



# **Search and Rescue Satellite-Aided Tracking (SARSAT)**

**U.S. Mission Control Center Operations,  
Maintenance & Technical Support Contract**

**Request for IT Investment Authority**

**NOAA Information Technology Review Board**

**Ajay Mehta, Program Manager  
January 9, 2007**



# Agenda

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- Introduction
- Administrative/Departmental Goals and Initiatives
- Basis for Investment
- Architectural Compliance
- Project Management
- Risk Management
- IT Security

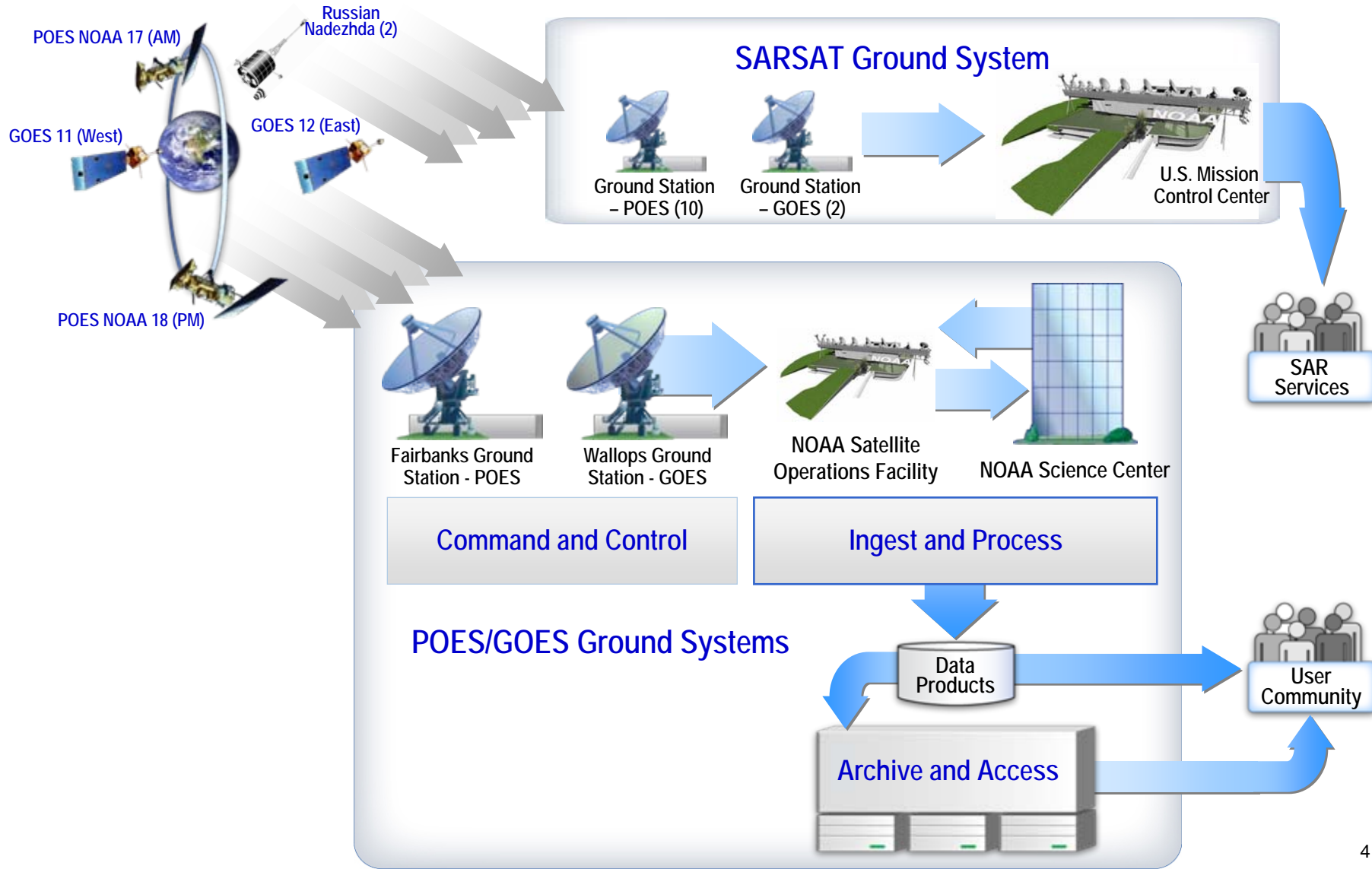


# Introduction

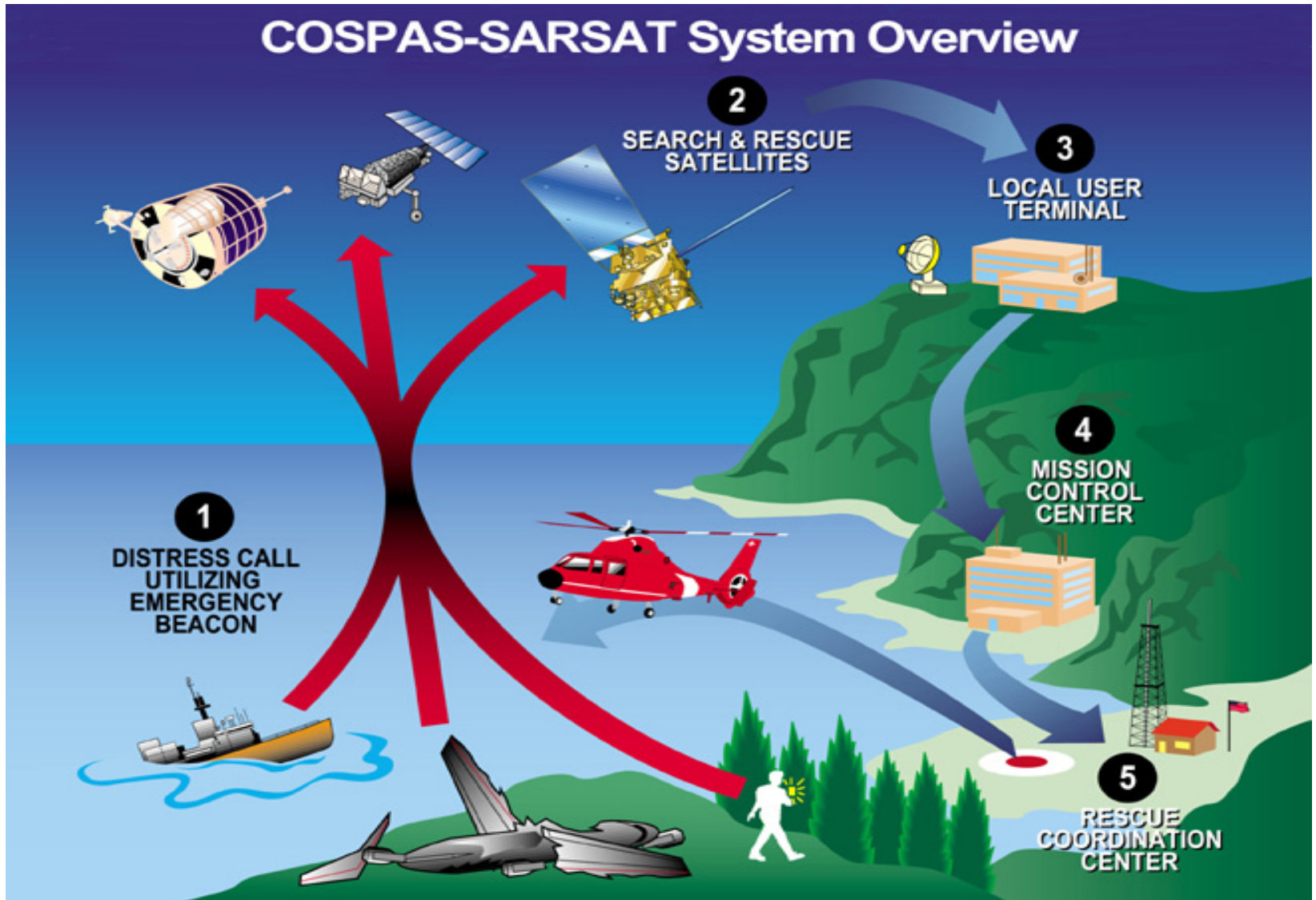
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- Requesting Delegation of Procurement Authority (DPA) of \$18M for operations, maintenance and technical support of the U. S. Mission Control Center (USMCC) and the SARSAT system in the United States
  - This contract is a re-compete of an existing contract
  - The maximum period of performance is 7.5 years
    - One base year, four option years and maximum of five 6-month periods awarded based on contractor performance
- The SARSAT system relays distress signals from aviators, mariners and land-based users in distress
- No other public or private sector system provides this service
  - One private organization that provided distress alerting has discontinued the service as it was not economically viable

# Introduction



# Introduction





# Introduction



- Fishing Vessel "BIGGIN" – November 16, 2006 (Florida)
- Two persons in water safely recovered after vessel sank
- Emergency beacon detected by NOAA satellite and distress signal processed and transmitted by SARSAT ground station and USMCC
- Quote from NBC affiliate "...and they are thankful for the EPIRB device that saved their lives. 'That's what saved his life!' exclaimed Grove's wife, Becky."



