30th ANNIVERSARY

NITA | CONTROLLING THE FLIGHT

NEW INFORMATION TECHNOLOGIES IN AVIATION

For more than 30 years we have been equipping aviation industry enterprises with up-to-date innovative solutions to control air traffic, to control and to plan flights, and to train aviation professionals.

Taking part in solving the most important tasks for modernization of the air navigation system of Russia and the CIS countries, we are constantly working hard to develop new solutions in accordance with international standards.

We are proud that our systems meet the world class of equipment and automation of processes in the air navigation system so that we make a worthy contribution to ensuring flight safety in the Russian Federation and abroad.

In the person of our company, you will find reliable partner for long-term fruitful cooperation.

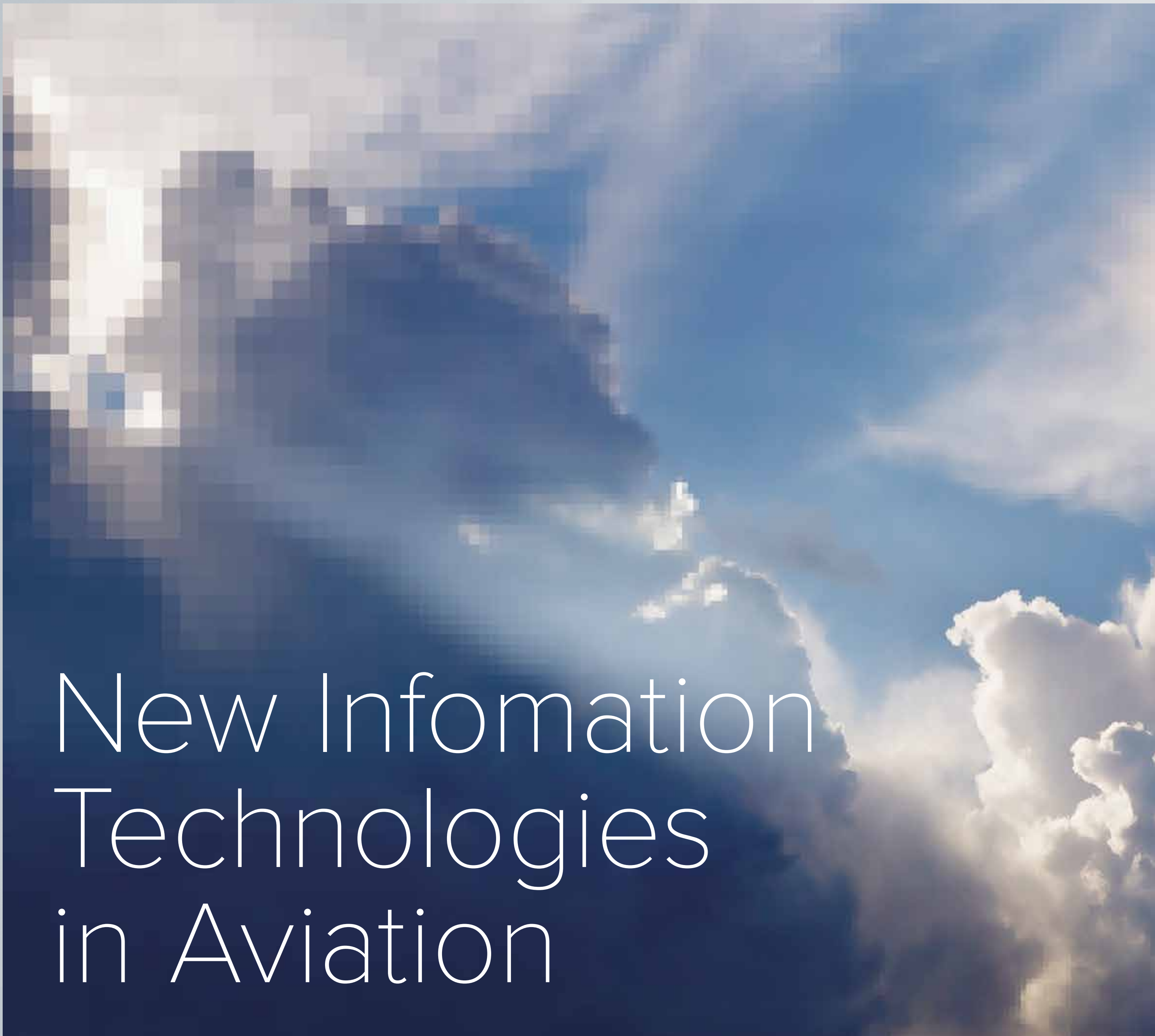
30th ANNIVERSARY

NITA

For many years NITA has been involved in implementation of all CNS/ATM elements:

- delivery of communication, navigation, and surveillance systems
- development of special (application) software
- ATM/ATC centers equipment
- supply of simulators and training systems
- design of aviation-related buildings and structures
- production and construction of modular buildings
- multi-purpose software development

NITA is licensed for development, production, and maintenance of aviation-related equipment, for development of information security tools including protection of confidential information, as well as for engineering survey, facilities design and construction.



