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Improvement of technology of interaction of railway transport and clients

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ABSTRACT: Quality and level of service on railway transport have to be one of the initial purposes. Achievement of these purposes cannot be presented without the automated systems. In this article are considered the existing technologies of interaction of railway transport and clients from the point of view of document flow. Solutions on improvement of technological processes by means of electronic document flow are proposed.

KEY WORDS: electronic document flow, digital signature, cargo and commercial work, information spaces, transportation document.

I. INTRODUCTION

For the cargo owner or transport company conclusion of contracts with JSC “O’zbekiston temir yo’llari”. is an indispensable condition of implementation of any sending. At the same time desire of carrier to provide all possible nuances of rendering services and in advance to stipulate them in various documents absolutely clear.

Conditionally all contracts signed between the user of services of railway transport and carrier can be divided into two groups: preceding a cargo transportation and accompanying her. They consist on a voluntary basis in the order regulated the Civil code of the Republic of Uzbekistan, the law "Charter of Railway Transport of the Republic of Uzbekistan", rules of transportation of goods by railway transport and normative documents.

It is possible to carry contracts for giving/cleaning of cars and operation of a railway track of uncommon use to the first group. They consist, as a rule, for 5 years and are caused by need of formation of a certain technology of work at implementation of transportation of goods[1].

It is possible to carry to the second group for example, contracts for transportation of goods on special conditions which consist in those cases if properties of freight or its state, and also terms of transportations offered by the consignor are not provided by the corresponding rules.

In them also the responsibility of the parties for transportation and safety of goods makes a reservation. It should be noted that taking into account provisions of the law "Charter of Railway Transport of the Republic of Uzbekistan" in transit dangerous and perishable freights by rail on the conditions provided by Rules of transportations by railway transport of perishable freights, Rules of transportations of dangerous freights, the conclusion of any other contracts besides the contract of transportation of goods, are not required[Fig 1]. Here also contracts for rendering services in formation of consignor routes on the public iron road ways belong.

Various aspects of application and modeling of processes of electronic document flow are considered in M. Yu. Krukovsky [2] articles, and on P.E. Bulavsky and D. S. Markov [3], N. M. Aripov and D.Kh. Baratov [5] railway transport. In the specified articles the theory of counts for modeling of processes of document flow generally is used. In P.E. Bulavsky and D. S. Markov [4] work for definition of temporary characteristics the office of the dynamic probabilistic loaded counts is used. Application of methods of network planning and management in processes of

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business are reflected in E. V. Butsenko's works [6]. Questions of improvement of technologies of cargo and commercial works are considered in I. A. Elovoy [7] and M. M. Kolos's works [8]. In these works the existing shortcomings of document flow and the recommendation about improvement quality of works with the help of the automated systems are in detail described.

