

37-X.X-SRS-02 99-00

11 Feb 99



SOFTWARE REQUIREMENTS SPECIFICATION FOR PROJECT BROADSWORD

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February 11, 1999

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Foreword

This document supercedes the Functional Requirements Document for Project Broadsword, document number 37-1.0-FRD-03 98-A0.

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1.0 Scope

This document identifies and aggregates the US Intelligence Community's functional requirements for an Intelink-based capability to smartly pull and brilliantly push information to any user via a single common interface. This capability shall not only access multiple heterogeneous information sources simultaneously across multiple sites, it shall also provide an access service for other information systems via a standard applications program interface.

1.1 System Overview

The basic mission of the *Broadsword* system is to provide a set of tools and services which allow a user to search and retrieve information from a collection of heterogeneous data sources, interconnected within a networked environment. To achieve this mission, *Broadsword* provides an automated capability to support the following activities:

- a. Search and retrieve information from multiple data sources, both structured and unstructured.
- b. Provide a unified ordering process for available information, regardless of the product format and delivery method.
- c. Transfer information to client using appropriate delivery method.
- d. Apply format conversion and/or compression to retrieved information, as necessary.
- e. Meets all requirements for SCI process as defined in DCID 1/16.

Broadsword is divided into three functional parts: the "Gatekeeper", a middleware capability, User Services, and Additional Services. Together they form a client/server architecture with session management and expandability. For a more in-depth discussion of each, see the Project *Broadsword* Functional Description Document.

1.2 Document Overview

This document is organized into several sections which compile requirement statements from across the community. This document follows Mil Std 498 SRS DID, which should be referenced for a description of the intended purpose of headings and subheadings.

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Title	Producer	Control Number	Date	Version
Geospatial & Imagery Access Service (GIAS) Specification (N0101-A)			TBR	v3.0
Defense Information Infrastructure (DII) Common Operating Environment (COE)			23 October, 1995	v2.0
Military Intelligence Integrated System (MINDS) and Integrated Data Base (IDB) Definition and Specification Document Element Catalog Part II Volume 1	DIA	DDB-2600-4537-90	1 July, 1990	
National Imagery Transmission Format (Version 2.0) for the National Imagery Transmission Format Standard	National Institute of Standards and Technology	MIL STD 2500A	12 October, 1993	v2.0
National Imagery Transmission Format (Version 2.0)	National Institute of Standards and Technology	MIL STD 2500	18 June, 1993	v2.0

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3.0 Requirements

- 3.0.1 Broadsword shall provide a single user interface access to existing C4I information available on JWICS, SIPRNET and NIPRNET. This shall be done using web-based technology.
- 3.0.2 Broadsword shall enable in-theater/deployed forces to employ reachback techniques to access pertinent and current information.
- 3.0.3 Broadsword shall provide a data brokering capability for analysis tools, enabling them to analyze a consolidated set of information from many applicable data source(s) through a single Applications Program Interface (API).
- 3.0.4 Broadsword shall be Year 2000 (Y2K) compliant.

3.1 Gatekeeper

3.1.1 General Support

- 3.1.1.1 Broadsword shall provide the ability to access information found in the information sources identified in Section 3.3 (External Interfaces Requirements) of this document, thereby providing a data brokering capability enabling users access to many applicable data sources.
- 3.1.1.2 Broadsword shall provide for external system access to its Gatekeeper “Data Brokering” functionality via a standard, defined interface for submittal of queries and retrieval of data.
 - 3.1.1.2.1 Broadsword shall provide a user the capability to request the termination of an ongoing search before it completes.
 - 3.1.1.2.2 Query termination shall be capable of being specified based on user-specified elapsed time, the number of items satisfying the query options, or the manual intervention of the user.
 - 3.1.1.2.3 Broadsword shall provide the capability to aggregate the completed query responses and return the aggregate as specified by the user when the search is prematurely terminated.
- 3.1.1.3 Broadsword support the ability to maintain individual user identity to a specified source (as in the case of broker login).

- 3.1.1.4 Broadsword shall not place any software on the source system, shall maintain the source's security policy and shall interface to the source through what are called "Data Interface Agents" or plugins. As a minimum, a plugin will provide for the following functionality:
1. conversion of standard normalized format to source specific format
 2. user authentication (if connected to a source requiring this feature); and
 3. request policy (capability to restrict what queries are sent to source).
- 3.1.1.5 Broadsword shall provide a federated view for querying and retrieving metadata.
- 3.1.1.5.1 Broadsword shall conform (when possible) to mandated data model and data dictionary based on the Defense Data Dictionary Standard.
- 3.1.1.5.2 Broadsword shall utilize the INTELINK Management Office (IMO) standard community metadata tags.
- 3.1.1.5.3 Broadsword shall provide the capability to translate/resolve data naming conflicts between multiple information sources.
- 3.1.1.6 Broadsword shall compute the projected processing for conversion and/or compression for use in transmit time estimation whenever Broadsword requests imagery and/or image products resident on a Project Broadsword server.
- 3.1.1.7 Broadsword shall display the projected transfer time whenever Broadsword requests imagery and/or image products resident on a server.
- 3.1.1.8 Broadsword shall allow inter-gatekeeper connectivity and authentication.

3.1.2 Client Support

- 3.1.2.1 Broadsword shall provide for a single request format that is independent of the source type, search utility and binding
- 3.1.2.2 Broadsword shall provide a mechanism that allows a client process to establish a connection to its Gatekeeper and return back connection status and source information for both local and remote sources.
- 3.1.2.3 Broadsword shall provide a mechanism that allows a client process to send a request to the source(s) selected and return with a query status and any query results.
- 3.1.2.4 Broadsword shall have the capability to return a partial response per source. This shall be configurable.
- 3.1.2.5 Broadsword shall allow configurable limits on the number of responses per source.

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- 3.1.2.6 Broadsword shall feature user selectable sources accessing local, distributed and/or a combination of sources simultaneously or in a user-specified order.
- 3.1.2.7 Broadsword shall provide an option to pass data to client systems either as individual data source packets, as the information is returned from each queried system, or to hold the data until all queried sources have returned information, then send as a complete package to client system.
- 3.1.2.8 Broadsword shall provide ability to access information available both locally and remotely that is stored on alternate forms of media, which may introduce delays in the retrieval process.
- 3.1.2.9 Broadsword's interface mechanism shall support keyword, SQL and Geographic Search capabilities. For those sources that support a SQL interface, Broadsword shall also support the ability to allow the SQL request to be passed through without mapping the elements to the federated schema.
- 3.1.2.10 Broadsword shall support the option to return or not return thumbnail images from those sources that support return of thumbnails.
- 3.1.2.11 Broadsword shall provide a mechanism that allows a client process to send a product request and return status of that product request.
- 3.1.2.12 Broadsword shall normalize the available conversion and compression capabilities already provided for by the existing imagery libraries.
- 3.1.2.13 Broadsword shall support the following imagery conversions:

FROM/TO	NITF 2.0	NITF 1.1	SunRaster	TIFF 6.0
NITF 2.0		N/A	√	√
NITF 1.1	√		√	√
SunRaster	√	√		√
TIFF 6.0	√	√	√	

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- 3.1.2.14 Broadsword shall provide the following compression capabilities:
1. Compression of NITF 2.0, 8 and 12 bit gray scale images via JPEG 12 bit
 2. Compression of NITF 2.0, 24 bit color images via JPEG 24 bit
 3. Kodak Downsampling Algorithm for NITF 2.0 images
 4. Compression of NITF 1.1, 8 bit gray scale images via ARIDPCM using rates of 0.75, 1.40 and 2.30.
 5. JPEG compression for both TIFF 6.0 and SunRaster
- 3.1.2.15 Broadsword shall provide the ability to manually and automatically extract information from a remote data source and place this information in local data storage.
- 3.1.2.16 Broadsword shall provide a mechanism that allows a client process to send a product request for status and return product request status
- 3.1.2.17 Broadsword shall provide a mechanism that allows a client process to gracefully terminate a session (or log off) the client from the Gatekeeper.
- 3.1.3 Configuration and Administration Support
- 3.1.3.1 Broadsword shall allow any user account that has the appropriate privileges, to make configuration changes. However, only one user at a time will be allowed to make a change. These changes, made through the System Administration API, shall be audited.
- 3.1.3.2 Each source connected to the local gatekeeper shall be configurable through a single interface. As a minimum the interface shall provide the following:
1. return the names of all installed sources;
 2. return the source specific parameters needed to configure the source;
 3. return a list of all sources currently configured;
 4. return all configuration information for a local Gatekeeper or a particular source;
 5. create a NEW source for the plugin name passed (It does not set any of the plugin specific data.);
 6. delete a source based on the source reference passed;
 7. allow setting a parameter to a passed value.

