GLONASS and Critical Infrastructure

Tatiana Mirgorodskaya

PNT Information and Analysis Center
Central Research Institute of Machine Building
Russian Federal Space Agency (Roscosmos)

WG-A Meeting
9th Meeting of the International Committee on GNSS
Prague, Czech Republic
11 November 2014

Background

IDM Workshop and WG-A Intersessional Meeting, 15-18 July 2014, Geneva:

Requested action to ICG members:

Prepare a presentation for the ICG-9 WG-A meeting addressing the following questions:

- **Do you consider Global Navigation Satellite Systems or their services to be National Critical Infrastructure? How does your response impact the protection of GNSS and its services in your nation?**
- **What do you consider to be the definition of "International Critical Infrastructure"?**

Approaches to Criticality

Differences in approaches to criticality in Russia and other countries :

- There is no single international definition of Critical Infrastructure
- Each country has its own definition , criteria for classification
- Each country has its own list of infrastructures classified as critical

Russia:

- Though often mentioned in media there is no official legal notion and definition of neither infrastructure nor critical infrastructure

USA, EU	*Russia*
Critical Infrastructures/ Critical Infrastructure Sectors	**•Critically Important Facilities •Critical Technologies**
Apply mostly to sectors or industries (e.g. 16 for US)	**•Apply to particular objects (> 2000) •Refer to technologies, development of which is prioritized**

Legal Framework

1. Presidential Decree № 638 of May 17, 2007

   "On Use of GLONASS (Global Navigation Satellite System) for the Benefit of Social and Economic Development of the Russian Federation"

2. Presidential Decree № 899 of July 7, 2011

   "On Adoption of Priority Directions for Science, and Technology Development and of the List of the Critical Technologies of the Russian Federation"

All of these address a special status of GLONASS and its relation to the "national infrastructure"

Presidential Decree № 638 of May 17, 2007

“On Use of GLONASS for the Benefit of Social and Economic Development of the Russian Federation”

states that

- national and international users have free and unlimited access to the GLONASS standard positioning signals
- to ensure national security, federal executive authorities and organizations within their jurisdiction shall use GLONASS based user equipment

recommends that

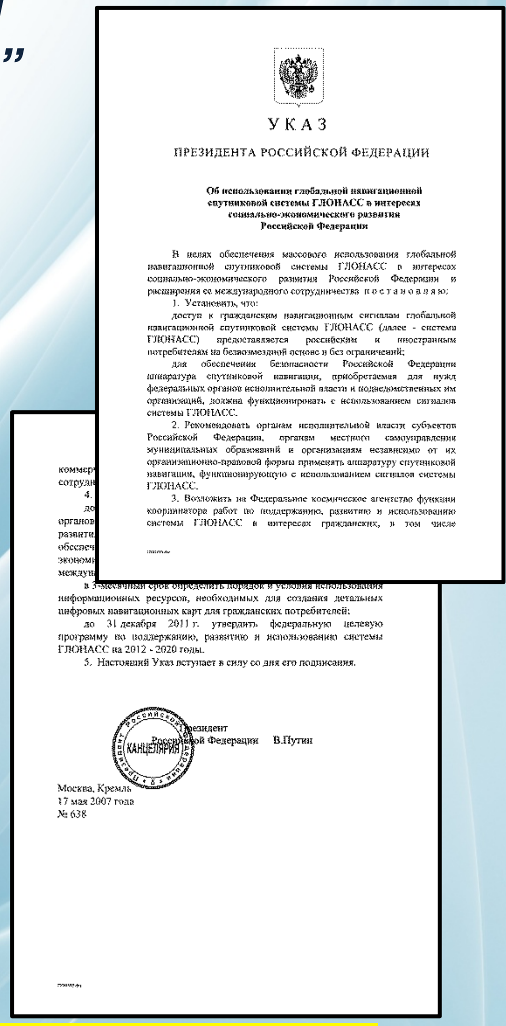
- regional executive authorities, local authorities and government organizations irrespective of their organizational and legal status use navigation equipment utilizing GLONASS

assigns Roscosmos

- to coordinate activities on GLONASS sustainment, development and use for the benefit of civil, including commercial users and on promoting international cooperation

directs the Government

- to approve the Federal GLONASS Program to secure dedicated budget



У К А З

ПРЕЗИДЕНТА РОССИЙСКОЙ ФЕДЕРАЦИИ

Об использовании глобальной навигационной спутниковой системы ГЛОНАСС в интересах социально-экономического развития Российской Федерации

В целях обеспечения массового использования глобальной навигационной спутниковой системы ГЛОНАСС в интересах социально-экономического развития Российской Федерации и расширения ее международного сотрудничества п о с т а н о в л я ю:

1. Установить, что:

доступ к гражданским навигационным сигналам глобальной навигационной спутниковой системы ГЛОНАСС (далее - система ГЛОНАСС) предоставляется российским и иностранным потребителям на безвозмездной основе и без ограничений;

для обеспечения безопасности Российской Федерации аппаратура спутниковой навигации, приобретаемая для нужд федеральных органов исполнительной власти и подведомственных им организаций, должна функционировать с использованием сигналов системы ГЛОНАСС.