New Infomation Technologies in Aviation

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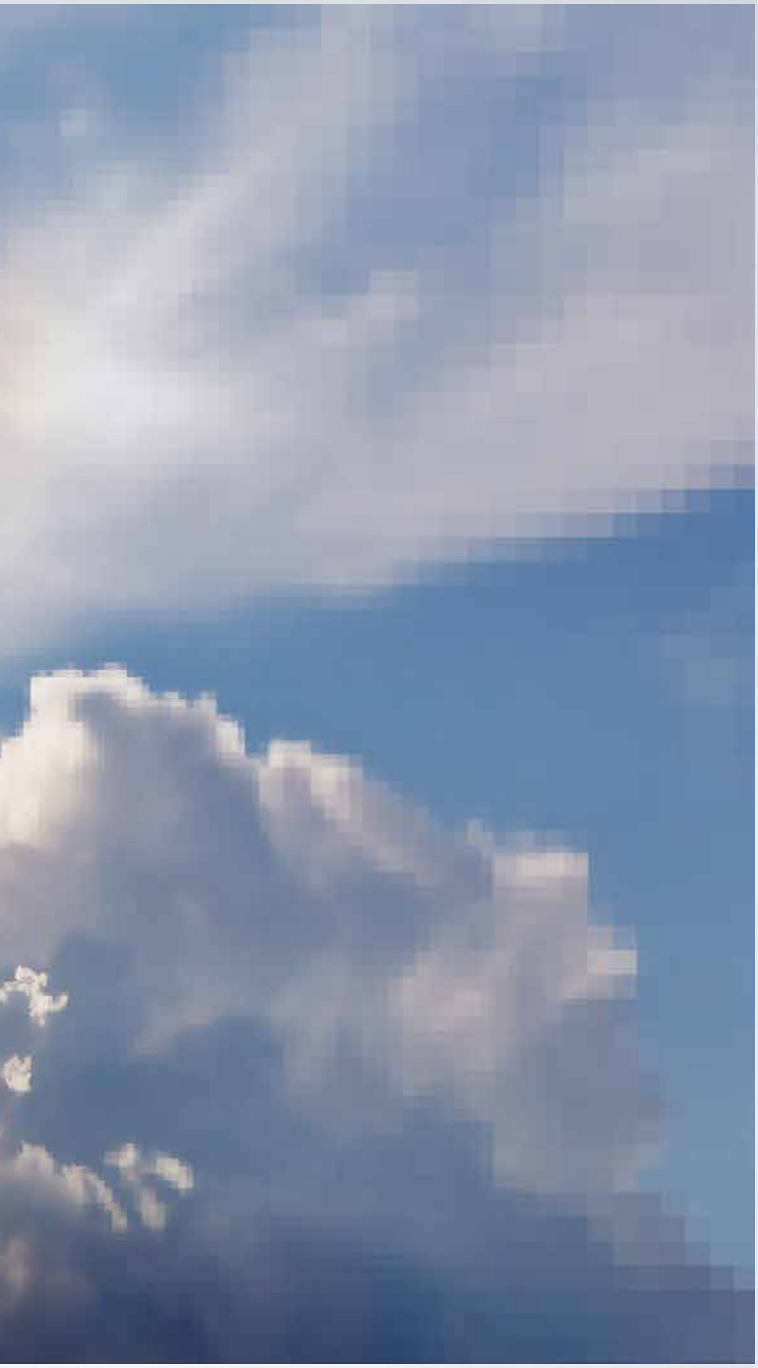


НИТА

>80%

OF THE RUSSIAN FEDERATION AIRSPACE IS CONTROLLED USING THE SYSTEMS PRODUCED BY NITA

HIGH TECH SOLUTIONS AND 30 YEARS OF EXPERIENCE

NITA IS ONE OF THE LEADING RUSSIAN RESEARCH AND DEVELOPMENT COMPANIES IN THE FIELD OF CIVIL AND STATE AVIATION, THE SUPPLIER OF TECHNICAL SOLUTIONS FOR AIR TRAFFIC MANAGEMENT SYSTEM (ATM).

Successful cooperation with the leading aviation industry enterprises, state-of-the-art technologies, integrated approach, and 30 years of experience enable us to handle tasks of any degree of complexity, and to offer the best solution for any customer.

Hardware and software appliances produced by NITA operate in more than 380 aviation enterprises, ATM centers, educational institutions of Russia and other countries.

