Переносные телемедицинские комплексы

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НПГ «Традиция»

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Цель телемедицинских технологий - получение дополнительных конкурентных преимуществ на рынке медицинских услуг

Телемедицинские технологии целесообразно использовать в следующих областях:

- *Дистанционные видеоконсультации больных (плановые и экстренные) в ведущих российских и зарубежных клиниках;*
- *Дистанционное интерактивное телеобучение врачей (в т.ч. последипломное образование);*
- *Изучение новых медицинских технологий и оборудования («мастер-классы» ведущих хирургов и диагностов);*
- *Проведение телесеминаров и телесовещаний*
- *Домашняя телемедицина*

НАЧАЛО: ПЕРВЫЕ ВИДЕОКОНСУЛЬТАЦИИ И ИНТЕРАКТИВНЫЕ ТЕЛЕЛЕКЦИИ ДЛЯ РЕГИОНОВ РФ БЫЛИ ПРОВЕДЕНЫ В 1997 г. (ТМ-проект «Москва – регионы России»)

- Сейчас только в НЦССХ в год:
- > 1250 видеоконсультаций
- > 3400 часов телелекций
- > 60 мастер-классов
- > 1000 часов трансляций конференций и симпозиумов

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ТЕЛЕМЕДИЦИСКИЕ ЦЕНТРЫ - ПАРТНЕРЫ

Сейчас в РФ > 300 ТМЦ , из них 24 - в МОСКВЕ

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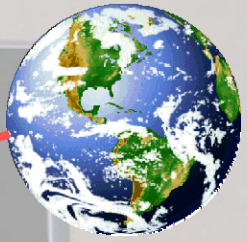
ТМ-сеть РФ - элемент международной ТМ-сети (при поддержке стандартов ITU)

