



Goddard Procedural Requirements (GPR)

DIRECTIVE NO.	<u>GPR 4520.4A</u>	APPROVED BY Signature:	<u>Original Signed By</u>
EFFECTIVE DATE:	<u>August 12, 2019</u>	NAME:	<u>Eric K. Isaac</u>
EXPIRATION DATE:	<u>August 12, 2024</u>	TITLE:	<u>Director, Safety and Mission Assurance</u>

COMPLIANCE IS MANDATORY

Responsible Office: 300/Safety and Mission Assurance Directorate

Title: Counterfeit Part Avoidance Program

PREFACE

P.1 PURPOSE

This document establishes the policy at Goddard Space Flight Center (GSFC) for preventing the use of counterfeit items in mission hardware and for closed loop control of counterfeit items that may have entered the GSFC supply chain.

P.2 APPLICABILITY

- a. This GPR applies to all processes within GSFC where counterfeit items may be procured or encountered for flight application in missions required to follow NPR 7120.5 or in safety-critical applications. This policy applies to hardware including Electrical, Electronic, and Electromechanical (EEE) parts and assemblies, and mechanical parts and assemblies. The requirements herein apply to all Directorates, Divisions, Branches, and Offices who direct the procurement of these items.
- b. This GPR applies to projects governed by NPR 7120.8 or otherwise outside of NPR 7120.5 only to the extent specified in paragraph 2.7. Some Class D projects may entail a similar risk posture and hence may pursue a waiver to this GPR for permission to follow the requirements in 2.7.
- c. In this directive, all document citations are assumed to be the latest version unless otherwise noted.
- d. 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.

P.3 AUTHORITIES

NPD 8730.2, NASA Parts Policy

P.4 APPLICABLE DOCUMENTS AND FORMS

- a. NPD 9800.1, NASA Office of Inspector General Programs
- b. NPR 7120.5, NASA Space Flight Program and Project Management Requirements

CHECK THE GSFC DIRECTIVES MANAGEMENT SYSTEM AT
<http://gdms.gsfc.nasa.gov> TO VERIFY THAT THIS IS THE CORRECT VERSION PRIOR TO USE.

DIRECTIVE NO.	<u>GPR 4520.4A</u>
EFFECTIVE DATE:	<u>August 12, 2019</u>
EXPIRATION DATE:	<u>August 12, 2024</u>

- c. NPR 7120.8, NASA Research and Technology Program and Project Management Requirements
- d. NPR 8705.4, Risk Classification for NASA Payloads
- e. GPR 5100.1, Procurement
- f. GPR 5340.3, Preparation and Handling of GIDEP Alerts, GIDEP Safe-Alerts, GIDEP Problem Advisories, GIDEP Agency Action Notices, and NASA Advisories
- g. 500-PG-4520.2.1, Electrical, Electronic and Electromechanical (EEE) Counterfeit Parts Avoidance Plan (CPAP)
- h. 541-PG-8072.1.2, Goddard Space Flight Center Fastener Integrity Requirements
- i. 547-PG-8072.1.1, Manufacturing Process
- j. 547-WI-8072.1.6, Bath Analysis for the Electroplating Solutions
- k. 270-WI-5100.1.2, Procurement
- l. SAE AS5553, Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition

P.5 CANCELLATION

GPR 4520.4-, Counterfeit Part Avoidance Program

P.6 SAFETY

None

P.7 TRAINING

At the time of writing of this directive, there is no established core training for counterfeit parts prevention that would be cost-effective to require for a large population at GSFC. Most training courses and modules available are specific to identification of counterfeits found in commercial procurements that are made outside of the requirements herein. In general, the employee’s supervisor is best suited to determine whether an individual is likely to encounter counterfeits and whether special training is needed. Those with a general possibility of encountering counterfeits in day-to-day activities should attend some of the periodic online or in-person seminars and colloquia offered to NASA employees.

P.8 RECORDS

Record Title	Record Custodian	Retention
Counterfeit Form	Code 562 Parts, Packaging and Assembly Office	5 years after end of project*
Procurement Records	Procurement Agency	5 years after end of project*
OIG Investigation Records with confirmed counterfeit items	NASA OIG	<u>NRRS: 9/23(D1):</u> *PERMANENT* Transfer To NARA 10 Years After File Is Closed.

