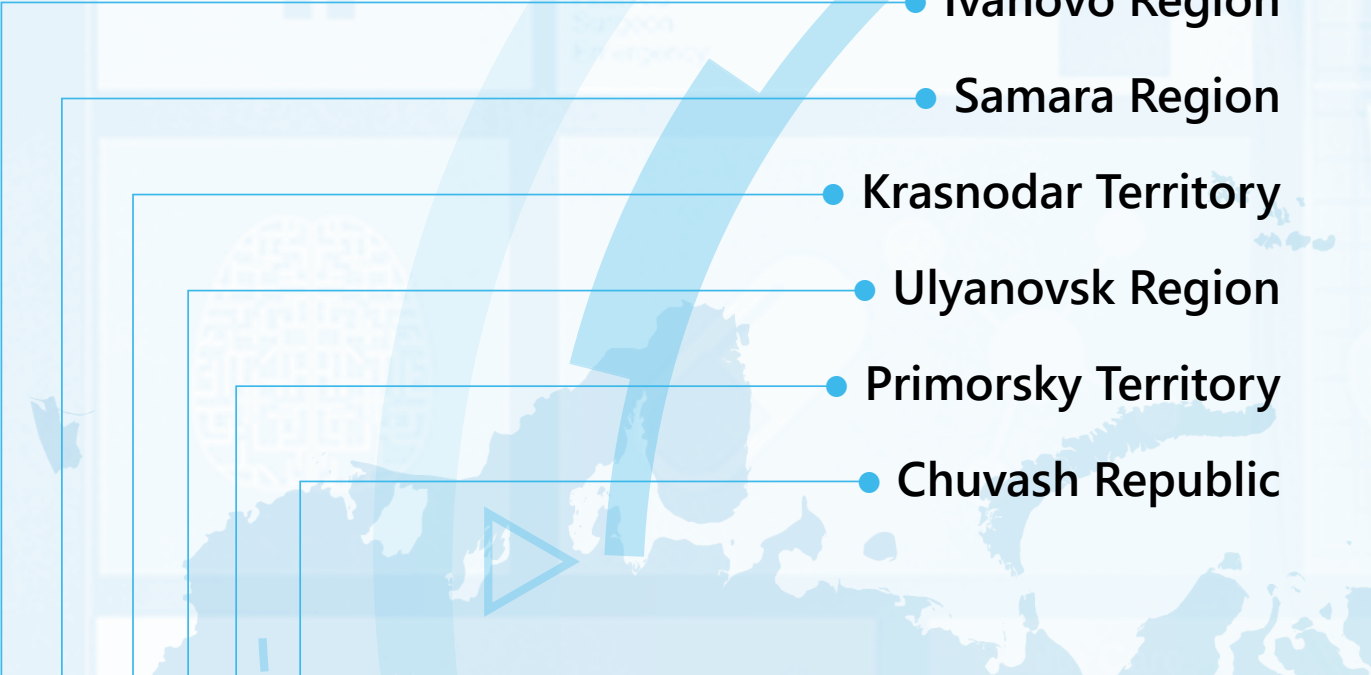




INFORMATION TECHNOLOGIES FOR HEALTHCARE

REGIONAL REPRESENTATIVES

- 
- A map of Russia is shown with several rectangular callout boxes pointing to specific regions. The callouts are connected to a list of regional representatives on the right. The regions highlighted are Ivanovo, Samara, Krasnodar, Ulyanovsk, Primorsky, and Chuvash.
- Ivanovo Region
 - Samara Region
 - Krasnodar Territory
 - Ulyanovsk Region
 - Primorsky Territory
 - Chuvash Republic

DEVELOPMENT CENTERS

- 
- A map of Russia is shown with three rectangular callout boxes pointing to specific cities. The callouts are connected to a list of development centers on the right. The cities highlighted are Moscow, Samara, and Krasnodar.
- Moscow
 - Samara
 - Krasnodar

ABOUT THE COMPANY

YSAR+ Joint-Stock Company is a leading Russian developer and integrator of IT systems for healthcare. The Company has been operating in the IT market since 1996. Clients from the regions of Russia, Asia, the Middle East and Europe trust us.

YSAR+ is an established team of highly qualified professionals, which successfully implements state and commercial orders for the creation of integrated, comprehensive turnkey medical projects at the federal and regional levels. The team consists of researchers, Candidates and Doctor of Sciences, and Honored Doctors of the Russian Federation.

