RECOMMENDATION ITU-R S.729*

Control and monitoring function of very small aperture terminals (VSATs)

(1992)

The ITU Radiocommunication Assembly,

considering

a) that geostationary-satellite networks in the fixed-satellite service operate in the same frequency bands;

b) that it is necessary to limit interference to other users of the frequency spectrum;

c) that VSAT earth stations will in general be unattended;

d) that some VSAT earth station fault conditions may be detected locally at the VSAT itself while others may be detected at the Network Control and Monitoring Centre or at an equivalent facility;

e) that VSAT earth stations must have control and monitoring functions to limit interference to other users of the frequency spectrum when a malfunction occurs at an unattended remote VSAT earth station;

f) that VSAT earth stations receive control information from the Network Control and Monitoring Centre or an equivalent facility,

recommends

that VSAT earth stations should at least be provided with the following monitoring and control functions:

1 transmissions from the VSAT earth station should be inhibited at initial start-up (power on) until the VSAT determines that it is correctly receiving and interpreting a specified command signal generated by the Network Control and Monitoring Centre or by an equivalent facility or initiated at the VSAT;

2 the correct functioning of the VSAT (including but not limited to transmitter frequency) should be monitored; this monitoring may be done locally at the VSAT. When a fault which may cause interference is detected the VSAT should cease transmission;

3 the VSAT should cease transmissions after receiving a "parameter change" command which may cause interference during the change, e.g. one that alters its output frequency, until it receives an "enable transmission" command or determines itself that it can continue operation;

4 where so equipped, the VSAT should monitor the received outbound carrier. If for any reason the VSAT detects that a malfunction has occurred, the VSAT should cease transmission. The

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* Radiocommunication Study Group 4 made editorial emendments to this Recommendation in 2001 in accordance with Resolution ITU-R 44 (RA-2000).

VSAT may then continue transmission after it receives a command from the Network Control and Monitoring Centre or from an equivalent facility to do so, or after it determines itself that synchronization with the outbound carrier has been re-established;

5 the VSAT should, at least, be able to accept from the Network Control and Monitoring Centre or from an equivalent facility, the following commands:

– disable transmission;

– enable transmission.

In addition, it shall be possible for the Network Control and Monitoring Centre or an equivalent facility to monitor the health of a VSAT and to determine if a VSAT has failed;

6 that the following Notes be considered as a part of this Recommendation:

NOTE 1 – The recommendation in § 4 is not applied for stand-alone point-to-point, VSAT-to-VSAT networks. In this case one VSAT may need to continue transmission even when it loses the received carrier, because otherwise the network will never restore after rain fades if both sides stop transmission.

NOTE 2 – That § 5 does not apply to receive-only VSATs.