



# Multimedia in training of specialists in GNSS: Russian experience



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ROSCOSMOS

# Learning Programs in Russian GLONASS Education Center



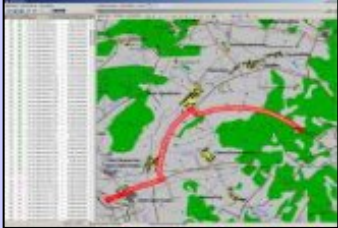

**CONSTRUCTION,  
MONITORING OF ENGINEERING  
STRUCTURES**



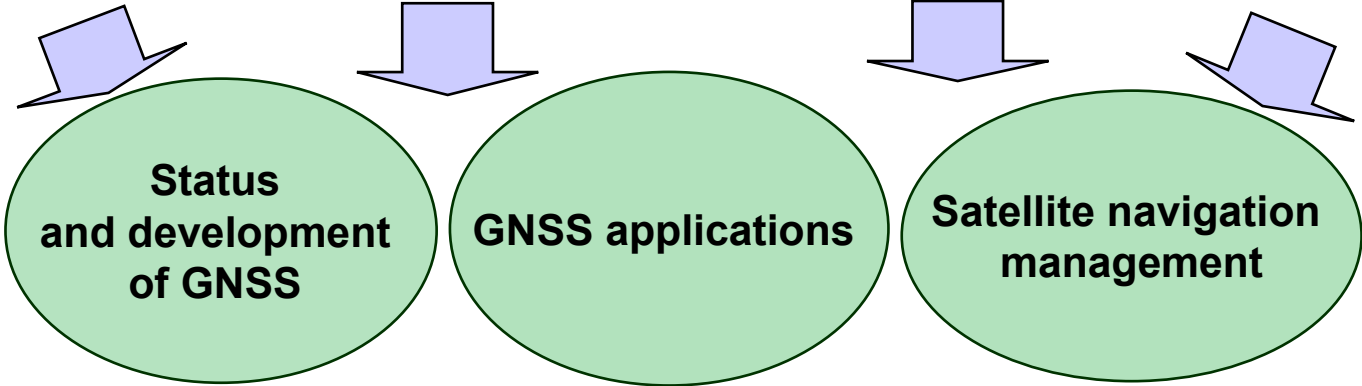
**TRANSPORTATIONS**



**CIVIL AVIATION**



**GEODESY**



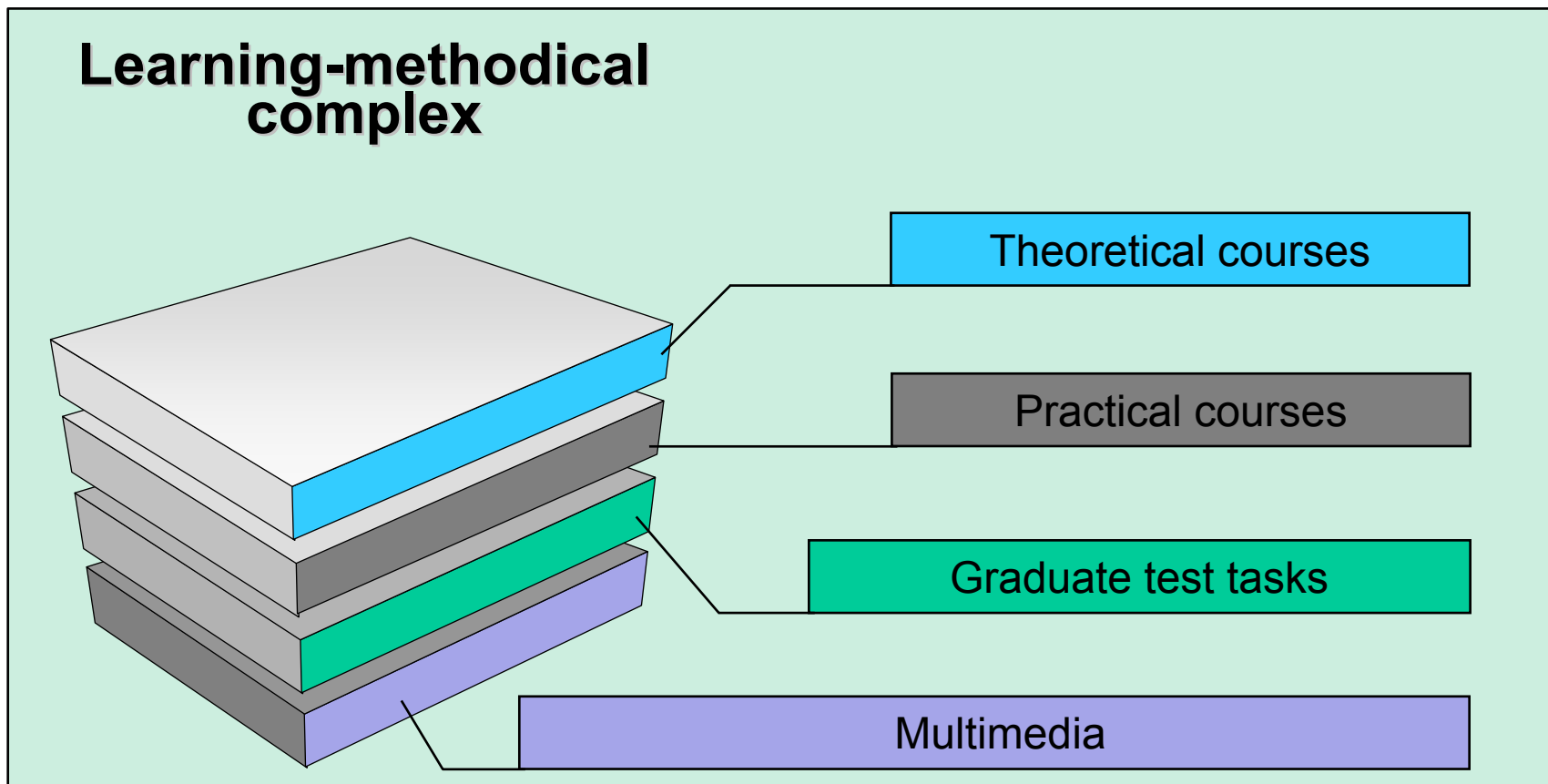
**DISTANT  
LEARNING  
SYSTEM**



- Information-Analytical Complex: planning the work of ACDL
- Automated Complex of Distant Learning: learning process organizing
- Complex of Scientific, Technical and Methodical Supply



## Structure of Learning-methodical complex



To apply the learning programs it was designed the interactive multimedia facility on GLONASS system «**Generation of the Future**»



# Objectives for multimedia facilities on GNSS



Learning and information dissemination on GNSS



Multimedia platform: «RSS RAD Technologies» by «Russian Space Systems»  
Development environment: Unity3D



