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University of Applied Sciences

Degree Programme in International Business / International Trade

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RUSSIAN STANDARDS APPLICABLE FOR EUROPEAN RAILWAY PRODUCTION: COMPLEXITY, CONTRADICTION AND CONFORMITY ASSURANCE

Case Company: Bombardier Transportation

Bachelor's Thesis 2015

ABSTRACT

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Russian Standards Applicable for European Railway Production: Complexity, Contradiction and Conformity assurance

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The technical regulation sphere, namely conformity assurance regulations, in Russian Federation are complex, bureaucratic and both time and money consuming. Even producers and retailers originated from Russia experience difficulties when obtaining appropriate certificate that is required for market access. Moreover, the on-going changes caused by various economic integrations make enough complicated processes even more tangled.

The conducted research aims to explain Russian technical regulation to the foreign manufacturer, Bombardier Transportation, which is planning further production and sell on the territory of Russian Federation. Drawn analogies with European standards and processes of conformity assurance intend to clarify and show that Russian technical regulation works according to the same rules as its' European's counterparty. Research reveals contradiction in state norms and provides a solution if a contradiction arises.

The study relies on the official publicly available documents, such as government decrees, decisions and publications. Also several interviews with certification experts have been held. The academic knowledge that has been obtained for this thesis is illustrated with common practices that companies experience when passing through the same bureaucratic procedures.

The solutions provided in the final part of research are designed to overcome difficulties and reduce time and money costs during conformity assurance procedures. Based on the results of the research the training on Russian standards and technical regulation has been held inside the company. Although several questions remain opened, the vector of further activity has been found.

ACKNOWLEDGEMENTS

This thesis is a result of the research that I did for the Bombardier Transportation, where I did a 3,5 month internship in the position of Project Trainee. Working environment in BT allowed me to make the research deep and comprehensive enough to make it respond to the company needs, to communicate with experts, while seeking to the answers for research questions and cooperate closely with businesses from both France and Russia.

This thesis would not be possible without the support of several people. First of all, I would like to express my gratitude to the Dr. Sc., Principal lecturer of IB programme Minna Söderqvist, my thesis supervisor, who despite the enormous workload literally took me under her wing, when I was in student exchange in France, which made it much harder to supervise me. Without her constant support through emails and Skype conversation, I would have stuck somewhere in the middle of thesis writing process and would have hardly find motivation to continue. I am grateful for all the guidelines that Mrs. Minna Söderqvist gave me. I feel that I was getting as much support as anyone else, who was present on the campus during the thesis writing.

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TERMS AND ABBREVIATIONS

Abbreviations:

AFNOR	Association Française de Normalisation
BA	Bombardier Aerospace
BIPM	International Bureau of Weights and Measures
BT	Bombardier Transportation
CCU	Committee of Custom Union
CE	Certification of Europe
CEN	European Committee for Standardisation
CENELEC	European Committee for Electrotechnical Standardisation
CIS	Commonwealth of Independent States
CU	Custom Union: Russia, Belorussia, Kazakhstan
DIN	Deutsches Institut für Normung
EAC	EurAsian Conformity
EASC	EuroAsian Interstate Council for Standardisation, Metrology, and Certification
ECU	Eurasian Custom Union, a nother abbreviation for CU
EEC	Eurasian Economic Committee
ETSI	European Telecommunoication Standard Institution

EU	European Union
EurAsEC	Eurasian Economic Community
FBO RC FRT	Federal Budgetary Organization "Register of Certification on the Federal Railway Transport"
FCS CSFT	Federal Customs Service Customs Statistics of Federal Trade
FL	Federal Law
GOST R	Governmental Standard used in Russia (Russian Federation)
GOST	Governmental Standard used in former USSR republics
IAF	International Accreditation Forum
IEC	International Electrotechnical Commission
ILAC	International Laboratory Accreditation Cooperation
ISO	International Standardization Organisation
ITT	Invitation to Tenderers
MINPROMTORG	Ministry of Industry and Trade of Russia МИНПРОМТОРГ
NQI	National Quality Infrastructure
OECD	Organisation for Economic Cooperation and Development
OPZhT	United Enterprise of Railway Transport ОИЖТ
RF	Russian Federation, Russia