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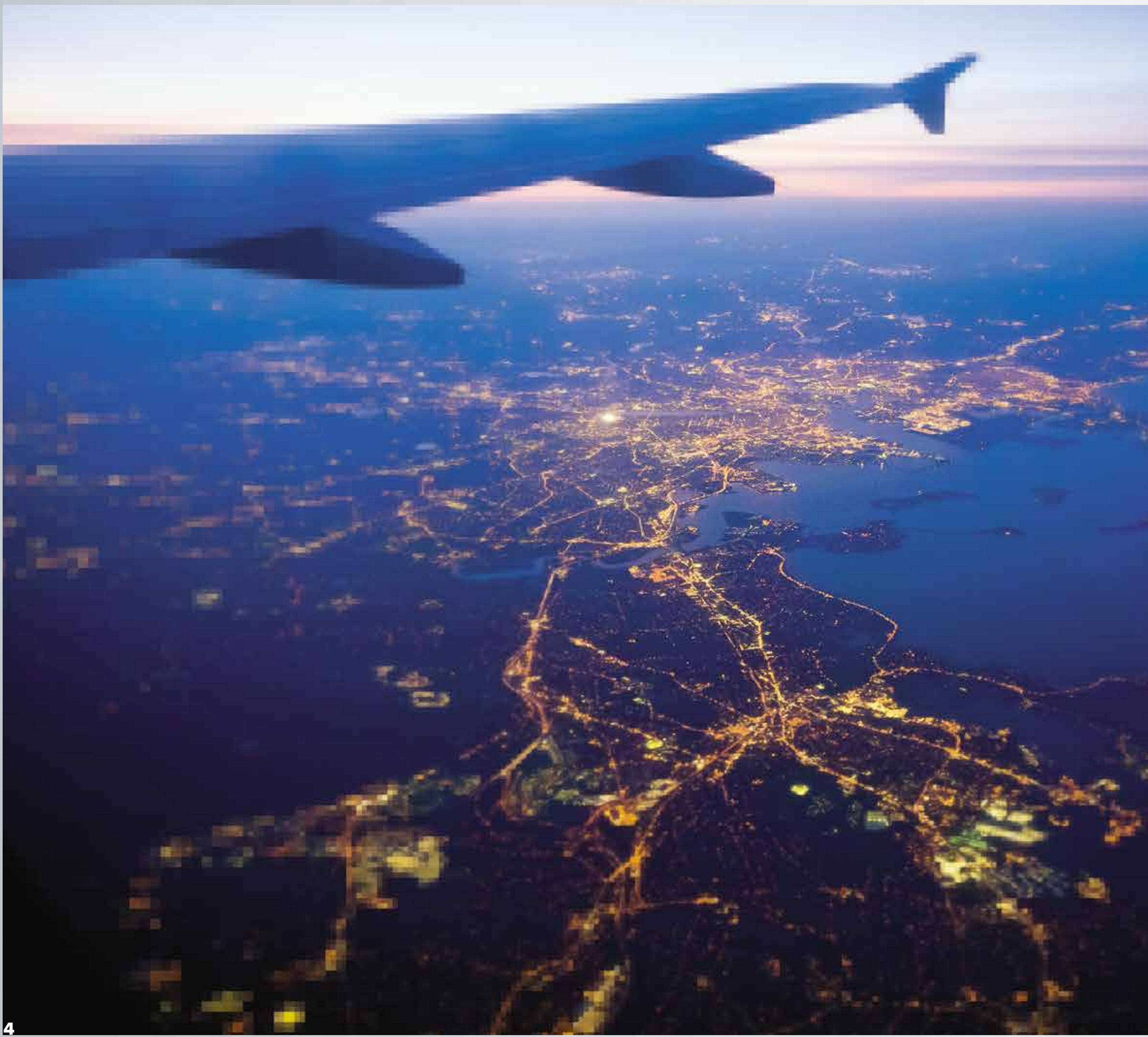
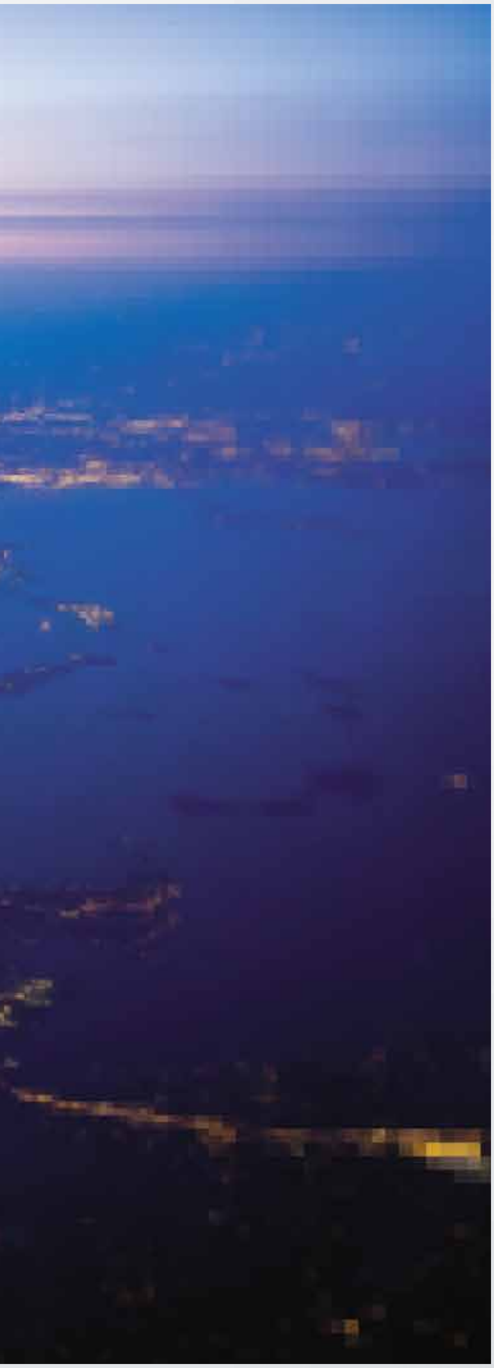
ATC CENTERS USE THE AUTOMATED COMPLEXES DEVELOPED BY THE COMPANY



