

Concept of Control of the Reliability of Customs Information

Saidov Abdusobirjon^{1,*}

Abstract

In this paper deals with the problem of modeling customs information and the criterion for controlling its reliability in the process of managing customs clearance of goods is considered. As the main object of the study, the information of the cargo customs declaration, which is submitted to the customs authorities in electronic form for customs clearance of goods, is considered. The main criteria for determining the reliability of customs information, based on the classical methods used by other fields of science, are given.

Key Words: reliability of information, cargo customs declaration, the process of customs clearance, electronic declaration of goods, the criterion for monitoring the reliability of information .

I. INTRODUCTION

One of the types of violation of customs legislation is the unreliable declaration of goods. The Criminal Code of many countries, including Article 182 of the Criminal Code of the Republic of Uzbekistan, provides for violation of customs legislation of this type and is prosecuted with criminal punishment.

A study of the history of the customs service shows that such acts take place as long as the customs service itself exists. The task of identifying unreliable customs declarations also has an equally ancient history. Until the middle of the twentieth century, this task was solved very simply - conducting customs inspection of the declared goods. If, as a result of customs inspection, it was established that the goods indicated in the customs declaration did not correspond to the declared goods, it was considered that the declaration was unreliable.

But the irreversible process of global globalization, the excessive increase in international trade turnover in comparison with the last century made such methods as physical customs examination to identify unreliable customs declarations ineffective. Therefore, specialists in this field began to intensively pursue the search for new

methods for identifying unreliable customs declarations, and in part they succeeded. The main requirements for them are the acceleration of the process of customs clearance of goods and the facilitation of foreign trade. Modern methods of revealing unreliable customs declarations include the management of customs risks, the use of large-scale inspection equipment, various technical means of customs control.

Despite the effectiveness of the above methods, they nevertheless require, in one way or another, to communicate with the declared goods in order to identify invalid declarations and do not allow modern methods of data processing to be widely applied to this process.

Proceeding from the foregoing, the study of new methods of revealing unreliable customs declarations that allow to solve the tasks set by processing the available data bank is relevant.

II. PROPOSED METHOD

2.1. Study of problem

Although in everyday life the term "unreliable customs declaration" is often used, along with it the term "customs declaration with an error" or simply "false declaration" is used. Regardless of how it is called, the task of identifying

Manuscript received December 12, 2017; Revised December 22, 2017; Accepted December 22, 2017. (ID No. JMIS-2017-0051)

Corresponding Author (*): A. Saidov, Prospect Islam Karimov-3, 100003, Tashkent city, Republic of Uzbekistan, a.saidov@outlook.com

¹State Customs Committee Republic of Uzbekistan, a.saidov@outlook.com

unreliable customs declarations is in the field of economic interests of any state, because this is directly related to the receipt of customs payments to the state treasury. Customs payments, as a rule, constitute a considerable part of the total revenue part of the state budget. For example, during the past five years, customs payments account for 16-19% of the total revenues of the state budget of the Republic of Uzbekistan stably [12].

On the other hand, the task of identifying unreliable customs declarations is a special case of a common and, as is known, ancient task of identifying false information, i.e. how to distinguish "truth" from "False". This famous task is mentioned in many ancient written sources, for example, Aristotle (384 BC), being the founder of logic, formulated three logical laws: the law of identity (*immutability of thoughts in the process of reasoning*), the law of contradiction (*two incompatible with each other judgments can not be true at the same time, at least one of them is false*) and the law of the excluded third (*if in one of the two expressions something is asserted about the object, and in the second one, one of them is necessarily true*) are completely devoted to methods of proving the truth or falsity of the predicate (propositions) under consideration [3].

On April 7, 2017, Google launched a new unique feature, "Fact-Finding", which allows users of the "World Wide Web" to verify the authenticity of information coming from the media. From now on, Google will closely monitor news coming from various media outlets and statements by officials. The result of the function will be the inscriptions "true", "untrue" or "half-truth". The role of auditors can be advanced world publications. Nevertheless, the new feature will attract attention to fact-checking organizations, but it will not help fight the spread of unreliable news [14].

