Discussion Document

JRAC Rapid Fielding Study

Recommendations To Improve Rapid Acquisition Information Sharing

January 09, 2007

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This report summarizes recommendations to improve information-sharing across the Rapid Acquisition Community of Interest to achieve the following objectives:

- Gain transparency into current needs and capabilities being processed through the Joint rapid acquisition process
- Gain transparency into current needs and capabilities being processed through Service/agency-specific rapid acquisition processes
- Identify existing capabilities that may be able to address developing urgent needs
- Detect potential interoperability issues between existing capabilities and emerging capabilities
- Collect and share feedback from the warfighter on the effectiveness of fielded capabilities

Objectives are to obtain feedback on these recommendations and decide on the courses of action so that implementation of the recommendations can begin

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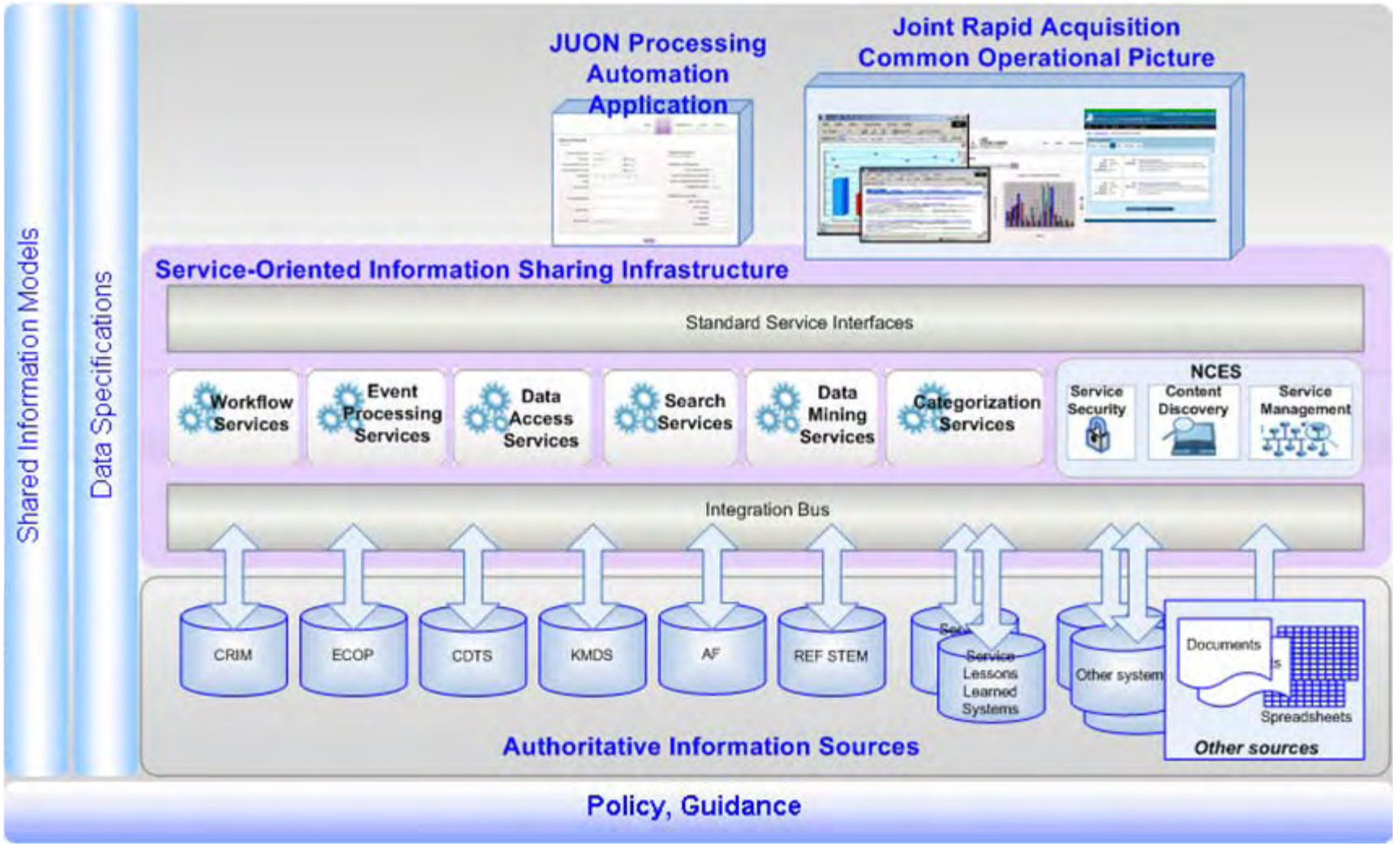
A solution is needed that will enable rapid acquisition information to be made visible, accessible, and understandable. Such a solution requires a combination of:

- **Standards**: Government, industry and COI-specific standards to identify rapid acquisition's shared information and the common syntax, semantics, and mechanisms for sharing that information
- **Technology**: Applications and IT (Information Technology) infrastructure to support the Joint rapid acquisition process and enable automated information-sharing
- **Governance**: Institutionalization of rapid acquisition information-sharing using the identified standards and technology

- *This solution will:*
  - *Allow for minimal intrusion from the Joint Staff and JRAC into the Service and agency processes, thus maintaining the autonomy of these processes*
  - *Preserve the Services' and agencies' investments in their systems by leveraging existing systems*
  - *Integrate existing systems and enable interoperability to obtain an integrated view of rapid acquisition information.*

The Joint Rapid Acquisition Information Sharing Environment should be based on a combination of Standards, Technology, and Governance …



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Three main standards areas need to be developed in order to realize the described information sharing environment

- **Shared Information Models**: Logical models describing the information that should be shared across all rapid acquisition processes
  - Shared Information Sets—to identify what information should be shared at key steps in rapid acquisition processes
  - Rapid Acquisition Logical Data Model—to model the shared information to identify discrete data objects and the relationships among them
  - Forms—user friendly presentational formats to capture the shared information
- **Data Exchange Specifications**: Technical specifications defining the syntax, semantics, and structure for information that needs to be exchanged across rapid acquisition systems and processes
  - XML Schemas for exchange of information identified in the Shared Information Models
- **Service Specifications**: Technical specifications for software services that will enable the machine-to-machine exchange of rapid acquisition shared information
  - Data Retrieval Service Specifications—specifications for software capabilities exposed by the Services'/agencies' source systems to provide access to the underlying data.
  - Data Posting Service Specifications—specifications for software capabilities exposed by the common infrastructure to allow the Services/agencies to post their shared data to a common repository.

