

**«National Telemedicine Agency»**  
Research-and-Production Union

All-Russian Centre for disaster medicine  
**«Zaschita»**

**Complex telemedicine system  
of Disasters Medicine Survey for the relief actions  
in a course of elimination of emergency situation  
consequences to provide medical aid to the  
population during liquidation of emergency  
situations consequences**



**The Fifty-eighth World Health Assembly,**

**Noting the potential impact that advances in information and communication technologies could have on health-care delivery, public health, research and health-related activities for the benefit of both low- and high-income countries;**

**. . . . .**

**Aware that advances in information and communication technologies have raised expectations for health;**

**. . . . .**

**Stressing that e-Health is the cost-effective and secure use of information and communications technologies in support of health and health-related fields, including health-care services, health surveillance, health literature, and health education, knowledge and research,**

**. . . . .**

**URGES Member States:**

**to consider drawing up a long-term strategic plan for developing and implementing e-Health services in the various areas of the health sector, including health administration, which would include an appropriate legal framework and infrastructure and encourage public and private partnerships;**

**to develop the infrastructure for information and communication technologies for health as deemed appropriate to promote equitable, affordable, and universal access to their benefits, and to continue to work with information and telecommunication agencies and other partners in order to reduce costs and make e-Health successful;**

**From WHA58.28 e-Health Resolution**

All-Russian Centre for disaster medicine

**«Zaschita»**

and the

**«National Telemedicine Agency»**

Research-and-Production Union



propose to the interested organizations of the SCO member countries cooperation in creation in these countries of compatible complex telemedicine systems for rendering medical and social services to the population during emergence situations, natural и man-caused accidents, military actions or acts of terrorism (CTS-ES).

The CTS-ES is developed on the basis of the long-term operational experience in the field of disaster medicine. CTS-ES is intended for independent work in any climatic and geographical conditions, it is equipped by the necessary medical equipment, uses the newest information technologies, various communication systems, including satellite. CTS-ES is complete with independent functioning systems that provide a long work of equipment and ability to live of crew in conditions of global destructions.

Mobile component of the CTS-ES is placed on the out-of-roads lorry and can be operatively delivered to the emergence area by plane or to arrive independently.

Thus, inclusion of telemedicine system to the Emergence medicine system will allow appreciably to increase the efficiency of medical services due to:

Fast receiving receptions of maximum full and trustworthy information from emergence zone;

effective and exact estimation of scale and complexity of the situation in emergence area;

ensuring of acceptance of effective decisions about measures for liquidation of emergence consequences, management and coordination of the involved forces and facilities;

Organization of the qualified medical and social services to the population both in emergence conditions and during liquidation of their consequences.

## **Complex telemedicine systems for rendering medical and social services to the population during emergence situations**

allows to carry out the management of emergence groups and coordinate the work of medical personnel both in emergence area and in medical institutions where the victims are delivered. Mobile Telemedicine Units (MTU) are include to the system that renders the opportunity of long independent operation in emergence area, its equipped by necessary means for rendering medical aid to the victim.

CTS-ES represents three-level decision occurred during liquidation of emergence consequences:

**The first stage** - first aid to the victim, their sorting and transportation to the hospitals;

**The second stage** - prevention of epidemics in the emergence zone;

**The third stage** - rendering of social services in the emergence zone.

# Suggested Telemedicine Network represents 4-levels system:



International Level



State Level



Regional Level



Local Level

MTU is the key element of proposed telemedicine system. They mounted on the out-of-road chassis or any other vehicle and have a complex of the diagnostic medical and telecommunication equipment, including a satellite communication. That allows to transmit the data of examinations in the digital form, in case of necessary in on-line mode, to the central medical institutions in the country, or abroad, where highly skilled experts analyze these data and return to the MTU personnel the necessary conclusions and recommendations.

MTU are equipped with all necessary for long independent work even in conditions of lack, or full absence of necessary medical and telecommunication infrastructure.