The priority areas of **YSAR+** activity include the development, implementation and aftersales service of state-of-the-art healthcare information systems. The software developed by the Company has a Certificate of Registration of Medical Device with the Ministry of Health of the Russian Federation issued by the Federal Service for Surveillance in Healthcare (RosZdravNadzor).



MIS Architecture

The Medical Information System provides for complete automation of all processes of a healthcare institution. It is a complex of integrated modules operating in common information space and automating the workplaces of the specialists of the healthcare institution from primary care to the top management and the administrative and business units.

The Medical Information System was developed using open source software based on PostgreSQL, Java and Angular, and also adapted to work on free Linux system software with support for both the server and the client end.

Optimized system performance (more than 1000 users with guaranteed response time) with the possibility of horizontal scaling of servers, whereby one function can be performed in parallel on different computing nodes.

The architectural core of the system contains an electronic medical record, which consists of an array of electronic medical records, which are electronic documents signed by enhanced encrypted and certified digital signature of a doctor.

Each electronic medical record can be exported for transfer to another medical organization as a separate pdf-document, and the electronic signature is checked anywhere with the standard features of the viewer.

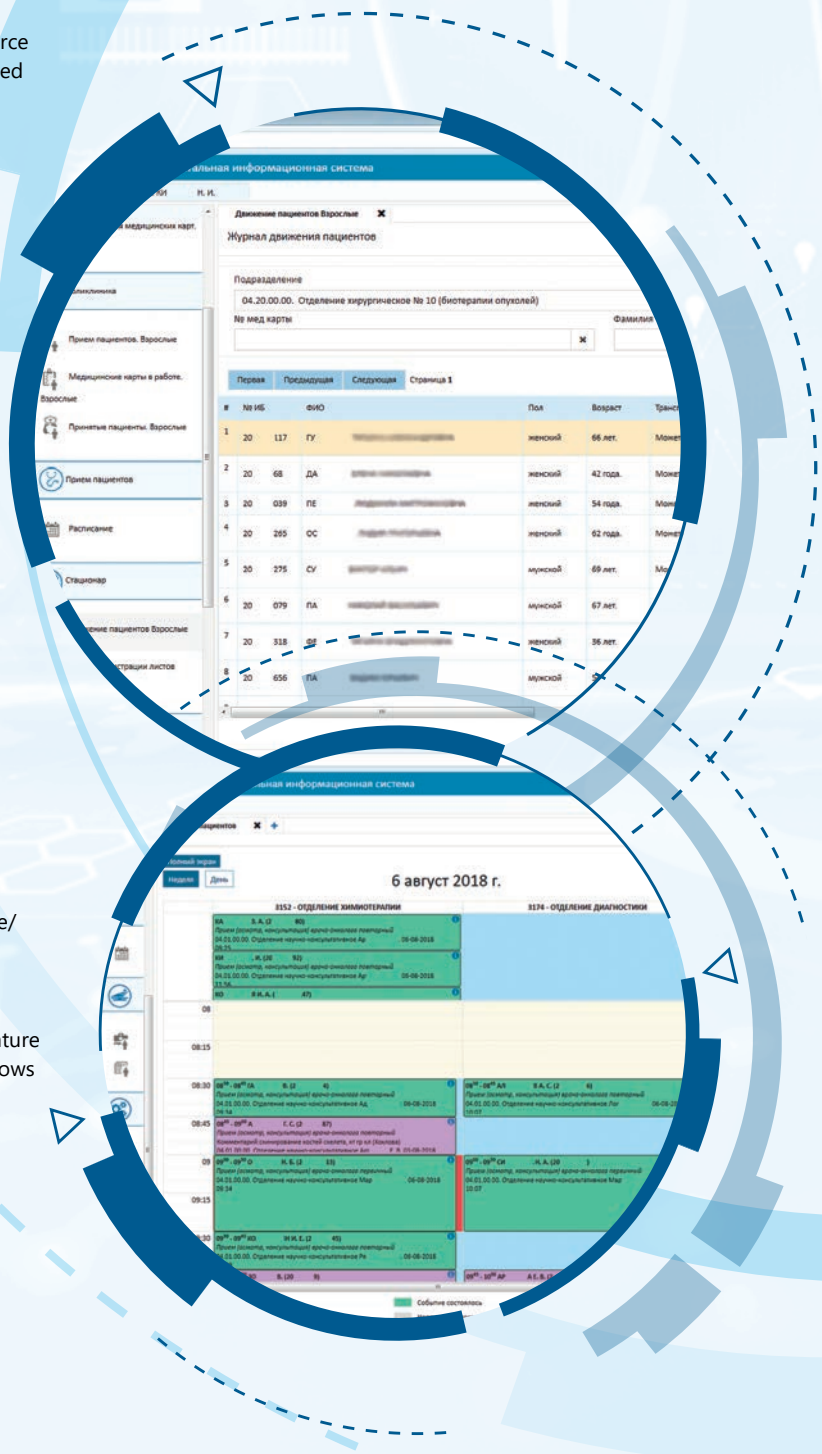
Structured templates for medical documents are configured by the user independently and use directories and a library of reusable blocks (diagnoses, referrals, etc.).

