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Pre-Arrival Information Exchange System (PAIES) as a best practice of EDI for Customs to Customs (C2C) Communications in TRACECA Region

Applied Training Workshop on TRACECA Containerisation Trends and Customs Clearance for Regular Block Train Transportation

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Part I

International Standards for EDI in the customs field

Major trends in the development of inter-customs relationships

- **Globalization of foreign economic and trade relations in the sphere of exchange of information, goods and services**
- **Increased coherence and cooperation between the customs systems of countries worldwide**
- **Harmonization of customs procedures and unification of customs formalities**
- **Implementation of electronic data processing, based on the latest state-of-the-art information technologies**
- **Improvement of technical means of customs control**

International norms and standards for IT use in customs sphere

- ❖ International Convention on the Simplification and Harmonization of Customs procedures (Kyoto Convention, 1999)**
- ❖ Framework of Standards to Secure and Facilitate global trade, approved in June 2005**
- ❖ International Convention on the Simplification of Formalities in Trade in Goods of 1987, International Convention on a Common Transit Procedure of 1987**

Outlines for the Framework of Standards of the World Trade and Customs Organizations

- Preliminary informing (automated exchange of information on the international transport of goods) allows:
 - 1) to reduce paperwork;
 - 2) to perform preliminary risks assessments;
- **Risks analysis and management system (implementation of a differentiated, systematic approach to the forms of customs control: selective inspection, customs audit)**
- **Inspection of goods in the exporting country (carried out using specialized inspection system at the request of the importing country)**
- **Partnership between customs authorities and business communities (includes creation of a benefits system for participants in the international supply of goods which comply with the minimum standards of safety; economic and technical operators of the customs services market)**

Existing bilateral agreements and protocols on preliminary electronic information exchange and IT use in customs matters

✓ Moldova-Ukraine (November 2006):

Protocol between the State Customs Service of Ukraine and the Customs Service of the Republic of Moldova on organization of preliminary information exchange.

✓ Ukraine - Belarus (March 2009, 2011):

Bilateral agreement between the Customs Services of Ukraine and Belarus to introduce a system of preliminary information exchange.

✓ Ukraine - Georgia (October 2010):

Protocol between the Revenue Service of the Ministry of Finance of Georgia and the State Customs Service of Ukraine on preliminary information exchange.

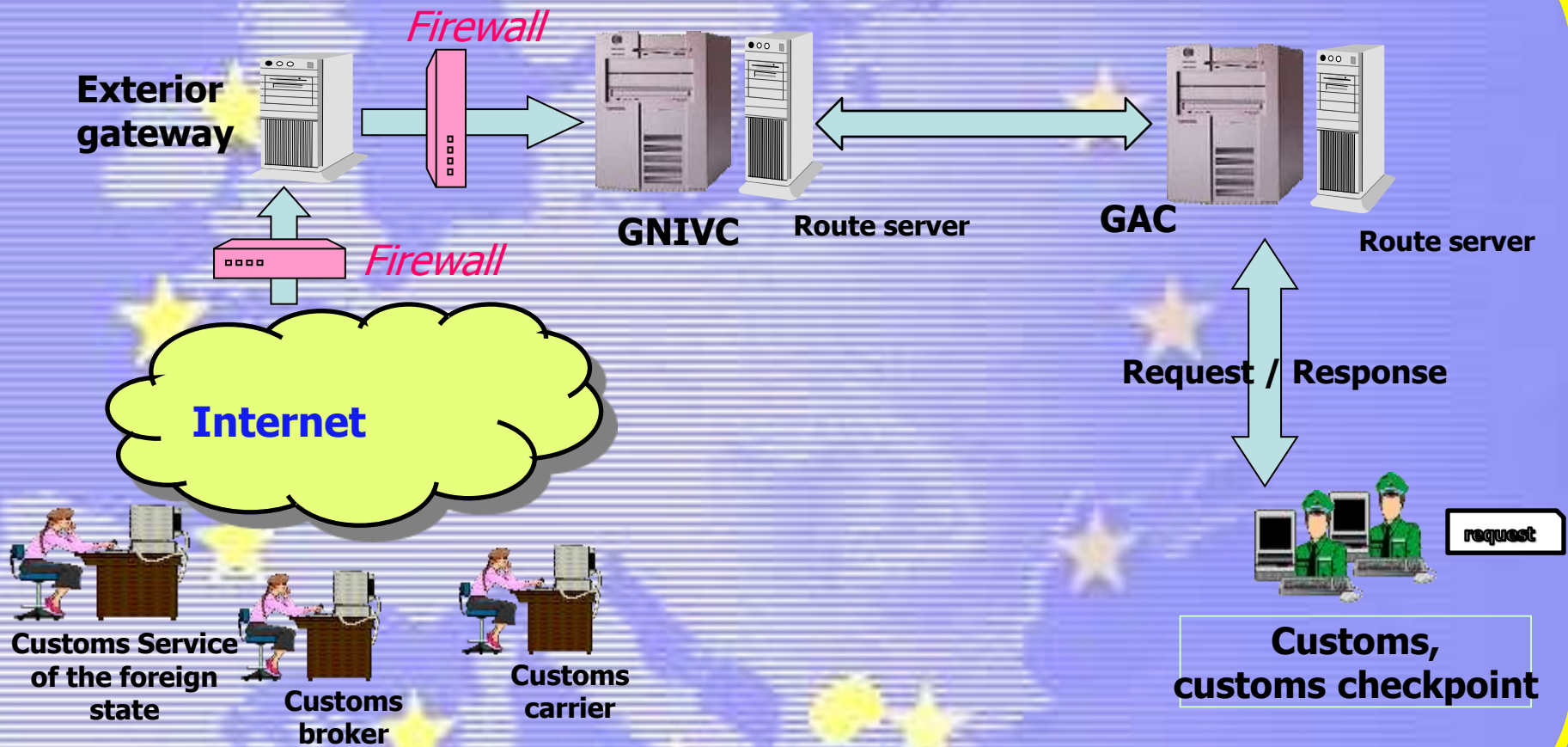
✓ Georgia-Turkey (November 2011):

Protocol on organization of electronic information exchange between the Revenue Service of the Ministry of Finance of Georgia and the State Customs Service of Turkey.