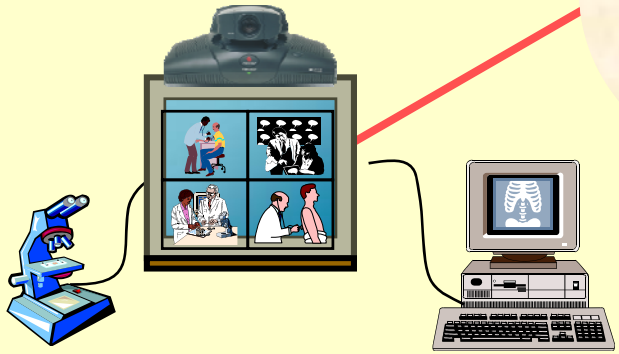
Main medical centers of Russia



Main telemedicine center
Moscow

ISDN / IP

Regional telemedicine center



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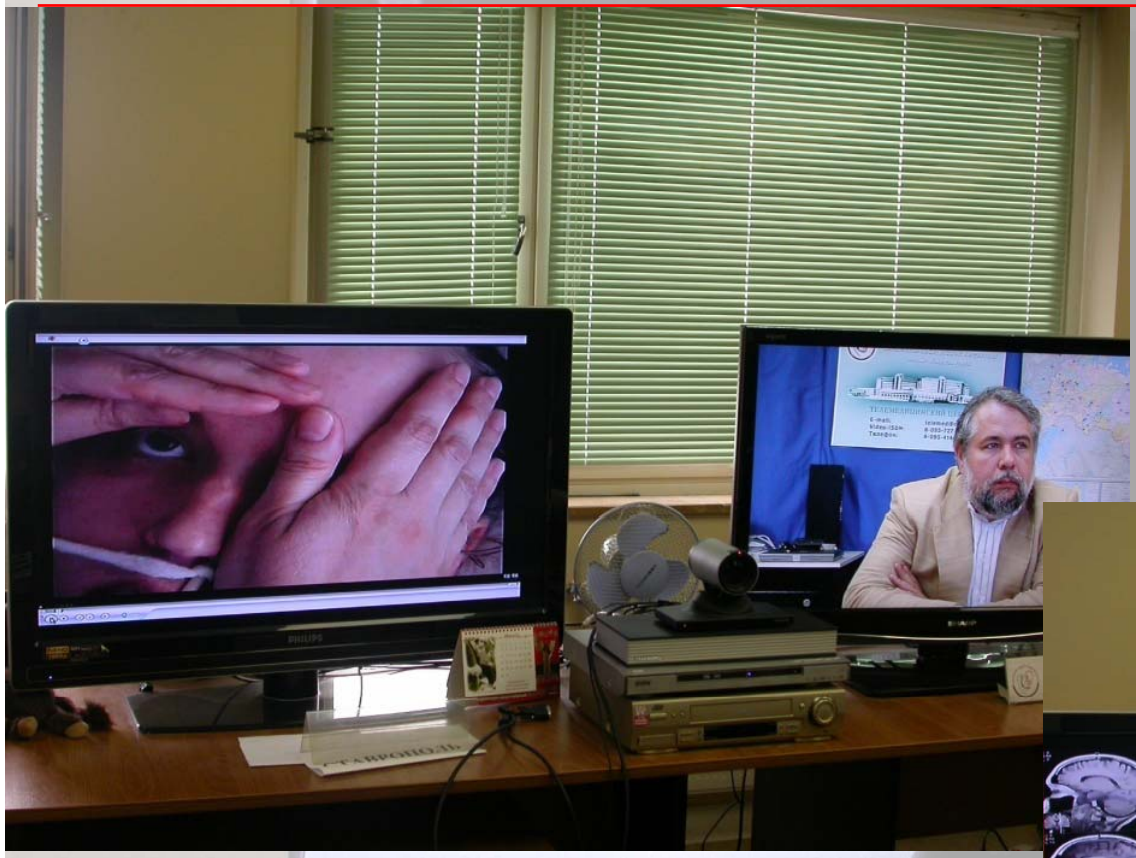
Дистанционные видеоконсультации



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Дистанционные видеоконсультации

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Что сделано: ТЕХНОЛОГИЯ ДИСТАНЦИОННЫХ ВИДЕОКОНСУЛЬТАЦИЙ

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Что сделано: ТЕХНОЛОГИЯ ИНТЕРАКТИВНОГО ТЕЛЕОБУЧЕНИЯ

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Surgical Education by “observational immersion”

“*The Anatomy Lesson*” by Rembrandt van Rijn (1632)

