Organizing the cooperation of Russian Education Center with the United Nations – affiliated Regional Centers for Space Science and Technology Education

ICG-5
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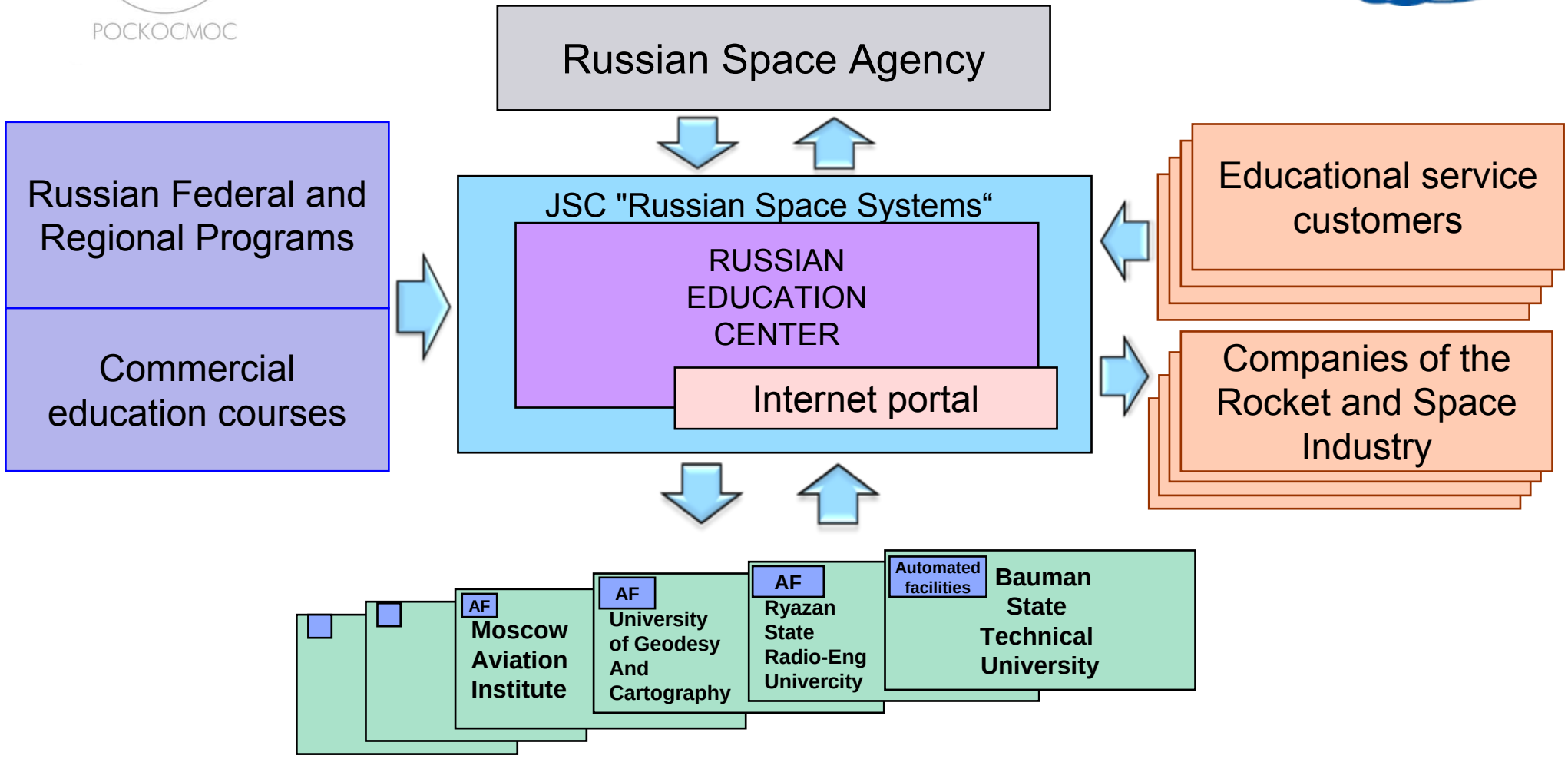
Russian Education Center

Russian Education Center is created as the element of International Innovation Center of Space and Navigation Technologies and Systems, JSC "Russian Space Systems“