ROSSTANDART	Russian Standard, the name of the Federal Agency on Technical Regulation and Metrology РОССТАНДАРТ
ROSZHELDOR	The Federal Agency for Railway Transport РОСЖЕЛДОР
RSFSR	Russian Soviet Federative Socialistic Republic
TBT	Tariffs and Barriers to Trade
TR	Technical Regulation
TT	Customer Technical Specifications
WTO	World Trade Organisation
KGC	Classificatory of State Standards
OCT	Industrial Standard
CTO	Standard of Enterprise, STO

Terms:

<i>Accreditation</i>	The activity of providing independent attestation as to the competency of an organization or individual to offer specified conformity assessment services as testing, inspection, or certification (Racine, 2011); “official recognition by the agency for accreditation of a natural person's or legal entity's authority to perform works in a certain sphere of compliance evaluation” (Federal Law №184 on Technical regulation, 2002).
<i>Certification</i>	“Certification is formal procedure by which an accredited or authorized person or agency assesses and verifies (and attests in writing by issuing a certificate) the attributes, characteristics, quality, qualification, or status of individuals or organizations, goods or services, procedures or pro-

cesses, or events or situations, in accordance with established requirements or standards” (Business Dictionary, 2014). Certification – approval by an independent body in a form of written assurance (a certificate) that the considered product, service or system meets specific requirements established by officials. (ISO, 2014)

Compliance

Compliance is an agreement between customer and manufacturer to present as final product what was ordered. According to the Dictionary of Transport and Logistics (2002), compliance is vehicle being tested to be revealed to be fully compliant with requirements.

Homologation

Homologation is the granting of approval by an official authority, which is also can be called certification. Dictionary of Transport and Logistics (2002) states that “in vehicle manufacture, a specified number of a particular model has to be built to achieve homologation” (117). After certain amount of models been built the vehicle can be approved.

Metrology

Metrology is the science about measurement and its application.

Technical regulation

“Technical regulation is a document that lays down product characteristics or their related processes and production methods, including the applicable administrative provisions, with which compliance is mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method” (WTO, 1995).

1 INTRODUCTION

1.1 Purpose of the Study

The objective of the thesis is to study the system of norms and standards of Russian Federation in detail and to show the company how it is applied in international context on the example of train production industry. The easier further cooperation with Russia will be achieved by fulfilling this objective and research/development goal.

1.1.1 Company Introduction

Bombardier is the only one company in the world that manufactures both aircrafts and train vehicles. It is the company with 76,400 employees in 79 production and engineering sites in 27 countries and with headquarters in Montréal, Canada. Bombardier shares are traded on the Toronto Stock Exchange (BBD) and are listed on the Dow Jones Sustainability World and North America indexes. In the 2013 fiscal year Bombardier revenue accounted to the \$18.2 billion USD.

Bombardier describes their vision as following: “We look far ahead to see and shape the future of mobility. Our goal is to continuously find better ways to bridge distances and bring people together. Across cities, countries and the globe. This is our passion.” The mission statement of Bombardier is: “The Evolution of Mobility is our brand promise. A promise to everyone.”

In the Bombardier “Core Values& Leadership Attributes” presentation from July 2006 (Bombardier, 2006), it is stated:

“Our mission is to be the world’s leading manufacturer of planes and trains. We are committed to providing superior value and service to our customers and sustained profitability to our shareholders by investing in our people and products. We lead through innovation and outstanding product safety, efficiency and performance. Our standards are high. We define excellence—and we deliver.”

Bombardier has two divisions, Bombardier Transportation and Bombardier Aerospace. Divisions hold approximately the same share of company activity. Figure 1. Bombardier Divisions reflects the share of each division in the fiscal year 2013.