# The base composition of the Complex telemedicine systems for rendering medical services to the population during emergence situations



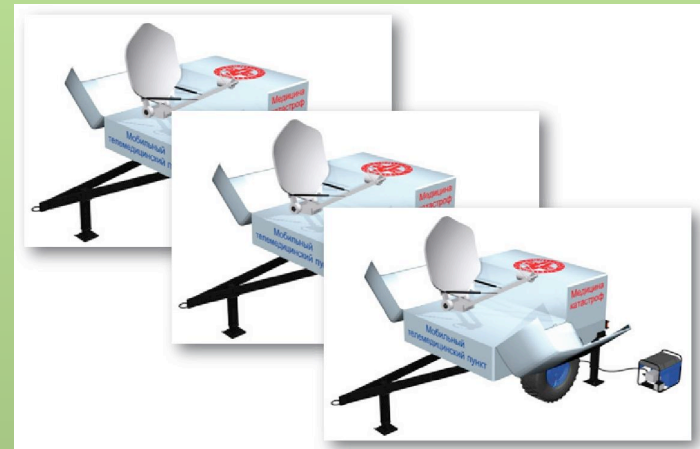
*Mobile Control Station*



*Mobile Telemedicine Station for emergency assistance*



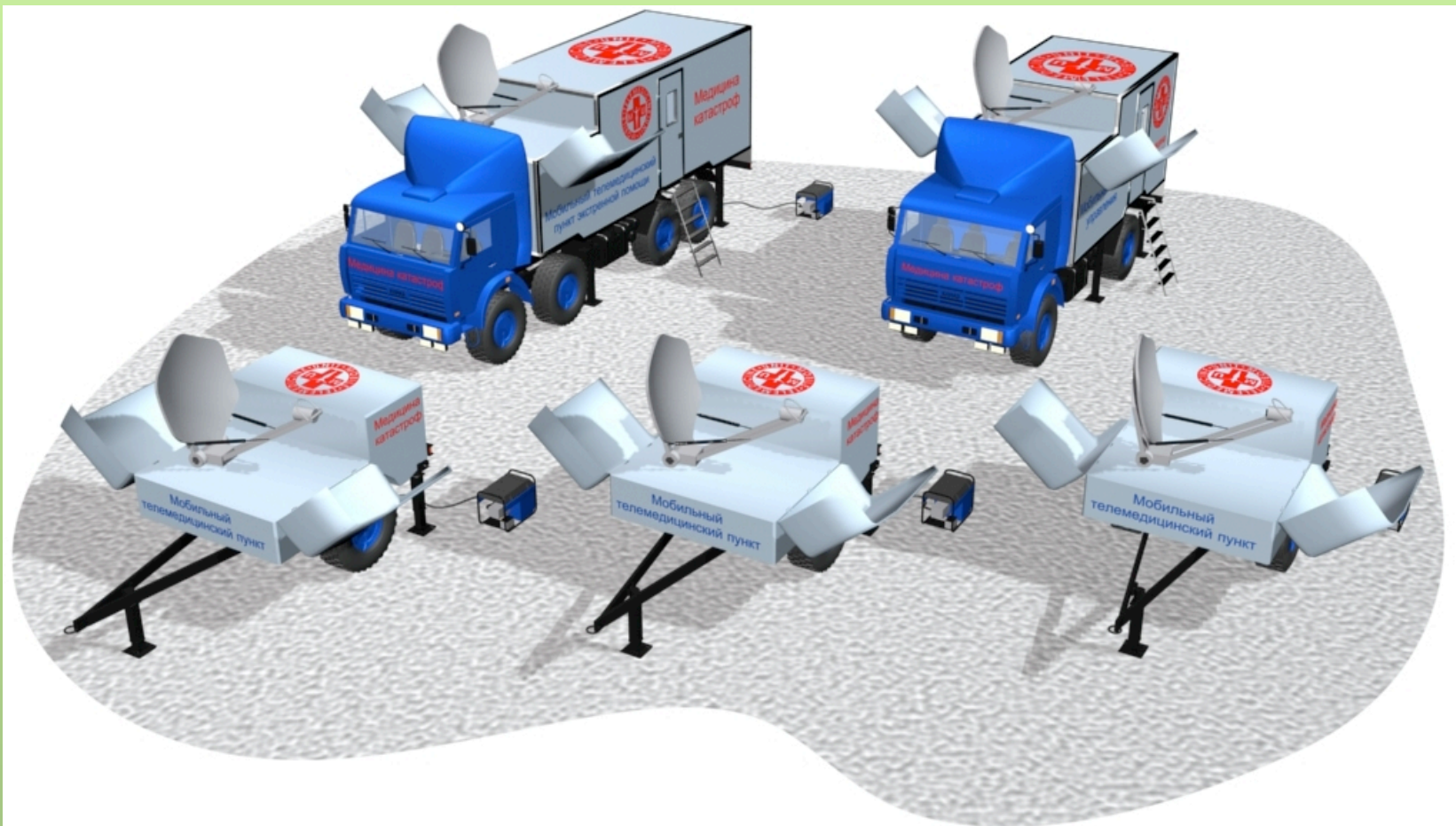
*Mobile Telemedicine Unit*



*Small mobile telemedicine units*



## Mobile part of Telemedicine System launched in emergency zone



## Мобильный телемедицинский пункт экстренной помощи



Mobile telemedicine Station for emergency assistance (MTSEA) intended for rendering of extraordinary medical services directly in the emergency zone.

This station is equipped with special diagnostic and therapeutic medical equipment.

There are also the autonomous tools for satellite communications, autonomous power supply systems and “life-support system” providing comfortable working conditions for personal in any climate.