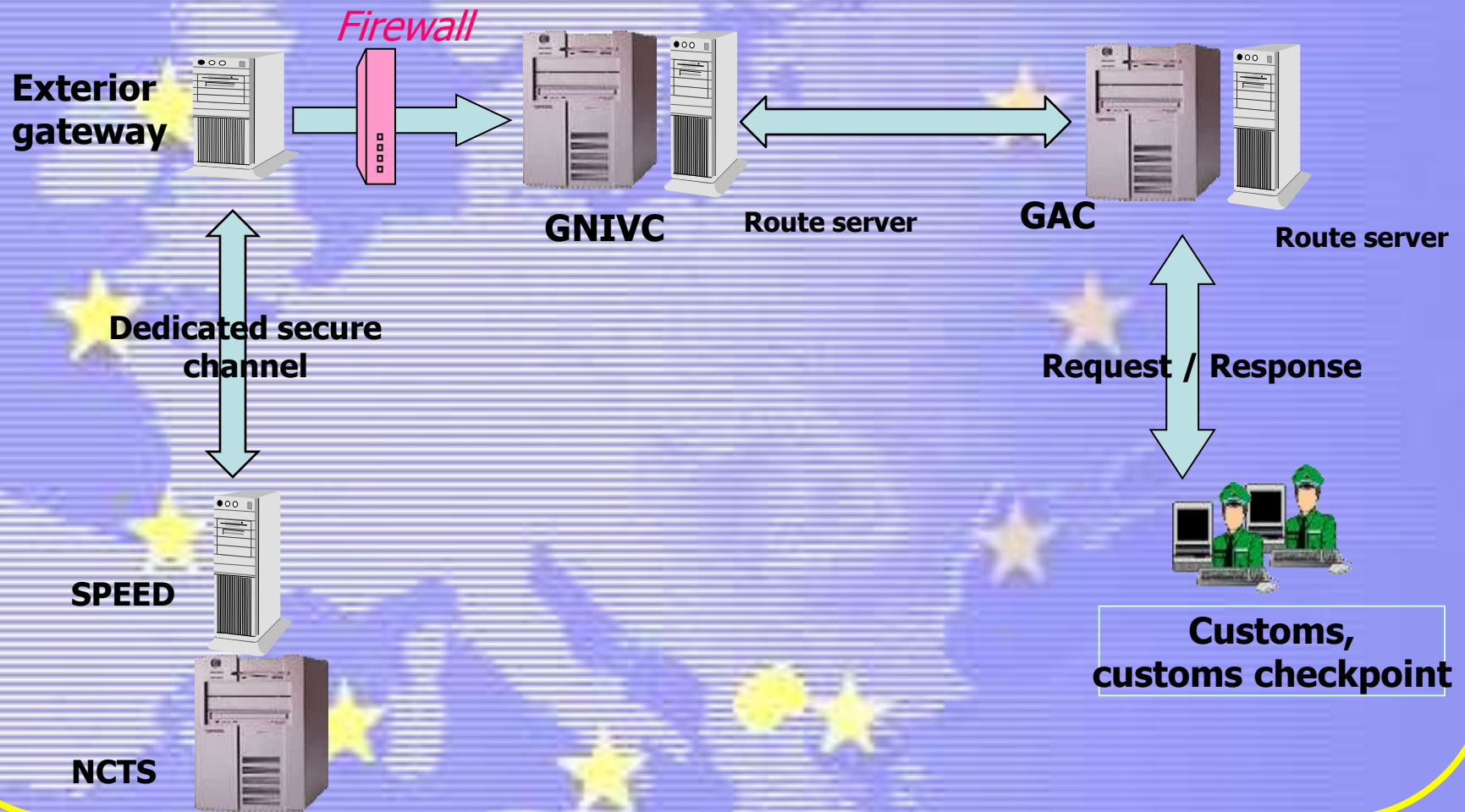
✓ Ukraine - Azerbaijan (October 2011):

Action Plan, signed by the Heads of Customs authorities of Ukraine and Azerbaijan, providing for measures to implement joint struggle of the two customs against smuggling, *mutual exchange of information* and other matters.

