

## **AGREEMENT**

on coordination between stations in the land mobile service of the Telecommunication Administration of Sweden and stations in the aeronautical radionavigation service of the Telecommunication Administration of the Russian Federation in the frequency band  
694 – 790 MHz

2015

## Preamble

In accordance with Article 6 of the International Telecommunication Union Radio Regulations, the Telecommunication Administration of Sweden (hereinafter referred to as Sweden) and the Telecommunication Administration of the Russian Federation (hereinafter referred to as the Russian Federation), jointly referred to as "Parties", enter into this Agreement on coordination between Base Stations (BS) in the Land Mobile Service, User Equipment (UE) operating in the Land Mobile Service (LMS) in Sweden and stations in the Aeronautical Radionavigation Service (ARNS) in the Russian Federation in the frequency band 694-790 MHz.

Coordination of LMS with the broadcasting service is outside the scope of this Agreement and shall be carried out separately.

This Agreement does not cover coordination between LMS stations.

The principles, conditions and technical parameters specified in the corresponding Articles of this Agreement shall be used in the coordination<sup>1</sup> between LMS stations in Sweden and ARNS stations in the Russian Federation in the frequency band 694-790 MHz.

The Telecommunication Administrations recognize that LMS and ARNS stations may be used in accordance with Article 5.1.3 of the GE06 Agreement.

## 1. Principles

1.1. This Agreement applies to LMS stations using the Frequency Division Duplex (FDD) mode, where the frequency band 703-733 MHz is used by UE (the «uplink»), and the frequency band 758-788 MHz is used by BS (the «downlink»).

1.2 This agreement also includes BS transmitting in the frequency band 738-744 MHz (the «downlink»).

1.3 This agreement also includes BS transmitting in the frequency band 744-758 MHz (the «downlink»).

1.4 This agreement applies to ARNS stations of the Russian Federation in the frequency bands 703-733 MHz and 738-788 MHz.

1.5 No coordination is required for UEs in the frequency range 703-733 MHz, since it is covered by coordination of base stations.

1.6 In case carrier aggregation is used in such a way that the «uplink» is in the frequency band 790-862 MHz band and is aggregated with the downlink in the frequency band 694-790 MHz, BS conditions of the «Agreement between the Telecommunications Administrations of Sweden and the Russian Federation

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<sup>1</sup> Coordination reached under this Agreement can be used by the Administrations as an agreement obtained under RR No.9.21 procedure with respect to ARNS of the Telecommunication Administration of the Russian Federation.

concerning the use of the frequency band 790 - 862 MHz for terrestrial systems» (Moscow, 2011) shall apply to BS operating in the frequency band 694-790 MHz with such carrier aggregation.

1.7. If the Telecommunication Administration of Sweden plans to use the LMS in the frequency band 694-790 MHz, it shall in advance inform the Russian Federation about the start date of LMS use. From that date on, new ARNS stations of the Russian Federation shall be coordinated with the LMS in Sweden in accordance with the procedures in this Agreement. At the same time coordination of ARNS stations of the Administration of the Russian Federation with the broadcasting service of the Administration of Sweden in accordance with the Agreement GE06 is no longer required and coordination of ARNS stations of the Administration of the Russian Federation with the Administration of Sweden in the frequency bands in which this Agreement applies shall be deemed completed under Agreement GE06.

1.8 This Agreement applies to LMS and ARNS stations that are brought into use from the start date of LMS use in the frequency band 694-790 MHz in Sweden.

1.9 LMS stations that do not meet the provisions in principles 1.1, 1.2 and 1.3 are not covered by this Agreement.

1.10 ARNS stations that do not meet the provisions in principles 1.4 are not covered by this Agreement.

## **2. Technical conditions for coordination of the stations in the land mobile service of Sweden with the stations in the aeronautical radionavigation service of the Russian Federation**

2.1 When a BS located in Sweden operates in accordance with the principle in 1.1 or 1.3, such BS shall be deemed coordinated with ARNS stations located in the Russian Federation if the following condition is met:

- The predicted mean field strength value doesn't exceed the threshold levels defined in Table 1 at the border of the Russian Federation;

or if the following condition is met:

- the LMS BS is used in accordance with Article 5.1.3 of the GE06 Agreement.

**Table 1. Field strength value thresholds**

<b>Border (B) of the Russian Federation</b>	<b>Field strength value (E) at height 3 m, (dB<math>\mu</math>V/m) in BW= 5 MHz</b>	<b>Field strength value (E) at height 3 m, (dB<math>\mu</math>V/m) in BW= 1 MHz</b>
B	15	8
Note 1: $E_{\text{new}}$ can be calculated for other measurement bandwidths (BW) from these values by using the following formula $E_{\text{new}} = E + 10 \log (BW_{\text{new}} / BW)$ , where $BW_{\text{new}}$ is in MHz		

2.2 When a BS located in Sweden operates in accordance with the principle in 1.2, such BS shall be deemed coordinated with ARNS stations located in the Russian Federation if the following condition is met:

- The predicted mean field strength value doesn't exceed the threshold levels defined in Table 2 at the border of the Russian Federation;
- or if the following condition is met:
- the LMS BS is used in accordance with Article 5.1.3 of the GE06 Agreement.

