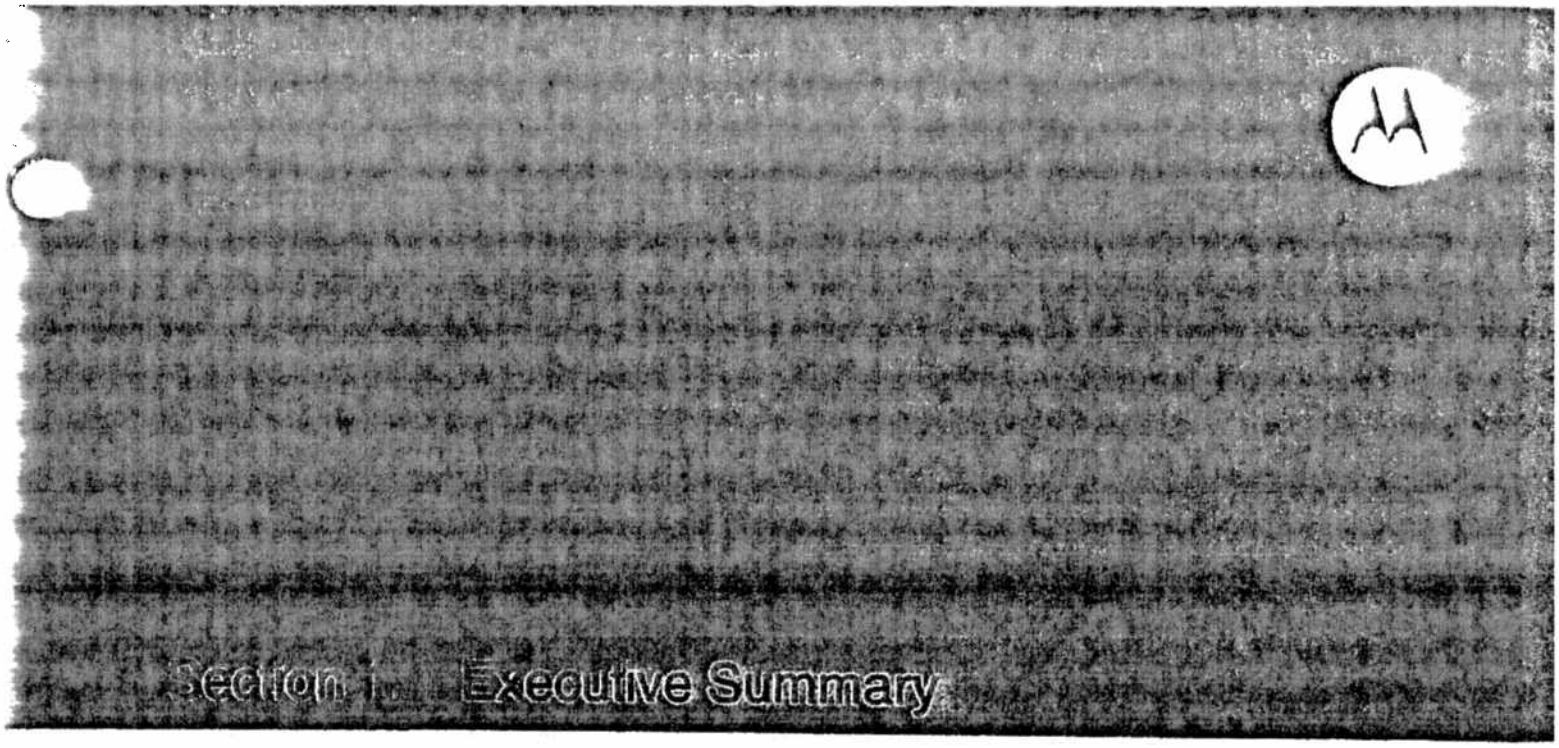
SECTION 3. EQUIPMENT LIST 3-1

SECTION 4. STATEMENT OF WORK 4-1

4.1 CONTRACT 4-1
4.1.1 Contract Award (Milestone) 4-1
4.1.2 Contract Administration 4-1
4.1.3 Project Kickoff 4-2
4.2 CONTRACT DESIGN REVIEW (CDR) 4-2
4.2.1 Review Contract Design 4-2
4.2.2 Design Approval (Milestone) 4-4
4.3 ORDER PROCESSING 4-4
4.3.1 Process Equipment list 4-4

