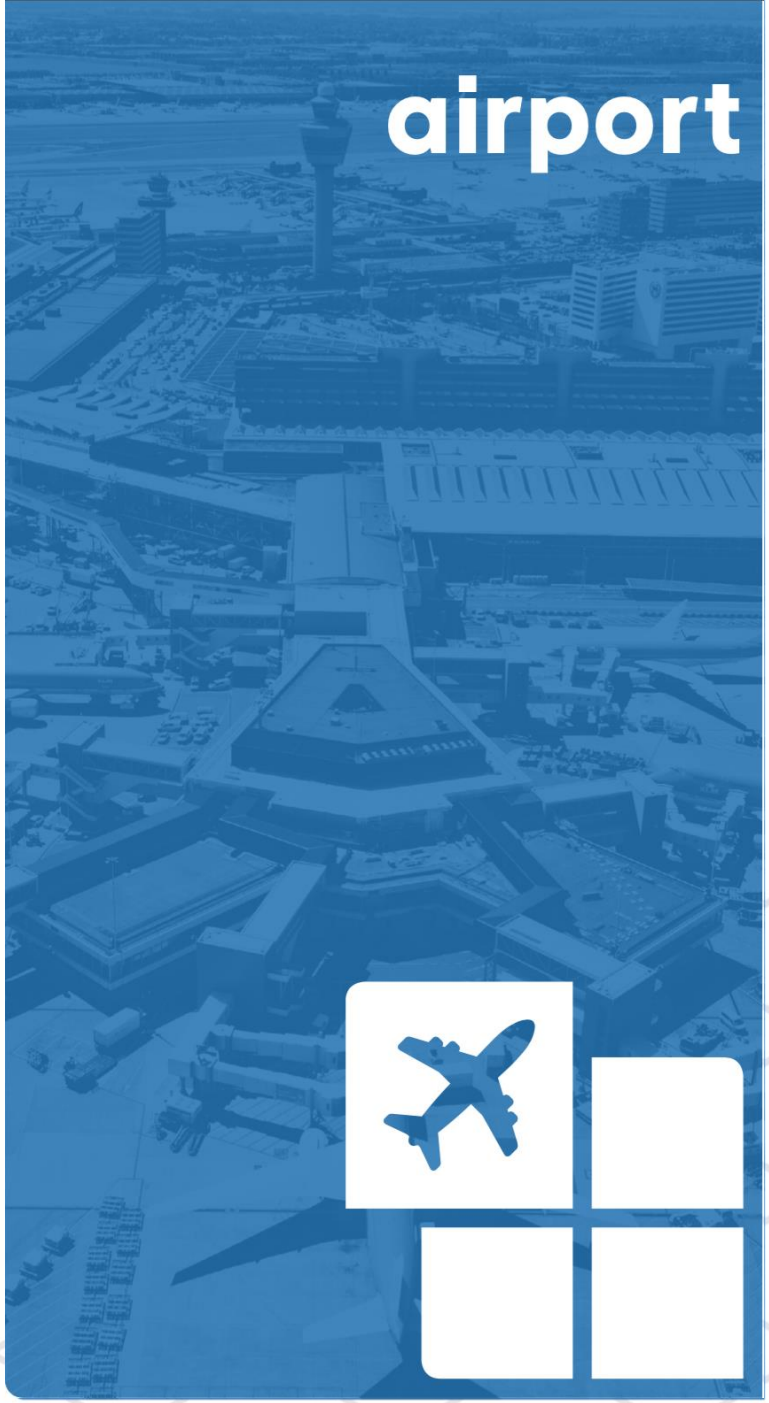
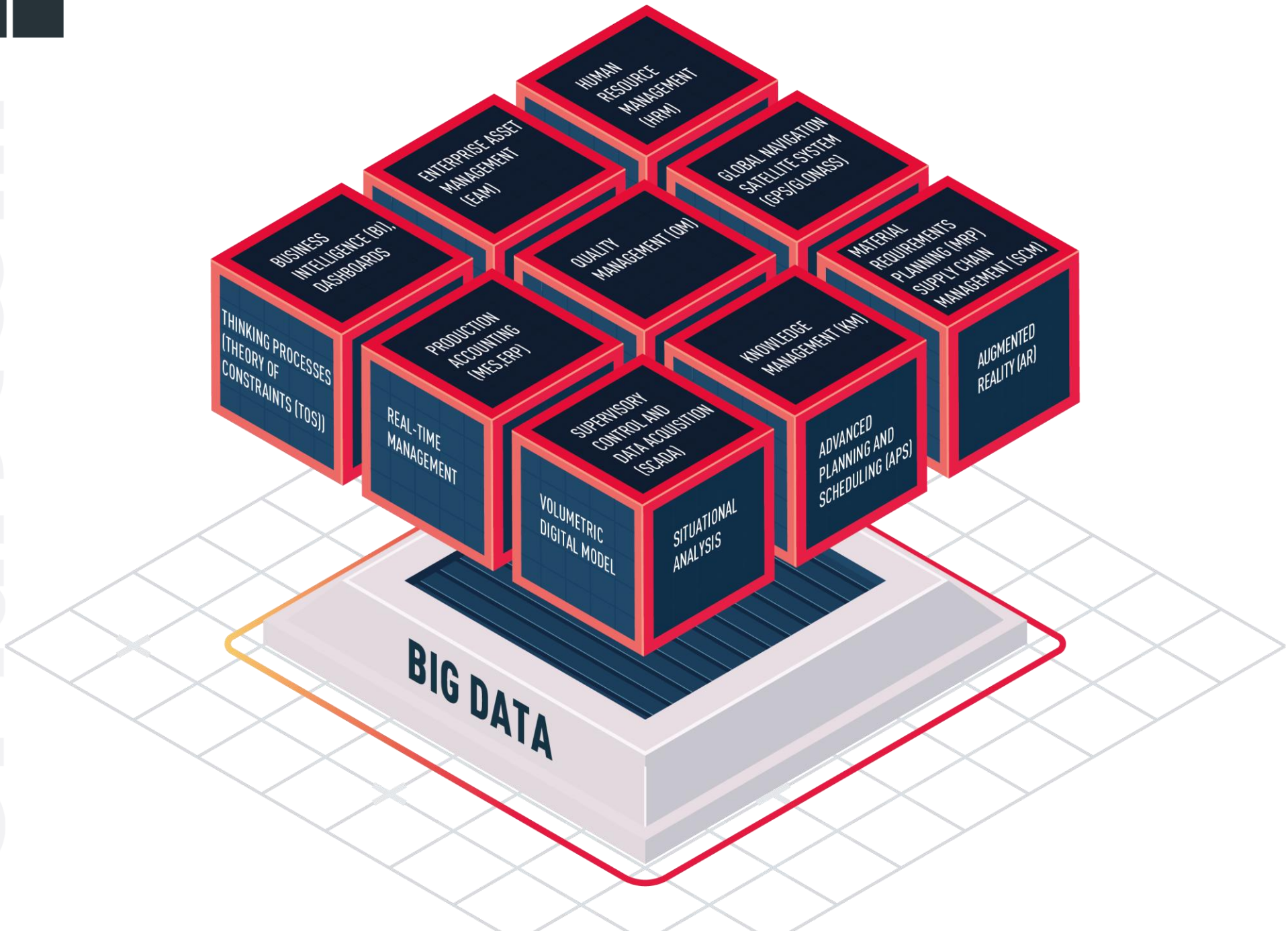
Smarttwin