- 3.1.3.3 Broadsword shall support the capability to allow or deny access to specific sources and remotely connected gatekeepers. To provide this capability Broadsword will support the following functionality:
1. retrieve the Discretionary Access Control (DAC) permissions for a particular Gatekeeper or backside source;
 2. set the DAC permissions for a particular Gatekeeper or backside source;
 3. remove the DAC permissions for a particular Gatekeeper or backside source;
 4. set the DAC for a user or group to a source or Gatekeeper;
 5. get the DAC for a user or group;
 6. get the valid producers for a particular source;
 7. get the valid administrator or ISSO for the local Gatekeeper;
 8. add a valid producer for a particular source;
 9. add a valid administrator or ISSO user to the local Gatekeeper.
- 3.1.3.4 Broadsword shall support the management of user groups by the System Administration Interface. As such the following functionality shall be provided:
1. return all group names;
 2. retrieve members of a group;
 3. add a member to a group (The member may be another group name.);
 4. delete a member from a group (The member may be another group name.);
 5. delete a group; and
 6. add a group.
- 3.1.3.5 Broadsword shall support the ability to add/modify the user friendly name, help description, and acceptable values for each site.
- 3.1.3.6 Broadsword shall provide the status of connected gatekeepers and sources.
- 3.1.3.7 Broadsword shall provide capability for site administrator(s) to selectively govern access to specific sites, key data and information sources.
- 3.1.3.8 Broadsword shall return the status of sources that fail to respond to either a query, find, or product request. This status will identify the source and the reason for the connection failure.
- 3.1.3.9 Broadsword shall provide capability for site administrator(s) to create site configurable query templates.

3.1.4 Security Support

3.1.4.1 Broadsword shall perform all necessary auditing to meet DCID 1/16 accreditation for SCI processing. As such the Gatekeeper will store the following auditable events:

QUERY
REQUEST
GATEKEEPER STARTUP
GATEKEEPER SHUTDOWN
LOGIN
LOGOUT
ADDDAC
DELETEDAC
ADDUSER
DELETEUSER
CREATESRC
DELETESRC
GETAUDITRPT
DUMPAUDIT
DELETEAUDIT
ADMINLOCK
ADMINUNLOCK
SETSRCPARAM
ADDGROUP
DELGROUP
ADDGROUPMEMBER
DELGROUPMEMBER
MODELEMENT
SETUSERDAC

3.1.4.2 Broadsword shall support an internal, configurable Deadman Timeout.

3.1.4.3 Broadsword shall allow the capability to maintain audits through the Security Support API. As such, the API provides for the following functionality:

1. get the Audit Detail report by user id, time/date and event;
2. generate the Audit Extract file;
3. to remove the Audit records;
4. to list the location and content of the Audit Extract files;
5. to restore an Audit from the Audit Extract file in order to generate reports.

3.1.5 **Catalog Support**

- 3.1.5.1 Broadsword shall support the import of products to an Imagery Product Library (IPL) version 1.0 and 2.0.
- 3.1.5.2 Broadsword shall provide status for those products delivered to an IPL for catalog.
 - a) Broadsword Audit Cataloging
 - b) Broadsword Provide Catalog Status
 - c) Provide Templates for Cataloging
 - d) Provide Site Mandatory Fields
 - e) Auto Population of Meta-Data via
 - f) NITF Header
 - g) Query SRC for TGT ID
 - h) Import of Single Product to Multiple IPLs
 - i) Parsing IPL v1.0 Data Files for Auto-population of Meta-data
 - j) Brokered Log-in Password for Cataloging

3.1.6 **Performance**

- 3.1.6.1 Broadsword shall pass information to the respective system within five seconds when processing queries out to source systems from client systems or passing gathered information back to the querying client system.

3.2 **Client**

3.2.1 **General**

- 3.2.1.1 Broadsword shall support remote access.
- 3.2.1.2 Broadsword shall feature unitary logon.
- 3.2.1.3 Broadsword shall store individual user preference.

3.2.2 **Preferences**

- 3.2.2.1 **Information Support**

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3.2.2.1.1 Broadword shall support a single place where the user provides personal data. As a minimum the following information is necessary:

1. Name
2. Organization
3. Office Symbol
4. E-mail Address
5. Unclassified Telephone Number
6. Secure Telephone Number
7. Mailing Address
8. Defense Courier Service Address

3.2.2.1.2 Broadword shall allow the user to choose their default first page.

3.2.2.1.3 Broadword shall normalized the available conversion and compression capabilities already provided for by the existing imagery libraries.

3.2.2.1.4 Broadword shall provide user selectable conversion to support the following :

FROM/TO	NITF 2.0	NITF 1.1	SunRaster	TIFF 6.0
NITF 2.0		N/A	√	√
NITF 1.1	√		√	√
SunRaster	√	√		√
TIFF 6.0	√	√	√	

3.2.2.1.5 Broadword shall provide a set of user selectable compression ratios. As a minimum the following compression capabilities shall be available:

1. Compression of NITF 2.0, 8 and 12 bit gray scale images via JPEG 12 bit
2. Compression of NITF 2.0, 24 bit color images via JPEG 24 bit
3. Kodak Downsampling Algorithm for NITF 2.0 images
4. Compression of NITF 1.1, 8 bit gray scale images via ARIDPCM using rates of 0.75, 1.40, 2.30, and 4.50
5. JPEG compression for both TIFF 6.0 and SunRaster

3.2.2.1.6 Broadword shall allow the user to set the compliance level of their imagery viewer to insure that those products returned will be viewable by their application.

3.2.2.1.7 Broadword shall provide the capability for concept-based search.

3.2.2.2 Delivery Options

3.2.2.2.1 Broadword shall allow the user to define a default delivery address and directory where products shall be delivered to (via FTP). Also, for the user shall be able to request only the product or both the product and any metadata.

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- 3.2.2.2.2 Broadsword shall allow the user to set a default destination for those deliveries that are made via a mail or courier service.
- 3.2.2.3 Search Tool
 - 3.2.2.3.1 Broadsword shall feature user selectable sources accessing local, distributed and/or a combination of sources simultaneously or in a user-specified order.
 - 3.2.2.3.2 Broadsword shall provide source dependent information.
 - 3.2.2.3.3 Broadsword shall provide the capability to search by keyword, geographically and by specific query. The available utility shall be user selectable. Combinations of geographic with query or keyword shall also be allowed.
 - 3.2.2.3.4 Broadsword shall provide query capability as user selectable:
 - a. Short form option;
 - b. An advanced form option.
 - 3.2.2.3.5 Broadsword shall provide geographic search as user selectable;
 - a. A text form option;
 - b. A graphical, map-based interface option.
 - 3.2.2.3.6 Broadsword shall allow established and stored defaults and user selectable preferences for query, product request, and product transfer.
 - 3.2.2.3.7 Broadsword shall allow individual users the ability to save, load and delete queries.
 - 3.2.2.3.8 Broadsword shall allow configurable limits on the number of responses per source.
- 3.2.2.4 Results
 - 3.2.2.4.1 Broadsword shall provide the user with the ability to select how many items will be returned at one time on the results page.
 - 3.2.2.4.2 Broadsword shall provide the user with the ability to turn on/off the display of thumbnails for those sources that return thumbnails.
 - 3.2.2.4.3 Broadsword shall provide user selectable return elements.
 - 3.2.2.4.4 Broadsword shall provide the user with the ability to perform up to a two layer sort on any of the items that have been chosen by the user to be returned.
 - 3.2.2.4.5 Broadsword shall permit query screens to be tailored to user specified attributes.