4.4 MANUFACTURING OF EQUIPMENT 4-5
4.4.1 Manufacture Motorola Fixed Network Equipment 4-5
4.4.2 Manufacture Non-Motorola Equipment 4-5
4.4.3 Ship Equipment to Field 4-5
4.4.4 Ship Acceptance (Milestone) 4-6
4.5 CIVIL WORK FOR THE CUSTOMER PROVIDED FACILITIES 4-6
4.6 SYSTEM INSTALLATION 4-7
4.6.1 Install Console Interface Equipment 4-7
4.6.2 Interference 4-7
4.6.3 Console Interface Installation Complete 4-8
4.6.4 System Installation Acceptance (Milestone) 4-8
4.7 SYSTEM OPTIMIZATION 4-8
4.7.1 Optimize System 4-8
4.7.2 Link Verification 4-9
4.7.3 Optimization Complete 4-9
4.8 TRAINING 4-9
4.9 AUDIT AND ACCEPTANCE TESTING 4-10
4.9.1 Perform R-56 Audit 4-10
4.9.2 Perform Functional Testing 4-10
4.9.3 System Acceptance Test Procedures (Milestone) 4-10
4.10 FINALIZE 4-11
4.10.1 Resolve Punchlist 4-11
4.10.2 Transition to Service/Project Transition Certificate 4-11
4.10.3 Finalize Documentation 4-11
4.10.4 Final Acceptance (Milestone) 4-12
4.11 PROJECT ADMINISTRATION 4-12
4.11.1 Project Status Meetings 4-12
4.11.2 Progress Milestone Submittal 4-12
4.11.3 Change Order Process 4-13
APPENDIX A–MILESTONE COMPLETION DOCUMENT 4-14
APPENDIX B – CHANGE ORDER FORM 4-15
APPENDIX C – ACCEPTANCE CERTIFICATE 4-16
SECTION 5. PROJECT SCHEDULE 5-1
SECTION 6. ACCEPTANCE TEST PLAN 6-1
SECTION 7. WARRANTY AND MAINTENANCE PLAN 7-1
7.1 WARRANTY OVERVIEW 7-1
7.1.1 Dispatch Service 7-1
7.1.2 Infrastructure Board Repair 7-2
7.1.3 On-Site Infrastructure Response 7-2
7.1.4 Technical Support 7-3
7.2 MOTOROLA WARRANTY AND MAINTENANCE SUPPORT TEAM 7-3
7.3 AFTER WARRANTY MAINTENANCE SUPPORT OPTIONS 7-4
SECTION 8. PRICING SUMMARY 8-1
8.1 PAYMENT SCHEDULE 7-2
SECTION 9. TERMS AND CONDITIONS 9-1





1.1 Understanding the Challenges

From creating the first police car radio in 1930, to being the first to deliver Internet Protocol (IP) technology on a digital trunking radio system in 2001, Motorola is leading the way in high performance wireless communication systems. It is this history and experience that provides Motorola with the knowledge to understand the challenges faced by The Department of Aviation and to propose a solution to meet these challenges.

The Chicago Department of Aviation faces the challenges of controlling dispatch operation of two major airports within the Chicago metropolitan area. To meet these challenges, the Chicago Department of Aviation has identified its most pressing needs as follows:

- Control Dispatch Operation from each Airport
- Provide redundancy in Airport Operations

As a trusted solution provider for many cities and counties, Motorola has helped our customers provide safe and welcoming communities. Our proven commitment to the public safety industry over the last 70 years, combined with our vision to remain a leading developer of state of the art information and communication technologies, help ensure that the system enhancements Motorola has designed for The Chicago Department of Aviation, will meet its current needs and will be able to grow and adapt to meet the Chicago Department of Aviation's future communication needs.