DIGITAL TWIN – FASHION OR NECESSITY?

SmartTwin (ST) - Solution known as «Enterprise Digital Twin» means the paradigm connection of physical and digital world through the interaction of a person, equipment and analytical software. Enables control and improvement of production cycle operations, thereby simplifying operational activity, saving resources, diminishing the number of failures, extending the service life of the equipment.

INFORMATION SYSTEMS



THE ACHIEVEMENT OF STRATEGIC OBJECTIVES

- Single point of entry and receipt of information
- Visualization of analytical, statistical and dynamic information
- Providing timely and accurate information
- Data accumulation and control over a large number of facilities
- Integration with all industrial systems, digitization (automation) of non-covered areas

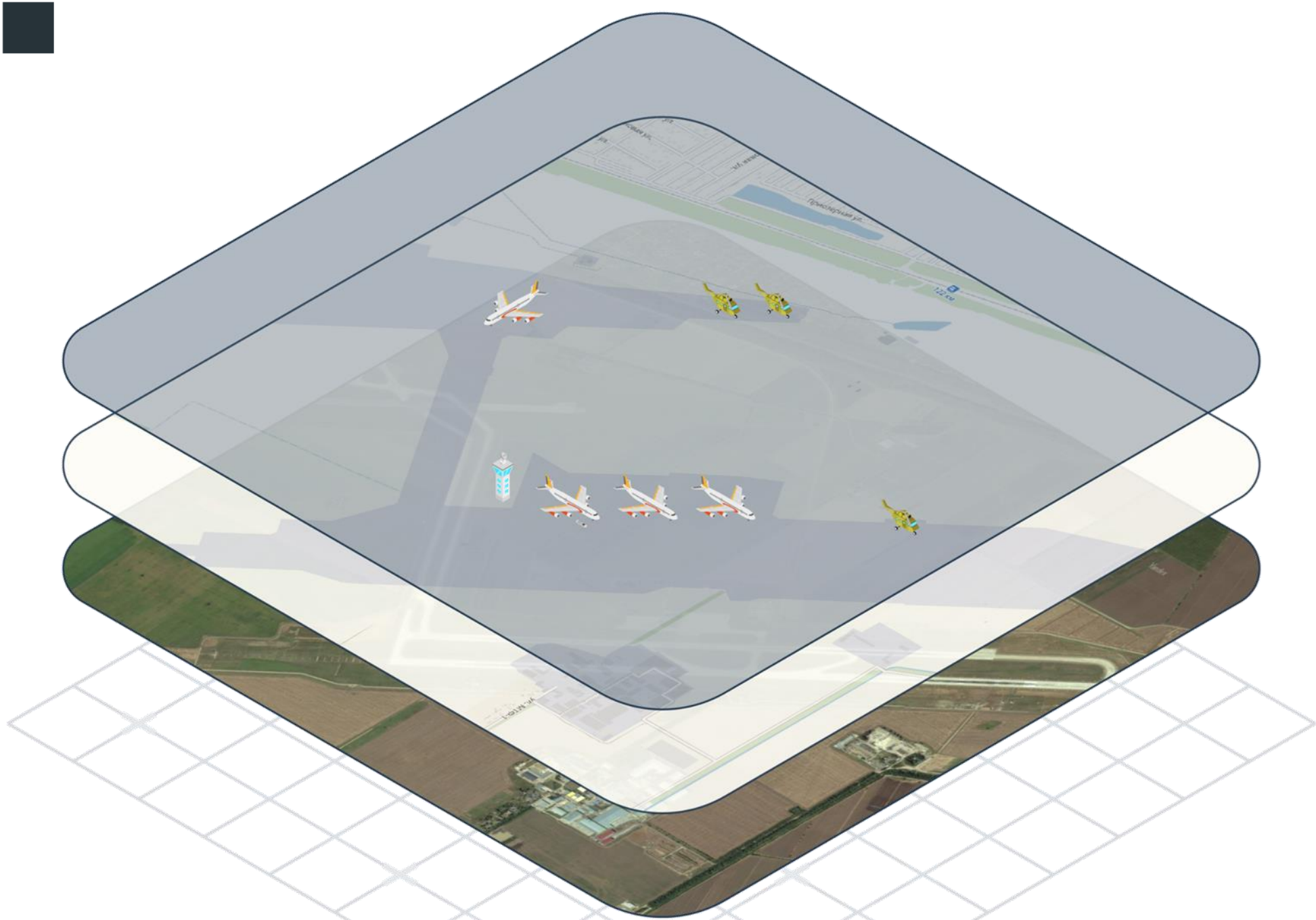
THE ACHIEVEMENT OF STRATEGIC OBJECTIVES

- Providing on-line interaction between departments
- Modeling service actions and facility locations
- Analysis of production activities
- Optimization of production operations