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Technology is a key enabler to achieving the JRAC's information-sharing objectives

- **JUON Processing Automation Application**:
  - Web-based application to automate the processing of JUONs
  - Improves information-sharing across Joint Staff, JRAC, and Interim Sponsors
- **Information-Sharing Infrastructure**:
  - Allows the integration and interoperability of the multiple systems supporting rapid acquisition to provide a common operational picture
  - Improves information-sharing across all of rapid acquisition

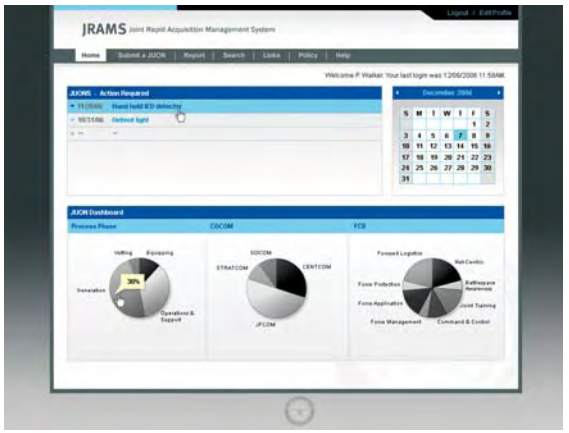
The JUON processing application should include the following functionality:

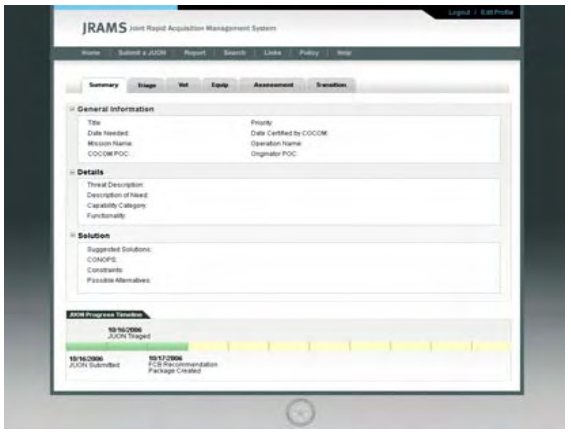
- **Process Automation**:
  - Web-based JUON submission that provides integrity checking during data entry
  - Workflow functionality to automate the processing of JUONs
  - Decision support wizards to help ensure proper routing of JUONs to prevent unnecessary delays
  - Status tracking timeline for each JUON that will allow users visibility across the entire process
  - History tracking features to log and track all user actions

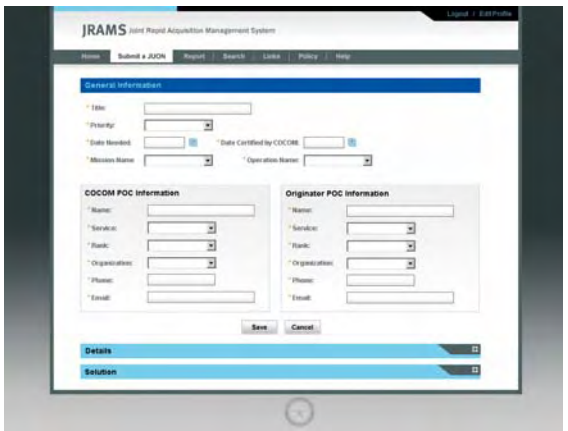
- **Collaborative Work Environment**:
  - Online collaboration environment to facilitate working group meetings and discussions
  - Tabbed browsing environment to allow users to keep track of multiple process phases at once within a single browser window
  - Messaging functionality to help ensure required actions are brought to the attention of the rapid acquisition stakeholders in a timely manner

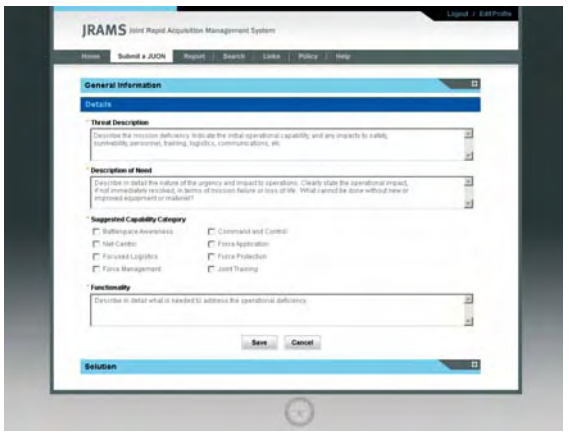
- **Information-Sharing:**
  - Dashboards that provide strategic and tactical views of JUON-related information
  - Search and reporting functionality to allow users to find single or multiple JUONs that match the search criteria
  - Tagging functionality to label JUONs with simple keywords for user-defined categorization to improve searching and browsing functionality