HD-видеоконференция – мастер-класс для кардиохирургов

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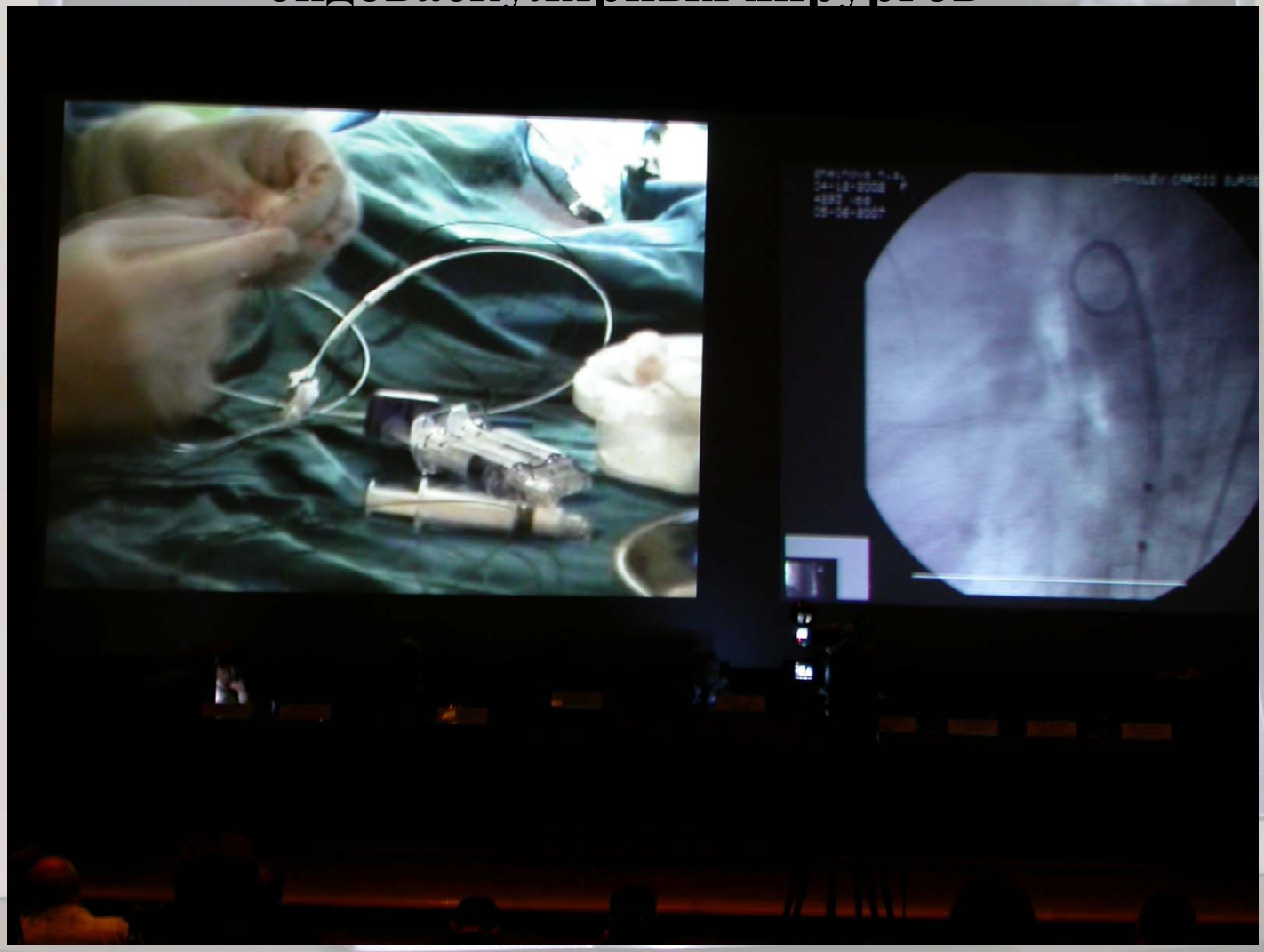
HD-видеоконференция – мастер-класс для эндоваскулярных хирургов



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ВИДЕКОНФЕРЕНЦИЯ ВЫСОКОГО РАЗРЕШЕНИЯ В ЗАДАЧЕ ТЕЛЕОБУЧЕНИЯ НОВЫМ ТЕХНОЛОГИЯМ

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Что сделано: ТЕЛЕМЕДИЦИНСКИЙ КОМПЛЕКС В СОСТАВЕ МЕДИЦИНСКОГО ПОЕЗДА

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Мобильные решения: ТЕЛЕМЕДИЦИНСКИЙ КОМПЛЕКС В СОСТАВЕ МЕДИЦИНСКОГО ПОЕЗДА

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Что сделано: МОБИЛЬНЫЙ ТЕЛЕМЕДИЦИНСКИЙ ЦЕНТР НА БАЗЕ РЕАНИМОБИЛЯ

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Russian portable telemedicine system

