USDA Forest Service
U.S. DEPARTMENT OF AGRICULTURE

Digital Mobile Sketch Mapping (DMSM)

Digital Mobile Sketch Mapping
Support Plan

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Definition of Terms

Term	Definition
AGOL	ArcGIS Online
ASWG	Aerial Survey Working Group
CIO	USFS Chief Information Office
DMSM	Digital Mobile Sketch Mapping system
FHAAST	Forest Health Assessment and Applied Sciences Team
FITARA	Federal Information Technology Acquisition Reform Act
IDTO	Information Technology Delivery Optimization
OS	Operating System
RFC	Request for Change
ServiceNow	The CIO's information technology change & configuration management solution
VDC	Virtual Data Center. The USFS application hosting environment within the USDA Enterprise Data Center in Kansas City, Missouri.

Introduction

This document presents the overall approach guiding software maintenance and support for the Digital Mobile Sketch Mapping (DMSM) system. DMSM is software developed and supported by the Forest Health Assessment and Applied Sciences Team (FHAAST) for conducting aerial and ground-based surveys of forest health conditions. DMSM Releases are classified as Major, Revision, or Emergency, based on the impact of the changes on the application. Requests for Change (RFCs) including software fixes and feature requests will be managed by adopting a priority-driven approach that balances fixes and new feature additions with the stability of the software. RFCs will be logged using the DMSM Software Bug form managed by the FHAAST DMSM Support Team and also in the USFS CIO's ServiceNow change/configuration management system as needed. User support is organized in three tiers shared across Regions (Tier 1), FHAAST (Tier 2), and the USFS CIO (Tier 3). RFCs are periodically prioritized by FHAAST staff in conjunction with end-users. The expectation is for an application development cycle that produces a Major release as needed.

The plan represents the anticipated process for supporting DMSM and its users. The plan's approach is to balance formality with expediency in a way that provides transparency and assurance to DMSM users regarding support procedures and expectations. The plan is open to revision and refinement at any time to further these goals.

SOFTWARE MAINTENANCE

Releases

New releases of DMSM will be organized in periodic Major Releases, scheduled every two - three years to balance software stability with innovation. Revision Releases address non-critical defects. Emergency Releases are intended to include only fixes. Releases of any kind are expected to include both fixes and new features. Some features of each release may potentially be incompatible with the features or behavior of a previous release.

Three types of releases are defined:

Major Release

A Major release for DMSM is characterized by the addition of a new set of features and behaviors to the existing application.

Revision Release

A Revision release includes changes fixing specific defects found in production and represents an interim release during the lifetime of the current Major release.

Emergency Release

An Emergency release includes changes fixing only immediate-priority defects found in production that preclude or severely hamper use of DMSM and for which no reasonable work-around can be determined.

Issues and Changes

The primary sources of input for issues and changes are FHAAST staff and end-users. The FHAAST DMSM Support Team is generally responsible for managing changes to address defects and improvements for DMSM. The support team may at times be required to engage with the CIO for additional support in the form of database management, server management, application development, and management of data services. RFCs are submitted to the DMSM Support Team and logged in the DMSM Software Bug form managed by FHAAST. If an RFC requires support from the CIO, a ticket is also created in ServiceNow, the USFS change/configuration management system.

The DMSM Software Bug form is used to record and manage RFCs which are periodically prioritized by FHAAST staff in conjunction with end-users. Initial prioritization is based on a combination of severity, impact, and cost. The final evaluation of an RFC results in one of four possible priority levels listed below. The priority of an RFC can be suggested by the proponent, but FHAAST in collaboration with the ad hoc ASWG DMSM Work Group, is ultimately responsible for setting it.

The priority levels are:

Immediate

The RFC needs to be addressed as soon as possible as an Emergency release.

An Emergency release can contain only immediate-priority changes. Multiple immediate-priority changes can be included in the same release, provided that any change does not delay the release significantly. It should be noted that:

- Emergency releases carry the risk of introducing new defects due to the rapid deployment of the solution and limited time for testing prior to deployment.
- Emergency releases should not be considered an opportunity for the inclusion of lower-priority changes that are not directly related to the resolution of the emergent issue(s).

High - The RFC will be addressed in the next Major release of DMSM.

Medium - The RFC will be addressed in a future Major release of DMSM.

Low - There is no target date for addressing the RFC.

Issue Tracking

Each RFC will be tracked in the DMSM Software Bug form and managed by the FHAAST DMSM support team. For RFCs that require action by CIO staff (e.g. server or database administration, updates to Production systems, etc.), a ticket will be submitted to ServiceNow which allows tracking of submitted tickets.

The following information is recorded in the DMSM Software Bug form for each RFC:

- TITLE
- DESCRIPTION
- DATE CREATED
- STATUS
- REQUESTOR NAME
- REQUESTOR EMAIL
- REQUESTOR REGION
- CATEGORY
- PRIORITY
- TABLET MAKE/MODEL
- TABLET OS
- REPLICATE ERROR POSSIBLE
- SPECIAL CIRCUMSTANCES
- ATTACHMENT
- ASSIGNED TO
- FINAL COMPLETION DATE
- FINAL RESOLUTION

RFCs should be assessed by the DMSM Support Team within five business days, and either be accepted or closed with an appropriate resolution noted. An accepted RFC whose priority is Immediate should be immediately associated with an Emergency release and prioritized for resolution as soon as possible. An accepted RFC whose priority is High should be promptly associated to the next Major release of DMSM. Accepted RFCs with Medium and Low priority will be retained as backlog items in the tracker until prioritized for a future DMSM release.