Electronic medical records are grouped into nodes of a configurable tree; the nodes are various types of medical records in accordance with the orders of the Ministry of Health (Outpatient Card F No. 025/u, Hospital Record F No. 003/u etc.).

The system enables search for medical records by type of service/ time/ doctor, as well as full-text search of EMRs for all medical records of a patient.

Each medical record is linked to a service listed in the Nomenclature of Medical Services of the Ministry of Health of Russia, which allows you to retrieve any statistics and prepare reports based on primary data.

A versioned system of regulatory and reference information is supported, which guarantees the invariability of historical data when entering new versions of directories and classifiers.



STANDARDS AND REGISTER

The module for registration of healthcare standards allows you to follow federal and regional standards, in particular to maintain a list of services, drugs, medical supplies, blood components and medical nutrition, indicating their quantities, measuring units, and frequency of administration in accordance with the patient's model.

The Regional Oncology Register is designed to solve the problems of healthcare informatization in the Russian Federation and fully complies with the requirements of the Unified State Health Information System (USHIS) and does not contradict the order of the Ministry of Health of the Russian Federation No. 135.

Medical Information Systems transfer to the Register information about newly detected tumors in the form of notifications, about inpatient and outpatient treatment of the patient – in the form of relevant extracts, and about the fact and cause of death of the patient – in the form of a medical death certificate.

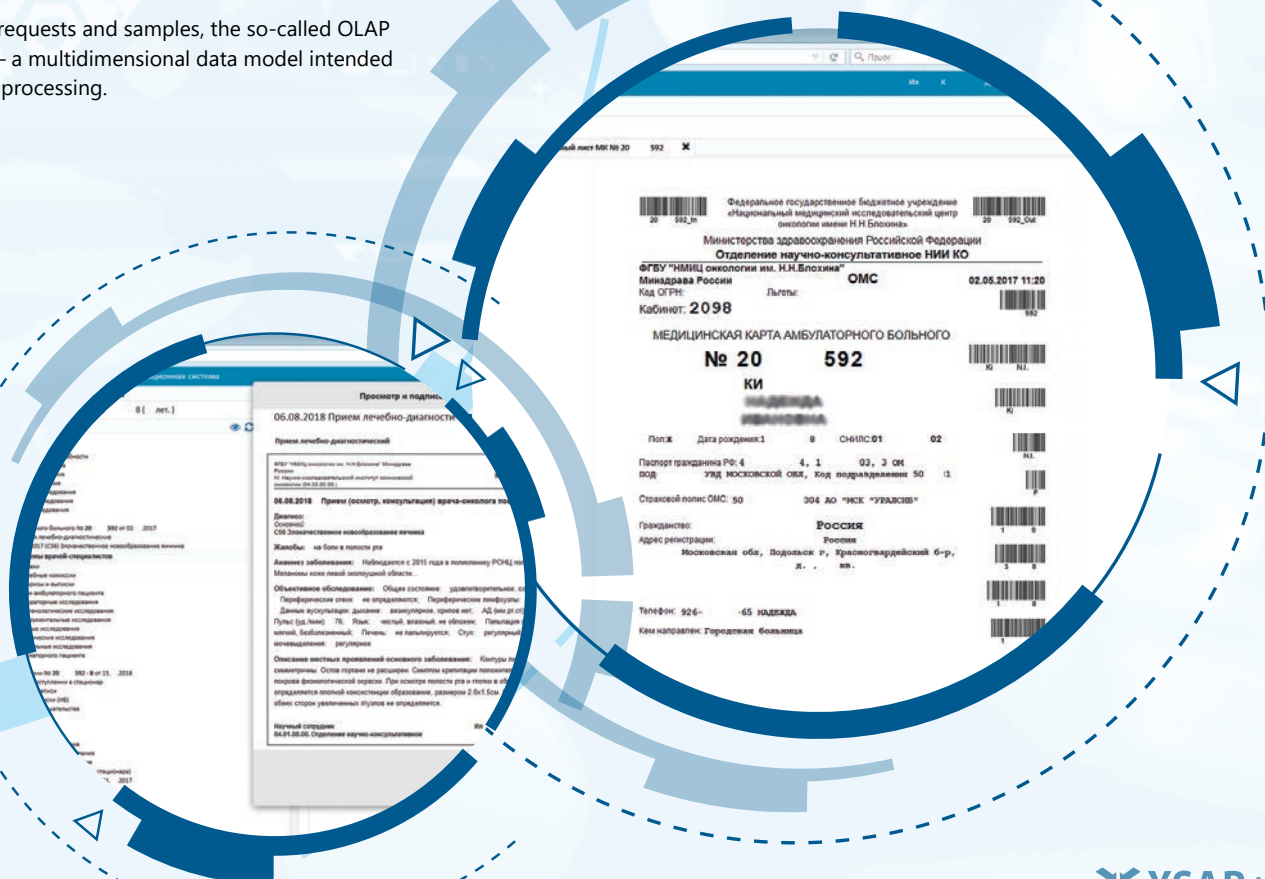
Information from documents undergoes the format and logical control and is included into the Register's database, linked to a specific patient.