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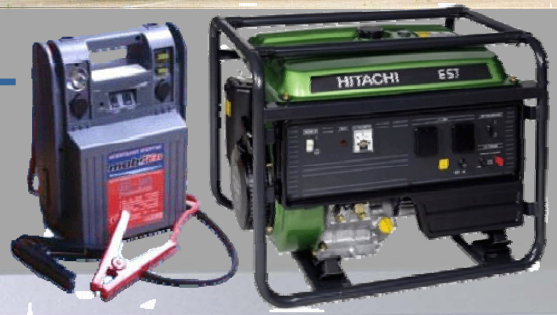
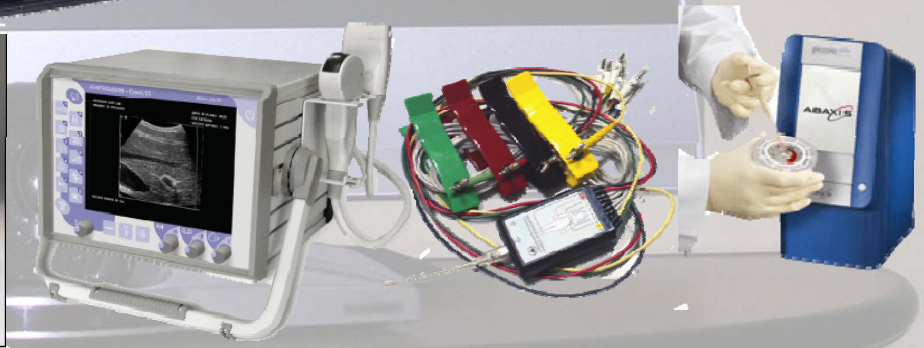
Mobile telemedical complex for impassability



Mobile videoconferencing terminal



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System versions:

ARNEGA-VC (telemedical applications)

- Protective suitcase
  - ✓ Includes camera on the inside of the
  - ✓suitcase cover (night vision option)
  - ✓ LCD 15,6” sunreadable display (protected glass)
  - ✓ Coding/decoding module (compatible w/ Cisco Tactical MXP)
  - ✓ Telemedical module includes the following medical equipment (user configurable):
    - ECG, oxymeter, stethoscope, blood pressure and other lab equipment (connectable via digital interfaces such as USB)
    - other equipment may be integrated on request
  - ✓ Remote control (internal power supply)

System versions:

ARNEGA-VC (telemedical applications)

✓ Other additional periphery devices may be connected upon request:

✓ external videocamera

✓ external display

✓ microphone

✓ additional remote control

✓ additional medical equipment

✓ biofeedback device for monitoring physical and psychological state of the staff member

✓ **accessories:** protective helmet w/audio and video devices, headset, protective vest, GPS positioning device, etc…

✓ UAV remote control module with situation view system

Optional:

Cardiac monitoring device for home and on-the-go

Allows to estimate the physical and psychological condition of the patient

Controls the following parameters:

- ✓Blood pressure
- ✓ECG
- ✓High-resolution ECG
- ✓Heart rate frequency
- ✓Hearth rate rhythm (cardiointervalogram)
- ✓Respiratory function
- ✓The reaction rate/speed to basic stimuli

The data monitored can be automatically integrated into the electronic medical history of a patient

Applications:

- Suitable for use in all working environments, including potentially hazardous environments (ATEX Zone 2 certified)
- Helps guarantee the security & safety of workers and effectiveness of the works conducted

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Applications:

• In emergency situations ARNEGA™ will help lower casualties by:

✓establishing direct real time contact b/w patient and his doctor

✓ providing qualified first aid in case of accidents through remote support of a number of experts

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Future development:

3D vision module: Integrated system of 3D vision with support of augmented reality and in-built or loadable libraries of virtual objects, operation environment;
mission context activated tools according to the worker's specialization and skills.

This module will help, for example, a surgeon located off-site show a medical worker how to perform a particular part of an operation.

Future development:

Trauma detection module: Automated image analysis and anomalies recognition system based on 2D/3D ultrasound images. The recognition methods used are artificial neural networks, fuzzy logic, k-nearest neighbour, their combination.

A CADD system to help detect foreign objects in the body, fractures, internal bleeding and other trauma.

Future development:

Knowledge bases & decision support: Web-service with access to theme or person based expert knowledge and other citizen-oriented services, including:

- Doctor's remote consultation at home or in a move
- Personalized medical insurance – this service requires the use of a personal monitoring device (Lockey LPG by Tradition) or a smartphone
- Access to medical knowledge bases and the "automated pre-diagnostics" zone – this service allows you to upload medical images and get an automated "diagnosis" based on an image analysis and cognitive features identification using integrated & loadable semantic templates.

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