FAA-E-2901C

Attachment B: Direct User Access Terminal Service (DUATS) Draft Specification

Flight Services Program Operations

September 2011

Federal Aviation Administration
800 Independence Avenue, SW
Washington, DC 20591

Change Record

Change Letter	Description of Change	Date	Changed By	Approved By

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1.0 SCOPE

1.1 Identification

This specification sets forth the functional and performance requirements for Direct User Access Terminal (DUAT) Service. To facilitate traceability, individual requirements have been assigned unique identification numbers encased in brackets (e.g., [000]). Appendix E to this specification contains a cross reference between specification paragraphs and identification numbers. References to Automated Flight Service Stations (AFSSs) and Flight Service Stations (FSSs) within the specification apply equally to both types of activities.

1.2 System Overview

DUAT Service is an Internet-based weather information and flight plan processing service provided by the Federal Aviation Administration (FAA) through designated Service Providers for United States civil aviation pilots and other authorized users. It allows pilots to use personal computers or remotely connected computer terminals to access an FAA database to obtain weather and aeronautical information, to file, amend, and cancel flight plans, and to close Visual Flight Rules [VFR] flight plans. Pilots can connect to the DUAT Service low-speed (ASCII) interface via a communications circuit providing toll free telephone numbers or to the high-speed interface using popular Internet web-browsers.

Major DUAT Service functions include the capabilities to:

(a) Provide a selection of weather information formats (standard, abbreviated or outlook) for routes or defined areas,
(b) Process flight plans and associated messages,
(c) Encode/decode location names and location identifiers (LOCIDs),
(d) Provide select weather graphic products,
(e) Provide information services to FAA offices, and
(f) Ensure that the security of the NAS is not compromised by the delivery of DUAT Service.

1.3 Document Overview

This document is organized as follows:

Section 1 This section includes the scope of the document.
Section 2 This section identifies documents applicable to this specification.
Section 3 This section includes the DUAT Service functional, performance and interface requirements.
Section 4 Reserved.

Section 5 This section identifies where an acronym list, definitions, and a glossary can be found.

2.0 APPLICABLE DOCUMENTS

The documents identified in Section J3 "Applicable Documents" of the DUAT Schedule form a part of this specification to the extent specified herein. The version of each document in effect on the date of the release of the Screening Information Request is the version that applies to all requirements.

2.1 Sources of Documents

2.1.1 Sources of FAA, Military and Federal Documents

The National Airspace System (NAS) Documentation Control Center (DCC) is the principal repository for NAS Configuration data and baselined documentation. Points of Contact for the DCC are:

U.S. Mail Address:
Federal Aviation Administration
800 Independence Avenue, S.W.
Room 700W, AJW-27
ATTN: NAS Documentation Control
Center (DCC)
Washington, DC 20591

Physical Location
600 Maryland Avenue, S.W.
Suite 700
Washington, DC 20024

Phone and Fax Numbers
(202) 548-5502 (voice mail)
(202) 548-5501 (Fax)

Document Drop-off and Pickup by Appointment Only; 8:00 a.m. to 4:00 p.m. (ET)

The DCC maintains an index, inventory, and storage for NAS related information including specifications, FAA Standards, and NAS interface documents. The DCC is the primary source within the FAA for the distribution of FAA Specifications, FAA Standards, Interface Requirement Documents (IRDs), and Interface Control Documents (ICDs). Documents may be ordered directly off the DCC Website, which is accessible through http://www.faa.gov/cm by clicking on the "Document Control Center" topic.

Some FAA Advisory Circulars (ACs) and some FAA Orders are available from the Regulatory and Guidance Library website at http://rgl.faa.gov. National Institute of Standards and Technology (NIST) documents may be obtained from its website at http://csrc.nist.gov/ publications/nistpubs or by phone at (301) 975-6478. The NIST address is:

The National Institute of Standards & Technology (NIST)
100 Bureau Drive
Stop 1070
Gaithersburg, MD 20899-1070

2.1.2 Sources of Other Documents

Technical society and technical association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal agencies.

2.1.2.1 Sources of International Telecommunication Union (ITU) Documents

ITU Documents may be obtained from their Website at **http://www.itu.int/publications** or from phone: +41 22 730 5111. The ITU's address is:

International Telecommunication Union (ITU)
Place des Nations
1211 Geneva 20
Switzerland

Note: Time in Switzerland is six (6) hours later than the East Coast Time Zone.

2.1.2.2 Sources of ICAO Documents

Copies of International Civil Aviation Organization (ICAO) documents may be requested from ICAO's Website (http://www.icao.int/fsix) or from (514) 954-8022. The ICAO's address is:

Document Sales Unit
International Civil Aviation Organization
999 University Street
Montreal, Quebec
Canada H3C 5H7

Payment is required.

3.0 REQUIREMENTS

3.1 Definition

DUAT Service is a real-time, multi-user, computer-based system that functions in direct response to user requests for aviation weather information and flight plan processing. An overview diagram indicating the functions and interfaces is shown in Figure 1, below.

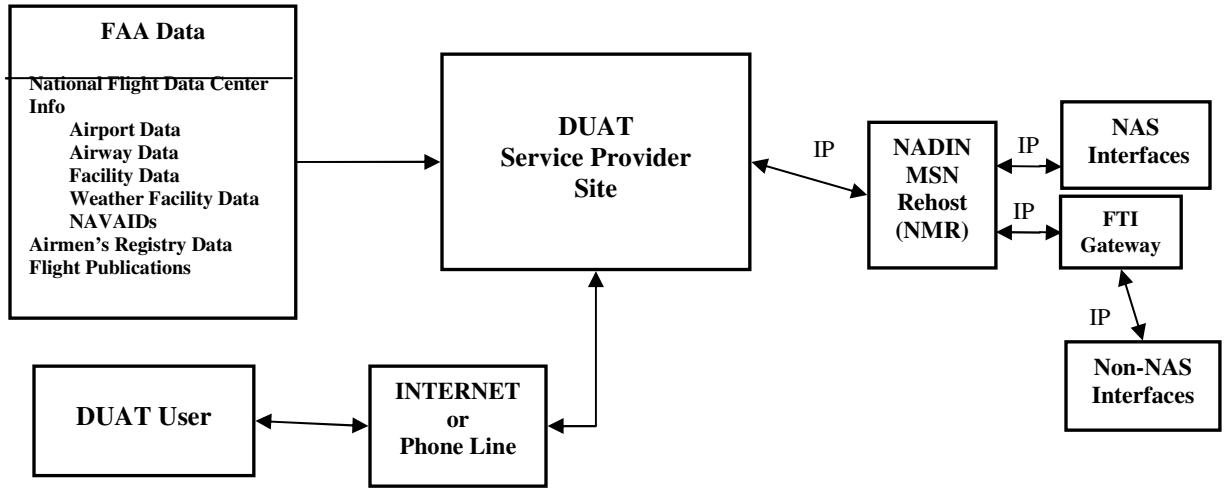

Figure 1: DUAT System Service Diagram

3.2 Characteristics

3.2.1 Functional Characteristic

The DUAT Service must provide:

(a) Current weather information, [001]
(b) Forecast weather information, [002]
(c) Notice to Airmen (NOTAM) [003] information,
(d) Flight planning service [004] to authorized users,
(e) Event reconstruction data to authorized FAA offices [082], and
(f) An online help function [159].

DUAT Service must be available [005] 24 hours a day, 7 days a week. It must [006] permit pilot users to connect to the service using toll free telephone numbers, or, at each pilot's discretion, through the use of popular Internet web-browsers. [810]

3.2.1.1 General Requirements

The SP's DUAT Service must be capable of performing the following functions concurrently:

(a) Automatically accept, process, and store meteorological and aeronautical information received from the Weather Message Switching Center Replacement (WMSCR) or other comparable system or service; [007]
(b) Accept and process requests from multiple users for DUAT Service functions simultaneously; [008]
(c) File, amend, and cancel domestic, ICAO, and domestic ICAO (refer to Appendix D for definition) Instrument Flight Rule (IFR), domestic and ICAO Visual Flight Rule (VFR) flight plans originating in the contiguous United States, Alaska, Hawaii, Puerto Rico and the U.S. Virgin Islands; [009]
(d) Close domestic VFR Flight Plans; [010]
(e) Accept, process, and file flight plan information and interface with Air Route Traffic Control Centers (ARTCCs), Automated Flight Service Stations (AFSSs), and Flight Service Stations (FSSs); [011]
(f) Automatically address flight plans; [012]
(g) Store and retrieve data for each transaction; [013]
(h) Provide weather and NOTAM information to users, including user-defined weather product collectives; [014]
(i) Provide Event Recording and Reconstruction processing; [015]
(j) Provide Data Retrieval for Search and Rescue; [016]
(k) Provide System Security; [017]
(l) Provide Activity Reports; [018]
(m) Provide Encode and Decode functions; [019]
(n) Meet Availability Requirements; [020]
(o) Provide flow control and air traffic advisory/delay information (unscheduled reports received from ATCSCC/Advisory); [021]
(p) Provide information on airspace use and warning areas (unscheduled reports received from ATCSCC/Advisory). [022] Provide users on-screen User Help Functions; [023]
(q) Provide users the capability to set-up, examine, retain, and modify individual adaptation and user profiles; [024]
(r) Maintain and report System Activity Statistics; [025]
(s) Provide a 24-hour a day user Help Line; [026]
(t) Accept and process requests from multiple users from Internet for DUAT Service functions simultaneously; [811] and
(u) Provide pilots the capability to access airport diagrams when using DUAT Service for pre-flight briefings. [812]

3.2.1.1.1 Data Entry and Formats

Unless specifically stated otherwise in this specification, all required input, output, and display formats are design options. The DUAT Service SP must [705] ensure that contractions adopted for user transactions are in accordance with FAA Order 7340.1. References in this specification to user "data entry" refer to keyboard entries, menu selections, and web page links; whichever is appropriate for the function being executed.

3.2.1.1.2 Airport Diagrams

In order to provide pilots with the capability to access towered airport diagrams for pre-flight briefings the DUAT Service SP must [706] include the following link and statement on its Web page:

"For airport/s familiarization, the following Website is available for airport diagrams: http://www.naco.faa.gov. Not all airport diagrams are available at this time."

3.2.1.1.3 Military Graphical Data

DUAT Service must [920] use the FAA's Aeronautical Information Service (AIS) data file, National Airspace System Resources, for Military Graphical Data.

3.2.1.2 Range of Service

3.2.1.2.1 Weather Briefing and Flight Planning

The DUAT Service must provide weather information services to users in the contiguous United States], Alaska, Hawaii, Puerto Rico, the US Virgin Islands, Mexico, Canada, and other briefing areas as appropriate. [027].

The DUAT Service must provide flight planning services to users in the contiguous United States, Alaska, Hawaii, Puerto Rico, and the US Virgin Islands in accordance with FAA Order 7110.10 [028].

3.2.1.2.2 International Weather Support

DUAT Service must request weather information from the Weather Message Switching Center Replacement (WMSCR) or other comparable system or service when requested by users for the following areas.

(a) Canada, [029]
(b) Mexico, [030]
(c) Bahamas, [031]
(d) Puerto Rico, [032]
(e) Haiti, [033]
(f) Dominican Republic, [034]
(g) Virgin Islands, [035] and the

(h) Cayman Islands. [036]

The DUAT Service must provide the current surface observation(s) (including specials) [037], and terminal forecast(s) [038] for the international destinations above including alternate airports.

In conformance with FAA Order 7110.10, Flight Services Handbook, paragraph 3-2-1, the DUAT Service must [750] provide the following cautionary statement to pilots planning flights outside of United States controlled airspace: "Check data as soon as practical after entering foreign airspace, as our international data may be inaccurate or incomplete."