From the EMR database, you can request data about the patient's visits to healthcare institutions that preceded the detection of an oncological disease; From the Regional Radiological System – reports on radiological examinations.

From the Laboratory Information System – results of laboratory tests.

Based on the primary data, according to the regulations, an anonymized population register is formed, which is then used to generate standard reporting forms.

For complex requests and samples, the so-called OLAP cube is built – a multidimensional data model intended for analytical processing.



Radiological digital information system with image archiving module (RIS+PACS)

The product enables the presentation, storage, processing and analysis of visual information coming from various types of diagnostic equipment (2D and 3D), with archiving function, and integrates with all information systems of healthcare institutions in the region using international exchange protocols.

Fully automates the work of diagnostic departments.

Works with any PACS using the DICOM protocol.

Functionality:

- research planning (timetables and working hours of offices, equipment, and specialists);
- all types of worklists (modality, pre-procedure, post-procedure, reporting, individual);
- accounting of services rendered (mandatory health insurance, high-tech medical care, paid services);
- automatic requests depending on the type of examination and patient – for allergy, pregnancy, intolerance of particular drugs, cumulative radiation dose for the period preceding the examination;
- DICOM SR support (structured reporting); integration with patient register according to HL7 protocol;
- integration with any MIS based on test referrals in accordance with IHE profiles.

Supports:

- autonomous work in a healthcare institution in a limited mode when temporarily disconnected from the data center;
- after reconnecting, automatic synchronization with the data center and transfer of all accumulated information.



INTEGRATION



- For the interaction of the Medical Information System with other external automated systems, international standards and protocols for the exchange of medical information are used.
- Integration with laboratory systems with support for full electronic document flow: «referral – collection of biomaterials – request to the laboratory – test result», in the form of electronic medical records.
- Integration with PACS – the diagnostician's workstation for generating examination reports with the link to the test in PACS.
- Built-in DICOM medical image viewer that allows you to open the image at any workstation, including the link specified by the diagnostician in the report with the test result.
- Integration with 1C-Salary and Personnel – the entire organizational and staff structure of a healthcare institution is synchronized with 1C, including personnel appointments and dismissals.

MULTIDISCIPLINARY TELE-HEALTHCARE

PURPOSE

The system of tele-healthcare consultations is designed to organize, conduct and analyze the results of diagnostic tests in accordance with international standards, providing for a multiple study of the data.

OBJECTIVES

To increase the availability of high-tech tests, secure provision of emergency consultations and reduce overlapping of diagnostic procedures.

To significantly improve the quality of surgical care, avoid medical errors and create a comprehensive knowledge database.