2. Рекомендовать органам исполнительной власти субъектов Российской Федерации, органам местного самоуправления муниципальных образований и организациям независимо от их организационно-правовой формы применять аппаратуру спутниковой навигации, функционирующую с использованием сигналов системы ГЛОНАСС.

3. Возложить на Федеральное космическое агентство функции координатора работ по поддержанию, развитию и использованию системы ГЛОНАСС в интересах гражданских, в том числе

коммер...
сотруд...
4. ...
до...
органов...
развити...
обеспеч...
экономи...
междуна...

в 3-месячный срок определить порядок и условия использования информационных ресурсов, необходимых для создания детальных цифровых навигационных карт для гражданских потребителей;

до 31 декабря 2011 г. утвердить федеральную целевую программу по поддержанию, развитию и использованию системы ГЛОНАСС на 2012 - 2020 годы.

5. Настоящий Указ вступает в силу со дня его подписания.

Президент Российской Федерации В.Путин

КАНЦЕЛЯРИЯ

Москва, Кремль
17 мая 2007 года
№ 638

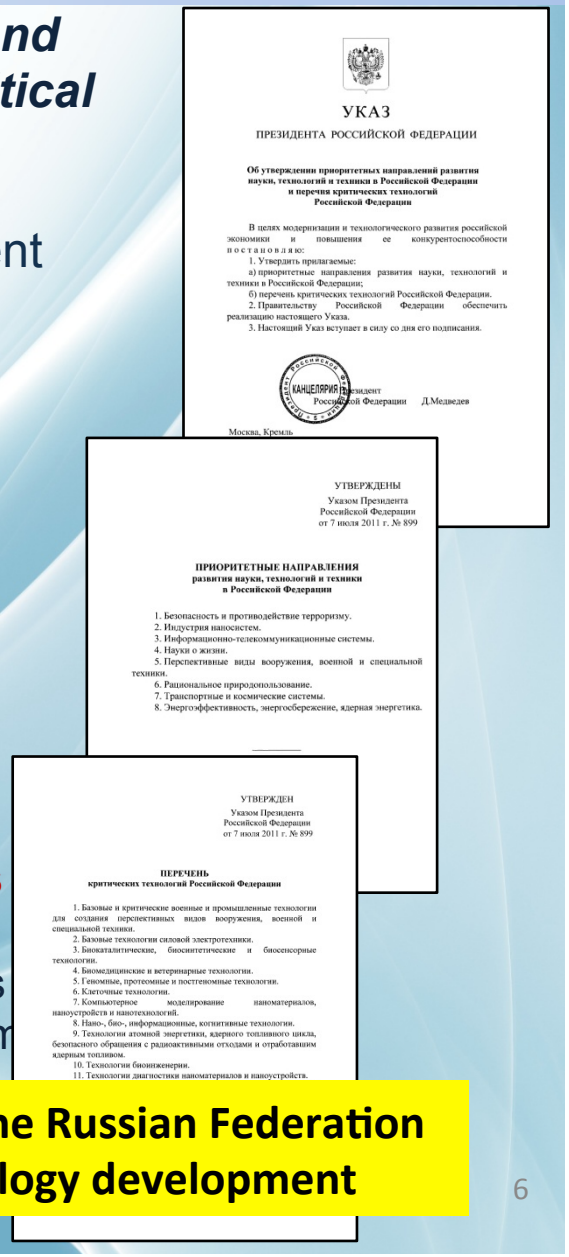
The civil part of GLONASS is addressed for the first time
The nation-wide and cross-regional importance of GLONASS is stressed
Budgeting through the mechanism of a Federal Program is defined

Presidential Decree № 899 of July 7, 2011 (1)

"On Adoption of Priority Directions for Science, and Technology Development and of the list of the critical technologies"

states

- Priority directions for science and technology development
  - security and terrorism counteraction
  - nanosystem industry
  - **information and telecommunication systems**
  - life sciences
  - advanced weapons, military and special equipment
  - responsible nature management
  - **transport and space systems**
  - energy efficiency, energy saving and nuclear power engineering
- List of critical technologies of the Russian Federation
  - 27 critical technologies including:
    - ✓ Information, control and **navigation technologies** as a separate line
    - ✓ A number of technologies for which PNT technologies are vital at a minimum and are enablers at a maximum


УКАЗ

ПРЕЗИДЕНТА РОССИЙСКОЙ ФЕДЕРАЦИИ

Об утверждении приоритетных направлений развития науки, технологий и техники в Российской Федерации и перечня критических технологий Российской Федерации

УТВЕРЖДЕНЫ
Указом Президента Российской Федерации
от 7 июля 2011 г. № 899

ПРИОРИТЕТНЫЕ НАПРАВЛЕНИЯ развития науки, технологий и техники в Российской Федерации

1. Безопасность и противодействие терроризму.
2. Индустрия наносистем.
3. Информационно-телекоммуникационные системы.
4. Науки о жизни.
5. Перспективные виды вооружения, военной и специальной техники.
6. Рациональное природопользование.
7. Транспортные и космические системы.
8. Энергоэффективность, энергосбережение, ядерная энергетика.