3.2.1.3 Source Data and Database Maintenance

This section identifies the data and database maintenance requirements for the operation of the DUAT Service. The four types of DUAT Service data are Airmen File Data, Static Flight Data, System Activity Statistics, and Dynamic Weather and NOTAM Data.

3.2.1.3.1 Authorized Users

The DUATS must [041] maintain a user database containing information from the FAA's Airmen Certification database and any other users authorized by the FAA.

3.2.1.3.1.1 Graphic Weather Data

The DUAT Service must receive [070] and maintain [072] a dynamic weather database using graphic weather products received from an FAA-approved source.

When graphic products are requested by the user, the DUAT Service must make available, but not necessarily be limited to, the following analysis, prognosis, and data products:

(a) Surface Analysis, [910]
(b) Weather Depiction, [911]
(c) National Radar Summary, [912]
(d) Forecast Winds Aloft, [923]
(e) Current Winds Aloft, [924]
(f) Constant Pressure Charts [925]
- 850 MB
- 700 MB
- 500 MB
- 300 MB
- 200 MB,

(g) Composite Moisture Stability Chart (Lifted Index, Precipitable Water, Freezing Level-Mean Relative Humidity), [915]

(h) 12- and 24-hour low level significant weather prognosis, [913]
(i) High level significant weather prognosis, [914]
(j) 36- and 48-hour surface prognosis, [926]
(k) Satellite Imagery Products, [927] and
(l) NEXRAD Products. [928]

The DUAT Service must [929] provide these products from an FAA approved source . The minimum dimensions for the display of graphic weather data must [930] be 640 X 480 pixels, except when 4-Panel display format is being utilized. All 4-Panel displays must [931] have an overall dimension at least 800 X 600 pixels with each individual quarter panel being at least 360 X 270 pixels.

3.2.1.3.2 Static Flight Data

The DUAT Service must use Static Flight Data to support dynamic weather [042] and NOTAM [043] data processing and flight planning [044] functions (See Appendix A).

3.2.1.3.2.1 Data Availability

The DUAT Service must [045] update Static Flight Data and make them available for processing on the effective date of the data.

3.2.1.3.2.2 Editing and Error Correction

The DUAT Service must [046] have the capability for on-site correction of errors that may exist in the Static Flight Data. The DUATS must [047] correct errors in the Static Flight Data using all available means including, but not limited to, sources described in paragraph 3.2.1.4.1.3 and notify the FAA as soon as possible.

3.2.1.3.2.3 Characteristics

Identification, source, and characteristics of the Static Flight Data must [048] be as specified in Appendix A.

3.2.1.3.3 Dynamic Weather and NOTAM Data

The DUAT service must [049] use WMSCR or a comparable system or service for all weather and NOTAM data. If WMSCR is used, weather data must [039] be processed using World Meteorological Organization (WMO) headers and TCP/IP with CMHP when available for operational use.

3.2.1.3.3.1 Weather and NOTAM Products

The weather products [050] and NOTAM [051] products, including product sizes, issue times, formats, and retention periods must be as indicated in Appendix C.

3.2.1.3.3.1.1 Full Text Products

The DUAT Service must provide users with the option of receiving alphanumeric products in either:

(a) Normal transmission format (abbreviated) [052] or
(b) Expanded English text (unabbreviated) [053].

3.2.1.3.3.2 ICAO Weather Codes

The DUAT Service must implement the aeronautical meteorological codes as referenced in the Aviation Routine Weather Report (METAR) [054]; Aviation Selected Special Weather Report (SPECI) [055], Aerodrome Forecast (TAF) [056], and the Canadian Forecast Advisories (FAs) [830]. The ICAO code formats are published in ICAO Document 7910.

3.2.1.3.3.3 Surface Weather Observations

Throughout this specification, the term "hourly surface observation(s)" refers to METAR observation(s), which is recorded on the hour. The term "special observation(s)" or "special(s)" refers to SPECI observation(s) which are recorded when special criteria are met or exceeded. (Note: See FAA Order 7900.5, Surface Weather Observing, for a complete description of current weather message formats).

3.2.1.3.3.4 Data Retention

The DUAT Service must retain in dynamic databases the latest version of any weather or NOTAM product, unless it has expired, exceeded its valid period, been canceled, or the retention time indicated in Appendix C has been exceeded [057].

3.2.1.3.3.4.1 Data Purge

The DUAT Service must purge from its dynamic database, within one hour, products that have:

(a) Expired, [060]
(b) Exceeded their valid period, [061]
(c) Exceeded their retention period, [062] or
(d) Been canceled [063].

3.2.1.3.3.5 Corrected or Amended Weather Products

When a weather product is received by the DUAT Service indicating that it is a Correction (COR) or Amendment (AMD) to a previously issued product, the COR [064] or AMD [065] product must be considered the latest version. The retention period for COR or AMD products is based on the retention time of the original product.

3.2.1.3.3.6 Routine Delay Weather Products

Weather products that are transmitted after their scheduled time may contain a Routine Delay (RTD) indicator. When a weather product is received by the DUAT Service indicating that it is a RTD, it must [066] be retained in the database according to its data type, location/product identifier (ID), and date/time, just as any other incoming product.

3.2.1.4 Processing Requirements

All transactions must [932] be completed in a timely manner. A transaction begins when a user successfully logs onto the DUAT Service and ends when the connection is terminated in accordance with the provisions of paragraph 3.2.1.5.1.6. The functions included within one transaction are defined in paragraph 3.2.1.4.5.1.

3.2.1.4.1 Database Maintenance

3.2.1.4.1.1 Alphanumeric Weather Data

The DUATS must receive [067], process [068], and maintain [069] a dynamic weather database using alphanumeric products provided by WMSCR or a comparable system or service.

3.2.1.4.1.2 Static Flight Data

The DUAT Service must use the current versions (including posted changes) of the Government-Furnished Information (GFI) listed below for data maintenance editing and verification:

(a) Airman's Information Manual, [074]
(b) En Route Charts (High and Low), [075]
(c) National Airman Files, [076]
(d) Airport Facility Directory, (AFD) [077]
(e) Digital Aeronautical Chart Supplements, (DACS) [078]
(f) National Flight Data Digest (NFDD), [079]
(g) US Terminal Procedures (USTP), [080]
(h) World Aeronautical Charts (WACs), [081] and
(i) Static Flight Data (as described in Appendix A) [083].

Sources for GFI are identified in Section J7.

3.2.1.4.1.3 User Directory Assistance

The DUAT Service must provide authorized users with on-line access to an Airport Facility Directory [820]. The SP must obtain FAA approval before providing additional information [821].

3.2.1.4.2 Weather Message Identification

The DUATS must identify all incoming messages and store them with the date [084] and time of receipt [085].

3.2.1.4.2.1 Weather Message Text Editing

The DUAT Service must [086] not edit or alter the content of weather and NOTAM messages, except header information. Header information (e.g., data type, product ID, or date-time) may be altered to facilitate processing and storage. Converting designated messages to expanded English text does not constitute an edit or alteration of the message.

3.2.1.4.2.2 Weather Message Duplication

If the DUAT Service receives a duplicate weather product from a Government approved weather source, the SP must [087] consider the product received last as the latest version.

3.2.1.4.3 Weather Information Function

3.2.1.4.3.1 Weather Briefing Formats

The DUAT Service must provide users with weather briefings, as follows:

(a) Standard Weather Briefing, [088]
(b) Outlook Weather Briefing, [089] and
(c) Abbreviated Weather Briefing. [090]

The DUAT Service weather briefing types and their presentation formats are shown in Table 3.2.1.4.3.1-1.

Table 1: Weather Briefing Types

Briefing Type	Format
Standard Weather Briefing	Route Area
Abbreviated Weather Briefing	Route
	Area
Outlook Weather Briefing	Route
	Area

NOTE: Each briefing type consists of a low altitude briefing for flights below 18,000 feet MSL or a high altitude briefing for flights above 18,000 feet MSL.

3.2.1.4.3.1.1 Standard Weather Briefing

The DUAT Service must [091] provide users with a Standard Weather Briefing, as follows.

3.2.1.4.3.1.1.1 Input

For a Standard Weather Briefing, the DUAT Service must require the user to submit the following information:

(a) Aircraft identification; [092]
(b) Briefing format (route or area) (optional); [093]
(c) Estimated time of Departure; (ETD) [094]
(d) For route format only:
    (1) Departure point, [095]
    (2) Destination point, [096]
    (3) Alternate destination(s) (optional), [097]
    (4) Route of flight (optional), [098]
    (5) * Route corridor width (nm) (optional), [099]
    (6) * Winds aloft route corridor width (optional), [100]
    (7) Flight altitude(s), [101]
    (8) Estimated time en route (ETE); [102]
(e) For area format only:
    (1) A center point for the search area (LOCID or latitude/longitude) [103] and
    (2) A search area radius (optional); [104]
(f) Option for Air Traffic Control (ATC) delay and flow control advisories. [105].

NOTE: * If no value is entered, the default value identified in Appendix B must [106] be used. Adaptable parameter values are contained in Appendix B.

3.2.1.4.3.1.1.2 Output

For a Standard Weather Briefing, the DUAT Service must label, segment, and output available weather products and NOTAM data to the user for either the identified route or area, as follows:

(a) Adverse weather products affecting the route corridor or area, [107]
(b) Latest surface observations for departure point, destination, and, if selected, alternate(s), [108]
(c) Latest terminal forecasts for departure point, destination, and alternate(s), [109]
(d) * En route weather -- surface observations along the route corridor [110] (May provide En Route FTs),
(e) Pilot Reports (PIREPs) within the route corridor or area for the last 90 minutes, [111]
(f) Forecast winds and temperatures aloft, [112]
(g) Latest radar reports affecting the route corridor or area, [113]
(h) NOTAMs pertinent to the route corridor or area, [114] and
(i) **ATC delay and flow control advisories, if pertinent to the route corridor or area (user option). [115]

* Not required for high altitude briefings
** Provide as a user-selected option (see 3.2.1.4.4.30 for content)

3.2.1.4.3.1.2 Abbreviated Weather Briefing

The DUAT Service must [116] provide users with an Abbreviated Weather Briefing, as described in the following Subsections.

3.2.1.4.3.1.2.1 Input

For an Abbreviated Weather Briefing, the DUAT Service must require the user to submit the following:

(a) Aircraft identification, [117]
(b) Weather report type(s) desired for the identified locations, [118]
(c) *Up to 10 LOCIDs (optional), 119]
(d) *State identifier(s) (optional), [120]
(e) **Flight altitude, [121]
(f) ETD, [122]
(g) **ETE, [123]
(h) ***Route of flight, [761]

(i) ***Route corridor width, [762]
(j) ****Center point for search area (LOCID) or latitude/longitude, [763] and
(k) ****Search area radius (optional). [764]

NOTE:
* Users may request products for 10 LOCIDs or opt to request state collectives for those selected products.
** Entry required only when a FD data type has been requested.
*** Entry required only when a route oriented briefing has been requested.
**** Entry required only when an area oriented briefing has been requested.

3.2.1.4.3.1.2.2 Output

For an Abbreviated Weather Briefing, the DUAT Service must [124] retrieve, label, segment, and output to the user all requested products (available in the database) in the order requested.

3.2.1.4.3.1.3 Outlook Weather Briefing

The DUAT Service must [125] provide the user with an Outlook Weather Briefing when the ETD is 6 or more hours from the briefing time. The Outlook Weather Briefing is the same as the Standard Weather Briefing except as noted in sections 3.2.1.4.3.1.3.1 and 3.2.1.4.3.1.3.2.

