

## RESOLUTION ITU-R 47-2\*

### **Future submission of satellite radio transmission technologies for IMT-2000**

(2000-2007-2012)

The ITU Radiocommunication Assembly,

*considering*

- a)* that Resolution ITU-R 56 provides that the term “IMT” is the root name that encompasses both IMT-2000 and IMT-Advanced collectively, and that the term “IMT-2000” encompasses also its enhancements and future developments;
- b)* that universal coverage and seamless global roaming are key IMT objectives, and the satellite component of IMT-2000 will form an essential part in realizing the complete IMT-2000 vision;
- c)* that IMT systems are defined by a set of interdependent ITU Recommendations to allow for the introduction into service of IMT subject to user demand;
- d)* that Recommendation ITU-R M.1034 describes each of the various IMT-2000 satellite radio operating environments;
- e)* that the design of satellite Radio Transmission Technologies (RTTs) is based on an extensive range of technical and economical factors, some of which are in common with terrestrial technologies, some are unique to satellite technologies and some require different consideration when applied to satellite technologies;
- f)* that following evaluation by the ITU-R, seven satellite RTTs have been adopted as satisfying the evaluation requirements for IMT-2000;
- g)* that IMT radio interfaces have been designed to be flexible and are expected to accommodate service requirements for an extended period,

*further considering*

- a)* that since satellite systems are particularly resource limited (for example, power and spectrum), satellite RTTs are optimized to the specific scenarios under which the satellite system will be operating and the market and environments to be served;
- b)* that, while a prime objective for IMT-2000 has been to minimize the number of radio interfaces, because of the constraints on satellite system design and deployment, a number of satellite RTTs may be required for IMT-2000 (see Recommendation ITU-R M.1167);
- c)* that the set of services provided by IMT-2000 service providers and/or operators using a particular satellite system in a given environment is impacted by the particular design constraints for the radio interface for that system;
- d)* that Recommendation ITU-R M.816 recognizes that there may be later phases of IMT-2000 implementation with respect to high data rate of portable computing users and support of

---

\* This Resolution should be brought to the attention of Telecommunication Standardization Study Group 13 and the Telecommunication Standardization Advisory Group (TSAG).

enhanced multimedia communications requirements, and further, that other service objectives may be identified in the work of ITU-R and ITU-T;

e) that for the satellite operating environments shown in Recommendation ITU-R M.1034, the choice of satellite constellation impacts on how operational requirements are met, but for several satellite systems under development choices of the specific satellite constellations have not yet been finalized;

f) that in Recommendation ITU-R M.1034, the operational scenario includes operation across various IMT-2000 radio operating environments, operation across multiple IMT-2000 operators and multiple types of IMT-2000 operators, and that there may be more than one type of satellite system within IMT-2000 each having a different internal configuration and different ownership;

g) that as satellite system optimization and development proceeds, in order to adapt to changes in market demands, business objectives, technology developments, and operational needs, and as commonalities with the terrestrial component of IMT are maximized as appropriate, it may be necessary to modify/update relevant ITU-R Recommendations,

*resolves*

1 that a proponent with a proposal for a new satellite RTT for IMT-2000 should submit the proposal to the ITU in accordance with Recommendation ITU-R M.1225;

2 that three (3) months later, the proponent that submitted an RTT, should submit a self-evaluation report to the ITU, taking into account Recommendation ITU-R M.1225;

3 that, based on evaluation reports received from the proponent and other evaluation groups established by Administrations of Member States of the ITU and ITU Sector Members, the ITU-R should evaluate the proposed RTT in relation to Recommendation ITU-R M.1225 and the criteria in Annex 1 below as to whether it qualifies as an IMT-2000 satellite radio interface;

4 that as soon as possible, the proponent that submitted a satellite RTT that qualifies as an IMT-2000 satellite radio interface should submit to the ITU the information needed to up-date Recommendation ITU-R M.1850;

5 that once this evaluation process is completed by the ITU-R the new satellite radio interface should be entered into Recommendation ITU-R M.1850,

*further resolves*

1 that modifications of existing satellite radio interfaces should be submitted to the ITU through an Administration of Member States of the ITU or an ITU Sector Member and after a review by the ITU-R, the modifications should be entered into Recommendation ITU-R M.1850,

*instructs the Director of the Radiocommunication Bureau*

1 to inform the Administrations of Member States of the ITU and ITU Sector Members via a Circular Letter of any submission made according to *resolves* 1, and invite evaluation reports based on Recommendation ITU-R M.1225 to be submitted to the ITU within three (3) months of the date of the Circular Letter;

2 to implement suitable procedures to meet the requirements of *resolves* 3 above;

3 to review the procedures established in respect of this Resolution prior to the next Radiocommunication Assembly.

## ANNEX 1

### **IMT-2000 satellite RTT evaluation criteria**

The minimum performance capability for data services (excluding paging) is a user bit rate of 9.6 kbit/s. However, proponents are encouraged to provide higher user bit rates for applications involving vehicular or nomadic terminals.

Handover is required within a satellite system due to the relative movement between the terminal and the satellite spot beam.