- Crashed Helicopter – July 10, 2006 (Washington)
- Two passengers on board
- Emergency beacon detected by NOAA satellite and distress signal processed and transmitted by SARSAT ground station and USMCC
- Two hours and 40 minutes from distress alert to rescue forces on scene
- Two persons safely recovered



# Introduction

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- SARSAT (NOAA5023)
  - High impact (FIPS199 / NIST 800-60)
  - National Critical (Commerce's Homeland Security Perspective)
  - System comprises radio frequency equipment, hardware, software and communications for the following components:
    - U.S. Mission Control Center (Located in NOAA's Satellite Operations Facility in Maryland)
      - Web based services (e.g., Registration Database)
    - Local User Terminals (Satellite Ground Stations) for polar-orbiting and geostationary orbiting satellites (Located in Guam, Hawaii, Alaska, California, Florida and Maryland)
- U.S. Mission Control Center
  - PC-based System operating on Windows 2003
  - Hardware includes PCs, servers, routers and switches
  - Software includes Visual Basic, C++, Visual C++, Java, MS SQL, and Commercial Off-The-Shelf (COTS) software such as MapInfo



# Introduction

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- Acquire contract services for the USMCC and the SARSAT system
  - 24x7 operation of the USMCC
    - Monitoring
    - Point of contact for search and rescue services
  - Administer Beacon Registration Database and Incident History Database
    - Manual entry of registration forms
    - Help desk services for emergency beacon owners
  - Software Maintenance Support
  - Technical Support for the SARSAT system
    - Hardware and network maintenance
    - Operational and technical analysis
  - Assist with IT Security Management
  - Additional support for web-based data collection system applications that share a USMCC web server
- Current contract expires March 2007
- Requesting extension through September 2007





# Administrative / Departmental Goals and Initiatives

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- Maps to Federal Enterprise Architecture Business Reference Model:
  - Disaster Management (supports Search and Rescue)
  - Homeland Security (supports Maritime Transportation Security)
- SARSAT part of NOAA's Emergency Response Program in the Commerce and Transportation Goal
- Support the Nation's Commerce with Information for Safe, Efficient, and Environmentally Sound Transportation
  - Reduce human risk, environmental, and economic consequences resulting from natural or human-induced emergencies



# Basis for Investment

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- SARSAT rescues more than 250 persons annually in the United States (more than 1,400 world-wide) and provides a net benefit of more than \$250M<sup>(1)</sup> annually to the Federal Government
  - \$250M based on 2005 Cost Benefit Analysis
  - USMCC operations key to life-saving mission
- Drivers
  - International Cospas-Sarsat Programme Agreement
  - National Search and Rescue Plan
  - Interagency Cospas-Sarsat Memorandum of Agreement

(1) "Economic Statistics for NOAA," April 2006, <http://www.economics.noaa.gov/>



# Basis for Investment

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- Acquisition Strategy
  - Will use small business set-aside approach
    - Work historically performed by small businesses
  - Will use a hybrid type contract (firm fixed price and cost plus)
  - Will use performance based statement of work
  - Will use Government-Wide Acquisition Contract (GWAC) - Commerce IT Solutions (COMMITTS)
    - Employ a down-select process to limit number of bidders
    - Receive full proposals from sub-set of vendors
    - Review proposals for technical content and receive any oral clarifications
    - Award contract on “best value” in terms of technical/cost



# Basis for Investment

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- Procurement Alternatives Considered
  - Consolidation with NOAA5001 Environmental Satellite Processing Center (ESPC)
    - No operational or financial benefit
    - Few commonalities exist between ESPC and SARSAT in terms of mission, systems and customers
    - Tasks and skill sets sufficiently different
  - Full and Open Competition among Small Business
    - Time constraints
    - Requires additional extension of current contract
  - COMMITTS NexGen GWAC
    - Selected alternative
    - Review of COMMITTS contracts reveals several qualified vendors
    - Competitively awarded in a timely manner
    - Opportunity for pre-approved IT small businesses