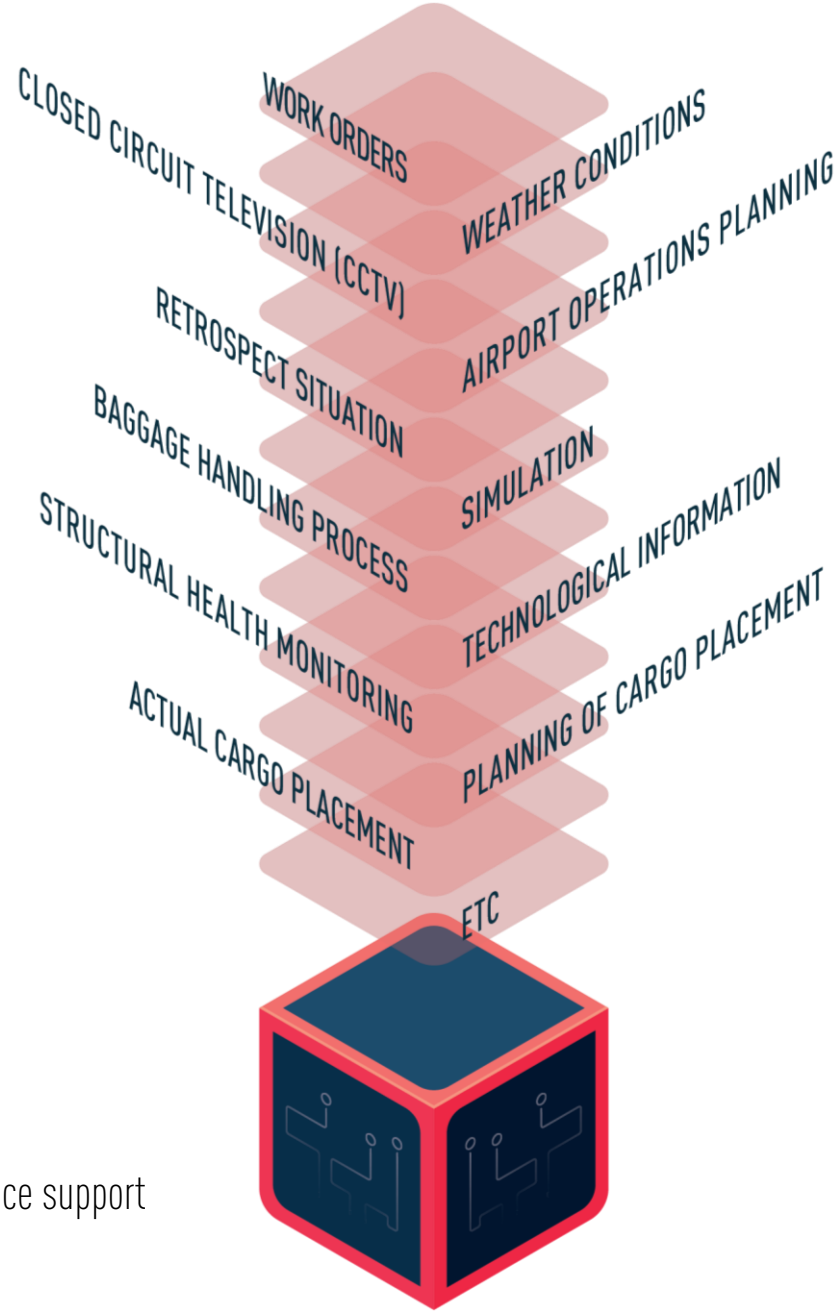
THE ACHIEVEMENT OF PRODUCTION OBJECTIVES

- Visualization of analytical, statistical and dynamic information
- Acceleration of most industrial tasks by up to 50%
- Reduced time and number of repairs and downtime
- Reduced maintenance costs for machinery and equipment
- Assets Management
- Visualization of technological processes
- Assistance in making management decisions

