

## The concept of the "single window - a local solution" project

### 1. The idea of the project

Until recently, the entire document workflow in the ports of Ukraine, as well as planning of works carried out in paper. This system of exchange of information, other than what is morally obsolete, and more and more dependent on the human factor, as evidenced by numerous publications in mass media, various ratings and reports of international organizations. The development of information technology allows us to fundamentally change the current situation and move to a qualitatively new level of service cargo flows, increase and improve the image of our country in the international arena.

The only true and working tool to achieve these goals, which is confirmed by international experts, is to create a port community system (PCS).

Condition of information flow in the port community without PCS:

Optimization of information flow with the use of PCS

The purpose of the system - minimizing paper work when the manufacturing operations at the port, optimization of technological processes, reducing the time for each of the operations by providing all participants in the transport of cargo and operational process, correct and legitimate information.

Port Community System is designed to integrate all participants in the transport and cargo at the port process into a single information space with the possibility of provision and access to information used in the technological processes at the port with the use of technical protection of national standard. The introduction of the PCS first on a local level with the prospect of using this experience to create a national "single window" bring Ukraine closer to the strategy of development of international trade and ensure the exchange of information based on standards developed by the UN and the IMO.

Also it will strengthen the position of the port sector of Ukraine in the region. Sophisticated, outdated and bureaucratic procedures have led to a global outflow transit from Ukraine. Country with the highest coefficient of transit in Europe annually loses up to 20% of the cargo traffic. Basic law of Logistics says that goods should be there, where it is easier and quicker their registration. Besides the problems with the transit, the lack of a "single window" creates a "narrow" places on the borders for imports and exports, which greatly hampers the development of international trade.

According to Recommendation number 33 of the Centre for Trade Facilitation and Electronic Business United Nations Economic Commission, "Single Window" - a transparent mechanism that allows fully resolve these issues by providing the parties involved in trade and transport capabilities to provide standardized information and documents in one place through a "single window" to fulfill all regulatory requirements related to the import, export and transit. If the information is in electronic form, then the individual data should be the only one.

## 2. General information about the system

The system consists of a B2B (business to business) and B2G (business to government) solution based on the communications hub, built on the principle of E & T (Extraction and transformation). The unit of information in the system is a document. Each document represents an information container that contains the actual part of the semantic information, service information (header) and a part of a digital signature (electronic digital signature). Container structure is based on the standard PCS # 7. The system uses a digital signature of the state sample.

Port Community System includes three information models:

- Double-sided information model (BIM - Bilateral Information Model)
- Centralized information model (CIM - Centralised Information Model)
- Decentralized Information Model (DIM - Decentralised Information Model)

For example, with PCS of Odessa port uses a centralized model, at the same time a part of business process allows the use of two-way or decentralized model.

Port community system can be defined as the neutral and open electronic system that allows carrying out intellectual and secure exchange of information between state and private parties trading to increase the competitiveness of the port users. It optimizes, manages and automates the efficient port and logistics processes through a single submission of data and linking chain of transport and logistics.

Given system is recognized as the most advanced method for sharing information in one port or port system structures of one country. It is based on an agreement between the parties to submit trade data in one place, to develop an information infrastructure, technical relationship, a favorable legal environment, standardization and harmonization of data exchange, limit duplication of information in the documents. It creates a user port narrowly integrated system covering the export, import, transit traffic, consolidation, dangerous goods and statistical reports on international maritime transport of goods.

The system includes:

- Regulatory authorities (customs, border service, etc.)
- Port Authority
- Stevedoring companies
- Agents
- Freight forwarders
- Ukrzaliznica
- Etc.

In Western Europe, the specified form of "single window" operating at the ports of Hamburg (Germany), Rotterdam (Netherlands), Antwerp (Belgium), Felixstowe (UK), Le Havre, Marseille (France), Barcelona, Bilbao (Spain), etc. . On the basis of their established European association that aims to develop electronic logistics in all European ports, improve efficiency of shipping, freight forwarding and logistics activities in the EU.