Information dissemination on  
GLONASS: technologies,  
subsystems, services

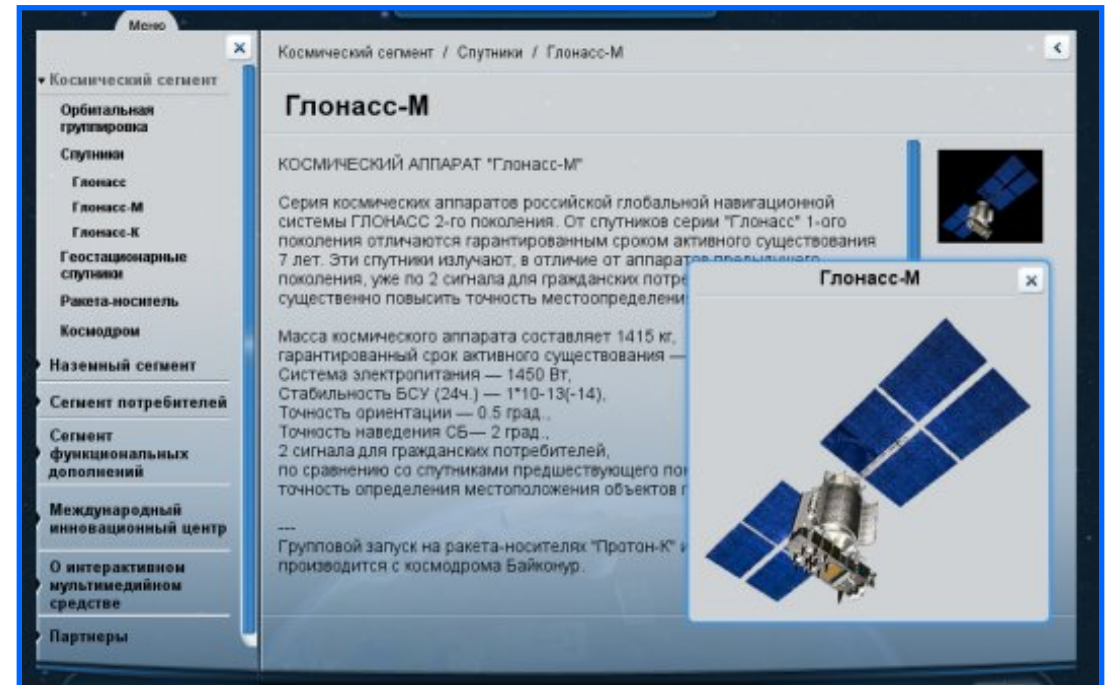
Presentation tool on GLONASS

Near-real-time monitoring of  
GLONASS navigation information

Learning tool



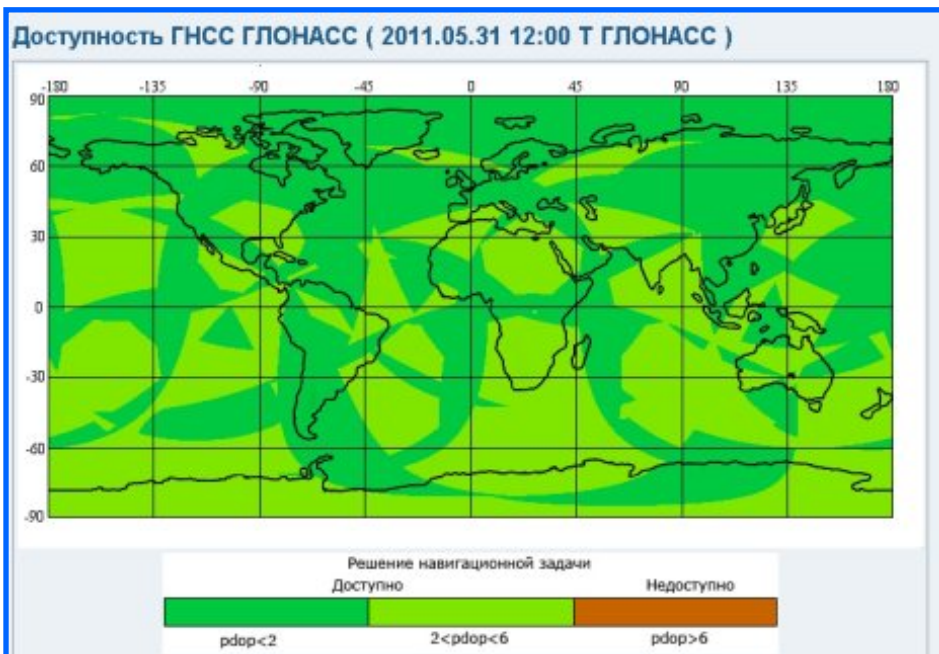
On the base of «**RSS RAD Technologies**», multimedia facilities on any GNSS  
may be designed, and even in any other field !