3.2.1.4.3.1.3.1 Input

For an Outlook Weather Briefing, the DUAT Service must [126] require the user to enter the same information as the Standard Weather Briefing except for winds aloft route corridor width.

3.2.1.4.3.1.3.2 Output

For an Outlook Weather Briefing, the DUAT Service must label, segment, and output the same weather products as for a Standard Weather Briefing, except as follows:

(a) Omit current weather conditions (surface observations, PIREPs, and radar reports), [127]
(b) Omit forecast winds and temperatures aloft, [128]
(c) Omit NOTAMs, [129] and
(d) Omit ATC delay and flow control information. [130].

The DUAT Service must [131] provide the user the option to receive the omitted information (i.e., items a through d, above).

3.2.1.4.3.2 Adverse Weather Products

3.2.1.4.3.2.1 Standard and Outlook Weather Briefing

If, for Standard Weather or Outlook Weather Briefings, adverse weather products (as defined in appendix C) exist which affect the route corridor or search area, the DUAT Service must [132] output all applicable adverse weather products, except as noted in the subsections below.

3.2.1.4.3.2.1.1 Tropical Advisories

When the user selects a Standard or Outlook Weather Briefing, and a Tropical Depression and Hurricane Advisory or an Atlantic/Pacific Ocean Tropical Cyclone Advisory affects the route, the DUAT Service must [133] display an alert message giving the user the opportunity to review or decline review of the report(s).

3.2.1.4.3.2.1.2 Severe Weather Outlook

When the user selects a Standard or Outlook Weather Briefing, the DUAT Service must [134] address those portions of the Area Forecast that affect the user-specified route or area.

When the user selects a Standard or Outlook Weather Briefing and a Severe Weather Outlook affects the route corridor or search area, the DUAT Service must [765] either automatically output the product or give the user the opportunity to review or decline to review the product.

3.2.1.4.3.2.2 Abbreviated Weather Briefing

If, for an Abbreviated Weather Briefing, adverse weather products exist which affect the locations requested, the DUAT Service must [135] display an alert message giving the user the opportunity to review or decline to review these products. The DUAT Service must [136] display the Abbreviated Weather Briefing alert message prior to providing any requested information.

3.2.1.4.3.2.3 Area Forecast Output

When the user selects a Standard or an Abbreviated Weather Briefing, the DUAT Service must [137] display all sections of the Area Forecast when the user selects Area Forecast as a report type.

3.2.1.4.3.3 Trend Weather Products

The DUAT Service must [138] have the capability to produce a Trend Weather Product (TW) consisting of the current surface observation, the previous two hourly surface observations, and all subsequent SPECI observations or off-hour METAR observations for a weather reporting location.

3.2.1.4.3.3.1 Trend Weather Product Requests

In response to an Abbreviated Weather Briefing request, the DUAT Service must [139] output a TW for any requested valid weather reporting station's LOCID.

3.2.1.4.3.4 Forecast Winds and Temperatures Aloft

The DUAT Service [140] must use either the Forecast Winds and Temperatures Aloft (FD) or the Gridded Winds and Temperatures Aloft Forecast (GF) to interpolate for flight level winds issued 4 times a day. The DUAT Service must interpolate between forecast levels and output flight level data for the departure point [141], destination [142], and at least every 200nm along the route corridor [143].

3.2.1.4.3.4.1 Output Time Period

The DUAT Service must retrieve and output the data with the "Valid Time" [144] and "For Use" [145] period, based on the FD or GF winds and temperatures used for the interpolation.

3.2.1.4.3.5 Alternate Airport Weather

Any time an alternate airport(s) has been designated by the user, the DUAT Service must supply the user with alternate airport data, as follows:

(a) Any adverse weather products affecting the alternate(s) that have not already been provided [146]
(b) Current hourly surface observation(s) [147] and any subsequent SPECI or off-hour METAR observations [148]
(c) Terminal forecast(s) [149]
(d) NOTAMs [150].

3.2.1.4.3.6 Closest Reporting Location

If terminal weather is unavailable for the departure and/or destination, the DUAT Service must output corresponding products, as follows:

(a) Current hourly surface observation for the nearest location [151] and any subsequent SPECI or off-hour METAR observations [152]
(b) Terminal forecast for the nearest location, only if it is within 5 miles of the requested location [153]. If no terminal forecast is available, the DUAT Service must [154] output the latest FA which encompasses the area of the requested terminal forecast.

3.2.1.4.3.7 Collective Products

In response to a Weather Briefing request, the DUAT Service must allow the user to request state collectives of user-selected weather product types [155].

3.2.1.4.3.8 Weather Briefing Entry Carryover

The DUAT Service must [156] carry forward into the flight plan all weather briefing data related to the flight planning function.

3.2.1.4.3.9 Use of Previous Route

When a user has filed a flight plan(s) during the current transaction, the DUAT Service must provide the opportunity for using that route data [157] or route data from any of the users' own pre-stored flight plans [158] for obtaining a Route Weather Briefing.

3.2.1.4.3.10 Product Retrieval

3.2.1.4.3.10.1 Weather Product Search Area

The DUAT Service search area for weather product retrievals must be by a user-defined area (center point and radius)[187] or a route corridor [188].

3.2.1.4.3.10.2 Retrieval Processing

All weather and NOTAM data in Appendix C are classified according to a type of aerial coverage (point or area). The DUAT Service must [189] retrieve a product when its affected area coincides with or infringes on the search area of interest.

3.2.1.4.3.11 NOTAMs

With any standard weather briefing, the DUAT Service must retrieve distant NOTAMs [190] and Flight Data Center (FDC) NOTAMs [191] associated with an affected facility by the affected facility identifier. (Note: See FAA Order 7930.2 for terms of reference).

3.2.1.4.3.11.1 Non-associated Facilities

When an FDC NOTAM is requested and non-associated NOTAMs exist, the DUAT Service must [192] output a response to the user, stating:

> "There are non-associated FDC NOTAMs current. Do you want them?" Or provide another FAA-approved message.

This response is to indicate to the user that FDC NOTAMs not associated with an affected facility identifier will not be presented unless the user specifically chooses to receive such information.

3.2.1.4.3.12 Graphic TFRs

Temporary Flight Restrictions (TFRs) are a critical part of the National Airspace System and providing a graphic display of these TFRs is an important aspect of a pilot's flight planning. These graphic displays provide for enhancement of all pilot weather briefings and flight planning. To maintain the FAA's highest level of safety for the NAS and flight planning, DUAT Service must provide graphic TFR displays. [767]

3.2.1.4.3.13 Superseded Products

The DUAT Service must not output weather [193] or NOTAM [194] products to users for which later versions have been received.

3.2.1.4.3.14 DUAT Service Interruptions

3.2.1.4.3.14.1 Short-Term Weather Data Interruption

In the event of a short-term weather data interruption (one lasting less than 15 minutes), the DUAT Service must utilize the most recently received weather [195] and NOTAM [196] data.

3.2.1.4.3.14.1.1 Short-Term Interruption Message

At the end of the first minute of the short-term interruption of incoming weather data, the DUAT Service must [197] output the following message:

> "Weather/NOTAM data may not be current due to loss of incoming data at [Zulu *time*] Z. A recheck of data prior to departure may be warranted." Or provide another FAA-approved message.

The DUAT Service must output the short-term interruption message until the weather/NOTAM databases have been restored [198] or for up to 15 minutes after the onset of the interruption of service [199], whichever occurs first.

3.2.1.4.3.14.1.2 Short-Term Interruption Resumption

The DUAT Service must develop and implement procedures to determine when the database has been fully updated with the data backlog from WMSCR [200] or other comparable system or service and the short-term interruption message withdrawn [201].

3.2.1.4.3.14.2 Long-Term Weather Data Interruption

In the event of a long-term weather data interruption (one lasting 15 minutes or more), the DUAT Service must not provide weather [202] and NOTAM [203] data to users.

3.2.1.4.3.14.2.1 Long-Term Interruption Message

When the interruption of incoming weather data reaches 15 minutes, the DUAT Service must [204] output the following message:

> "No Weather/NOTAM data currently available due to loss of incoming data at [*time*] Z. You may file a flight plan or access the system later for full service." Or provide another FAA-approved message.

3.2.1.4.3.14.2.2 <u>Long-Term Interruption Resumption</u>

The DUAT Service must develop and implement procedures to determine when the database has been fully updated with the data backlog from WMSCR [205] or other comparable system or service, the interruption message withdrawn [206], and user services resumed [207].

3.2.1.4.3.14.2.3 <u>WMSCR Recovery</u>

For weather restoral using WMO headers and TCP/IP with CMHP when available for operational use, the DUAT service must [1513] add the following flag after the domestic service area recovery is complete to display an outage warning for 6 hours (only for users who would normally get this warning).

"Briefing information may not be accurate or complete. Information should be secured at the first available opportunity from the country in whose airspace the flight will be conducted."

The outage warning must [1514] be as follows:

"Weather/NOTAM data may not be accurate or complete in areas outside of the Continental U.S. due to a loss of incoming data at #### Z. Check of conditions prior to departure may be warranted."

3.2.1.4.3.14.3 <u>USNS-R Interruption</u>

The US NOTAM Service Replacement (USNS-R) may issue a Circuit Notice (CIRNOT) advising of the unavailability of NOTAM information. Following receipt of the CIRNOT, the DUAT Service must [208] display a message to users, as follows:

> "NOTAM data may not be current due to a US NOTAM Service interruption. A recheck of data prior to departure may be warranted." Or provide another FAA-approved message.

The DUAT Service must [209] output this message until it has been verified that the NOTAM database has been fully restored.

3.2.1.4.3.14.4 <u>DUAT Service System Failure</u>

The DUAT SP must develop and implement procedures to ensure the weather [210] and NOTAM [211] databases are current and complete before user service is resumed.

3.2.1.4.3.14.4.1 DUAT Data Base Rebuild

In the event the DUAT Service failure results in the loss of data already received, a partial or full database rebuild may be required. The DUAT Service must [212] establish database rebuild procedures which result in full database restoration.

3.2.1.4.3.14.4.2 DUAT System Failure Message

When the DUAT system returns to service, but is in the process of restoring the database, the following message, or another FAA approved message, must [213] be displayed to the users: "No Weather/NOTAM data currently available due to system failure. Full service is expected to resume at [*time*] Z."

3.2.1.4.3.15 Unavailable Weather Products

3.2.1.4.3.15.1 Product Not in the Database

When a product request is valid, but not in the database, the DUAT Service must [214] output a response to the user stating "NO REPORT AVBL." Or provide another FAA-approved message.

3.2.1.4.3.15.2 Invalid Product

When a product request cannot be provided because of invalid user input (i.e., invalid LOCID/product identifier and/or data type), the DUAT Service must [215] output a response to the user stating "NOT IN SYSTEM." Or provide another FAA-approved message.

3.2.1.4.3.15.3 Invalid Format

When a product request cannot be provided because of an invalid format input, the DUAT Service must [216] output a response to the user stating "INVALID FORMAT." Or provide another FAA-approved message.

3.2.1.4.4 Flight Planning Function

The DUAT Service must provide users with the capability to:

(a) File flight plans, [217]
(b) Amend flight plans, [218]
(c) Store flight plans, [219]
(d) Cancel flight plans, [220] and
(e) Close flight plans (VFR only). [221].

3.2.1.4.4.1 Flight Planning Software Capabilities

The DUAT Service must provide authorized users the following Flight Planning software capabilities upon user entry of Flight Plan route, en route altitude and fuel consumption (gallons per hour):

For each leg of the flight plan route:

(a) Magnetic heading (winds considered), [825]
(b) True course, [826]
(c) Leg length, [827]
(d) Leg estimated flight time, [828] and
(e) Fuel required. [829]

3.2.1.4.4.2 Stored Flight Plans

The DUAT Service must [222] permit the user to store flight plans. Stored flight plans do not have to be complete and/or validated until they are filed.

