



National Aeronautics and Space Administration



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**Communications, Navigation, and Networking reConfigurable Testbed
(CoNNeCT) Project**

National Aeronautics and Space Administration
John H. Glenn Research Center at Lewis Field, OH 44135

CoNNeCT PROJECT

SCAN TESTBED ON-ORBIT DISPOSAL

AUTHORIZED by CM when under FORMAL Configuration Control	
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PREFACE

National Aeronautics and Space Administration (NASA) is developing an on-orbit, adaptable, Software Defined Radio (SDR)/Space Telecommunications Radio System (STRS)-based testbed facility to conduct a suite of experiments to advance technologies, reduce risk, and enable future mission capabilities on the International Space Station (ISS). The Communications, Navigation, and Networking reConfigurable Testbed (CoNNeCT) Project will provide NASA, industry, other Government agencies, and academic partners the opportunity to develop and field communications, navigation, and networking technologies in the laboratory and space environment based on reconfigurable, software defined radio platforms and the STRS Architecture. The SCAN Testbed Payload Operations Nomenclature is “SCAN Testbed” and this nomenclature will be used in all ISS integration, safety, verification, and operations documentation. Also included are the required support efforts for Mission Integration and Operations, consisting of a ground system and the Glenn Telescience Support Center (GRC TSC). This document has been prepared in accordance with NASA Glenn’s Configuration Management Procedural Requirements GLPR 8040.1 and applies to the CoNNeCT configuration management activities performed at NASA’s Glenn Research Center (GRC). This document is consistent with the requirements of SSP 41170, Configuration Management Requirements, International Space Station, and Space Assurance Requirements and Guidelines (SARG).

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1.0 INTRODUCTION

The SCAN Testbed (payload) is a Flight Releasable Attachment Mechanism (FRAM) based payload that will launch aboard the Japanese H-II Transfer Vehicle (HTV) Multipurpose Exposed Pallet (EP-MP) to the International Space Station (ISS), and will be transferred to the Express Logistics Carrier 3 (ELC3) via Extravehicular Robotics (EVR). The SCAN Testbed will operate on-orbit for a minimum of two years. Upon failure or end-of-life, the SCAN Testbed will be decommissioned in-place. The disposal verbiage in section 2.0 is from section 3.1.1 of the Payload Integration Agreement (PIA) for Space Communication and Navigation (SCAN) Testbed, OZ-10-024, June 29, 2010.

1.1 Purpose

This document reiterates the disposal agreement between the CoNNeCT Project and the International Space Station Payloads Office for the safe disposal of the SCAN Testbed from the ISS.

1.2 Background

Due to the approaching end of the Space Shuttle Program (SSP), alternate methods are required to dispose of obsolete/failed hardware that would normally have been returned on the Space Shuttle.

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2.0 DISPOSAL

From PIA OZ-10-024, June 29, 2010: There is no requirement to return the SCAN Testbed to Earth. The International Space Station Program (ISSP) will dispose of the payload at the ISS Program's discretion. The ISS Payloads Office has defined a preferred disposal of the SCAN Testbed via HTV (or any launch vehicle with FRAM interface disposal requirement defined) for controlled re-entry.

2.1 Disposal Planning

The CoNNeCT Project will provide Increment Certificate of Flight Readiness (CoFR) inputs throughout the mission life of the SCAN Testbed. At the end of mission life or within 1 year of the end of safe life, the CoNNeCT Project will notify the International Space Station Payloads Office that the SCAN Testbed will be decommissioned in-place, on-orbit.

2.2 Disposal Support

The CoNNeCT Project will analytically support the Payloads Office in the removal of the SCAN Testbed from the ELC and the installation of the SCAN Testbed into a controlled re-entry vehicle.