AIR TRAFFIC MANAGEMENT SOLUTIONS



NITA IS FOCUSED ON THE DEVELOPMENT AND SERIAL PRODUCTION OF EQUIPMENT AND SOFTWARE FOR AIR NAVIGATION SYSTEM

Complexes and systems are customized and successfully operated in ATM centers of various air traffic intensity: from small-scale airfields to consolidated ATM centers.

All equipment conforms to higher level of automation according to classification of FAR for radio navigation equipment, and is developed in compliance with ICAO and Eurocontrol standards and recommendations.

ALPHA AIR TRAFFIC MANAGEMENT SYSTEM

ALPHA ATM system is designed for flight data processing, airspace management, and air traffic services in consolidated ATM centers. The subsystems included in ALPHA ATM system are based on series products thus providing for configurations of any degree of complexity in the shortest possible time, for customization of the systems according to particular specification requirements, and to provide further extension and modification.

The system uses:

- high-performance hardware and computers by leading global manufacturers
- application software of in-house design
- triple redundancy for local area networks and key nodes to provide highest level of automation, reliability, and fault tolerance.

The system is provided with interfacing to numerous data sources:

- air traffic information
- weather data
- communication networks
- data links, etc.

Automated interaction with adjacent and institutional systems is implemented.

Built-in information security tools provide for data integrity and protection against unauthorized access in accordance with preset level of data security.

ALPHA COMPONENTS

ALPHA ATC SYSTEM

provides for receipt and processing of surveillance data, flight plan data, and weather, navigation, and mapping information, 4D trajectory development, integrated air traffic situation display, flight safety monitoring, and output of corresponding prompts and warnings to ATC controller.

EXPERT FULL ATC SIMULATOR

is designed for ATC controllers training and retraining as related to radar, non-radar, and visual control, to maintain professional skills, to practice abnormal and emergency procedures, and to prepare changes in airspace structure, and arrival/departure procedures.

GRANIT RECORDING SYSTEM

provides continuous recording of voice, radar, direction funding, FDP data, weather data, controller actions, video flows from IP-cameras and workstation screens, and simultaneous playback of the above data to provide live monitoring.

MEGAPHONE VOICE COMMUNICATION SWITCHING SYSTEM

is designed to arrange ground loudspeaker and telephone communications, to control air-ground and ground-ground radio communications, and to provide access to external communication networks and lines both by standard and specific civil aviation telecommunications interfaces.

LADOGA DATA DISTRIBUTION SYSTEM

is designed for acquisition, format conversion, multiplexing/ demultiplexing and transmission of data from radars and transceivers to ATC centers as well as for data exchange between ATM centers.

CONSULTANT REFERENCE SYSTEM

is designed to generate, maintain and provide access to various types of weather, air navigation, reference data and supplemental information (aircraft data directories, airports, airlines directories, regulatory documents, manuals, phone directories, maps, charts, etc.).

AMETIST D-ATIS/D-VOLMET SYSTEM

provides for automated generation and transmission of weather reports, airfield and bird hazard reports with regard to aerodromes to aircraft crews on-air and/or by digital data communications.

PLANETA FLIGHT DATA PROCESSING SYSTEM

is designed to automate processes of strategic, pre-tactic and tactical airspace management planning.

SFERA DATA PROTECTION SOFTWARE

provides data integrity, and prevents unauthorized access to information in storage and processed by the hardware-software systems.

METRONOM PRECISE TIMING SYSTEM

provides universal time for all ATM systems, other digital systems and complexes, and their synchronization to a high precision.

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SIMULATORS AND TRAINING PROGRAMS INSTALLED BY NITA

SIMULATORS AND TRAINING SYSTEMS

NITA IS ONE OF THE LEADERS OF RUSSIAN ATC SIMULATION COMMUNITY.

FULL ATC SIMULATORS PROVE THEIR EFFICIENCY IN ATC STAFF TRAINING BOTH IN RUSSIA AND ABROAD.

