UPDATE ON CNS MODERNIZATION IN 2014

The Federal Target Program (FTP) "Joint ATM System Modernization in the Russian Federation (2009-2020)" is in progress.

The Program is aimed at improving flight safety and ASM efficiency through modernization of the Joint ATM System, its facilities and related systems by means of establishing and developing Russia's air navigation system using advanced technical equipment and technologies in accordance with ICAO SARPs.

Major activities:

✓ Establishment of consolidated ACCs;

✓ Improvement of terminal and en-route ANS provision;

✓ Modernization of aeronautical telecommunications and data link network;

✓ Equipment of radar sites with secondary radars systems;

✓ Implementation of a single airspace management planning system;

✓ Transition to advanced CNS/ATM technologies;

✓ Implementation of automated civil/military ATC systems.

Major attention was given to establishing consolidated ACCs, commissioning aerodrome ATC automation aids and CNS facilities.

Establishment of Irkutsk Consolidated ACC – the automated ATM system is now operational.

Consolidated ACC and TWR

Ops Room

Vladivostok

Yuzhno-Sakhalinsk
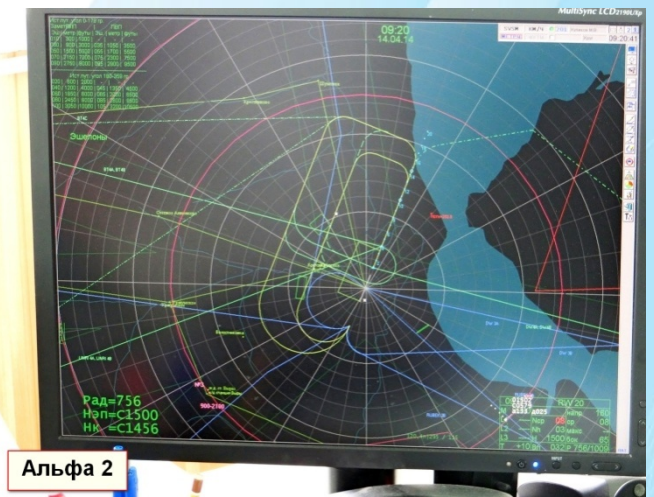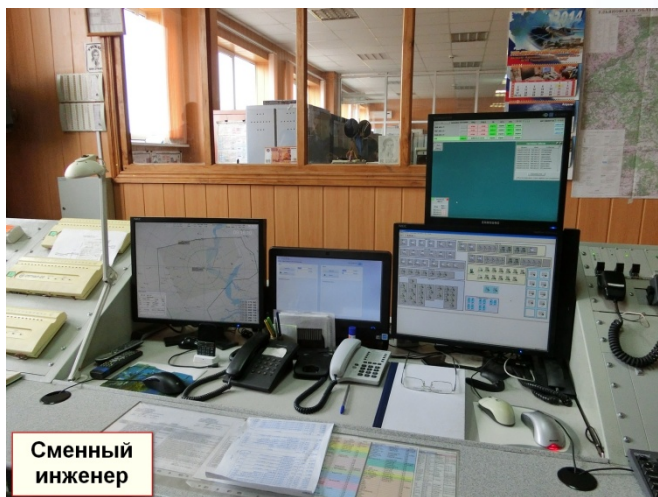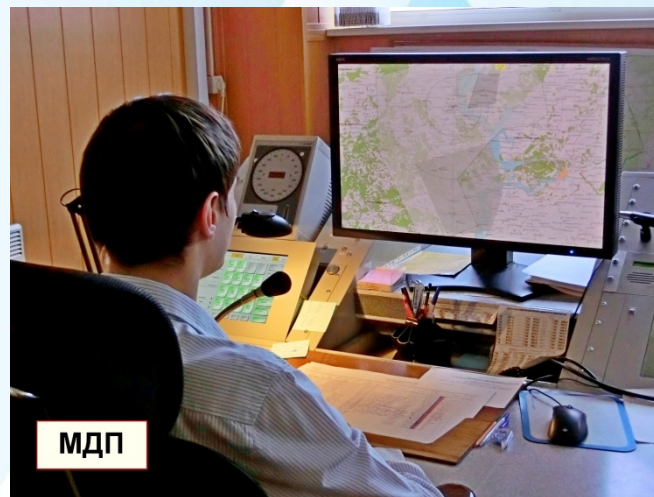

Blagoveshchensk

Belgorod

Krasnoyarsk

Yakutsk

6 aerodromes equipped with ATC automation aids in 2014:

- Ulyanovsk,
- Bratsk,
- Belgorod,
- Blagoveshchensk,
- Irkutsk,
- Naberezhniye Chelny.