The DUAT Service must permit:

(a) Private pilots to store 10 flight plans [701] and

(b) Part 135 Operators to store at least 20 aircraft identifications [751], 20 pilots [752] and 100 routes. [753].

The DUAT Service must [703] have the capability to store at least 100,000 flight plans.

3.2.1.4.4.3 Message Formatting

The DUAT Service must require that message formatting [223], coding [224], and text [225] for DUAT Service originated flight plans and related messages are in accordance with FAA Order 7110.10.

3.2.1.4.4.3.1 Flight Data Message Precedence

The DUAT Service must provide address fields [226] and message precedence [227] for all flight data messages, as required by FAA Order 7110.10.

3.2.1.4.4.4 Flight Plan Processing

The DUAT Service must accept and process only flight plans that are in accordance with the appropriate flight plan format [229], as specified in FAA Order 7110.10.

3.2.1.4.4.4.1 Domestic Flight Plan Processing

The DUAT Service must accept and process domestic IFR [230], domestic ICAO IFR and VFR [231] flight plans in compliance with all applicable orders and documents.

3.2.1.4.4.4.2 ICAO Flight Plan Processing

The DUAT Service must accept and process ICAO flight plans in which the departure point is a geographic point within the contiguous United States, Alaska, Hawaii, Puerto Rico and the US Virgin Islands. [233] and comply with all applicable orders and documents [234]. The DUAT Service must [235] validate ICAO flight plans to the last known fix in the route. FAA Order 7110.10, Chapter 7, International Operations, provides the procedures and guidance for filing ICAO flight plans.

3.2.1.4.4.4.3 Adverse Weather Conditions

If the user has not already received a weather briefing during the current transaction, the DUAT Service must [236] advise the user of adverse weather conditions applicable to the route of flight. The DUAT Service must require the user to accept or decline review of the adverse weather conditions [237].

3.2.1.4.4.5 Acknowledgments

The DUAT Service must process and store acknowledgment messages from Air Route Traffic Control Centers (ARTCC) [238] and AFSS/FSS [239].

3.2.1.4.4.6 IFR Flight Plans

The DUAT Service must accept domestic IFR [240] domestic ICAO IFR **up to the Air Traffic Control Transmit Time (ATCTT)** and ICAO IFR [241] Flight Plans up to the ATCTT prior to departure, as indicated in Appendix B.

3.2.1.4.4.6.1 IFR Parameter Time

When a domestic IFR, domestic ICAO IFR [242] ATCTT or ICAO IFR [243] ATCTT flight plan is to be forwarded to an ARTCC, the DUAT Service must delay transmission of the flight plan until prior to the proposed departure time, as indicated in Appendix B.

3.2.1.4.4.7 ADIZ Flight Plan

DUAT Service must provide General Aviation (GA) Pilots the capability to file an IFR ADIZ Flight plan. [768]

3.2.1.4.4.8 Domestic and ICAO VFR Flight Plans

The DUAT Service must accept domestic [244] and ICAO VFR [245] flight plans up to the Flight Service Station Transmit Time (FSST) parameter time, as indicated in Appendix B.

3.2.1.4.4.8.1 Domestic and ICAO VFR Parameter Time

When a domestic [246] or ICAO [247] VFR flight plan is to be forwarded to a AFSS/FSS, the DUAT Service must delay transmission until the FSST parameter time prior to the proposed departure time, as indicated in Appendix B.

3.2.1.4.4.9 Alaska Flight Plans

The DUAT Service must [248] provide the user with the ability to file VFR flight plans in Alaska with a maximum of two weeks en route time. Round-robin flight plans are acceptable.

3.2.1.4.4.10 File Flight Plan with ARTCC

The DUAT Service must prepare domestic IFR [249], domestic ICAO IFR or ICAO IFR [250] flight plans in accordance with FAA Order 7110.10. The DUAT Service must file the IFR [251] and ICAO [252] flight plans with the departure ARTCC.

3.2.1.4.4.11 Multiple Flight Plans

The DUAT Service must [253] accept multiple flight plans per aircraft identification.

3.2.1.4.4.11.1 Dispatcher Flight Plans

The DUAT Service must allow multiple flight plans to be filed [254] and stored [255] from one source (such as a corporate dispatcher or an airline) only after obtaining the identification of the dispatcher(s) involved and the flight identification(s).

3.2.1.4.4.12 Formatted Flight Plans

The DUAT Service must:

(a) Format flight plans in accordance with FAA Order 7110.10. [259]
(b) Transmit them to the appropriate ARTCC [260], or AFSS/FSS [261], at a parameter transmit time before the proposed departure time.

3.2.1.4.4.13 Data Transmission

The DUAT Service must [262] transmit flight plan data in accordance with FAA Order 7110.10.

3.2.1.4.4.14 Flight Plan Storage

3.2.1.4.4.14.1 IFR Flight Plan Storage

The DUAT Service must store domestic IFR [263], domestic ICAO IFR and ICAO IFR [264] flight plans from time of receipt until an ATCTT parameter time prior to the proposed departure time, as indicated in Appendix B.

3.2.1.4.4.14.2 VFR Flight Plan Storage

The DUAT Service must store domestic [265] and ICAO VFR [266] flight plans from time of receipt until a FSST parameter time prior to the proposed departure time, as indicated in Appendix B.

3.2.1.4.4.15 Time Modifications

The DUAT Service must [267] have the capability to modify the ATCTT parameter time as capacity warrants.

3.2.1.4.4.16 Duplicate Flight Plans

The DUAT Service must not accept [268] or transmit [269] duplicate flight plans, except as identified in subsection 3.2.1.4.4.16.

3.2.1.4.4.17 Flight Plan Acknowledgments

3.2.1.4.4.17.1 IFR Acknowledgment

When a valid acknowledgment response has not been received from the addressed ARTCC for a domestic IFR or domestic ICAO IFR flight plan within 5 minutes of its transmission, the DUAT Service must [270] immediately re-transmit the flight plan to the ARTCC.

If an acknowledgment is not received for the re-transmitted domestic flight plan, the DUAT Service must [272] deliver the flight plan, via telephone, to the ARTCC Flight Data Position within 10 minutes after the time the initial flight plan was transmitted.

3.2.1.4.4.17.2 VFR Acknowledgment

When a valid acknowledgment has not been received from the addressed AFSS/FSS for a domestic [276] flight plan within 15 minutes of its transmission, the DUAT Service must immediately re-transmit the flight plan to the AFSS/FSS.

If an acknowledgment is not received for the re-transmitted domestic [278] flight plan, the DUAT Service must deliver the flight plan, via telephone, to the AFSS/FSS within 30 minutes after the time the initial flight plan was transmitted.

3.2.1.4.4.18 Error/Reject Messages

3.2.1.4.4.18.1 Error Message Procedures

In the event an error message is received from the addressed ARTCC, the DUAT Service must observe the following procedures:

(a) Immediately transmit a cancellation message (CXX) to delete the erroneous flight plan from the ARTCC database, [280]
(b) Correct the flight plan, as indicated within the ARTCC error message, and re-transmit the revised flight plan to the ARTCC, [281]
(c) If either the route or altitude must be altered, enter "FRC" (Full Route Clearance) as the first element in the Remarks Section of the revised flight plan, [282] and
(d) If, after transmitting the revised flight plan, a second error message is received, transmit a second cancellation message and call the ARTCC to input the flight plan manually. [283].

3.2.1.4.4.18.2 Reject Message Procedures

In the event a reject message is received from the addressed ARTCC, the DUAT Service must observe the following procedures:

(a) Attempt to correct the flight plan, as indicated by the reject message, and re-transmit the revised flight plan to the ARTCC; [284]
(b) If, after transmitting the revised flight plan, a second reject message is received, call the ARTCC to input the flight plan manually; [285]
(c) If either the route (including inserting a lat/long into the route of flight for Center acceptance) or altitude must be altered, enter “FRC” as the first element in the Remarks Section of the revised flight plan; [286] and
(d) If the reject message is identified as being an exact duplicate, the message is not to be re-transmitted. [287]

3.2.1.4.4.19 Flight Plan Filing

The DUAT Service must [288] allow a user to submit a domestic, or domestic ICAO IFR flight plan any time from 30 minutes to 24 hours before the proposed departure time and an ICAO flight plan any time from one hour to 24 hours before the proposed departure time.

Flight plans with waypoints must [040] be filed by the SP in accordance with FAA Order 7110.10. If an error message is received from the addressed ARTCC and a waypoint needs to be altered the SP must [058] enter "FRC" (Full Route Clearance) as the first element in the remarks section of the revised flight plan. The SP must [059] make only those changes required for computer acceptance.

3.2.1.4.4.20 Lifeguard Flights

The DUAT Service must [289] accept Lifeguard and US Coast Guard flight plans, as designated in FAA Order 7110.10, up to 10 minutes before the proposed departure time.

3.2.1.4.4.21 Flight Plan Input

The DUAT Service must [290] require the user to enter flight plan data required by the applicable FAA flight plan form.

3.2.1.4.4.21.1 Domestic Flight Plan Acceptance

The DUAT Service must [291] not accept domestic flight plans unless all the required flight plan data blocks indicated on FAA Flight Plan Form 7233-1 contain valid entries in accordance with FAA Order 7110.10.

3.2.1.4.4.21.2 ICAO Flight Plan Acceptance

ICAO flight plans must [292] not be accepted by the DUAT Service unless all the required flight plan data blocks indicated on FAA Flight Plan Form 7233-4 contain valid entries in accordance with FAA Order 7110.10.

3.2.1.4.4.21.3 Incorrect Entries

When the user makes an incorrect entry, the DUAT Service must [293] identify the error and give the user the opportunity to correct the entry.

3.2.1.4.4.21.4 Format Checking

The DUAT Service must perform format checks on the user entry [294] and, upon format verification, initiate flight plan filing procedures [295].

3.2.1.4.4.21.5 Latitude-Longitude Entry

If a latitude-longitude is entered on the flight plan for departure [296] or destination [297], the DUAT Service must ensure the location name is carried in the remarks section.

3.2.1.4.4.21.6 Washington, DC Metropolitan Area Flight Restriction Zone (DC FRZ)

The DUAT Service must [071] reject to the user all proposed flight plans with departures, arrivals or flights transitioning within the Washington, DC Flight Restricted Zone (DC FRZ).

3.2.1.4.4.22 Flight Plan Display

When all required entries have been completed and contain acceptable data, the DUAT Service must [298] output a complete flight plan to the user.

3.2.1.4.4.22.1 Flight Plan Modification/Filing

When a flight plan is output to the user, the DUAT Service must allow the user to file the flight plan [299] or to modify any of the data blocks before filing the flight plan [300].

3.2.1.4.4.22.1.1 Weather Briefing Update

When the user modifies any of the data blocks in the flight plan, the DUAT Service must [301] prompt the user for the opportunity to receive a new weather briefing.

3.2.1.4.4.22.1.2 Re-output Modified Flight Plan

When the user modifies any of the data blocks, the DUAT Service must [303] re-output the entire flight plan to reflect the modification.

3.2.1.4.4.22.1.3 Continuation of Changes

The DUAT Service must permit the user to modify the flight plan until the user stores the flight plan [304], files the flight plan [305], or selects another DUAT Service function [306].

3.2.1.4.4.23 Completion Message

When the flight plan has been validated and accepted, the DUAT Service must [307] output a message to the user indicating the validation and acceptance.