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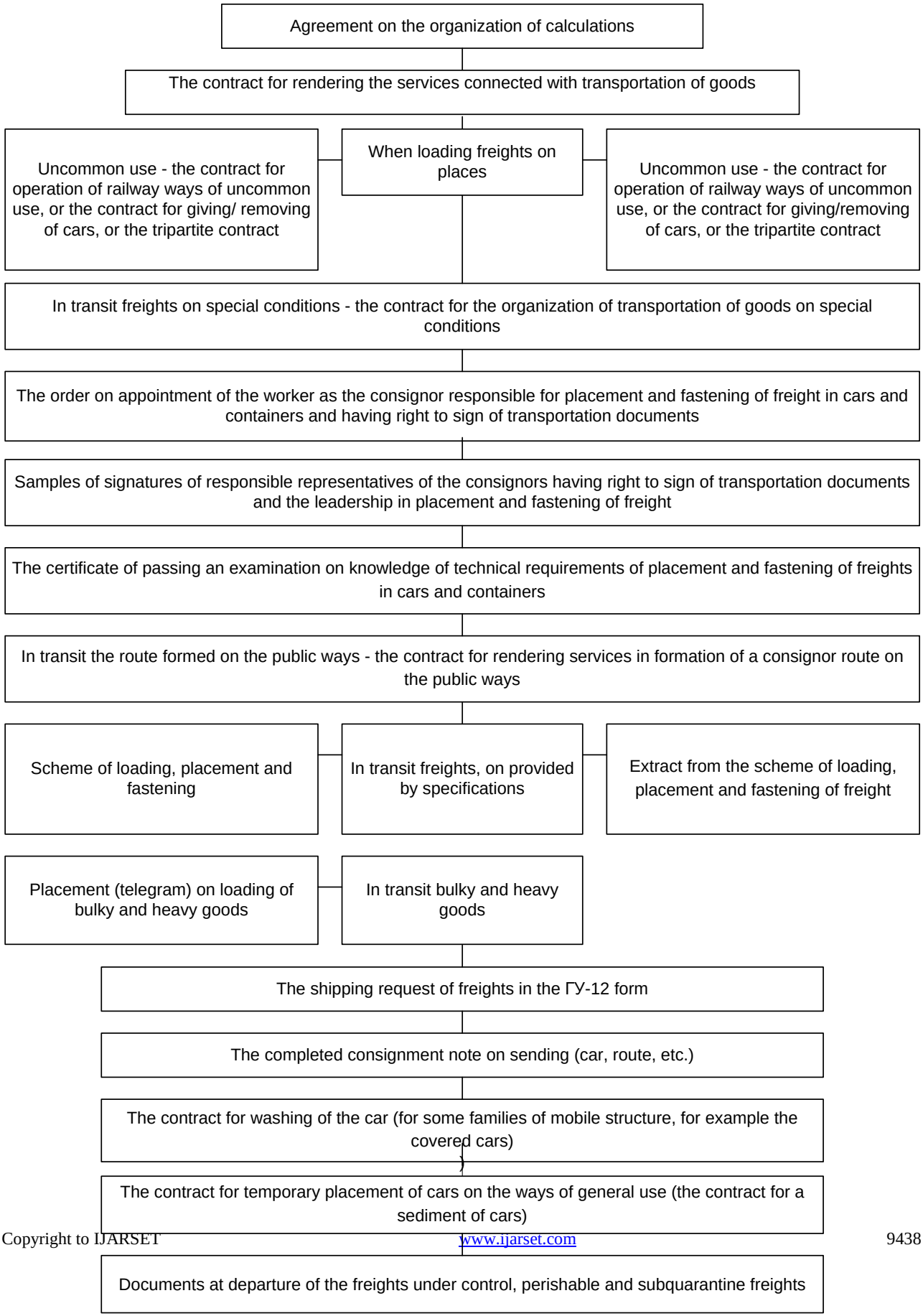

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Fig1. The list of contracts and documents when sending freights on railway transport

II. APPLICATION OF ELECTRONIC DOCUMENTS

Today all contracts signed by JSC "O'TY" with clients are made out on paper. Transition electronic interaction with clients when providing services to them, the sphere of rail freight transportation, certainly, is one of the perspective directions of development. Here you will not argue, everything is correct. However and in this case it would be quite good to consider the existing realities.

Considerable step upon transition to paperless technology of the organization of work is **the refusal of use of forms of the strict** reporting. Initial purpose of forms of the strict reporting consists in protection against their unauthorized use. Application of electronic documents allows to carry out functions of control by means of the EDS. As the perspective directions of improvement of technology of work with application the automated system for registration of carriage docements it is expedient to analyse need of a carriage leaf, having reconsidered its form and fullness proceeding from modern technological tasks.

Application of electronic documents will allow to improve **technology of transfer of notices.** Need of transfer of notices is regulated by ChRT and Rules of transportation of goods. Fixing of time of transfer of notices allows in the subsequent correctly to calculate a payment for use of cars or for storage of freight. A considerable technological problem is that for fixing of two different notices (about arrival of freight on the station, about the forthcoming giving on an access road) one book ГУ-2 is used. As the decision it is offered to transfer the notice of arrival of freight automatically upon assorted putting down of a calendar stamp of the station of destination.

Along with interaction of the station and railway tracks of uncommon use of the same complex problem planning of transportations and the accounting of implementation of applications is.

Monthly planning is superfluous and inconvenient both for clients, and for workers of the railroad. The consignor cannot authentically specify the plan of shipment for month owing to the changing situation in the market or non-payments of contracts that causes the necessity of submission of additional applications both for transportation, and on account of change of the main.

Excess depth of planning leads to excessive paper work both for carrier, and for the sender; potentially predetermines existence of a penalty that negatively influences the consignor and, at the same time, does not increase profitability of JSC "O'TY". Existence of penalties at failure to follow plans of loading against the background of an unstable economic situation leads to the fact that consignors are reinsured and declare in the main plan only a part of volumes to avoid potentially possible penalties All other volumes of loading pass according to additional plans. The automated system has to satisfy rather full volume to needs of clients concerning planning of transportations taking into account:

- *transfers of the electronic application for giving of cars before the planned term* that is carried out now by the letter addressed to the station-master on the letterhead with the press;
- *indications of a cause of failure from loading of the sent car for filling of the registration form* (now the commodity cashier recognizes a cause of failure from loading by phone).