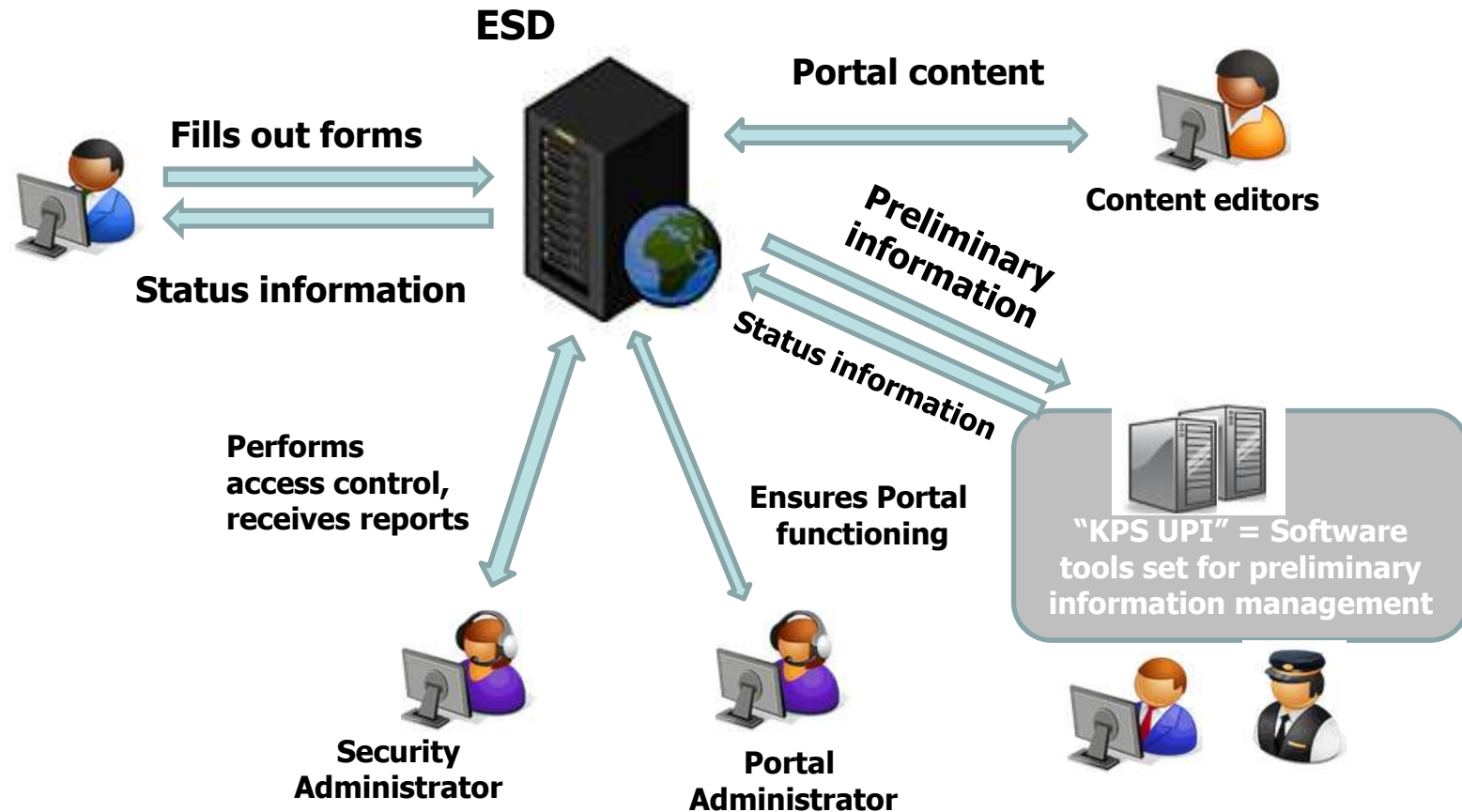
Scheme of information interaction with electronic data submission



Scheme of information exchange in the interaction with the EU member states



User categories of the Portal for Electronic Submission of Data (ESD)



Information Interaction between the ESD Portal and FEA participants



FEA participant's workstation

Functions

- Filling of electronic forms
- Downloading completed electronic documents
- Format and logical tests
- Formation of electronic messages (XML)

https



ESD Portal

Functions

- Authentication and authorization of users
- Publication of the received forms in the Personal Area
- Publication of ready electronic documents
- Sending electronic messages via MQSeries to KPS UPI
- Monitoring of messages received from KPS UPI and their processing, change of status of the forms published in the Personal Area on the Portal
- Publication of new form templates and modification of existing forms, when needed
- Providing FEA participants with actual reference data

MQSeries



KPS UPI (Software tools set for preliminary information management)

Functions:

Ensures reception of information provided by FEA participants or other interested parties (declarants, brokers), with its subsequent routing.

What can we expect?

Added Value

- ❑ A significant increase in the number of FEA participants and other interested parties providing preliminary information on goods and vehicles before crossing the customs border;
- ❑ Provision of technical capability to any person to submit preliminary information in a simple and convenient form;

And as a consequence :

- ❑ improving efficiency and reducing duration of customs clearance;

Advantages of the proposed system – (Added value) for FEA participants



No need to buy expensive equipment

No need to agree on the wiring diagram

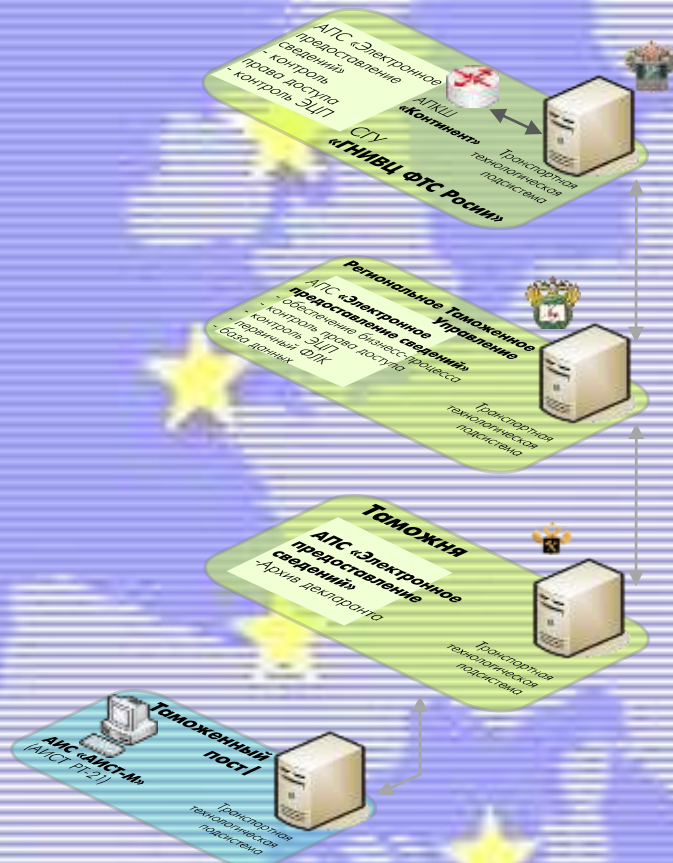
No need to have a qualified IT specialist in the staff