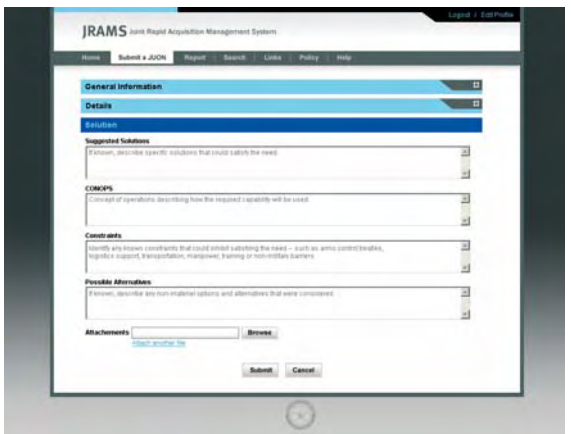
Conceptual screen mockups of the JUON processing web-application have been developed











** Full size screen mockups are located in the backup section of this brief.* [Click here]

There are four possible courses of action to implement the JUON application …

Course of action	Core Functionality	Technical Infrastructure	Information Assurance	Other Considerations
1. Implement JUON application within CRIM	5 out of 6	2 out of 8	1 out of 4	– CRIM is already being used to support JUON processing for CENTCOM – Large percentage of JUONs come from CENTCOM, so majority of existing data already in CRIM – Joint Staff and JRAC also use CRIM, thus should be familiar with the look and feel of the application – Microsoft .NET platform—scalable and extensible
2. Implement JUON application within KM/DS	3 out of 6	3 out of 8	2 out of 4	– KM/DS is already being used by Joint Staff and JRAC to support JUON processing – Existing JUON data already in KM/DS – Since KM/DS supports JCIDS, may allow for easier integration into JCIDS process for JUONs that transition into PoRs – JEE platform—scalable and extensible
3. Create JUON PROJECT within STEM	4 out of 6	6 out of 8	2 out of 4	– Built with Oracle Projects—quick to create and deploy basic workflow, tracking applications, no coding required – Oracle platform is scalable – Custom features may be more difficult to add since source code is not available – Automatic integration with REF data
4. Implement JUON application within ECOP	4 out of 6	4 out of 8	1 out of 4	– Integrates data from multiple data stores, but primarily through non-net-centric mechanisms (e.g. manual uploads, batch feeds) – Microsoft .NET platform—scalable and extensible – System owner indicated that they won't be able to host and manage a JUON application within their infrastructure

Option 1: Implement the JUON application within CRIM

Core Functionality

- Data call response indicates existing support for **5 out of 6** core functionality requirements
- Limited support for analytics and data mining

Technical Infrastructure

- Data call response indicates existing support for **2 out of 8** technical infrastructure requirements
- No existing support for web services, XML data exchange, common vocabulary for data exchange, processing of structured data, processing of unstructured data, no performance and scalability reports
- Information is stored in SQL Server database
- System is not tightly coupled to internal data structures

Information Assurance

- Data call response indicates existing support for **1 out of 4** information assurance requirements
- No existing support for non-repudiation, encryption, integration with NCES Security Services
- Response did not indicate highest security level of information contained by the system, but indicated that system is installed on SIPR
- System has input validation and user-defined error checking to ensure data integrity

Other Considerations

- CRIM is already being used to support JUON processing for CENTCOM
- Large percentage of JUONs come from CENTCOM, so majority of existing data already in CRIM
- Joint Staff and JRAC also use CRIM, thus should be familiar with the look and feel of the application
- Microsoft .NET platform—scalable and extensible

Option 2: Implement the JUON application within KM/DS

Core Functionality

- Data call response indicates existing support for **3 out of 6** core functionality requirements
- No existing support for event processing, automatic data classification, metadata catalog creation

Technical Infrastructure

- Data call response indicates existing support for **3 out of 8** technical infrastructure requirements
- No existing support for XML data exchange, real-time data access, common vocabulary for data exchange, processing of unstructured data, no performance and scalability reports
- Information is stored in Oracle database
- System is tightly coupled to internal data structures—may require significant code changes if data structures are modified

Information Assurance

- Data call response indicates existing support for **2 out of 4** information assurance requirements
- No existing support for non-repudiation and integration with NCES Security Services
- Highest security level of information contained by the system is SECRET
- System has form validation and error checking to ensure data integrity

Other Considerations

- KM/DS is already being used by Joint Staff and JRAC to support JUON processing
- Existing JUON data already in KM/DS
- Since KM/DS supports JCIDS, may allow for easier integration into JCIDS process for JUONs that transition into PoRs
- JEE platform—scalable and extensible

Option 3: Create JUON PROJECT within STEM

Core Functionality

- Data call response indicates existing support for **4 out of 6** core functionality requirements
- No existing support for data mining and automatic data classification (response indicates they are in process of defining data classification functionality)

Technical Infrastructure

- Data call response indicates existing support for **6 out of 8** technical infrastructure requirements
- No existing support for processing of unstructured data, no performance and scalability reports
- Information is stored in Oracle database
- System is not tightly coupled to internal data structures

Information Assurance

- Data call response indicates existing support for **2 out of 4** information assurance requirements
- No existing support for clear demarcation of data sensitivity levels and associated access privileges (will be added after migration to SIPR), no existing support for encryption
- Currently information is FOUO but will be housing Top Secret info once migrated to SIPR
- User feedback and backup logs for data integrity checking—does not appear to have automated data integrity checking capabilities

Other Considerations

- Built with Oracle Projects—quick to create and deploy basic workflow, tracking applications, no coding required
- Oracle platform is scalable
- Custom features may be more difficult to add since source code is not available
- Automatic integration with REF data

Option 4: Implement JUON application within ECOP

Core Functionality

- Data call response indicates existing support for **4 out of 6** core functionality requirements
- No existing support for automatic data classification, metadata catalog creation

Technical Infrastructure

- Data call response indicates existing support for **4 out of 8** technical infrastructure requirements
- No existing support for web services, use of XML for data exchange, processing of unstructured data, no performance and scalability reports
- System is not tightly coupled to internal data structures