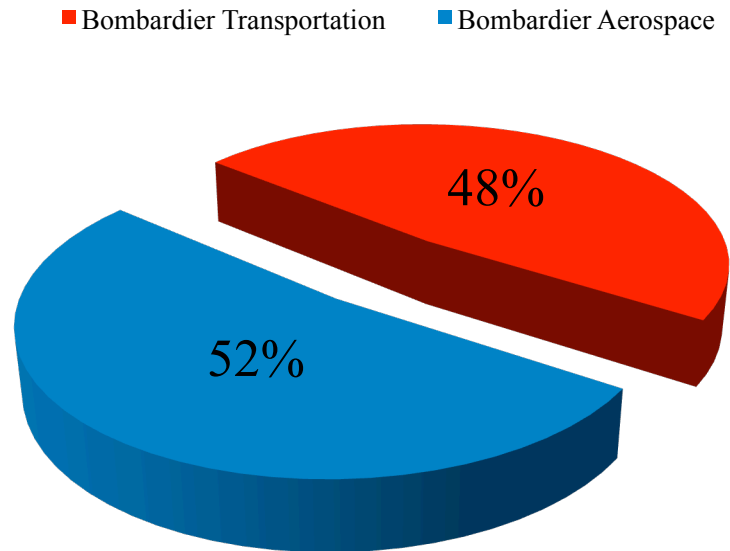


Figure 1. Bombardier Divisions

Bombardier Aerospace revenues in 2013 accumulated in \$9.4 billion, whereas order backlog accounted in \$37.3 billion. BA has customers in more than 100 countries and present in 29 countries with 37 700 employees. Its headquarters are in Montreal, Canada.

Bombardier Transportation is headquartered in Berlin, Germany. BT has 63 production sites situated in 26 countries. This is shown in the map in Figure 2. BT employs more than 38 500 people and has customers in the more than 60 countries.