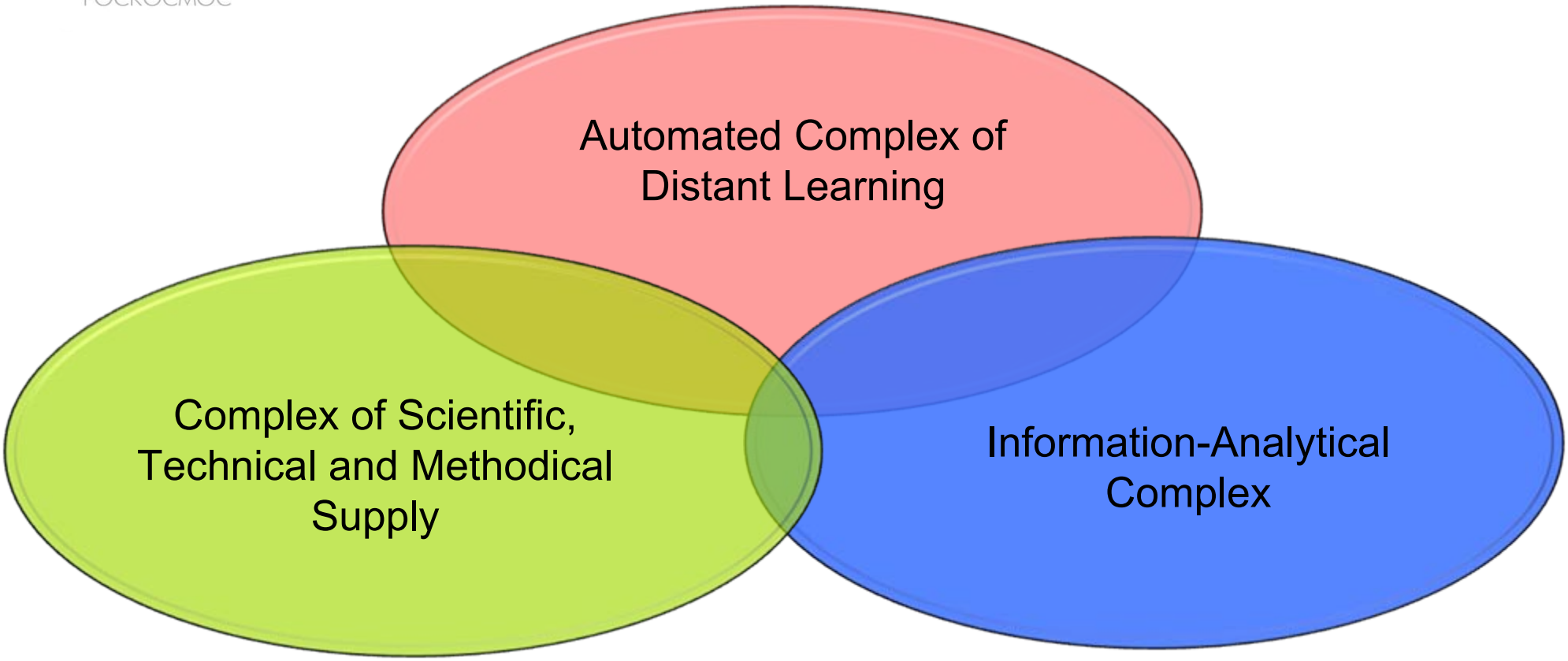
Objectives: additional learning and training of specialists in GNSS applications, including GLONASS

Organization Chart of Russian Education Center



Distant Learning will be the main learning form in Russian Educational Center,
respecting to the recommendations of ICG-4, September 2009

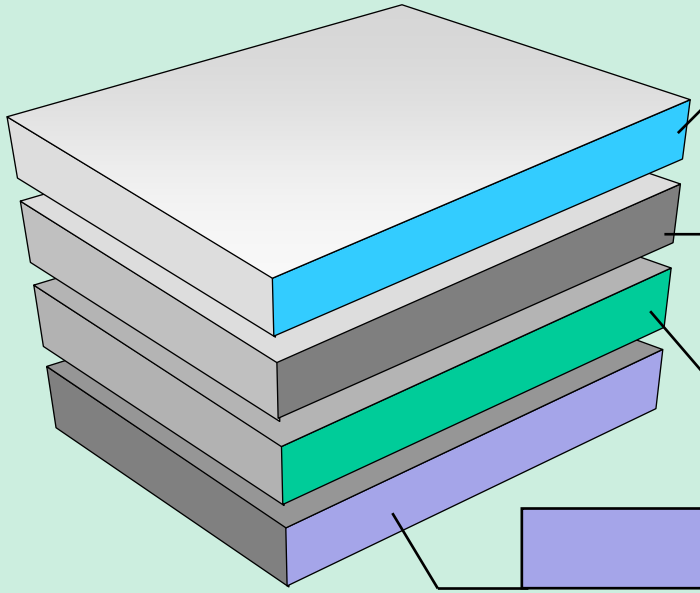
Russian Distant Learning System: Structure



The Distant Learning System facilities are developed now in JSC "Russian Space Systems“ commissioned by Roscosmos

Structure of Learning-methodical complex

Learning-methodical complex



- Theoretical courses
- Practical courses
- Graduate test tasks
- Multimedia

Learning Programs

- More than 1000 h. of theoretical and practical training
- More than 200 h. of laboratory works

To the end of 2011

CONSTRUCTION, MONITORING OF ENGINEERING STRUCTURES

TRANSPORTATIONS

CIVIL AVIATION

GEODESY

LEARNING CONCEPTS

- **Status and development of GNSS**
- **GNSS applications**
- **SNS mangement**

Status and development of GNSS

- History, principles and structure, projects
- Methods, navigation signals, data transmission protocols
- Differential systems, integrity, control methods
- Consumer equipment, particularly the implementation of real-time measurements, communications
- Coordinate-time operation of the GNSS

