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Volume I - ESOG Module 110 - Issue 4.2
EARTH STATION ACCESS
AND APPROVAL PROCEDURES
10 February 2009



eutelsat
communications via satellite

EUTELSAT_{S.A.}

SYSTEMS OPERATIONS GUIDE

ESOG	Module 110
EARTH STATION ACCESS AND APPROVAL PROCEDURES	
Issue 4.2	10-02-2009

Volume I

EUTELSAT S.A.

SYSTEMS OPERATIONS GUIDE

ESOG Module 110

EARTH STATION ACCESS AND APPROVAL PROCEDURES

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FOREWORD

The Eutelsat S.A. Systems Operations Guide (ESOG) is published to provide all Eutelsat S.A. space segment users with information that is necessary for successful operation of earth stations within the Eutelsat S.A. satellite system.

The ESOG consists of 2 Volumes. They contain, in modularised form, all the necessary details, which are considered important for the operations of earth stations.

Volume I concentrates on Earth Station and Antenna Approvals, System Management and Policy aspects.

Volume II describes the initial line-up of satellite links between earth stations and the commissioning of earth stations for Eutelsat S.A. services. The modules which are contained in this Volume relate to the services provided via Eutelsat S.A. satellites.

The ESOG can be obtained either by requesting a printed version to Eutelsat S.A. or in Acrobat format from the Eutelsat S.A. Web:

<http://www.eutelsat.com>

Paris, 10-02-2009

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VOLUME I

EUTELSAT S.A. SYSTEM MANAGEMENT AND POLICIES

Earth Station Standards.....	Module 100
Earth Station Access and Approval Procedures	Module 110
Earth Station Type Approval	Module 120
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VOLUME II

EUTELSAT S.A. SYSTEMS OPERATIONS AND PROCEDURES

Digital Services Handbook.....	Module 210
VSAT Handbook.....	Module 230
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1. GENERAL

Formal procedures for control of earth stations to access the space segment are necessary to prevent interference to other users of the satellite system, to ensure the establishment of a proper interface with the space segment and to maintain system discipline.

The following paragraphs describe the procedures in obtaining approval for an earth station to operate within the Eutelsat S.A. space segment.

Request for approvals have to be sent on-line via an interactive application available on the Eutelsat S.A. Extranet, at the following address: <http://services.eutelsat.fr>. Access codes to this application can be obtained from Eutelsat S.A. on request, by writing at the following e-mail address: esapproval@eutelsat.fr.

Exceptionally, in case the Applicant has no access to the Web, approvals can be obtained by filling in the relevant Application Forms provided in Annexes A, B and C.

2. PERFORMANCE CHARACTERISTICS OF EARTH STATIONS

2.1. General

Eutelsat S.A. has specified mandatory performance characteristics for earth stations, which are intended for access to the Eutelsat S.A. space segment. These criteria govern primarily antenna performance, acceptable noise interference levels and transmission parameters which are related to the operation of standard earth stations in the 10 to 30 GHz bands with performance characteristics conforming to the requirements set forth in the relevant documents.

It is a major element for any earth station, regardless of type (fixed or transportable) and service, that co-ordination of RF frequency bands in accordance with the International Telecommunication Union Radio Regulations (ITU Radio Regulations) currently in force has been undertaken to prevent later limitations in use. Any constraints shall be reported to Eutelsat S.A.

The following types of earth stations may become operational in the Eutelsat S.A. satellite system:

- Eutelsat S.A. Standard earth stations
- Non-standard earth stations
- Type approved earth stations
- VSAT Networks

2.2. Standard Earth Stations

Standard earth stations (fixed or transportable) are those which meet the Earth Station Minimum Technical and Operational Requirements (Standard M, EESS 502).

A summary of approved and existing earth station standards is contained in ESOG Module 100.

An electronic version of the Eutelsat S.A. Earth Station Standards (EESS) can be found in the Eutelsat S.A. Extranet:

<http://services.eutelsat.fr>

Access codes to this application can be obtained from Eutelsat S.A. on request, by writing at the following e-mail address: esapproval@eutelsat.fr.