# Basis for Investment

(FY\$K):	FY07	FY08	FY09	FY10	FY11	FY12	FY13
<b>CAPABILITY:</b>							
Current Program (NOAA ORF)	1,135	1,164	1,318	1,394	1,380	1,412	1,321
Current IT Resources (NOAA ORF)	1,150	1,180	1,336	1,366	1,399	1,431	1,339
<b>Program Total (NOAA ORF)</b>	<b>2,285</b>	<b>2,344</b>	<b>2,654</b>	<b>2,715</b>	<b>2,779</b>	<b>2,843</b>	<b>2,660</b>
<b>IT COMPONENTS:</b>							
Hardware	0	486	357	348	158	166	325
COTS Software	75	34	0	0	20	21	25
Support Services	1,686	1,939	2,461	2,234	2,426	2,434	2,177
Telecommunications	200	70	70	70	70	70	70
IT Security	187	232	244	246	249	251	244
IT Training	10	15	15	15	15	20	20
Common Services	0	0	0	0	0	0	0
FTE Costs	250	250	258	265	273	281	290
<b>IT Component Total (NOAA ORF/PAC &amp; Reimbursable)</b>	<b>2,408</b>	<b>2,992</b>	<b>3,147</b>	<b>3,178</b>	<b>3,211</b>	<b>3,243</b>	<b>3,151</b>
USMCC Contract (Program)	120	480	480	480	480	480	480
USMCC Contract (IT)	280	1,920	1,920	1,920	1,920	1,920	1,920
<b>Total USMCC Contract (new)</b>	<b>400</b>	<b>2,400</b>	<b>2,400</b>	<b>2,400</b>	<b>2,400</b>	<b>2,400</b>	<b>2,400</b>





# Basis for Investment

Date	Milestone
12/15/06	Complete Exhibit 300 and Acquisition Plan (Attachment A to Exhibit 300)
01/03/07	Obtain NOAA clearance on Acquisition Plan
01/09/07	Brief NITRB
02/10/07	Finalize Performance Based Statement of Work
02/21/07	Obtain final approval for Acquisition Plan from Department
02/28/07	Brief CITRB/ARB
03/07/07	Obtain Delegation of Procurement Authority
03/07/07	Obtain Solicitation reviews and clearances (e.g., legal, etc.)
03/15/07	Issue Request for Solutions, Governments Questions to Contractors
04/02/07	Conduct Pre-proposal Conference and Site Visit
04/16/07	Receive Down-select Responses
04/30/07	Complete Down-select review and notify selected bidders
05/15/07	Receive Offers from selected bidders
06/01/07	Complete Technical Evaluation
06/15/07	Determine Competitive Range
06/15/07	Open negotiations
06/29/07	Receive Final Proposals
07/13/07	Source Selection
07/16/07	Review Task/Delivery Order and obtain clearance (e.g., legal, etc.)
07/30/07	Award Task/Delivery Order, and Announcement on COMMITTS Business Opportunities Page, if applicable.