3.2.3 Search

3.2.3.1 Broadsword shall support a date range search.

3.2.3.2 Broadsword shall accept UNICODE search strings.

3.2.3.3 Find

3.2.3.3.1 Broadsword shall provide the capability to search for information based on a keyword or a Boolean expression of keywords. As a minimum, the find utility shall support the following functionality:

1. case-insensitive and case-sensitive queries;
2. the ability to match parts of words, whole words, or multiple word phrases (like "resource discovery");
3. Boolean (AND/OR) combinations of keywords;
4. approximate matches (e.g., allowing spelling errors);
5. structured queries (which allow you to constrain matches to certain fields);
6. the ability to show matched lines or entire matching records (e.g., for citations);
7. the ability to specify limits on the number of matches returned;
8. allowing unlimited prefix or suffix by using "wild cards" which must be enclosed within parentheses (e.g., (*)).

3.2.3.4 Query Support

3.2.3.4.1 Broadsword shall have access to user selected data elements and products consistent with available interfaces and access granted by the information source.

3.2.3.4.2 Broadsword shall identify those attributes that are common across the selected sources.

3.2.3.4.3 Broadsword shall provide a site configured list of valid values, a selection menu containing those values will be displayed in the Value column.

3.2.3.4.4 Broadsword shall provide query capability in batch mode.

3.2.3.5 Short Form

3.2.3.5.1 Broadsword shall provide context sensitive Help on the attributes.

3.2.3.5.2 Broadsword shall support user configurable list of attributes.

3.2.3.5.3 Broadsword shall support the following comparison operators: equal, not equal, greater than, less than, like, not like.

3.2.3.5.4 Broadsword shall "And" attributes containing a user supplied value to form a query.

3.2.3.6 Advanced Form

3.2.3.6.1 Broadsword shall support creating a query from a pop-down list of available attributes.

3.2.3.6.2 Broadsword shall support user configurable list of attributes.

3.2.3.6.3 Broadsword shall support the following comparison operators: equal, not equal, greater than, less than, like, not like.

3.2.3.6.4 Broadsword shall support “AND” and “OR” Boolean operators.

3.2.3.6.5 Broadsword shall allow up to six search conditions connected with Boolean operators on a query.

3.2.3.7 Geographic Search

3.2.3.7.1 Broadsword shall provide both a text and a graphical map-based geographic search. Geographic coordinates can be entered in either Latitude/Longitude or UTM.

3.2.3.7.1.1 Text Interface

3.2.3.7.1.2 Broadsword shall support point search; the user defines the point by entering a single coordinate.

3.2.3.7.1.3 Broadsword shall support circle search; the user defines the circle by entering a center coordinate and radius in either meters or nautical miles.

3.2.3.7.1.4 Broadsword shall support searches on polygons with at least three and no more than six vertices.

3.2.3.7.2.1 Map-based Interface

3.2.3.7.2.2 Broadsword shall provide the ability to create a map of interest through a combination of zooming and panning on successive maps.

3.2.3.7.2.3 Broadsword shall support point search; the user defines the point by clicking on the map at the desired location. This selected point will be displayed on the map with a "cross".

3.2.3.7.2.4 Broadsword shall support circle search; the user defines the circle by clicking on the map twice. First to define the center point and second to define the radius of the circle. The user defined circle will be displayed on the map.

3.2.3.7.2.5 Broadsword shall support graphical searches on polygons with at exactly four vertices (rectangle). The user defines the rectangle by clicking on the map twice. First to define the upper left corner of the rectangle and second to define the lower right corner of the rectangle. The user defined rectangle will be displayed on the map.

3.2.4 Results

3.2.4.1 Broadsword shall identify to the user when querying across different networks at the same classification, results in apparent duplicative or conflicting information, highlighting this information to the user so that they may review and resolve the discrepancy, along with assistance to assess different dates, sources and reliability.

3.2.4.2 Broadsword shall be able to display retrieved information as a list, graphically on a map, or timeline. Format for retrieved information shall be user selectable. All retrieved information display formats will provide the user with the ability to order the displayed products.

3.2.4.3 Broadsword shall support a list format such that retrieved information is shown in a list format and shall display a summary of information which is available for each "hit". The attributes displayed are user configurable.

3.2.4.4 Broadsword shall support a map based format such that retrieved information is shown on a map and will contain an appropriate symbol drawn on the map at the target coordinate location for each "hit". The following features, as a minimum shall be:

- a) The map used to display the retrieved information will be of a scale that is appropriate for the geographic locations of the "hits".
- b) Hits that can not be displayed on the map will be displayed using the list format.
- c) The user will be able to see a summary of the information available for any "hit" by clicking on the symbol for that "hit" on the map.
- d) The ability draw a rectangle on the returned map will be provided. This rectangle will be used to enclose products that are to be ordered and to define a zoom area.

3.2.4.5 Broadsword shall support a timeline format such that retrieved information is shown in a user configurable segment of time and shall display a summary of information which is available for each "hit". The attributes displayed are user configurable.

3.2.4.6 Broadsword shall provide capability to identify the source of retrieved information gathered from a query involving multiple source organizations.

3.2.4.7 Broadsword shall provide query status message(s) to client system users with the following information, which can be turned off or activated, by the user:

Source(s) not available.

Sources(s) slow in returning data.

Volume of information available in response to request.

How accurately response appears to meet requester's needs, to include duplicative data.

Time estimate of when response shall arrive.

3.2.4.8 Broadsword shall provide the users the ability to modify a query based on initial data, i.e., volume and response time, returned to user.

3.2.5 Retrieval

3.2.5.1 Ordering Products

3.2.5.1.1 Broadsword shall allow orderable products to be placed in a shopping cart with the following features:

- a) The shopping cart shall be divided into a number of bins – each containing products requiring the same ordering information
- b) Each bin will support the ability to edit the order information that is the same for all products and the ability to edit the order information for a specified product
- c) Products placed in the shopping cart shall be saved from session to session and only removed when the product has been ordered
- d) Maintenance of the cart shall be provided. As a minimum, the user can delete specific entries in the cart or clear the cart in its entirety

3.2.5.2 Broadsword shall provide for brokered login on the electronic delivery page.

3.2.5.3 Order Status

3.2.5.3.1 Broadsword shall display the order status log in order for the user to know where in the process, when an ordered product has become available.

3.2.5.3.2. Broadsword shall maintain the order status log, as a minimum, the user can delete specific entries in the log or clear the log in its entirety

3.2.6 Managed Requests

3.2.6.1 Broadsword shall provide a capability to manage queries and query processing parameters for later use.

- 3.2.6.2 Broadsword shall provide two types of managed requests: interactive and background.
- 3.2.6.3 Broadsword shall incorporate the querying capabilities described in Sections 4.0 and 5.0 into the Managed Requests capability, with retrieved information being available to the target client application/system through the Broadsword Data Standard.
- 3.2.6.4 Broadsword shall provide the capability to share managed requests with other users and at other sites.
- 3.2.6.5 Interactive Processing
- 3.2.6.5.1 Broadsword shall allow the user to immediately execute a query which had been previously saved.
- 3.2.6.5.2 Broadsword shall utilize the user's current Search Preferences when the query is executed.
- 3.2.6.6 Background Processing
- 3.2.6.6.1 Broadsword background processing shall be functional while the user's session is not active or the terminal is logged off. This shall preclude the need for the user to remain signed-on and present at the terminal during queries which require a large amount of time to process.
- 3.2.6.6.2 Broadsword shall provide two vehicles for background processing: batch and e-mail.
- 3.2.6.6.3 Broadsword shall utilize independent batch and e-mail profile parameters to override the current Search Preferences when a query is executed.
- 3.2.6.7 Scheduled/Batch Processing
- 3.2.6.7.1 Broadsword shall permit queries to be processed at a later time or date specified by the user.
- 3.2.6.7.2 Broadsword shall provide optional notification to the user via e-mail upon completion of batch processing.
- 3.2.6.7.3 Broadsword shall allow selection of Sequential or Simultaneous search.
- 3.2.6.7.4 Broadsword shall support querying of all data sources to which the user is allowed access.