Information Assurance

- Data call response indicates existing support for **1 out of 4** information assurance requirements
- No existing support for non-repudiation, encryption, and integration with NCES Security Services
- Highest security level of information contained by the system is SECRET
- For data integrity checking, system has advanced form field checking with autofill capabilities based on values pulled from authoritative data sources

Other Considerations

- Integrates data from multiple data stores, but primarily through non-net-centric mechanisms (e.g. manual uploads, batch feeds)
- Microsoft .NET platform—scalable and extensible
- System owner indicated that they won't be able to host and manage a JUON application within their infrastructure

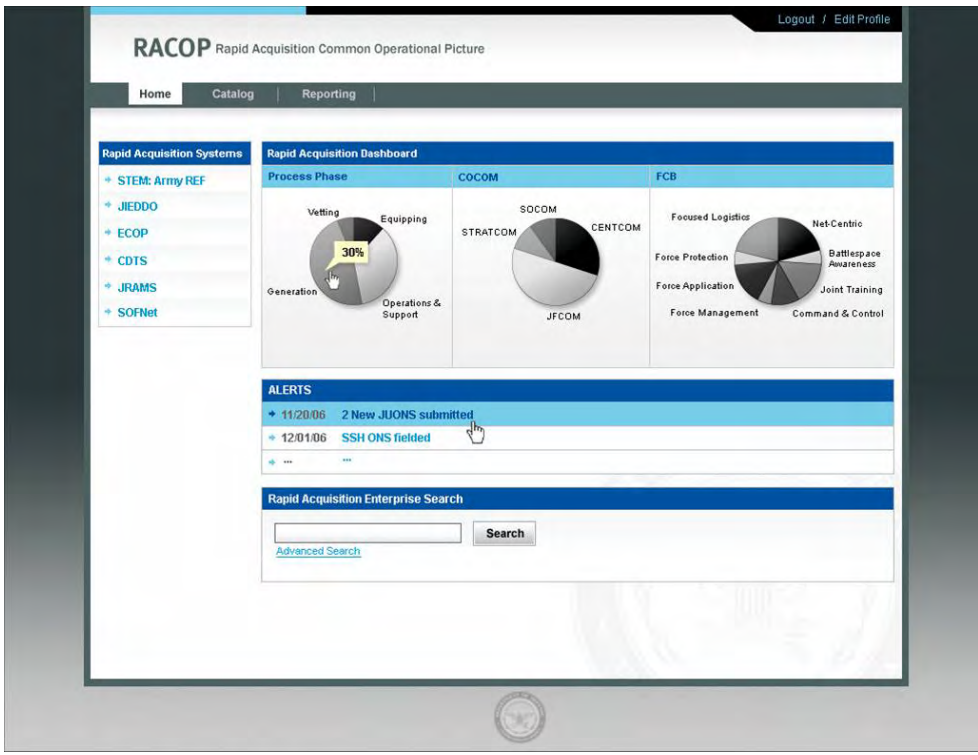
There are two possible courses of action to achieve the information-sharing infrastructure capabilities …

1. **Implement Service-Oriented Information-Sharing Infrastructure**
   - Use an iterative approach to develop the information-sharing infrastructure
   - Requires more financial investment than option 2, but with iterative approach the entire effort does not have to be funded all at once
   - Capabilities should be prioritized and incrementally built

2. **Manual Integration and Reporting**
   - Generalize JUON application to support collection of information from other processes
   - Manually collect the information defined by the information models and input them into the JUON application so that they are centrally available
   - This option does not lead to the optimal solution, but provides a feasible alternative without requiring the financial investment needed in option 1
   - Some of the more advanced features such as single-sign-on, federated search, and browseable catalogs may not be available, because these features require capabilities from the service-oriented infrastructure

The service-oriented information-sharing infrastructure should include the following components:

- **Data Services**: Software layer to logically-centralize access to distributed information and provide value-added capabilities to ensure that this information can be effectively used.
- **Core Infrastructure Services**: Provide the foundational capabilities on which to build the service-oriented information-sharing environment
- **Integration Bus**: Mediate the differences in communication protocols and data formats of the diverse systems that make up the rapid acquisition IT environment
- **Rapid Acquisition Common Operational Picture:** Web-based portal on top of the infrastructure to provide a graphical user interface into the integrated environment



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Governance is required to institutionalize the sharing of rapid acquisition information …

- **Authoritative Information Sources**: Identification and designation of IT Programs from Services and agencies that should act as the authoritative sources for the data identified in the Shared Information Models.
  - Clear and distinct authoritative sources should be identified for both data and metadata
  - Programs designated as authoritative sources should be required to capture, maintain, and make information available to the Rapid Acquisition COI
  - A definitive list of approved technologies, protocols and standards should be established for the authoritative sources
  - Traceability needs to exist to ensure that systems are obtaining data from sources that are acknowledged as being accurate, managed, and auditable.

- **Policy:** Policy requiring Services and agencies to capture the information identified in the Shared Information Models and make it available through the rapid acquisition data and service specifications.
  - The process description in CJCSI 3470 will need to be updated to reference the use of the JUON application (once it is available).
  - Instruction should reference the data and service specifications when directing the Services and agencies to share their information.
  - Scope of the instruction will need to be expanded to the Service and agency-specific rapid acquisition processes so that information-sharing directives can include those processes necessary to enable a complete view of rapid acquisition.

- **Guidance:** Guidance describing how the service-oriented information-sharing infrastructure and technical specifications should be used to share information.
  - Information consumers, producers, and managers must follow rules, guidelines, and processes as they produce and consume the services and other resources within the information-sharing infrastructure
  - User manuals, online forums, and other guidance materials should be developed to educate IT personnel
  - Development of a CJCSM can help set forth the guidelines and procedures for the information-sharing infrastructure and the use of the automated JUON processing application.

