NR 886 PROBLEMY TRANSPORTU I LOGISTYKI NR 32

2015

DOI:10.18276/ptl.2015.32-02

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TIME RESERVATION SYSTEM OF CUSTOMS CLEARANCE - EBOOKING TRUCK

Abstract

In recent years the Customs Service has been introducing several innovative electronic services (e-services) for clients (entrepreneurs, forwarders). One of the proposed solutions is the system of eBooking TRUCK, which enables clients electronic reservation of the date of customs for the trucks leaving Poland. The article presents basic information regarding this improvement, the aim of which is primarily shortening the time of truck spent on customs clearance (eliminating or reducing queues on the border crossings) and improving the work organisation of customs services. There is presented the concept of the eBooking TRUCK system, the premises of its implementing, the scope of data transmission by the entrepreneurs, the scope of handling notification by the customs officers, architecture of system and the ways of clients communication within the system (SMS, e-mail, CB radio, information panels, infokiosks). At the end, there is presented a description of implementing actions based on the pilot programme carried out from 5th October 2015 at Koroszczyn border crossing point (Customs Chamber in Biała Podlaska, Polish-Belarus border) and Grzechotki (Customs Chamber in Olsztyn, Polish-Russian border).

Keywords: e-services, electronic administration, customs clearance, e-customs

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Introduction

In recent years there has been observed an increase in the number of modern electronic services (so called e-services)¹ implemented by the public administration, and meant to improve the work of offices and customers service.² The Customs Service is one of the institutions introducing a significant number of innovative e-services for entrepreneurs.³ The Customs Service Strategy for the years 2014–2020⁴ assumes facilitating the legal activities for entrepreneurs, improving customs services and reducing bureaucracy. In the strategy implementation the following 3i development strategies are used: electronic tools (INTERNET), intelligent knowledge use (INTELLIGENCE) along with a continuous striving for introducing innovations (INNOVATION). The solutions applying modern technologies are being implemented, i.e.:

- the systems of electronic customs notifications in exports, imports and transit (100% of customs notifications in 2013 and electronically served),
- the systems of electronic service of Intrastat declaration (over 92% of declarations registered online in 2013),
- the system of notification (booking) the date of customs clearance of coaches and minibuses (eBooking BUS)⁵ implemented in 2012,
- the system of notification the time of customs clearance of trucks (eBooking TRUCK) implemented as pilot version in 2015,
- the system of electronic registration of TAX-FREE documents,
- the service of "e-Attachments" possibility of providing electronic parts of attachments to customs declaration,

¹ K. Boyer, R. Hallowell, A. Roth, *E-services: operating strategy – a case study and a method for analyzing operational benefits*, "Journal of Operations Management" 2002, No. 20 (2), pp. 175–188.

² L. Carter, F. Belanger, *The utilization of e-government services: citizen trust, innovation and acceptance factors*, "Information Systems Journal" 2005, No. 15 (1), pp. 5–25.

³ Customs Service in Poland is a leader of innovations in EU according to Eurobarometer Report: *The electronic customs implementation in the European Union*, 2014.

⁴ Służba Celna 2020 – strategia działania na lata 2014–2020, "Wiadomości Celne" 2013, No. 10, (in Polish).

⁵ M. Klimek, *System elektronicznej rezerwacji odprawy celnej autokarów i busów (eBooking BUS)*, "Logistyka" 2015, No 1, pp. 48–51 (in Polish).

⁶ M. Klimek, *Usługa "e-załączniki" – nowe rozwiązanie usprawniające odprawy celne*, "Logistyka" 2014, No. 6, pp. 46–49 (in Polish).

- using various forms of passing information, communication with clients,⁷ i.e.: electronic, information road signs, operating of the nationwide department of Customs Service Information Centre, virtual panoramic guide on the border crossing point, web cameras with online image of border crossing points, notifications on the information panels in the customer service offices, the service of the Customs Service granica.gov.pl, the mobile application "Granica", infokiosks, the Newsletter service etc..
- centre of official customs procedures CUDO (abbreviation in Polish Centrum Urzędowego Dokonywania Odpraw) – electronic customs clearance of goods in the assigned agency with a simultaneous possibility of introducing the freight in a different agency, etc.

Introducing convenient solutions using modern technologies is possible owing to a high degree of informatisation of the Customs Service and entrepreneurs alike.