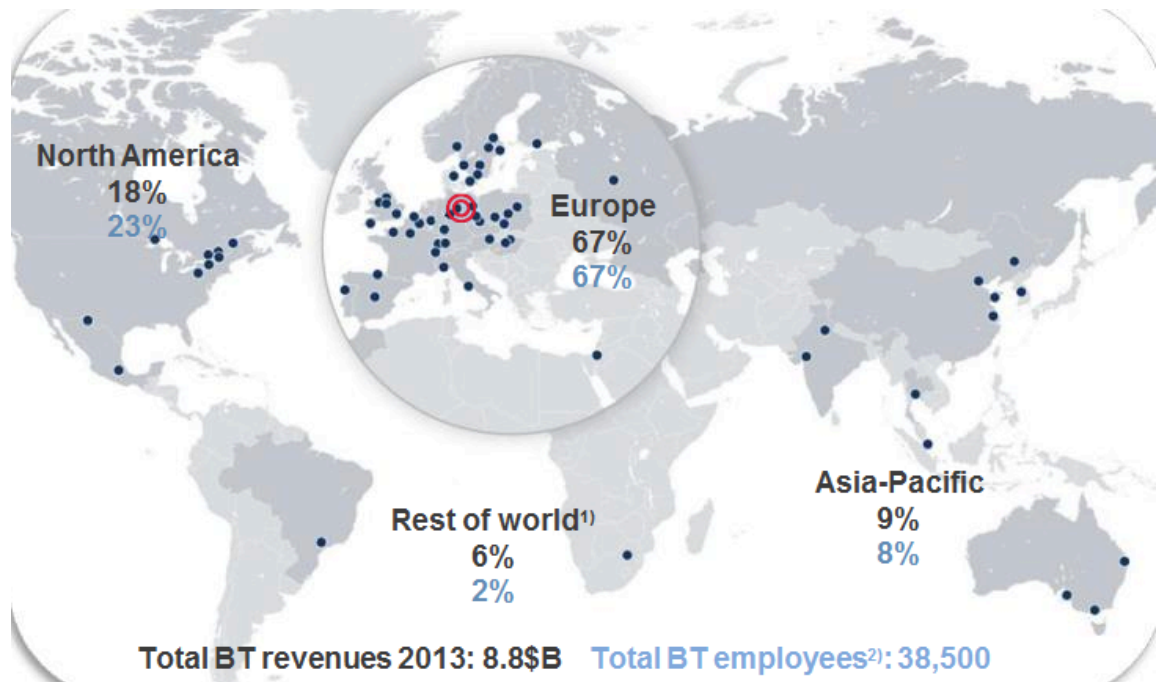


Figure 2. Map of Bombardier presence

Bombardier Transportation is a manufacturer of rolling stock, supplier of signalling systems and maintenance services. Among rolling stock production range BT offers its customers light rail vehicles, trams, metros, commuter, regional, intercity and hi-speed trains, electric and diesel locomotives, bogies.






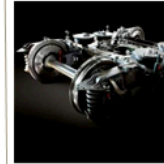
Rail Vehicles	Transportation Systems	Services	Rail Control Solutions	Propulsion & Controls	Bogies
 <ul style="list-style-type: none"> ▪ Light rail vehicles ▪ Metros ▪ Commuter trains ▪ Regional trains ▪ Intercity trains ▪ High speed trains ▪ Locomotives 	 <ul style="list-style-type: none"> ▪ Driverless Systems: Monorails, Metros, People Movers ▪ Light rail systems ▪ Metro Systems ▪ Intercity Systems ▪ E-mobility Solutions ▪ Operations and Maintenance 	 <ul style="list-style-type: none"> ▪ Fleet Management ▪ Asset Life Management ▪ Material Solutions ▪ Component re-engineering and overhaul 	 <ul style="list-style-type: none"> ▪ Integrated control systems ▪ Automatic train protection and operation ▪ Interlocking systems ▪ Wayside equipment ▪ Services 	 <ul style="list-style-type: none"> ▪ Traction converters ▪ Auxiliary converters ▪ Traction drives ▪ Control and communication 	 <ul style="list-style-type: none"> ▪ Portfolio to match entire range of rail vehicles ▪ Full scope of service over the lifetime of a bogie

Figure 3. Range of Products

BT market is wide and variable. As was mentioned above, BT supplies its production to more than 60 countries. In the last five years among BT's customers were: Stock-

holm, San Francisco, New York and Delhi metros, Basel and Berlin tram networks, Australian and French commuter and intercity lines.