DIRECTIVE NO.	<u>GPR 4520.4A</u>
EFFECTIVE DATE:	<u>August 12, 2019</u>
EXPIRATION DATE:	<u>August 12, 2024</u>

* *NRRS – NASA Records Retention Schedule* ([NRRS 1441.1](#))

P.9 MEASUREMENT/VERIFICATION

Internal and external audits verify effectiveness of this program.

PROCEDURES

1.0 Responsibilities

1.1 Center Director:

- a. Ensures that GSFC projects and Directorates comply with Agency-level policies and requirements to prevent entry of counterfeit items into NASA inventories and mission hardware.
- b. Ensures that GSFC projects and Directorates comply with this counterfeit items avoidance plan.

1.2 Heads of each Directorate:

- a. Ensure personnel understand and follow the policies herein and adhere to the requirements that are relevant to the work of the Directorate to avoid procuring counterfeit items, to identify and prevent use of suspect counterfeit items that are received, and to properly report the receipt and disposition of suspect counterfeit items.

1.3 Program/Project Managers:

- a. Establish sufficient counterfeit avoidance requirements in accordance with Section 2.0 of this document.
- b. Ensure that counterfeit avoidance requirements are imposed on in-house and out-of-house procurements for all applicable items used on mission hardware and safety-critical applications.

1.4 Safety and Mission Assurance (SMA):

- a. Ensures that requirements for counterfeit item avoidance for all mission hardware and safety-critical applications are imposed in the Mission Assurance Requirements (MAR) document or other project requirements documentation for purchased hardware, assemblies, and materials.
- b. Periodically performs supply chain audits to ensure prime contract and subcontract suppliers of applicable hardware have counterfeit item avoidance plans that comply with the requirements herein.
- c. Provides for suspect counterfeit item reporting via the GSFC Government-Industry Data Exchange Program (GIDEP) system per GPR 5340.3.
- d. Ensures that any parts or materials intended for use in mission hardware that are obtained from GSFC supply stock or from an entity outside of GSFC meet all requirements in this GPR and have all relevant pedigree documentation, prior to integration into hardware.

DIRECTIVE NO.	<u>GPR 4520.4A</u>
EFFECTIVE DATE:	<u>August 12, 2019</u>
EXPIRATION DATE:	<u>August 12, 2024</u>

- e. Provides counterfeit avoidance requirements to procurement personnel to include in procurement procedures and contract language to mitigate the risk of ordering counterfeit items.
- f. Ensures that all applicable procured items are inspected upon receipt in accordance with counterfeit requirements. For in-house procurements, these procedures will comply with all applicable published directives and the project requirements. For out-of-house procurements, the procedures will comply with counterfeit item avoidance requirements in the project requirements documentation.
- g. Establishes procedures for handling and quarantining items identified as suspect counterfeit parts.
- h. Establishes procedures for reporting incidents when suspect counterfeit items are encountered to the appropriate channels, including the Office of the Inspector General (OIG), the project Chief Safety and Mission Assurance Officer (CSO), and the GIDEP Alert Coordinator.
- i. Aids Code 210 in enforcing procurement contract terms and conditions for item replacement.

1.5 Engineering:

- a. Coordinates with Procurement to ensure that item source selections are not in conflict with Center-established policies and project requirements that are in place to avoid procurements of counterfeit items.
- b. Provides information as it becomes available to the Procurement organization about emerging considerations related to selection and procurement that reduce risk of counterfeit items acquisitions.
- c. Establishes procedures for performing incoming inspection testing as needed and as applicable, where those tests cannot be performed by the procurement organization, to determine if the delivered items are suspect counterfeit.
- d. Establishes procedures for notifying the OIG, Procurement, the project CSO, and the GIDEP Alert Coordinator when suspect counterfeit items are encountered.

1.6 Employees:

- a. Notify the OIG and management (project or line supervision) immediately when suspect counterfeit items are encountered.