- 3.2.6.7.5 Broadsword shall allow cancellation of the batch job when it is pending in the batch queue or while it is actually processing. The user shall be allowed to cancel batch jobs which are owned by him/her. The Site Administrator shall be allowed to cancel any Broadsword-generated batch job.
- 3.2.6.8 Brilliant Push (E-mail Notification) Processing
- 3.2.6.8.1 Broadsword shall provide an automated method of updating product information returned in response to earlier queries when their source information changes.
- 3.2.6.8.2 Broadsword shall replace existing client systems' product distribution capabilities with subject-automated notification functions.
- 3.2.6.8.3 Broadsword shall provide INTELINK users a real-time service which automatically notifies individual users of changes in key product information which they have identified for this capability.
- 3.2.6.8.4 Broadsword shall provide the capability to profile specific information requirements of intelligence systems that is time-critical to their operation, then monitor the JWICS/SIPRNET/NIPRNET environment for subject information changes that satisfy the e-mail profile. This information shall then be automatically provided to specific users.
- 3.2.6.8.5 Broadsword shall provide users selectable data sources at specific organizations. The Notification Processing shall support querying of IPA, IPL and 5D data sources. Data sources shall be limited to those which the user is allowed access. Other sources will be added for future releases.
- 3.2.6.8.6 Broadsword shall provide the users with the ability to set the frequency at which they shall receive e-mail notification. The frequency shall be based on multiples of the site-determined minimum interval for processing e-mail profiles.
- 3.2.6.8.7 Broadsword shall allow the user to suppress e-mail notification when there are no products matching the profile specifications.
- 3.2.6.8.8 Broadsword shall allow the user to specify an active duration for an e-mail profile. When the duration interval elapses, the profile shall expire.
- 3.2.6.8.9 Broadsword shall allow the user to activate or deactivate profiles, while still retaining the profiles on the system.
- 3.2.6.8.9 Broadsword shall allow the Site Administrator to limit the E-mail Notification processing in order to support critical missions. The Site Administrator shall be able to set the minimum interval for processing profile data, restrict access to specific data sources at specified sites and restrict the elements which can be queried.

3.2.7 **Catalog**

- 3.2.7.1 Broadsword shall provide the user with the ability to catalogue/add new products to the co-located IPL database or to remote IPLs.
- 3.2.7.2 Broadsword shall allow site selectable templates for cataloging new products as well as the capability for each user to create and delete templates.
- 3.2.7.3 Broadsword shall allow site selectable mandatory fields when cataloging new products.
- 3.2.7.4 Broadsword shall allow IESS and MIDB auto-population of fields when cataloging new products.
- 3.2.7.5 Broadsword shall support the cataloging of Multi-Products and Multi-Image Products.
- 3.2.7.6 Broadsword shall allow site selectable mandatory fields when cataloging new products.
- 3.2.7.7 Broadsword shall parse IPL data file fields when cataloging with the IPL data file header method.
- 3.2.7.8 Broadsword shall parse NITF 2.0 metadata fields when cataloging with the NITF header method.
- 3.2.7.9 Broadsword shall verify metadata fields when cataloging.

3.2.8 **Administration**

- 3.2.8.1 Broadsword shall provide system status.
- 3.2.8.1.1 Broadsword shall allow daemon management; such as:
 - a) displaying the status of daemons,.
 - b) allowing start/stop daemon.
- 3.2.8.1.2 Broadsword shall allow debug flags to be turned on/off; selectively or the entire set.
- 3.2.8.1.3 Broadsword shall display the option to view the log file containing the debug flags messages.
- 3.2.8.1.4 Broadsword shall provide queue maintenance, such as:
 - a) viewing the queue entries;
 - b) updating queue display;
 - c) deleting queued messages.

- 3.2.8.1.5 Broadsword shall provide system log maintenance, such as:
 - a) viewing the file system path name, total size, used portion (size), available portion (size), and capacity;
 - b) updating display;
 - c) allowing the log to be cleared.

- 3.2.8.2 Broadsword shall provide system statistics, such as:
 - a) graphical representation of the number of hits in a weekly chronology;
 - b) graphical representation of the number of home page accesses in a weekly chronology;
 - c) annual reports selectable by week containing transfer rates, most viewed pages, access code results, and most active sites.

- 3.2.8.3 Broadsword shall allow user maintenance, such as:
 - a) allowing privileges to be added/removed,
 - b) allowing sources to be added/removed.

- 3.2.8.4 Broadsword shall provide system configuration.

- 3.2.8.4.1 Broadsword shall allow queriable elements to be selected (on/off) for display on the short form and the advanced form individually.

- 3.2.8.4.2 Broadsword shall allow data elements to be configured by display name, help text, data list item addition, and data list item deletion.

- 3.2.8.4.3 Broadsword shall provide site selectable time out lengths for the server, pulling products, file removal, and retrieving thumbnails.

- 3.2.8.4.4 Broadsword shall allow gatekeeper configuration.

- 3.2.8.4.5 Broadsword shall list other configured gatekeepers, co-located and remote.

- 3.2.8.4.6 Broadsword shall allow sites to add sources, remove sources, and set initial access control.

- 3.2.8.3.7 Broadsword shall allow sites to reset the home page access counter.

- 3.2.8.3.8 Broadsword shall allow sites to enter the email directory and the cataloging input directory.

3.2.9 **ISSO**

3.2.9.1 Broadsword shall provide audit reporting on:

- Query
- Transfer Request
- Gatekeeper Startup
- Gatekeeper Shutdown
- User Login
- User Logout
- Remove DAC
- Remove Source
- Remove User Priviledge
- Get audit report
- Dump Audit Report
- Delete Audit Report
- Adminlock
- Adminunlock
- Set System Parameters
- Set Source
- Add User Priviledge
- Add New Source
- Add Group Member
- Modify Element
- Set User DAC

3.2.9.2 Broadsword shall provide audit report generation by:

- a) user and/or;
- b) date.

3.2.9.3 Broadsword shall allow audit reports to be archived.

3.2.9.4 Broadsword shall allow audit reports to be removed.

3.2.10 Other Services

3.2.10.1 Broadsword shall provide the capability to index retrieved HTML text and/or unstructured web-based information/products, then assign community standard metadata tags to that information for local storage.

3.2.10.2 Broadsword shall include the capability to associate web-based products to standard databases, for example: a post mission debrief, imagery, intercepts and video to a target identification.

3.2.10.3 Broadsword shall interact with future data fusion tools.

- 3.2.10.4 Broadsword shall be able to format extracted information for rapid manipulation by local site's application(s).
- 3.2.10.5 Broadsword shall provide capability for user to provide feedback (email) to data source owner pertaining to suspected problems (accuracy, currency, etc.,) with retrieved information.
- 3.2.10.6 Broadsword shall provide for Java class Application Programmer Interfaces (APIs).

3.3 External Interface Requirements

3.3.1 AMHS

- 3.3.1.1 Broadsword shall support the Intelink interface to perform query and message retrieval from AMHS.
- 3.3.1.2 Broadsword shall provide the capability to query AMHS using the Find capability 3.2.3.3.
- 3.3.1.3 Broadsword shall provide the capability to query AMHS using the Query capability 3.2.3.4.
- 3.3.1.4 Broadsword shall provide the capability to view AMHS messages.
- 3.3.1.5 Broadsword shall provide the capability to map AMHS attributes to Federated Schema.