One of the innovative electronic services is, introduced as a pilot in 2015, the system of electronic booking of the date of customs clearance of trucks – eBooking TRUCK (in short: eBT), the aim of which is reducing the queues of trucks on the border crossing points in the export direction from Poland. Due to the eBT system it will become possible to shorten the time of customs clearance as well as improving the work organisation on the border crossing points. In the article there is introduced basic information concerning the eBT system. In Chapter 1 there is presented the idea of the system, presumptions of its introduction, the benefits on the part of the client (carrier) and the Customs Service. In Chapter 2 there is described the process of booking and the range of data used during the notification procedure. Chapter 3 presents the architecture of the system and its elements, such as the system of booking the date of customs clearance for the clients, infokiosks, information panels for the clients, the system of serving the officers. There are also presented the ways of the clients communication within the eBT system. In Chapter 4 there is a preparatory description of the piloting activities.

⁷ M. Klimek, *Wybrane nowoczesne formy przekazu informacji wdrażane przez Służbę Celną*, "Logistyka" 2015, No. 3, pp. 2197–2204 (in Polish).

Description of the eBooking TRUCK system

Introducing the eBT system was led in 2012 by starting the system of electronic booking of customs clearance date of coaches and minibuses eBooking BUS.8 Owing to this solution the time of customs clearances of buses registered in eBooking BUS was shortened, especially in the periods of more intense bus traffic, e.g.: Christmas time. A shorter time of customs clearance results in the fact that part of the control actions (such as risk analysis) is completed even before a bus arrival to the border crossing point. Additionally, along with a large number of clearances it is possible to plan a bigger crew to serve the coaches.

The concepts that proved to be successful in the customs clearance of buses are used in facilitating the customs clearance for trucks. The Customs Service has prepared a similar system border crossing through eBT (the logo of the system in Figure 1), which is a component of the "e-Customs Program", an undertaking under the term of Integrated System of Serving the Border CAIFS II.



Figure 1. The logo of eBooking TRUCK system Source: e-booking.gov.pl.

The requirements behind designing the system of eBT were formulated based on the concept proposed by the Institute of Logistics and Warehousing in Poznań, which made an analysis¹⁰ for the Ministry of Finances of the actual state formulated recommendation of facilitations using the eBT system for customs services of trucks leaving Poland (the supervisor of the expert team preparing

⁸ M. Klimek, *System elektronicznej rezerwacji odprawy celnej autokarów i busów (eBooking BUS*), "Logistyka" 2015, No. 1, pp. 48–51 (in Polish).

⁹ Web page of "e-Customs Program", http://www.e-clo.gov.pl.

¹⁰ B. Śliwczyński, M. Stajniak, E. Jurkowska-Kubiak, I. Jeleń, T. Dębicki, M. Foltyński, B. Guszczak, Analiza stanu aktualnego i opracowanie rekomendacji usprawnień z wykorzystaniem systemu eBooking TRUCK dla procesów obsługi samochodów ciężarowych wyjeżdżających z Polski, Instytut Logistyki i Magazynowania, Poznań 2013 (in Polish).

the opinion was Professor Bogusław Śliwczyński). Among other things, a survey was carried out on 913 potential clients of the eBT system – forwarders, drivers, custom agents. Nearly 85% of responders were interested in using the system of electronic booking of customs clearance in order to reduce the time spent of the border crossing point. The results of the survey suggest that there is clear potential for success in implementing the eBT system.

As the analyses indicate the reason for building up queues on the Polish border side is above all the lack of possibility of controlling the traffic on the border crossing point and the fluctuating intensity and intermittency of car influx accumulation. A sensible and possible solution of the queuing problem for trucks leaving Poland is methodical affecting the quantity and the stability of the car influx, which could be achieved through introducing the system of electronic booking of customs clearance.

The implementation of eBT system of electronic booking of the date of crossing the border aims at facilitating the process of border checks for trucks leaving Poland. Expected benefits of using eBT are among others¹¹:

- shortening the time spent on approaching the border crossing and customs clearance and a better planning by the drivers (forwarders),
- eliminating or significant reduction of truck queues pending at the border crossing points in the exiting direction from Poland,
- integrating all the services involved in serving the clients on the border crossing points (Border Guard, Customs Service, Veterinary Inspectorate, Sanitary Inspection, Phytosanitary Inspection), a better planning of their actions and organising the resources of the border services based on the booking data received beforehand (possibility of planning the number of crew members on a shift, planning their tasks and availability as well as taking an advantage of the infrastructure).

The eBT system collects information about planned by clients the dates of customs clearances, which is meant to enable a balanced distribution of traffic on border crossing points in Poland.

¹¹ Ibidem.