1.2 Providing the Solution

To meet the needs of The Chicago Department of Aviation, Motorola proposes connectivity which will allow the Motorola Gold Elite operator positions at either airport to dispatch calls for one another. This will provide redundancy in dispatch communications capability for both airports as addressed in the following functions;

- Back up Operation and AEB Switching
- Ethernet LAN connections for loading data bases
- Dispatch Consoles with like Talkgroups for ease in communicating with Airport Departments and Support Services

1.3 Working Together

Motorola will work with The Chicago Department of Aviation to design and implement a system that meets DOA's current needs, as well as provides flexibility to grow with Aviation's future needs. By working together with you, Motorola can provide integrated information and communication networks to improve your effectiveness and to better serve the communication community

Motorola will assemble a team to work with The Chicago Department of Aviation on this important project consisting of account managers, engineers, project managers, system technologists, and system maintenance support personnel. The Department of Aviation project manager and the Motorola project manager will work together closely throughout the implementation of the project.

Each member of the Motorola team stays abreast of the latest methods and techniques in their discipline through our comprehensive employee training programs offered through alliances with George Washington University, ESI International, and Motorola University.

By selecting Motorola, you gain the benefit of our investment in our people. Their qualifications and training have allowed us to implement and integrate some of the largest and most complex networks in the world—on time and with solid, reliable results. Our team will provide DOA with:

- **Coordinated Management** - Our project manager serves as a single point of contact, works with The Department of Aviation to oversee the project, and answers any questions DOA may have about the project. The project manager brings together the people and the resources for the project, and then manages them toward meeting every project milestone.
- **Implementation Services** - In addition to a project manger, our team includes highly trained engineers, system technologists, and customer support managers. Our engineers will work with The Department of Aviation to finalize the system

design. Our system technologists install and test the system. Our customer support managers work with The Department of Aviation to design a maintenance program specifically for DOA.

- **Proven Implementation Processes** - Motorola will use its proven implementation processes that we have developed and fine-tuned over the years to ensure the timeliness and quality of our work.

From concept to delivery, design and installation, Motorola's direct sales representatives, system integration team, engineers, and service maintenance providers are ready to work together with you.

1.4 Benefiting from Motorola's Experience

As we enter a new era of information and communication needs, Motorola is addressing critical demands by providing public safety customers with innovative solutions that include software, hardware, and services to improve operational performance. Our customers gain the benefit of our experience in many ways, such as:

- **Peace of Mind** - For over 70 years, Motorola has been a trusted source for mission-critical public safety communications systems and is a leading provider of two-way radio products, systems and services as well as large integrated communication and information technology systems for business and government applications.
- **Presence** - Motorola's sales force, combined with an extensive dealer and service center network, provides Motorola with over 7,000 points-of-presence worldwide, with solutions that cover a variety of commercial, government, and industrial communication needs.
- **Innovative Solutions** - Motorola provides more than just enabling technology. Motorola works with customers from concept to installation while continuously upgrading solutions to bring rapid mobile intelligence to customer operations. Motorola is committed to helping customers navigate the rapidly changing landscape to make their organizations the best that they can be, now and in the future.
- **Established Resources and Processes** - From our Customer Center for Solutions Integration (CCSi) and System Support Center (SSC), to our processes for site readiness, testing, and problem escalation, Motorola has made investments in facilities, people, and services to support project implementation and maintenance.
- **Quality** - Dedication to quality is a way of life at Motorola. The company's ongoing process of continuous improvement reaches out for change, refinement, and even revolution in pursuit of quality excellence as recognized through the Malcolm Baldrige Award in manufacturing for CGISS. Motorola was a recipient