3.3.2 5D

- 3.3.2.1 Broadsword shall provide the capability to query 5D using the Query capability 3.2.3.4.
- 3.3.2.2 Broadsword shall provide the capability to query 5D using the Geographic Search capability 3.2.3.7 via point, circle, or polygon search on the Target table only.
- 3.3.2.3 Broadsword shall provide the capability to order 5D products.
- 3.3.2.3 Broadsword shall provide the capability to view 5D products.
- 3.3.2.4 Broadsword shall report the status of 5D ordered products.
- 3.3.2.5 Broadsword shall display 5D thumbnails.

3.3.2.6 Broadsword shall provide conversion and compression of 5D products.

3.3.2.7 Broadsword shall map 5D elements to Federated Schema.

3.3.2.8 Broadsword shall retrieve Multi-Image products from 5D.

3.3.3 IESS

3.3.3.1 Broadsword shall provide the capability to query the Host, Database System (HDBS), either the Image Exploitation Support System (IESS) or (NPIC Data System (NDS), to determine IDEX II holdings.

3.3.3.2 Broadsword shall provide the capability to query IESS using the Geographic Search capability 3.2.3.7 via point, circle, or polygon search on the Image or Target table.

3.3.3.4 Broadsword shall retrieve on-line reports; History of Coverage, Imagery Interpretation Reports, Standing Requirements, and Target Details.

3.3.3.5 Broadsword shall map IESS elements to Federated Schema.

3.3.4 IPA v1.2.3/IPL v1.0

3.3.4.1 Broadsword shall provide the capability to query IPA v1.2.3/IPL v1.0 using the Find capability 3.2.3.3.

3.3.4.2 Broadsword shall provide the capability to query IPA v1.2.3/IPL v1.0 using the Query capability 3.2.3.4.

3.3.4.3 Broadsword shall provide the capability to query IPA v1.2.3/IPL v1.0 using the Geographic Search capability 3.2.3.7 via point, circle, or polygon search on the Image or Target table.

3.3.4.4 Broadsword shall provide the capability to view IPA v1.2.3/IPL v1.0 products.

3.3.4.5 Broadsword shall provide the capability to order IPA v1.2.3/IPL v1.0 products.

3.3.4.6 Broadsword shall report the status of ordered IPA v1.2.3/IPL v1.0 products.

3.3.4.7 Broadsword shall support the display of image thumbnails.

3.3.4.8 Broadsword shall provide product conversion and compression of IPA v1.2.3/IPL v1.0 products utilizing the source utilities or GateKeepers (should be configurable).

3.3.4.9 Broadsword shall retrieve Multi-file and Multi-Image products.

- 3.3.4.10 Cataloging on Broadword shall support mandatory fields as described by SPIA, for adding new products.
- 3.3.4.11 Broadword shall auto populate metadata via IESS.
- 3.3.4.12 Broadword shall provide the capability to accept, parse, and index metadata.
- 3.3.4.13 Broadword shall preserve NITF controlled and registered tags.

3.3.5 IPL v2.0

- 3.3.5.1 Broadword shall provide the capability to query IPL v2.0 using the Find capability 3.2.3.3.
- 3.3.5.2 Broadword shall provide the capability to query IPL v2.0 using the Query capability 3.2.3.4.
- 3.3.5.3 Broadword shall provide the capability to query IPL v2.0 using the Geographic Search capability 3.2.3.7 via point, circle, or polygon search on the Image or Target table..
- 3.3.5.4 Broadword shall provide the capability to view IPL v2.0 products.
- 3.3.5.5 Broadword shall provide the capability to order IPL v2.0 products.
- 3.3.5.6 Broadword shall report the status of IPL v2.0 ordered products .
- 3.3.5.7 Broadword shall support display of IPL v2.0 image thumbnails.
- 3.3.5.8 Broadword shall configure product conversion and compression for IPL 2.0 products.
- 3.3.5.9 Broadword shall retrieve Multi-file and Multi-Image IPL 2.0 products.
- 3.3.5.10 Broadword shall also provide GIAS compliant interface to IPL v2.0 and an API interface to IPL v2.0 (as described in APPENDIX VIII of the IPL v1.0 ICD),.
- 3.3.5.11 Broadword shall retrieve Multi-Products and Multi-Image products.
- 3.3.5.12 Broadword shall support two ways of requesting an IPL v2.0 image, full frame and Auto Chip. Chipping supports rectangular areas of interest.
- 3.3.5.13 Broadword shall map to Federated Schema.

3.3.6 **MIDB**

3.3.6.1 Broadsword shall provide the capability to query MIDB using the Query capability 3.2.3.4.

3.3.6.2 Broadsword shall provide the capability to query MIDB using the Geographic Search capability 3.2.3.7 via point, circle, or polygon search on the Target table only.

3.3.6.3 Broadsword shall provide the capability to view MIDB reports.

3.3.6.4 Broadsword shall map to Federated Schema.

3.3.7 **NDS**

3.3.7.1 Broadsword shall provide the capability to query NDS using the Query capability 3.2.3.4.

3.3.7.2 Broadsword shall provide the capability to query NDS using the Geographic Search capability 3.2.3.7 via point, circle, or polygon search on the Image table only.

3.3.7.3 Broadsword shall provide support through IPL, no plug-in is available for NDS.

3.3.8 **CSIL**

3.3.8.1 Broadsword shall provide the capability to query CSIL using the Query capability 3.2.3.4.

3.3.8.2 Broadsword shall provide the capability to query CSIL using the Geographic Search capability 3.2.3.7 via point or polygon (rectangle only) search on the Image table only.

3.3.8.3 Broadsword shall provide the capability to order CSIL products.

3.3.8.4 Broadsword shall report the status of CSIL products.

3.3.8.5 Broadsword shall use the user registration to identify a DIA work order to the specific user.

3.3.9 **IDEX**

3.3.9.1 Broadsword shall support automated retrieval/transmission of images, sub-images, and Reduce Resolution Data Sets (RRDS) from IDEX II.

- 3.3.9.2 Broadsword shall allow the exporting of imagery, or a portion of an image (image chip), based on a user defined "stretchy box" overlaid on a map or image.
- 3.3.9.3 Broadsword shall support two ways of requesting an IDEX Image; full frame and Auto Chip. Chipping supports both circular and rectangular areas of interest.
- 3.3.9.4 Broadsword shall report the status of IDEX products.
- 3.3.9.5 Broadsword shall provide the capability to order IDEX products.

3.3.10 Intelink Meta Search

- 3.3.10.1 Broadsword shall provide the capability to query Intelink using the Find capability 3.2.3.3.
- 3.3.10.2 Broadsword shall provide the capability to query Intelink using the Query capability 3.2.3.4.
- 3.3.10.3 Broadsword shall provide the capability to view Intelink products.
- 3.3.10.4 Broadsword shall provide the support Intelink v2.0 Meta-search.

3.3.11 Space Db

- 3.3.11.1 Broadsword shall provide the capability to query Space Db using the Find capability 3.2.3.3.
- 3.3.11.2 Broadsword shall provide the capability to query Space Db using the Query capability 3.2.3.4.
- 3.3.11.3 Broadsword shall provide the capability to query Space Db using the Geographic Search capability 3.2.3.7 via polygon search on the Target table only.
- 3.3.11.4 Broadsword shall support the query/retrieval of DISOB, DISOB-SUP, SPACE LOG, SLV, MISSION, FACILITY, LAUNCH and SOB reports from Sybase Database.

3.3.12 NIMA Libraries

- 3.3.12.1 Broadsword shall provide a GIAS compliant interface to NIMA Libraries.