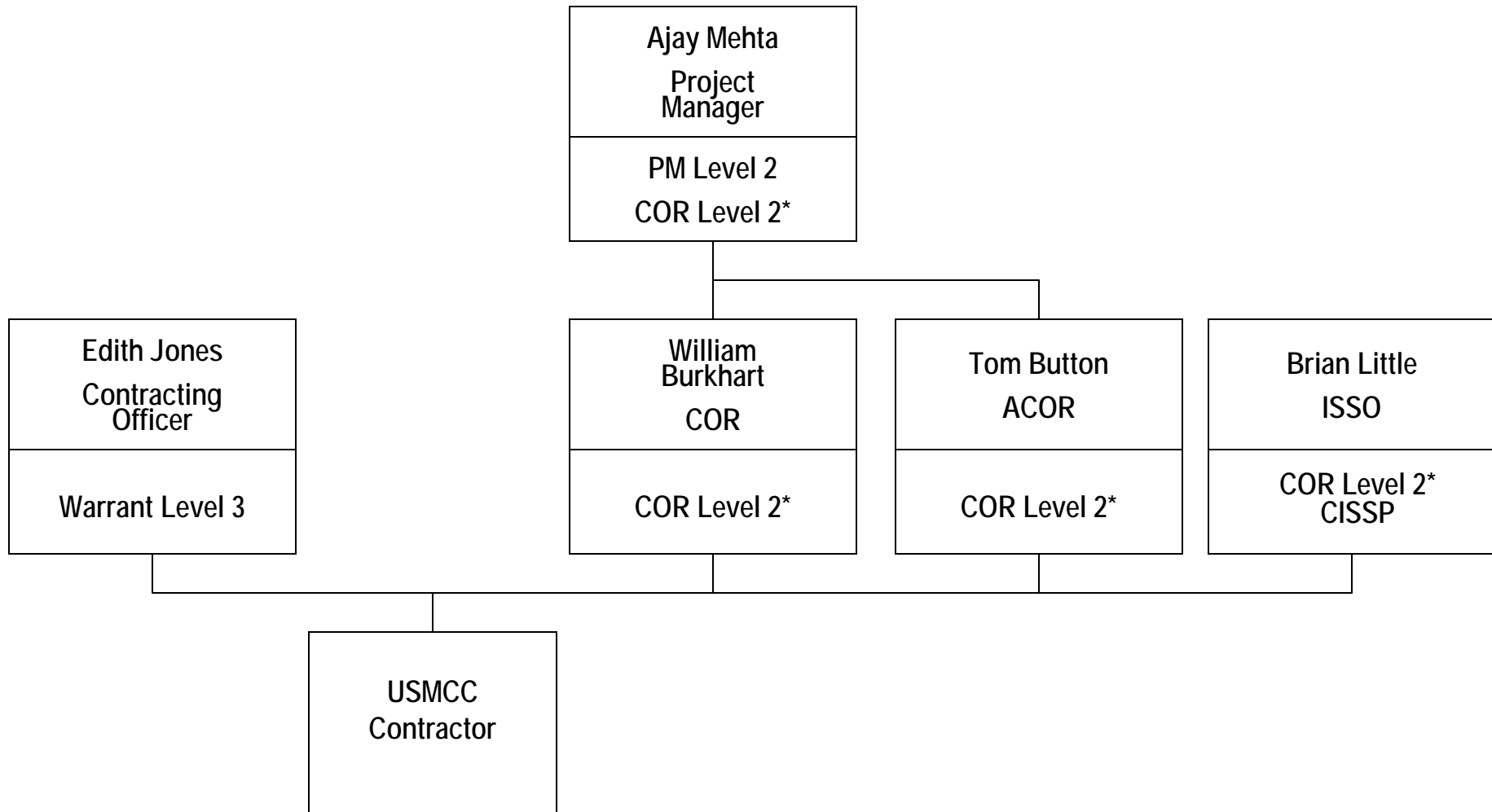
# Architectural Compliance

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- Collaboration on Achieving Enterprise Solutions
  - Reviewed possible convergence with Environmental Satellite Processing Center
  - Will use *NOAAnet* for data communications at selected sites (e.g., Alaska)
  - Use of U.S. Coast Guard networks to reduce cost and number of ports
- Reuse of existing assets
  - Web-based registration database software reused by international Cospas-Sarsat organization to provide global registration capability
- Usage of standards
  - Complies with Federal Enterprise Architecture standards
  - Government Paperwork Elimination Act (GPEA)



# Project Management



\* Expected to be elevated to Level 3 in January 2007



# Project Management

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- Earned Value Management (EVM)
  - EVM is not appropriate because it is a level of effort support services contract - Operational Analysis will continue to be submitted according to DOC/NOAA guidance
- Changes to system managed by Configuration Control Board (CCB)
  - Contracting Officer's Representative chairs CCB
  - Changes to hardware and software driven by System Problem Reports and System Change Proposals
  - CCB determines priority and schedule of system changes
- Contracting Officer's Representative (COR) responsible for contractor cost, schedule and performance



# Project Management

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- Contract Management:
  - Performance metrics developed in the areas of operations support, software maintenance and technical support
  - Reporting
    - Vendor provides daily brief on system operations
    - Vendor provides bi-weekly status on technical and operations support
    - Vendor provides status of system changes to CCB
    - Vendor provides monthly reporting on cost and general schedule and performance issues
  - Annual review for performance award
    - Tied to cost, schedule, performance, and support of the mission





