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**Satellite Earth Stations (SES);  
Centralised control and monitoring functions  
for VSAT networks**

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## Foreword

This European Telecommunication Standard (ETS) has been produced by the Satellite Earth Stations (SES) Technical Committee of the European Telecommunications Standards Institute (ETSI), and, has undergone the ETSI standards approval procedure in Public Enquiry 20 and Vote 25.

Every ETS prepared by ETSI is a voluntary standard. This ETS may contain text concerning type approval of the equipment to which it relates. This text should be considered only as guidance and does not make this ETS mandatory.

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## 1 Scope

This European Telecommunication Standard (ETS) defines the requirements for two-way Very Small Aperture Terminals (VSATs) operating in the framework of a satellite network for digital communications purposes. In these networks there is a set of control and monitoring functions at each VSAT and a separate set of Centralised Control and Monitoring Functions (CCMF). The control and monitoring functions are designed to limit interferences to users of the frequency spectrum due to a fault condition at a VSAT.

ETS 300 160 [2] defines the requirements for the control and monitoring functions in a VSAT as defined in ETS 300 159 [1]. These control and monitoring functions are only applicable to the satellite access subsystem of the VSAT.

This ETS contains the requirements for the CCMF.

NOTE: The use of the term "centralised" does not imply any particular topology VSAT system. It refers to the fact that functions are implemented at system level and not in every one of the VSAT.

## 2 Normative references

This ETS incorporates by dated or undated references, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to, or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] ETS 300 159: "Satellite Earth Stations (SES); Transmit/receive Very Small Aperture Terminals (VSATs) used for data communications operating in the Fixed Satellite Service (FSS) 11/12/14 GHz frequency bands".
- [2] ETS 300 160: "Satellite Earth Stations (SES); Control and monitoring functions at a VSAT".

## 3 Definitions

The CCMF which are the subject of this ETS constitute the set of functional entities that, at system level, monitor and control the correct operation of all VSATs in a system.

The VSAT system subject to this ETS is designed for unattended operation and with transmission capability limited to baseband digital signals. Transmission and reception at a VSAT relate to transmission and reception over the satellite.

**Control channel(s):** channel or channels by which VSATs receive control information from the CCMF. The control channel(s) shall be carried by the same satellite in which the system operates.

## 4 Abbreviations

For the purpose of this ETS, the following abbreviations apply.

CCD	Central Control Disable
CCE	Central Control Enable
CCMF	Centralised Control and Monitoring Functions
VSAT	Very Small Aperture Terminal

## 5 Requirements

### 5.1 Receive signal level monitoring facility

**Purpose:**

To be able to monitor the received signal level from any transmitting VSAT.

**Specification:**

At the CCMF there shall be a feature which shall be able to monitor the signal level of any VSAT transmission, on demand.

**Verification:**

Compliance by documentary evidence and demonstration.

The manufacturer shall explain how the CCMF will identify any VSAT which is transmitting a carrier with an abnormal signal level.

### 5.2 Frequency error monitoring facility

**Purpose:**

To be able to monitor in a VSAT whether the error on the transmit frequency exceeds a predefined threshold.

**Specification:**

At the CCMF, there shall be a feature which shall be able to monitor VSAT transmit frequency error, with respect to the nominal carrier frequency, for any VSAT transmission, on demand.

It shall be possible to modify the error threshold.

**Verification:**

Compliance by documentary evidence and demonstration.

The manufacturer shall explain how the CCMF will identify any VSAT which is transmitting with an incorrect frequency.

### 5.3 Suppression of VSAT transmissions

**Purpose:**

To inhibit transmissions from any VSAT or all VSATs from the CCMF.

**Specification:**

It shall be possible to suppress all transmissions from each individual VSAT or from all VSATs simultaneously.

The CCMF shall provide the mechanism to send the appropriate inhibit commands by, for instance, transmitting Central Control Disable (CCD) messages to the VSATs concerned on the control channel.

The execution by the system of the suppression of the transmissions from any VSAT, or all VSATs shall take no more than 1 minute.



**Verification:**

Compliance by documentary evidence and demonstration.

The manufacturer shall provide an agreed test procedure to verify the compliance with the specification.

**5.4 VSAT validation**

There are two alternative methods to confirm that the transmissions by each transmitting VSAT are correctly received. These are:

- transmission validation by the CCMF;
- transmission validation by any receiving station.

Systems which select transmission validation by the CCMF shall meet the following requirement.

**5.4.1 VSAT transmission validation by the CCMF**

**Purpose:**

To validate the ability of a VSAT to transmit information that can be received by other stations in the system. This shall be done by the CCMF requesting the VSAT to send a status message in order to validate its correct transmission.

**Specification:**

The CCMF shall instruct each VSAT, which has been enabled to transmit, to transmit a status message either once or periodically by means of a poll for status message.

The poll for status message shall be sent simultaneously with, or immediately after, an enable command, and may be sent on a regular basis.

Failure to receive the status message within a predefined system specific time period shall result in an alarm identifying the VSAT.

**Verification:**

Compliance by documentary evidence and demonstration.

The manufacturer shall provide an agreed test procedure to verify the compliance with this specification.

**5.5 Enabling VSAT transmission**

**Purpose:**

To re-enable transmissions from a VSAT, or VSATs, whose transmissions have previously been suppressed.

**Specification:**

At the CCMF it shall be possible, by means of a Central Control Enable (CCE) message, to re-authorise transmission for any, or all VSATs, whose transmission have previously been suppressed.

**Verification:**

Compliance by documentary evidence and demonstration.

## History

<b>Document history</b>	
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