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Immediate next steps are to decide on the following courses of action:

- **JUON Automation Application:**
  1. Implement the JUON application within CRIM
  2. Implement the JUON application within KM/DS
  3. Create a JUON PROJECT within STEM
  4. Implement the JUON application within ECOP

- **Information-Sharing Environment:**
  1. Implement Service-Oriented Information Sharing Infrastructure
  2. Manual Integration and Reporting

Once the COAs have been decided, a CONOPS and implementation plan will be developed that will include the following:

- Detailed explanation of how the selected information-sharing solution will be used to support the JUON process and other rapid acquisition processes with which it will integrate
- Ownership and operating responsibility for the supporting IT system(s)
- CJCSI 3470.01 updates required to direct users to use the supporting IT system(s)
- Requirements for training
- Timelines
- Costs
- Full DOTMLPF assessment
- Any additional plans as deemed necessary

Backup

- Current Information-Sharing Challenges
- JUON Processing Automation Application Screen Mockups
- Rapid Acquisition Common Operational Picture Screen Mockup
- Summary of Recommendations

Current challenges that prevent effective information-sharing:

- Process:
  - Each Service/agency operates within the perspective of its own individual process creating stove-piped views of information
  - Key pieces of information are often not collected because personnel do not always have time to collect all the information due to timeliness-demands of rapid acquisition
  - Cross-process comparisons are difficult because different processes collect different sets of data so there is no consistent view into all the processes
- Standards:
  - Standards and policies do not comprehensively define what data should be captured and shared at key points in the processes.
  - No common standards exist for rapid acquisition information leading to inconsistent syntax and semantics
- Technology:
  - No integrated environment or system exists that can provide a complete view of rapid acquisition because each Service/agency has its own system
  - Even within a single Service/agency, data is often scattered across multiple systems, spreadsheets, and documents
  - No end-to-end automated system exists to support the processing of JUONs resulting in labor-intensive, manual procedures

Logout / Edit Profile

JRAMS Joint Rapid Acquisition Management System

Home | Submit a JUON | Report | Search | Links | Policy | Help

Welcome P. Walker. Your last login was 12/06/2006 11:58AM.

JUONS - New

11/28/06	Shoot around corner gun
10/31/06	Helmut light
...	...

JUONS - Action Required

11/01/06	Hand held IED detector
09/31/06	Helmut light
...	...

December 2006

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

JS J8 Gatekeeper Homepage

JUON Dashboard

Process Phase

COCOM

FCB

Logout / Edit Profile

JRAMS Joint Rapid Acquisition Management System

Home | Submit a JUON | Report | Search | Links | Policy | Help

Welcome P. Walker. Your last login was 12/06/2006 11:58AM.

JUONS - Action Required

11/28/06	Hand held IED detector
10/31/06	Helmut light
...	...

Regular User Homepage

December 2006

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
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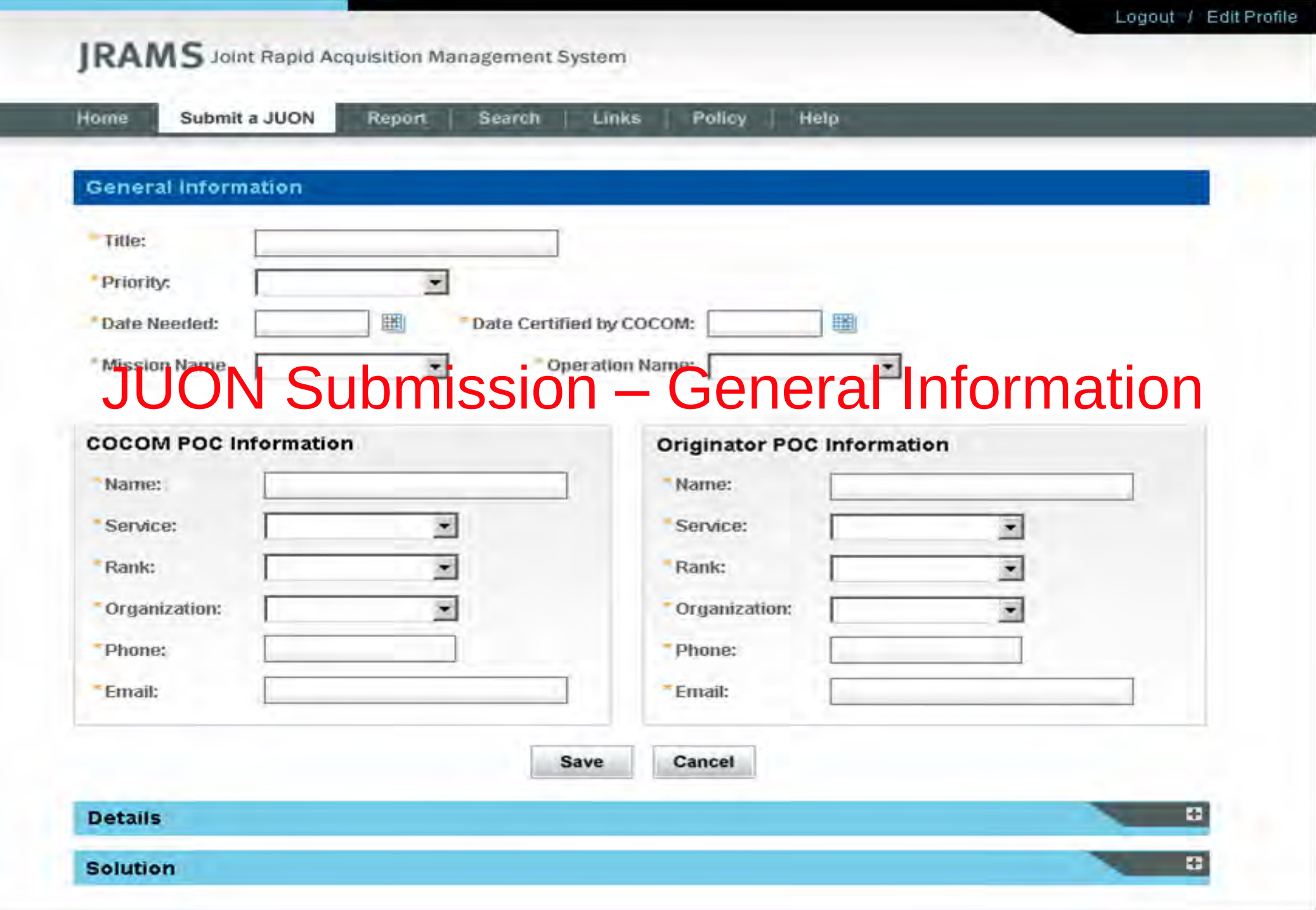
31						