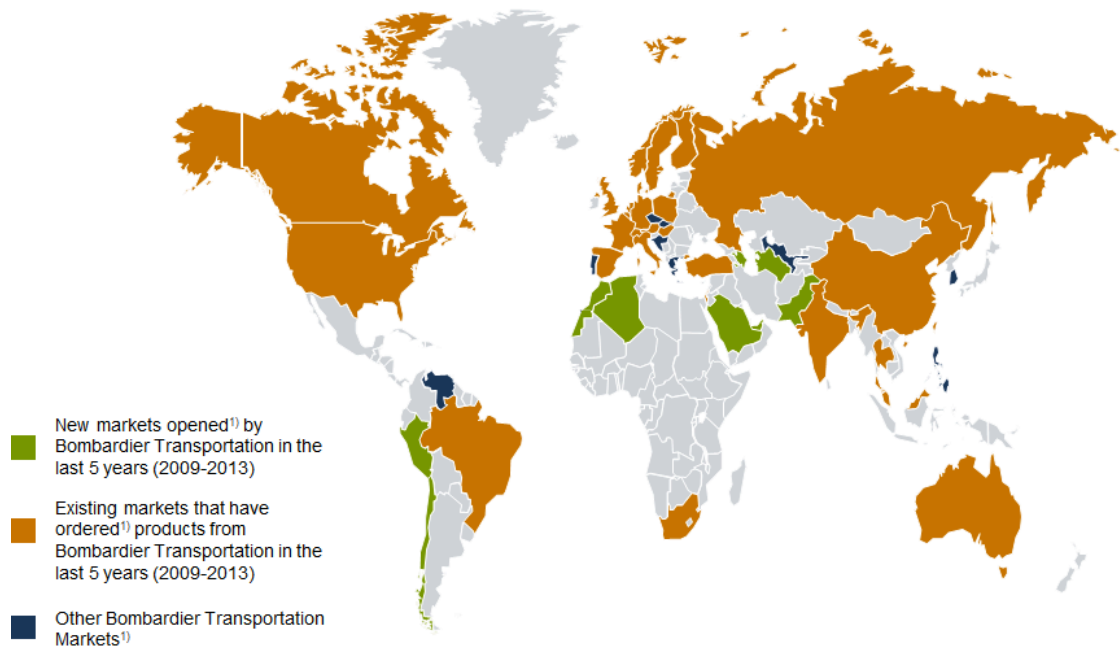


Figure 4. BT customers

BT's key competitors are: French based Alstom, headquartered in Spain CAF, two Chinese companies CNR and CSR and German rolling stock and system producer Siemens. All these companies have strong worldwide presence and offers production in the same categories as BT does: rolling stock, system integration and signalling. However, BT's competitive advantage is that BT offers full spectrum of rail production as well as spare part and maintenance. The range of products can be seen in Figure 3.

	Rolling stock						System integration	Signalling	Head-quarters
	Light-rail	Metros	Commuter and Regional	High speed and Intercity	Loco-motives	Monorail			
BT	XX	XX	XX	XX	XX	XX	XX	XX	Germany
Alstom	XX	XX	XX	XX	XX		XX	XX	France
Ansaldo STS							XX	XX	Italy
CAF	XX	XX	XX	XX					Spain
CNR	XX	XX	XX	XX	XX				China
CSR	XX	XX	XX	XX	XX				China
GE					XX				U.S.
Hitachi			XX	XX		XX	XX	XX	Japan
Kawasaki		XX	XX	XX				XX	Japan
Rotem		XX	XX	XX	XX			XX	Korea
Siemens	XX	XX	XX	XX	XX		XX	XX	Germany
Stadler	XX		XX	XX					Switzerland
Thales								XX	France

Table 1. BT competitors

1.1.2 Project Introduction

The project, for which purpose the present research is conducted, is an on going project of BT. The project named “Moscow Metro” as the final aim of it is to produce and deliver metro trains for Moscow Metro. Metro of Moscow is the second busiest metro in the world after Tokyo. It consists of 12 lines, 185 stations, its total lines length is 306 km and it has a passenger flow of 9.5 million people per day. Now Moscow Metro is expanding: both extending lines length and train park. By 2020 it is planned to extend metro lines by 160 km and built 78 new stations, 13 of which are already in use (Moscow Metro, 2012). As a consequence of metro expansion, Moscow Metro is going to announce in the end of 2014 a tender, where the best proposal will be selected. Bombardier and UVZ are going to participate in the tender together by making common bid, which will result in competitive advantage: national producer and European quality.

The project is arranged between Bombardier Transportation and UralVagonZavod (UVZ), Russian train and weapon manufacturer. BT and UVZ have experience of working together on the project of trams supply for Moscow city in 2013. This time the project supposes BT to perform preliminary design and supply of 80 car bodies and transfer technology about designing of full train until detailed design to UVZ, who in their turn will procure, perform assembly of trains and deliver 120 of 8 car trains to the Moscow Metro with associated product introduction and warranty. Also, for each train BT will supply bogies, control and traction systems.

Additionally, project requires that BT project team to support the sales efforts for the other CIS countries on the later stage and product development in parallel with main project design. BT will have no commercial relations directly with Moscow Metro, but in the bid will be announced that trains originally manufactured by Bombardier Transportation.