УТВЕРЖДЕН
Указом Президента Российской Федерации
от 7 июля 2011 г. № 899

ПЕРЕЧЕНЬ критических технологий Российской Федерации

Navigation technologies are listed as critical technologies of the Russian Federation included into the priority directions of science and technology development

Presidential Decree № 899 of July 7, 2011 (2)

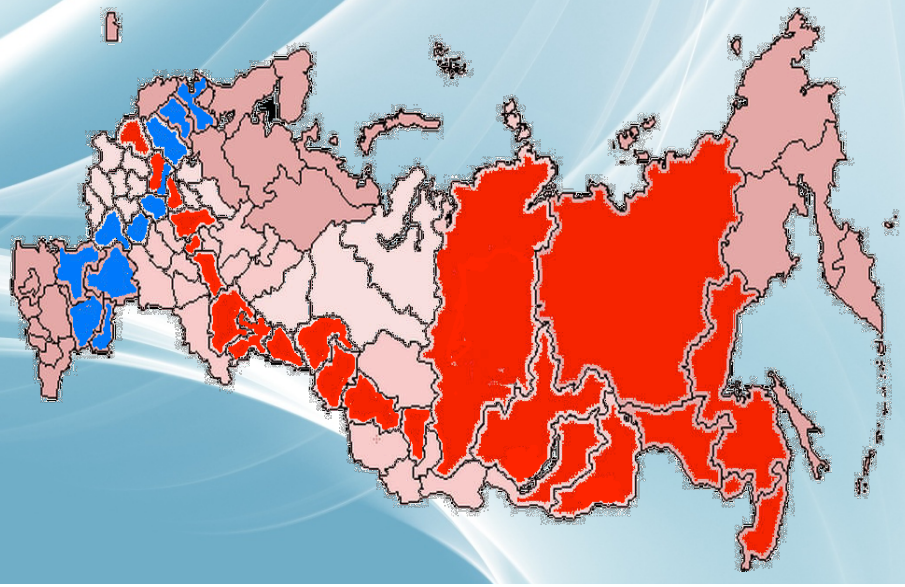
Critical Technologies (from the list) enabled by PNT

- military and industrial technologies used to create advanced weapons, military and special equipment
- nuclear power engineering technologies, i.e. radioactive waste management
- distributed and high-efficiency computer networks and systems
- technologies for environment monitoring and forecasting, environment pollution prevention and mitigation
- technologies for management of natural resources (exploration and mining)
- natural and man-made disaster management
- technologies used for development of high-speed transportation capabilities and ITS
- space and rocket technologies, new generation transportation technologies
- technologies for energy transportation, distribution and use

There are a number of critical technologies listed for which PNT and satellite navigation technologies in particular are vital

Nation-level Projects Based on Navigation Technologies

- **ERA-GLONASS – Emergency Response to Accidents**
  - ✓ decreasing the number of deaths and casualties as a result of road accidents in the Russian Federation
  - ✓ increasing safety of passenger and cargo transportation
  - ✓ commercialization of GLONASS: promoting mass navigation market for services and equipment
- **GLONASS based ground infrastructure for regional information and navigation systems covering "West-East" and "North-South" transportation corridors**
- **Social GLONASS**
- **Federal System for Monitoring Critical Objects and/or Potentially Hazardous Infrastructure Objects and Hazardous Cargo**
- **Special Navigation and Information System for Managing Elections**
- **Government Automated Infrastructure and Resource Monitoring System**



Do you consider Global Navigation Satellite Systems or their services to be National Critical Infrastructure?

On a regulatory level Critical Infrastructures or Critical Infrastructure Sectors are not fixed in Russian Federation.

Navigation technologies (which include GNSS and other PNT capabilities) are included into the List of Critical Technologies adopted by the President.

Obviously, a number of other listed Critical Technologies rely on and depend on navigation technologies.

Satellite Navigation de facto tends to become a separate branch of economy as it has been repeatedly stated by Government leaders although not yet legally fixed.

Thank you for your attention!

Tatiana Mirgorodskaya
PNT Information and Analysis Center
Tel. +7 495 513-4882
Fax+7 495 513-4139
www.glonass-iac.ru