No need to pass the certification process

**The system can be operated with minimal internet channel
and**

**Availability of qualified technical support from the operator on
communication with the customs**

Advantages of the proposed system – (Added value) for customs authorities



The maintenance of the communication channel from a FEA participant to GNIIVTS of the Federal Customs Service of Russia is provided by an operator

Instead of multiple participants connected to the ED system only one organization: the information operator

All the preventive maintenance works on the customs system must be coordinated with only one organization, the information operator

Part II

Electronic Pre-Arrival Information Exchange System

PAIES/NCTS

PAIES - Pre-Arrival Information Exchange System

The objective of the inter-regional software and hardware complexes is to create a secure environment for information exchange between the information systems of customs services of the countries involved within the transit process.

These complexes are used to separate the internal customs communication systems and the global telecommunications network Internet in terms of data transfer using the software IBM WebSphere MQSeries, *by means of MOM (Message Oriented Middleware) or MQSeries, as one of its versions.*

WebSphere MQ is the most popular system for messaging across multiple platforms, including Windows, Linux, IBM high-level and medium-level systems and other Unix systems. WebSphere MQ also referred to simply as MQ or MQSeries.

There are two parts to message queue :

- Messages are collections of binary or character data that have some meaning to a participating program. As in other communications protocols, storage, routing, and delivery information is added to the message before transmission and stripped from the message prior to delivery to the receiving application.
- Message queues are objects that store messages in an application.

PAIES – Continued

There are several advantages to this technology :

- Messages do not depend on pure packet-based transmissions, such as TCP/IP. This allows the sending and receiving ends to be decoupled and potentially operate asynchronously.
- Messages will be delivered once and once only, irrespective of errors and network problems.
- Message delivery is guaranteed between systems on different platforms
- The most important feature is the reliability of transmission; data should never be lost with a correct MQ configuration

**There are no restrictions on use and application
for road and rail transit**

PAIES – Continued

The pre-arrival information exchange system between customs administrations shall provide for simplification and harmonization of administrative procedures at border crossings and therefore reduce transportation costs and transit time.

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The benefits and effectiveness of the practical implementation of the pre-arrival electronic information exchange system were demonstrated through the implementation of the pilot project "The establishment and introduction of an pre-arrival information exchange system between customs administrations of Ukraine and the Republic of Belarus" financed by the EC, specified in the report "Study for an Eastern Partnership Integrated Border Management Flagship Initiative project" (2009).

Added Value

The system is designed:

- to create electronic tools for efficient and transparent standardized customs procedures for international traffic at border crossing points between countries;
- to harmonize administration processes at border crossings in accordance with the norms and requirements of the Eastern Partnership Integrated Border Management (IBM) Program;
- to reduce administration time for performance of customs formalities for import/export and as well as for transit;
- to implement an automated risk analysis and control;
- to prevent corruption and minimize human factor impact through the use of paperless technologies and procedures.

Evaluation of the system efficiency:

One of the main objectives of the Eastern Partnership (EP) IBM Flagship Initiatives is to provide a seamless cross-border traffic along the Pan-European transport corridors, which in turn shall create a solid foundation for an effective regional integration of the EP countries into the Trans-European Networks (TEN-T).

The efficiency of this system has been proven in practice, since it was introduced between Moldova and Ukraine (EUBAM) in 2008 and is currently being implemented with the assistance of the EC between the customs authorities of Belarus and Ukraine.