# Risk Management

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- Risk management activities captured in two documents:
  - Interagency SARSAT Risk Management Plan – July 1, 2006
    - Focus on program and operational risks
  - SARSAT Risk Assessment – June 16, 2005
    - Focus on IT and IT security risks
    - Required as part of Certification and Accreditation process



# Risk Management

Procurement Risks						
Rank	Risk	Impact	Severity	Probability	Mitigation	Type (Mission, Schedule, Cost)
1	Loss of Expertise	Anomaly – Resolution time may be adversely impacted. IT Security C&A may be impacted	High	Medium	<ul style="list-style-type: none"><li>- Provide for two month overlap transition for new and old contract</li><li>- Identify key positions</li><li>- Delay expiration of old contract until after C&amp;A is completed</li></ul>	Mission
2	Proposed Cost Exceeds Budget	Improvements and updates will be delayed	High	Low	<ul style="list-style-type: none"><li>- Identify critical activities and functions</li><li>- Prioritize non-critical activities</li><li>- Complete Independent Government Estimate and have it validated by other agencies</li></ul>	Cost
3	Cost Overruns	Improvements and other non-critical activities will be deferred	Medium	Low	<ul style="list-style-type: none"><li>- Perform critical operations under fixed price</li><li>- Use performance measures to monitor level of effort</li><li>- Develop annual work plan</li></ul>	Mission
4	Further Extension of Current Contract	Time and resources are needed to justify the impact	Low	Low	<ul style="list-style-type: none"><li>- Use COMMITTS NexGen GWAC</li></ul>	Schedule, Cost



# IT Security

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- System Certification & Accreditation received in June 2005
- Recertification scheduled for 4<sup>th</sup> Quarter of Fiscal Year 2007
  - Due to operations move to NOAA Satellite Operations Facility and technical upgrade of system
- Configuration management in place to assess and mitigate IT security risks
  - Information System Security Officer (ISSO) on CCB
- Well-defined network boundary
- Centralized firewall management
- Employ and audit Intrusion Detection System



# IT Security

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- SARSAT Security Plan completed June 16, 2005 – in process of being updated for recertification
  - Compliant with DOC/NOAA guidance
- Employing operational and technical controls as outlined in FIPS200 and NIST 800-53
  - Plan of Action & Milestones being developed for those controls not currently implemented – will be completed by next Certification and Accreditation
- On track to complete most Plan of Action & Milestones according to published schedules
  - Includes those identified in the Inspector General's report on SARSAT E-authentication
  - Only milestones at risk are related to security background checks which are behind schedule due to backlog at Office of Personnel Management
- SARSAT expending approximately 8% of IT budget on IT security activities
  - This level will be reviewed after next Certification and Accreditation to determine adequacy



# IT Security

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- Continuity of Operation Plan (COOP) in place for SARSAT
  - Tested in October/November 2006
  - Needs to be updated as a result of the move to the new NOAA Satellite Operations Facility
- Contingency plan in place – Tested in November, 2006
- Backup U.S. Mission Control Center system being relocated to Critical Infrastructure Protection site at Wallops Island, VA.
- This procurement will help ensure that system security requirements are met
  - Activities include planning for and implementing controls, testing, monitoring, risk assessments, contingency operations, and documentation
- IT Security Issues:
  - Interconnection Agreement with International Partners
    - Compensating measures include firewalls and restrictive access policy
  - Completing next Certification and Accreditation before current contract ends





# SARSAT USMCC Operations, Maintenance & Technical Support Emergency Response Program (SARSAT)



## ITIA REVIEW

- **NOAA GOAL:** Commerce & Transportation
- **NOAA PROGRAM:** Emergency Response
- **EXHIBIT 300:** NOAA/NESDIS Search and Rescue Satellite-Aided Tracking (SARSAT)
- **TITLE OF ACQUISITION:** SARSAT USMCC Operations, Maintenance & Technical Support
- **TYPE OF ACQUISITION (Competitive, Sole Source):**
  - Competitive – COMMITS NexGen
- **PROJECT MANAGER:** Ajay Mehta
- **CONTRACTING OFFICER:** Edith Jones
- **COR:** Bill Burkhart