The company is also involved in development of basic systems for up-to-date flight simulators with the use of new IT solutions. The systems and components designed are supplied and used for production of airplane and helicopter simulators.

EXPERT FULL ATC SIMULATOR

IS DESIGNED FOR ATC CONTROLLER INITIAL TRAINING AND RETRAINING AS RELATED TO RADAR, NON-RADAR AND VISUAL CONTROL, TO MAINTAIN PROFESSIONAL SKILLS, AND TO PRACTICE ABNORMAL AND EMERGENCY PROCEDURES. THE BASIC MODULES OF THE SIMULATOR ARE RADAR CONTROL MODULE AND TOWER MODULE.

Radar module enables simulation of situation environment for ATC personnel training. The simulator is designed for ATM centers to test and develop professional skills, and for initial training in educational institutions. Maximum configuration of a module for 90 workstations is implemented in Moscow Consolidated ATM Center.

More than 100 aircraft and helicopter visual models of various types with international and local airlines livery, various models of ground vehicles, people, and animals are used in Tower simulator module. Summer and winter, day and night, snow and rain, fog and thunderstorm are simulated to provide realistic visual environment. Training in process is recorded to enable further playback of exercise together with voice recording for the purpose of monitoring and analysis of the training process. Visual representation for Tower module may vary from 180° up to 360° depending on customer needs and room space.

EXPERT ATC Simulator is successfully operated both in Russia and abroad: for instance, a module with 360° visual system is installed in DHMI Training Centre (Ankara, Turkey), and exclusive to Lithuania ATC training simulation system is made based on EXPERT ATC Simulator in Antanas Gustatis Aviation Institute (Vilnius, Lithuanian Republic).

FULL FLIGHT SIMULATOR OF L-410 AIRCRAFT

The flight simulator of L-410 UVP-E20 airplane with N-80-200 engines is designed for training in piloting, navigation, and operation of onboard systems and equipment.

The simulator complies with ICAO requirements to accuracy of aircraft performance simulation applied to the fifth qualification level of flight simulators (ICAO Doc. 9625-AN/938, third edition).

The materials of flight tests performed by Aircraft Industries and the State Research Institute of Civil Aviation were used for development of the simulator QTG.

Qualification testing of the simulator was performed by the Aviation Certification Center of the State Research Institute of Civil Aviation with the use of QTG.

NAVIGATION AND SURVEILLANCE SYSTEMS

FOR MORE THAN 25 YEARS NITA HAS BEEN DEVELOPING NAVIGATION AND SURVEILLANCE SYSTEMS AND TECHNIQUES IN LINE WITH ICAO CONCEPT FOR NEW CNS/ATM TECHNOLOGIES IMPLEMENTATION USING GLONASS/GPS GLOBAL NAVIGATION SATELLITE SYSTEMS AS WELL AS ADS-B TECHNOLOGY.

SONAR ADS-B 1090ES GROUND-BASED STATION

is designed for surveillance of aircraft and ground vehicles equipped with 1090ES ADS-B transponders, and for digital processing and transmission of surveillance data to Air Traffic Control centers.

MARKER 1090 ES RADIO BEACON

All-weather small-size ground-based 1090ES ADS-B radio beacon provides generation of positioning data using GPS and GLONASS GNSS signals to transmit status, current position, and speed data on 1090 MHz (DF=18) channel.

SOZVEZDIE MULTILATERATION SYSTEM

is a network of ground-based receiver stations including central processor, and interrogator of A/C/S modes.

Multilateration system is designed for surveillance of aircraft and other traffic equipped with transponders of A/C/S modes and ADS-B 1090ES on airfield surface, within terminal area, and en-route.

ORBITA GBAS STATION

is used at airfields as a source of differential corrections to global navigation satellite systems to provide final approach, approach, and landing procedures according to ICAO category I.

PULSAR-N GROUND-BASED ADS-B VDL MODE 4 STATION

is designed for automatic dependent surveillance of aircraft and other mobile objects basing on VDL mode 4 technology in accordance with ICAO standard (Doc 9816 AN/448).

Design versions:

- PULSAR-N communication, navigation, and surveillance station;
- PULSAR-K shipboard communication, navigation, and surveillance station.

PULSAR ADS-B VDL MODE 4 AIRBORNE TRANSPONDER

is designed for ADS-B surveillance of aircraft and other traffic basing on VHF data link (VDL) mode 4 in compliance with ICAO standard (Doc 9816 AN/448).

Design versions:

- PULSAR airborne transponder;
- PULSAR-M mobile transponder;
- PULSAR-RM portable transponder.

GELIOS ADS-B NETWORK SERVER

is a routing node of ADS-B network, and is designed for data switching between ADS ground-based stations and ATM systems.