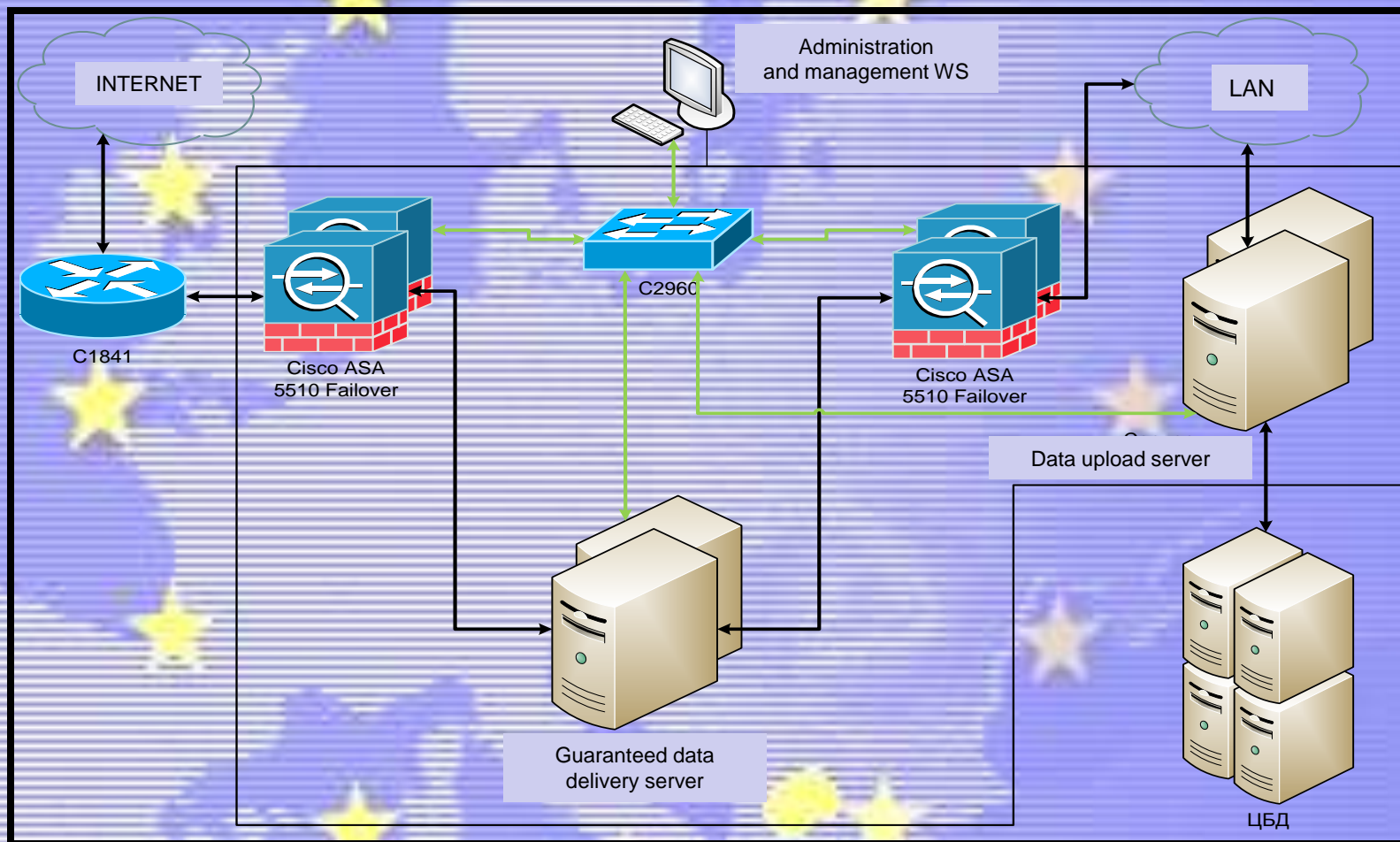
Moreover, in October 2010 bilateral agreements on the implementation of this system was signed between the customs authorities of Ukraine and Georgia as well as between Georgia and Turkey.

Brief description:

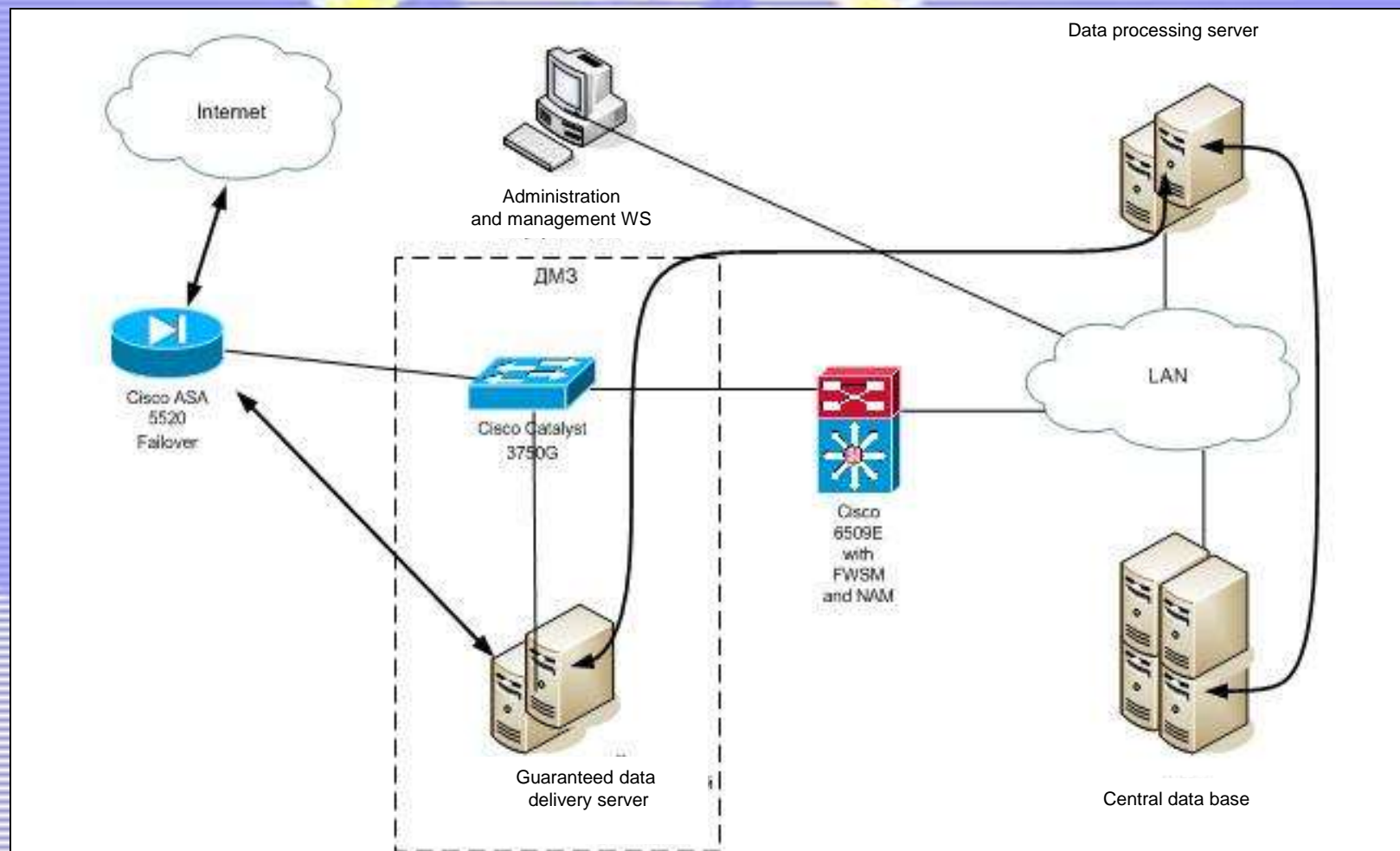
The purpose of the development of the inter-regional hardware and software complexes is to create secure environment for information exchange between information systems of customs services of the countries involved into the transit process.