The contrast of time, the examples given above - from IV cc. BC to 2017 - shows how old and urgent the task of ensuring the reliability of information. Despite the fact that hundreds and thousands of scientific papers are devoted to solving this problem, it becomes again and again relevant after time elapses.

Analyses of research results in this area show that it is not possible to develop comprehensive criteria for ensuring the reliability of information covering politics, economics, spiritual, cultural, scientific and technical and other fields. This is evidenced by a short list of studies by the authors - contemporaries of SM Ivanov. [8], Zmanovskaya EG [6], Monakhov M.Yu., Semenova I.I. [10], Kuznetsov I.N. [9], VE Zakharchenko [5], Zubets VV, Ilina IV [7], AA Belogaev. [4], Agareva O. Yu., Selivanov Yu. V. [2], Xin Luna Dong [13].

Together with this, certain successes are achieved in

controlling and ensuring the reliability of information in certain branches of science. For example, the authors of [13] argue that the method developed by them allows us to evaluate the information of Web resources with high accuracy. This method is based on internal signals, namely, on the correctness of the actual information presented on the web resource, rather than external signals that have traditionally been based on the use of links to the site. In this method, a web resource containing a small number of false facts can be considered reliable.

This method was applied to a database containing 2,8 billion facts extracted from the network and, thus, assessed the authenticity of 119 million web pages. The evaluation of the result groups, conducted without the use of automatic means, confirmed the effectiveness of the method.

2.1. State of problem

When it comes to the reliability of customs information, it means the identification of a reliable declaration of goods, i.e. it is necessary to allocate an "unreliable customs declaration" from the general submitted declarations to the customs authorities through the global Internet network in electronic form. As you know, all customs services of developed countries have long switched to electronic declaration.

Analysis of the database of facts of violation of the customs legislation of the Republic of Uzbekistan for several years shows that to organize an effective fight against illegal trafficking in goods, it is necessary to evaluate the reliability of information about the goods in all parameters, i.e. Multidimensional analysis of information about the product is required.

The information on the goods is fully reflected in the cargo customs declaration (CCD). As is known, CCD is formalized in the form of a multidimensional matrix D , which is the source of state customs statistics [12].

Each element of this matrix is an information variable $dnml$, which reflects the value of one of the CCD graphs. Here:

- n - is the number of the specified CCD column,
- m - is the serial number of the gas turbine engine,
- l - the level of detail of the n th graph of the CCD.

The number of CCD graphs is 54. The serial number of the gas turbine engine is updated every year and approximately five hundred thousand gas turbine engines are submitted to the customs authorities of the Republic of Uzbekistan per year, of which about 300,000 are issued. The level of detail of each CCD graph is determined depending on the complexity of the analysis tasks posed. The highest level of detail belongs to the 31-graph CCD, which reflects the parameters of each goods customs clearance.

If we take into account the fact that according to the legislation of the Republic of Uzbekistan, only 3 hours of time are spent for the full verification of the CCD, including its reliability, then from the above (1) it can be verified that D is a typical OLAP cube - (On-Line Analytical Processing - interactive data analysis) with all the currently available data processing technologies. For each fixed $m = m_0$, a "slice" of the OLAP cube $D = D_0$ (d_{ni}) is obtained, representing a separate gas turbine engine.

Concerning the control of the reliability of the CCD, it can be said that in order for the information on the goods to be reliable, each graph of the CCD must be reliable and meet certain reliability criteria. If we assume that for a certain graph of a gas turbine engine a confidence interval is set, i. the upper and lower confidence limits are defined, then the reliability criterion parameters are a three-dimensional table K

$\mathcal{D} =$

	d_{111}	d_{121}	...	d_{1M1}
	d_{211}	d_{221}	...	d_{2M1}

	d_{N11}	d_{N21}	...	d_{NM1}

(1)

$\mathcal{K} =$

	k_{111}	k_{121}
	k_{211}	k_{221}

	k_{J11}	k_{J21}

(2)

To assess the reliability of customs information, the concept of a reliability function is introduced, which takes the values 0 or 1:

$$\mathcal{A} = \mathcal{A}_m(x_{ij}), i = \overline{1, I}, j = \overline{1, J}, m = \overline{1, M} \quad (3)$$

where A_m is the confidence level of m - CCD;

x_{ij} - an estimation of reliability of j -detailing of i -graph CCD. The value of x_{ij} is defined as follows:

$$x_{ij} = \begin{cases} 1, & \text{if } k_{i1j} \leq d_{imj} \leq k_{i2j} \\ 0 - & \text{otherwise} \end{cases} \quad (4)$$

Here is the m -number of the controlled CCD.