3.2.1.4.4.24 Route Definition

The DUAT Service must allow the user to enter flight plan routes according to the following route elements:

(a) LOCIDs; [308]

(b) Fixed Radial Distances; [309]
(c) Latitudes and longitudes, [310]
(d) Control, Victor, Jet, Colored Airways, Area Navigation, Bahamas Routes and Atlantic or any other approved FAA route elements; [311]
(e) Standard Instrument Departure; [312]
(f) Standard Terminal Arrival Route; [313]
(g) Navigation aids; [315]
(h) LF/MF Airways and Oceanic Low/High frequency routes; [316]
(i) Tower En Route Control (TEC) routes; [317]
(j) Waypoints; and
(k) Any valid combination of the above. [318]

Note: If the user chooses to use a Standard Instrument Departure (SID) or Standard Terminal Arrival Route (STAR) in an ARTCC area that does not accept SIDs or STARs, the user will enter them in the remark area only.

3.2.1.4.4.24.1 Valid Elements and Fixes

The DUAT Service must [319] validate all domestic route elements against the Static Flight Data, as provided in Appendix A. There is no requirement to validate a VFR route of flight.

3.2.1.4.4.24.2 Route Contiguous Legs

For IFR flight plans, the DUAT Service must [320] require that the legs of an IFR route be contiguous.

3.2.1.4.4.24.3 Previously Entered Data

When the user has previously entered an acceptable route to obtain a weather briefing, the DUAT Service must [321] allow the user to use this route for the flight plan without reentering the data.

3.2.1.4.4.24.4 Preferred Routes

The DUAT Service must maintain files containing preferred IFR low [322] and high [323] altitude, and Tower En Route Control (TEC) routes [324].

3.2.1.4.4.24.4.1 Preferred Route Selection

When the user provides a departure point, proposed departure time, aircraft type, altitude, and destination, the DUAT Service must provide the user with the opportunity to select from the preferred routes [326] and automatically insert the route data into the route of flight [327]. Preferred route processing must be applied when an IFR flight plan is filed [328] or amended [329].

3.2.1.4.4.25 Flight Plan Amendments/Cancellations

The DUAT Service must allow the user to amend [330] or cancel [331] flight plans, which were previously accepted, but not transmitted to the appropriate facility.

3.2.1.4.4.25.1 Authorization

The DUAT Service must permit the user to amend [332] or cancel [333] flight plans only with the same access code used to originally file it.

3.2.1.4.4.25.2 Flight Plan Retrieval

The DUAT Service must allow the user to select a flight plan(s) to be amended [334] or canceled [335] by retrieving and displaying all stored flight plans on file for the access code/aircraft identification entered.

3.2.1.4.4.25.3 Flight Plan Amendments

The DUAT Service must [336] allow the user to amend a flight plan at any time prior to transmission of the flight plan to the appropriate FAA facility (including a destination change or a lat/long insertion. When this occurs, the route of flight will be re-verified for Center acceptance.

3.2.1.4.4.25.3.1 Flight Plan Time Limits

When the user attempts to amend a flight plan after transmission to the appropriate FAA facility, the DUAT Service must [337] advise the user to contact an AFSS/FSS.

3.2.1.4.4.26 Flight Plan Entry Carryover

The DUAT Service must [338] carry forward into the weather briefing all flight plan data related to the weather briefing function.

3.2.1.4.4.27 Acceptance Messages

The DUAT Service must [339] output a message to the user indicating the amended flight plan has been validated (error and format checked) and accepted.

3.2.1.4.4.28 Cancel Flight Plans

3.2.1.4.4.28.1 Flight Plan Retention

When the user cancels a flight plan proposal, the DUAT Service must [340] retain the flight plan data with the transaction data for event reconstruction.

3.2.1.4.4.28.2 Time for Cancellation

The DUAT Service must [341] provide the user with the ability to cancel a flight plan at any time between the flight plan acceptance and transmission to the appropriate facility.

3.2.1.4.4.28.3 Message After Cancellation

When the user identifies the flight plan to be canceled, the DUAT Service must [342] output a confirmation message to the user indicating that the flight plan has been canceled.

3.2.1.4.4.28.4 Notification of Transmission

If a request for cancellation is made and the flight plan has already been transmitted, the DUAT Service must [343] advise the user to contact an AFSS/FSS.

3.2.1.4.4.28.5 No Flight Plan Message

When no flight plan proposals have been received for the entered access code and aircraft identification, the DUAT Service must [344] output a FAA-approved message indicating that no flight plan exists for the aircraft identification entered.

3.2.1.4.4.29 VFR Flight Plan Closure

The DUAT Service must accept and transmit to the tie-in AFSS/FSS, domestic [345] and ICAO VFR [346] flight plan closure messages when the destination is in the contiguous U.S., Alaska, Hawaii, Puerto Rico, or the U. S. Virgin Islands.

3.2.1.4.4.29.1 Flight Plan Closure Acceptance

The DUAT Service must not accept domestic [347] and ICAO VFR [348] flight plan closures without the minimum required entries to process the closure.

3.2.1.4.4.29.1.1 Required Entries

To accept domestic and ICAO VFR closures, the DUAT Service must require, as a minimum, the following entries:

(a) Aircraft Identification, [349]
(b) Aircraft Type, [350]
(c) Departure Point, [351]
(d) Flight Planned Destination Point, [352]
(e) Pilot Remarks, e.g., location of aircraft if other than planned destination (optional entry). [353].

3.2.1.4.4.29.2 Closure Message

The DUAT Service must generate and transmit a domestic [354] or ICAO VFR [355] closure message to the destination tie-in FSS, in accordance with FAA Order 7110.10, within 2 minutes of the pilot's notification of closure.

3.2.1.4.4.29.3 Receipt of Closure Message

When the user inputs a domestic [356] or ICAO VFR [357] flight plan closure, the DUAT Service must output a confirmation message to the user, indicating that the closure message has been sent.

3.2.1.4.4.29.4 Acknowledgment

When an acknowledgment is not received for any domestic [358] flight plan closure within 10 minutes, the DUAT Service must immediately deliver the flight plan closure via telephone to the flight planned destination AFSS/FSS.

3.2.1.4.4.30 Traffic Management Function

The DUAT Service must allow the user to view, in full text, the traffic management information concerning air traffic delays (ATCSCC messages) [360] and reroutes [361]. The DUAT Service must [362] strip the message information following the string "FSx.//", where "x" is any alphabetic character.

NOTE: References to persons-to-call and telephone numbers in ATCSCC messages are removed before the messages are made available to the general user population. This information follows the character string "FSx.//", where "x" represents any alphabetic character, and appears at the end of an ATCSCC message.

3.2.1.4.4.31 Encode/Decode Functions

Encoding involves the conversion from a location name to the assigned LOCID. Decode involves the conversion from a LOCID to a location name.

The DUAT Service must provide encode [363] and decode [364] functions for domestic locations in accordance with the information contained in FAA Order 7350.7.

The DUAT Service must provide encode [365] and decode [366] functions for ICAO locations in accordance with the information contained in ICAO 7910.

Note: Some Canadian and Mexican locations are also listed in FAA Order 7350.7.

3.2.1.4.4.31.1 Domestic Location Information

When accomplishing domestic decode, the DUAT Service must [367] provide the user, as a minimum, the associated location information contained in FAA Order 7350.7 (i.e., associated ARTCC and tie-in AFSS/FSS).

3.2.1.4.4.31.2 ICAO Area of Responsibility

The DUAT Service must be responsible for encode and decode for the following ICAO areas:

(a) Canada, [368]
(b) Mexico, [369]
(c) Bahamas, [370]
(d) Puerto Rico, [371]
(e) Haiti, [372]
(f) Dominican Republic, [373]
(g) Virgin Islands, [374] and the
(h) Cayman Islands. [375]

3.2.1.4.4.32 Escape to Encode/Decode Function

The DUAT Service must allow the user the capability to escape from any DUAT Service function and go to Encode/Decode Function [376] and then return to the original function [377].

3.2.1.4.4.33 Data Recording and Retention

3.2.1.4.4.33.1 Event Recording and Reconstruction

The DUAT Service must provide Event Recording [378] and Reconstruction [379] for all user transactions to aid in aircraft accident/incident investigation.

3.2.1.4.4.33.1.1 Transaction Recording

The DUAT Service must record each user transaction in its entirety, to include:

(a) All inputs. [380]
(b) All outputs, [381] and
(c) All messages related to the transaction. [382]

3.2.1.4.4.33.1.2 Event Reconstruction

The DUAT Service must have the capability to retrieve data to recreate a specific recorded user transaction in its entirety, to include:

(a) All inputs, [383]
(b) All outputs except weather graphics, [384] and
(c) All messages related to the transaction. [385]

Although weather graphic products are not required for the reconstruction data, the DUAT Service must [704] identify each specific weather graphic product provided to the user.

3.2.1.4.4.33.1.2.1 Event Retrieval Key

The DUAT Service must [386] use aircraft identification as the primary key to retrieve the event reconstruction data.

3.2.1.4.4.3.1.2.2 Event Retrieval Time Period

The DUAT Service must have the capability to retrieve event data for 15 calendar days plus partial data for the current day [387] or for a specified start/stop time interval within the period [388].

3.2.1.4.4.33.1.3 Transaction Data Retention

The DUAT Service must retain all recorded user transaction data, as follows:

(a) Alaskan flight plans, 15 calendar days plus partial data for the current day after proposed flight closure [389]
(b) All other flight plans, 15 calendar days plus partial data for the current day after the transaction date and time [390].

3.2.1.4.4.33.2 Incoming Weather and NOTAM Data

The DUAT Service must provide for the recording, retention, and retrieval of all received:

(a) Alphanumeric weather products [391]
(b) NOTAMs [393].

3.2.1.4.4.33.2.1 Weather and NOTAM Data Recording

The DUAT Service must time-stamp all incoming weather [394] and NOTAM [395] data.

3.2.1.4.4.33.2.2 Weather and NOTAM Data Retention

The DUAT Service must retain all incoming alphanumeric weather products [396] and NOTAM data [397] for 15 calendar days plus partial data for the current day from the time of receipt.

3.2.1.4.4.33.2.3 Data Retrieval

The DUAT Service must have the capability to retrieve weather and NOTAM data from the record retention period by:

(a) LOCID, [398]
(b) Data type, [399]
(c) Product identification, [400]
(d) Date-time, [401]
(e) Start/stop time interval, [402] or
(f) Any combination of the above. [403]

3.2.1.4.4.33.2.3.1 Time-Stamp Display

The DUAT Service must display the received time stamp on all weather [405] and NOTAM [406] data retrieved from the 15 calendar days plus partial data for the current day retention file.

3.2.1.4.4.33.3 Event Reconstruction Requests (EVR)

The DUAT Service must [407] make event reconstruction data available in response to Q signal messages requests, any general Service B message request, and verbal requests, when followed by written or FAX requests on letterheads, received from FAA intra-agency offices (e.g., FAA flight Service stations, FAA air traffic control facilities, etc.). Other agencies requiring event reconstruction support from the DUAT Service will submit a written request or FAX (with letterhead) to the DUAT Service Contracting Officer (CO):

Federal Aviation Administration
ATTN: DUAT Contracting Officer, AJA-48
800 Independence Avenue, SW
Washington, DC 20591
Phone: (202) 267-3610
Fax: (202) 267-5412

The DUAT service provider must respond to the initial request in the format specified by the request. Responses may be in formats such as: Service B, fax, and/or telephone. However, if additional EVR data is needed, adhere to FAAO JO 8020.16 (Air Traffic Organization Aircraft Accident and Incident Notification, Investigation, and Reporting.

3.2.1.4.4.33.3.1 Request Response Time

For Event Reconstruction, the DUAT Service must [414] respond to the requesting organization or agency within 48 hours of receipt of the request.

