



# Ames Procedural Requirements

**APR 1120.1**  
**Effective Date:** May 2, 2023  
**Expiration Date:** March 13, 2027

**COMPLIANCE IS MANDATORY**

**Subject: Ames Safety and Mission Assurance Technical Authority (SMATA) and Health and Medical Technical Authority (HMTA)**

**Responsible Office: Code Q / Safety and Mission Assurance Directorate**

## DOCUMENT CHANGE LOG

Status [Baseline /Revision /Cancelled]	Document Revision	Date of Change	Description
Baseline	-	5/2/2023	New baseline. Removed content related to cancelled APR 7170.1 and made administrative edits.

# TABLE OF CONTENTS

## **PREFACE**

- P.1 Purpose
- P.2 Applicability
- P.3 Authority
- P.4 Applicable Documents and Forms
- P.5 Measurement/Verification
- P.6 Cancellation

## **CHAPTER 1 INTRODUCTION**

- 1.1 Technical Authority Overview

## **CHAPTER 2 ARC SMATA AND HMTA ROLES AND RESPONSIBILITIES**

- 2.1 SMATA Roles and Responsibilities
- 2.2 HMTA Roles and Responsibilities

## **CHAPTER 3 ARC SMATA AND HMTA FORMAL DISSENT AND CONFLICT RESOLUTION**

- 3.1 Referral to SMATA or HMTA
- 3.2 Assessment of Issues

## **CHAPTER 4 RECORDS**

## **APPENDIX A. DEFINITIONS**

## **APPENDIX B. ACRONYMS**

## **PREFACE**

### **P.1 PURPOSE**

a. This document is the Ames Research Center (ARC) implementation plan for Safety and Mission Assurance Technical Authority (SMATA) and Health and Medical Technical Authority (HMTA).

### **P.2 APPLICABILITY**

a. This document is applicable to all activities under the purview of NASA Ames Research Center SMATA and HMTA.

b. In this directive, all mandatory actions (i.e., requirements) are denoted by statements containing the term "shall." The terms: "may" or "can" denote discretionary privilege or permission, "should" denotes a good practice and is recommended, but not required, "will" denotes expected outcome, and "are/is" denotes descriptive material.

c. In this directive, all document citations are assumed to be the latest version unless otherwise noted.

### **P.3 AUTHORITY**

a. NPD 1000.0, NASA Governance and Strategic Management Handbook

b. NPR 7120.5, NASA Space Flight Program and Project Management Requirements

c. NPR 7120.11, NASA Health and Medical Technical Authority (HMTA) Implementation

### **P.4 APPLICABLE DOCUMENTS AND FORMS**

a. APR 1000.1, Ames Formal Dissent Process

b. APR 8735.2, Deviation/Waiver (D/W) Process

c. APR 8735.3, Control of Nonconforming Products and Services

### **P.5 MEASUREMENT/VERIFICATION**

a. Verification of conformance to requirements in this directive are measured through Center and Responsible Organizational management reviews, self-assessments, and subsequent analysis and reports of conformance to requirements, as well as periodic internal audits.

### **P.6 CANCELLATION**

a. APR 1120.1, Ames Safety & Mission Assurance Technical Authority and Health and Medical Technical Authority, dated April 24, 2018.

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Eugene Tu  
Director

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### **DISTRIBUTION STATEMENT:**

Internal and external distribution.

## CHAPTER 1 INTRODUCTION

### 1.1 Technical Authority Overview

There are three distinct types of Technical Authority: Engineering Technical Authority (ETA), Safety and Mission Assurance Technical Authority (SMATA), and Health and Medical Technical Authority (HMTA). This document addresses the implementation of SMATA and HMTA at ARC.

#### 1.1.1 Safety and Mission Assurance Technical Authority

##### 1.1.1.1 SMATA Flow

a. The SMATA flows down from the Chief, Office of Safety and Mission Assurance, through the ARC Center Director to the ARC Safety and Mission Assurance Director, down to the Systems Safety and Mission Assurance (SS&MA) Division Chief, and to Chief Safety and Mission Assurance Officers (CSOs) assigned to support specific programs or projects. The SMATA supports programs and projects to assure compliance to Safety and Mission Assurance (SMA) requirements consistent with the program and project needs and applicable Agency standards.

b. In the event a program/project does not have an assigned CSO, the SMATA authority flows up the SMA management chain to the Systems Safety and Mission Assurance Division Chief, and then up to the SMA Director.