From the clients perspective the effects of implementing the eBT, such as shortening the time devoted to customs clearance and a possibility of planning its date, are associated with financial benefits:¹²

- shortening the working time for drivers, lower costs of work for the employees,
- cutting costs since the assets are frozen for a shorter time,
- improving the promptness and reliability of deliveries to the recipients,
- limiting the cases of lowering the use-by date of transported goods and their quality,
- a better rotation of the means of transport and higher revenues on selling transport services for forwarders,
- more comfort for the truck drivers, possibilities of resting in the pending areas.

The process of booking in the eBooking TRUCK system

The booking procedure in the eBT system from the client's perspective can be described in the following steps:

- registration of a user (this step does not refer to a one-time booking),
- booking a convenient date of customs clearance personally or by a representative, i.e. a customs agent,
- receiving a confirmation of the booking date on the given email address,
- arrival to the pending area on the boarding crossing point, e.g. an hour before the planned time of customs clearance,
- calling from the pending area and customs clearance in the time booked beforehand.

The process of booking the date of customs clearance starts with logging into the portal of the electronic customs services PUESC¹³ (abbreviation in Polish Platforma Usług Elektronicznych Służby Celnej), which is a platform built as part of the "e-Customs Program", on which there are being developed other services for clients, ultimately meant as the only point of accessing the e-services of the Customs Service) and finishes with confirming the start of the customs

¹² Ibidem.

Web page for PUESC service, https://www.puesc.gov.pl.

clearance on the main customs clearance station in the SOC-T system (abbreviation in Polish System Odpraw Celnych – Towarowy).

While registering to the new booking system on the PUESC portal, a client fills in a form with such details as: the border crossing point (the code and the name of the customs branch), the type (priority, multiple choice, current), the booking date (the date choice and the time range in the booking calendar), the number of customs requests, the registration number of the means of transport, the driver's telephone number, etc. Having completed the required information, if the booking on the requested date is possible, then the number of reservation is generated (e.g. for Grzechotki in GRZ/xxxxxx/xx/xx format), the booking status is displayed and sent to the email address of the client with a confirmation of booking.

The booking calendar (Figure 2) includes 24 one-hour time windows per day in the planning horizon (30 days by default).

OC Koroszczyn					
Time window	27.11.2015	28.11.2015	29.11.2015	30.11.2015	01.12.2015
00:00 - 01:00	available	available	available	available	available
01:00 - 02:00	unavailable	available	available	available	available
02:00 - 03:00	available	unavailable	available	available	available
03:00 - 04:00	available	available	unavailable	available	available
04:00 - 05:00	available	available	unavailable	available	available
05:00 - 06:00	unavailable	unavailable	available	unavailable	unavailable
06:00 - 07:00	unavailable	available	available	unavailable	unavailable

Figure 2. Booking calendar in eBT

Source: own elaboration using e-booking-gov.pl.

For the respective time windows there is marked their availability (red colour on the website www.e-booking.gov.pl – reserved, "unavailable" window, green colour on the website www.e-booking.gov.pl – "available" window), with the information of service capacity per one hour included (the indicator service capacity/hour) and determined for each border crossing point. In the planning of the booking the customs clearance date there can be distinguished various cases, depending on the type of booking:

- for priority booking (e.g. due to transportation of livestock, dangerous goods, humanitarian aid, highly perishable products etc.) – the client can choose "the red" time windows,
- for multiple choice the client can tick only green data field (available)
 in the whole planning horizon of the booking calendar,
- for current booking the client confirms the data field indicated by the eBT system as the first available date of booking taking into account the displayed information on the remaining time to the customs clearance.

Architecture and components of eBooking TRUCK system

The electronic system of booking customs clearances for trucks done via the internet portal are available to all the clients. A further service of customs clearances is continued in SOC-T, locally for customs officers in the selected border crossing point (customs branch). In the customs departments there is used the integrated system of border service CAIFS II. The eBT system is a subsystem of CAIFS II. The eBT modules are integrated on the central level with the SKR subsystem (abbreviation in Polish System Kontroli Ruchu) and on the local level with the subsystem of truck customs clearances SOC-T. The subsystem SKR is a repository of the collected data and attributes with the central database. It shares the common mechanism of processing and data replication originated in the local subsystems (among others SOC-T). SKR includes report modules, administration, risk analysis etc. The subsystem SOC-T is responsible for serving the customs clearances in the cargo border crossings, local storage and processing data, managing the traffic on the check-in desks etc. SOC-T provides a risk analysis and report modules as well as the mechanism of truck customs clearance services on the entrance station, the main customs clearance station and the exit station.