3.2.1.4.4.34 Search and Rescue Requests (SAR)

The DUAT Service must perform a search of the event reconstruction data to satisfy the following SAR requests:

(a) Data Request on Aircraft (QALQ) [415] or ICAO equivalent (DETRESFA), [1046]
(b) Information Request (INREQ) [416] or ICAO equivalent (INCERFA), [417]
(c) Alert Notice (ALNOT) [418] or ICAO equivalent (ALERFA), [419] and
(d) A request from an authorized agency [420] as identified in subsection 3.2.1.4.4.33.3.

3.2.1.4.4.34.1 SAR Response Time

The DUAT Service must respond to a SAR requester within 15 minutes after receipt of the request, either automatically [421] or manually (telephone) [422], as specified in FAA Order 7110.10.

3.2.1.4.4.34.2 SAR Response Order

If there are multiple SAR requests, the DUAT Service must [423] respond to each SAR request message in the order in which they were received.

3.2.1.4.4.34.3 Data Search

The DUAT Service must [424] begin the SAR request data search with the most recent data and continue back through the previous 24 hours unless the SAR request specifies a start/stop time interval.

3.2.1.4.4.34.3.1 Continuation of Search

When a SAR request is active, the DUAT Service must [425] continue to monitor current in-coming transactions for the affected aircraft identification.

Note: If the SAR request is a start/stop time type request whose time interval negates the need for on-going monitoring, a continuation search is not required.

3.2.1.4.4.34.4 Data Retrieval

The DUAT Service must [426] search for recorded transactions by the aircraft identification submitted in the SAR request [427] and, if appropriate, the start/stop time interval [428].

3.2.1.4.4.34.5 Response Data

The DUAT Service must include the following as SAR response data for the affected aircraft identification:

(a) All inputs, [429]
(b) All outputs, [430] and
(c) All messages related to the transaction(s). [431]

In responding to a SAR request, the DUAT Service must [432] not include the actual weather and NOTAM data provided to the user.

3.2.1.4.4.34.6 No Data Found in Search

The DUAT Service must immediately advise the requesting facility or agency when:

(a) No transaction data were found to satisfy the SAR request for the 24-hour period [433], or
(b) No transaction data were found in the SAR specified start/stop time interval [434].

3.2.1.4.5 DUAT Service Access

DUAT Service Access is defined as the probability that any attempt to access the DUAT Service made by an authorized user will result in a connection providing reliable bi-directional data transfer. DUAT Service Access must [435] be 95 percent or greater.

3.2.1.4.5.1 Transaction Provisions

A transaction begins when the user is connected with the DUAT Service and the system is awaiting user input or command. The DUAT Service must allow a single transaction to consist of multiple functions; such as the provision of text or graphical weather information, the filing of one or more flight plans, and the performance of other DUAT Service functions [437]. A transaction is terminated upon (a) user request (log-off), (b) inactivity time expiration, (c) loss or failure of the connection, or d) the DUAT Service provider in accordance with the transaction termination requirements of this specification.

3.2.1.4.5.1.1 Time Recording Accuracy

The DUAT Service must [438] record the times of transaction activities in at least tenths of a minute increment.

3.2.1.4.5.2 Termination

3.2.1.4.5.2.1 Transaction Termination

The DUAT Service must [440] allow the user to terminate the transaction at any time. The DUAT Service must [441] terminate the transaction if there is no user input for a total of three minutes from the user's last keyboard/mouse entry. The DUAT Service must [442] prompt the user for entry if there has been no keyboard/mouse activity for two minutes. The DUAT Service must disconnect the user from the DUAT Service upon the completion of a transaction [443].

3.2.1.4.5.3 Transaction Number

The DUAT Service must [444] assign and display to the user a unique transaction number for each transaction. The DUAT Service must assign transaction numbers sequentially, on a daily basis, beginning at 0000Z for the interactive DUAT Service [445].

3.2.1.4.5.3.1 Storage

The DUAT Service must [447] store the transaction number with the transaction for event recording and reconstruction.

3.2.1.4.6 User Information

3.2.1.4.6.1 FAA Information

The DUAT Service must provide a FAA Information Display [448] at the beginning of every transaction for the display of FAA messages and announcements. The DUAT Service must allow the user the opportunity to access the FAA Information Display [449] or to proceed to the next desired function [450].

3.2.1.4.6.2 Input Error Detection

Whenever a user-input error is detected, the DUAT Service must [460] output a FAA approved message to the user identifying that error.

3.2.1.4.6.2.1 Reentering Data

When a user input error has been identified, the DUAT Service must [461] give the user an opportunity to reenter data correctly.

3.2.1.4.6.3 Date and Time Display

The DUAT Service must display the date and current Coordinated Universal Time Code (UTC) to the user at the beginning [462] and end [463] of each transaction.

3.2.1.4.7 Help Function

The DUAT Service must [464] provide an on-line help function to define and explain responses to DUAT Service user entries.

3.2.1.4.7.1 Help Function Field Entries

DUAT Service help messages must reflect the specified field entries [465], data types [466], and the required format [467].

3.2.1.4.7.2 Access to Help Function

The DUAT Service must [468] provide access to the help function any time the DUAT Service requires input from the user.

3.2.1.4.7.3 Expanded Help Function

In addition to assistance on individual prompts, the DUAT Service must provide an on-line, expanded help function that provides at least the following information:

(a) A detailed description of the DUAT Service from a user's viewpoint; [469]
(b) Instructions on how to use the DUAT Service, including examples; [470]
(c) A description of, and instructions on, the use of the control functions available to the user; [471] and
(d) A complete description of all command syntax and meanings, error messages and meanings, product display formats, and detailed help data. [472]

3.2.1.4.7.4 ICAO Help Function

The DUAT Service must [473] provide an ICAO help function that describes and provides examples of ICAO data to be entered for each field of the flight plan.

3.2.1.4.7.4.1 ICAO Help Function Entry

The DUAT Service must [474] allow entry to the ICAO help function from any ICAO flight plan function.

3.2.1.4.8 DUAT Service Help Line

The DUAT Service must [475] provide direct assistance to users via toll-free communications circuits. The DUAT Service must [1040] provide direct assistance to users using an Internet interface. The DUAT Service Help Line must [476] operate 24 hours a day, 7 days a week.

3.2.1.5 Interface Requirements

3.2.1.5.1 Interface with NAS Systems

The SP must interface with the following National Airspace System (NAS) systems:

(a) National Airspace Data Interchange Network (NADIN) MSN Rehost (NMR) [1500];
(b) Weather Message Switching Center Replacement (WMSCR), if not using a comparable system or service; [1501];
(c) Air Traffic Control (ATC) Host Computer or its replacement, En Route Automation Modernization (ERAM); [1502];
(d) Air Traffic Control System Command Center (ATCSCC) [1503];
(e) Legacy AFSS/FSS System Interfaces (i.e., OASIS and AISR) [1504];

(f) Flight Services 21 (FS-21)) [1505];
(g) Government communications circuits [1506] and;
(h) National Airspace Data Interchange Network (NADIN II) for the exchange of flight and weather information [1515].

The contractor must provide a National Institute of Standards and Technology (NIST)-certified X.25 interface to NADIN II network.

The X.25 interface must be in accordance with GOSIP Register of Conformance Tested Products.

3.2.1.5.2 Automatic Call Detection

The DUAT Service must provide automatic-answering [485] and automatic-baud detection and adjustment features [486].

3.2.1.5.3 Call-Termination

The DUAT Service must terminate connection:

(a) When originated by the user, [487]
(b) When there has been no user keyboard entry for 3 minutes, [488] or
(c) When the transaction is complete. [489]

3.2.1.5.4 DUAT TCP/IP Interfaces

The DUAT Service must [491] use TCP/IP as an intermediate pathway between the DUAT Service and other NAS and non-NAS systems after the interface has been tested and approved for operational use. Following testing, approval, and transition of the DUAT service to TCP/IP with CMHP for operational use, the X.25 interface listed in section 3.2.1.5.1.4 will no longer be required by the DUAT service. The TCP/IP interface must [493] comply with NADIN TCP/IP services utilizing the Common Message Handling Protocol (CMHP) Interface Control Document (ICD) and if WMSCR is used, the interface must [492] comply with the Weather Message Switching Center Replacement (WMSCR) TCP/IP Services utilizing the Common Message Handling Protocol (CMHP) ICD.

3.2.1.5.4.1 NAS Messages

The DUAT Service must:

(a) Establish and maintain the electronic flight plan messages for data transmission to the NAS [496] and
(b) Receive and process rejected flight plan data messages from the NAS [497].

3.2.1.5.4.1.1 Originator's Address

Messages originated by the DUAT Service must [498] contain the originator's unique address indicator which will be assigned by the FAA.

3.2.1.5.4.1.2 Data Exchanges

Data exchanges between the DUAT Service and the FAA facilities must comply with the following FAA Publications:

(a) NAS-MD-310, [499]
(b) NAS-MD-311, [500]
(c) NAS-MD-312, [501]
(d) NAS-MD-315, [502]
(e) NAS-MD-316, [503] and
(f) FAA Order 7110.10. [504]

3.2.1.6 Performance Requirements

The DUAT Service must meet the performance requirements in Tables 3.2.1.6-1 and 3.2.1.6-2 (Requirements 505 through 523).

3.2.1.6.1 Simultaneous Users

The DUAT Service must [524] be capable of initially supporting at least 96 simultaneous users while meeting all functional and performance requirements of the specification.

3.2.1.6.2 Time Source Synchronization

The DUAT Service must [525] maintain the time reference synchronized to within one second of UTC, based on a FAA-approved time source.

Table 2: Processing Performance Requirements

Item	Requirement	Mean	99th Percentile	Maximum
1	Connection establishment time: From connection until display of initial log-on screen	3.0 [505]	5.0 [506]	10.0 [507]
2	Complete Flight Plan Route Validation	2.0 [508]	5.0 [509]	10.0 [510]
3	Respond to Data Request	2.2 [511]	3.9 [512]	8.3 [513]

Item	Requirement	Mean	99th Percentile	Maximum
4	Error Message Output	2.0 [514]	7.2 [515]	8.3 [516]
5	Flight Plan Processing	2.0 [517]	5.0 [518]	7.2 [519]

Note: All values are in seconds and a normal distribution is assumed.

Table 3: Data Performance Requirements

Item	Requirement	Maximum
1	Terminal, area, upper-air forecasts, and forecast amendments	30 [520]
2	Surface Weather observations, PIREPs and radar reports (including special/urgent reports)	15 [521]
3	Weather warnings and advisories	15 [522]
4	NOTAMs	30 [523]

Note: Maximum time is in seconds and is computed from time of data receipt until the product has been processed, stored, and is ready for use. Product sizes are provided in Appendix C.

3.2.1.6.3 Flight Plan Error Rate

The DUAT Service error rate for flight plan messages filed with the ARTCC must [526] not exceed one (1) percent on a weekly basis.

Flight plan error rate must [527] be computed as the number of flight plan errors (a flight plan error message may identify more than a single error) divided by the number of flight plan messages filed, expressed as a percentage.

A flight plan reject message must [528] be counted as an error unless the reason for reject was for the flight plan being a duplicate transmission.

Other errors, which are determined by the FAA not to be the fault of the DUAT Service, will be excluded from the error rate computation.

