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SERIES H: TRANSMISSION OF NON-TELEPHONE
SIGNALS

Use of telephone-type circuits for voice-frequency
telegraphy

**Composition and terminology of international
voice-frequency telegraph systems**

ITU-T Recommendation H.21

Extract of **Red Book Fascicle III.4 (1984)**

NOTES

- 1 ITU-T Recommendation H.21 was published in Fascicle III.4 of the *Red Book*. This file is an extract from the *Red Book*. While the presentation and layout of the text might be slightly different from the *Red Book* version, the contents of the file are identical to the *Red 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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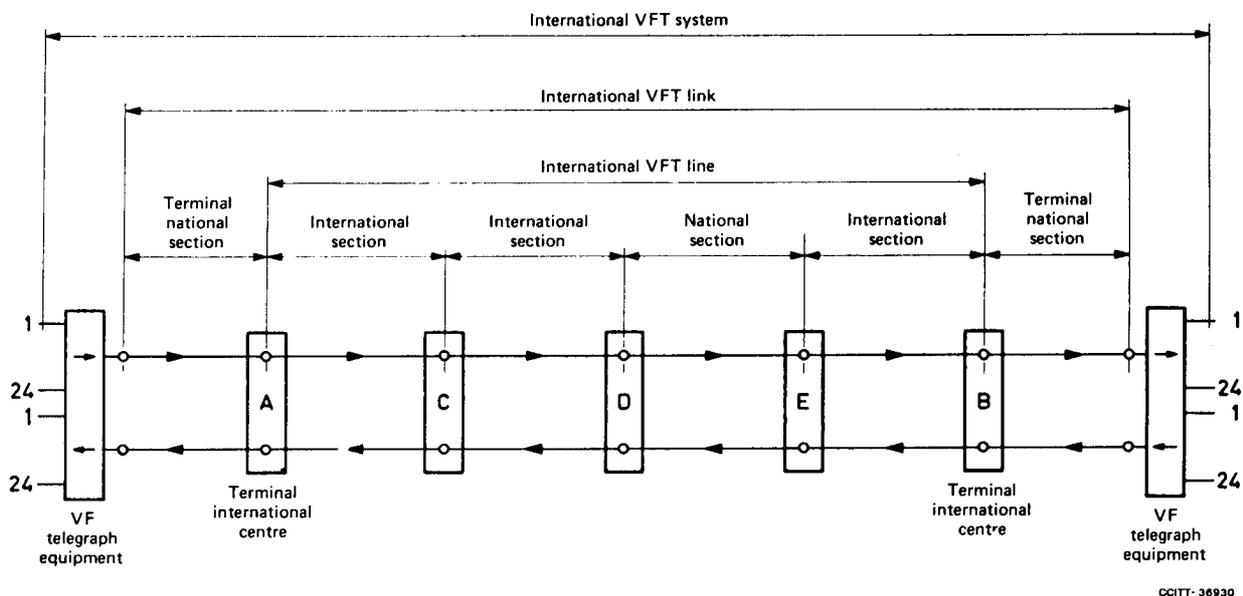
COMPOSITION AND TERMINOLOGY OF INTERNATIONAL VOICE-FREQUENCY TELEGRAPH SYSTEMS

(Mar del Plata, 1968)

Figure 1/H.21 illustrates the composition of an international voice-frequency telegraph (VFT) system and the terminology used.

1 International voice-frequency telegraph system

This is the whole of the assembly of apparatus and lines including the terminal VFT equipment. In Figure 1/H.21 the system illustrated provides 24 duplex international telegraph circuits, but other numbers of telegraph circuits can be provided.



(At the intermediate centres C, D and E and at the terminal international centres A and B, the signals transmitted are at audio frequencies. At these points it is possible to make measurements.)

FIGURE 1/H.21

The components of an international VFT system

2 International VFT link

(sometimes referred to as the bearer circuit)

2.1 Four-wire telephone-type circuits are used for VFT links. The link comprises two unidirectional transmission paths, one for each direction of transmission, between the terminal VFT equipments.

2.2 The VFT link consists of an international telegraph line together with any terminal national sections connecting the international telegraph line to the VFT telegraph terminal equipment and may be constituted entirely on carrier channels (on symmetric pair, coaxial pair or radio-relay systems) or on audio-frequency lines or combinations of such lines.

2.3 The normal links for VF telegraphy have no terminating units, signalling equipment or echo suppressors.

3 International VFT line

3.1 The international VFT line may be constituted by using a channel in a carrier group or channels in tandem on a number of groups. National and international sections can be interconnected to set up an international telegraph line. See Figure 1/H.21, but note that § 3.2 below details the preferred method.

The international telegraph line could equally well be set up between, for example, only A and C or between C and D, in which case A and C, or C and D would be the terminal international centres.

3.2 Wherever possible an international telegraph line for a VFT link should be provided on channels of a single carrier group, thereby avoiding intermediate audio-frequency points. In some cases, such a group may not exist or, for special routing reasons, it may not be possible to set up the international telegraph line in the preferred way. In such cases, the international telegraph line will consist of channels in tandem on two or more groups with or without audio sections, depending on the line available and the routing requirements.

4 Terminal national sections connected to the international telegraph line

In many cases the VFT terminal equipment is remote from the terminal international centre of the international telegraph line (Figure 1/H.21), and such cases necessitate the provision of terminal national sections in order to establish international VFT links. These sections may be in short-distance local audio cables, amplified or unamplified, or may be routed in long-distance carrier groups or amplified audio plant as available.