USER SUPPORT

User support is organized in three tiers. Tier 1 is managed at the Region level, where Regional aerial survey staff provide the first level of support for end-users (USFS and state aerial surveyors and GIS specialists). Tier 2 is managed by the FHAAST DMSM support team. End users and Region staff should contact FHAAST to elevate issues that could not be resolved at the Tier 1 level. Tier 3 support is managed at the CIO and involves the DMSM Support Team submitting requests to the ServiceNow change/configuration management system.

Types of support requests include questions about how to use DMSM, where to find DMSM data or documentation, what data services URLs to use, reporting faulty behavior in the software, and requests for new features. The Support Model description below describes the general approach to fielding a wide range of support request types.

Support Model

The DMSM support model operates with three levels (Tiers 1-3):

1. **Tier 1** is provided by the aerial survey team at each Region and is the first point of contact for fielding end-user support requests. Routine questions about advice for using DMSM software, current service URLs, and where to find documentation are typical of requests that can be handled by Tier 1. If Tier 1 is unable to resolve a request, then the Region and/or the end-user refers the issue to Tier 2 support.
2. **Tier 2** is the FHAAST DMSM Support Team. Tier 2 requests often involve software installation problems, issues with data service performance/availability, and problems requiring the intervention of the DMSM data steward. Tier 2 should be able to handle the majority of support requests unless the resolution involves the need for privileged access to servers or databases located in the USFS Virtual Data Center (VDC) production environment.
3. **Tier 3** support involves RFCs for which the resolution requires either deliberation and decision making involving the ASWG/the user community or the assistance of CIO staff with appropriate access and permissions to resources at the VDC or software code changes. Tier 3 support is often a direct collaboration between the Tier 2 DMSM Support Teams and Tier 3 IT specialists where online co-working sessions are used in addition to written Release Notes provided to the Tier 3 team.

Support Timeline

1. Tier 1 requests should be resolved within 1-5 business days
2. Tier 2 requests should be resolved within 5-10 business days depending on complexity and urgency.
3. *Tier 3 requests should be resolved within 10-20 business days depending on complexity and urgency.

   * The CIO Hosting Support Services (HSS) team guarantees return to operation within 72 hours for support requests in ServiceNow that are flagged as Severity 1 (i.e. Emergency RFCs) under the following model:
   - Severity 1 (high urgency) = e.g. service/system not available
   - Severity 2 & 3 (moderate urgency) = e.g. service/system with reduced performance
   - Severity 4 (low urgency) = e.g. O&M, license renewal

Request Resolution

A goal of the DMSM support plan is to systematically address support and change requests. If an issue is reported that interferes with the use of DMSM or reporting of data, the aim is to restore normal service as soon as possible. Issues should remain open until they are resolved to the satisfaction of the party(ies) that originated the issue. Solutions may not be fully fixed immediately if a reasonable workaround exists in which case an RFC may remain open until time, resources, or the next development cycle allow for a fully executed solution.

General Support Resources

The following general, self-directed support resources also exist for DMSM users:

DMSM Webpage (https://www.fs.usda.gov/foresthealth/applied-sciences/mapping-reporting/digital-mobile-sketch-mapping.shtml)

A place where users can find a number of guidance documents and links to more information.

DMSM AGOL page (https://arcg.is/1WGv4v)

This resource provides the URLs to the current DMSM Production and Training webservices required for use with DMSM tablets. The page is available to users registered with the DMSM AGOL User Group. To get registered contact Kyle Neely (kyle.neely@usda.gov) or Bill Frament (William.r.frament@usda.gov).

DMSM Data on AGOL (https://usfs.maps.arcgis.com/home/search.html?q=DMSM)

There are a number of DMSM data sets available as services or for download. Includes current year and recent past years' DMSM data.

APPLICATION DEVELOPMENT

Background

FHAAST recently employed the services of a third-party contractor to develop and provide ongoing support for DMSM. The original DMSM software development lifecycle plan called for transitioning the application source code in-house and to continue development and support for the long-term using the primary vendor for FHAAST's IT support services contract. The FHAAST DMSM adheres to the USFS Information Technology Delivery Optimization (IDTO) guidelines.

IDTO applies stricter implementation of Federal Information Technology Acquisition Reform Act (FITARA) provisions. CIO staff supported the developers under contract for FHAAST who specialize in geospatial applications designed for mobile devices.

Development Cycle

The DMSM Software Bug form is used to record and manage RFCs which are periodically prioritized by FHAAST staff in conjunction with the ad hoc ASWG DMSM Work Group. The expectation is for an application development cycle that produces updates annually or biannually as needed.

Development Backlog

A list of reported DMSM bugs & fixes and new features is maintained by FHAAST as the application development backlog. The list and other related information is available under Support Resources of the DMSM webpage: https://www.fs.usda.gov/foresthealth/applied-sciences/mapping-reporting/digital-mobile-sketch-mapping.shtml.

DMSM HARDWARE

The DMSM Support Team surveys the market for new equipment suitable for use with DMSM. The results are summarized and links to vendor websites are provided in the DMSM Equipment Specifications & Recommendations document available on the DMSM webpage: https://www.fs.usda.gov/foresthealth/applied-sciences/mapping-reporting/digital-mobile-sketch-mapping.shtml. DMSM users are also encouraged to send suggestions for new equipment to FHAAST DMSM Support Team sm.fs.fhaast_smsm@usda.gov