Ulyanovsk ATC Center

ДПП

МДП

Сменный инженер

Альфа 2

Belgorod ATC Center

Tower

✓ **8 Data switching centers installed at ATC Centers:** Petropavlovsk-Kamchatsky, Vologda, Kotlas, Apatity, Petrozavodsk, Murmansk, Astrakhan**.**

✓ **New voice communication switching systems installed at 10 ATC Centers:** Kurgan, Leshukonskoe, Barnaul, Kemerovo, Kyzyl, Tyumen, Usinsk, Ukhta, Ulan-Ude, Stavropol.

"Megafon" voice communication switching system equipment rack

"Megafon" voice communication switching system

Aeronautical Fixed Satellite Communications facilities installed at ATC Centers:

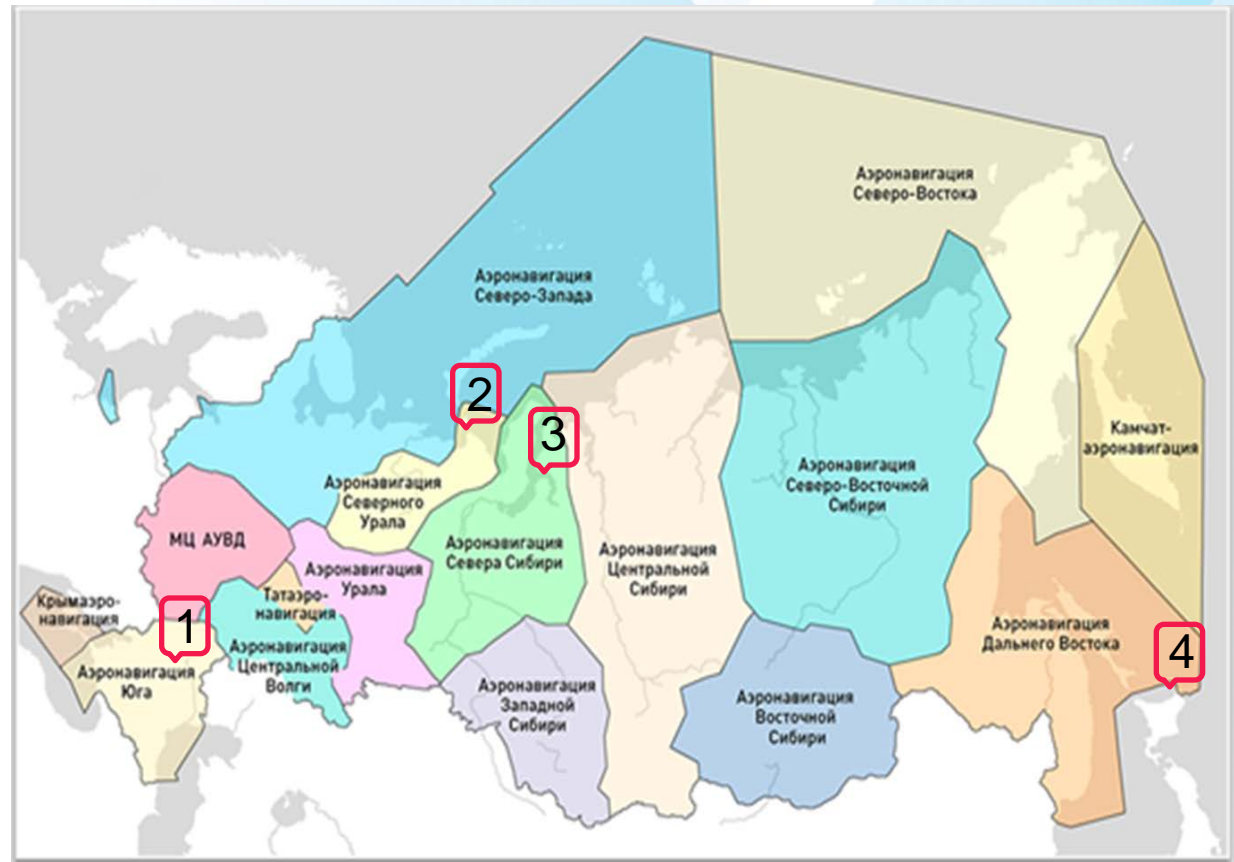Postov-on-Don, Pechora, Salekhard, Iturup airport.