The station provides efficient diagnostics of injured, information support and consultancies for medical personal.

## Mobile Control Station



Mobile Control Station (MCS) intended for coordination of all systems and services during liquidation of emergency consequences.

MCS is equipped with data acquisition and imaging devices. There are autonomous tools of satellite communications, autonomous power supply systems and “life-support system” providing comfortable working conditions for personal in any climate. The station provides collection and exchange of emergency information and delivery of decisions and commands directly to liquidators of emergency consequences.

## Small Mobile Telemedicine point



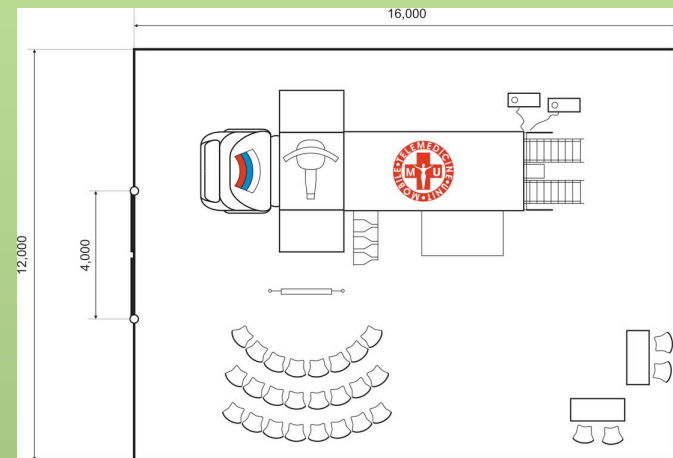
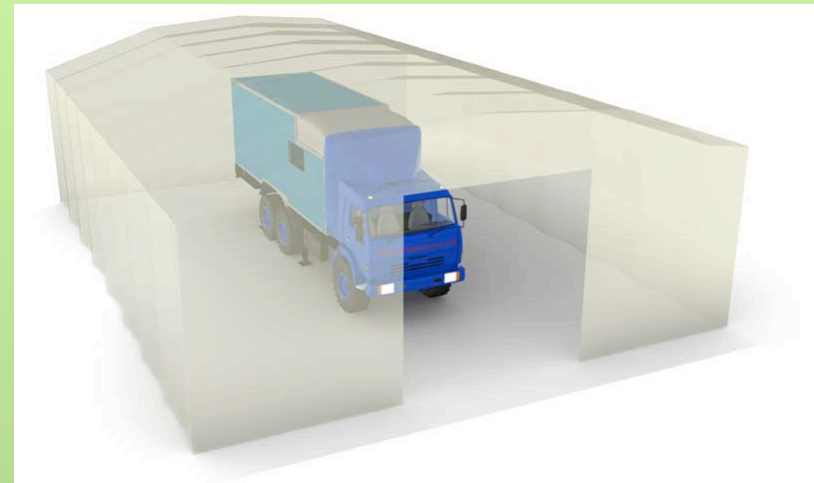
The small mobile telemedicine unit (SMTU) is destined for organizing a temporary telemedicine unit in local and regional medical institutions dedicated for aiding the injured evacuated from the ES zone.