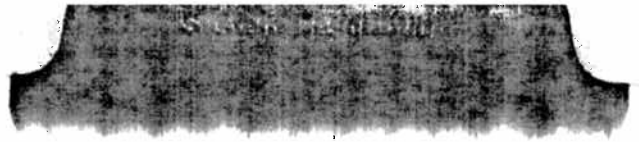
of the Baldrige Award in the award's inaugural year of 1988 and was again honored in November of 2002 by President George W. Bush and Commerce Secretary Don Evans. The Baldrige Award is the United State's premier award for performance excellence and quality achievement. Earning the Malcolm Baldrige National Quality Award acknowledges Motorola's CGISS' (Commercial, Government, and Industrial Solutions Sector) dedication to rigorous quality related processes and improvements over time. Motorola has been, and continues to be, the leading manufacturer and supplier of communications equipment and systems, both domestically and worldwide.

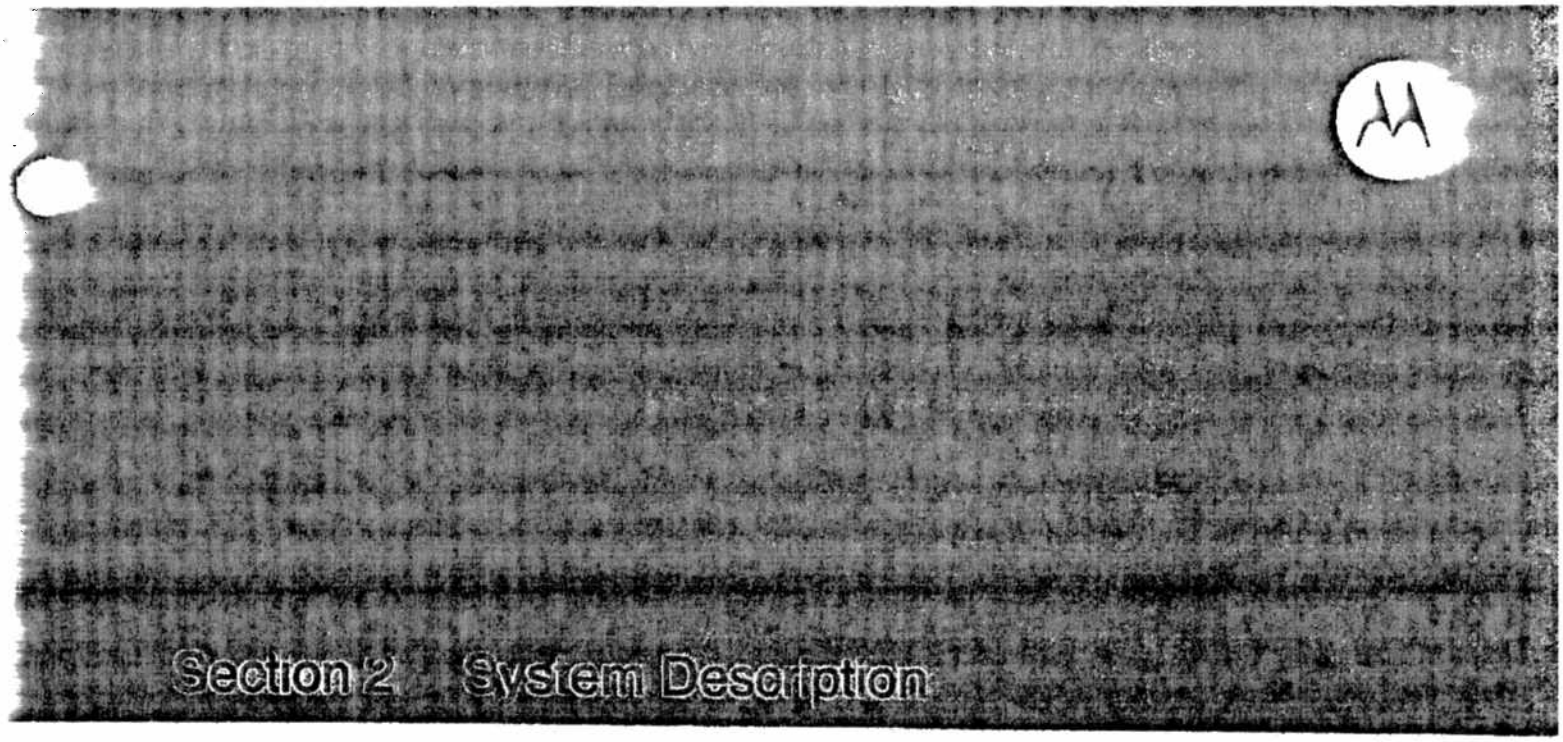
1.5 Committing to Your Success

As a trusted solution provider for numerous cities and counties in a public safety role for many years, Motorola is prepared to assist The Chicago Department of Aviation with its current communication dispatch needs. Supported by a Motorola implementation team dedicated to the success of the project and Motorola's responsive local service, DOA can be assured of the timely implementation of its system. Motorola is committed to your success by:

- Delivering total, integrated communications solutions that empower your organization.
- Drawing on experience, skills, and an extensive portfolio of technologies, services, and capabilities to complete your project.
- Meeting our commitments so that you can be confident we will provide the right solution for your organization.

Your community is depending on your ability to get the right information to the right people, in the right place, at the right time. Motorola is committed to working with DOA to make that happen. Motorola looks forward to continuing our relationship with DOA and continuing to be a positive presence in the community for generations to come.





2.1 System Overview

The following is a system overview for providing dispatch communication capability between the O'Hare Communications Center and the Midway Operations Center. This connectivity will allow the Motorola Gold Elite operator positions at either airport to dispatch calls for one another. This will provide redundancy in dispatch communications capability for both airports.