Today road sheets are printed out on papers, for further transfers on TechShD (for check of correctness of charge of money). Methods of improvement of work on check of correctness of charge of carrying payments, including with use of functionality the automated system have to be chosen depending on functions of TechShD. The full refusal of check of correctness of carrying payments can be realized in the conditions of timely input of correction coefficients to assorted tariffs, transition to maintaining reference books of NSI at qualitatively new level and completions of the existing software minimizing influence of "a human factor".

The refusal of transfer of documents on papers for control of correctness of charge of payments for additional works and services can be realized in the conditions of reduction of the list of payments, simplification of a technique of charge of payments (first of all, payments for giving and cleaning of cars), toughenings of control of correctness of execution of primary documents at the station level (including software).

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Planning of transportations are carried out on the basis of requests of consignors. Shipping requests of loads of ГУ-12, and also graphics of giving of cars of the ГУ-11 form in a paper form and in the form of the electronic legally significant documents signed with the EDS move consignors by means of the automated system (AS). At application electronically the certificate of existence of money on the account railway is not required from the client. Necessary general customer information will be available in real time. The main and additional requests are automatically transferred to special base of the accounting of shipping requests where access only to persons participating in approval will be included.

Unlike old technology, the consignor will not control a condition of the request, results of approval, a nonagreement or partial approval of shipping requests of loads of the indication of the reasons are transferred assorted which will notify the consignor. In case of transportation approval the consignor creates schedules of giving of cars of the ГУ-11 form.

Schedules of giving of cars of the ГУ-11 form the consignor electronically and are considered by the station commander. After signing of the schedule of giving of cars by the station commander with the EDS, information from the schedule can be transferred to the registration form. The result of performance of the planned volumes of transportations both on monthly, and on additional to plans is fixed in the registration form which is displayed assorted and is signed by the consignor. In fig. 2-4 shows advantage technology of documents management on the carriage process.

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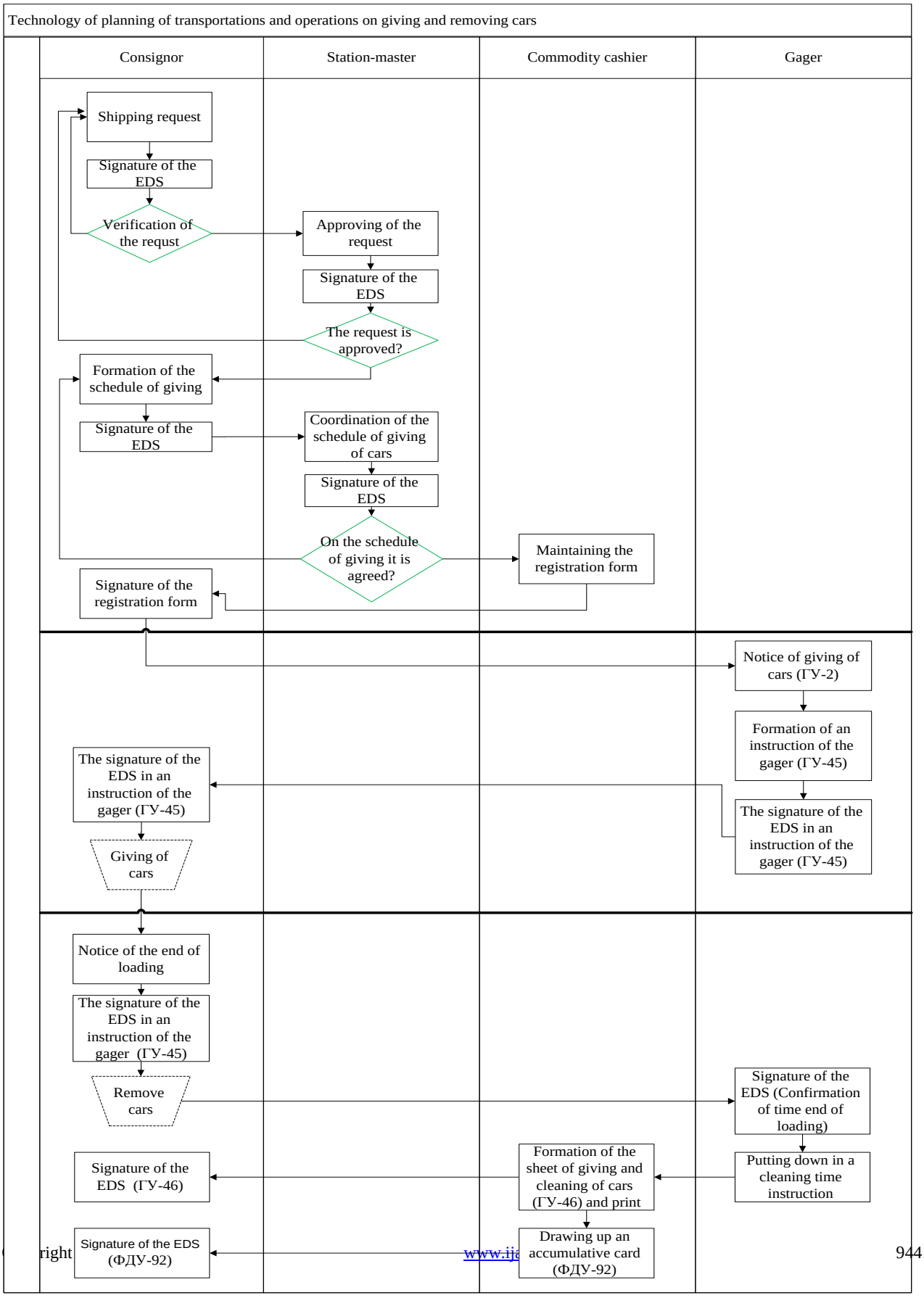