Easy to engage and play video, audio, photo, pdf, ppt... content



## Near-real-time monitoring of navigation information



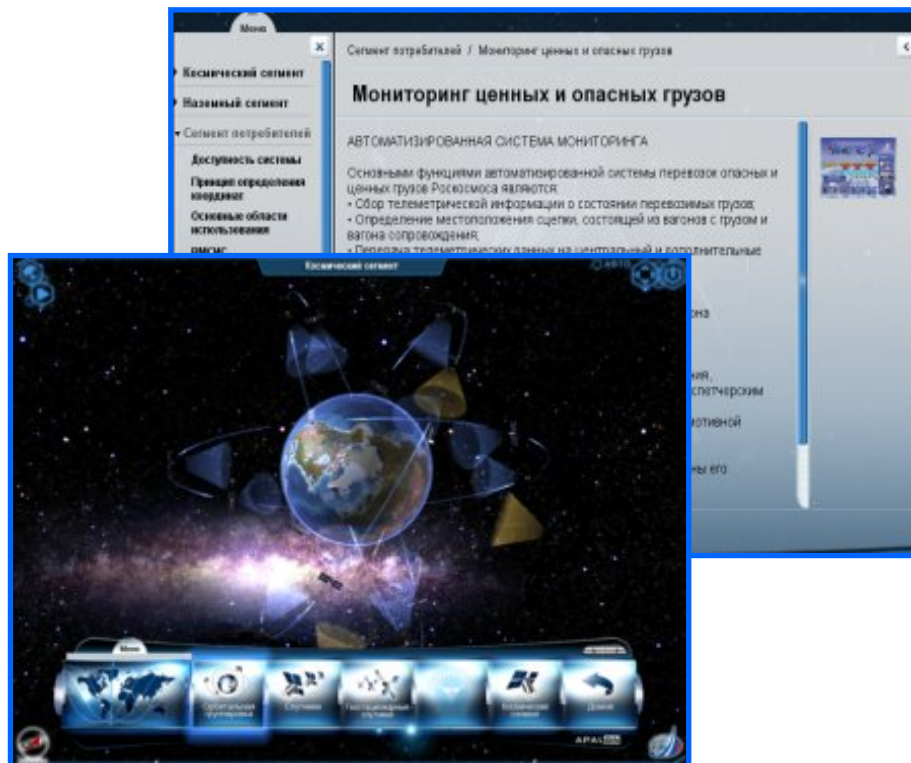
GLONASS availability  
at [www.sdcm.ru](http://www.sdcm.ru) and in «Generation of the Future»

«Generation of the Future» may update data from special online monitoring websites



Theoretical courses

Practical courses



«Generation of the Future» is the facility of Distant Learning System developed in JSC "Russian Space Systems" commissioned by Roscosmos



**06-07.2011**

Ryazan State Radio-technical University

**Successful distant learning of 32 specialists**



**01-02.06.2011**

The 5th International Satellite Navigation Forum

**The report submitted: «New approach to learning and Popularization of GLONASS. Interactive multimedia facility «Generation of the Future"»**



**16-21.08.2011**

The International Aviation and Space salon MAKS

**«Generation of the Future» aroused great interest among specialists and visitors**





Upload to <http://spacecorp.ru>  
Demonstration and promotion

Adapt for the tablets, PDA, smartphones (iOS, Android), propose on Apple Store, Android Market

Learning tools on satellite navigation for schools and universities

Translate the content of «Generation of the Future» into English, Arabic, Spanish, French and Chinese respecting to the recommendations of the ICG



Cooperation on the development of interactive multimedia may be promising in the dissemination of information on GNSS and training of specialists in satellite navigation



## Conclusion



Interactive multimedia is convenient and perspective tool for GNSS popularization and e-learning

To enhance international exchange of informational, learning, scientific and methodical facilities, **«Generation of the Future»** may be published on ICG Portal

On the base of «RSS RAD Technologies» platform, «Russian Space Systems» is ready to design interactive multimedia for UN – affiliated Regional Centers curriculum respecting to ICG recommendations



**Thanks for your attention!**

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РОСКОСМОС





## Технологии создания ИМС «Поколение будущего»



Качественное отображение 3D-объектов, используя **высокополигональные модели.**

*Пример: Flash: 25000 полигонов на сцену, Unity3D – 16000 полигонов на один объект, т.е. на отображении космического сегмента — около 1,5 млн. полигонов.*

**Мультимедийные интерактивные обучающие курсы, презентации, тренажеры, игры.**

*Прямой конкурент Torque3D для экспорта продукта на другие платформы требует наличие у разработчика своего SDK под каждую платформу. В Unity3D это реализовано в рамках доступных лицензий, что для нас имеет первостепенную важность.*

**Поддержка портирования приложений** на PC, Mac, iPad, Android, возможность портирования презентаций на игровые приставки Wii, XBox, SPS, может исполняться в современных браузерах через сеть интернет

Административная часть ИМС **не использует никаких баз данных.**  
*В качестве формата передачи данных от сервера к ИМС выбран XML*