To address the need for this additional communication, Motorola is providing the equipment necessary for audio to be routed through a new T1 link connecting the Midway CEB to the O'Hare AEB. There will also be a redundant T1 link connecting the equipment at Midway to O'Hare for backup purposes. All audio that is supported by each CEB to AEB T1 link have been carefully designed to avoid audio holes (lost audio). All T1s are the customer's responsibility to obtain. Four (4) T1s are required to be connected between the two airports and four (4) T1s need to be connected between the redundant AEB switches at O'Hare. In order to provide the Console interoperability between the airports, the software will be upgraded on all the existing operator positions and existing CEBs at O'Hare to match the software at Midway. In addition, it was requested that new CEB power supplies be ordered to replace existing/failing power supplies at the O'Hare OCC location.

2.2 Back Up Operation and AEB Switching

Via the T1 connection between the Midway CEB and O'Hare AEB, the airports can provide back up console operations for one another. Each operations center will have access to the talk groups and resources at either airport. The switching from the O'Hare main AEB to the back up AEB is accomplished via a custom designed RF

controlled switch. The switching and control equipment will be provided by The Larry McGee Company. Additional McGee T1 switching cards will be required to enable AEB redundancy for the T1 links from Midway.

Note: It will be the customer's responsibility to provide AC backup power for the Channel Service Units (CSU) which Interfaces between the T1 carrier and the CEB equipment at Midway.

2.3 LAN

CENTRAOM Elite operates under client-server architecture. This means that all dispatch positions are connected together via a local area network (LAN). An Ethernet LAN connection must be obtained between O'Hare and Midway to have all dispatch positions on a common LAN. The server computer runs the Console and Alias Database Manager programs. The O'Hare (ADM/CDM server) will act as the main server for both airports. Midway's (ADM/CDM server) database information will need to be programmed into the O'Hare (ADM/CDM server). In addition, the Midway dispatch positions will need to be reprogrammed to operate on the (ADM/CDM server) at O'Hare. When the LAN connection is established, the Midway (ADM/CDM server) computer will then need to be disconnected from its current network. It is the customer's responsibility to setup and isolate the Console Ethernet LAN between O'Hare and Midway from any other network traffic.

