

AGREEMENT

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

Preamble

In accordance with Article 6 of the International Telecommunication Union Radio Regulations, the Telecommunication Administration of Norway (hereinafter referred to as Norway), and the Telecommunication Administration of the Russian Federation, jointly referred to as “Parties” have concluded the Agreement on the coordination between Base Stations (BS) operating in the land mobile service (LMS) and User Equipment (UE) in the land mobile service in Norway and stations in the aeronautical radionavigation service (ARNS) in the Russian Federation in the frequency band 694-790 MHz.

The coordination of the LMS with the broadcasting service is outside the scope of this Agreement and shall be carried out additionally.

This Agreement does not cover coordination between LMS stations.

The principles, conditions and technical parameters specified in the corresponding Articles of this Agreement are used in the coordination¹ between LMS stations in Norway and ARNS stations in the Russian Federation in the frequency band 694-790 MHz.

The Telecommunication Administrations recognize that MS and ARNS stations may be used in accordance with Article 5 paragraph 5.1.3 of the GE06 Agreement.

If Norway plans to use LMS in the frequency band 694-790 MHz, it shall inform the Russian Federation in advance about the relevant date of such use.

From that date on, new ARNS stations of the Russian Federation shall be coordinated with the LMS of Norway in accordance with the procedures in this Agreement.

At the same time coordination of ARNS stations in the Russian Federation with broadcasting stations in Norway in accordance with the GE-06 Agreement shall no longer be required. Coordination of ARNS stations in the Russian Federation with Norway in the frequency bands in which this Agreement applies shall be deemed completed under the GE-06 Agreement.

1. The 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 («uplink»), and the frequency band 758-788 MHz is used by BS («downlink»).

1.2 This Agreement also includes BS transmitting in 738-758 MHz («downlink»).

¹ 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 Russian Federation.

1.3 No specific coordination is necessary for UEs in the frequency range 703-733 MHz, since this is covered by coordination of BSs.

1.4 In case carrier aggregation is used in such a way that the uplink is in the frequency band 790-862 MHz and is aggregated with downlink in the frequency band 694-790 MHz, BS conditions of the "Agreement between the Telecommunications Administration of Norway and the Telecommunications Administration of the Russian Federation concerning the use of the frequency band 790 – 862 MHz for terrestrial systems, Bucharest September 2011" shall apply to BS operating in the frequency band 694-790 MHz with such carrier aggregation.

1.5 This Agreement applies to stations operated in accordance with the Radio Regulations and brought into use after the date when Norway starts using the frequency band 694-790 MHz for LMS.

1.6 Norway shall inform the Russian Federation about the date when it will start to use the frequency band 694-790 MHz for LMS.

1.7 LMS stations that do not meet the provisions in 1.1 and 1.2 are not covered by this Agreement.

2. Technical conditions for coordination of stations in the land mobile service with stations in the aeronautical radionavigation service

2.1 When a BS located in Norway is operated in accordance with principle 1.1, such BS shall be considered coordinated with ARNS stations located in the Russian Federation if all of the following conditions are met:

- the predicted mean field strength value does not exceed the threshold levels defined in Table 1.
- in the area between 1 km and 100 km from the border of the Russian Federation the density of BS sites transmitting simultaneously in the same frequency, taking into account new frequency assignments to BS and existing ones, shall not exceed 10 BS sites per 100 km².

or if the following condition is met:

- the LMS BS is used according to the Article 5 paragraph 5.1.3 of the GE06 Agreement.

2.2 When a BS located in Norway is operated in accordance with principle 1.2, such BS shall be considered coordinated with ARNS stations located in the Russian Federation if all of the following conditions are met:

- the predicted mean field strength value does not exceed the threshold levels defined in Table 2.
- in the area between 1 km and 100 km from the border of the Russian Federation the density of BS sites transmitting simultaneously in the same frequency, taking into account new frequency assignments to BS and existing ones, shall not exceed 10 BS sites per 100 km².

or if the following condition is met:

- the LMS BS is used according to Article 5 paragraph 5.1.3 of the GE06 Agreement.

