

RECOMMENDATION 722-1

UNIFORM TECHNICAL STANDARDS (ANALOGUE)
FOR SATELLITE NEWS GATHERING (SNG)

(Questions 13/CMTT and 33/CMTT)

(1990-1992)

The CCIR,

considering

- a) that Satellite News Gathering (SNG) using portable transmitting earth stations is essential for broadcast operations and provides a valuable method of transmission for the rapid acquisition and broadcasting of news events;
- b) that to facilitate the international coverage of news and to optimize the design of equipment, it would be desirable to adopt uniform technical standards for SNG, taking into account the possibility for interference to other satellites and systems;
- c) that SNG requirements include various communication and transmission support systems and that it is necessary to provide, preferably on the same satellite transponder, auxiliary signals for the operation of SNG earth stations;
- d) that SNG earth stations operate mainly in the fixed-satellite service, and should comply with the relevant provisions of the Radio Regulations, and any relevant domestic regulation requirements;
- e) that SNG transmissions should conform to certain technical criteria with regard to off-axis e.i.r.p. and other antenna characteristics;
- f) that the technical characteristics of an appropriate identification signal should be specified,

recommends

- 1. that SNG earth-station transmissions should comply with the uniform technical standards as described in Annex 1;
- 2. that SNG earth stations equipped to provide two-way satellite communications circuits should comply with Recommendation 771.

ANNEX 1

Technical parameters applicable to SNG terminals

1. General performance

An SNG terminal must be able to be rapidly deployed, to transmit (with a minimum of impairments) vision and associated sound or sound programme signals, to provide limited receiving capability to assist in the pointing of the antenna and to monitor (where possible) the transmitted signals, and to provide two-way communications for operation and supervision.

SNG terminals consist of the following main units:

- antenna and feed system with polarization adjustment;
- antenna mount with azimuth/elevation adjustment;
- high-power amplifier (HPA) for vision/sound and auxiliary (voice/data) communication channels;
- receiver unit in order to assist antenna pointing;

- baseband/modulation equipment and IF to RF upconverter;
- two-way voice/data communication equipment;
- system local/remote control panel;
- optional power generator.

2. Transmission performance requirements

The baseband signal shall be transmitted with a minimum of impairment.

2.1 SNG for analogue television broadcasting

Video signal: refer to Recommendation 567-3 (Düsseldorf, 1990). (Requirements for random noise may be relaxed by the user.)

Audio signal: refer to Recommendation 505-4 (Düsseldorf, 1990). (Requirements for random noise may be relaxed by the user.)

2.2 SNG for analogue sound broadcasting

Baseband: as per Recommendation 504-2 (Geneva, 1982). (Requirements for random noise may be relaxed by the user.)

3. RF performance requirements

3.1 Off-axis e.i.r.p. density

Shall comply with Recommendation 524 or the satellite operator's requirements, whichever is more stringent.

3.2 Polarization discrimination

Some satellites use overlapping channels with orthogonal polarization discrimination. The cross-polarization design for linearly polarized antennas should be better than 30 dB within the -1 dB points of the main axis of the beam and 25 dB elsewhere.

3.3 E.i.r.p.

The necessary e.i.r.p. of the SNG terminal depends on the required uplink carrier-to-noise ratio C/N and satellite G/T . However, e.i.r.p. is often limited by the off-axis e.i.r.p. density limits as indicated in § 3.1.

3.4 Necessary RF bandwidth

The necessary RF bandwidth for SNG can be determined by taking into account the signal format, the required signal-to-noise ratio, the e.i.r.p., the number of associated carriers for auxiliary circuits and the available bandwidth of the transponder.

SNG for analogue television broadcasting

17.5-36 MHz

SNG for analogue sound broadcasting

100-300 kHz

4. Modulation characteristics

The equipment providing the modulation shall include: video lowpass filter which can be bypassed, switchable pre-emphasis networks, selectable IF bandpass filters, one or more frequency agile sound subcarrier modulators, dispersal generator where required, IF power control, and a linear video FM modulator. The dc component of the video signal should be preserved to take advantage of the available bandwidth.