Integrating the eBT system with CAIFS II system comes down to:

- development of SKR by "eBT Administration" module (possibility of eBT configuration, e.g. texts of regular messages appearing on the information panels) and the new parameters and permissions included in the database.
- adding to SOC-T an option the eBT booking service, new functionalities in SOC-T are, among others, a possibility of checking whether a given

vehicle is booked in eBT, presenting eBT booking data in the SOC-T format in each stage of the customs clearance, queuing the customs clearances and assigning automatically the first vehicle in a row for the main customs clearance based on the booking data,

- adding to SOC-T in the Reports module a new overview presenting eBT booking statistics,
- implementing and handling new equipment components, i.e. tv sets,
 LED panels, infokiosks, CB radios, all used for communicating with
 a client based on the date from the local SOC-T and eBT databases.

Along with launching the eBT booking system several interfaces for entering data and communication channels have been made available:

- portlet within the PUESC Portal,
- infokiosks.
- communication channels (type A and B information panels, SMS messages, CB radio announcements, e-mail notifications).

In the portlet www.e-booking.gov.pl on the PUESC portal it is possible to book a new date of customs clearance for trucks along with edition and overview of the previous notifications. There are placed basic information about the eBT booking system (the aim, functioning and instructions for the user) and the current situation on the border crossing points (the range of customs service, calendar of booking, information about problems). The client (booking the dates of customs clearances) is provided with time windows schedule, which enables planning of a truck arrival to the border crossing point and its customs clearance without waiting in a queue. In order to use eBT it is advised, but not obligatory to sign up on the website www.ebooking.gov.pl.

The infokiosk (Figure 3) is an interactive information point (a computer with Windows 8 interacting with a user with a help of a standard keyboard, an indicating device and a touchable pad) placed in the clients pending area, with which the information about the eBT system can be checked upon, and after data authentication (by automated reading the number on the electronic transit card or completing it in hand-writing) the current date of booking can be viewed and modified, e.g. changing a phone number for SMS notifications, declaring the earlier readiness for customs clearance, etc. In the infokiosk it is also possible to check the current position in the queue and the estimated remaining time for the customs clearance.



Figure 3. Infokiosk with touchpad interface

Source: own elaboration based on System eBooking TRUCK – Szkolenie dla administratorów lokalnych.

Information panels are LED panels or tv sets, on which the information data is displayed for eBT clients. There are two types of the panels (Figure 4):

- type A panels, which are located in the pending areas and customs clearances rooms, display registration numbers of the vehicles in the pending area in the order arranged based on the data in the eBT system,
- type B panels, located in the customs clearance rooms, displaying the registration numbers with the assigned numbers of the main customs service stations.

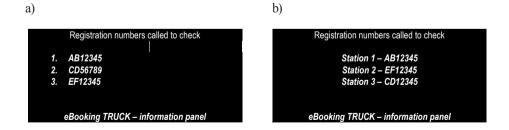


Figure 4. Information panels type A (Fig. 4a) and type B (Fig. 4b). In the figure informations presented in Polish

Source: own elaboration based on System eBooking TRUCK – Szkolenie dla administratorów lokalnych.

The panel information is updated in the moment of changing the order of calling the vehicles for customs clearance. On the type A and B panels in the heading section and footer there are areas, for which the content for particular panels is set up in SKR.

In addition to the presentation of data on the information panels communication with clients in the eBT system also involves:

- SMS messages sent to clients in the moment of adding a new booking or to inform about necessity to prepare for customs clearance;
- voice announcements sent via CB Radio (in Polish and in English) used to calling out the driver for the customs clearance room based on the content included in the templates defined in SKR;
- announcements sent through emails to clients at the moment of adding new booking or editing the already existing one (in PUESC portal).

Pilotage of eBooking TRUCK system

Implementing the eBT service proceeds in stages. Initially there is conducted a pilot version of the system, which was launched on October the 5th 2015 on the border crossing point in Kukuryki – cargo terminal in Koroszczyn (the Customs Chamber in Biała Podlaska, Polish-Belarusian border) and in Grzechotki (the Customs Chamber in Olsztyn, Polish-Russian border). Along with the piloting programme there were carried out promotion and information actions (meeting with transport companies, much information in the media, newsletters, information videos, virtual guides on the border crossing points). Further implementation works depend on the effects of the pilot actions.