KEY FUNCTIONS

System core

- provides image reception by DICOM protocol;
- image stream receiving/processing service;
- entering of information into the database, distributed by levels of DICOM requests;
- test list management; provides the function of requests for selected fields to remote stations.

Workstation

- creating, saving, editing of consultation requests;
- receipt, storage, and processing of consultation requests and feedback;
- appointment of responsible consulting doctor;
- tracking the consultation status;
- integration with RIS/ PACS;
- communication with MIS.



INTEGRATED SCREENING PROGRAM

The introduction of the technology will make it possible to improve the screening process within a shorter time by way of standardizing, assessing the specialists' work quality at all stages of routing of the examined patients, and generating recommendations depending on the results.

The system of description of recommendations and statistics consists of a system platform and formalized test description protocols.

The system platform allows to:

- transfer medical data between healthcare institutions;
- store medical data in one archive;
- remotely carry out independent second and third reviews;
- access educational databases from remote workstations;
- generate statistical reports on any data entered into the formalized test description protocols;
- assess the quality of screening programs at all stages;
- create a single national register of patient data.

The system integrates with the radiological archive and the hospital information system.

The formalized protocol, due to the standardization of data in accordance with generally accepted BI-RADS standards, allows to facilitate and accelerate the activities of the X-ray diagnostician, as well as to improve the quality of description of X-ray patterns.

Automated screening using the SORS system:

- speeds up the processing of test results at each stage of image description;
- reduces the time between views;
- carries out later views in independent mode;
- conducts educational process at workplace.



MULTIFUNCTIONAL MOBILE SOLUTION

- Special configuration for medical tasks
- Touch height adjustment
- Battery life up to 4 hours
- Remote status monitoring
- Integration with medical systems
- Connecting to a wired | wireless network
- Video recording from operating cameras, endoscopic equipment, etc.
- Two streams video broadcasting
- Editing recorded video material
- Sending to the server in DICOM format
- Viewing 2D | 3D medical images



ALL-INCLUSIVE ENGINEERING SOLUTIONS

YSAR+ performs full range of works - services for the implementation of network and telecommunication systems, including digital telephone exchanges, «smart home» systems, scheduling engineering equipment, video conferencing systems, access control and management systems; as well as the development of design documents, logistics, installation, commissioning, after-sales service, and training, including:

- audit and pre-project inspection of networks and information infrastructure of the site;
- design of future information systems, including based on active network and server equipment from leading world manufacturers;
- preparation and approval of necessary documents;
- configuration and delivery of optimal equipment;
- validation of the system and its components;
- specific testing of complex equipment for compatibility and fault tolerance;
- installation and commissioning of hardware and system software;
- commissioning of information systems, local area networks and active equipment;
- technical maintenance and support;
- warranty and after-sales service;
- consulting Customers.



YSAR+ projects have been repeatedly tested by regional and federal centers of expertise (similar to GlavMosexpertiza).

ENDOSCOPY SOFTWARE PACKAGE

The «Endoscopy» hardware and software complex is intended for displaying, processing and analysis of multimedia data obtained from analog and digital endoscopic equipment during endoscopic examinations, as well as for the exchange of information via the DICOM protocol with other workstations or servers included in the system of a healthcare institution.

The video signal from medical equipment is digitized using the Endoscopy system for the following types of endoscopic examinations: esophagogastroscopy, bronchoscopy, colonoscopy, laryngoscopy, rectoscopy, cystoscopy, laparoscopy, colposcopy (colposcope with camera).



INTEGRATED LOW-CURRENT SYSTEMS

YSAR+ provides a full range of works on design and supply of equipment and materials, installation, commissioning and maintenance of the following systems:

- structured cabling system (SCS) to ensure the functioning of a LAN (Internet) and telephony;
- local area network (LAN);
- telephone communication system with the possibility of organizing urban telephone communications (CS);
- medical information system (MIS);
- electric clock system (EC);
- broadcast television and wired radio (RT);
- ward communication and alarm system (WCA);
- tele-healthcare technology system (TTS);
- CCTV system;
- access control system (ACS);
- video surveillance system;
- engineering equipment scheduling system;
- fire alarm system (FAS);
- burglar alarm (BA);
- fire warning and evacuation management system (FWEMS);
- conference room communication system;
- automatic fire protection (AFP).



REGIONAL PROJECTS

YSAR+ JSC is actively involved in the implementation of tasks to introduce innovative digital solutions for the national health care project.