Figure 5. BT and UVZ presented their train for Moscow Metro to V.Putin and A.Merkel on the International Trade Show Hannovers Messe 2013

1.2 Research And Development Problem, Objective And Limitation

The problem is that European norms and standards are not applicable in Russia. The Russian Federation has its own Standard and Norms catalogue, which is called GOST. Another part of production is regulated by Technical Regulations which are common for the Custom Union Countries: Russia, Belarus and the Kazakhstan Republic. The issue is that, first of all, a foreign company, which usually produces according international standards for both domestic and foreign markets now faces the problem that internationally accepted norms are not valid in Russia. So they have to work with Russia's own regulations and standards, which in their turn are not harmonised with international one and could even be obsolete. It is hard to adapt to the other country's standards as it is hard to get access to the Russian standardisation and certification documents, or very often when access is possible the documents available only in Russian. Secondly, not all products are required to be certified in accordance with Russian State Standards. Yet, the customer requirement is that products to correspond to GOST.

The next problem is that there are several types of norms in Russia beside GOST and they may contradict each other. The Bombardier Transportation would like also to know which norms to follow in this case; about the hierarchy of the norm in more details. The problem of standards leads to the problem of product certification and homologation, so research is dealing with them both. It is essential to know how certification is done in Russia and what are the pitfalls. This work will allow BT easier further cooperation with Russian companies and on Russian market.

The objective of the thesis is to study in details the system of norms and standards of Russian Federation applicable for railway and metro production and to show the company how it is applied in international context on the example of train production industry. The physical outcome of the research is the training material handbook of about 100 pages, which explains in detail the national quality infrastructure system in Russia, hierarchy of standards, standard interdependence and future changes in the system; and other outcome - training held inside company, during which Russian standards and norms were explained to European engineers and arising questions were solved. Also the problem the training is dealing with is finding analogies with the European system to make engineers better informed. By fulfilling this objective and research/development goal, in terms of business easier further cooperation with Russia will be achieved.

1.3 Research and Development Question

There are a lot of questions that arise inside the company when working on the project. The main question is ‘How to apply Russian Standards and Norms?’ which includes following sub questions:

- What are these standards and norms?
- When are standards and norms applicable?
- What are the other or implied/connected norms (fire safety, sanitary norms, etc.)?
- Which norms to follow if they contradict to each other?
- In case if the Europe has better and less costly practices in manufacturing, but it does not correspond to Russian norms, could it still be applicable?

- If the customer requirements do not fit Russian standards, whose requirements should be followed: dictated by GOST or by Customer specifications?
- What the voluntary certification provides?
- What is being prepared, and what is the future of certification for Metros in Russia?
- Which office will release certification/homologation of company's products?

2 NATIONAL QUALITY INFRASTRUCTURE

2.1 Framework of National Quality Infrastructure

Racine (2011: 82) defines National Quality Infrastructure (NQI) as “the public or private institutional framework required establishing and implementing standardization, conformity assessment services (inspection, testing, and certification), metrology, and accreditation”. The components of NQI are closely connected and can hardly exist independently, which is shown in Figure 6. National Quality infrastructure is an institutional tool that among various activities aimed to regulate safety of the products on the market, protect consumers, establish order of market access, maintains quality of goods and services, etc.

