



Recommendation ITU-R F.557-5
(02/2014)

**Availability objective for radio-relay systems
over a hypothetical reference digital path**

F Series
Fixed service



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Foreword

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BT	Broadcasting service (television)
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RA	Radio astronomy
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SA	Space applications and meteorology
SF	Frequency sharing and coordination between fixed-satellite and fixed service systems
SM	Spectrum management
SNG	Satellite news gathering
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V	Vocabulary and related subjects

Note: This ITU-R Recommendation was approved in English under the procedure detailed in Resolution ITU-R 1.

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RECOMMENDATION ITU-R F.557-5

Availability objective for radio-relay systems over a hypothetical reference digital path

(1978-1986-1990-1991-1997-2014)

Scope

This Recommendation provides the availability objective for radio-relay systems over a hypothetical reference digital path (HRDP) including the concept of unavailability of a HRDP and factors to be included in the assessment of unavailability. This Recommendation also provides the guidance of the availability and reliability of radio-relay systems.

It should be noted that this Recommendation could be used only for systems designed prior to the approval of Recommendation ITU-R F.1703 in 2005.

The reference to the hypothetical reference circuit (HRC) and related analogue information are removed in this revised version. For this information, see the previous version of this Recommendation, as well as the guide – List of ITU-R Recommendations on analogue systems in the fixed service in the frequency bands above 30 MHz (this document is available on the web page of ITU-R Working Party 5C), which contains a list of all the Recommendations referring to the analogue fixed service systems, including those already suppressed.

Keywords

Fixed service, hypothetical reference digital path (HRDP), availability, unavailability, mean time between failures (MTBF), mean time to restore (MTTR)

The ITU Radiocommunication Assembly,

considering

- a) that the hypothetical reference digital path (HRDP) is intended as a guide to designers and planners for systems designed prior to 2005;
- b) that the availability of a radio-relay system is dependent upon many factors and particularly upon: the maintenance organization (which determines the time to restore), the reliability of equipment and the system design and propagation conditions. The relative importance of these various factors may vary significantly, sometimes without possibility of control, from one area to another;
- c) that it is desirable to apply common availability objectives to both cable and radio-relay systems,

recommends

- 1 that the availability objective appropriate to a 2 500 km HRDP for digital radio-relay systems (Recommendation ITU-R F.556) should be 99.7% of the time, the percentage being considered over a period of time sufficiently long to be statistically valid, this period is probably greater than one year; the period of time is under study (see Notes 2, 3 and 4);
- 2 that the concept of unavailability of a HRDP should be as follows:
 - 2.1 the period of unavailable time begins at the onset of ten consecutive severely errored second (SES) events, in at least one direction of transmission (see Notes 1 and 9). These ten seconds are considered to be unavailable time. For the definition of SES, refer to related Recommendations ITU-T G.821 and ITU-T G.826;