INTERACTIVE MULTILAYERED VISUALIZATION



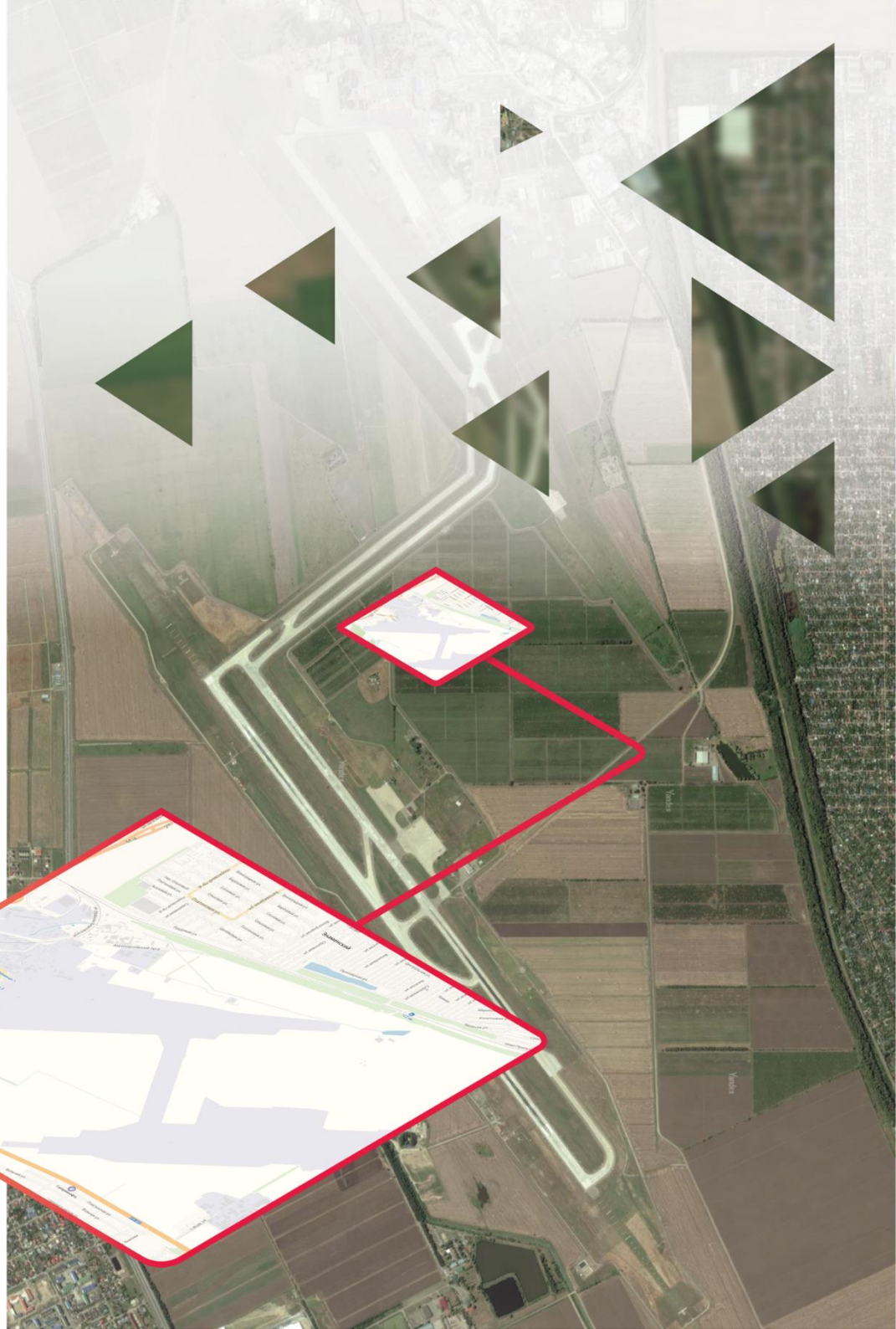
EVERYTHING IN “SINGLE-WINDOW” MODE



+ Multi-language user interface support

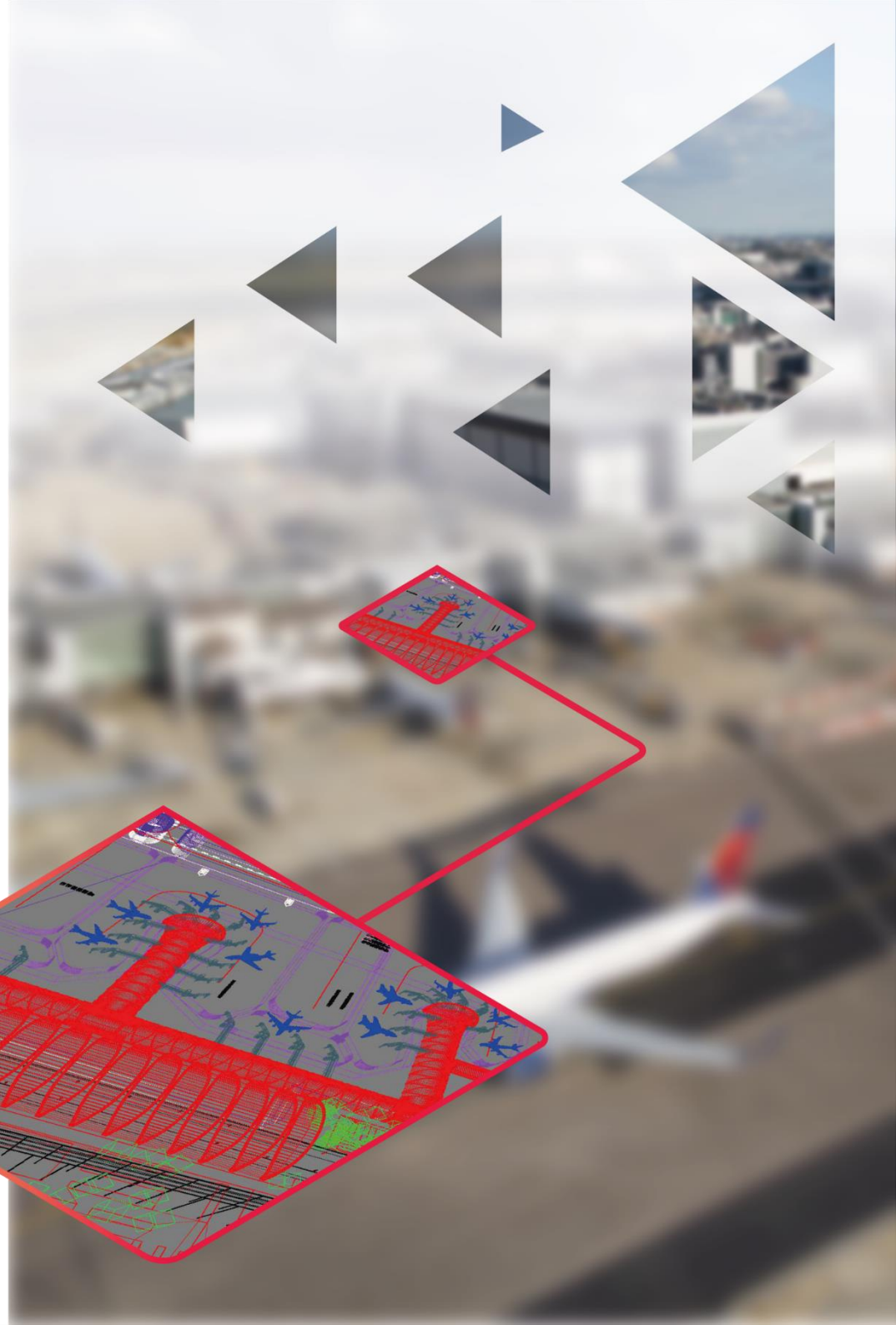
ABOUT THE SYSTEM

- Accurate geographic coordinates display of airport