3.3.13 Information Access Services

3.3.13.1 Broadsword shall provide a GIAS compliant interface to Information Access Services.

3.3.14 Intelink Hydra

3.3.14.1 Broadsword shall provide the capability to query Intelink using the Find capability 3.2.3.3.

3.3.14.2 Broadsword shall provide the capability to query Intelink using the Query capability 3.2.3.4.

3.3.14.3 Broadsword shall provide the capability to view Intelink products.

3.3.15 JIVA ISM

3.3.15.1 Broadsword shall provide the capability to query JIVA ISM using the Find capability 3.2.3.3.

3.3.15.2 Broadsword shall provide the capability to query JIVA ISM using the Query capability 3.2.3.4.

3.3.16 Sensor WEB

3.3.16.1 Broadsword shall display Sensor Web data dynamically on a geographic map presentation.

3.3.17 MEPED

3.3.17.1 Broadsword shall provide the capability to query MEPED using the Find capability 3.2.3.3, searching against equipment nomenclature, equipment alligence, and producer country only.

3.3.17.2 Broadsword shall provide the capability to query MEPED using the Query capability 3.2.3.4, searching against equipment nomenclature, equipment alligence, and producer country only.

3.3.17.3 Broadsword shall retrieve on-line reports; Overview, Using Country, Producer Country, Browse, Associated Systems, Alaises, and Point of Contact (POC) .

3.3.18 Others

3.3.18.1 Broadsword future releases shall interface with the following sources:

MDITDS
COLISEUM
GCCS TC4I/TBMCS
WRANGLER
RMS
PATHFINDER
SAFE
DMS
ALE
NACDF
UAV VIDEO ARCHIVE
TRAP

3.4 Internal Interface Requirements

3.4.1. Broadsword shall launch applications or viewers such as: Image Viewers, MPEG Players, QuickTime Players, Audio Players, Document Viewers, and FTP Servers.

3.4.2. Broadsword shall be able to accurately process date data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, including leap year calculations.

3.5 Internal Data Requirements

This section has no requirements.

3.6 Adaptation Requirements

This section has no requirements.

3.7 Safety Requirements

This section has no requirements.

3.8 Security and Privacy Requirements

3.8.1 Broadsword shall function separately on SCI (JWICS), collateral (SIPRNET) unclassified (NIPRNET) and unclassified sensitive systems

- 3.8.2 Broadsword shall meet all applicable security requirements (i.e., auditing user access, logging system use, etc.,) to be accredited for use at the SCI level at any DoDIIS site.
- 3.8.3 Broadsword shall be accessed by Login accounts which will be obtained by contacting the System Administrator when Broadsword is configured as a Protected. A separate access list is not required.
- 3.8.4 Broadsword shall allow access as a registered server. A separate access list is not required.
- 3.8.5 Broadsword shall send a user ID and password to the gatekeeper for login.
- 3.8.6 Broadsword must meet C2 System High security accreditation criteria.
- 3.8.7 Broadsword gatekeeper shall provide audit logs per source.
- 3.8.8 Broadsword shall provide site selectable audit logs events.
- 3.8.9 Broadsword shall provide audit archives by batch mode.
- 3.8.10 Broadsword shall allow audit archives to be stored on any accessible nfs mounted server.

3.9 Environment Requirements

- 3.9.1 Broadsword shall be capable of operating on and across all DoDIIS specified Target Operating Systems (TOS's).
- 3.9.2 Broadsword shall be DII COE and C4ISR Architecture Framework compliant in addition to meeting current CSE-SS requirements.
- 3.9.3 Broadsword outputs shall be configurable to allow basic functionality over narrow communications lines using laptop i.e., field deployed PCs connecting via INTELINK, operating at 36KBS.
- 3.9.4 Broadsword shall provide site modifiable home page to include site logo, words, hot links, etc.

3.10 Computer Resource Requirements

This section has no requirements.

3.11 Software Quality Factors

- 3.11.1 Broadsword shall provide a Project Broadsword Interface based architecture in accordance with DoDIIS standards and develop a standard ICD/API document that describes the Broadsword /server interface.
- 3.11.2 Broadsword shall be Defense Information Infrastructure (DII)/Common Operating Environment (COE) Level 3 (at a minimum) Compliant.
- 3.11.3 Broadsword shall be compliant with the Defense Data Dictionary Standard.
- 3.11.4 Broadsword shall use an evolutionary design approach providing incremental capabilities.
- 3.11.5 Broadsword shall employ Best Commercial Practices for Reliability, Maintainability, and Availability (RMA) including but not limited to error handling, limit checking, and performance enhancements.

3.12 Design and Implementation Constraints

- 3.12.1 Broadsword queries shall use the wildcard characters (@, #, ? and *) that are defined in the DoD HCI Style Guide.
- 3.12.2 Broadsword queries shall use Comparison Operators are = (equal), <> (not equal), > (greater than), < (less than), like, and not like.
- 3.12.3 Broadsword shall use Boolean logic, including negative logic, to support all queryable Project Broadsword elements.
- 3.12.4 Broadsword shall use the HTML 3.2 Style Guide for development of the client software.

3.13 Personnel-related Requirements

This section has no requirements.

3.14 Training-related Requirements

- 3.14.1 Broadsword shall provide an easy-to-understand working aids and “cheat sheets” to assist users.
- 3.14.2 Broadsword shall provide on-line help, which is electronically formatted suitable for printing.

- 3.14.3 Broadsword shall include an on-line tutorial featuring state-of-the-art computer-based training.
- 3.14.4 Broadsword shall be segmented to address the various functional areas of Broadsword.
- 3.14.5 Broadsword's On-line tutorial shall provide measurements stored for each user so a supervisor can assess the competency of a Broadsword user to exploit this tool.
- 3.14.6 Broadsword's On-line tutorial shall be compliant with DoD direction for such support.
- 3.14.7 Broadsword Program Office shall provide 9 AM through 5 PM, Monday through Friday, accessible help desk (after-hours answering machine).
- 3.14.8 Broadsword shall provide on-line video clip demonstrations.
- 3.14.9 Broadsword shall provide hot links to describe table elements as found in the user's manual which describes the elements and provide a number of valid examples.
- 3.14.10 Broadsword will support remote diagnostics and maintenance efforts.

3.15 Logistics-related Requirements

- 3.15.1. The auto install process shall enable the users to install and configure Project Broadsword Interface at their sites.
- 3.15.2. The Broadsword Interface shall support remote downloading of software.

3.16 Other Requirements

This section has no requirements.

3.17 Packaging Requirements

This section has no requirements.

3.18 Precedence and Criticality of Requirements

This section has no requirements.

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This section has no requirements.

5.0 Requirements Traceability

REQUIREMENT NUMBER	ORIGINATOR	VERSION
3.0.1	Broadsword PMO	1.0
3.0.2	USSPACECOM	1.0
3.0.3	DIA	1.0
3.0.4	Broadsword PMO	2.0
3.1 Gatekeeper Core Requirements		
3.1.1 General Support		
3.1.1.1	AIA	1.0
3.1.1.2	IESS PM & DIA	1.0
3.1.1.2.1	Broadsword PMO	3.0
3.1.1.2.2	Broadsword PMO	3.0
3.1.1.2.3	Broadsword PMO	3.0
3.1.1.3	Broadsword PMO	2.0
3.1.1.4	Broadsword PMO	1.0
3.1.1.5	NSA	1.0
3.1.1.5.1	ASA	1.0
3.1.1.5.2	USSOCOM	1.0
3.1.1.5.3	AIA	1.0
3.1.1.6	Broadsword PMO	3.0
3.1.1.7	Broadsword PMO	3.0
3.1.1.8	Broadsword PMO	1.0
3.1.2 Client Support		
3.1.2.1	Broadsword PMO	1.0
3.1.2.2	Broadsword PMO	1.0
3.1.2.3	Broadsword PMO	1.0
3.1.2.4	Broadsword PMO	3.0
3.1.2.5	NIM	2.0
3.1.2.6	AIA	1.0
3.1.2.7	IESS PM	3.0
3.1.2.8	IESS PM	3.0
3.1.2.9	NSA	1.0
3.1.2.10	Broadsword PMO	1.0
3.1.2.11	Broadsword PMO	1.0
3.1.2.12	Broadsword PMO	1.0
3.1.2.13	USTRANSCOM	1.0