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Fig 2. Technology of planning of transportations and operations on giving and removing cars

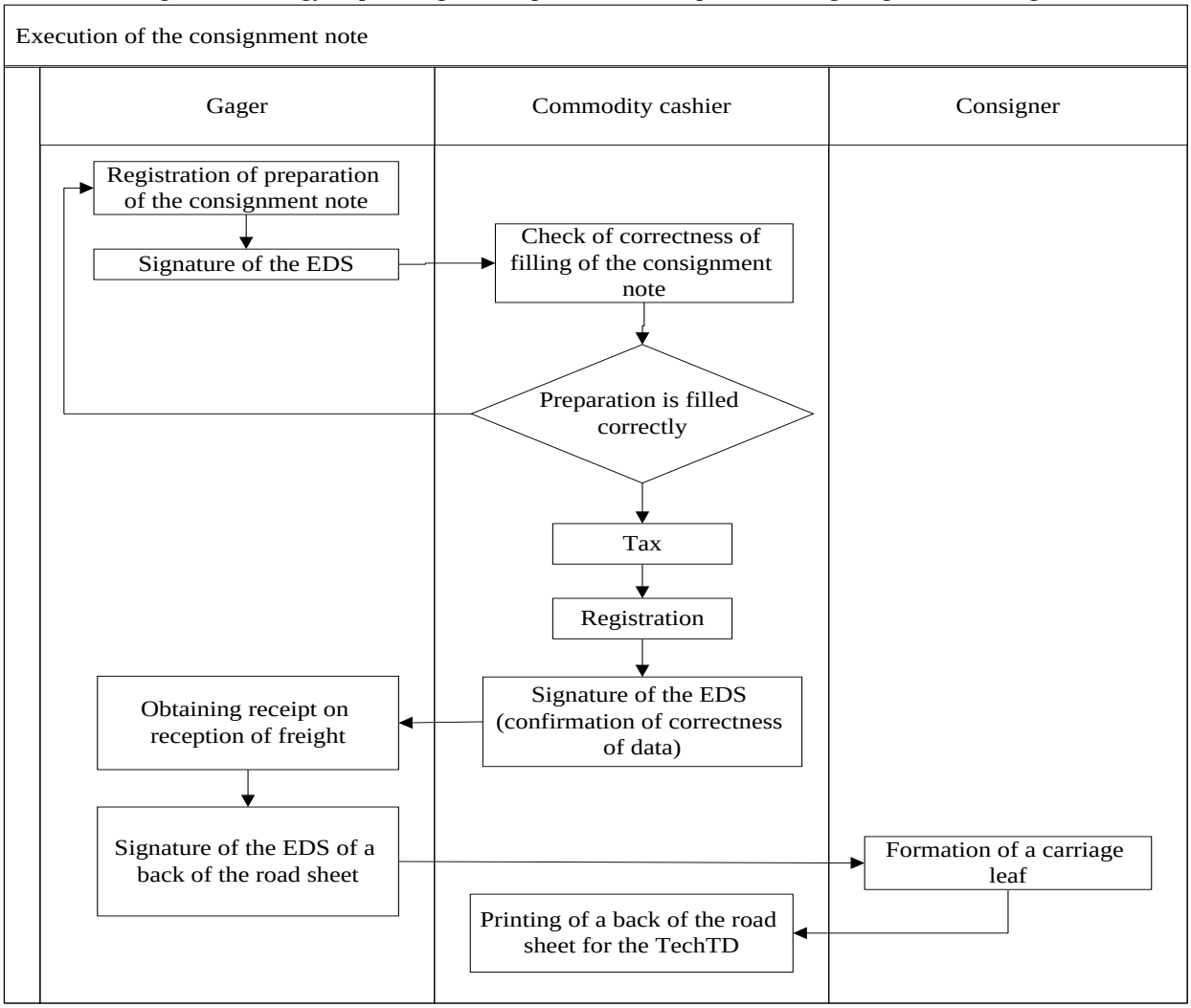

Fig. 3. Execution of the consignment note

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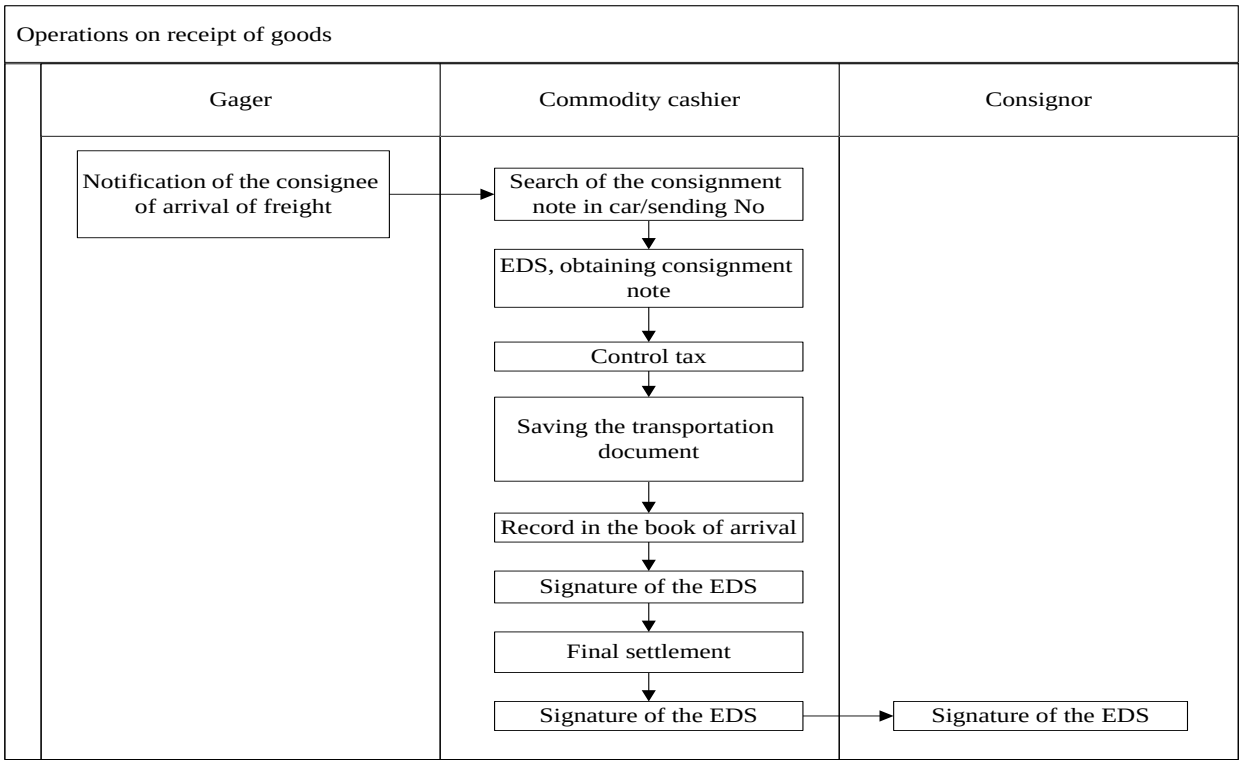