The experience of the major ports of Europe shows that the electronic exchange of data in the system eliminates the port community subjective intervention of the human factor in process of regulation of foreign trade and thus eliminates opportunities for corruption. Smooth exchange of data in port community system and gives impetus to the development of intermodal and Multimodal Transportation, as at the heart of the system - a smooth transition of data between sectors, linking the supply chain and between different modes of transport.

### 3. History of the Project

The CPS Project is supervised by an interdepartmental working group, which was established in accordance with the instructions of the Prime Minister of Ukraine, and consists of representatives from government and business. Expert assistance to the project is provided by the UN Economic Commission. Considering the technical readiness of the greatest of Odessa ports to the project, he was chosen as the basic for its implementation. At that time the port was operating time on the individual modules of the PCS.

In order to save the state budget and the state-owned company, has been involved in the project company of JSC "PLASKE", which took over the functions of the investor and for 14 years in the Odessa area has been successfully operating for Transport - freight forwarding services. JSC "PLASKE" is the representative of Lithuanian railways in Ukraine and operator of combined transport train "Viking", a representative of the Bulgarian railways in Ukraine and cargo agent "shipping company Bulgarian Maritime Fleet" BP PKP LHS wide trackway (POLAND).

The organization has successfully completed negotiations with the port of Samsun (Turkey), Turkish shipping company «UPM transportation» Turkish railways and the opening of rail-ferry service Illichevsk / Samsun. Also JSC "PLASKE" appointed official freight agent of the Turkish company «UPM transportation» in Ukraine.

JSC "PLASKE" the first in Ukraine who has issued an electronic declaration, electronic outfit and has hands-on experience in pilot projects on the interaction of systems UAIS (Unified Automated Information System of the State Customs Service of Ukraine) and NCTS (New Customs Transit System) as a joint project of the State Customs Service of Ukraine, with the support of the Customs Service of Lithuania and the ICITAP program of the Ministry of Justice. JSC "PLASKE" takes an active role in the organization of international seminars and conferences in Ukraine to introduce the principle of "single window" (Recommendations CEFACT number 33, 34, 35), in the organization of interaction of traders and regulatory bodies.

These activities are carried out with the assistance and support of the United Nations Economic Commission for Europe (seminars on trade facilitation: "The concept of a local" single window "(information service systems)", the Coordination Council on Transsiberian Transportation (on the application of innovative technologies for multimodal container transport international traffic with SCI: - e-document; - Single informational source - The project "e-train"; - The safety and determination risk in the transportation of cargo), Ukrainian National Committee of the International Chamber of Commerce (trade facilitation; measures relating to transport and related to customs control), etc., as evidenced by publications in the business and specialized mass media. Also JSC "PLASKE" with the participation of Ukraine in the EU has initiated a pilot transport container with the imposition of identification means of the carrier in form of electronic GPS-seals with monitoring the movement of goods, excluding stops and parking areas along the route of observation and analysis of the movement of goods.

This organization has taken part in addressing issues related to the financing of the project and the provision of methodological assistance in the organization of the PCS. To develop a suitable software product and its support of JSC "PLASKE" established service center "Planning port logistics (PPL) 33-35" in the form of LLC, which is accepted as a member of the Association of European Port Community (EPCSA)? This allows the use of existing experience and best practices of European ports of developing e-logistics; improve the efficiency of maritime transport, technology improvement clearance of goods and vehicles, to improve international trade.

For creation of system, the recommendations, handbooks, policies and guidelines of the Economic Commission for Europe, United Nations Centre for Trade Facilitation and Electronic Business (CEFACT), the United Nations Network of Experts for Paperless Trade in support of the Asia-Pacific region (UNNEXT), United Nations Commission on international Trade Law (UNCITRAL), the World customs Organization (WCO), the UN Conference on Trade and development (UNCTAD), etc.

Recently, the company signed a similar memorandum on cooperation in the implementation of the PCS with the State Enterprise "Illichevskiy sea trading port" and began to study the processes in the enterprise.