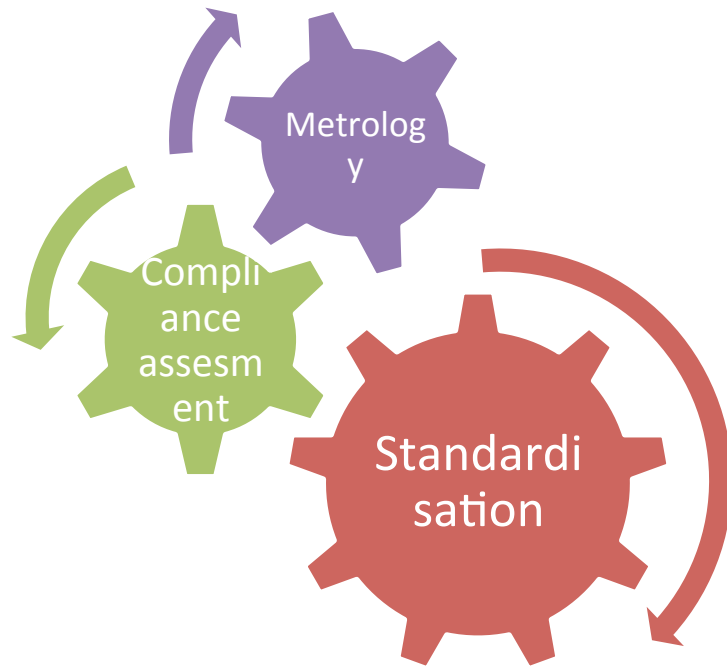


Figure 6. NQI components

The conducted research focuses on two parts of NQI: standards and conformity assessment, namely certification. The NQI broad structure with highlighted areas of study interest is reflected in the Figure 7. National Quality Infrastructure content. The figure shows, that on the level of the 4 NQI components, the “standards” component itself and parts of “conformity assessment” are interesting for study and going to be discussed and analysed.