JUON Dashboard

Process Phase

COCOM

FCB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JRAMS Joint Rapid Acquisition Management System
Home
Submit a JUON
Report
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Policy
Help
General Information
Title:
Priority:
Date Needed:
Date Certified by COCOM:
Mission Name
Operation Name:
JUON Submission – General Information
COCOM POC Information
Name:
Service:
Rank:
Organization:
Phone:
Email:
Originator POC Information
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Service:
Rank:
Organization:
Phone:
Email:
Save
Cancel
Details
Solution

Logout / Edit Profile

JRAMS Joint Rapid Acquisition Management System

Home | Submit a JUON | Report | Search | Links | Policy | Help

General Information

Details

Threat Description

Describe the mission deficiency. Indicate the initial operational capability, and any impacts to safety, survivability, personnel, training, logistics, communications, etc.

JUON Submission – Details

Description of Need

Describe in detail the nature of the urgency and impact to operations. Clearly state the operational impact, if not immediately resolved, in terms of mission failure or loss of life. What cannot be done without new or improved equipment or materiel?

Suggested Capability Category

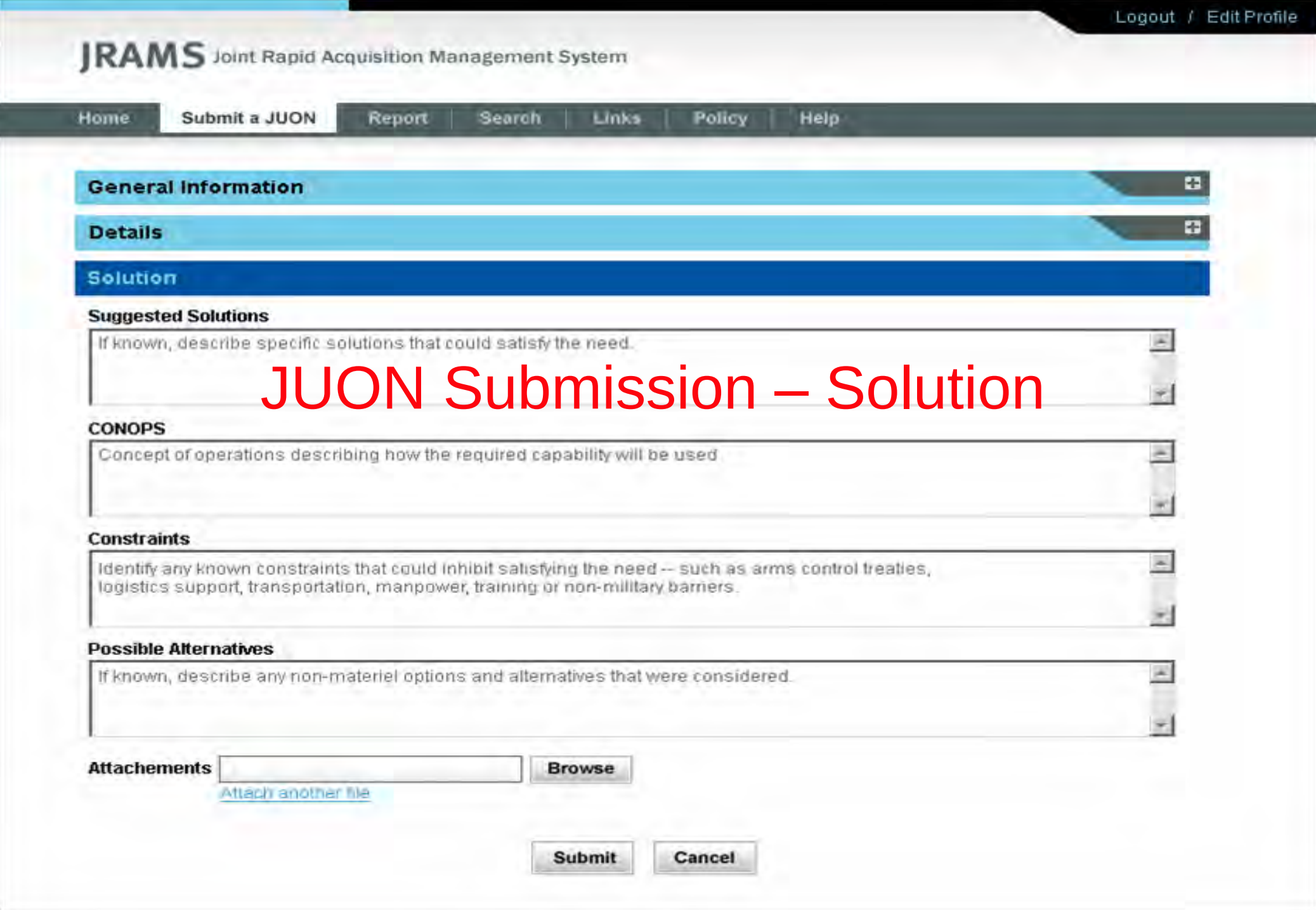
- ☐ Battlespace Awareness
- ☐ Command and Control
- ☐ Net-Centric
- ☐ Force Application
- ☐ Focused Logistics
- ☐ Force Protection
- ☐ Force Management
- ☐ Joint Training