The SMTU is equipped with a transportable telemedicine terminal (provided with wireless communications with the unit), has autonomous means of satellite communications and power supply.

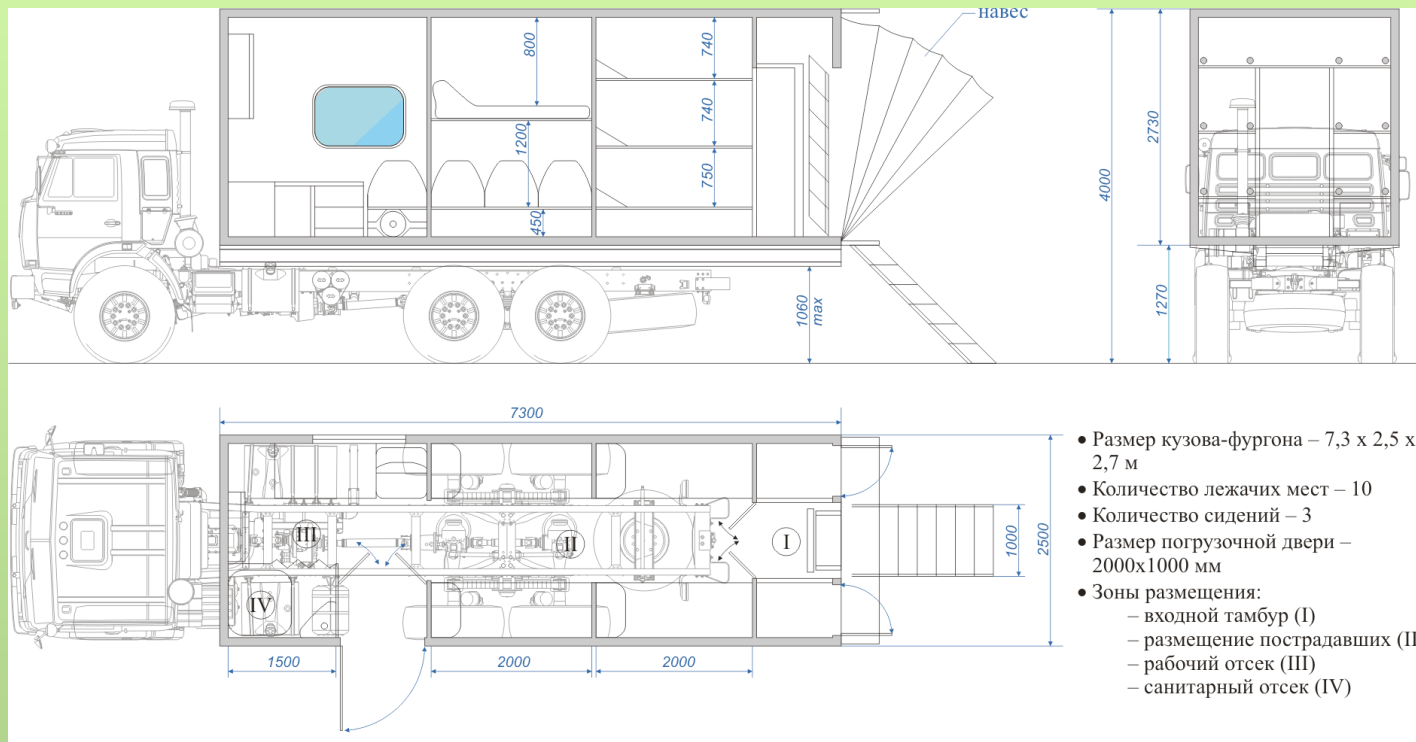
The SMTU is transported (by any vehicle) to regional medical centers destined for evacuation of injured and provides efficient medical aid and collection of information about the injured.