GNSS in geodesy, cadastre and land management

- Construction of geodesic networks and special-purpose
- Global, regional and local geodynamics
- Organization of field work in cadastral surveys, geodetic software inventory
- Geodetic work in land management
- GNSS use in the underground work and work carried out in quarries

GNSS in transportations

- The use of GNSS in rail and road transport
- Use of satellite navigation equipment in intelligent transportation systems
- GNSS applications in modern on-board navigation systems
- GNSS applications to improve safety, productivity and quality of transport
- Creation of digital navigation maps

GNSS applications in civil aviation

- The introduction of ICAO CNS / ATM in civil aviation
- The use of GNSS for geodetic support the construction and operation of aerodromes
- The use of GNSS to control unmanned aerial vehicles
- GLONASS/GNSS-oriented technologies (ADS, TAWS, TCAS, RVSM)
- GLONASS/GNSS equipment in avionics

Construction and monitoring of engineering structures

- The use of GNSS to perform tasks in building and managing construction machinery
- Monitoring of the deformations of engineering structures
- Use of GNSS in laying pipelines, taking the bottom topography and underground utilities
- Goniometric navigation equipment for operational control during construction and operation
- GNSS applications in the mining industry

Developed educational tools can be a basis for the organization of international cooperation

РОСКОСМОС

Main forms of cooperation with the UN–affiliated Regional Centers for Space Science and Technology Education

Organization of international conferences, courses, seminars, workshops, schools

ICG meetings

Distant cooperation via the ICG portal

РОСКОСМОС

Why Distant Learning is so good?

- Wide geographic spread of the target audience
- Practical orientation of training
- Always actual training courses, considering the international information exchange
- Continuity and flexible learning
- Constant monitoring of the knowledge and skills obtained

Organizing the cooperation

OFFER:

Organize the distant cooperation of Russian Education Center with UN – affiliated Regional Centers

Motivation:
to spread the information on GNSS systems (GPS, GLONASS, GALILEO and others) more effectively

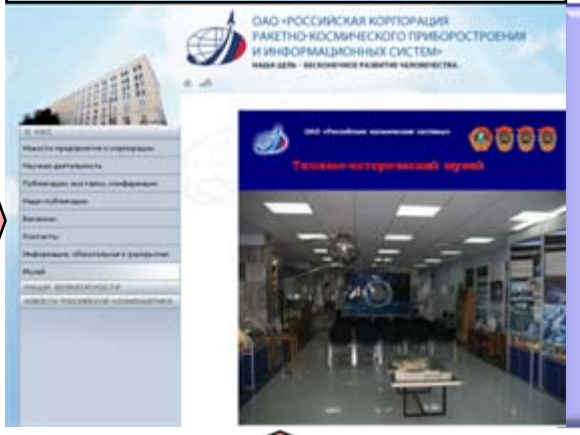
Tasks of the Russian Education Center:
- establish long-term cooperation with UN – affiliated Regional Centers;
- promote GLONASS;
- examine the demand of the world market for the GNSS services.

Organization scheme of possible cooperation way

ICG Portal

Portal of Russian Education Center

UN–affiliated Regional Centers



Russian Education Center

Educational service customers

Educational service customers

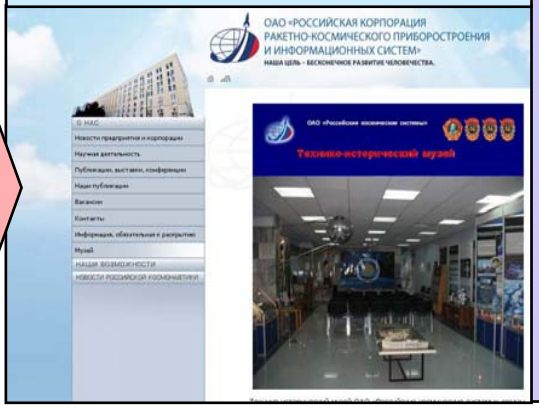
To clarify the interest of UN–affiliated Regional Centers and clarify the technical capacity we propose to perform a pilot cooperation with the Russian training center in 2011

Pilot cooperation: proposed way

UN–affiliated Regional Center

ICG Portal

Portal of Russian Education Center



Russian Education Center

Curriculum structure and way of access to it on Russian Education Center portal will be designed respecting to the recommendations of the ICG

Conclusion

Russian Education Center, supported by Russian Space Agency, develops the distant learning system actively

It is offered to organize the distant cooperation of Russian Education Center with UN – affiliated Regional Centers

Russian educational tools can be used in the development of the UN – affiliated Regional Centers curriculum

Successful use of the distant technologies will enhance international cooperation in learning and dissemination of information on GNSS

Thank you for your attention!

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