

Policy Guidance: Ground Components



Guidance Circular

GC No: 960, App. A -1
Subject: Guidance on Ground Component Terminology and Testing
Date: October 20, 2022

Guidance Circulars (GC) are intended to provide guidance to entities subject to or potentially subject to the Land Remote Sensing Policy Act of 1992 (51 U.S.C. § 60101 *et seq.*) and the National Oceanic and Atmospheric Administration's (NOAA's) implementing regulations at 15 CFR Part 960. The contents of this document do not have the force and effect of law and are not meant to bind the public in any way. The document is only intended to provide clarity to the public regarding existing requirements under the law or agency policies.

Applicable Statute: 51 U.S.C. § 60121, 60122

Applicable Regulations: 15 C.F.R. 960, App. A.

If you have suggestions for improving this GC, we invite you to provide feedback to NOAA's Commercial Remote Sensing Regulatory Affairs office (CRSRA) at crsra@noaa.gov, noting the number of the GC you are discussing in your email. Please note that responses by email are not anonymous and the entirety of the response, including the email address, attachments, and other supporting materials, may be disclosed pursuant to federal freedom of information law. Sensitive personal information, trade secrets, or financial information should not be included with the response.

Overview of Issue:

The Land Remote Sensing Policy Act of 1992 authorizes the Department of Commerce (delegated to NOAA) to license private entities to operate private remote sensing space systems (systems), and prohibits the operation of these systems without such a license. The

implementing regulations define a system as an instrument that is capable of conducting remote sensing and which is not owned by an agency or instrumentality of the U.S. Government. 15 C.F.R. § 960.4. The system includes the remote sensing instrument and:

all additional components that support operating the remote sensing instrument, receipt of unenhanced data, and data preprocessing, regardless of whether the component is owned or managed by the applicant or licensee, or by a third party through a legal arrangement with the applicant or licensee.

Id. Accordingly, NOAA’s jurisdiction extends to additional components in the system such as ground components that aid in the operation of the remote sensing instrument, receive unenhanced data from the remote sensing instrument, or conduct data preprocessing.

NOAA regulates ground components by first requiring applicants to report the location of ground components and whether any entity or individual other than the applicant will own, control, or manage any mission control center (discussed further below). 15 C.F.R. § 960, App. A (Application Information Required). Information provided by the applicant about their ground components is then incorporated into their license as material facts. See 15 C.F.R. § 960, App. C, Part D (License Template). Because information regarding ground components constitutes material facts, licensees must request and receive approval for a license modification before taking any action that would change the information in their license regarding their ground components. 15 C.F.R. § 960.16(d).

This GC provides further explanation of the categories of ground components that support operating a remote sensing instrument and explains how licensees can ensure that tests for new ground components are lawful.

Mission Control Center

A Mission Control Center (MCC) is the primary facility through which ultimate decision-making authority is regularly exercised by the Licensee, where operational commands, such as altitude control, propulsion, and imagery targeting commands, are generated and transmitted to the System. Subtypes include:

Mission Control Center Subtype	Description
Backup Mission Control Center (BMCC)	Any secondary facility through which ultimate decision-making authority may be exercised by the Licensee when unable to do so through the MCC,

	where operational commands can be generated and transmitted to the System. ¹
Subordinate Mission Control Center (SMCC)	Any facility through which partial control of the system may be exercised, where operational commands that are subject to final approval by the Licensee can be generated and transmitted to the System.

Ground Station

A Ground Station is any ground component with one or more of the following abilities: to uplink commands to any remote sensing instrument in the System; to downlink unenhanced data from any remote sensing instrument in the System; or to conduct preprocessing on unenhanced data.² Subtypes include:

Ground Station Subtype	Description
Relay Ground Terminal (RGT)	Any facility with the ability to: <ul style="list-style-type: none"> • Directly downlink and relay unenhanced data from a remote sensing instrument, but with no ability to access that data; and/or • Directly uplink and relay commands to a remote sensing instrument, but with no ability to alter those commands or to generate new commands
Data Access Terminal (DAT)	Any facility with the ability to downlink and access unenhanced data from a remote sensing instrument.

¹ CRSRA considers the use of a BMCC to be an anomaly that must be reported. An anomaly is defined as “an unexpected event or abnormal characteristic affecting the operations of a system that could indicate a significant technical malfunction or security threat” and includes “any significant deviation from the orbit and data collection characteristics of the system.” 15 C.F.R. § 960.4. Please note that a standard license condition requires licensees to “[n]otify the Secretary in writing . . . no later than seven days after the event” of “[t]he detection of an anomaly.” *Id.* § 960.8(e)(3).

² Unenhanced data means the output from a remote sensing instrument, including imagery products, which is either unprocessed or preprocessed. Preprocessing includes rectification of system and sensor distortions in data as it is received directly from the instrument in preparation for delivery to a user, registration of such data with respect to features of the Earth, and calibration of spectral response with respect to such data, but does not include conclusions, manipulations, or calculations derived from such data, or a combination of such data with other data. 15 C.F.R. § 960.4.

Data Preprocessing Terminal (DPT)	Any facility that conducts preprocessing on unenhanced data from a remote sensing instrument, but with no ability to directly downlink unenhanced data from a remote sensing instrument.
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NOTE: CRSRA understands that a ground component may be mobile. Because the location of a ground component is a material fact, applicants and licensees are required to provide and maintain a location for any ground component, and to request a license modification prior to moving the ground component. See 15 C.F.R. § 960.8(f). Licensees may request a license modification, pursuant to 15 C.F.R. § 960.13, seeking CRSRA’s approval of an alternative condition to account for a ground component’s mobile capabilities.

Ground Component Testing

CRSRA understands that licensees may wish to operate additional ground components during the term of their license. CRSRA also understands that when licensees evaluate a potential location for additional ground components, the licensee may wish to conduct tests to evaluate the locations, components, and/or facilities. As stated above, the location of a ground component is a “material fact,” as that term is defined in 15 C.F.R. § 960.4, and a licensee must obtain approval for a license modification pursuant to 15 C.F.R. § 960.13 prior to taking any action that would change a material fact in the license. Therefore, where testing activities, in substance, amount to operating an unlicensed Ground Station component, such actions could constitute a license violation. However, CRSRA wants to clarify the circumstances under which licensees may lawfully test a Ground Station component that is not listed in the license.

To consider whether the testing of an unlisted ground station is lawful, CRSRA considers several factors. These include but are not limited to:

- the location of the test;
- the length of the test and, if multiple tests are conducted, the frequency of testing activities;
- what is transmitted to the potential Ground Station component, especially the amount of unenhanced data the potential Ground Station component receives from on-orbit remote sensing instruments; and
- the extent to which the potential Ground Station component can communicate commands to the on-orbit remote sensing instruments and the nature of the commands communicated.

To assist licensees in conducting lawful tests of potential Ground Station components, CRSRA strongly encourages licensees to contact CRSRA, at least **fifteen days** in advance of any such test at crsra@noaa.gov, and identify the location of the test, the length of the test, what will be transmitted to the potential Ground Station components, and the extent to which the on-orbit remote sensing instrument will be subject to control by the potential Ground Station component

and the nature of commands to be communicated. CRSRA will promptly provide a written response to advise whether, based on the information provided by the licensee, the proposed testing activities would amount to operational actions and, if so, whether CRSRA considers the test a compliance concern.

Opportunity for Feedback: We welcome any feedback you may have about this GC. Please contact CRSRA at crsra@noaa.gov.