**Table 2. Field strength value thresholds**

<b>Border (B) of the Russian Federation</b>	<b>Field strength value (E) at height 3 m, (dB<math>\mu</math>V/m) in BW= 5 MHz</b>	<b>Field strength value (E) at height 3 m, (dB<math>\mu</math>V/m) in BW= 1 MHz</b>
B	-2	-9
Note 1: $E_{\text{new}}$ can be calculated for other measurement bandwidths (BW) from these values by using the following formula $E_{\text{new}} = E + 10 \log (BW_{\text{new}} / BW)$ , where $BW_{\text{new}}$ is in MHz		

### **3. Technical conditions for coordination of stations in the aeronautical radionavigation service of the Russian Federation with stations in the Land Mobile Service of Sweden**

3.1 An ARNS station of the Russian Federation may use the frequency bands 703-733 MHz and 758-788 MHz without coordination with Sweden, if the predicted mean field strength produced by that station does not exceed 36 dB( $\mu$ V/m)/1 MHz at a height of 3 m above the ground at the border of Sweden.

3.2 An ARNS station of the Russian Federation may use the frequency band 738-758 MHz without coordination with Sweden, if the predicted mean field strength produced by this station does not exceed 36 dB( $\mu$ V/m)/1 MHz at a height of 3 m above the ground at the border of Sweden.

### **4. General**

4.1 A new frequency assignment to a LMS BS that does not meet the conditions in Article 2 of this Agreement shall be subject to coordination.

4.2. A new frequency assignment to ARNS that does not meet the conditions in Article 3 of this Agreement shall be subject to coordination.

4.3. The coordination procedure shall be performed in accordance with Article 5 of this Agreement.

4.4. If interference is caused by a station covered by this Agreement, a Report of harmful interference shall be presented in accordance with Appendix 10 to the Radio Regulations. Upon receipt of a Report of harmful interference the Party responsible for such station shall take all possible measures to eliminate the interference and inform the other Party accordingly.

4.5 Recommendation ITU-R P.1546-5 "Method for point-to-area predictions for terrestrial services in the frequency range 30 MHz to 3 000 MHz" shall be used, taking into account agreed terrain data and/or clearance angle for calculation of the field strength values created by the terrestrial stations. The field strength values in this agreement are calculated for 10% of the time and 50% of the locations.

4.6 Technical characteristics required to perform coordination of BS and ARNS stations shall be provided to the other Party. The information provided shall be taken into account by the other Party.

## **5. Coordination Procedure**

5.1 The Administration wishing to initiate the use of a frequency assignment to a station covered by this Agreement that does not meet the conditions in Article 2 or Article 3 of this Agreement shall send to the other Administration a request to coordinate such frequency assignment. A request shall be sent by mail, fax, or e-mail. If a request is emailed, the requesting Administration shall send a cover letter to the affected Administration by fax and receive confirmation of receipt of that fax.

5.2. The affected Administration shall respond to such frequency assignment coordination request within 10 weeks from the date of the request receipt confirmation. If no response is received, an urgent reminder shall be sent. The Administration that fails to respond within 2 weeks from the date when the urgent reminder is received shall be deemed as in agreement, except if the Administration whose consent is sought asks for additional time to review the request.

5.3. If the affected Administration refuses to satisfy a request for coordination, the requesting Administration shall provide to the affected Administration results of its calculations or propose new technical characteristics of the assignment.

5.4. If no response to the proposals referred to in Article 5.3 above is received from the affected Administration within 10 weeks from the date of the receipt of the proposal, an urgent reminder shall be sent. The Administration that fails to respond within 2 weeks from the date when it receives the urgent reminder shall be deemed to accept the coordination proposals submitted.

5.5. The Administration that does not agree with a coordination request received shall propose a reasonable modification of such request, which shall provide for adequate protection of its existing and planned services and preserve the original objective of the coordination request as much as possible.

5.6. In case of controversies arising from application of this Agreement, the Administrations shall be guided by provisions and procedures of the Radio Regulations, as well as applicable international and bilateral agreements.

## 6. Revision and Termination

6.1. This Agreement may be terminated by either Party which shall give three year notice to the other Party. This shall not affect the operation of stations already brought into use or coordinated under this Agreement.

6.2. After such termination, the Parties shall exchange lists of stations already brought into use or coordinated under this Agreement, if so requested.

6.3. This Agreement may be revised or terminated without notice, if both Parties agree to do so.

## 7. Entry into Effect

7.1. This Agreement shall become effective on the date of signing.

7.2. This Agreement is executed in the English language in two identical originals, one for the Telecommunication Administration of Sweden and one for the Telecommunication Administration of the Russian Federation.

On behalf of the  
Telecommunication Administration  
of Sweden

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*Catarina Wretman*

On behalf of the  
Telecommunication Administration  
of the Russian Federation

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*k. Stepanenko*