PCC.III/REC.42 (XII-99)[1]

RADIO FREQUENCY CHANNEL ARRANGEMENTS FOR DIGITAL POINT-TO-POINT RADIO SYSTEMS OPERATING IN THE 360 – 390 MHz RANGE

The XIIth Meeting of the Permanent Consultative Committee III: Radiocommunications,

CONSIDERING:

(a) That the segment 360-390 MHz is within the band 335-400 MHz and that in it analog radiocommunications systems to serve rural areas, have been established for many years in several countries of the Hemisphere, and that these same bands can be used today by replacing those systems with digital technologies with modulation techniques 16 and above that enable the use of the radio spectrum in these bands to be maximized;

(b) That the systems in these bands can be utilized with interconnection speeds of 0.7, 1.5, 2, 6.2 and 8 MB/s in conformity with the respective recommendations, such as G.703 of ITU-T;

(c) That it is sometimes desirable to be able to connect these low capacity digital radiocommunication systems with international communications on medium or high capacity systems or with international switching exchanges that are also digital;

(d) That new commercial developments in rural areas entail radiocommunication system quality requirements for interconnection with Integrated Services Digital Networks (ISDN);

(e) That in mountainous countries, or countries with radio ranges in rural areas above 40 Km, the use of bands in the vicinity of 400 MHz may be more advantageous from the technical and propagation points of view, thus avoiding costly installations required in higher bands due to tower and other infrastructure requirements;

(f) That it may be of great benefit to many countries of the Hemisphere and the world to replace analog radiocommunication systems with digital systems, taking advantage of the spectrum compression advantages that allow for digital modulation and the types of small antennas that may be used in these bands, and

(g) That point-to-point systems may provide interconnection solutions to small populations in very remote rural areas,

RECOGNIZING:

[1] Reference: PCC.III/doc.1171/99 rev.2.

That some countries in the region reserve this band for military mobile, fixed and mobile satellite services use.

RECOMMENDS:

1. That Member States planning to replace analog radiocommunications systems which operate in the band 360 –390 MHz with digital systems in remote rural areas, continue to consider the use of this band for the same purpose.

2. To promote the efficient use of radio spectrum in the band 360-390 MHz through equipment using a high spectrum efficiency modulation of at least 16 modulation states.

3. To use of a maximum of 16 two-way radio channels with a separation between carriers of 0.5 MHz where:

fo is the central frequency of the 375.25 MHz band,

fn *is* the central frequency of a radio channel in the lower half of the band,

fn' *is* the central frequency of a radio channel in the upper half of the band,

SD (duplexer separation between transmitter and receiver) = 20 MHz.

Where the frequencies of individual channels are given by the following ratios:

lower half of the band: $fn = fo - 14.5 + 0.5\,n$ MHz

upper half of the band: $fn' = fo + 5.5 + 0.5\,n$ MHz

where n = 1, 2, 3.....or 16