area allows to determine correct distance between objects (points) on the map
- Interactive displaying of objects and their parameters in real time and retrospect (location and condition changes of objects) in layers
- Adding and editing map objects
- 2D and 3D display
- Zoom-in-out support



ABOUT THE SYSTEM

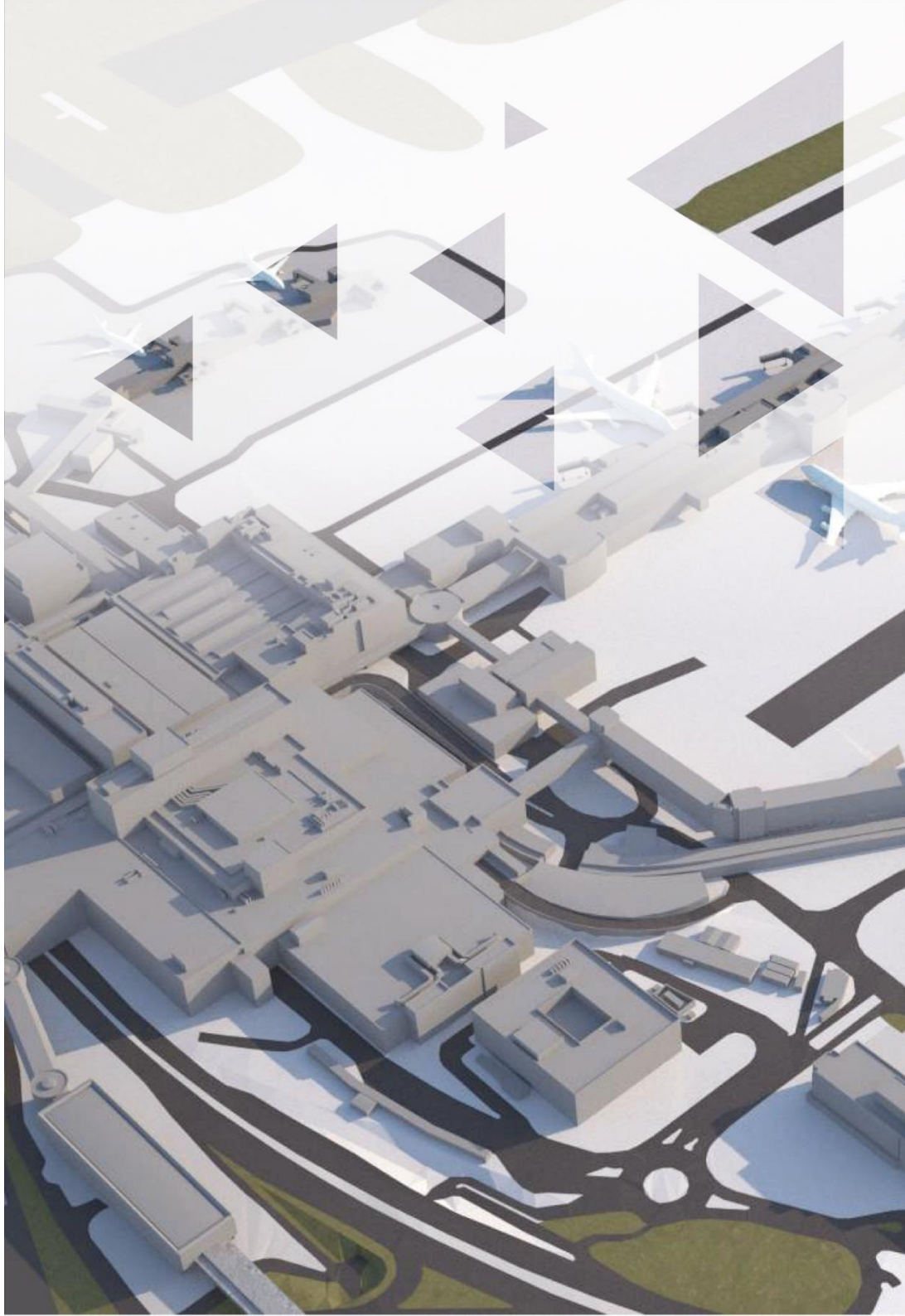
- Receiving and displaying data from weather sensors and weather monitoring systems
- Objects and cargo search
- Role-based security permissions model
- Personal user settings
- Objects change log