The info-communication equipment of mobile units allows to use it not only as diagnostic screening facility and rendering of medical aid, but also as multi-purpose information centers providing the training the population in a survival in emergence conditions, methods of care of patients, an explanation of a various sort of social and other matters.

The rapid unwrapped hangar can be delivered for maintenance of work in adverse climatic conditions, for example in northern and tropical regions.



## Evacuator "Pechora" for removal of victims from an emergence zone



Evacuator it is intended for rapid victims evacuation from the emergence zone. It is mounted on the KAMAZ-53229 (6x4) elongated chassis (up to 10 places of reclining position, 3 sitting places).

The workplaces of the personnel, lavatory with wash-stand and bio-toilet, stock of hot and cold water, necessary medical equipment and communication facility are placed in a working compartment of evacuator.

## Mobile telemedicine diagnostic laboratory «Terek» for monitoring of epidemic situation in emergence zone



Mobile diagnostic telemedicine laboratory «**Terek**» is intended for carrying out of diagnostics of infectious agents in an emergence zone. The base technology of diagnostics is the method of **polimerase chain reaction (PCR) in a real time mode (Real Time PCR)**, providing an opportunity of **quantitative** definition of DNA/RNA infectious agents in an investigated material, automatic registration and interpretation of received results, and also considerable reduction of pseudo-positive results. In case of necessary to carry out of goal-oriented researches the Mobile laboratories «**Terek**» can be equipped with additional tools, facilities and materials for indication and identification of corresponding pathogen.

# Mobile telemedicine diagnostic laboratory «Terek» for monitoring of epidemic situation in emergence zone

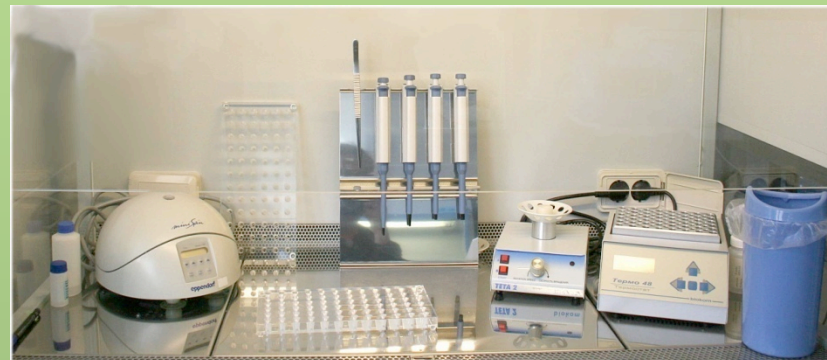
## The samples of equipment and interior