MULTI-PURPOSE CONSOLES OF PULT-A SERIES

THE CONSOLES FOR ALPHA ATM SYSTEM WORKSTATIONS

The consoles of PULT-A series comply with GOST R State Standard requirements for ergonomics and industrial aesthetics of operator and ATC controller workstations, and with Sanitary Regulations and Norms for workplaces and ecological requirements.

Provide for:

- embedding of unified (standard 19” fastenings) and specific hardware
- arrangement of several displays (including 30”, 28”, 44”, 2K×2K, 2K×4K) adjustable horizontally and vertically
- installation of various controls
- changing desktop height promptly (option)

Designed for workstations in:

- ATC control and operator rooms
- control and situation centers
- command posts
- control offices of fast-response and emergency services

Design of the consoles may be customized depending on customer needs and considering specific features of installation site.

SOLUTIONS BASED ON MULTI-PURPOSE MODULES OF SEGMENT SERIES

WE OFFER SOLUTIONS BASED ON MODULAR BUILDINGS OF SEGMENT SERIES FOR AVIATION INFRASTRUCTURE FACILITIES IN VARIOUS CONDITIONS AND FOR PROMPT DEPLOYMENT OF MOBILE ATC UNITS


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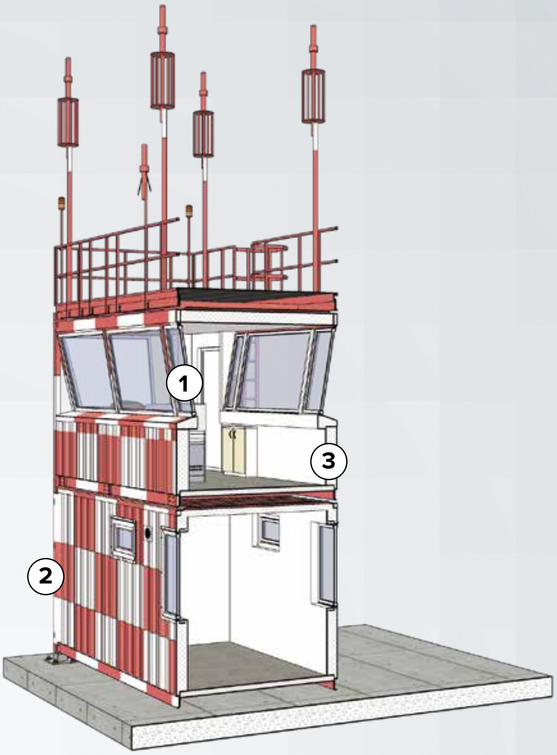


1. Non-glare panoramic window
2. Deformation-resistant robust all-welded frame
3. Floor and windows heating system

FUNCTIONALITY OF THE MODULES DEPENDS ON PROCESS EQUIPMENT INSTALLED AND DELIVERY SET

TOWER MODULE

to arrange visual and radar control workstations

WEATHER MODULE

to arrange weather observer workstations

LIVING QUARTERS MODULE

to arrange rest area for personnel

TECHNICAL CONTROL AND MONITORING MODULE

to place servers of the automated systems and workstations of radio communication and technical personnel on duty

MULTI-PURPOSE OR UNIVERSAL MODULE

when a module is used for several purposes

Modular buildings of Segment series are a set of multi-purpose modules based on 20-feet containers provided with specific equipment to enable fast erection of modular buildings in any regions and any climate conditions. The structure design provides maximum functionality.

Design features enable easy installation and dismantling of a building, transportation to a new installation site, functionality amendment by replacing equipment installed, multi-storey arrangement and of several modules in width including double-volume premises.

MODULAR BUILDINGS OF SEGMENT SERIES ARE MANUFACTURED AT IN-HOUSE PRODUCTION SITE WITH THE USE OF UP-TO-DATE EQUIPMENT AND ADVANCED TECHNOLOGIES

The modules delivery is provided within the shortest time possible and by any means of transportation.

It takes 1-2 days for installation of a building on a prepared site.

In order to equip the modules according to their purpose the basic equipment of own production is used, as well as navigation, communication, lighting, and weather equipment produced by third party manufacturers.

STANDARD SOLUTIONS

VISUAL CONTROL POST

is designed for airfields where visual surveillance and control are required. May be deployed for temporary or permanent operation.

TOWER MODULE

is designed for air traffic instrument control in terminal area.

MOBILE ATC TOWER

is designed for fast deployment at temporary operating airfields, landing, and other sites. Structure design of the Mobile Tower and basic equipment installed are adapted for supercharge load during repeated transportations, temperature variations, and fast deployment.

STANDBY CONTROL UNIT

is designed for complete backup of ATC unit (including ATM system in operation) in order to enhance reliability of air traffic services within responsibility area. Modular design makes it possible to build out and modify the premises in the shortest possible time when functional load increases.