The accumulated experience and competencies resulted in a systematic and integrated approach to the formation and development of regional healthcare informatization programs and their integration into federal information, analytical and educational networks.

Federal State Budgetary Institution Radiology Research Center of the Ministry of Health of the Russian Federation, as the leading institution in the industry, supports the introduction of tele-healthcare technologies offered by YSAR+ JSC in the processes of early diagnosis (screening) and patient treatment.



The oncological screening software and hardware complex developed by YSAR+ JSC is installed at the National Center for Reproductive Organs Oncology, which is located on the territory of the Radiology Research Center.

«The hardware and software complex automates the activities of diagnosticians in accordance with international standards, transfers medical data from mobile systems to stationary facilities for analysis and archive storage, and also allows to evaluate the quality of screening at all stages – and all this remotely» – noted Chief Mammologist of the Russian Federation N.I. Rozhkova – Head of the National Center for Oncology of Reproductive Organs.

INTERNATIONAL COOPERATION

Within the framework of the international activities of the Company, work is being carried out to promote the latest high-tech solutions of YSAR+ JSC in such European countries as Germany, Cyprus, Serbia, Bosnia and Herzegovina, Greece, Sweden, Northern Macedonia and Bulgaria, and countries of Southeast Asia (Singapore, Cambodia, Indonesia, Malaysia), the CIS (Armenia, Kazakhstan, Azerbaijan, Uzbekistan, Kyrgyzstan), as well as in the Middle East and Africa (Jordan, Mozambique, Morocco, United Arab Emirates, Tanzania).

The innovative technology «System of Description of Recommendations and Statistics», which provides automation of the diagnostic process and supports decision-making by the doctor, is in great demand among international clients.

High level of expertise of the solution, and compliance with international standards explain genuine interest of the medical community in the technologies offered by YSAR+ JSC.



STRATEGIC PARTNERSHIP

In cooperation with manufacturing and industrial companies, YSAR+ JSC carries out a wide range of integrated research, development, production, organizational and business activities.

Cooperation with leading Russian state corporations and enterprises, such as ROSTEC, Kraftway, Shvabe, has long-term perspectives; the combined research and production potential of these companies is aimed at implementing high-tech projects in the field of healthcare.

At the instruction of the President of Russia and in the framework of the program of the Ministry of Health of Russia aimed at developing a network of perinatal centers in the regions of the Russian Federation, the State Corporation Rostech acted as a customer for the design, construction and equipment of 15 perinatal centers. YSAR+ JSC and its partners ensured the equipping of the centers with high-tech equipment and software systems.

YSAR+ JSC is a member of the Russian-Singapore Business Council. The sphere of strategic interests of RSBC and YSAR+ JSC covers international projects in the field of promotion of domestic innovative technologies at foreign markets.



Ростех

 **Швабе**
Основано в 1837 году

 **YSAR+**
www.eng.yusar.ru

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Bryansk



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«Брянские городские больницы №1»
(ГБУЗ «ГБ №1»)
Камочина ул., д. 11, Брянск, 241035
Тел. (4832) 516145, факс (4832) 51-63-83, e-mail: hplbryansk@mail.ru
ОКПО 01918869, ОГРН 1023201066887, ИНН/КПП 3201000510/325791001

В комплекте
АО «ЮСАР»

ОТЗЫВ

о проделанной работе

Компанией АО «ЮСАР» за успешное внедрение и пернатальное автоматизированной системы удаленных телемедицинских консультаций.

Внедрение системы позволит специалистам центра оперативно и квалифицированные консультации ведущих экспертов в рамках учреждений федерального уровня. В рамках системы развернут удаленный центр телемедицины, который обеспечит специалистам центра возможность оказания удаленных консультаций по всей Брянской области.

Специалистами АО «ЮСАР» были выполнены монтажные и пуско-наладочные работы по установке программно-аппаратного комплекса телемедицины, который включает в себя серверную часть, автоматизированные рабочие места и специализированное оборудование для трансляции информационного потока из операционной. К телемедицинскому комплексу подключено диагностическое оборудование, которое обеспечивает работу в режиме реального времени с помощью специального программного обеспечения, разработанного АО «ЮСАР».

Хотю поздравить компанию «ЮСАР» за оставшиеся на достигнутом, востановить совершенствовать свой потенциал. Рассчитываю на продолжение успешного сотрудничества для реализации планов по дальнейшему региональному развитию!