#### 4. Realization of the project

##### 4.1. Creating a Matrix of production chains.

One of the first stages of the project was the creation of the Matrix production chains (MPC) (Appendix 1). Under the technological chain means a series of successive stages of the passage clearance of the vehicle or cargo in the port.

The Matrix production chains display all processes for processing of vehicles and cargo at the port, allowing you to identify and graphically see the full cycle of an operation. When creating MPC was found more than 500 processing chains vehicle handling and cargo. Established MPC is universal and suitable for any port.

##### 4.2. Selection of process chain.

After creating the MPC and the identification of all production chains vehicle handling and cargos was determined the most current process chain. For the port of Odessa - it was process chain "arrival of loaded import containers on the ship - the departure of vehicles." It has become the first "swallow" in the construction of PCS.

4.3. The division into stages of production chains and development of specific stages.

Given process chain was divided into specific stages:

- 1) The preliminary information from the agent of the cargo;
- 2) Permit for commencement of commercial operations ("Free Practice");
- 3) Information on Stevedoring Company (SK) about the actual unloading;
- 4) Warehouse operations with the container;
- 5) The design of an electronic outfit;
- 6) Departure the vehicle with a container with SK area;
- 7) Exit from the territory of the checkpoint (port).

Of these 7 steps was chosen the most difficult and important for the port clients - "electronic outfit." In the pilot phase of operation was launched on October 8 2012. Commercial operation is scheduled for 01.02.2013.

As part of the implementation of each stage for the drafting of the following materials:

Description of business processes (current, temporary (for the duration of the experiment) and permanent (based on the comments and proposals set out in the course of the experiment) :

- Order (technological scheme) clearance of goods and t / c, agreed with the agencies involved, which describes in detail step by step technique clearance of goods and vehicles (word document).
- Diagrams of participants, processes (Annex 2, 3). The main purpose of the diagrams is reduced to the key actions and the "actors". The diagram defines framework and terms of reference for a detailed analysis of the processes. Each chart - is detailed elaboration options for the use of business process. It describes how each business process is implemented step by step, who is responsible for the execution of each action as documentary requirements apply, and how the flow of information going. Based on the charts, you can make a list of paper-based and electronic documents and reports covered by the scale of project works on the harmonization of the data. You can also define the name of the party responsible for issuing of each paper document and electronic document or message.
- Tables of data elements terms (Attachment 4, 5). The aim of this work - to get a clear description of the data requirements. Description and specification of data is compiled using the definitions and terminology of business users and experts such as buyer / seller, a customs officer or a freight forwarder. This forms the basis for understanding the semantics of the data, the type of data presentation, format and restrictions, which is important information for the automation of information flows in subsequent phases. Every uncertainty in meaning and usage of data

elements delayed the process of harmonization of the attributes of the data elements to the selected semantic rules, and creates inconsistencies in the process of harmonization. After completion of this phase for each of the specific documents compiled the data dictionary, which contained in the document data elements are described in detail from the point of view of the user. The data dictionary for a single document can contain the following information:

- The name of the document.
- The purpose of the document.
- Name of the owner of the document.
- The identification number for each data element name, such as the field number in the document.
- The name of each data element in accordance with how it is presented in the document.
- The definition for each data item in the local language and / or English according to the way it was presented to the owner of the document and / or the relevant standard.
- Format (alpha, numeric, alpha-numeric) and the size (length of the data item, the number figures or characters) for each data item.
- Limitations on the number of occurrences of each data element.
- The list of codes and subsets of the code list.

Data Harmonization:

This process involves the conversion to international standards and uniformity of all documents and data terms which are used in a "single window".

Analysis of the effectiveness of steps:

This analysis allows you to see obtained effect of each stage. Where graphically described the results achieved and their impact on this stage (Financial, temporal parameters, reduction of bureaucratic factors, reduction of corruption).

Such analysis was carried out after the implementation of the port of Odessa "free practice" - the ability to handle the ship after docking, without waiting for the arrival of the commission on board (Appendix 6).

