



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

M.731

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

**MAINTENANCE:
INTERNATIONAL TELEPHONE CIRCUITS**

SUBJECTIVE TESTING

ITU-T Recommendation M.731

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation M.731 was published in Fascicle IV.1 of the *Blue Book*. This file is an extract from the *Blue Book*. While the presentation and layout of the text might be slightly different from the *Blue Book* version, the contents of the file are identical to the *Blue Book* version and copyright conditions remain unchanged (see below).

2 In this Recommendation, the expression “Administration” is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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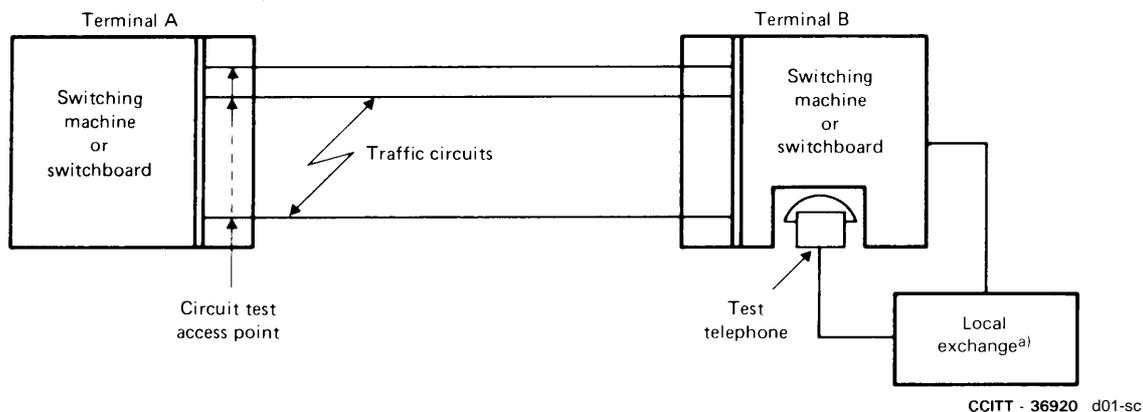
Recommendation M.731

SUBJECTIVE TESTING

1 The need for subjective testing of circuits depends to a great extent on whether or not automatic or semi-automatic supervisory, testing and fault localization equipment is already provided. For example, subjective testing of circuits is not necessary on routes where ATME No. 2 (as described in Recommendation O.22 [1]) is available. Also, the supervisory and fault localization functions built into SPC exchanges and digital transmission systems reduce or even remove the need for subjective testing. For those Administrations wishing to use subjective testing, the methods described in §§ 2-4 below are recommended.

2 Circuits used for the automatic and semi-automatic telephone service may be tested subjectively to reveal gross faults, by systematic test calls from circuit Terminal A to a telephone located at circuit Terminal B. (See Figure 1/M.731.) Such test calling may be done independently of all other tests or combined with functional signalling test calls as described in the *Second method* in Recommendations Q.139 [2] and Q.163 [3] for Signalling Systems No. 4 and No. 5, respectively. Such test calls may be classed as type 3 test calls as defined in Recommendation E.424 [4]. They may be applied on a periodic basis for systematically checking each trunk in a group for excessive echo, clipping, loss, noise, distortion and crosstalk. Any fault suspected as a result of this subjective check should be investigated in the normal manner. When type 3 test calls are used in this manner a test telephone is assumed to exist at the distant international centre. The test telephone is connected to a local exchange, if possible, not located at the same point as the international centre so as to permit a realistic appraisal of the service quality. The test should be initiated at the outgoing terminal for one-way circuits and at both terminals sequentially on both-way circuits. Such test calls for checking service quality should be scheduled with the distant international centre during light load periods.

3 Another method of subjective testing, that may be alternatively considered involves *type 1 test calls* as defined in Recommendation E.424 [4]. It permits systematic evaluation from Terminal A to a location at Terminal B which would not consist of a test telephone, as shown in Figure 1/M.731, but rather to a test location at Terminal B that is not associated with a local exchange. Such an agreement might not be as effective in detecting echo control problems (since the simulation of a normal connection would be less realistic) but might be useful when the first technique suggested above is impractical due to local conditions.



a) If possible, not located at the same point as Terminal B so as to develop a realistic return loss.

FIGURE 1/M.731
Use of a type 3 test call for systematic circuit evaluation

4 In order to obtain the greatest value from subjective tests it might be advantageous to apply them in association with the tests prescribed in Recommendation M.610 and with *in-station* tests such as those for the maintenance of echo suppressors.

References

- [1] CCITT Recommendation *Automatic transmission and signalling testing equipment ATME No. 2*, Vol. IV, Rec. O.22.
- [2] CCITT Recommendation *Manual testing*, Vol. VI, Rec. Q.139.
- [3] CCITT Recommendation *Manual testing*, Vol. VI, Rec. Q.163.
- [4] CCITT Recommendation *Test calls*, Vol. II, Rec. E.424.