MOST REALISTIC OBJECTS

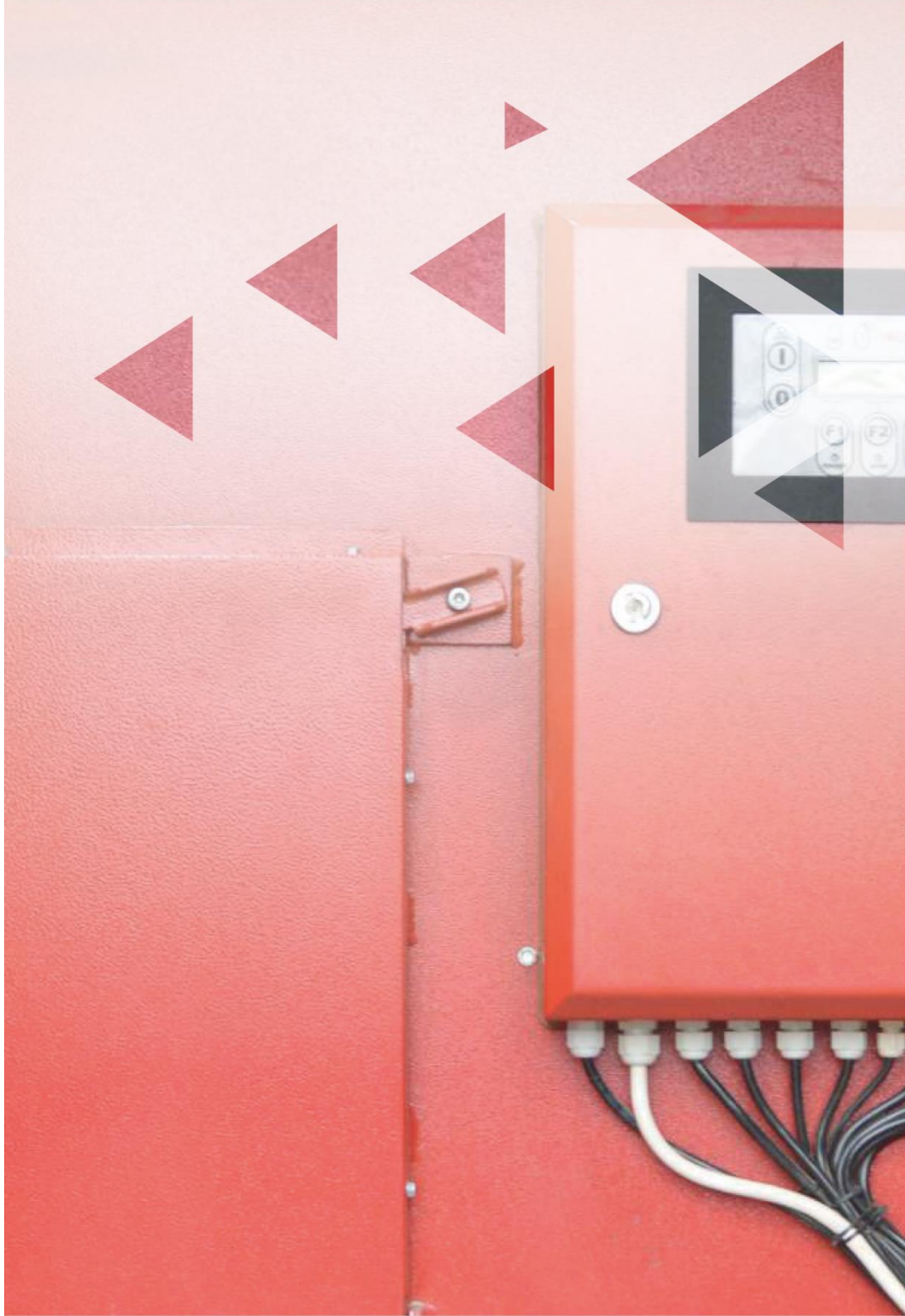
INTEGRATION. AIRPORT SYSTEMS

- AODB
- Passenger processing
- Air traffic management
- Baggage handling
- Resource management
- Terminal management
- Staff management
- Reporting
- Invoicing and billing.
- Border management.
- Etc.



INTEGRATION APCS / SCADA

- Control and accounting of the power supply
- Lighting control
- Control of the water supply and sewerage systems
- Security control
- Control and management of the parking lots
- Control of the runway drainage system
- Control of the baggage transportation system
- Control of the performance of the information boards
- Control and management of the waste disposal system
- Control and management of the lifting and transport systems and doors
- Control and management of heating, ventilation, and air conditioning



CONTROL OF PRODUCTION ACTIVITIES

- Operational management of onboard processing operations
- Operational management of storage areas
- Management of entry check points and auto-visits
- Security systems management
- Display of analytical information on cargo, aircraft, contractors, etc.
- Display of the status of equipment and machinery

WAREHOUSING

- Getting visual information about the implementation of the plan for the placement of goods at storage facilities and storage positions
- Obtaining visual information of cargo placement, planned for handling of board
- Obtaining actual and planned status of cargo in warehouse
- Obtaining actual characteristics and history of changes in the state of units of warehouse

SPECIALIZED VEHICLES

- Location control based on satellite monitoring systems
- Virtual corridor. Assignment of permitted zones for the location, movement, and work performance
- Informing vehicles driver's about allowed areas according to work orders
- Processing of critical violations up to the blocking of further movements of vehicles

ENGINEERING NETWORKS AND SYSTEMS

- Display of engineering networks in 3D
- Visualization of conditions of hosts, units, sensors with change log
- Loading objects from computer-aided design (CAD) systems
- Providing access to drawings of the objects

SECURITY SYSTEMS