It should be noted that the reliability criteria for each CCD column are not always established, i. for some of the CCD graphs such criteria may or may not be mandatory. Therefore, between the number of CCD graphs and the number of criteria, the following relationships are valid: $I \leq N, J \leq L$. Here the equality sign is fulfilled if the reliability criteria are defined for detailing each graph of the gas turbine engine.

The dependence between the value of the function A and its arguments is established under the following assumptions: if at least one detail element of one CCD column is not reliable, then the considered CCD is considered not reliable. In this case, the function of reliability of customs information is defined as follows:

$$\mathcal{A}_m = \prod_{i=1}^I \prod_{j=1}^J x_{ij}, \text{ where } m = \overline{1, M} \quad (5)$$

2.3. Criteria for controlling the reliability of customs information

From the above notation, it can be concluded that if the reliability function $A_m = 1$, then the submitted CCD is considered reliable, otherwise the declaration is considered not reliable and is subject to verification of application documents.

In order to determine the value of the reliability function A_m in (4), the reliability intervals for the detail elements of the CCD graphs must be set, i.e. it is necessary to determine the criteria for controlling the reliability of customs information. In other words, we return to the problem discussed in the part "The study of the problem" of this article.

As before, we mentioned that it is not possible to develop comprehensive criteria for ensuring the reliability of information covering politics, economics, spiritual, cultural, scientific and technical and other spheres.

Nevertheless, the task of distinguishing "false" or "reliable" information from the general array is of interest to numerous scientists, among whom there are those who have devoted their entire lives to solving this problem.

There are scientists who are engaged in and are engaged in the task of determining the authenticity of the hadith in *Islam*. The concept of hadeeth is defined as follows: "*hadith* - is a *message* about any word or deed of the Prophet, sallallaahu 'alaihi wa sallam, unspoken by his approval or his quality" [11].

The scholars adopted the principles and rules for the transmission of the hadeeth, perfected, systematized and presented them in special works that later received in their totality the title of the "science of the terminology of the hadith" ('ilm mustali al-hadith). This science is about the fundamentals and rules for determining the acceptability or unacceptability of the source (isnad) and the text (matn) of the hadeeth. It makes it possible to distinguish authentic hadith from hadiths that have some or other shortcomings.

It is known that hundreds of scientists were engaged in this science for more than 13 centuries, the most famous of them are Muhammad ibn Ismoil al-Bukhori, Muslim ibn Hajjorz Naysubriy, Muhammad Abu Isa at-Termizi and others. About the legendary scientist al-Bukhari (810-871) write that he devoted 40 years of his life to collecting and analyzing the hadith, collected more than 700 thousand hadith, worked for 16 years to create a criterion that separates the "authentic" hadith from the "unreliable".

Analyzing more than 700,000 hadith, he collected only about 7 300 hadiths in his book *Al-Jami-as-sahih*, which for more than 11 centuries is considered the most reliable book, after the Koran. The number of people who studied with him had reached 90,000 people.

reliability of information. For sometimes the hadeeth is called "khabar", which is translated in the broad sense as a "message". However, there are fundamental differences between these two words: each hadeeth is a "hub" ("message"), but not every message ("khabar") is a hadeeth [1].

Criteria for separating "authentic" hadith from "unreliable", which scientists have used and developed for many centuries, are divided into 2 groups of conditions:

- criteria of reliability for a source of hadeeth (sanad);
- criteria of authenticity for the text of the hadeeth (matn).

Inclusion of a certain hadeeth in the "credible" could only occur if its source (sanad) met the following three requirements.

The first condition: *continuity and completeness of the Sanada*. All the hadeeth transmitters, from the beginning of the transmitter chain to the end, should receive a message directly from each other.