Fig. 4. Operations on receipt of goods

III. FORMATION OF A COMMON INFORMATION SPACE

Formation by means of the AS of a common information space for all participants of transportation process, structural divisions of carrier affects:

- interaction of carrier and the consignor/consignee by transfer of payment documents and tracking of a condition of personal account, expeditious informing on existence of receivables;
- interaction of carrier, the consignor/consignee and customs at customs registration of freights;
- formation of the uniform database on acts of the general form due to their registration by all staff of assorted carrier;
- formation of the database on prohibitions and restrictions of loading;
- the operational accounting of profitable receipts at the road level.

The condition of personal accounts of clients and existence of receivables is traced daily at the level of TechShD. Receivables problem on JSC “O’TY” is extremely urgent, commodity cashiers, chiefs of stations and experts I NEIGH with clients continuous work on its decrease is carried out.

It is expedient to include the AS functions for the notification of the client of existence of receivables and impossibility of paperwork at a stage of formation of preparation of the consignment note.

Important aspect when forming a common information space for all participants of transportation process is interaction with customs applicants and bodies of customs control by means of electronic legally significant documents. Now paper document flow at registration of freights according to certain customs procedures is implemented. The limiting factor of electronic document flow is the impossibility of the translation of shipping documents in an electronic form.

In compliance policy of the Republic of Uzbekistan for increase quality of the provided services is expedient to organize works with clients on the principle of "one window" with the subsequent transition to interaction with clients through

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the Information portal of JSC “O’TY”.

The AS has to act as the peculiar "cover reference book" accumulating necessary information from the automated systems of the railroad for its further representation to the client, on the one hand; on the other hand, the AS has to have sufficient functionality for performance by the client of full volume of legally significant actions at interaction with the railroad.

The possible *directions of development of the Information portal* is providing the following services:

- transfer to clients of invoices and lists of the rendered services for the subsequent payment, reconciliation statements of calculations, and also information on a condition of personal account and receivables;
- coordination of special conditions of transportations;
- providing information on dislocation of cars;
- informing on available services;
- consulting support;
- assembly claims activities;
- market researches, etc.

The functionality *of the Information portal* has to allow to realize and expand above-mentioned functions, however the interrelation *of web* service with other information systems of the road for providing necessary information to the client is necessary for implementation of work with clients by the principle of "one window".

System problems of increase in efficiency of use of the automated systems on JSC “O’TY” are:

1) lack of the uniform concept of development of information technologies on the railroad providing development, development and maintenance of software products is integrated for all technological processes of rail transportation. Now informatization is carried out is separate by certain technological sectors or local tasks that complicates complex use of the generated information at all levels and improvement of work of railway transport as complete system;
2) lack of unification of the automated systems intended for the solution of identical technological tasks.;
3) problem of the translation of shipping documents in an electronic form.

Now shipping documents are generated on papers. The translation them in a digital form demands the consent of a banking system, tax authorities, consignees and other participants of economic activity. Scanning of shipping documents with the subsequent assurance of the EDS is temporary solution of a problem for consignors with small volumes of departure.

Separate actions need to be carried out on introduction of a technique of training in assorted work, **professional development of workers of the railroad and training of users.** The variety of the software products used in commercial work, a possibility of their control "under themselves" assumes existence of skills of work and rather high education level.

It is necessary to add the AS with the "emerging" hints, reference information according to the sections "User's guides", creation of the training video on separate aspects of work with the AS. For consignors and consignees rendering of services on training in assorted work, for workers of the railroad - increase in overall performance of groups of introduction is expedient.

IV. CONCLUSION

For achievement of really significant progress in automation of management of operational work it is necessary to reconsider its principles. Information systems have to become the direct part of technological process providing control of technological discipline and reflection of all operations in real time. At the same time the reporting received from information systems for all levels of management has to be formed centrally, on the basis of primary information on technological operations and be provided to all levels of management from top to down from uniform storage of data.

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Electronic document flow has to become prevailing and legally significant: paper copies of documents in need of them have to turn out from information systems. Work with all primary documents in information systems has to be conducted with application of the digital signature fixing data about the employees making input or change of electronic documents.

Use of such system in a complex with legal procedures will allow to conduct electronic technological document flow, to control production discipline, will exclude the duplicating flows of information and a possibility of a misrepresentation of reports at the intermediate stages.

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