Table 1

	Field strength value (E) originating from a single BS [dBμV/m/5MHz] at height 3 m
At the border	55
9 km into the Russian Federation	29
Note: E can be calculated for other measurement bandwidths (BW) by using the following formula $E_{\text{new}} = E + 10 \log (BW_{\text{new}} / 5 \text{ MHz})$, where BW_{new} is in MHz	

Table 2

	Field strength value (E) originating from a single BS [dBμV/m/5MHz] at height 3 m
At the border	32
9 km into the Russian Federation	0
Note: E can be calculated for other measurement bandwidths (BW) by using the following formula $E_{\text{new}} = E + 10 \log (BW_{\text{new}} / 5 \text{ MHz})$, where BW_{new} is in MHz	

3. Technical conditions for coordination of stations in the aeronautical radionavigation service with stations in the land mobile service.

3.1 An ARNS station of the Russian Federation may use the frequency band 703-733 MHz without coordination with Norway, if the predicted mean field

strength produced by this station does not exceed 32 dB μ V/m/5 MHz at a height of 3 m above the ground at the border of Norway.

3.2 An ARNS station of the Russian Federation may use the frequency band 738-758 MHz without coordination with Norway, if the predicted mean field strength produced by this station does not exceed 48 dB μ V/m/5 MHz at a height of 3 m above the ground at the border of Norway.

3.3 An ARNS station of the Russian Federation may use the frequency band 758-788 MHz without coordination with Norway, if the predicted mean field strength produced by this station does not exceed 55 dB μ V/m/5 MHz

or if one of the following conditions is met:

- the ARNS station (aircraft or ground based) is located at a distance greater than 100 km from the Norwegian border;
- the ARNS station is used according to Article 5 paragraph 5.1.3 of the GE06 Agreement.

4. General

4.1. A new frequency assignment to a BS that is not in compliance with the conditions in Article 2 of this Agreement is subject to coordination.

4.2 A new frequency assignment to ARNS that is not in compliance with the conditions in Article 3 of this Agreement is subject to coordination.

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

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

4.5 The latest version of Recommendation ITU-R P.1546 “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 terrestrial stations. The field strength values in this agreement shall be calculated for 10% of the time and 50% of the locations.

4.6 The technical characteristics required to perform coordination of BS and ARNS stations shall be provided. Provided information shall be taken into account.

4.7. The density of BS sites shall be calculated in accordance with the method defined in Annex 1 of this Agreement.

4.8. Information about a new LMS BS that meets the provisions of this Agreement and is located at distance not more than 100 km from the border, shall be provided by the Administration of Norway to the Administration of the Russian Federation within 2 (two) weeks after such BS is brought into use. The information should be provided in the form of the International Telecommunication Union notice for LMS BS frequency assignment.

4.9 The aggregate mean field strength of BSs should be calculated by using the power sum method.

5. Procedure for effecting coordination

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

5.2 The affected Administration shall respond to the request to coordinate assignments within 10 weeks from the date of the request receipt. If no response is received, an urgent reminder shall be sent. Administrations that fail to respond within 2 weeks from the date of an urgent reminder receipt shall be deemed agreeing if the administration whose consent is sought, does not request extra time to coordinate the request review.

5.3 In case of the affected administration's refusal to satisfy a request for coordination, the requesting administration shall provide to the affected administration results of its calculations, or any new technical characteristics of the assignment.

5.4 If no response from the affected administration to the proposals provided in Item 5.3 is received within 10 weeks from the date of proposals receipt, an urgent reminder shall be sent. Administrations that fail to respond within 2 weeks from the date of receipt of an urgent reminder shall be deemed to accept the coordination proposals provided.

5.5 The administration objecting to a coordination request received shall propose reasonable changes to such request that shall not only provide for adequate protection of its existing and planned services, but shall preserve the initial objective of such coordination request to the maximum extent possible.

5.6 In case of controversies originating from this Agreement, provisions and procedures of the Radio Regulations, as well as applicable International and bilateral Agreements shall apply.

6. Revision and cancellation

6.1. This Agreement may be cancelled by either Party with a notice of at least 1 (one) year. This does not affect the operation of stations already brought into use or coordinated under this Agreement.