Second: *the conscientiousness of the transmitters*. Each transmitter of the hadith must be an adult, reasonable, obedient to Allah.

Third: *transmitter memory*. The transmitter must be able to transmit messages as well as it received it (verbally or in writing). He should never be accused of conveying a lie.

Scientists sometimes emphasize the importance of the following two conditions:

- a) *live in the same age*. That is, every transmitter

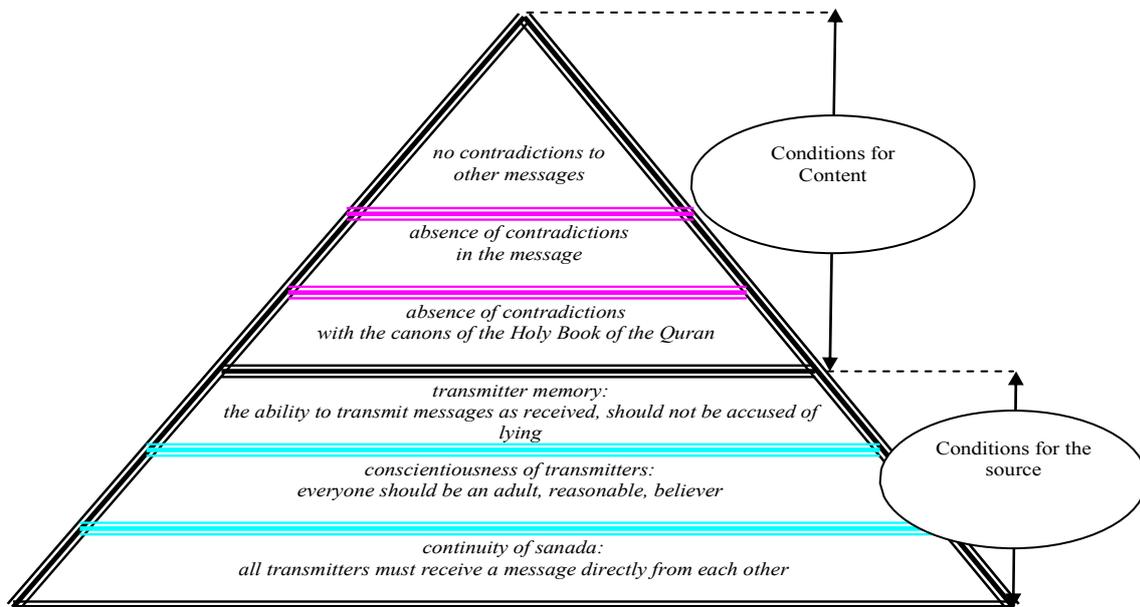


Fig.1. Pyramid criterion for determining "authentic" hadith

Despite the fact that the subject of this science differs from the subject that we are researching, its methods and reliability criteria will be useful for solving problems of secular sciences, including the task of controlling the

must live in the same age with the person who transmitted the hadeeth to him.

But they, in our opinion, explain the first condition, because if they did not *live in the same age* or *did not meet*,

b) *meeting*. That is, every transmitter must meet at least once with the person who gave him the hadeeth. then the first condition would not be fulfilled. could not receive a message directly from each other
 Inclusion of a certain hadeeth in the composition of "authentic" could occur only if its text (matn) was consistent with the following three requirements.

Fourth: *the absence of contradictions with the canons of the Koran*. In the text of the hadith, there should be no contradiction with the revealed names, laws and rules of the holy book of the Qur'an.

Fifth: *no shortcomings in the message*. In the text of the hadith, there should not be contradictions of the text of the hadeeth, there should not be thoughts contradicting each other, capable of weakening the message.

Sixth: *there is no contradiction between the messages sent*. In the hadith text, there should not be a contradiction of the hadiths transmitted by other transmitters, or the hadith transmitted by the transmitter, which exceeds it in level.

two groups of conditions:

- conditions for the source of customs information;
- conditions for the content of customs information

Inclusion of a CCD in the "reliable" is carried out only if its source meets the following three requirements.