SOLUTIONS BASED ON MODUL AVIA BUILDINGS

MODUL AVIA BUILDINGS ARE DESIGNED FOR CONSTRUCTION OF SITES OF VARIOUS APPLICATION WITH THE USE OF MODULE CONSTRUCTION TECHNOLOGY

MODUL AVIA buildings are designed:

- to construct buildings and structures using the technology of module construction
- to facilitate building process by unification and standardization of installation work
- to reduce labour effort and material consumption
- to reduce construction period and operating costs
- for reliable and safe operation
- to transfer construction works and specific processes of equipment assembly to factory conditions to exclude influence of weather
- to facilitate design due to generation of standard series of objects, and to introduce standard solutions and constructions of high degree of prefabrication
- to provide continuous improvement of competitiveness, adaptability, and quality of the products manufactured

MODUL AVIA design enables construction of buildings (structures) of any space and volume by connecting several products into a single construction system.

Room plans (location of partitions, openings, passages, stairs, windows, doors, equipment layout, etc.), composition and availability of engineering systems in a building (structure) are determined by customer technical specification.

The modules can be operated at temperature from -40° C up to +40° C and in seismically active regions reaching 7 of magnitude.

The process equipment of own production and by third party manufacturers is used to equip the modules.

COMPLEX SOLUTIONS

DEVELOPMENT OF AVIATION INFRASTRUCTURE OBJECTS REQUIRES SPECIFIC APPROACH TO DESIGN AND OUTFIT WITH PROCESS EQUIPMENT

Responding to demands of the industry NITA applies comprehensive approach and offers a whole range of services from pre-project inspection to commissioning and further maintenance.

Dealing with one contractor results in unified standards, proved delivery method, on-the-spot solution of logistics issues, and responsibility to customer for each stage of project implementation.

DESIGN, CONSTRUCTION, AND ENGINEERING SURVEY

NITA is highly experienced in solving tasks of

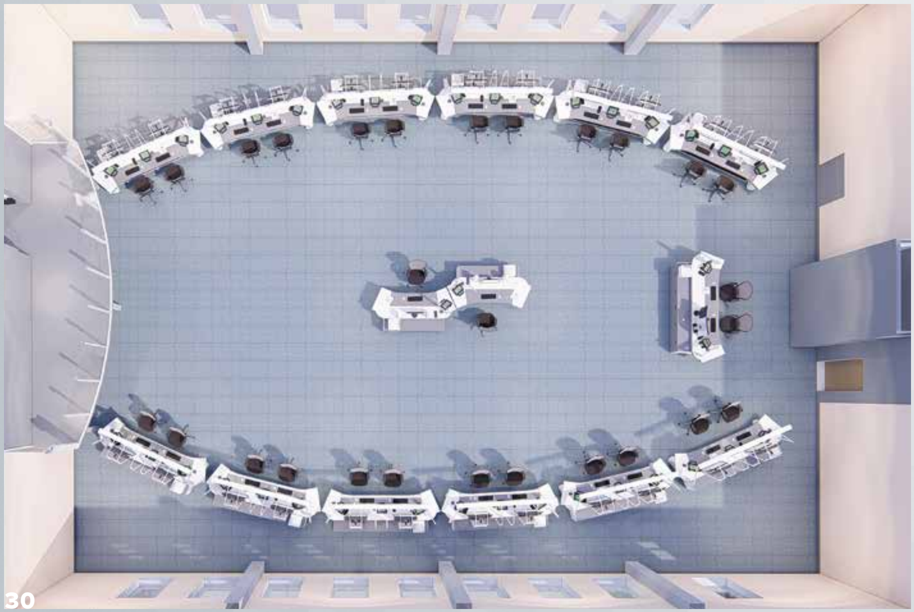
- pre-project inspection
- engineering survey
- development of design specifications and estimates
- support of the project developed in examining bodies
- development of detailed design documentation
- maintenance of the documents worked out at the stage of object construction and commissioning

Design objects:

- Towers
- Air Traffic Control units
- Lighting equipment
- Terminals
- Border inspection posts