3.2.1.6.4 Qualified Internet Communications Provider (QICP) Requirement

The SP must achieve and maintain status as a QICP [1507]. As such, the SP must install and use Secure Socket Layer (SSL) encryption for CFR Part 121 and 135 operators to

fully comply with requirements outlined in Advisory Circular AC 00-62, dated 11/01/02. [1508]

After the SP achieves QICP status, the SP must display a warning label on its Internet site. [1509] The following language is recommended for the label: This Qualified Internet Communication Provider's (QICP) servers and communication interfaces are approved by the FAA as secure, reliable, and accessible in accordance with AC 00-62. 1) This QICP does not ensure the quality and currency of the information transmitted to you. 2) You the user, assumes the entire risk related to the information and its use.

3.2.3 System Quality Factors

3.2.3.1 Reliability

The DUAT Service must [530] plan and implement reliability procedures to satisfy the performance and operational requirements of this specification.

3.2.3.2 Maintainability

The DUAT Service must [531] plan and implement maintainability procedures to satisfy the performance and operational requirements of this specification.

3.2.3.3 Availability

The DUAT Service must [532] maintain an operational availability (Ao) of 99 percent in any 30-day period. For the purposes of availability calculations, down time is defined as anytime DUAT Service is unavailable to users within the mean times established in table 3.2.1.6-1. Events such as natural disasters and Government communications circuits failures must [073] be included in the Ao calculations but these will not be counted against the SP's service requirement.

DUAT Service availability must [536] be computed as:

$$Ao = (\text{total time} - \text{total down time} / \text{total time}) \times 100$$

3.2.4 System Flexibility and Growth

The DUAT Service must [537] be an open system capable of incorporating new products or other capabilities as they become available.

3.2.4.1 DUAT Service User Growth

The DUAT Service must [538] be able to accommodate a 5 percent annual growth in the number of transactions while still satisfying all functional and performance requirements of this specification.

3.3.1 Human Engineering

The user's personal computer or terminal must [542] provide the human interface to the DUAT Service. The human interface is defined to be all display and data/command entry devices with which the user accesses or uses the DUAT Service.

3.3.1.1 Human Factors

Human factors requirements for error management/data protection must [543] comply with MIL-STD-1472, paragraph titled Error Management/Data Protection, except where superseded or extended by a requirement in this specification.

3.2.1.6.5 Command Language

The DUAT Service must [544] provide a data entry/command format for users to input data.

3.2.1.6.6 User Feedback

The DUAT Service must [545] provide feedback to all user data and command entry actions, with message output subject to FAA approval.

3.2.1.6.6.1 Feedback Message

The DUAT Service must provide a plain language text message or other distinct indication to confirm a requested system action [546], or an indication that the action was not performed [547].

3.2.1.6.6.1.1 Feedback Time

When any user request takes more than 3 seconds to complete, the DUAT Service must [548] provide a message/icon indicating that the system is working on the user's request.

3.2.1.6.6.2 Error Messages

The DUAT Service must generate system error messages [549] and user input error messages [550] written in plain language text. The messages should aid the user as much as possible without reference to a FAA-approved manual.

3.2.1.6.6.2.1 Command Response Message

The DUAT Service must [551] respond to all fulfilled commands with an acknowledgment indicating successful completion.

3.2.1.6.6.2.2 Command Error Message

The DUAT Service must respond to all unfulfilled commands with messages identifying user input or syntax errors in these commands [552], and system errors detected in the performance of these commands [553].

3.2.2 General Security Requirements

3.2.2.1 Physical Security

The DUAT Service must [554] provide Physical Security as defined in FAA Order 1600.69B.

3.2.2.2 Telecommunications and Information Security

The DUAT Service must provide Telecommunication and Information Security as defined in Information Systems Security Program; FAA Order 1370.82A, Chapter 3, Section 12 [555].

3.2.2.3 User Passwords

The DUAT Service must [557] protect user passwords in the database as defined in the FAA Information Systems Security Program; FAA Order 1370.82A.

3.2.3 Access Levels

The DUAT Service must provide the following three levels of access:

(a) Weather Briefing and Flight Planning, [558]
(b) Authorized Users Database Management, [559] and
(c) FAA Information Display. [560]

3.2.3.1 Weather Briefing/Flight Planning Access

The DUAT Service must restrict access to the Weather Briefing [561] and Flight Planning [562] Functions to persons listed in the Authorized Users Database or other FAA-authorized users.

3.2.3.2 Authorized Users Database Access

The DUAT Service must allow only FAA-authorized personnel to access [563] and update [564] the Authorized Users Database.

3.2.3.3 User Information Display Area Access

The DUAT Service must [565] allow only FAA-authorized personnel to access and update the FAA Information Display.

3.3.9.1 Access Restrictions

The DUAT Service must [566] prevent unauthorized access to the DUAT Service.

3.3.9.2 Initial Access Validation

On initial use, DUAT Service must require the user to enter his/her last name [567] and his/her pilot certificate number [568] (if applicable) for validation with the Authorized Users Database.

3.2.3.3.1 Access Non-Validation

When the user-entered access data are not contained in the Authorized Users Database, the DUAT Service must [569] display a message to the user indicating that an access code cannot be issued because the DUAT Service was unable to validate the name and certification number (if applicable).

3.2.3.3.1.1 New DUAT User Access

If a new user is not listed in the Authorized Users Database, the DUAT Service must [570], upon receipt of a copy of the user's Pilot Certificate or Student Medical Certificate, provide access to the DUAT Service. Fax copies are acceptable.

3.2.3.3.1.1.1 Documentation Retention

The DUAT Service must [571] retain the copies of the new user's Pilot or Medical Certificates until the user's name appears in the updated Authorized Users Database.

3.2.3.4 Access Code and Password Assignment

Once a first time user has been verified, the DUAT Service must provide the user with an access code [572] and require the user to input a password [573].

3.2.3.4.1 Access Codes

The DUAT Service must [574] assign a unique access code to each user.

3.2.3.4.1.1 Access Security

To maintain security, the DUAT Service must [575] obscure the access code and password from the user terminal.

3.2.3.4.1.2 Password

The DUAT Service must allow the user to initially select [576] and change [577] his/her password at any time.

3.2.3.4.2 Retention for Future Use

Once the password is verified by the user and accepted, the DUAT Service must [578] display a message suggesting retention of the access code and password for future use.

3.2.3.5 Log-on

Upon each user's subsequent log-on, the DUAT Service must [579] authenticate the user's identity by requiring the entry of a valid access code and password.

3.2.3.5.1 Log-on Denial

After three attempts, DUAT Service must deny entry when user enters an invalid access code [580] or password [581].

3.2.3.5.1.1 Log-on Denial Remarks

In the event of an unsuccessful log-on, the DUAT Service must [582] display a message to the user indicating a log-on denial and a request that the user contact the DUAT Service Help Line at a specified telephone number.

3.2.3.5.2 Record of Log-on Attempts

The DUAT Service must [583] record both successful and unsuccessful log-on attempts.

3.2.3.6 Scope of the Information Systems Security Program

The DUAT Service must [1021] provide the full scope of security as defined in the FAA Order 1370.82A, Chapter 1, Section 6] and Chapter 1, Section 4. The DUAT Services

must [1028] provide all the FAA ISS implementation directive guidance as defined in FAA Order 1370.82A, Section 7, a, b, and c.

3.2.3.6.1 Security Implementation

The DUAT Service must [1033] implement all aspects of the FAA Order 1370.82A, Chapter 1, Section 7, d.

3.2.3.6.2 Security Responsibilities

The DUAT Service must [1034] support the FAA to accomplish all of the tasks as defined in FAA Order 1370.82A, Chapter 2, Section 2.

4.0 ACRONYMS, DEFINITIONS, GLOSSARY

See Section J3 of the Screening Information Request.

APPENDIX A

STATIC FLIGHT DATA

Because the actual amount of storage necessary to store the GFE static data is dependent on the implementation, the only sizing guidelines that can be given are for the input size of the weather data and the number of entries in the static data records. The table below provides sizing guidelines for the static data. Data size estimates for the weather data are incorporated in Appendix C.

Table 4: Static Flight Data

Source	Updated (Days)	Subject	Minimum No. Items
NFDC	56	Airports	18,812
NFDC	56	NAVAIDs, Waypoints	3,248
NFDC	56	WX Reporting Locations	1,966
NFDC	56	Fixes	16,605
NFDC	56	Preferred Routes High	1,835
NFDC	56	Preferred Routes Low	783
NFDC	56	Jet Airways Segments	294 5,756
NFDC	56	Victor Airways	647
AVN-460	90	Pilots	1,000,000
NFDC	56	Colored Airways	33
ICAO (Montreal)	365	ICAO Data	1,000,000
NFDC	56	TEC Routes	961
NFDC	56	SIDs, STARS, and SIAPS	486
NFDC	56	Direct Routes Atlantic/Oceanic/SOCAL)	750
NFDC	56	ARTCC Boundaries	13
NFDC	56	Special Use Airways	978

APPENDIX B

ADAPTABLE PARAMETERS

This table lists the adaptable parameters used in the specification.

Table 5: Adaptable Parameters

Description	Parameter	Default Value	Minimum	Maximum	Incre-ment	Units
Route Weather Corridor Width	RWXC	50	10	100	5	nm
Weather Search Area Radius	WXR	25	10	100	5	nm
Forecast Winds Aloft Corridor Width	FWAC	200	100	600	50	nm
Air Traffic Control Transmit Time	ATCTT	60	N/A	N/A	10	min
Flight Service Station Transmit Time	FSST	30	N/A	N/A	10	min

APPENDIX C

PRODUCT LISTING

This appendix contains a weather product listing.

WEATHER TYPE	WX PROD ID	AREA/ POINT	RETENTION TIME	REPLACEMENT UPDATES	SOURCE	NUMBER OF REPORTS	AVERAGE SIZE (BYTES)	TRANS-MISSION TYPE	TIMES PER DAY	EST. TOTAL STORAGE REQ. (K BYTES)
ADVERSE CONDITIONS										
Area Forecast	FA									
Hazard/Flight Precautions	FA	A	12 h	S	WMSCR*	3	300	S	3	6
Synopsis	FA	A	12 h	S	WMSCR*	10	1000	S	3	20
Severe Weather Outlook	AC	A	12 h	S	WMSCR*	1	1600	S	2	2
Severe WX Warning										
Aviation Weather Alert Message	AWW	A	6 h	U	WMSCR*	1	150	U	N/A	2
Severe WX Forecast	WW	A	6 h	U	WMSCR*	1	1200	U	N/A	10
Severe WX Forecast Status	WW-A	A	6 h	U	WMSCR*	1	750	U	N/A	6
Tropical Depression and	WH	A	6 h	U	WMSCR*	3	1400	U	N/A	5

WEATHER TYPE	WX PROD ID	AREA/ POINT	RETENTION TIME	REPLACEMENT UPDATES	SOURCE	NUMBER OF REPORTS	AVERAGE SIZE (BYTES)	TRANS-MISSION TYPE	TIMES PER DAY	EST. TOTAL STORAGE REQ. (K BYTES)
Hurricane Advisory										
Atlantic Ocean Tropical Cyclones	WTNT21-25	A	6 h	U	WMSCR*	5	1400	U	N/A	7
Pacific Ocean Tropical Cyclones (Marine Adv.)	WTPZ21-25	A	6 h	U	WMSCR*	5	1400	U	N/A	7
Atlantic Ocean Tropical Cyclones (Quick Change Updates)	WTNT61	A	6 h	U	WMSCR*	3	1400	U	N/A	5
Pacific Ocean Tropical Cyclones (Quick Change Updates)	WTPZ61	A	6 h	U	WMSCR*	3	1400	U	N/A	5
Atlantic Ocean Tropical Cyclones (Position Estimates)	WTNT51	A	6 h	U	WMSCR*	3	1400	U	N/A	5