Functionality

Describe in detail what is needed to address the operational deficiency

Save Cancel

Solution


Logout / Edit Profile
JRAMS Joint Rapid Acquisition Management System
Home
Submit a JUON
Report
Search
Links
Policy
Help
General Information
Details
Solution
Suggested Solutions
If known, describe specific solutions that could satisfy the need.
JUON Submission – Solution
CONOPS
Concept of operations describing how the required capability will be used
Constraints
Identify any known constraints that could inhibit satisfying the need -- such as arms control treaties, logistics support, transportation, manpower, training or non-military barriers.
Possible Alternatives
If known, describe any non-materiel options and alternatives that were considered.
Attachements
Browse
Attach another file
Submit
Cancel

JRAMS Joint Rapid Acquisition Management System

Summary | Triage | Vet | Equip | Assessment | Transition

General Information

Title:
Priority:
Date Needed:
Date Certified by COCOM:
Mission Name:
Operation Name:
COCOM POC:
Originator POC:

Tabbed E2E Process View

Details

Threat Description:
Description of Need:
Capability Category:
Functionality:

Solution

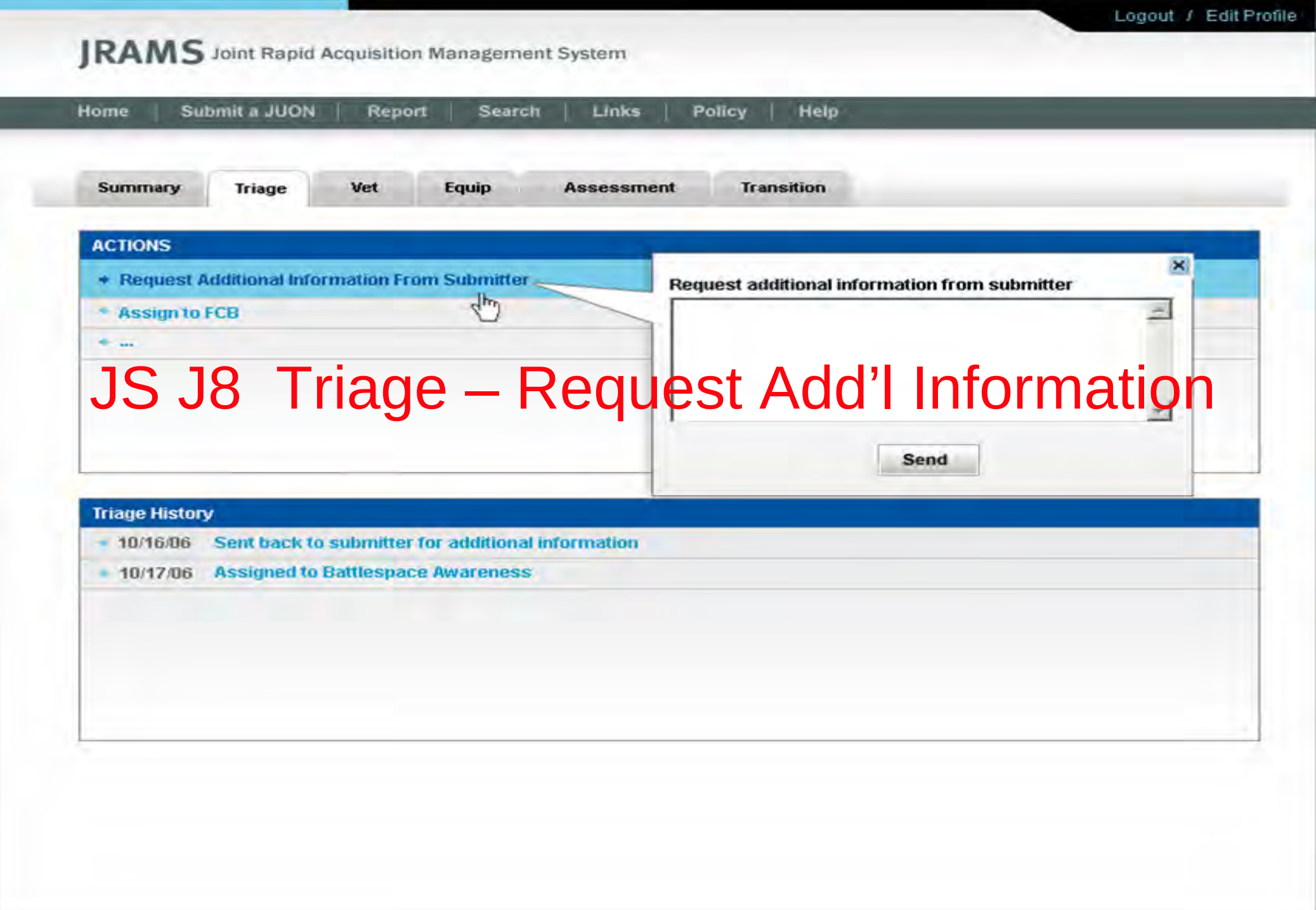
Suggested Solutions:
CONOPS:
Constraints:
Possible Alternatives:

JUON Progress Timeline

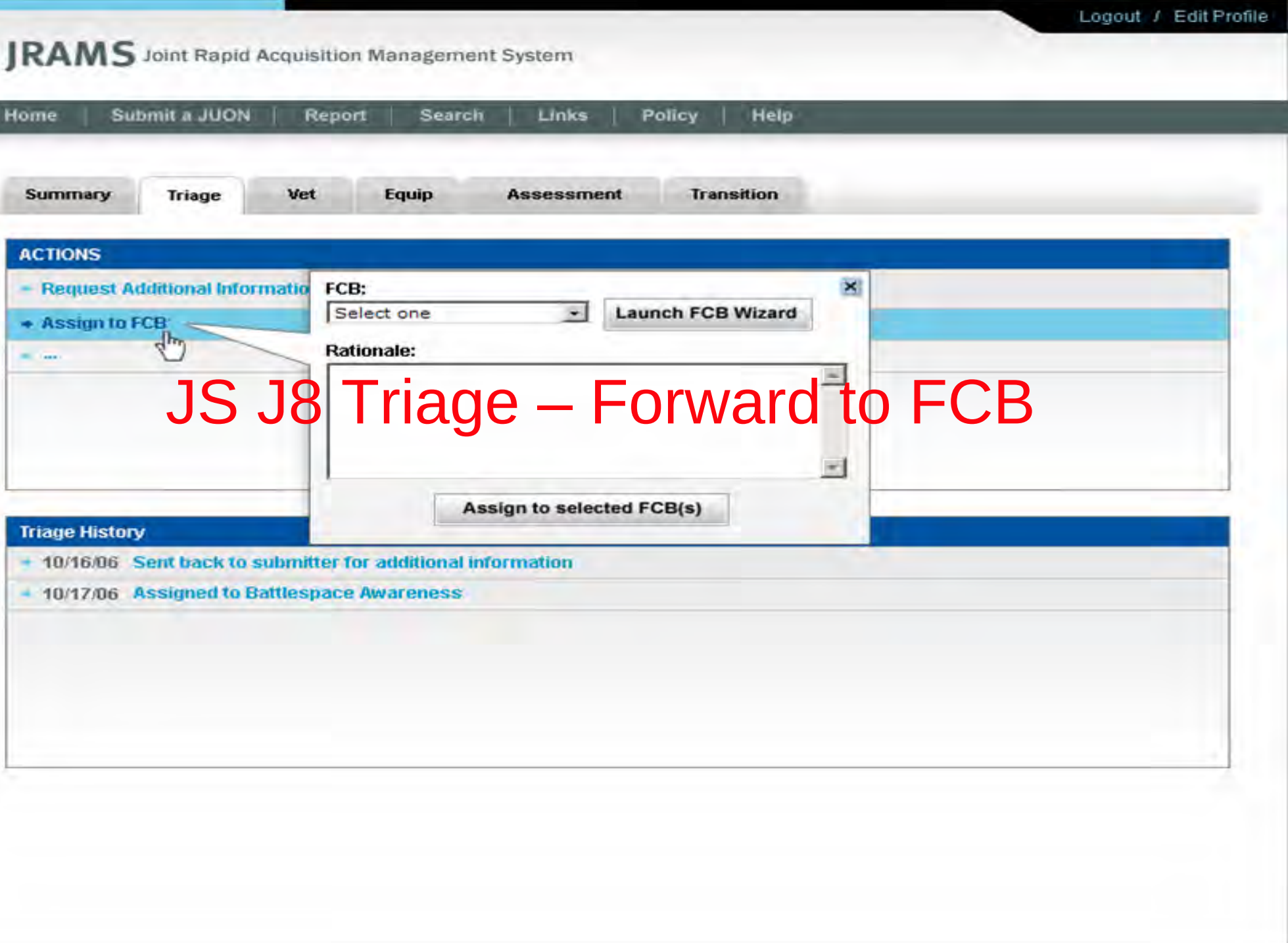
10/16/2006
JUON Triaged

10/16/2006
JUON Submitted

10/17/2006
FCB Recommendation Package Created



JS J8 Triage – Request Add'l Information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JRAMS Joint Rapid Acquisition Management System
Home
Submit a JUON
Report
Search
Links
Policy
Help
Summary
Triage
Vet
Equip
Assessment
Transition
ACTIONS
Request Additional Informatio
Assign to FCB
...
FCB:
Select one
Launch FCB Wizard
Rationale:
Assign to selected FCB(s)
JS J8 Triage – Forward to FCB
Triage History
10/16/06 Sent back to submitter for additional information
10/17/06 Assigned to Battlespace Awareness

Logout / Edit Profile

RACOP Rapid Acquisition Common Operational Picture

Home | Catalog | Reporting

Rapid Acquisition Systems

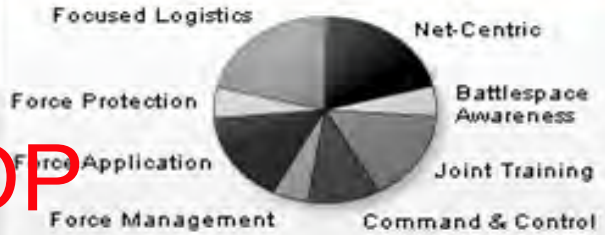
- STEM: Army REF
- JIEDDO
- ECOP
- CDTS
- JRAMS
- SOFNet

Rapid Acquisition Dashboard

Process Phase

COCOM

FCB



Rapid Acquisition COP

ALERTS

11/20/06	2 New JUONS submitted
12/01/06	SSH ONS fielded
...	...

Rapid Acquisition Enterprise Search

Search

Advanced Search

Summary of Recommendations

Recommendations	ROM Schedule Estimate	ROM Cost Estimate	Challenges
Standards			
Shared Info Models	9-12 months	$350K	Obtaining Services and agencies participation in development of standards; achieving common agreement on standards in a timely manner
Data Exchange Specifications			Versioning of specifications as they evolve, maintaining backwards compatibility
Service Specifications			
Technology			
JUON Automation Application	Several iterations over 9-12 months		Process is still in flux; migration of existing data; getting personnel to use the application over preferred methods such as email
Service-Oriented Information-Sharing Infrastructure		$750K	Access to Service/agency systems; migration of existing data
Governance			
Authoritative Information Sources	9-12 months	$300K	List will change as new systems are added, existing systems are retired. This will affect availability of data, compliance with standards.
Policy			Enforcing to Services/agencies
Guidance			Producing guidance in timely manner for IT personnel to use as soon as standards and technology are ready