- Visualization of the location objects of CCTV system
- Viewing streaming video from CCTV objects
- Pan–tilt–zoom (PTZ) cameras control
- Display covered areas with CCTV system
- Visualization of the boarders and conditions of Physical Access Control System (PACS) objects

INTELLIGENT LIGHTING AND ENERGY EFFICIENCY

- Takes into account the level of natural light
- Control of the elements of the power network in manual mode and / or semi-automatic mode
- Providing energy efficiency statistics

TECHNOLOGICAL MONITORING

- Monitoring of technological process parameters
- Equipment loading monitoring
- Monitoring of equipment resource costs
- Monitoring stock balances

TECHNOLOGICAL MONITORING

- Monitoring of quality indicators
- Environmental monitoring
- Energy consumption monitoring
- Digest and production reports

ENERGY MANAGEMENT

- Providing statistics on the efficiency of the energy resources usage
- Aligning of measured parameters of resource consumption and a production to a single standardized units of measurement (tonnes,Nm3, TOE, Gkal)
- Energy resource consumption monitoring by areas, workshops and resource allocations schemes

SITUATION CENTER

SmartTwin is able to self-aggregate in itself all port systems (from low- level controllers, IoT, sensors to business systems), thereby being the main element of the **SITUATION CENTER**

BIG DATA AND ANALYTICS

- Accumulation of a high number of indicators values from controllers, sensors, devices and systems
- Ability to access to any snapshot (as to the history of a separate object and the system as a whole)
- Analytical processing, forecasting and modeling based on data collected over the entire accumulated history

INTEGRATION

- Providing integration with any information system that is not a closed one

- Providing wide list of ready connectors to :
  - DBMS Oracle, MS SQL Server, PostgreSQL etc.
  - Solvo.TOS, Master Terminal, iPortman etc.
  - MS Dynamics AX, SAP HANA
  - Red Hat JBoss Fuse, IBM Integration Bus, MS BizTalk Server
  - MOORiNET
  - 1C, ERP Галактика
  - MS Office etc.

THANK YOU

MODERN AIRPORT – DIGITAL

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