2.3. Non-Standard Earth Stations

Non-standard earth stations are those which do not meet all the mandatory performance characteristics of the standard earth stations, but whose measured performance characteristics render them suitable for the requested use and for which a specific "Authorisation to Operate" must be provided by Eutelsat S.A. on a case-by-case basis.

The particular use is associated with the submission of detailed technical earth station data and approval of a transmission plan. The approval of non-standard earth stations is restricted to the following cases:

- Temporary operation pending the provision of a standard earth station
- Temporary operation of a limited duration for special events and renewable upon request
- Temporary operation renewable upon application for use with tests or demonstrations
- Operation in accordance with a valid Eutelsat Transmission Plan (Nomenclature of Standard M-x).

2.4. Type Approved Earth Stations

Type approved earth stations (i.e. identical small dishes which are produced in large quantities) are those earth stations that have undergone particular Eutelsat S.A. procedures and were assigned a type approval certificate and number from Eutelsat S.A.

Reference may be made to ESOG Module 120.

2.5. VSAT Networks

VSAT networks in general comprise one (or more) large Hub Stations and numerous small remote stations, -the VSAT terminals-, often located in different countries.

In the context of earth station approval, the Hub stations are subject to the normal procedures for standard (or non-standard) earth stations as given in paragraph 3. For the VSAT terminals, once type approved (ESOG Module 120 refers) the approval is normally limited to a simple registration via the Eutelsat S.A. Extranet <http://services.eutelsat.fr> or by means of the form given in Annex C of this module.

3. APPROVAL FOR ACCESS AND AUTHORISATION TO OPERATE EARTH STATIONS

3.1. General

Earth stations can be applied by any satellite operating entity in possession of the necessary authorisations to operate earth stations as required by the appropriate National Regulatory Agencies.

The applicant shall submit as soon as possible and **prior to commencement of operation** of the earth station an application to access the Eutelsat S.A. space segment.

3.1.1. Application to Access the Eutelsat S.A. Space Segment

Request for approvals can be sent on-line via an interactive application available on the Eutelsat S.A. Extranet, at the following address: <http://services.eutelsat.fr>; access codes to this application can be obtained from Eutelsat S.A. on request, by writing at the following e-mail address: esapproval@eutelsat.fr.

Exceptionally, in case the Applicant has no access to the Web, approvals can be obtained by filling in the relevant Application Forms provided in Annexes A, B and C.

The form for "APPLICATION FOR APPROVAL TO ACCESS THE EUTELSAT S.A. SPACE SEGMENT" by earth stations is presented in Annex A of this ESOG Module.

For VSAT Networks, the "APPLICATION FOR APPROVAL OF A NEW VSAT NETWORK" as given in Annex B has to be submitted. The "REGISTRATION OF REMOTE TERMINALS OF A VSAT NETWORK" form is given in Annex C.

3.1.2. Document of Approval

Following receipt and evaluation of the application via the Web or one of the annexed forms, Eutelsat S.A. will register the earth station, provide an earth station code and issue by e-mail a document of approval to access the space segment for the earth station.

Furthermore, the document of approval specifies conditions and criteria applicable to this earth station.

With the issuance of this document, the earth station has obtained "APPROVAL TO ACCESS THE EUTELSAT S.A. SPACE SEGMENT".

This approval to access can be conditioned by the subsequent successful performance of Earth Station Verification and Assistance (ESVA) and initial full line-up (IFLU) tests.

3.2. Verification and Authorisation to Operate in the Eutelsat S.A. Space Segment

Prior to commencement of operations the earth station shall demonstrate compliance with the specified earth station mandatory performance characteristics.

Upon successful completion of all verification and initial line-up testing the earth station will be granted "AUTHORISATION TO OPERATE IN THE EUTELSAT S.A. SPACE SEGMENT" by the issuance of a "Certification of Earth Station Performance".