##### 1.1.1.2 SMATA Independence

In addition to providing the expertise on SMA matters, the ARC SMATA provides an independent path to escalate Safety and Mission Assurance concerns outside of the program/project chain of command.

##### 1.1.1.3 SMATA Formal Dissent

Formal dissents pertaining to SMA can be referred to the SMATA for processing (see APR 1000.1). Decisions that change the agency risk posture or violate a major portion of one or more SMA standards will be briefed to the Chief of the Office of Safety and Mission Assurance (OSMA). It is the responsibility of the SMATA to coordinate with other technical authorities (Engineering, HMTA) and Subject Matter Experts who may have relevant expertise to bring to bear.

##### 1.1.1.4 SMATA Funding

Funding for SMATA is provided by Center Engineering, Safety, and Operations (CESO) and by programs and Projects. For SMA personnel funded by programs/projects, SMATA independence is ensured by maintaining frequent and open lines of communication with the Safety and Mission Assurance Directorate.

## 1.1.2 Health and Medical Technical Authority

### 1.1.2.1 HMTA Flow

The HMTA is the ARC Chief Medical Officer (ARC CMO) per delegation from the Chief Health and Medical Officer (CHMO) at NASA Headquarters in accordance with NPR 7120.11. The ARC CMO is located in the Safety and Mission Assurance Directorate and from a line management perspective reports to the SMA Director.

### 1.1.2.2 HMTA Independence

The HMTA provides independent oversight of all health, medical, and crew/personnel performance matters that arise in association with the execution of NASA ARC programs or projects.

### 1.1.2.3 HMTA Formal Dissent

Formal dissents pertaining to health and medical matters can be referred to the HMTA for processing (see APR 1000.1). It is the responsibility of the HMTA to coordinate with other technical authorities (Engineering, SMATA) and Subject Matter Experts who may have relevant expertise to bring to bear.

### 1.1.2.4 HMTA Funding

Funding for the HMTA is through Center Engineering, Safety, and Operations (CESO) and is therefore independent from program/project funding.

## CHAPTER 2 ARC SMATA AND HMTA ROLES AND RESPONSIBILITIES

### 2.1 SMATA Roles and Responsibilities

#### 2.1.1 Ames Center Director shall:

- a. Assure SMA technical performance and mission success for Ames programs/projects.
- b. Promote the Formal Dissent process as related to SMATA for the Center.
- c. Ensure SMA matters are addressed and resolved with the participation from the SMATA and appropriate line organizations and offices.

#### 2.1.2 Technical Line Managers shall:

- a. Comply with SMA requirements and processes as specified by the SMATA.
- b. Raise technical issues to the SMATA.

#### 2.1.3 The SMATA shall:

- a. Assess the impact to the center and comment on Agency SMA policies, processes, procedures and standards.
- b. Develop and issue center-level SMA policies, processes, and procedures.
- c. Examine trends across ARC programs/projects to identify potential changes needed to standards and/or other SMA requirements documents.
- d. Assess and approve/disapprove requests for SMA Deviation/Waivers in accordance with the Deviation/Waiver Process (APR 8735.2). If the SMATA disapproves a request for a deviation/waiver, and the submitter disagrees with the reason for disapproval, the disagreement shall be adjudicated through the ARC Formal Dissent process (APR 1000.1).
- e. Assess and process Non-Conformance Reports (NCRs) against Center SMA requirements in accordance with the Control of Nonconforming Products and Services (APR 8735.3).
- f. Review status of NCRs, Waivers, reports and issues associated with SMA. This can be examined using information contained in the ARC Problem Reporting and Corrective Action (PRACA) system.
- g. Assess and concur/not concur with ARC program/project risk assessments associated with SMA. This is accomplished via program/project milestone reviews and status reviews where risk status is presented. If the SMATA non-concurs with the program/project risk assessment of classification, and the program/project disagrees with the reason for non-concurrence, the disagreement may be adjudicated through the ARC Formal Dissent process (APR 1000.1).
- h. Report independently at program/project reviews regarding the SMA readiness to proceed to the next milestone.
- i. Report, periodically, on SMA status to the Center Director and to the Chief, Office of Safety and Mission Assurance.

- j. Notify the ARC Chief Medical Officer in the event an HMTA issue is discovered while performing their day-to-day technical authority functions.
- k. Notify the Ames Chief Engineer in the event an ETA issue is discovered while performing their day-to-day technical authority functions.