These complexes are used to separate the internal customs communication systems and the global telecommunications network Internet in terms of data transfer using the software IBMWebSphere MQ Series.

Example 1: Block diagram: the hardware and software system of the Customs Service of Ukraine



Example 2: A technical solution for the hardware and software system of the Customs Committee of Belarus





Creation of this electronic system will enable economic agents and traders in one country to submit electronic export declarations (when goods are being exported to another country) and electronic transit declarations (when goods pass through a third country) to the relevant customs authorities and send pre-arrival notifications to the customs authorities of another country in case of export and to the customs authorities of any third country in case of transit.

In 2008/09, a short-term pilot project based on the New Computerized Transit System (NCTS) UA was carried out to assess the potential of using electronic transit procedures for transit movement of goods through Ukraine, Belarus and Lithuania.

The main features of this project were:

The SCSU sent advance information on goods in transit carried from Ukraine to Lithuania, and some goods were transported with the use of electronic transit declarations, in Ukraine as well as in Lithuania.

The State Customs Committee of Belarus (SCCB) expressed its willingness to participate in this project and acted as a recipient of the preliminary information.

The new EU Computerized Transit System (NCTS)

The New Computerised Transit System (NCTS) is a European wide system, based upon electronic declarations and processing. It is designed to provide better management, monitoring and control of transit.

NCTS is already functioning and covers the movement of goods between the EU Member States (including the 10 new countries which joined on the 1st May 2004) and the EFTA countries (Norway, Switzerland, Liechtenstein, and Iceland) providing better management, monitoring and control of transit.

Compatibility of UN EDIFACT and the new EU Computerized Transit System (NCTS)

The electronic data interchange (EDI) and Electronic Data Interchange For Administration, Commerce And Transport (UN/EDIFACT) are jointly used with the New Computerized Transit System EU (NCTS), as the advantages of EDIFACT include:

- increased safety;
- greater accuracy in data entry - you do not have to enter data twice into the system;
- improved financial planning;
- ability to input up to 999 items on the transit declaration.

Benefits of using the New EU Computerized Transit System (NCTS)

- **Electronic data input**
- **Preliminary notification**
- **Increased efficiency and effectiveness of procedures.**
- **Vehicles tracking**
- **Automated query system**
- **Connection to the systems of traders and carriers**
- **Real time border crossings control and monitoring**
- **Risk analysis and classification**

The aim of this pilot project was to demonstrate:

- the possibility of using paperless procedures based on the New Computerized Transit System (NCTS);
- SCSU ability to participate in international information exchange based on NCTS;
- The possibility of a successful movement of goods from Black Sea to the Baltic Sea, using :
 - paperless procedure based on the NCTS transit procedure in Ukraine,
 - national transit procedures in Belarus,
 - EU procedure, based on the NCTS transit procedure in Lithuania.

The aim of this pilot project was to demonstrate: (continued):

During the pilot project the Ukrainian traders and carriers involved submitted electronic transit declarations for the goods, loaded in two trucks, which departed from the port Illichevsk on December 26, 2009 at 00:15 a.m. and arrived at the border between Belarus and Lithuania (starting NCTS based EU transit procedure at the same time) on December 26 at 19:00.

For comparison, a conventional goods transportation in similar cases without using the electronic transit procedure takes from 5 to 7 days.

Expected pilot project outcome:

The pilot project was supposed to achieve the following results :

- **Optimize and improve the relationship between SCSU and SCCB;**
- **Reduce waiting time and costs at border crossings;**
- **Application of modern risk analysis methods and inspections based on perceived risks;**
- **Reduce corruption;**
- **Simplification and computerization of customs processes and procedures.**

Main results of implementing electronic system for prior information exchange between customs authorities:

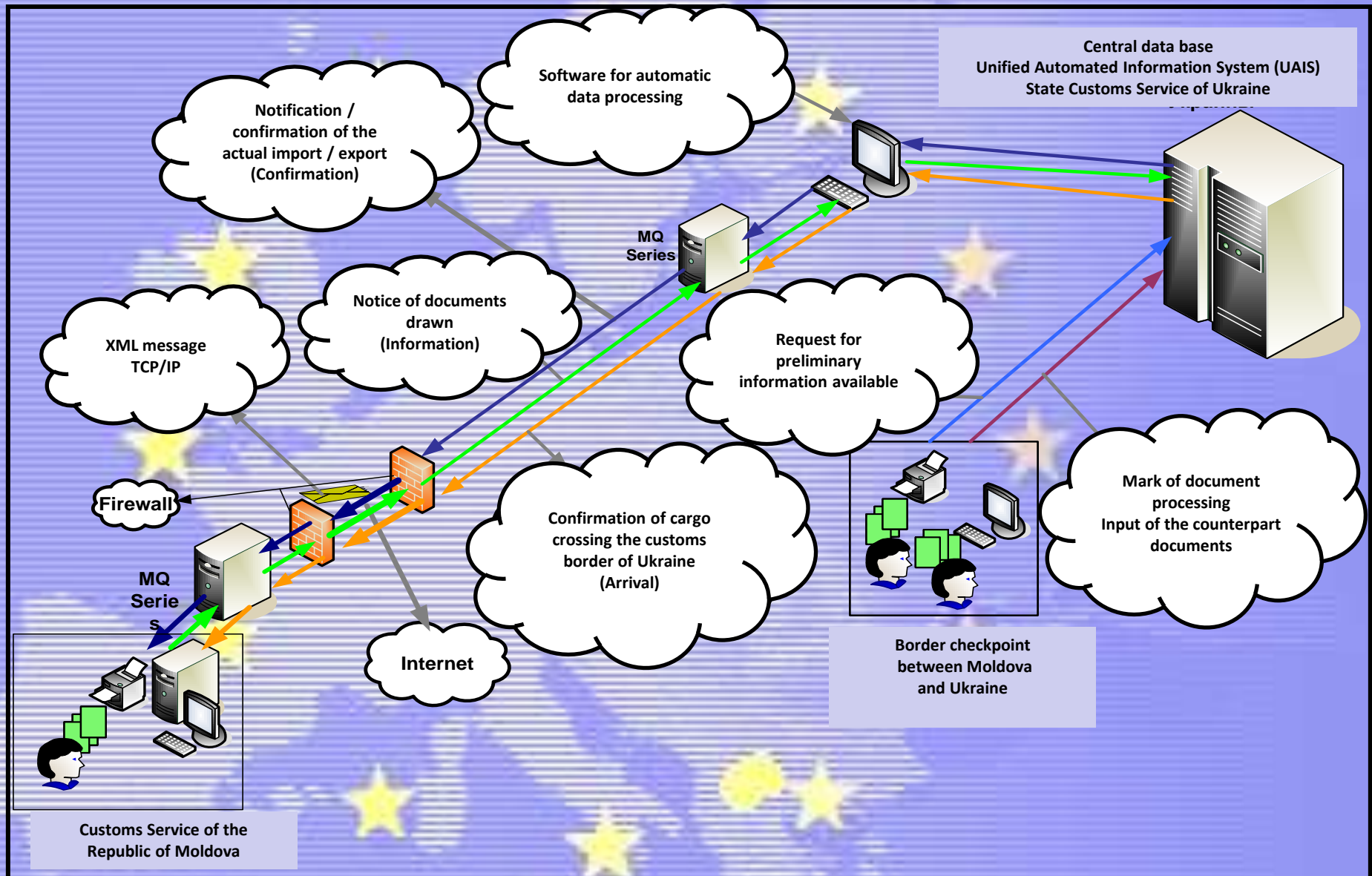
- Proven possibility to expand the NCTS based procedures to rail transit in the future;
- Reduced corruption in customs services by simplifying processes and procedures, improving administrative standards and transparency in the use of an interstate information sharing system;

According to the scientific research on corruption conducted in 2007-2009, the level of corruption in the SCSU declined according to all four evaluation criteria. The overall corruption level has been reduced by more than 15%.