The entity to which an allotment of capacity has been made by Eutelsat S.A. will be responsible and liable to Eutelsat S.A. for compliance with the registered performance characteristics and correct operation of the station throughout the allotment period.

3.2.1. Conditions of Authorisation to Operate

Should Eutelsat S.A. conclude at any time, that an earth station fails to meet the mandatory performance characteristics and/or its transmitting signals interfere with effective operation of the overall Eutelsat S.A. space segment or other space systems, Eutelsat S.A. may require that earth station to curtail or to cease temporarily operations with the space segment or may even withdraw the "Authorisation to Operate" for that earth station until satisfactory performance is restored.

3.3. Previously Authorised but Modified Earth Stations

An earth station which has already been authorised for operation in the Eutelsat S.A. system may need to be modified or retrofitted for operational or technical reasons.

Whenever the modifications materially affect the performance characteristics as previously authorised, the approval procedures that are applicable to a new earth station are also applicable to the modifications made.

Eutelsat S.A. requires that a new application be submitted, with all items affected by the modifications, that the relevant performance characteristics

be re-verified and certified and that the earth station be subsequently authorised for operation.

3.4. Temporary Approval or Modification of an Existing Authorisation to Operate

Earth stations are sometimes used to enable operators to utilise satellites for unforeseen ad-hoc events, requiring urgent access to the space segment.

Eutelsat S.A. may extend or modify an existing authorisation for operation at a different location, or to grant temporary approval for the provision of commercial service of an ad-hoc nature (e.g. Emergency Telecommunication Services) for a single short duration purpose and within established Eutelsat S.A. policies.

Annex A - Application for Approval to Access the Eutelsat S.A. Space Segment

In case the Applicant has no access to the Web, the next pages give the standard application form to be filled-in for each standard or type approved Eutelsat S.A. Earth Station for which access to the Eutelsat S.A. Space Segment is sought. After completion the form has to be forwarded to the Head of the Ground Segment Operations Section.

Postal address, facsimile and e-mail addresses are given in the list of Operational Contact Points in the back of every ESOG Module.

APPLICATION FOR APPROVAL TO ACCESS THE EUTELSAT S.A. SPACE SEGMENT

To: Head of Eutelsat S.A. Ground Segment Operations Section

Applicant: Date: Ref.:

1. GENERAL

1.1. Data base to be treated confidentially Yes No Manned Unmanned

1.2.a Earth Station Name:

1.2.b Previous Earth Station Code:

1.3.a Mobility Transportable Mobile Fixed

1.3.b Sub-function Drive Away Fly Away Suitcase Antenna Vehicle Mounted SNG Maritime Antenna Satcom on the Move

1.4. Function Transmit Receive

1.5. Eutelsat S.A. Type Approved (if applies), Certificate N°:

1.6. Location Latitude Deg.: Min.: Sec.: N S
(GPS Data) Longitude Deg.: Min.: Sec.: E W

Nearest Town: Country:

1.7. Earth Station Address:

P.O. Box: Postal Code:.....

Town: Country:

Telephone: + Facsimile: +.....

E - Mail:

1.8. If not manned 24h/day, state single point of contact:

1.9. Operator Name:

Address:

P.O. Box: Postal Code:.....

Town: Country:

Telephone1: + Telephone2: +.....

Mobile: + Facsimile: +.....

E - Mail:

2. SERVICE

2.1. Planned Service Type (according to Eutelsat S.A. Tariff Manual):

2.2. Planned Commencement and Period of Service:

3. ANTENNA DATA

3.1. Manufacturer of main reflector: 3.1.b. f/D (focal length):

3.1.a. Model: 3.1.c. Manufacturer of feed:

3.2. Main Reflector

Circular Diameter: m
 Non. Circ. Hor. Axis: m
 Ver. Axis: m

3.3. Tracking

Monopulse
 Monopulse (with memory)
 Program
 Step
 Step (with memory)
 Conscan
 None
 Other