2.0 Counterfeit Avoidance Plans

2.1 This counterfeit item avoidance plan uses the following strategies to achieve compliance with the counterfeit control requirements of NPD 8730.2, NASA Parts Policy:

- a. Counterfeit control requirements are defined for EEE and finished mechanical parts.
- b. Counterfeit control is established for mission hardware by the project in its MAR or other project requirements documentation.
- c. Counterfeit control requirements are flowed down to prime contracts and subcontracts used to acquire mission components or systems.
- d. GSFC engineering organizations provide technical expertise to Program/Project Managers to develop requirements, procedures, and plans for avoiding acquisition of, or incoming acceptance of, suspect counterfeit parts.

DIRECTIVE NO.	<u>GPR 4520.4A</u>
EFFECTIVE DATE:	<u>August 12, 2019</u>
EXPIRATION DATE:	<u>August 12, 2024</u>

- e. Procurement organizations comply with Federal Acquisition Requirements (FAR), NASA FAR Supplement (NFS) requirements, and counterfeit avoidance requirements for applicable item procurements.
 - f. Procurement organizations ensure that their incoming inspection methods facilitate detection of suspect counterfeit parts.
 - g. Procedures are followed that ensure proper control, storage, disposition, and reporting of counterfeit items.
 - h. Procedures are followed that ensure that suspect counterfeit items are brought to the attention of the OIG for disposition.
- 2.2** Project Parts Engineers (or engineers responsible for part procurement when no formal position on a project exists) shall ensure that no counterfeit parts are introduced to project inventories or manufactured systems that will be used in the mission (i.e., “mission hardware”).
- 2.3** All GSFC projects shall establish counterfeit item avoidance requirements in the Mission Assurance Requirements (MAR) or other project requirements documentation for EEE parts and assemblies and finished mechanical parts.
- 2.4** EEE parts and assembly Counterfeit Prevention
- a. The counterfeit parts control plan shall meet the requirements of 500-PG-4520.2.1 or SAE AS5553. For finished mechanical parts, technical requirements for counterfeit control should be specified by the lead mechanical engineer, with input from the lead materials engineer where applicable.
 - b. For hardware provided by “**out-of-house**” suppliers where items are not procured and supplied by GSFC, requirements shall be flowed down via contract or purchase order to the prime contractor and all sub-tier contractors.
 - c. For GSFC direct purchases of items for use in manufacturing of applicable hardware internally (i.e., “**in-house**”) or for supply to external manufacturers (i.e., government furnished material), applicable PG documents are listed in Appendix C of this document.
- 2.5** **Material Counterfeit Prevention**
- a. The project engineer responsible for material procurement and usage shall ensure that the acquisition, traceability, receiving inspection, and test requirements for fasteners is per 541-PG-8072.1.2, Goddard Space Flight Center Fastener Integrity Requirements.
 - b. The project engineer responsible for material procurement and usage shall ensure that the material certification is documented in accordance with a configuration-controlled plan approved at the division level or project level. Approved directives, such as 541-PG-7120.2.1, Materials & Processes Engineering Support Guidelines for Goddard Space Flight Center Projects are sufficient to meet the requirements for this plan.
 - c. The project lead mechanical engineer shall ensure that fabricated parts are dimensionally inspected, including material chemical/physical test reports, in accordance with a configuration-controlled plan approved at the division level or project level. Approved directives, such as 547-PG-8072.1.1, Manufacturing Process, or equivalent are sufficient to meet the requirements for this plan.

DIRECTIVE NO.	<u>GPR 4520.4A</u>
EFFECTIVE DATE:	<u>August 12, 2019</u>
EXPIRATION DATE:	<u>August 12, 2024</u>

d. Projects and Divisions, as applicable, shall ensure the integrity of electroplating solutions for in-house applications in accordance with a configuration-controlled plan approved at the division level or project level. Approved directives, such as 547-WI-8072.1.6, Bath Analysis for the Electroplating Solutions are sufficient to meet the requirements for this plan.

2.6 For counterfeit concerns related to items not covered by this GPR, counterfeit avoidance control requirements shall be established by the program/project as needed to mitigate the risk of procurement and use of counterfeit items in mission hardware, critical ground support equipment, and safety-critical applications, as well as to ensure counterfeits are adequately reported, handled, and dispositioned.

2.7 Projects not governed by NPR 7120.5 shall:

- a. Notify the NASA OIG within 48 hours upon the suspicion or discovery of a counterfeit item, and turn over the item(s) to OIG.
- b. Store all pedigree documentation for unused parts and materials and provide to future users at GSFC or to accompany the items if transferred outside of GSFC.

