

GAC and RF Licences

1. Why is GAC involved when non-EO satellite operations are added to existing ground station activities?

The Scenario

An RSSSA licence has been issued to an operator in Farout, Canada. The operator provided an engineering drawing of the ground station and provided documentation on how both data and physical security is to be maintained at the site. The licence stipulates that all changes to the site must be reported to GAC.

Subsequently the operator proposes to install a GNSS antenna and a telecommunications antenna. Both antennas will use the common electrical and communications facilities available at the site.

Question A

GNSS and telecommunications satellites are NOT considered “satellites capable of Earth observation” unless they have a camera mounted on them, so they are not covered under the RSSSA. What is the role of the licensee with respect to GAC and these antennas?

Question B

What if the telecommunication facilities were there first and subsequently an EO antenna was constructed?

Response to Question A

The operating licence covers all facilities involved in the licensed remote sensing space system activities of this licensee.

Conditions of the licence include:

- All access to all facilities are to be reported
- All access to the control cabin will be reported and each person must have proper security clearance or to be escorted by approved staff with proper clearance at all times.
- Lists of equipment within controlled areas are to be provided and updated regularly.
- All proposed changes to the ground station must be reported and approved by GAC before construction (Reg 20(1)(e)).
- All changes to the data and command protection plans must be reported, including adding/removing equipment in the controlled areas.

- GAC reserves the right to carry out inspections covering all operations taking place at the ground station (RSSSA and non-RSSSA) as provided for in the RSSSA.
- All operations (RSSSA and non-RSSSA) at the site be undertaken only on the strength of valid authorizations obtained and held from other regulators as applicable. This may include, for example, Transport Canada/NAV Canada, Local authorities, Environmental clearances, and approvals from First Nations.

Questions GAC may reasonably ask include:

- Who additionally has access to the site, to the control cabin and the electrical facilities?
- Are the data and command protection plans compromised with the addition of other communications equipment?
- Is the physical security of the site compromised by additional facilities, equipment, personnel and activities?
- Is there documentation of security clearance for all persons who will access the site?
- Was an application form submitted seeking authorization under the Radiocommunication Act and the authorization received from ISED in respect of each antenna?
- What are the details of the owner and/or operator of the antennas in question? If they are owned/operated by a negative entity, then GAC may disallow an application or suspend an existing licence.
- Licences, if any, issued by other regimes/jurisdictions within Canada and globally. (It will be in order for a regulator to insist on proof that all required authorizations from other regulatory bodies have been obtained.)

Response to Question B

The telecommunications facilities were there first and the ground site supporting that equipment was not reviewed by GAC as the RSSSA did not cover the satellites. GAC had no role in the development of the ground station at that time. When the EO operation is contemplated it is the responsibility of the applicant to contact GAC and provide an application, including engineering drawings for the proposed facilities for EO operations and obtain approval before any additional construction starts. If the facilities are the same for both, GAC must review the security of existing facilities and ensure that the EO operations are not compromised by the existing infrastructure, equipment and operations. Application information in Schedule 1 of the Remote Sensing Space Systems Regulations (RSSSR) must be provided. GAC will assess the application information and determine if the remote sensing data is properly protected while at the site and while being transmitted to potential clients, data processing or archive facilities. GAC assessment criteria may be categorized into three main areas - IT security, personnel security and

physical security of the system. GAC assessment scope includes the owners and clients of the telecommunications system as they share the same licensed facilities and have security implications on the licensed system.

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- Are the data and command protection plans compromised with the addition of other communications equipment?
- Is the physical security of the site compromised by additional facilities, equipment, personnel and activities?
- Is there documentation of security clearance for all persons who will access the site?
- Was an application form submitted seeking authorization under the Radiocommunication Act and the authorization received from ISED in respect of each antenna?
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- Licences, if any, issued by other regimes/jurisdictions within Canada and globally. (It will be in order for a regulator to insist on proof that all required authorizations from other regulatory bodies have been obtained.)

2. What is the role of GAC with respect to possible satellite transmission interference?

More generally the question may be rephrased as what is the role of GAC with respect to Radio Frequency (RF) licensing?

Response to Issue Two

Three parties need to provide licences/approval before a satellite may be operated from Canadian soil:

1. Public Safety departments approve the operation of the satellite in Canada at the location specified
2. ISED provides an RF licence
3. GAC issues a licence authorizing controlled activities under specific conditions for remote sensing space systems.

GAC will not authorize operation of a satellite unless and until a valid RF licence is issued and, for foreign satellites, public safety departments approve its operation in Canada at the location specified.

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