WEATHER TYPE	WX PROD ID	AREA/ POINT	RETENTION TIME	REPLACEMENT UPDATES	SOURCE	NUMBER OF REPORTS	AVERAGE SIZE (BYTES)	TRANS-MISSION TYPE	TIMES PER DAY	EST. TOTAL STORAGE REQ. (K BYTES)
Pacific Ocean Tropical Cyclones (Position Estimates)	WTPZ51	A	6 h	U	WMSCR*	3	1400	U	N/A	5
SIGMETs	WS	A	4 h	R	WMSCR*	99	100	U	N/A	14
Convective SIGMET	WST	A	4 h	R	WMSCR*	3	400	S	24	2
Center WX Advisory	CWA	A	6 h	R	WMSCR*	126	200	U	N/A	101
Urgent WX Advisory	UCWA	A	6 h	R/A	WMSCR*	126	400	U	N/A	2
AIRMET	WA	A	6 h	R	WMSCR*	30	1000	U	N/A	120
CURRENT CONDITIONS										
Surface Observation	SA	P	185 m	A	WMSCR*	2200	54	S	24	245
Special Reports	SP	P	185 m	A	WMSCR*	2200	50	U	N/A	120

WEATHER TYPE	WX PROD ID	AREA/ POINT	RETENTION TIME	REPLACEMENT UPDATES	SOURCE	NUMBER OF REPORTS	AVERAGE SIZE (BYTES)	TRANS-MISSION TYPE	TIMES PER DAY	EST. TOTAL STORAGE REQ. (K BYTES)
Correction	COR	P	185 m	A	WMSCR*	200	50	U	N/A	35
AMOS, AUTOB, RAMOS, ASOS, AWOS	SAME	P	185 m	R	WMSCR*	500	50	S	N/A	16
Pilot Report	UA	P/A	95 m	U	WMSCR*	1600	75	U	N/A	117
Urgent Pilot Report	UUA	P/A	95 m	U	WMSCR*	1600	75	U	N/A	90
Radar Report	SD	A	1 h	R	WMSCR*	230	100	U	N/A	20
Special Radar Report	SD-SPL	A	1 h	R	WMSCR*	230	70		N/A	0 7
FORECAST CONDITIONS										
Terminal Forecast	TAF	A	18 h	R	WMSCR*	1000	125	S	3	130
TAF AMD	SAME	A	18 h	R	WMSCR*	1000	100	U	N/A	5

WEATHER TYPE		WX PROD ID	AREA/ POINT	RETENTION TIME	REPLACEMENT UPDATES	SOURCE	NUMBER OF REPORTS	AVERAGE SIZE (BYTES)	TRANS-MISSION TYPE	TIMES PER DAY	EST. TOTAL STORAGE REQ. (K BYTES)
WINDS ALOFT FORECAST											
FD1	LOW	FD	A	18 h	R	WMSCR*	400	70	S	2	29
FD2		FD	A	18 h	R	WMSCR*	400	70	S	2	29
FD3		FD	A	18 h	R	WMSCR*	400	70	S	2	29
FD8	HIGH	FD	A	18 h	R	WMSCR*	100	20	S	2	2
FD9		FD	A	18 h	R	WMSCR*	100	20	S	2	2
FD10		FD	A	18 h	R	WMSCR*	100	20	S	2	2
Current Winds		FD	A	18 h	R	WMSCR*	100	20	S	2	2

WEATHER TYPE	WX PROD ID	AREA/ POINT	RETENTION TIME	REPLACEMENT UPDATES	SOURCE	NUMBER OF REPORTS	AVERAGE SIZE (BYTES)	TRANS-MISSION TYPE	TIMES PER DAY	EST. TOTAL STORAGE REQ. (K BYTES)
Aloft										
Grid Winds	GF	A	18 h	R	WMSCR*	3	1600	S	2	4
Notice To Airmen	D	P	until exp. date	U	WMSCR*	2200	40	U	N/A	88
FDC NOTAMs	FDC	A	until exp. date	U	WMSCR*	180	212	U	N/A	40
LORAN NOTAMs	LORAN	A	until exp. time	U	WMSCR*	100	50	U	N/A	20
WAAS NOTAMs	WAAS	A	until exp. time	U	WMSCR*	100	50	U	N/A	20
GPS NOTAMs	GPS	A	until	U	WMSCR*	100	50	U	N/A	20

WEATHER TYPE	WX PROD ID	AREA/ POINT	RETENTION TIME	REPLACEMENT UPDATES	SOURCE	NUMBER OF REPORTS	AVERAGE SIZE (BYTES)	TRANS-MISSION TYPE	TIMES PER DAY	EST. TOTAL STORAGE REQ. (K BYTES)
			exp. time							

WEATHER TYPE	WX PROD ID	AREA/ POINT	RETENTION TIME	REPLACEMENT UPDATES	SOURCE	NUMBER OF REPORTS	AVERAGE SIZE (BYTES)	TRANS-MISSION TYPE	TIMES PER DAY	EST. TOTAL STORAGE REQ. (K BYTES)
ATCSCC Delay Info	ATC	A	until exp. date	U	Govt Approved source	75	100	U	N/A	5
ATCSCC Warning Restricted Areas	WRS	A	until exp. date	U	Govt Approved source	100	100	U	N/A	1
GRAPHIC PRODUCTS										
Surface Analysis		A	3 h	R	Govt Approved source	1	477 K	S	8	954 K
Weather Depiction		A	3 h	R	Govt Approved source	1	230 K	S	8	460 K

WEATHER TYPE	WX PROD ID	AREA/ POINT	RETENTION TIME	REPLACEMENT UPDATES	SOURCE	NUMBER OF REPORTS	AVERAGE SIZE (BYTES)	TRANS-MISSION TYPE	TIMES PER DAY	EST. TOTAL STORAGE REQ. (K BYTES)
Radar Summary/NEXRAD		A	1 h	R	Govt Approved source	1	232 K	S	24	464 K
Low-Level Significant Weather Prognosis		A	6 h	R	Govt Approved source	1	256 K	S	4	512 K
High-Level Significant Weather Prognosis		A	6 h	R	Govt Approved source	1	256 K	S	4	512 K
Composite Moisture Stability Chart (Stability Panel only)		A	12 h	R	Govt Approved source	1	203 K	S	2	406 K
Severe Weather Outlook		A	24 h	R	Govt Approved	1	183 K	S	1	366 K

WEATHER TYPE	WX PROD ID	AREA/ POINT	RETENTION TIME	REPLACEMENT UPDATES	SOURCE	NUMBER OF REPORTS	AVERAGE SIZE (BYTES)	TRANS-MISSION TYPE	TIMES PER DAY	EST. TOTAL STORAGE REQ. (K BYTES)
					source					
Constant Pressure Charts 850/700/500/300/200mb	mb			U	Govt Approved source	1	750 K		N/A	
36 and 48 hour surface prognosis		A	6h	R	Govt Approved source	1	256K	S	4	512K
Satellite Imagery				U	Govt Approved source	1	750 K		N/A	

Legend:

Area/Point: A = Area, P = Point

Replacement Updates: A = Appended R = Replaced S = Scheduled U = Unscheduled

Transmission Type: S = Scheduled U = Unscheduled

Size: K = Kilobytes, M = Megabytes

Time: h = hours, m = minutes

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* Or other comparable system or service.

APPENDIX D

Domestic ICAO Flight Plan

On June 29, 2008 all ARTCC Host computer systems switched from Domestic Flight Plan (FAA Form 7233-1) processing to International Flight Plan (FAA Form 7233-4) processing for those pilots wishing to receive automated assignment of flight plans with Area Navigation (RNAV) arrival and departure routes. Use FAA Form 7233-4, International Flight Plan, for international flights as well as flights in domestic U.S. airspace in which automatic assignment of RNAV routes is desired. This explanation is provided to explain when an international flight plan form will be used to file a flight plan in domestic U.S. airspace.

Appendix E

VERIFICATION REQUIREMENTS TRACEABILITY MATRIX (VRTM)

Table E contains the DUAT Service VRTM. The test methods identified are:

I = Inspection
A = Analysis
D = Demonstration
T = Test
T/A = Test and Analysis

Table 6: DUAT Service VRTM

Specification Paragraph	Rqmt No.	Ver Method	
3.0 REQUIREMENTS	---	---	
3.1 Definition	---	---	
3.2 Characteristics	---	---	
3.2.1 Functional Characteristics	001	D	
3.2.1 Functional Characteristics	002	D	
3.2.1 Functional Characteristics	003	D	
3.2.1 Functional Characteristics	004	D	
3.2.1 Functional Characteristics	082	D	
3.2.1 Functional Characteristics	159	D	
3.2.1 Functional Characteristics	005	D	
3.2.1 Functional Characteristics	006	D	
3.2.1 Functional Characteristics (Internet Interface)	810	D	
3.2.1.1 General Requirements	007	D	
3.2.1.1 General Requirements	008	D	
3.2.1.1 General Requirements	009	D	
3.2.1.1 General Requirements	010	D	
3.2.1.1 General Requirements	011	D	
3.2.1.1 General Requirements	012	D	
3.2.1.1 General Requirements	013	D	
3.2.1.1 General Requirements	014	D	
3.2.1.1 General Requirements	015	D	
3.2.1.1 General Requirements	016	D	

Specification Paragraph	Rqmt No.	Ver Method	
3.2.1.1 General Requirements	017	D	
3.2.1.1 General Requirements	018	D	
3.2.1.1 General Requirements	019	D	
3.2.1.1 General Requirements	020	D	
3.2.1.1 General Requirements	021	D	
3.2.1.1 General Requirements	022	D	
3.2.1.1 General Requirements	023	D	
3.2.1.1 General Requirements	024	D	
3.2.1.1 General Requirements	025	D	
3.2.1.1 General Requirements	026	D	
3.2.1.1 General Requirements	811	D	
3.2.1.1 General Requirements	812	D	
3.2.1.1.1 Data Entry and Formats	705	I	
3.2.1.1.2 Airport Diagrams	706	I	
3.2.1.1.3 Military Graphical Data	920	I	
3.2.1.2 Range of Service	--	--	
3.2.1.2.1 Weather Briefing and Flight Planning	027	D	
3.2.1.2.1 Weather Briefing and Flight Planning	028	D	
3.2.1.2.1.1 Reserved	---	---	
3.2.1.2.2 International Weather Support	029	D	
3.2.1.2.2 International Weather Support	030	D	
3.2.1.2.2 International Weather Support	031	D	
3.2.1.2.2 International Weather Support	032	D	
3.2.1.2.2 International Weather Support	033	D	
3.2.1.2.2 International Weather Support	034	D	
3.2.1.2.2 International Weather Support	035	D	
3.2.1.2.2 International Weather Support	036	D	
3.2.1.2.2 International Weather Support	037	D	
3.2.1.2.2 International Weather Support	038	D	
3.2.1.2.2 International Weather Support	750	D	
3.2.1.3 Source Data and Database Maintenance	---	---	
3.2.1.3.1 Authorized Users	041	D	
3.2.1.3.1.1 Graphic Weather Data	070	D	
3.2.1.3.1.1 Graphic Weather Data	072	D	

Specification Paragraph	Rqmt No.	Ver Method	
3.2.1.3.1.1 Graphic Weather Data	910	D	
3.2.1.3.1.1 Graphic Weather Data	911	D	
3.2.1.3.1.1 Graphic Weather Data	912	D	
3.2.1.3.1.1 Graphic Weather Data	913	D	
3.2.1.3.1.1 Graphic Weather Data	914	D	
3.2.1.3.1.1 Graphic Weather Data	915	D	
3.2.1.3.1.1 Graphic Weather Data	923	D	
3.2.1.3.1.1 Graphic Weather Data	924	D	
3.2.1.3.1.1 Graphic Weather Data	925	D	
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