## **2.2 HMTA Roles and Responsibilities**

### **2.2.1 Ames Center Director shall:**

- a. Assure the health, safety, technical performance, and mission success for Ames programs and projects.
- b. Promote the Formal Dissent process as related to HMTA for the Center.
- c. Assess health and medical risk posture of ARC programs/projects based on information provided by the ARC Chief Medical Officer.
- d. Ensure health and medical matters are addressed and resolved with the participation from the HMTA and the appropriate line organizations and offices.

### **2.2.2 Technical Line Managers shall:**

- a. Comply with health and medical requirements and processes as specified by the HMTA.
- b. Raise technical issues to the ARC Chief Medical Officer.

### **2.2.3 In addition to the HMTA roles and responsibilities as defined in NPR 7120.11, the ARC Chief Medical Officer shall:**

- a. Assess the impact to the center and comment on Agency Health and Medical policies, processes, procedures, and standards.
- b. Develop and issue center-level health and medical policies, processes, and procedures.
- c. Examine trends across ARC programs/project to identify potential changes needed to standards and/or other health and medical requirements documents.
- d. Assess and approve/disapprove Health and Medical Deviation/Waivers as delegated by CHMO and/or Deviation/Waivers against ARC requirements in accordance with the Deviation/Waiver Process (APR 8735.2). If the HMTA disapproves a request for a deviation/waiver, and the submitter disagrees with the reason for disapproval, the disagreement may be adjudicated through the ARC Formal Dissent process (APR 1000.1).
- e. Assess and process Non-Conformance Reports (NCRs) against Center Health and Medical requirements in accordance with the Control of Nonconforming Products and Services (APR 8735.3).
- f. Assess and concur/not concur with ARC program/project risk assessments associated with Health and Medical Risks. This is accomplished via program/project milestone reviews and status reviews where risk status is presented. If the HMTA non-concurs with the program/project risk assessment of

classification, and the program/project disagrees with the reason for non-concurrence, the disagreement shall be adjudicated through the ARC Formal Dissent process (APR 1000.1).

- g. Report independently at program/project reviews as to the HMTA readiness to proceed to the next milestone.
- h. Report on status of HMTA at ARC to the Center Director and to CHMO.
- i. Notify the SMATA in the event an SMATA issue is discovered while performing their day-to-day technical authority functions.
- j. Notify the Ames Chief Engineer in the event an ETA issue is discovered while performing their day-to-day technical authority functions.



## **CHAPTER 3 ARC SMATA AND HMTA FORMAL DISSENT AND CONFLICT RESOLUTION**

### **3.1 Referral to SMATA or HMTA**

Formal dissents are processed in accordance with APR 1000.1. Based on review by the Deputy Center Director, the formal dissent can be referred for processing by the SMATA and HMTA as described below.

#### **3.1.1 SMATA**

Issues referred to the SMATA consist of formal dissents, conflicts, and requests for relief from SMA requirements. The person raising the issue shall notify the SMATA of the issue and provide sufficient explanatory material to allow a preliminary review of the issue by the SMATA.

#### **3.1.2 HMTA**

Issues referred to the HMTA consist of formal dissents, conflicts, and requests for relief from Health and Medical technical requirements. The person raising the issue shall notify the HMTA of the issue and provide sufficient explanatory material to allow a preliminary review of the issue by the HMTA.

### **3.2 Assessment of Issues**

#### **3.2.1 SMATA**

- a. Upon receipt of a request for consideration of an issue, the SMATA shall determine if other technical expertise is required.
- b. The SMATA shall notify other resources, if required, providing them with an agenda and preliminary material relevant to the issues to be addressed.
- c. All parties to an issue under contention shall be notified of the meeting and requested to attend and be prepared to further explain the decision they made or their concern.
- d. After all issue meetings, the SMATA shall document all decisions and action items.
- e. The person who submitted a request for consideration of an issue shall also be notified of the resolution of the issue, at which time they may choose to accept the resolution or escalate the issue to the next level. Following a decision by the SMATA, if the result was unsatisfactory to the submitter, the next level for review would be the Center Director and then the Chief, OSMA.

#### **3.2.2 HMTA**

- a. Upon receipt of a request for consideration of an issue, the HMTA shall determine if other technical expertise is required or alternatively may decide to address the issue directly.
- b. The HMTA shall notify other resources, if required, providing them with an agenda and preliminary material relevant to the issues to be addressed.
- c. All parties to an issue under contention shall be notified of the meeting and requested to attend and be prepared to further explain the decision they made or their concern.
- d. After all issue meetings, the HMTA shall document all decisions and action items.

