INFORMATION TECHNOLOGY SOLUTIONS, USED IN STATIONARY CUSTOMS CONTROL SYSTEMS FOR FISSION AND RADIOACTIVE MATERIALS. WAY OF DEVELOPMENT

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FISSILE AND RADIOACTIVE MATERIALS (FRM) AS A RISK COMMODITY

- Customs code of the Eurasian Economic Union, paragraph 8, article 351
- Resolution of the Government of Russian Federation No. 456 of 19 July 2007, item 14 of the Rules for the physical protection of nuclear materials, nuclear installations and nuclear material storage facilities
SOFTWARE AND TECHNICAL COMPLEX FOR AUTOMATION OF CONTROL OVER THE MOVEMENT OF RADIOACTIVE SUBSTANCES
The customs authorities operate about 2,000 stationary radiation control systems and 7,000 portable radiation control equipment at checkpoints on the state border of the Russian Federation, which are external sections of the customs border of the Eurasian Economic Union.
Improving the efficiency of customs control of fissile and radioactive materials

- Formalization and documentation the actions of officials
- Increase of efficiency of operation of technical means of radiation control
- Prevention of radiation safety violations
- Improving the quality and efficiency of decision-making
- Improving the coordination the actions of officials
THE SCHEME OF THE DEPARTMENTAL AUTOMATED MANAGEMENT INFORMATION SYSTEM
THE STRUCTURE OF THE DEPARTMENTAL AUTOMATED MANAGEMENT INFORMATION SYSTEM

The level of the FCS of Russia Selective
Selective control of response and technical condition of STC AC FRM

The level of the RCO
Full control over the response and technical condition of STC AC FRM

The level of customs
Full control over primary response technical condition of STC AC FRM, inspection and localization of IRS, maintenance of STC AC FRM

Checkpoint level
Primary response to FRM detection (inspection) and daily maintenance of STC AC FRM

Locally placed at checkpoints software and technical complex of automated control of fissile and radioactive materials (STC AC FRM) on the basis of stationary customs radiation control system «Yantar»
THE MOST IMPORTANT TECHNOLOGICAL SOLUTIONS FOR THE DIGITAL TRANSFORMATION OF CUSTOMS CONTROL OF FISSION RADIATION MATERIALS

Artificial INTELLIGENCE – the science and technology of creating intelligent machines, especially intelligent computer programs; the property of intelligent systems to perform creative functions that are traditionally considered the prerogative of man. Artificial intelligence is associated with the similar task of using computers to understand human intelligence, but is not necessarily limited to biologically plausible methods;

End-to-end TECHNOLOGIES are a set of processing methods, which consist of a set of specialized programs on the basis of one system, independent of specific techniques and allowing for interactive data exchange. Primary data can be generated by both automatic systems and manual input, but their subsequent transmission and processing is completely automatic.

BLOCKCHAIN TECHNOLOGIES are multifunctional and multilevel information technologies designed for reliable accounting of various types of assets (Melanie Swan). Blockchain is a distributed database that contains a continuously increasing set of ordered records (blocks), each block contains a timestamp and a link to the previous block. Blockchains are open, distributed registers that can record transactions between two participants in a reliable and reliable manner;

Internet of things—the concept of a computer network of physical objects ("things") equipped with built-in technologies to interact with each other or with the external environment.
THE BASIC ORGANIZATIONAL DIRECTION DIGITAL TRANSFORMATION

1. Process optimization
   Monitoring and continuous optimization of processes in accordance with the advanced trends of digital transformation

2. Data
   A strategic approach to data management by providing comprehensive access to real-time, ensuring data security

3. Models
   Large-scale application of models based on a continuous process of innovation

4. Infrastructure and tools
   Powerful, reliable and flexible systems and tools create an infrastructure that effectively facilitates digital transformation

5. People and competencies
   Unique professionals, who are able to quickly learn new skills to help develop successfully in the era of digital transformation

6. Culture and interaction
   A culture focused on interaction and the principles of honest and open communication contributes to the development of digital transformation
THE MAIN TECHNOLOGICAL DIRECTIONS DIGITAL TRANSFORMATION

- **Use of intelligent technical means of control**
- **Organization of modern network technologies of data collection control**
- **The use of technology blockchain**
- **Automatic execution of target functions**
- **Implementation of software access to operating parameters and measurement results of technical means of control**

**Single information environment** (Information ecosystem of technical means of customs control)
- Improve the quality and efficiency of decisions

- Will allow for an early analysis of possible action scenarios

- Will reduce the material costs of maintaining an appropriate level of security