Satellite earth station antenna post

JOINT SYSTEM OF FIXED SATELLITE COMMUNICATIONS

Aeronautical Fixed Satellite Communications facilities installed at ATC Centers:

- Rostov-on-Don (1)
- Pechora (2)
- Salekhard (3)
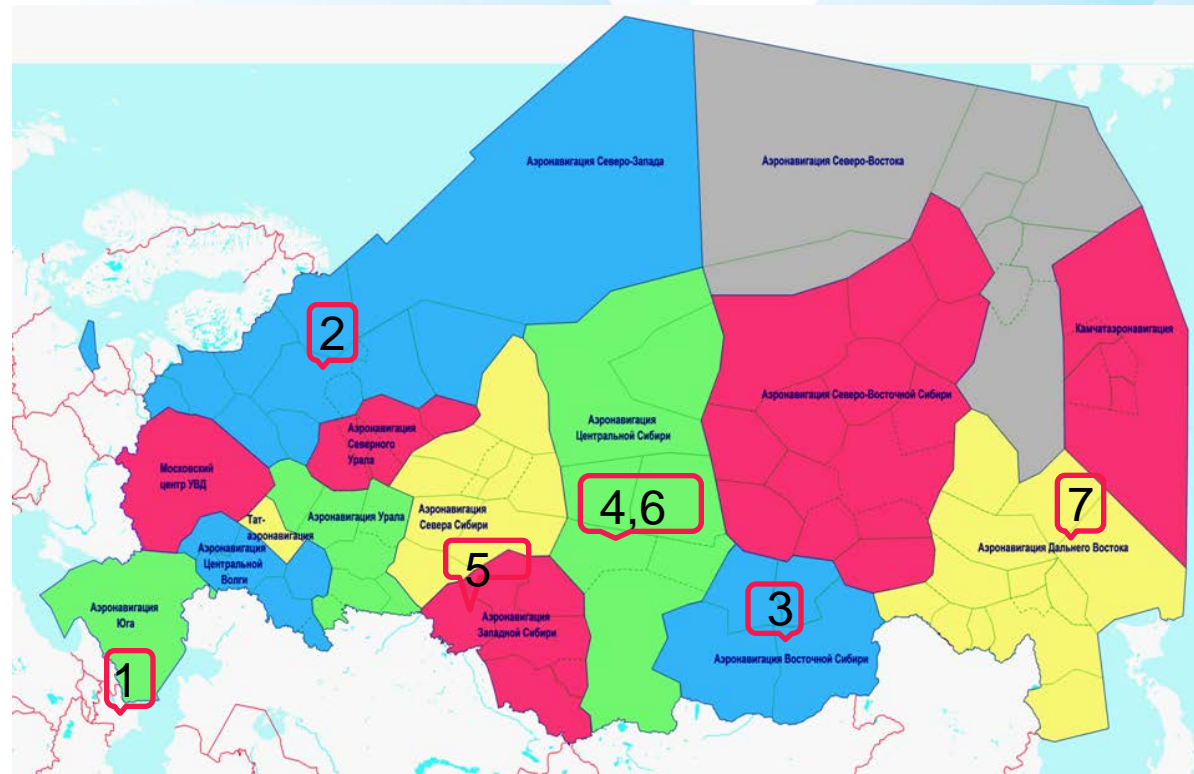- Iturup airport (4)

Terminal radars

Put into operation:

✓ «Lira-A10» Terminal radar – Samara (Kurumoch), Leshukonskoe, Bratsk

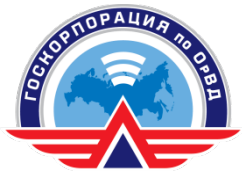✓ 1AC Terminal surveillance radar – Kyzyl, Strezhevoy, Igarka, Komsomolsk-on-Amur

IMPLEMENTATION OF RADAR FACILITIES

Terminal radars

Put into operation:
- Samara – 1
- Leshukonskoe – 2
- Bratsk – 3
- Kyzyl – 4
- Strezhevoy – 5
- Igarka – 6
- Komsomolsk-on-Amur–7

**1AC Terminal surveillance radar
(Iturup airport)**

**1AC Terminal surveillance radar
(Strezhevoy airport)**

Put into operation:

MSSRs:

- ✓ Avrora   - Nizhneudinsk (with ADS-B 1090 ES)

- ✓ Krona-M   - Syktyvkar
  - Barnaul

- ✓ Lira-VM   - Irkutsk

En-route radars:

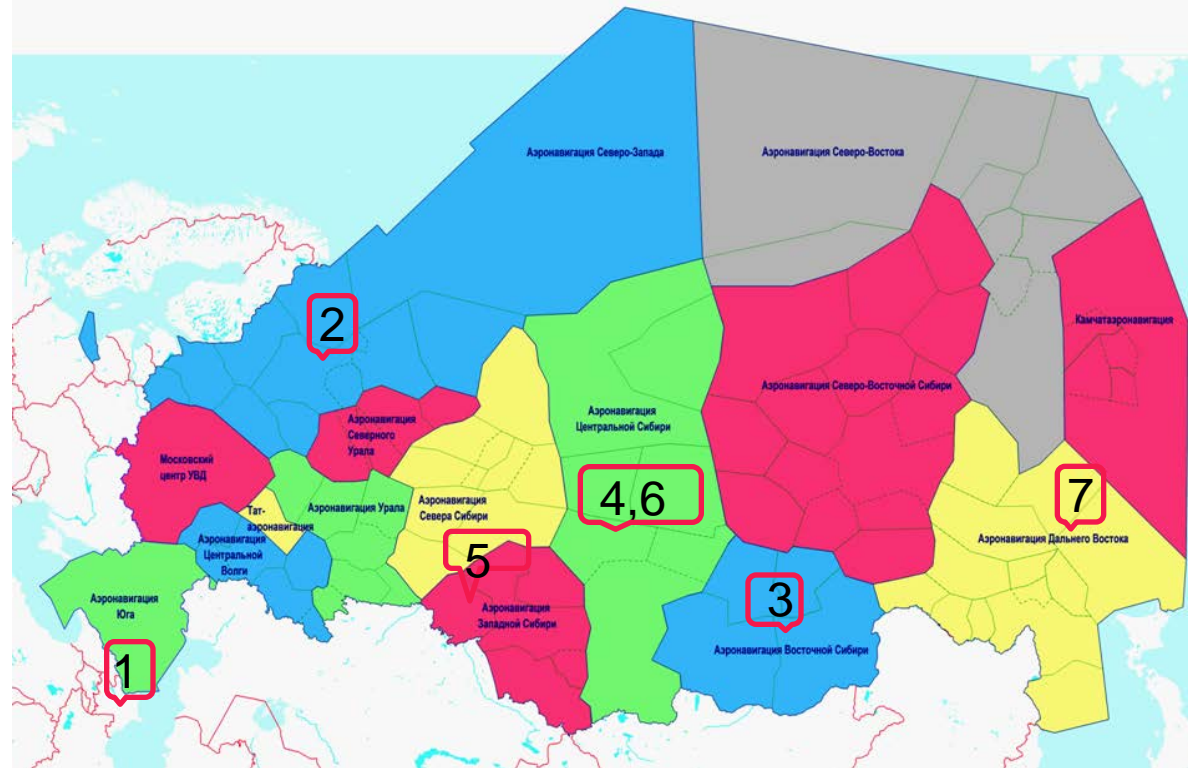- ✓ Lira-T   - Zhigalovo
- ✓ Lira-T   - Ust-Khayryuzovo