3.4. Type

Front Fed
 Cassegrain
 Gregorian
 Offset Front Fed
 Offset Cassegrain
 Offset Gregorian
 Back-Fire Feed
 Flat Antenna
 Other

3.5. Feed System: Tx Nr. Ports:
 Rx Nr. Ports:

3.6. Polarisation: Linear
 Circular

3.7. Frequency Bands	Gain		Gain
[GHz]	[dBi]		[GHz]
Rx <input type="checkbox"/> 2.20 - 2.29	Tx <input type="checkbox"/> 2.08 - 2.095	.....
Rx <input type="checkbox"/> 3.60 - 4.20	Tx <input type="checkbox"/> 5.80 - 6.40	.....
Rx <input type="checkbox"/> 10.70-10.95	Tx <input type="checkbox"/> 12.75-13.00	.....
Rx <input type="checkbox"/> 10.95-11.20	Tx <input type="checkbox"/> 13.00-13.25	.....
Rx <input type="checkbox"/> 11.20-11.70	Tx <input type="checkbox"/> 13.75-14.00	.....
Rx <input type="checkbox"/> 11.70-12.50	Tx <input type="checkbox"/> 14.00-14.50	.....
Rx <input type="checkbox"/> 12.50-12.75	Tx <input type="checkbox"/> 17.30-18.10	.....
Rx <input type="checkbox"/> 18.40-19.70	Tx <input type="checkbox"/> 18.10-18.40	.....
Rx <input type="checkbox"/> 19.70-20.20	Tx <input type="checkbox"/> 27.50-29.50	.....
Rx <input type="checkbox"/> 21.40-22.00	Tx <input type="checkbox"/> 29.50-30.00	.....

3.8. G/T: dB/K at GHz

4. TRANSMIT EQUIPMENT

4.1. HPA's

TWTA Number of units Phase Combined
 Rating (Watt)
 Klystron Number of units Phase Combined
 Rating (Watt)
 SSA Number of units Phase Combined
 Rating (Watt)

4.2. EIRP (in the direction of the satellite): Maximum capability: dBW
 Overall RMS stability: + dB
 - dB

4.3. UPPC mechanism: Receive beacon level
 Other, please state
 None

5. FREQUENCY CONVERTERS

5.1. TX Frequency stability Tolerance: kHz

5.1.a Number of Up Converters: 5.1.b Number of Down Converters:

5.1.c Number of Block Up Converters: 5.1.d Number of LNB:

6. EARTH STATION VERIFICATION ASSISTANCE (ESVA)

6.1. Test requested: Yes
 No

6.2. Requested Period:
Earliest start: ... / ... / 20...
To be finished before: ... / ... / 20...

7. RECOMMENDED LINE-UP TESTS (ACCORDING TO SERVICE)

7.1. Test requested: Yes
 No

7.2. Requested Period:
Earliest start: ... / ... / 20...
To be finished before: ... / ... / 20...

8. AGREEMENTS AND CERTIFICATION

The Applicant agrees with respect to the earth station of:
for which he has submitted this application to be responsible and liable to Eutelsat S.A. for compliance with the requirements of the document of approval as specified by Eutelsat S.A.

The Applicant also certifies that it is in possession of all the relevant authorisations to operate earth stations, as required by the appropriate National Regulatory Agencies.

Place: Date: Signature:

Annex B - Application for Approval of a New VSAT Network

In case the Applicant has no access to the Web, the next pages give the standard application form to be filled-in for each VSAT Network for which access to the Eutelsat S.A. Space Segment is sought. After completion the form has to be forwarded to the Head of the Ground Segment Operations Section.

Postal address, facsimile and e-mail addresses are given in the list of Operational Contact Points in the back of every ESOG Module.

