

RECOMMENDATION ITU-R F.556-1*

**HYPOTHETICAL REFERENCE DIGITAL PATH FOR RADIO-RELAY SYSTEMS
WHICH MAY FORM PART OF AN INTEGRATED SERVICES DIGITAL NETWORK
WITH A CAPACITY ABOVE THE SECOND HIERARCHICAL LEVEL**

(1978-1986)

The ITU Radiocommunication Assembly,

considering

- a) that it is desirable to define a hypothetical reference digital path for digital radio-relay systems, to afford guidance to the designers of equipment and systems for use in international telecommunication networks;
- b) that the hypothetical reference digital path for digital radio-relay systems should, as far as possible, be in agreement with the 2500 km hypothetical reference digital paths as specified by the ITU-T;
- c) that the capacity of digital radio-relay systems should be that of an ITU-T recommended hierarchical level or an integral multiple of it,

recommends

1. that a hypothetical reference digital path for digital radio-relay systems, meeting the requirements of "high-grade performance" specified in ITU-T Recommendation G.821 and with a capacity above the second hierarchical level, should be 2500 km long (see Note 1);
2. that this digital path should include, for each direction of transmission, nine sets of digital multiplexing equipment at the ITU-T recommended hierarchical levels, it being understood that a set of digital multiplexing equipment comprises a number of associated multiplexers and demultiplexers;
3. that this digital path should include nine consecutive identical digital radio sections of equal length (see Note 2);
4. that this hypothetical reference digital path should be as represented in Fig. 1.

Note 1. – In conformity with considering (c) this hypothetical reference digital path also applies to systems with a capacity which is an integral multiple of the second or higher hierarchical level.

Note 2. – A digital radio section consists of two consecutive radio terminal equipments and their interconnecting transmission medium which together provide the whole of the means of transmitting and receiving between two consecutive digital distribution frames (or equivalents), a digital signal of specified rate (see ITU-T Recommendation G.702). The characteristics of some radio-relay systems (for instance code conversion, insertion of justification bits, parity bits and service bits) may cause the bit rate within the digital radio section to be different from the ITU-T recommended hierarchical level or an integral multiple of it.

* Radiocommunication Study Group 9 made editorial amendments to this Recommendation in 2000 in accordance with Resolution ITU-R 44.