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REQUIREMENT NUMBER	ORIGINATOR	VERSION
3.1.2.14	Broadsword PMO	1.0
3.1.2.15	Broadsword PMO	1.0
3.1.2.16	AIA	1.0
3.1.2.17	Broadsword PMO	1.0
3.1.2.18	Broadsword PMO	2.0
31.3 Configuration and Administration. Support		
3.1.3.1	Broadsword PMO	1.0
3.1.3.2	Broadsword PMO	1.0
3.1.3.3	Broadsword PMO	1.0
3.1.3.4	Broadsword PMO	1.0
3.1.3.5	Broadsword PMO	1.0
3.1.3.6	USSPACECOM	1.0
3.1.3.7	Broadsword PMO	1.0
3.1.3.8	Broadsword PMO	1.0
3.1.3.9	Broadsword PMO	2.0
3.1.4 Security Support		
3.1.4.1	Broadsword PMO	1.0
3.1.4.2	Broadsword PMO	1.0
3.1.4.3	Broadsword PMO	1.0
3.1.5 Catalog Support		
3.1.5.1	Broadsword PMO	1.0
3.1.5.2	Broadsword PMO	1.0
3.1.6 Performance		
3.1.6.1	IESS PM	1.0
3.2 Client		
3.2.1 General		
3.2.1.1	AIA	1.0
3.2.1.2	AIA	1.0
3.2.1.3	Broadsword PMO	1.0
3.2.2 Preference		
3.2.2.1 Information Support		
3.2.2.1.1	Broadsword PMO	1.0
3.2.2.1.2	Broadsword PMO	1.0
3.2.2.1.3	STRANSCOM	1.0
3.2.2.1.4	Broadsword PMO	1.0
3.2.2.1.5	Broadsword PMO	1.0
3.2.2.1.6	Broadsword PMO	1.0
3.2.2.1.7	AIA & NSA	3.0
3.2.2.2 Delivery Options		
3.2.2.2.1	SOCOM	1.0
3.2.2.2.2	Broadsword PMO	1.0
3.2.2.3 Search Tool		

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REQUIREMENT NUMBER	ORIGINATOR	VERSION
3.2.2.3.1	AIA	1.0
3.2.2.3.2	Broadsword PMO	1.0
3.2.2.3.3	AIA	1.0
3.2.2.3.4	Broadsword PMO	1.0
3.2.2.3.5	AIA	1.0
3.2.2.3.6	Broadsword PMO	1.0
3.2.2.3.7	Broadsword PMO	2.0
3.2.2.3.8	Broadsword PMO	2.0
3.2.2.4 Results		
3.2.2.4.1	Broadsword PMO	1.0
3.2.2.4.2	Broadsword PMO	1.0
3.2.2.4.3	Broadsword PMO	1.0
3.2.2.4.4	Broadsword PMO	1.0
3.2.2.4.5	AIA	1.0
3.2.3 Search		
3.2.3.1	Broadsword PMO	1.0
3.2.3.2	NSA	1.0
3.2.3.3 Find		
3.2.3.3.1	Broadsword PMO	1.0
3.2.3.4 Query Support		
3.2.3.4.1	AIA	1.0
3.2.3.4.2	Broadsword PMO	1.0
3.2.3.4.3	Broadsword PMO	1.0
3.2.3.4.4	Broadsword PMO	2.0
3.2.3.5 Short Form		
3.2.3.5.1	Broadsword PMO	1.0
3.2.3.5.2	Broadsword PMO	1.0
3.2.3.5.3	Broadsword PMO	1.0
3.2.3.5.4	Broadsword PMO	1.0
3.2.3.6 Advance Form		
3.2.3.6.1	Broadsword PMO	1.0
3.2.3.6.2	Broadsword PMO	1.0
3.2.3.6.3	Broadsword PMO	1.0
3.2.3.6.4	Broadsword PMO	1.0
3.2.3.6.5	Broadsword PMO	1.0
3.2.3.7 Geographic Search		
3.2.3.7.1	Broadsword PMO	1.0
3.2.3.7.1.1 Text Interface		
3.2.3.7.1.2	Broadsword PMO	1.0
3.2.3.7.1.3	Broadsword PMO	1.0
3.2.3.7.1.4	Broadsword PMO	1.0
3.2.3.7.2.1 Map-based Interface		
3.2.3.7.2.2	Broadsword PMO	1.0

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3.2.3.7.2.3	Broadsword PMO	1.0
3.2.3.7.2.4	Broadsword PMO	1.0
3.2.3.7.2.5	Broadsword PMO	1.0
3.2.4 Results		
3.2.4.1	USSPACECOM	2.0
3.2.4.2	Broadsword PMO	2.0
3.2.4.3	Broadsword PMO	1.0
3.2.4.4	Broadsword PMO	2.0
3.2.4.5	Broadsword PMO	2.0
3.2.4.6	ACC	1.0
3.2.4.7	IESS PM & USSPACECOM	3.0
3.2.4.8	USSPACECOM	3.0
3.2.5 Retrieval		
3.2.5.1 Ordering Products		
3.2.5.1.1	Broadsword PMO	1.0
3.2.5.2	Broadsword PMO	1.0
3.2.5.3 Order Status		
3.2.5.3.1	Broadsword PMO	1.0
3.2.5.3.2	Broadsword PMO	1.0
3.2.6 Managed Requests		
3.2.6.1	Broadsword PMO	2.0
3.2.6.2	Broadsword PMO	2.0
3.2.6.3	Broadsword PMO	2.0
3.2.6.4	Broadsword PMO	2.0
3.2.6.5 Interactive Processing		
3.2.6.5.1	Broadsword PMO	2.0
3.2.6.5.2	Broadsword PMO	2.0
3.2.6.6 Background Processing		
3.2.6.6.1	Broadsword PMO	1.0
3.2.6.6.2	Broadsword PMO	1.0
3.2.6.6.3	Broadsword PMO	2.0
3.2.6.7 Schedule/Batch Processing		
3.2.6.7.1	Broadsword PMO	1.0
3.2.6.7.2	Broadsword PMO	1.0
3.2.6.7.3	Broadsword PMO	2.0
3.2.6.7.4	Broadsword PMO	1.0
3.2.6.7.5	Broadsword PMO	2.0
3.2.6.8 Brilliant Push (E-mail Notification) Processing		
3.2.6.8.1	Broadsword PMO	1.0
3.2.6.8.2	Broadsword PMO	1.0
3.2.6.8.3	Broadsword PMO	1.0
3.2.6.8.4	Broadsword PMO	1.0
3.2.6.8.5	Broadsword PMO	1.0