APPLICATION FOR APPROVAL OF A NEW VSAT NETWORK

To: Head of EUTELSAT S.A. Ground Segment Operations Section

Applicant: Date: Ref.:

1. GENERAL

1.1. Controlling Hub Station Name:

1.2. Earth Station Code (if registered before with Eutelsat S.A.):

2. VSAT NETWORK DATA

2.1. Network Name:

2.1.a Network Topology Meshed Uni-directional
 Star Bi-directional

2.2. Outbound/Inbound Carriers

2.2.a Outbound Access Protocol TDM SCPC
 CDMA TDMA
 Other DAMA

2.2.b Inbound Access Protocol SCPC
 TDMA
 DAMA
 CDMA
 ALOHA
 Other

2.3. Manufacturer of VSAT Network Management System:

2.4. VSAT Control Centre:.....

Address:

P.O. Box: Postal Code: Town: Country:

Telephone: + Facsimile: + E-mail:.....

2.5. If not manned 24h/day, state single point of contact:

2.6. Operator Name:

Address: P.O. Box: Postal Code:.....

Town:..... Country:.....

Telephone: + Facsimile: + E-mail:

3. NETWORK MANAGEMENT SYSTEM

3.1. Can the VSATs radio equipment be powered off remotely from the Hub (i.e. by removing remotely the supply voltage of the VSATs radio equipment ODU (Outdoor Unit)) Yes No

3.2. If answer in 3.1 was Yes, state the Number of VSATs that can be simultaneously powered-off with one command from NMS: and state the time necessary to power-off after the command is sent from NMS:

3.3. If answer in 3.1 was No, describe means to remotely cease radiation of VSATs from NMS:

3.4. Describe the means to change the frequency and EIRP of the VSATs from NMS:

3.5. Describe the means to enforce continuous mode of operations of VSATs:

3.6. Describe / send by facsimile details of NMS monitoring facilities:

3.7. Describe Pointing Methods:

3.8. Describe Cross-Polarisation Alignment Methods:

3.9. Maximum theoretical separation between outbound and inbound frequency: kHz

4. DATA TO BE TREATED CONFIDENTIALLY Yes No

5. AGREEMENTS AND CERTIFICATION

The Applicant agrees with respect to the subject Hub Station and its VSAT Network:..... for which he has submitted this application to be responsible and liable to Eutelsat S.A. for compliance with the requirements of the document of approval as specified by Eutelsat S.A.

The Applicant also certifies that it is in possession of all the relevant authorisations to operate earth stations, as required by the appropriate National Regulatory Agencies.

Place: Date: Signature:

Annex C - Registration of Remote Terminals of a VSAT Network

In case the Applicant has no access to the Web, the next pages give the standard application form to be filled-in for each VSAT Network for which access to the Eutelsat S.A. Space Segment is sought. After completion the form has to be forwarded to the Head of the Ground Segment Operations Section.

Postal address, facsimile and e-mail addresses are given in the list of Operational Contact Points in the back of every ESOG Module.

REGISTRATION OF REMOTE TERMINALS OF A VSAT NETWORK

Use a separate form for each batch of identical type of terminals in the VSAT network

To: Head of Eutelsat S.A. Ground Segment Operations Section

Applicant: Date: Ref.:

1. VSAT NETWORK IDENTIFICATION

1.1. Network Code : 1.2. Hubstation Code :

2. EUTELSAT TYPE APPROVED (IF APPLIES), CERTIFICATE N°:

3. ANTENNA DATA

3.1. Manufacturer of main reflector:

3.2. Model: 3.3. f/D (focal length):

3.4. Type 3.5. Main Reflector

<input type="checkbox"/> Front fed <input type="checkbox"/> Offset Front fed <input type="checkbox"/> Other	<input type="checkbox"/> Circular Diameter : m <input type="checkbox"/> Non. Circ. Hor. Axis : m Ver. Axis : m
---	--