Appendix 6

<i>The economic effect of free practice for container ships in 2 years (01.10.10-01.10.12)</i>	
Ships processed	412
The average time savings on the same ship, min	45
Saved time, days	12,88
Performance during the time saving (80 containers / hour), cont.	24720,00
Performance during the time savings (1 cont. ~ 11 tons) tons	271920,00
Revenues from the LUW port and harbor dues (1 ton ~ 3.1 \$), \$	842952,00
Revenues from the port of Infrastructure (1 cont. ~ \$ 29.4) \$	726768,00

Revenues from the port inspection (inspection, provided third cont., 1 cont. ~ 47.1 USD) USD	388268,80
Income from container terminal LUW (1 cont. ~ 180 USD), USD	4449600,00
Agent savings on the contents of the vessel (the vessel with a length of 210 m ~ 10,000 USD) USD	128750,00
Income from freight forwarding activity (1 cont. ~ 100 USD), USD	2472000,00
Income from brokering activities (1 cont. ~ 200 USD), USD	4944000,00
Revenue from road transportation (1 cont. ~ 800 USD), USD	19776000,00
Revenue from customs duties (1 cont. ~ 12,000 USD) USD	296640000,00
Total revenue from the provision of free practice for container vessels for 2 years, \$	330368338,80
<b><i>The economic effect of free practice on Bulk Liquids vessels for 1 year (01.10.11-01.10.12)</i></b>	
Ships processed	26
The average time savings on the same ship, min	180
Saved time, days	3,25
Performance during the time saving (1900 tons / hour), tons	370500,00
Port revenues from the port charges (1 ton ~ 7.5 \$), \$	2778750,00
Revenues from the port infrastructures (1 ton ~ 1.5 USD) USD	555750,00
Revenue for usage of fire boats (1:00 ~ 456.25 USD) USD	35587,50
Agent savings on the contents of the vessel (the vessel with a length of 250 m ~ 20,000 USD) USD	65000,00
Income from freight forwarding and brokering activities (1 ton ~ 0.03 USD), USD	11115,00
Revenue from rail traffic (1 ton ~ 134 USD), USD	49647000,00
Revenue from customs duties (1 ton ~ 0.17 USD), USD	62985,00
Income from payment of customs clearance (1 ton ~ 0.14 USD), USD	51870,00
Total revenue from the provision of free practice on Bulk Liquids vessels for 1 year, \$	53208057,50
Total revenue from the provision of free practice for container and bulk ships for 1 year, \$	209571713,00

Analysis of the current legislation, the identification of barriers and project changes:

So, given that the existing regulations governing the procedures for implementing document management, control and clearance of goods and vehicles in the ports, there were no references to the PCS, as well as provisions allowing to implement electronic document, the first phase required the definition of the concept of "single port community information" and the establishment of the basic principles of its operation. To do this were drafted amendments to the Decree of Cabinet of Ministers № 451 of 21.05.2012, the order and the Ministry of Transport of Ukraine № 1098 from 13.12.2004 year.

Currently works are continuing to study the current legal environment for the PCS.

Upon completion of the first phase of testing the selected processing chain defects observed are comments into account proposals and data harmonization.

Prepared and approved at a meeting of the Interagency Working Group finalized the first phase of the Order of the selected processing chain, the final chart of participants, processes, developed the format and structure of documents and data elements and changes to the legislation.

Testing of the following stages of technological chain should be on the same principle, with the obligatory harmonization of the temporal order; terminology of data elements selected from the stage already spent a similar stage.

### **4.3. Summing up the entire process chain.**

Upon completion of all phases of mining production chain is developed:

- The final technological scheme (combines all final orders);
- Summary graphics participants processes;
- Summary table of terms;
- Summary table of data elements;
- Summary analysis of the effectiveness of the entire process chain;
- Aggregate size and structure of the documents and data elements;
- Summary of changes to the legislation.

The implementation of each of the following process chain will be held on the same principle.

Upon completion of the project will be created:

- Summary table of terms consists of a combination of all the tables of terms;
- Summary table of all the data elements of the matrix;
- Summary analysis of the effectiveness of the entire matrix (processes, financial performance, time performance, changes in legislation, harmonization of data, etc.).