PCR Laboratory:  
Amplification and detection zone



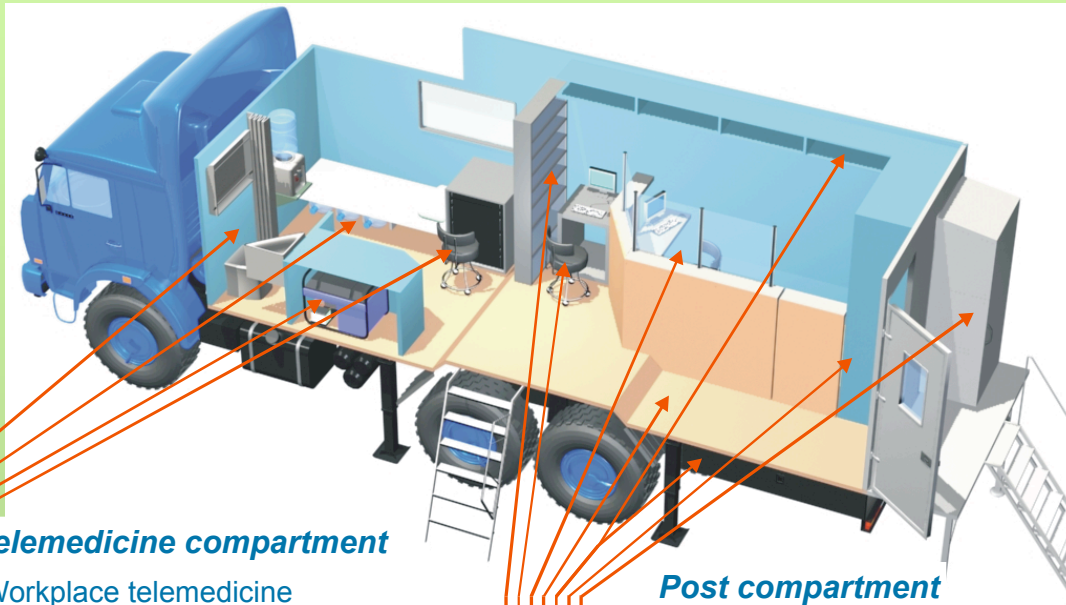
Telemedicine terminal



PCR Laboratory: DNA separation zone



## Multipurpose mobile Post complex « Cyber Twin »



### **Telemedicine compartment**

- Workplace telemedicine operator/medical assistant
- Diesel generator
- Household zone
- Lavatory

### **Post compartment**

- Safe's compartment
- The monetary safe
- Containers for storage post
- Departures container and the post operator
- Zone of clients of the post operator
- Workplace «Cyber Twin»
- Workplace of the post operator
- Show-window for accommodation of the consumer goods

One of extreme situations problem is maintenance of the population with social services. To solve it a problem allows Multipurpose mobile Post complex “Cyber Twin”, which can be included to system for emergence situations



**world summit**  
on the **information society**  
Geneva 10-12 December 2003



# DIPLÔME



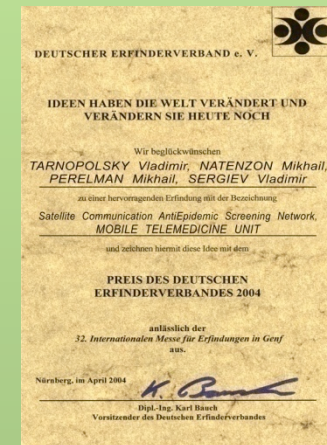
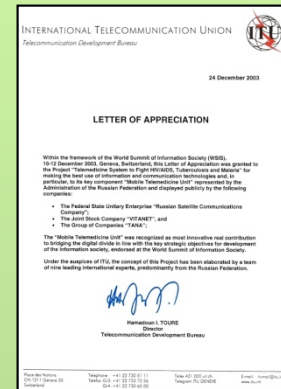
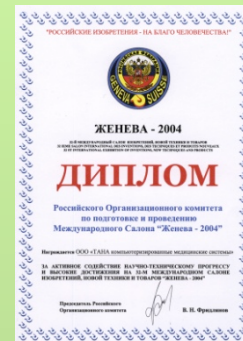
## SALON INTERNATIONAL DES INVENTIONS GENÈVE

Après examen, le Jury International a décidé  
de remettre à: Vladimir TARNOPOLSKY, Mikhail NATENZON,  
Mikhail PERELMAN, Vladimir SERGIEV  
pour l'invention: Procédé de diagnostic des maladies infectieuses

UNE MEDAILLE D'OR Genève, le 2 avril 2004

  
Rapporteur du Jury

  
Le Président du Comité  
d'Organisation du Salon





During the International summit on information society taken place in Geneva in 2003, Dr. Hamadoun Toure, who was Deputy Secretary General of the International Telecommunication Union that time, has examined MTU



**world summit**  
on the **information society**  
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This MTU project is one of greatest contributions to the Digital Divide Bridge -  
I am confident that together with the International Telecommunication Union (ITU) and the member states we will ensure a successful implementation of this project in many countries in the world -  
MTU saves lives -!

Thank you.

Hamadoun I. TOURE  
Director BDT/ITU.

10/12-2003. GENEVE.



The State Council of the Russian Federation (Kurgan City, October, 2, 2006).  
Mr. Vladimir V. Putin, the President of the Russian Federation visits  
the Mobile Telemedicine Unit



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(Kurgan City, October, 2, 2006)  
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**2006, conversation with Dmitriy A. Medvedev,  
Vice-Chairman of the Government of the Russian  
Federation about the work of MTU**

# **Please contact us !**

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