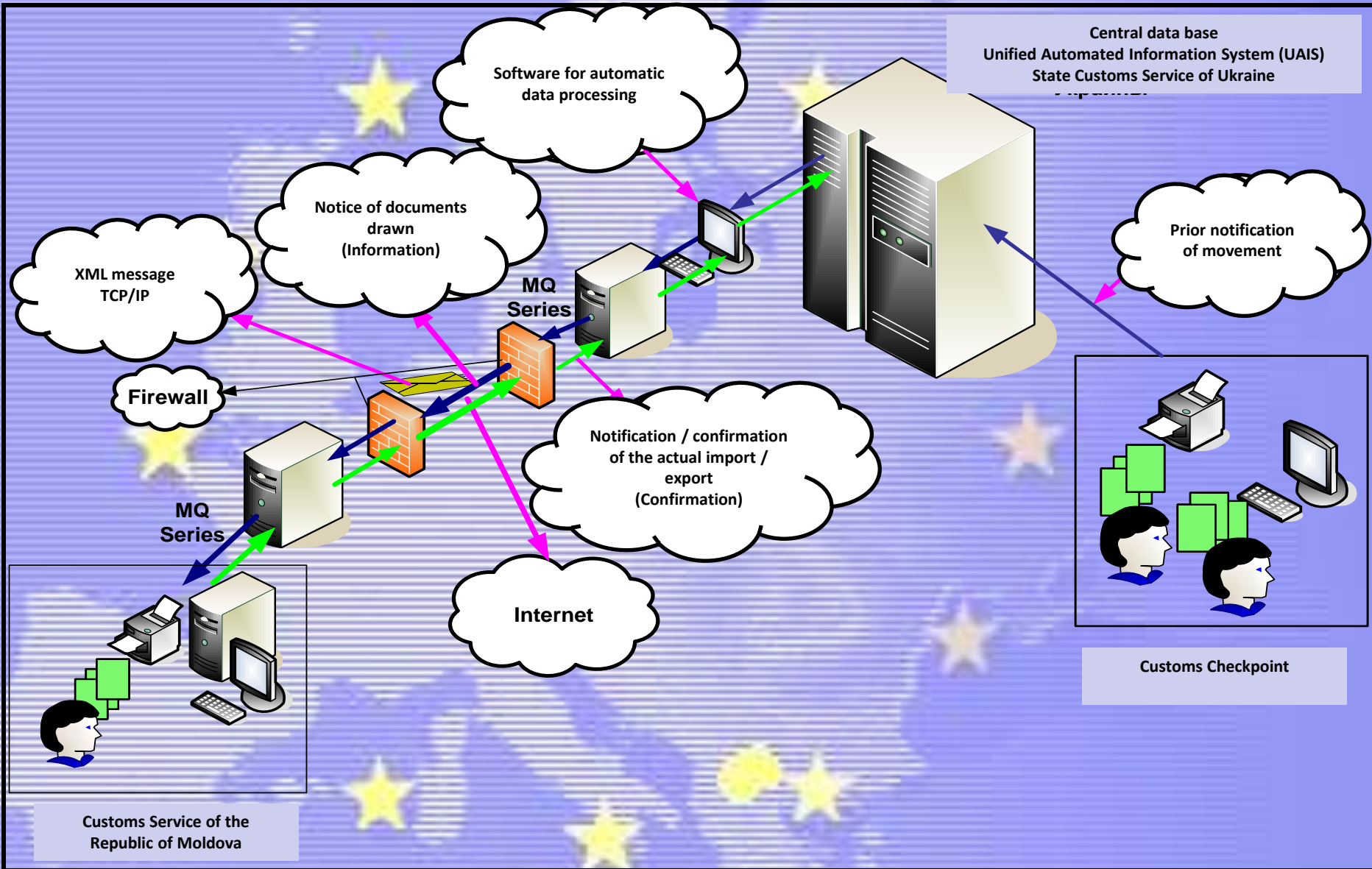
Part III

Information Exchange between the State Customs Service of Ukraine and the Customs Service of the Republic of Moldova

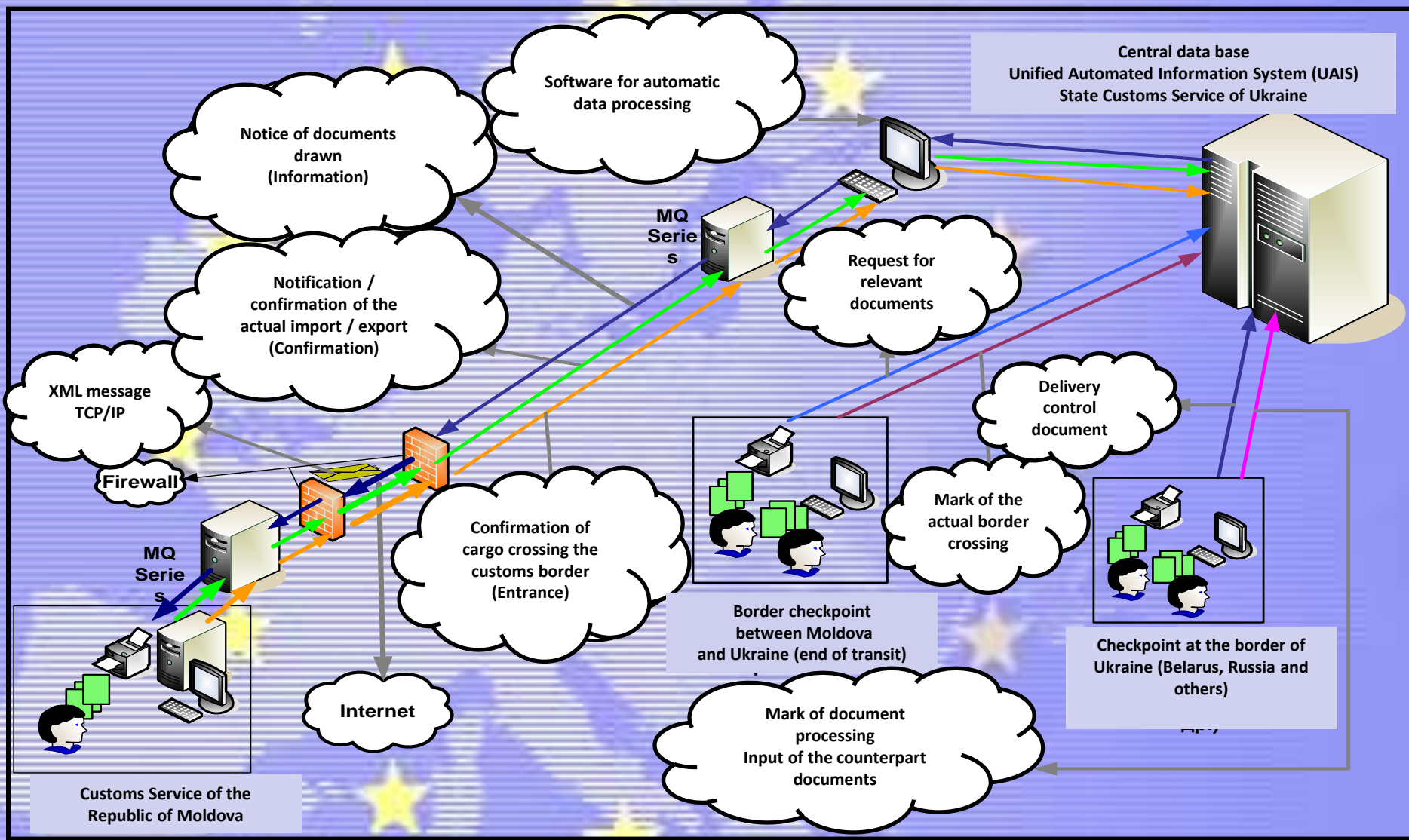
Data transmission scheme for import



Data transmission scheme for export



Data transmission scheme for transit





Thank you!