### **Authority for the preparation of materials as follows:**

- Drafting of temporary and permanent orders, regulations, charts participants, processes, tables of terms, tables of data elements, the analysis of efficiency, formats and structures of documents and data elements - the Association of port communities, representatives of which shall be established a service center, the port, etc. system users.

- The overall coordination and support of the project, approval of temporary and permanent orders, the format and structure of documents and items of data, coordination of normative documents - Interdepartmental Working Group.

## **5. Library of the project**

Archiving documents for the project is approximately as follows:

1. Shared Folder

1.1.

.....

1.500 technological chain (TC):

a.

...

iii. stages of production chains:

- analysis of existing business processes:

- The existing procedure
- Charts of the participants, processes

- Description of the new temporary business process:

- temporary order
- Charts of the participants, processes
- Terminology table
- Table of data elements
- The format and structure of documents and of data elements
- Effectiveness analysis stage
- Description of the outcome of a business process:
  - The final order
  - Charts of the participants, processes
  - The format and structure of documents and of data elements
- Legislation changes

б. description of the outcome of a business process:

- Final technological scheme (which includes all final orders of magnitude)
- Final charts of the participants, processes
- summary table of the terms

- Summary table of data elements

э. summary analysis of the effectiveness of the entire TC

ю. consolidated format and structure of documents and of data elements

я. consolidated legislation changes

2. Completion of the project:

2.1. Summary table of the terms

2.2. Summary table of all the of data elements of the matrix

2.3. Summary analysis of the effectiveness of the entire matrix (finances, time, changes in legislation, harmonization of data, etc.)

## 6. Security of the project

Implementation of a comprehensive information security system and certification system will be carried out jointly with the State Service of technical protection of information (SSTPI) and described by a separate set of design documents.

The information system must meet the requirements of the safety systems that do not contain state secrets by SSTPI.

Basic requirements:

- The protection of information;
- Immutability;
- Non-repudiation of authorship;
- Protection against unauthorized access.

Additional requirements are:

- Compliance with the requirements of the Law on electronic document;
- Support for digital signatures state model;
- Compliance with the requirements of the Law on electronic signature;
- Satisfaction of the risk model.

## **7. Prospects for the development of the project.**

1. The introduction of the principle of "single window" not only in the ports, but at all border crossing points;
2. International cooperation - to connect to a national "single window" of states which are carried on trade.
3. The introduction of the "single window" in other spheres of government and the economy of Ukraine.

## **8. Conclusion**

Creation of a "single window" will be extremely beneficial for the business - community and regulatory authorities.

It will have a positive impact on the development of ports and Ukraine as a whole; will stimulate the development of an enabling legal environment, harmonization of data exchange between different agencies on the basis of international standards, limiting red tape, corruption and deep international integration.

The national aspect:

The mechanism of "single window" system would improve the functioning of the public authorities and their work with businesses, will improve the risk management process in control - the executive order, and increase the safety

and efficiency of trade procedures. In addition, the collection and approval of the necessary information and trade documentation using the "single window" would entail a saving of human and financial resources, allowing the government to redirect resources previously used for administrative tasks to perform a more relevant and important functions.

Regional aspect:

This is largely accelerate the processing of goods at border crossing points, will increase their competitiveness, attract additional traffic and will facilitate the development of ports. Considering that the ports are the main sources of income and employment for regions in which they are given a push positive impact on their welfare.

The main business benefits:

The main benefit of the business community is that the "single window" provides the trader / agent a single channel for a one-time submission of all required information and documentation, to all state agencies involved in export, import or transit procedures. More effective and efficient allocation of human and financial resources.

Since the "single window" allows government agencies faster and more accurate processing of the information and documents, as well as collect fees, traders / agents should benefit from faster customs clearance and subsequent authorization for the shipment of their goods, thereby reducing delivery times. In addition, greater transparency and predictability can further restrict the opportunities for corruption in both the public and private sectors.