IMPLEMENTATION OF RADAR FACILITIES

MSSRs:
- Nizhneudinsk (1)
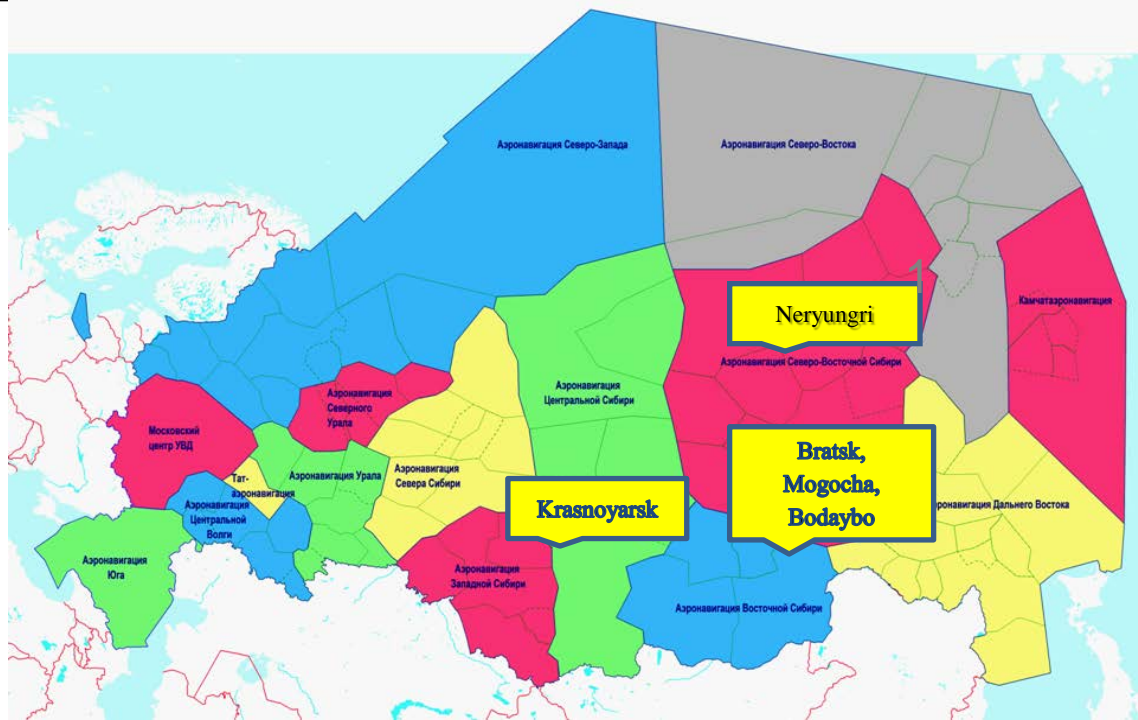- Syktyvkar (2)
- Barnaul (3)
- Irkutsk (4)

En-route radars:
- Zhigalovo (5)
- Ust-Khayryuzovo (6)

DVOR-2000/DME-2000 commissioned at airports: Krasnoyarsk, Neryungri

VOR/DME short-range navigation systems are in the process of commissioning at airports: Bratsk, Mogocha, Bodaybo

Aerodromes equipped with ILS 2700/DME/NL 2700:

Samara, Perm and Neryungi airports are being equipped with LS-200/DME-90NL.

53 airports are being equipped with ILS 2700/DME/NL 2700.

Radio-beacon LS-200

Commissioned in 2014:

✓ Automated airspace utilization and planning aids «Planeta-5» at Magadan Consolidated ACC;

✓ Automated airspace utilization and planning aids at 9 airports

✓ TWR Simulator at 2 airports

✓ Full Controller Simulators at 6 airports

✓ Automated Classroom at 1 airport

Full Controller Simulator "Expert"
Novosibirsk ATC Center

TWR Simulator

Controller automated WP

Instructor-operator automated WP

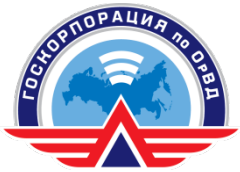Classroom

TWR Simulator (Sintez-TS-V)
Vnukovo ATC Center

20

Airports being equipped with GBAS and ADS-B:

- GBAS (Local Augmentation Station A-2000) are installed at ATC Centers.

- Navigation Coverage Status Monitoring Center GLONASS is being established.
  Total number of aerodromes equipped - 76.

ADS-B means installed at:

ADS-B 1090 ES:

- **4 radar positions**
- **6 aerodromes** - Arkhangelsk, Murmansk, Sheremetyevo, Kaliningrad, Mys Kamenny, Kotlas
- **3 CNS facilities** (Mode 4, pilot project «Yamal-ADS»)

ADS-B (Mode 4) implementation in progress at:

- **2 airports,** pilot project «Moskva-ADS».
- **3 airports,** pilot project «Baltika-ADS».

ADS-B network is to be established between all consolidated ACCs (Mode 1090 ES):

– **24 facilities** at Khabarovsk Consolidated ACC
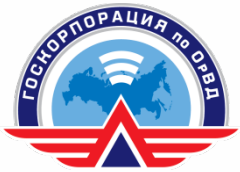– **11 facilities** at Samara Consolidated ACC

GBAS with GRAS function (Local Augmentation Station A-2000) is implemented at 76 airports.

ADS-B means have been installed at 39 airports under the FTP.

QUESTIONS?