**1st ITU INTER-REGIONAL WORKSHOP ON WRC-19 PREPARATION
(Geneva, 21-22 November 2017)**

Session 2 – Terrestrial

WRC-19 agenda item 1.11

Railway radiocommunication

José Costa
Chairman, ITU-R WP 5A

ITU WORKSHOPS

1st ITU Inter-regional Workshop on WRC-19 Preparation

21 – 22 November 2017
Geneva, Switzerland

www.itu.int/go/ITU-R/wrc-19-irwsp-17

ITUWRC
WORLD RADIOCOMMUNICATION CONFERENCE

90th Anniversary
CCIR - ITU-R Study Groups
(1927-2017)

Outline

- WRC-19 agenda item 1.11

- Resolution 236 (WRC-15)

- Background and motivation

- Organization of the work in WP 5A

- Status of studies

- Methods (work in progress)

- References

WRC-19 agenda item 1.11

- to take necessary actions, as appropriate, to facilitate global or regional harmonized frequency bands to support railway radiocommunication systems between train and trackside within existing mobile service allocations, in accordance with Resolution 236 (WRC-15);
  - Resolution 236 (WRC 15) – Railway radiocommunication systems between train and trackside.
- Responsible Group: **WP 5A**
- Contributing Groups: **WP 5A / WP 4A, WP 4B, WP 4C, WP 5B, WP 5C, WP 5D, WP 7C, WP 7B, WP 7D**
- Interested Groups: (WP 3K), (WP 6A).

Resolution 236 (WRC-15)

Railway radiocommunication systems between train and trackside

resolves to invite WRC-19

based on the results of ITU-R studies, to take necessary actions, as appropriate, to facilitate global or regional harmonized frequency bands, to the extent possible, for the implementation of railway radiocommunication systems between train and trackside, within existing mobile-service allocations,

invites ITU-R

to study the spectrum needs, technical and operational characteristics and implementation of railway radiocommunication systems between train and trackside.

Background and Motivation

- The evolving railway transportation technologies facilitate rapid transportations, which contributes to global economic and social development, especially for developing countries. As one of the core infrastructures, railway radiocommunication systems between train and trackside (RSTT) provides improved railway traffic control, passenger safety and improved security for train operations.

- With the development of international railway transportation, cross-border railway transportation are of increasing great importance. At present, RSTT vary in different countries, which lead to high operation costs for cross-border railway transportation. International standards and harmonized spectrum would facilitate improved interoperability of RSTT, reducing the railway infrastructure investment and providing for economies of scale.

Work in WP 5A

- Work being conducted in WG5A-2 chaired by Mr. LANG Baozhen, China

- The main activities are:
  - Development of draft CPM text for agenda item 1.11:
    - Draft CPM text: Annex 6 to Doc. 5A/650
    - Work plan: Annex 7 to Doc. 5A/650
  - Development of 2 draft new Reports and a draft new Recommendation:
    - Draft new Report ITU-R M.[RSTT.DESCRIPTION] – Description of Railway Radiocommunication Systems between Train and Trackside (RSTT): Doc. 5/81 approved in SG 5 on 20 Nov 2017 as Report ITU-R M.2418.
    - Working document toward a preliminary draft new Report ITU-R M.[RSTT.USAGE] – Current and future usage of railway radiocommunication systems between train and trackside (RSTT) – Annex 17 to Doc. 5A/650
    - Working document towards a preliminary draft new Recommendation ITU-R M.[RSTT.FRQ] – Harmonization of frequencies and related frequency arrangements, for railway radiocommunication systems between train and trackside – Annex 18 to Doc. 5A/650

Status of studies

- Have studied generic architecture, main application, current technologies, and generic operating scenarios of RSTT, published in Draft Report ITU-R M.[RSTT.DESCRIPTION] includes 4 categories of RSTT applications:
  - Train Radio (for voice dispatching, signalling and traffic management, for safe train operation),
  - Train Position Information (gathering train positioning information relevant to train operations),
  - Train Remote (data communication between locomotive and ground to control the engine), and
  - Train Surveillance (capture and transmission of video of the public and trackside areas etc.).

  And 5 generic operating scenarios of RSTT:
  - Railway line, Railway station, Shunting yard, Maintenance base and Railway hub.

- A questionnaire (5/LCCE/60) sent to Members provided information on the usage of RSTT. Based on the responses WP 5A studied detailed characteristics, implementations of current and planned RSTT, and the spectrum needs of RSTT; draft Report ITU-R M.[RSTT.USAGE] is being developed.

- Draft Recommendation ITU-R M. [RSTT.FRQ] will provide useful elements to facilitate global or regional harmonized frequency bands to support railway radiocommunication systems between train and trackside within existing mobile service allocations.

Methods (work in progress)

- **Method A: NOC to Vol.1, 2 of RR and suppress Resolution 236 (WRC-15).**
    - Reasons: Recommendation ITU-R M. [RSTT_FRQ] is sufficient to provide harmonized frequency bands for RSTT and there is no reason to reference this Recommendation in the RR.

- **Method B: Propose a draft new Resolution XYZ (WRC-19) and consequently suppress Resolution 236 (WRC-15).**
    - Reasons: To facilitate global or regional harmonized frequency bands to support railway radiocommunication systems between train and trackside within existing mobile service allocations.

References

Recommendations and Reports relevant to WRC-19 agenda item 1.11

- Report ITU-R M.2395-0 (11/2016), "Introduction to railway communication systems"

- Report ITU-R M.2418 – Description of Railway Radiocommunication Systems between Train and Trackside (RSTT): The draft was submitted by WP 5A to SG 5 and approved on 20 November 2017 – Doc. 5/81

- Working document toward a preliminary draft new Report ITU-R M.[RSTT.USAGE] – Current and future usage of railway radiocommunication systems between train and trackside (RSTT): Annex 17 to Doc. 5A/650

- Working document towards a preliminary draft new Recommendation ITU-R M.[RSTT.FRQ] – Harmonization of frequencies and related frequency arrangements, for railway radiocommunication systems between train and trackside: Annex 18 to Doc. 5A/650