## FUNDING

(FY\$K):	FY 07	FY 08	FY 09	FY10	FY11	FY12	FY13
ORF	280	800	800	800	800	800	600
Reimbursable	120	1,600	1,600	1,600	1,600	1,600	1,600
Total	400	2,400	2,400	2,400	2,400	2,400	2,400
COMPONENTS:	FY 07	FY 08	FY 09	FY10	FY11	FY12	FY13
Hardware	0	0	0	0	0	0	0
COTS Software	0	0	0	0	0	0	0
Support Services (ex: software are maint., dev.,	348	2,156	2,156	2,156	2,156	2,156	2,156
Telecommunications	0	0	0	0	0	0	0
IT Security (Ex: McAfee Software are, Security Plan dev., Incident Response)	47	232	232	232	232	232	232
IT Training	5	12	12	12	12	12	12
Common Services (ex. Help Desk)	0	0	0	0	0	0	0

## CONTRACTING LANGUAGE

### IT SECURITY

- FAR clause security processing requirement for contractor personnel

### EVMS

- Operational Analysis

### PERFORMANCE BASED CONTRACTING

- This is a performance based contract with performance tied to operations, software maintenance and technical support

## IT SECURITY, MILESTONES & RISKS

### IT SECURITY

- SARSAT C&A, NOAA5023, June 17, 2005

### MILESTONES

- 01/09/07 – Brief NITRB
- 02/21/07 – Obtain Approval for Acquisition Plan
- 02/28/07 – Brief CITRB
- 03/15/07 – Release Performance Based Statement of Work
- 06/01/07 – Complete Technical Evaluation
- 07/13/07 – Source Selection
- 07/30/07 – Award Task/Delivery Order

### RISKS

- Loss of Expertise



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# Backup Slides



# Acronyms

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ACOR	Alternative COR	GOES	Geostationary Operational Environmental Satellite
CISSP	Certified Information System Security Professional	GPEA	Government Paperwork Elimination Act
COMMITS	Commerce IT Solutions	GWAC	Government-Wide Acquisition Contract
COOP	Continuity of Operations Plan	ISSO	Information System Security Officer
CCB	Configuration Control Board	LUT	Local User Terminal (Satellite Ground Station)
COR	Contracting Officer's Representative	NIST	National Institute for Standards and Technology
COTS	Commercial Off-The-Shelf	ORF	Operations, Research, Facilities
DPA	Delegation of Procurement Authority	PAC	Procurement, Acquisition Construction
ESPC	Environmental Satellite Processing Center	PM	Project Management
FTE	Full Time Equivalent	POES	Polar-orbiting Operational Environmental Satellite
EVMS	Earned Value Management System	RCC	Rescue Coordination Center
FIPS	Federal Information Processing Standards	SARSAT	Search and Rescue Satellite Aided Tracking
		USMCC	U.S. Mission Control Center



# Basis for Investment

Metric	Unit	Fiscal Year						
		2007	2008	2009	2010	2011	2012	2013
Use of Web-Based Registration	Percent	40	43	46	49	52	55	60
Registration Currency	Percent	75.5	76	76.5	77	77.5	78	78.5
Percent of Beacons Registered	Percent	77	78	79	80	81	82	83
Usefulness of Registration Database	Percent	66	68	70	72	74	76	78
Accuracy of Registration Database	Percent	78	80	82	84	86	88	90
Number of RCCs Trained Annually	Number	2	2	2	2	2	2	2
Timing	% < 60 mns	91	91	92	93	94	95	95
Accuracy	% < 5km	91	91	92	93	94	95	95
Availability	Percent	98	98	98	98	98	98	98
Throughput of Beacon Messages	Percent	93	93	93	93	93	93	93
RCC Satisfaction Index	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Public Satisfaction Index	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
False Alert Rate	Percent	2.75	2.5	2.5	2.25	2	2	1.75
Persons Informed about False Alerts	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Search and Rescue Effectiveness	Total Cost/Rescue	TBD	TBD	TBD	TBD	TBD	TBD	TBD



USMCC contractor has lead



USMCC contractor supports



# Project Management

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- SARSAT Program Manager – Ajay Mehta
  - 11 years of experience providing management and technical support for IT systems with a value of \$12M
  - 40 hours plus of Project Management Training
  - PM Level = 2
  - COR Level = 2
- Contracting Officer – Edith Jones
  - Warrant Level = 3
  - CO for Multiple contracts valued at more than \$10M
- Contracting Officer's Representative – William Burkhart
  - SARSAT Operations Lead
  - More than 20 years experience managing and providing oversight for large scale IT systems
  - Current COR for USMCC Operations and Maintenance Contract
  - COR Level = 2
  - 40 hours plus of Project Management Training
  - Chair of Configuration Control Board for six years