3.6. Frequency Bands [GHz] Gain [dBi] Gain [dBi]

	<input type="checkbox"/>	2.20 - 2.29			<input type="checkbox"/>	2.08 – 2.095
Rx	<input type="checkbox"/>	3.60 - 4.20	.....	Tx	<input type="checkbox"/>	5.80 - 6.40
Rx	<input type="checkbox"/>	10.70-10.95	.....	Tx	<input type="checkbox"/>	12.75-13.00
Rx	<input type="checkbox"/>	10.95-11.20	.....	Tx	<input type="checkbox"/>	13.00-13.25
Rx	<input type="checkbox"/>	11.20-11.70	.....	Tx	<input type="checkbox"/>	13.75-14.00
Rx	<input type="checkbox"/>	11.70-12.50	.....	Tx	<input type="checkbox"/>	14.00-14.50
Rx	<input type="checkbox"/>	12.50-12.75	.....	Tx	<input type="checkbox"/>	17.30-18.10
Rx	<input type="checkbox"/>	18.40-19.70	.....	Tx	<input type="checkbox"/>	18.10-18.40
Rx	<input type="checkbox"/>	19.70-20.20	.....	Tx	<input type="checkbox"/>	27.50-29.50
Rx	<input type="checkbox"/>	21.40-22.00	.....	Tx	<input type="checkbox"/>	29.50-30.00

3.7 G/T: dB/K at GHz

4. OUTDOOR UNIT

4.1. Eutelsat Type Approved (if applies), Certificate N°:

4.2. Outdoor unit manufacturer:

4.3. Outdoor unit model:

4.4. Power Amplifier

SSA Rating : Watt
 Other (describe)

4.5. Maximum EIRP capability (in the direction of the satellite):..... dBW

5. INDOOR UNIT

5.1. Manufacturer: 5.2. Model:

5.3. Typical E_b /N₀ vs BER: dB @ 1E-3
 dB @ 1E-6

6. TERMINAL DATA

6.1. Location Data: Provide location data for all individual terminals of this type in table on the next page.

7. DATA TO BE TREATED CONFIDENTIALLY Yes No

8. AGREEMENTS AND CERTIFICATION

The Applicant agrees with respect to the subject Hub Station and its VSAT Network: for which he has submitted this application to be responsible and liable to Eutelsat S.A. for compliance with the requirements of the document of approval as specified by Eutelsat S.A.

The Applicant also certifies that it is in possession of all the relevant authorisations to operate earth stations, as required by the appropriate National Regulatory Agencies.

Place: Date: Signature:

**TABLE 1: SIMPLIFIED FORMAT FOR PROVISION OF VSAT
LOCATION UPDATES**

Eutelsat S.A. Code:

Antenna Diameter:

Antenna Manufacturer and Model:

Radio Unit Manufacturer and Model:

Country	Nearest Town	Latitude (GPS Data)				Longitude (GPS Data)			
		Deg	Min	Sec	N or S	Deg	Min	Sec	E or W
-	-	*	*	*	-	*	*	*	-
-	-	*	*	*	-	*	*	*	-
-	-	*	*	*	-	*	*	*	-
-	-	*	*	*	-	*	*	*	-
-	-	*	*	*	-	*	*	*	-

EUTELSAT S.A. OPERATIONS CONTACT POINTS

<p>Eutelsat S.A. CSC e-mail: csc@eutelsat.fr</p>	<p>Voice: +33-1-45.57.06.66 Fax: +33-1-45.75.07.07</p>
<p>Ground Segment Operations</p> <p>Earth Station Approval and Line-up Office e-mail: esapproval@eutelsat.fr</p> <p>Type Approval e-mail: typeapproval@eutelsat.fr</p>	<p>Voice: +33-1-53.98.48.11 Fax: +33-1-53.98.37.41</p> <p>Voice: +33-1-53.98.39.25 +33-1-53.98.46.13</p> <p>Voice: +33-1-53.98.48.16</p>
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<p>Mailing Address</p>	<p>Eutelsat S.A. 70, rue Balard F-75502 PARIS Cedex 15 FRANCE</p>
<p>Eutelsat S.A. Corporate Web</p>	<p>http://www.eutelsat.com</p>
<p>Eutelsat Extranet (password protected)</p>	<p>http://services.eutelsat.fr</p>