The Customs Service introduces eBT gradually with respect to high costs of implementing the system, which include:

- the costs of designing, implementation and introduction of the information system,
- the investments necessary for building the infrastructure and purchase of the equipment (building buffer parking places, purchase of infokiosks, purchase and installation of the electronic information panels in the pending area, on the access roads and the customs clearance rooms),
- the costs of running and maintenance the eBT system, the costs of promotional campaigns.

While launching eBT there have to be undertaken organisation works, analytical and legal and legislative connected with introducing necessary changes in the regulations. The changes in law and organisation regulations of the customs departments, which eBT requires are primarily:¹⁴ establishing and executing an obligation of electronic registration of customs clearance (denial of serving trucks without a prior booking), adequate organisation of trucks entering the pending area and managing the vehicle queue in the pending area, and what is more, adequate organisation of trucks leaving the pending area and their arrival to the border crossing point, etc.

In the pilot there are assessed, among others, the influence of introducing eBT on functioning and organisation of the work at a border crossing point, the level of users satisfaction (clients, customs officers), the current level of integrating the information systems of the Customs Service with eBT and a possibility of using the infrastructure of the border crossing points, e.g. for a proper organisation of the pending area, which could have a strong impact on rationalisation of customs clearances with the usage of the eBT system. There will be also carried out research surveys on the clients and customs officers, in which they will express their opinion on the advantages and disadvantages of eBT, options of further improvements, etc.

The essential condition of implementing the eBT system on all the border crossing points is ensuring proper infrastructure (the border crossing points selected for the pilot all have proper infrastructure) along with taking into account the eBT booking data in the process of planning the customs clearance by all the border services taking part in it. Organising the pending areas on the buffer parking areas equipped with proper infrastructure requires cooperation of all the border services, can imply a necessity of bearing considerable investment costs connected with obtaining grounds, building parking areas.

Conclusion

In the article there has been described the eBooking TRUCK service launched as a pilot version by the Customs Service in October 2015. The main

¹⁴ B. Śliwczyński, M. Stajniak, I. Jeleń, B. Guszczak, T. Kawecki, Warunki i wymagania wdrożenia Projektu systemu elektronicznej rezerwacji obsługi granicznej samochodów ciężarowych wyjeżdżających z Polski eBooking TRUCK wraz z uzasadnieniem biznesowym Projektu, Instytut Logistyki i Magazynowania, Poznań 2014 (in Polish).

aim of introducing the system of electronic booking of customs clearance service eBT was getting rid of or significant reduction of trucks queuing on the border crossings, waiting to leave Poland. The eBT system makes it possible for the client to book the date of customs clearance electronically on a chosen border crossing point and is meant to lead to greater stability of distribution of trucks entering the road border crossing points. Additionally, it introduces a continuous communication and coordination of contacts with a client in the process of booking, at the entrance to the pending area as well as the main customs clearance.

The system of eBT is an innovative solution, which can improve the capacity on the border crossing points, improves predictability of the process of customs clearance that leads to bringing clear benefits to transport companies, both organisational and financial.

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SYSTEM REZERWACJI CZASU ODPRAWY GRANICZNEJ – EBOOKING TRUCK

Streszczenie

W ostatnich latach Służba Celna wprowadza coraz więcej innowacyjnych usług elektronicznych (e-usług) dla klientów (przedsiębiorców, spedytorów). Jednym z proponowanych rozwiązań jest system eBooking TRUCK, który udostępnia klientom możliwość elektronicznej rezerwacji terminu obsługi granicznej dla pojazdów ciężarowych wyjeżdżających z Polski. W artykule przedstawione są podstawowe informacje dotyczącego tego usprawnienia, którego celem jest przede wszystkim skrócenie czasu odprawy ciężarówek (wyeliminowanie lub zmniejszenie kolejek przed przejściami granicznymi) i poprawa organizacji pracy służb granicznych. Zaprezentowana jest koncepcja systemu eBooking TRUCK, przesłanki do jego wdrożenia, zakres przesyłanych danych przez przedsiębiorców, zakres obsługi zgłoszeń przez funkcjonariuszy, architektura systemu i stosowane w nim sposoby komunikowania się z klientami (SMS, e-mail, CB Radio, tablice informacyjne, infokioski). Na koniec przedstawiona jest charakterystyka działań wdrożeniowych na podstawie pilotażu prowadzonego od 5 października 2015 roku na przejściach granicznych w Koroszczynie (Izba Celna w Białej Podlaskiej, granica polsko-białoruska) i w Grzechotkach (Izba Celna w Olsztynie, granica polsko-rosyjska).

Słowa kluczowe: e-usługi, elektroniczna gospodarka, odprawa celna, e-cło