Заместитель главного врача
по акушерско-гинекологической помощи *А.П. Куличкина*



ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ УЧРЕЖДЕНИЕ
«РЕСПУБЛИКАНСКИЙ КЛИНИЧЕСКИЙ ПЕРИНАТАЛЬНЫЙ ЦЕНТР»
386460, г. Назрань, территория Назрань-Юртовской агломерации, ул. Коммунальная, 76, Е-mail: gk@ngs.gov.ru
на № 13 от 20.05.2021 Директору АО «ЮСАР» С.Ю. Роговскому

Глубокоуважаемый, Сергей Юрьевич!

В рамках реализации федеральной программы развития перинатальных центров, компания «ЮСАР» приняла участие в комплексном обследовании современных медицинских технологий.

Компанией «ЮСАР» обеспечена внедрение и пернатальное автоматизированной системы удаленных телемедицинских консультаций.

Специалистами АО «ЮСАР» были выполнены монтажные и пуско-наладочные работы по установке системы озвучивания, системы контроля управления доступом и программно-аппаратного комплекса телемедицины, включающего в себя серверную часть, автоматизированные рабочие места и специализированное оборудование для трансляции информационного потока из операционной. К телемедицинскому комплексу подключено диагностическое оборудование, которое обеспечивает работу в режиме реального времени с помощью специального программного обеспечения, разработанного АО «ЮСАР».

В рамках системы развернут региональный центр телемедицины, и обеспечена возможность подключения ГБУЗ «Сургутская ЦРБ». Также республиканские специалисты АО «ЮСАР» участвуют в работе республиканского центра телемедицины, который обеспечивает консультации специалистов федерального уровня, которые при необходимости оказывают местным специалистам квалифицированную помощь по сложным случаям.

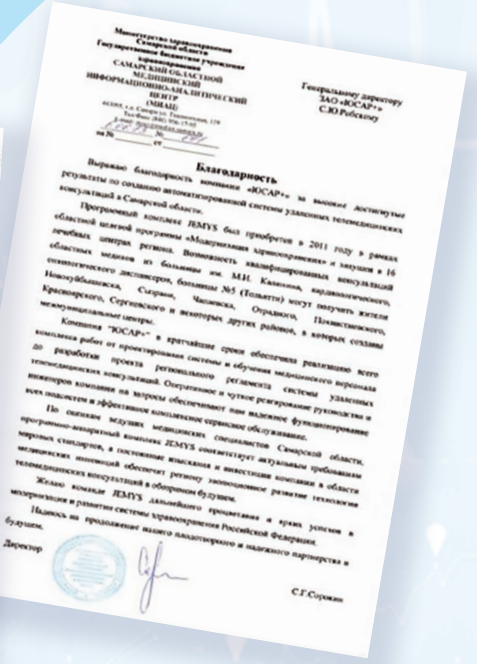
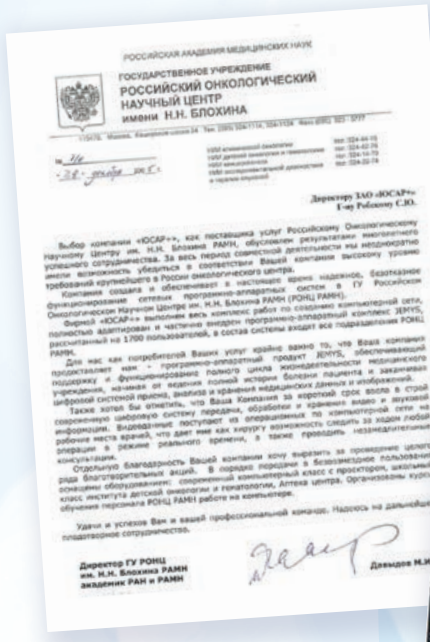
Выражаю благодарность коллективу Вашей компании за успешное проведение работы и надеюсь, что система телемедицинских консультаций будет успешно развиваться и работать на благо жителей Республики Ингушетия.

Государственный врач *В.С. Ступин*
В.С. Ступин



Nazran

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YSAR+ JSC

108814, Moscow, Russia,
23rd km of Kaluzhskoye Road
Estate 14, Building 3
8-800-222-75-67
info@yusar.ru
www.yusar.ru