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

6.3. This Agreement may be revised or cancelled without notice by mutual decision of the Parties.

7. Entry into force

7.1. This Agreement shall enter into force on the date of signing.

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

On behalf of the
Telecommunication
Administration of the
Russian Federation



Andrey Zheglov

On behalf of the
Telecommunication
Administration of Norway



Torstein Olsen

Oslo, 10 July 2015

Determination of base station site deployment density (example)

1. Deployment density of BS sites is determined within a circle of 100 km^2 (the circle radius is 5.6 km). The circle center corresponds to the location of the BS site being coordinated.
2. The number of BS sites located within the circle specified in item 1 (including the already coordinated or notified BS sites and BS sites under consideration) is compared with the permissible number of BS sites established for the area where the BS site under consideration is located (in accordance with item 2.1 and 2.2 of this Agreement) (see Fig. 1 and Fig.2).
3. If a BS site is located at the border of areas with different deployment densities of BS sites then the largest deployment density value of the considered areas is used as the permissible number of BS sites.

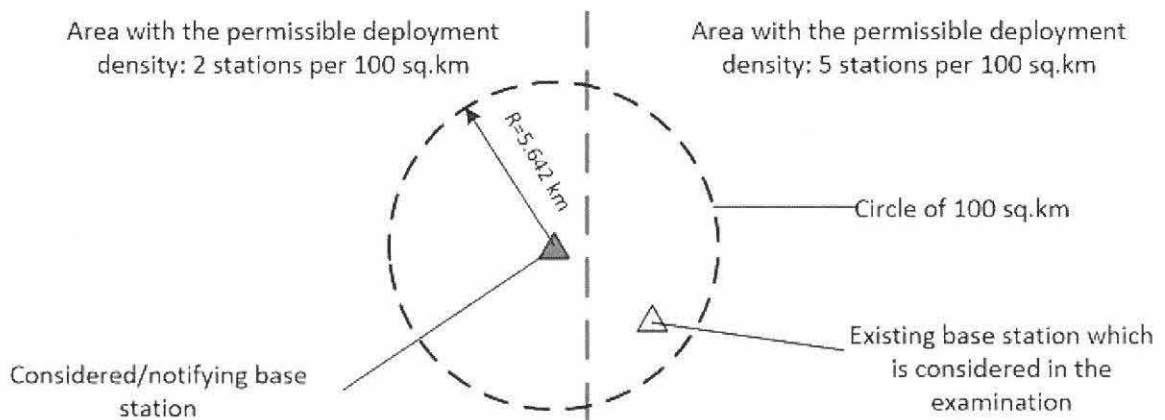


Fig.1

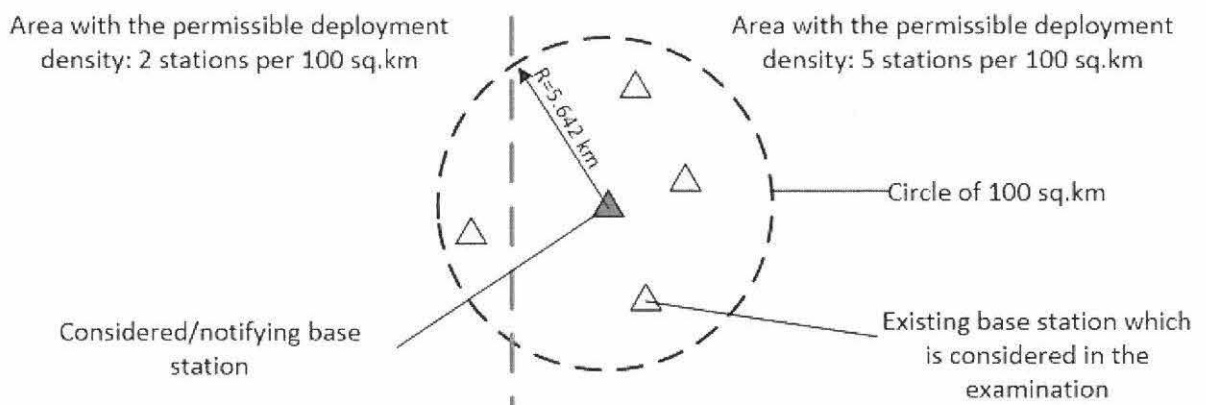


Fig.2