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3.2.6.8.6	Broadsword PMO	2.0
3.2.6.8.7	Broadsword PMO	1.0
3.2.6.8.8	Broadsword PMO	1.0
3.2.6.8.9	Broadsword PMO	2.0
3.2.7 Catalog		
3.2.7.1	Broadsword PMO	1.0
3.2.7.2	Broadsword PMO	1.0
3.2.7.3	Broadsword PMO	2.0
3.2.7.4	Broadsword PMO	2.0
3.2.7.5	Broadsword PMO	1.0
3.2.7.6	Broadsword PMO	2.0
3.2.7.7	Broadsword PMO	1.0
3.2.7.8	Broadsword PMO	1.0
3.2.7.9	Broadsword PMO	1.0
3.2.8 Administration		
3.2.8.1	Broadsword PMO	1.0
3.2.8.1.1	Broadsword PMO	1.0
3.2.8.1.2	Broadsword PMO	1.0
3.2.8.1.3	Broadsword PMO	1.0
3.2.8.1.4	Broadsword PMO	1.0
3.2.8.1.5	Broadsword PMO	1.0
3.2.8.2	Broadsword PMO	1.0
3.2.8.3	Broadsword PMO	1.0
3.2.8.4	Broadsword PMO	1.0
3.2.8.4.1	Broadsword PMO	1.0
3.2.8.4.2	Broadsword PMO	1.0
3.2.8.4.3	Broadsword PMO	1.0
3.2.8.4.4	Broadsword PMO	1.0
3.2.8.4.5	Broadsword PMO	1.0
3.2.8.4.6	Broadsword PMO	1.0
3.2.8.4.7	Broadsword PMO	1.0
3.2.8.4.8	Broadsword PMO	1.0
3.2.9 ISSO		
3.2.9.1	Broadsword PMO	1.0
3.2.9.2	Broadsword PMO	1.0
3.2.9.3	Broadsword PMO	1.0
3.2.9.4	Broadsword PMO	1.0
3.2.10 Other Services		
3.2.10.1	AIA	3.0
3.2.10.2	AIA	3.0
3.2.10.3	AIA	3.0
3.2.10.4	AIA & DIA	3.0

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3.2.10.5	DIA	3.0
3.2.10.6	Broadsword PMO	3.0
3.3 External Interface Requirements		
3.3.1 AMHS		
3.3.1.1	Broadsword PMO	1.0
3.3.1.2	Broadsword PMO	1.0
3.3.1.3	Broadsword PMO	1.0
3.3.1.4	Broadsword PMO	1.0
3.3.1.5	Broadsword PMO	2.0
3.3.2	Broadsword PMO	
3.3.2.1	Broadsword PMO	1.0
3.3.2.2	Broadsword PMO	1.0
3.3.2.3	Broadsword PMO	1.0
3.3.2.4	Broadsword PMO	1.0
3.3.2.5	Broadsword PMO	1.0
3.3.2.6	Broadsword PMO	1.0
3.3.2.7	Broadsword PMO	2.0
3.3.2.8	Broadsword PMO	1.0
3.3.3	IESS	
3.3.3.1	Broadsword PMO	1.0
3.3.3.2	Broadsword PMO	1.0
3.3.3.3	Broadsword PMO	1.0
3.3.3.4	Broadsword PMO	1.0
3.3.3.5	Broadsword PMO	2.0
3.3.4	Broadsword PMO	1.0
3.3.4.1	Broadsword PMO	1.0
3.3.4.2	Broadsword PMO	1.0
3.3.4.3	Broadsword PMO	1.0
3.3.4.4	Broadsword PMO	1.0
3.3.4.5	Broadsword PMO	1.0
3.3.4.6	Broadsword PMO	1.0
3.3.4.7	Broadsword PMO	1.0
3.3.4.8	Broadsword PMO	1.0
3.3.4.9	Broadsword PMO	1.0
3.3.4.10	Broadsword PMO	1.0
3.3.4.11	Broadsword PMO	1.0
3.3.4.12	Broadsword PMO	1.0
3.3.4.13	Broadsword PMO	1.0
3.3.5	Broadsword PMO	1.0
3.3.5.1	Broadsword PMO	1.0
3.3.5.2	Broadsword PMO	1.0
3.3.5.3	Broadsword PMO	1.0
3.3.5.4	Broadsword PMO	1.0

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3.3.5.5	Broadsword PMO	1.0
3.3.5.6	Broadsword PMO	1.0
3.3.5.7	Broadsword PMO	1.0
3.3.5.8	Broadsword PMO	1.0
3.3.5.9	Broadsword PMO	1.0
3.3.5.10	Broadsword PMO	1.0
3.3.5.11	Broadsword PMO	1.0
3.3.5.12	Broadsword PMO	2.0
3.3.5.13	Broadsword PMO	2.0
3.3.6 MIDB		
3.3.6.1	Broadsword PMO	1.0
3.3.6.2	Broadsword PMO	1.0
3.3.6.3	Broadsword PMO	1.0
3.3.6.4	Broadsword PMO	2.0
3.3.7 NDS		
3.3.7.1	Broadsword PMO	1.0
3.3.7.2	Broadsword PMO	1.0
3.3.7.3	Broadsword PMO	1.0
3.3.8 CSIL		
3.3.8.1	DIA	1.0
3.3.8.2	DIA	1.0
3.3.8.3	DIA	1.0
3.3.8.4	DIA	1.0
3.3.8.5	DIA	1.0
3.3.9 IDEX		
3.3.9.1	Broadsword PMO	1.0
3.3.9.2	Broadsword PMO	1.0
3.3.9.3	Broadsword PMO	1.0
3.3.9.4	Broadsword PMO	1.0
3.3.9.5	Broadsword PMO	1.0
3.3.10 Intelink Meta Search		
3.3.10.1	Broadsword PMO	2.0
3.3.10.2	Broadsword PMO	2.0
3.3.10.3	Broadsword PMO	2.0
3.3.10.4	Broadsword PMO	2.0
3.3.10.5	Broadsword PMO	2.0
3.3.11 Space Db		
3.3.11.1	Broadsword PMO	2.0
3.3.11.2	Broadsword PMO	2.0
3.3.11.3	Broadsword PMO	2.0
3.3.11.4	Broadsword PMO	2.0
3.3.12 NIMA Libraries		
3.3.12.1	Broadsword PMO	

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3.3.13 Information Access Services		
3.3.13.1	Broadsword PMO	2.0
3.3.14 Intelink Hydra		
3.3.14.1	Broadsword PMO	2.0
3.3.14.2	Broadsword PMO	2.0
3.3.14.3	Broadsword PMO	2.0
3.3.15 JIVA ISM		
3.3.15.1	Broadsword PMO	2.0
3.3.15.2	Broadsword PMO	2.0
3.3.16 Sensor Web		
3.3.16.1	Broadsword PMO	2.0
3.3.17 MEPED		
3.3.17.1	Broadsword PMO	2.0
3.3.17.2	Broadsword PMO	2.0
3.3.17.3	Broadsword PMO	2.0
3.3.18 Others		
3.3.18.1	Broadsword PMO	3.0
3.4 Internal Interface Requirements		
3.4.1	Broadsword PMO	1.0
3.4.2	Broadsword PMO	2.0
3.8 Security and Privacy Requirements		
3.8.1	USSOCOM & USSPACECOM	1.0
3.8.2	NSA	1.0
3.8.3	Broadsword PMO	1.0
3.8.4	Broadsword PMO	1.0
3.8.5	Broadsword PMO	1.0
3.8.6	Broadsword PMO	1.0
3.8.7	Broadsword PMO	1.0
3.8.8	Broadsword PMO	2.0
3.8.9	Broadsword PMO	2.0
3.8.10	Broadsword PMO	2.0
3.9 Environment Requirements		
3.9.1	USSOCOM	1.0
3.9.2	DIA	1.0
3.9.3	Broadsword PMO	1.0
3.11 Software Quality Factors		
3.11.1	Broadsword PMO	1.0
3.11.2	Broadsword PMO	2.0
3.11.3	Broadsword PMO	1.0
3.11.4	Broadsword PMO	1.0
3.11.5	Broadsword PMO	1.0

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3.12 Design and Implementation Constraints		
3.12.1	Broadsword PMO	1.0
3.12.2	Broadsword PMO	1.0
3.12.3	Broadsword PMO	1.0
3.12.4	Broadsword PMO	1.0
3.14 Training-related Requirements		
3.14.1	USSOCOM	1.0
3.14.2	DIA	1.0
3.14.3	DIA	1.0
3.14.4	DIA	1.0
3.14.5	AIA & AETC	1.0
3.14.6	DIA	1.0
3.14.7	DIA	1.0
3.14.8	Broadsword PMO	1.0
3.14.9	Broadsword PMO	1.0
3.14.10	Broadsword PMO	1.0
3.15 Logistics-related Requirements		
3.15.1	Broadsword PMO	1.0
3.15.2	Broadsword PMO	1.0

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