The first condition: *reliability and security of the software and hardware complex of information interaction*. The whole complex of information interaction - server, computer, telecommunication and auxiliary equipment, system, application software, database management systems should function smoothly, continuously and meet information security requirements.

Second: *the identifiability of the source of information*. Each transmitter of customs information must be identifiable, possesses an electronic digital signature and recognizes responsibility for false information.

Third: *low level of information source risk*. The transmitter should not previously be accused of presenting false customs information and in violation of customs legislation.

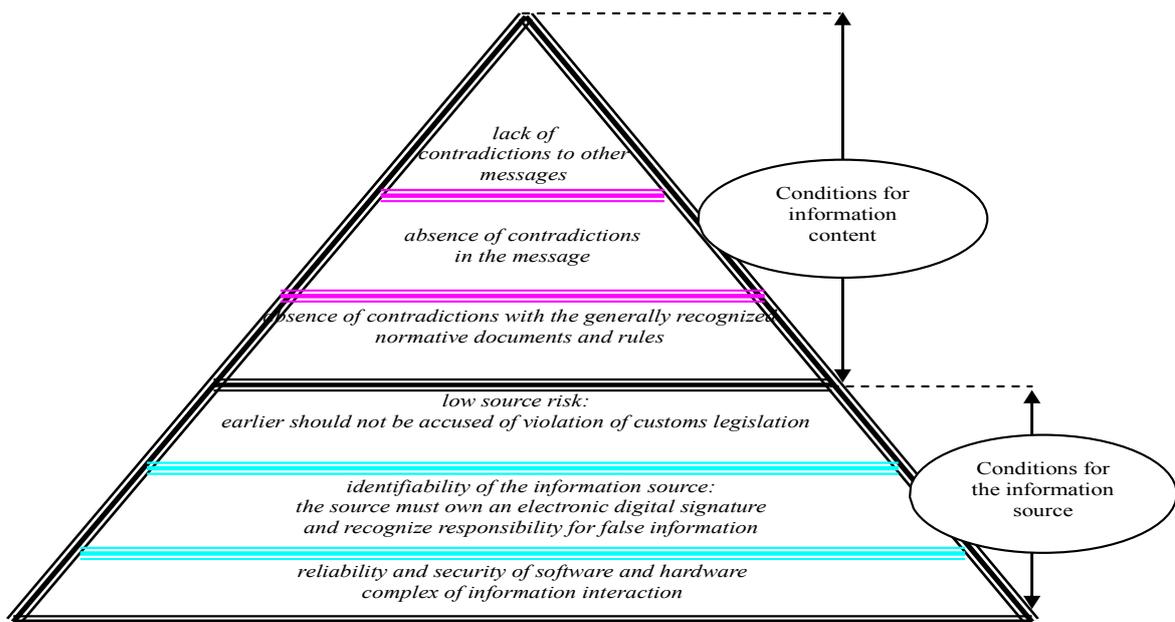


Fig.2. Pyramid criterion for determining the authenticity of customs information

Only hadiths, corresponding to all these criteria, could be included in the collection of "authentic" hadith (Fig. 1).

As can be seen, all the above conditions are entirely devoted to the definition of "authentic" hadith and can not directly and directly apply to the solution of the problem of determining the reliability of customs information. Nevertheless, one can borrow from them a systematic approach to determining the reliability of information and develop on their basis appropriate criteria for the solution of the task.

Based on the above analysis, we have developed criteria for the reliability of customs information, consisting of

Inclusion of a CCD in the "reliable" is carried out only if its content meets the following three requirements.

Fourth: *absence of contradictions with the generally recognized normative rules and reference data*. In the content of the CCD there should be no contradiction with international conventions, regulations and reference data.

Fifth: *no shortcomings in the message*. In the content of the CCD there should not be a contradiction between its various graphs and it must have complete information about the declared goods.

Sixth: *no contradictions between messages received from other sources*. In the content of the CCD there should

be no contradiction with information obtained from other verified sources, including from carriers, pre-shipment inspections, customs services of other countries. At least 10 alternative sources of information are recommended. Only those CCDs that meet all of the above conditions are accepted by the customs authorities for customs clearance. The pyramid of the reliability conditions of the gas turbine engine is shown in Fig.2.