Appendix A – Definitions

- A.1 Counterfeit Part** — A copy or substitute part without legal right or authority to represent itself as declared; or a part whose material, performance, or characteristics are knowingly misrepresented by a supplier at any level in the supply chain. Examples of counterfeit parts may include, but are not limited to: Parts which do not contain the proper internal construction and materials (die, manufacturer, wire bonding, etc.) consistent with the procured part.
- Part that exhibits appearance of being used, refurbished or reclaimed, but presented as new product.
 - Part that has a different package style or surface plating/finish than the ordered part.
 - Part that has not successfully completed the OEM’s full production and test flow, but is represented as completed product.
 - Part sold as a re-screened part, to a higher quality level than identified, that has not successfully completed re-screening.
 - Part sold with modified part number identification intended to misrepresent the part’s form, fit, function, grade or manufacturing date.
 - Part sold as compliant to a procurement specification, marked as required by the procurement specification but does not satisfy the parametric or quality requirements of the specification.
- A.2 EEE Parts** – Items such as capacitors, circuit breakers, connectors, crystals and crystal oscillators, diodes, fiber optics accessories, fiber optics cables, fiber optics conductors, fiber optics devices, fiber optics interconnects, filters, fuses, inductors, hybrids/multi-chip modules, microcircuits, relays, resistors, switches, thermistors, transformers, transistors, and wire/cable.
- A.3 Finished Mechanical Parts** – Items such as fasteners, bearings, studs, pins, rings, shims, piping components, valves, springs, brackets, clamps and spacers.
- A.4 Government-Industry Data Exchange Program (GIDEP)** – A cooperative program that collects and distributes Alerts, Safe Alerts, Problem Advisories, and Agency Action Notices to participating organizations.
- A.5 Suspect Counterfeit Part** — is a part in which there is an indication by visual inspection, testing, or other information that it may be misrepresented by the supplier or manufacturer or may not conform to legal, established government or industry-accepted specifications, or national consensus standards; or a part’s documentation.

DIRECTIVE NO.	<u>GPR 4520.4A</u>
EFFECTIVE DATE:	<u>August 12, 2019</u>
EXPIRATION DATE:	<u>August 12, 2024</u>

Appendix B – Acronyms

CSO	Chief Safety and Mission Assurance Officer
CPAP	Counterfeit Parts Avoidance Plan
EEE	Electrical, Electronic, and Electromechanical
FAR	Federal Acquisition Requirements
GIDEP	Government-Industry Data Exchange Program
GPR	Goddard Procedural Requirements
GSFC	Goddard Space Flight Center
GSE	Ground Support Equipment
MAR	Mission Assurance Requirements
NPD	NASA Policy Directive
NPR	NASA Procedural Requirements
NRRS	NASA Records Retention Schedule
NFS	NASA FAR Supplement
OCM	Original Component Manufacturer
OIG	Office of the Inspector General
PG	Procedural Guidelines
SMA	Safety and Mission Assurance

DIRECTIVE NO. GPR 4520.4A
EFFECTIVE DATE: August 12, 2019
EXPIRATION DATE: August 12, 2024

Appendix C – GSFC Counterfeit Control Program

The following documents are listed in this Appendix to establish traceability of the GSFC Counterfeit Control program.

GPR 5100.1	Procurement
GPR 5340.3	Preparation and Handling of GIDEP Alerts, GIDEP Safe-Alerts, GIDEP Problem Advisories, GIDEP Agency Action Notices, and NASA Advisories
500-PG-4520.2.1	EEE CPAP
541-PG-8072.1.2	Goddard Space Flight Center Fastener Integrity Requirements
547-PG-8072.1.1	Manufacturing Process
270-WI-5100.1.2	Procurement

DIRECTIVE NO. GPR 4520.4A
EFFECTIVE DATE: August 12, 2019
EXPIRATION DATE: August 12, 2024

CHANGE HISTORY LOG

Revision	Effective Date	Description of Changes
Baseline	09/25/14	Initial Release
A	08/12/19	Removed references to Ground Support Equipment (GSE). Simplified reference to missions under 7120.5, minor editorial changes and removal of redundant references