2.4 Central Electronics Bank

The CEB is a digital network connecting together dispatch positions and the communications equipment they control. Distributed control architecture is used to control the elements within the CEB. Audio is processed in a bi-directional manner between the dispatch positions and the communication equipment. The CEB provides the ability to encode and decode ASTRO (and many other) signaling transmissions and the ability to access, control and monitor trunking systems. It may also contain relays, input buffers, telephone line interface modules, etc. The CEB is composed of one to twelve interconnected card cages located in no more than two cabinets or racks. Various modules are installed in these card cages to perform the functions required in a communications system. The card cages are connected to the rest of the communications system via 25-pair cables. In an Embassy system such as this, CEBs are essentially tied together and the console operators are able to access any system connected to any CEB connected to the AEB. Embassy CEBs have dual AIMI interfaces in them, where in the event an AIMI fails another is already in place in the CEB ready to be connected to the T1s.

2.5 Ambassador Electronics Bank

The Ambassador Electronics Bank (AEB) is a high capacity TDM audio processing switch. It connects to the CEBs via T1 connections and is capable of processing multiple audio sources simultaneously. The AEB card cage has 32 digital audio buses, which interface to any combination of CEBs or channel banks up to a max of 32. These buses carry CEB audio passed up from the Ambassador Boards. In addition, the AEB card cage has a data bus that allows the interface modules to pass data to each other. The Ambassador Boards are the interfaces that the AEB uses to connect to the CEBs. The AEB has interface cards called Ambassador Cards (AMB). These cards have capacity for two (2) T1s.

In this system there will be an additional Ambassador Card added to each AEB to enable connectivity to the AIMI at the Midway CEB. In the event that an AIMI fails, there's a second AIMI that allows continued communications for the associated CEB.

2.6 CENTRACOM Gold-Series Elite™ Radio Control Centers

2.6.1 Development of CENTRACOM Elite

CENTRACOM Elite has been developed to provide dependable dispatch control solutions to meet the needs of large radio systems. Important considerations were to keep the consoles multifunctional, easy to use, and provide sophisticated, user-friendly, graphical interfaces for a complete overview of dispatching activity.

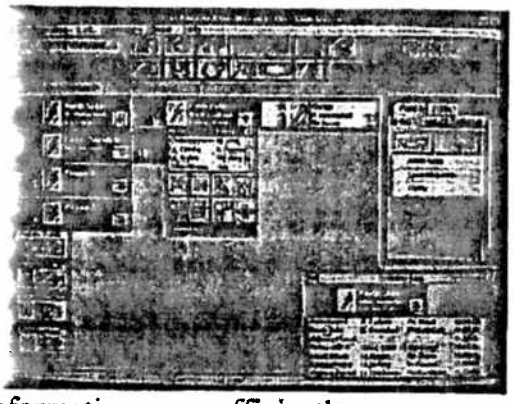
2.6.2 CENTRACOM Elite Features/Technical Description

2.6.2.1 Elite Radio Control Center Overview

CENTRACOM Elite is Motorola's current software-based radio dispatch control center. The proposed console utilizes an intuitive, easy-to-use Graphical User Interface (GUI) screen that runs under Microsoft Windows XP™ on standard PCs and monitors over an Ethernet Local Area Network (LAN).

Designed for effective, flexible dispatch communications, CENTRACOM Elite provides a range of valuable features:

2.6.2.2 Ease of Use



The intuitive, Graphical User Interface (GUI) of CENTRACOM Elite operates under the Windows platform. Elite's environment features the familiar standards used by other Windows programs worldwide. Screen layout, menus and icons are easy to understand and quickly recognizable by users. Elite's user-friendly graphics mean that dispatchers will learn to operate the console faster and be able to manage information more efficiently.