III. CONCLUSION

In conclusion, we note that the above criteria for controlling the reliability of customs information are developed and applied in the first of its elements in the automated information systems of the State Customs Committee of the Republic of Uzbekistan in 2008, which are continuously being improved.

Over the past years, they have shown their viability and effectiveness. In particular, in 2015 the system identified 511 unreliable CCDs related to customs payments, the total amount of additional accrual was 3,5 billion soums (*roughly equivalent to 1,25 million US dollars, The official rate of the Central Bank of Uzbekistan is 1 \$ = 2809,98 UZS by 31.12.2015*).

Along with this, it should be noted that sometimes in the scientific environment there is an unjustified self-alienation from the study of methods and methodology of religious sciences in relation to the tasks of secular sciences. But scientists of religious sciences never limit themselves from using such methods and methodology of secular sciences.

Therefore, in order to solve the pressing problems of modern sciences, it is expedient to conduct research into methods not only of natural or secular, but also of religious sciences.

In this paper, the primary results of a study on the control of the reliability of customs information conducted at the initial stage are given. To obtain more tangible results, not only for the control of customs information, it is necessary to conduct large-scale research in this direction.

REFERENCES

- [1] Abu Isa at-Termezi. Al-Jami-as-saheeh. "Translation from Arabic: Mirzo Kendzhabek (Translation from Uzbek into Russian by RR Gindullina Ya. A. Kadyrova)," Tashkent, 2012.
- [2] O. Yu. Agareva and Yu. V. Selivanov, "Mathematical logic and theory of algorithms," Textbook, MATI, 2011.
- [3] Aristotle, "Analytics, the first and second, the

translation from the Greek language BA Fotkh," GosPolitIzdat. M., 1952.

- [4] A. A. Belogaev, "Investigation of the transmission of Web-data in cellular networks," *Information processes*, Vol. 16, No. 4, pp. 362-374, 2016.
- [5] VE Zakharchenko, "Control of the reliability of parameter values in the process control system," *Automation in industry*, No. 7, pp. 10-14, 2008.
- [6] Zmanovskaya, "The main criteria for evaluating PR information, allowing to unite the interests of the media and business," *Young Scientist*, No. 5, pp.183-186, 2011.
- [7] Zubets VV and I. V. Ilina, "Estimation of the reliability of network information," *Bulletin of TSU*, vol.16, issue 1, pp.209-212, 2011.
- [8] Ivanova SM, "An estimation of reliability of the information found in a network the Internet," *the Teacher of the XX CENTURY*, No. 4, pp 54-60, 2015.
- [9] I. N. Kuznetsov, "Information: collection, protection, analysis," Textbook on information and analytical work, M., OOO Yauza, 2001.
- [10] M. Yu. Monakhov and I. I. Semenova, "Kognitivnaya model of assessing the level of reliability of information in synthesized scientific and production documentation," *Modern problems of science and education*, No. 1, 2014.
- [11] Muhammad Yusuf M, "Mustalahul hadith," Monograph, Tashkent, 2011.
- [12] A. A. Saidov, "Methods for ensuring the reliability of customs information," *Materials of the International Scientific and Technical Conference*, pp. 213-220 November, 2017.
- [13] Xin Luna Dong and others, "Knowledge-Based Trust: Estimating the Trustworthiness of Web Sources," <https://arxiv.org/abs/1502.03519>, arXiv:1502.03519v1 [cs.DB] 12 Feb 2015.
- [14] Google launched a service to verify the reliability of news. 2017 year. [electronic resource]. Access mode URL: <http://tass.ru/obschestvo/4163395>.

Authors



Saidov Abdusobirjon Abdurahmonovich (a.saidov@outlook.com) is the head of the department for the implementation of information-communication technologies of the Customs Committee of the Republic of Uzbekistan, he was born in Fergana Region of Uzbekistan. He received his diploma in the option of mathematics from the Tashkent National University in 1982 and received his Ph.D. in 2016. He is a Ph.D of Technical Sciences. His research includes security of information and data. He is the author of 5 books.