- e. The person who submitted a request for consideration of an issue shall also be notified of the resolution of the issue, at which time they may choose to accept the resolution or escalate the issue to the next level. Following a decision by the HMTA, if the result was unsatisfactory to the submitter, the next level for review would be the Center Director and then the CHMO.
- f. The ARC CMO shall maintain communications with the CHMO with respect to identification and resolution of all HMTA issues.

## CHAPTER 4 RECORDS

<b>Record</b>	<b>Retained By</b>	<b>Min. Retention</b>
Issue Resolution Meeting Action Items and Decisions	SMATA: SMA Director HMTA: CMO	In accordance with the NASA Record Retention Schedules defined in NPR 1441.1
Formal Dissent Resolutions	SMATA: SMA Director HMTA: CMO	In accordance with the NASA Record Retention Schedules defined in NPR 1441.1
Conflict Resolutions	SMATA: SMA Director HMTA: CMO	In accordance with the NASA Record Retention Schedules defined in NPR 1441.1

## APPENDIX A. DEFINITIONS

Anomaly, Anomalies	Hardware or software damage, a departure from established procedures or performance, or a deviation of system, subsystem, and/or hardware or software performance outside certified or approved design/performance specification limits.
Chief Medical Officer (CMO)	A medical doctor assigned to designated NASA Centers by the Agency Chief Health and Medical Officer (CHMO) to serve as the delegated Health and Medical Technical Authority (HMTA) for that Center.
Chief System and Mission Assurance Officer (CSO)	The person responsible for managing and overseeing all systems safety and mission assurance activities for a program/project.
Formal Dissent	As defined in section 3.5.4 of NPD 1000.0
Health and Medical Technical Authority (HMTA)	HMTA implements the responsibilities of the Office of the Chief Health and Medical Officer (OCHMO) to assure that Agency health and medical policy, requirements, and technical standards are addressed in program/project management, when applicable and appropriate. HMTA provides independent oversight of all health, medical, and crew performance matters that either arise in association with the execution of NASA programs or projects or are embedded in NASA programs or projects.
Non-Conformance	The state or situation of not fulfilling a requirement.
Safety and Mission Assurance Technical Authority (SMATA)	SMATA implements the responsibilities of the OSMA to assure that Agency safety and Mission Assurance policy, requirements, and technical standards are addressed in program/project management, when applicable and appropriate. SMATA provides independent oversight of all safety and mission assurance matters that either arise in association with the execution of NASA programs or projects or are embedded in NASA programs or projects.
Technical Authority	(1) Technical Authorities are part of NASA's system of checks and balances and provide independent oversight of programs and projects in support of safety and mission success through the selection of individuals at delegated levels of authority. These individuals are the Technical Authorities. Technical Authority delegations are formal and

traceable to the Administrator. Individuals with Technical Authority are funded independently of a program or project.

(2) The individual who specifically maintains technical responsibility over establishment of, changes to, and waivers of requirements in a designated area. Note: There are three Technical Authorities: Engineering, Safety and Mission Assurance, and Health and Medical.

(1) A written authorization to depart from a specific directive requirement (from NPR 1400.1).

(2) A documented authorization releasing a program or project from meeting a requirement after the requirement is put under configuration control at the level the requirement will be implemented. This definition is from NPR 7120.5)

Waiver

## APPENDIX B. ACRONYMS

AHJ	Authority Having Jurisdiction
APD	Ames Policy Directive
APR	Ames Procedural Requirement
ARC	Ames Research Center
CHMO	Chief Health and Medical Officer
CMO	Ames Chief Medical Officer
CSO	Chief Safety and Mission Assurance Officer
ESO	Explosives Safety Officer
ETA	Engineering Technical Authority
HMTA	Health and Medical Technical Authority
LDEM	Lifting Device Equipment Manager
LSO	Laser Safety Officer
NCR	Non-Conformance Report
NPD	NASA Policy Directive
NPR	NASA Procedural Requirement
OCHMO	Office of the Chief Health and Medical Officer
OSMA	Office of Safety and Mission Assurance
PRACA	Problem Reporting and Corrective Action
PSM	Pressure Systems Manager
RSO	Radiation Safety Officer
RSR	Range Safety Representative
SMA	Safety and Mission Assurance
SMATA	Safety and Mission Assurance Technical Authority