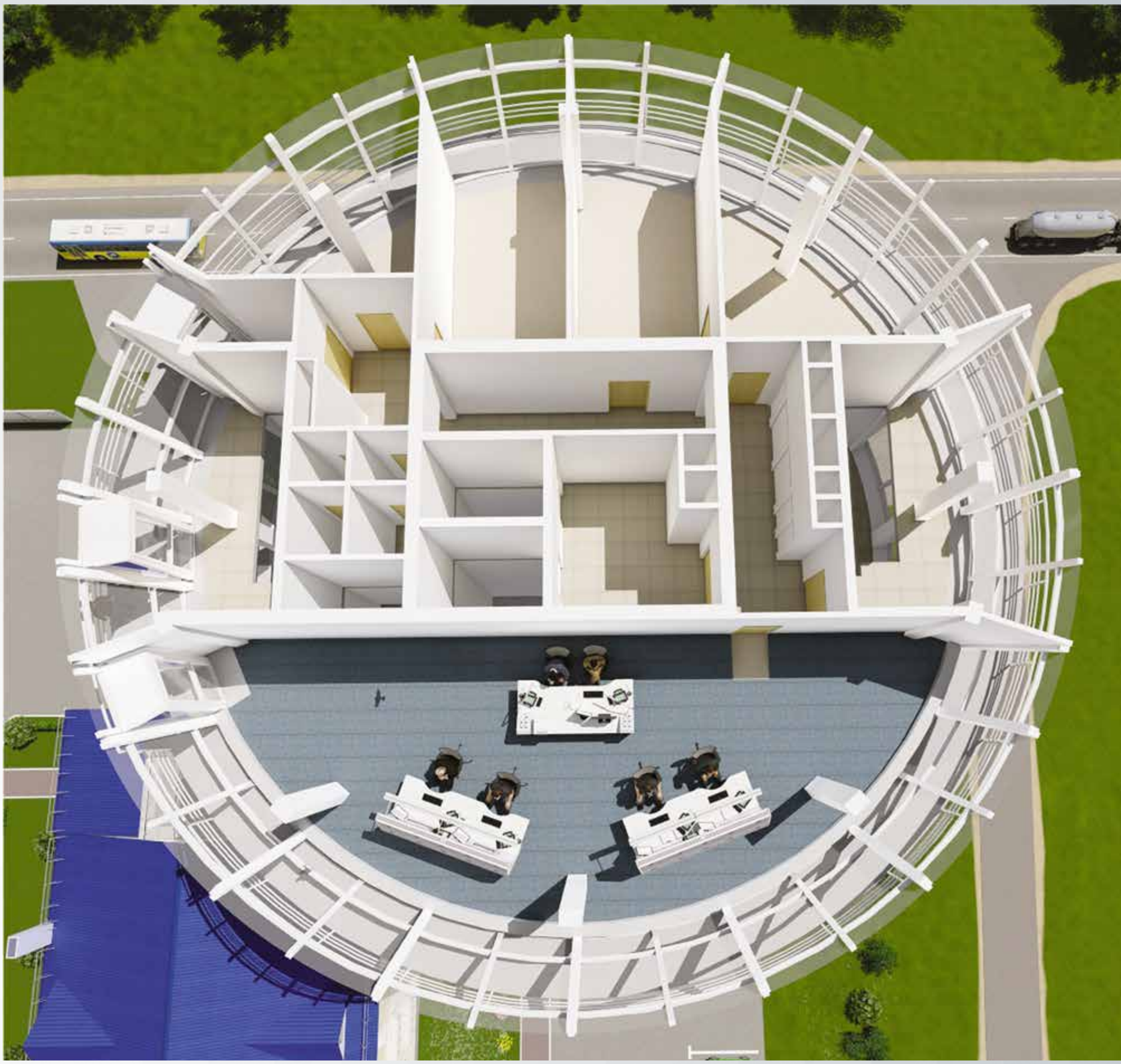
All the necessary information and documents can be provided to a customer in the course of work to reduce costs of project implementation and period of construction.

PROCESS DESIGN



NITA offers production design services to implement projects of various scale from helipads and small aerodromes to consolidated ATM centers.

Project development provides for selection of final engineering solutions for facility outfit: hardware and software,



layout of equipment, workstations, and utility networks of a building, equipment configuration.

Development of process engineering solutions and drawing up of documents for a project is carried out using up-to-date computer-aided design and visual systems.

CUSTOMER SUPPORT

Instruction and training are provided for the personnel on site for the rules and features of the equipment operation; warranty and post-warranty support is provided as well. Equipment in operation is regularly updated in accordance with new requirements of regulatory documents and advanced technological solutions.

SYSTEM INTEGRATION

CONSIDERING CUSTOMER INTERESTS IN ADDITION TO OWN-PRODUCED PROCESS EQUIPMENT OUR COMPANY OFFERS:

- navigation aids
- communication tools
- lighting equipment
- weather and other systems by third party manufacturers

NEW INFORMATION TECHNOLOGIES IN AVIATION

WE ARE INTERESTED IN CONTINUAL IMPROVEMENT AND INCREASING CAPABILITIES OF THE PRODUCTS CONSIDERING FEEDBACK AND RECOMMENDATIONS GIVEN BY THE SPECIALISTS DURING EQUIPMENT OPERATION FOR THE PURPOSE OF UPGRADE AND DEVELOPMENT OF NEW ITEMS.

30th ANNIVERSARY

NITA

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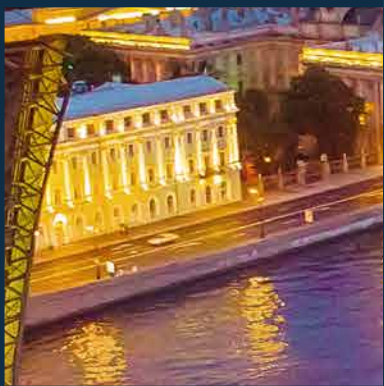

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