2.6.2.3 State of the Art Hardware and Software Functionality

With Motorola's innovative design, information and updates for each operator position can be obtained quickly from the server. Real-time dispatching operates through the highly reliable control center electronics, or Central Electronics Bank (CEB), independent from the LAN. This gives dispatchers instant on-screen access to all the information needed to manage systems efficiently and effectively. Key radio, telephone and auxiliary input/output resources are integrated on one screen and available at the click of a button.

2.6.2.4 Enhanced Configuration Tools

CENTRACOM Elite includes built-in, graphical software applications designed to allow custom configuration of workstations that will enhance dispatcher's productivity. Some of these applications are:

- Elite Dispatch - allows the individual operator to assign and de-assign any resource to the console.
- Elite Admin - a built-in program that gives supervisors an enhanced set of tools designed to manage the system and maximize dispatcher performance. The Elite Admin program enables supervisors to easily customize individual or shared screen configurations. A variety of options are available that allow the supervisor increased flexibility to control, allocate and update system resources.
- Alias Database Manager (ADM) - uses a graphical user interface to provide an intuitive, easy-to-use format for managing alias information in a Gold Series system.

- Console Database Manager (CDM) - allows single point configuration of each dispatcher workstation. This includes the appropriate interface modules located in the CEB.

2.6.2.5 CENTRACOM Elite Value Added Capabilities

- Key information and critical functions are clearly identified with easy to understand icons
- Elite can be used with a mouse, trackball or touch screen - no keyboard is required for operation of the system
- Multi-tasking Windows environment eliminates the need for more than one CRT at a dispatcher's workstation. This saves valuable space and allows the dispatcher to perform radio and telephony tasks in a compact efficient environment.
- Tools needed to communicate with field personnel are easily accessible. Channels/talk groups are displayed on-screen in "folders" for prioritization.
- Dispatchers can see information about callers, call type and call status instantly. Callers can be identified by real names instead of numeric IDs. Aliases up to 14 characters in length can be stored, displayed and updated as needed.
- Dropdown menus and a graphical toolbar offer the dispatcher a wide range of additional capabilities. Radio channels/talk groups, telephone lines, and auxiliary inputs/output items can all be displayed on one screen.
- Ability to add new features via software - Elite features are licensed to owners by operator position, channel or system. Upgrades are available through software enhancement releases announced periodically.
- Console Interface Electronics (CIE) - dispatchers can clearly hear radio calls through the speakers of the CIE. The general transmit button is placed on the front of the CIE for user accessibility and quick response to field personnel.

2.6.2.6 CENTRACOM Elite Features and Benefits Chart

Feature	Benefit
Ease of Use	Graphical User Interface operating under the Windows environment features familiar application standards. Icons, menus and screen layouts are easy to understand and learn.
Upgradeability	The cost effective CENTRACOM Elite can work side by side with existing console systems.

[illegible]	[illegible]
Hardware and Software Functionality	Industry standard equipment: servers, personal computers and LANs allow integration of Elite into existing systems/networks and provide the true multi-tasking capabilities of Windows. The Central Electronics Bank (CEB) gives dispatchers instant, real-time access to the communications system resources and information.
Enhanced Configuration Tools	Elite Admin, Console Database Manager and Elite Dispatch provide the tools necessary to easily manage workstations and resources for greater productivity.

2.7 Summary

The intent of this document is to provide a description of major components, configuration, features and characteristics of the backup dispatch operations for O'Hare and Midway. It is Motorola's expectation that the system described here will be sufficient to meet the Department of Aviation's communication needs for redundant operations centers. However, Motorola is committed to work closely with Department of Aviation to review and fulfill any specific future requirements and expansion needs. Motorola sincerely appreciates this opportunity to meet the needs of the Department of Aviation.