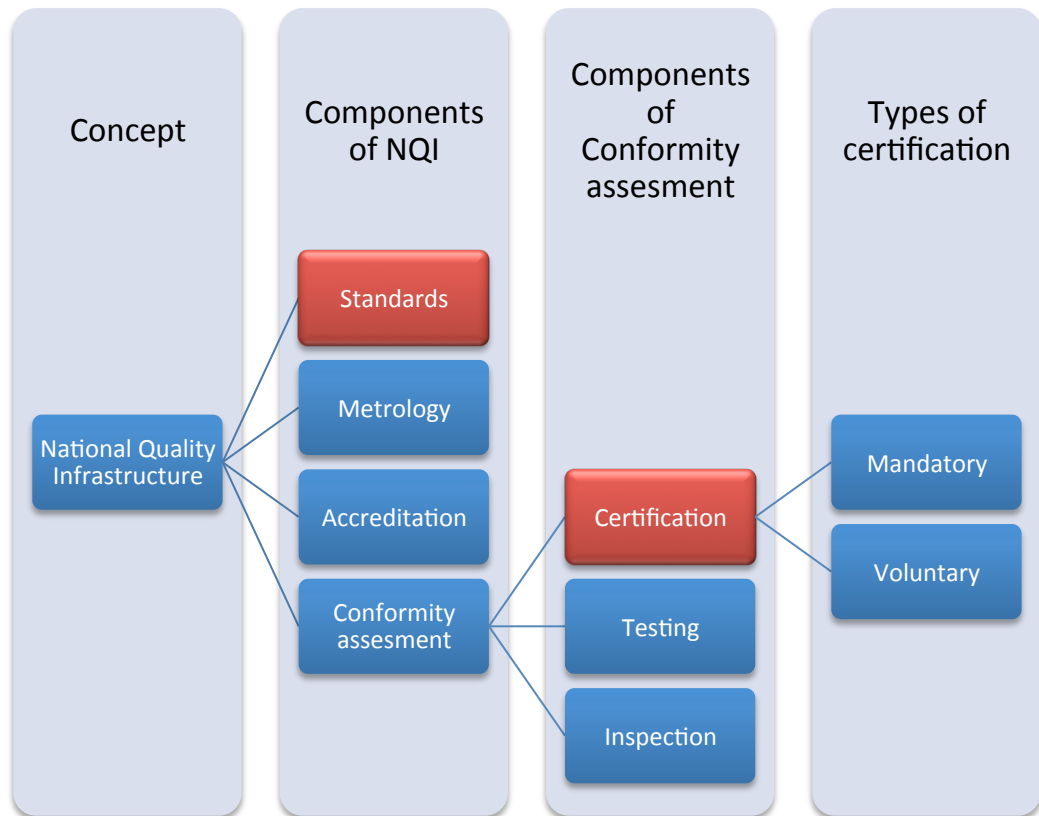


Figure 7. National Quality Infrastructure content

2.1.1 Standards and their importance in international trade

In WTO TBT Agreement (1995), standard interpreted as a “document approved by a recognised body, that provides for a common and repeated use, rules, guidelines or characteristics of a products or related processes or production methods, with which compliance is not mandatory”. Racine (2011) defines standards as examples and models that have been established by authority or customs. Standards, in their turn, “define how products, processes, and people interact with each other and their environments”. They bring an advantage to the trade, productivity and technological process.

Standards support government desire to protect consumers and environment from low quality products and dangerous production processes. However, standards serve various functions. Swann (2000) classified standards by their purposes:

- *Information and reference standards* are establishing the united technical language in order to make a comparison of physical attributes and convey de-

scriptive technical information. Thanks to these standards customer and supplier will always understand each other needs and possibilities.

- *Variety-reducing (or interchangeability) standards* (or majority of all standards) that defines the common characteristics of two or more entities. They provide the economies of scale and economies of learning in the production. For instance, the international standard ISO 216, that determines the trimmed sizes and classes of writing and printing paper (ISO, n.d.). It defines known by everyone the A4 format of paper, which leads to the ease in manufacturing, shipping, usage, printing, and etc. because of compatibility with printers and other technical devices.
- *Compatibility and interface standards* define physical or virtual relationships between independent entities and establishing interoperability and communication. These standards serve, for example, electrical equipment supply that comes to the outlets of one country and has to accommodate the single type of plug which is used in this country (Guasch, Racine and Triana, 2007:17).
- *Quality and safety standards* are standards that give an access to the consumers to quality and safety of the product before obtaining it. They widely present among such categories of products as food, toys, medical treatments and drugs and electrical appliances.

International, national or domestic standards play an integral role in human life.

Standards not only make markets work effectively, supports environment and human protection, but also increase market competitiveness and help to transfer new technologies and tools to the emerging countries and developing markets.

Varying from country to country, or from one region to another, all standards are aimed to protect consumers from untrusted producers, to protect their lives and health. Standards are tools with which government can filter the market from the not qualified and dangerous production.

2.1.2 Certification

Certification is “a formal procedure by which an accredited or authorized person or agency assesses and verifies (and attests in writing by issuing a certificate) the attrib-

utes, characteristics, quality, qualification, or status of individuals or organizations, goods or services, procedures or processes, or events or situations, in accordance with established requirements or standards” (Business Dictionary, 2014). Certification – “the provision by an independent body of written assurance (a certificate) that the product, service or system in question meets specific requirements”. (ISO, 2014)

Another word for certification is “homologation”. Homologation is the granting of approval by an official authority, which is also can be called certification. However, there is one minor difference between certification and homologation. Dictionary of Transport and Logistics (2002: 117) states that “in vehicle manufacture, a specified number of a particular model has to be built to achieve homologation”. After certain amount of models been built the vehicle can be approved.

Certification can be performed for product, process or system. Certification involves both private and private organisations, depending on the structure of NQI in particular country.

European NQI model

The European NQI’s main characteristic is that such activities as technical regulation (mainly standardisation), metrology, conformity assessment and accreditation are separated and has the specific institute that is responsible for this particular kind of activity. The institutions, in their turn, established on different levels according to the strict hierarchy: international-regional-national (see Figure 8). For instance, the French standards institutional hierarchy will be the following: on the international level standards are governed by ISO and IEC, on the level of European Union there is a regional organisation CEN/CENELEC and on the national level there is AFNOR standards organisation.

Moreover, service providers are separated from the institutions. Calibration and testing laboratories and certification and inspection bodies very often are representatives of the private sector.

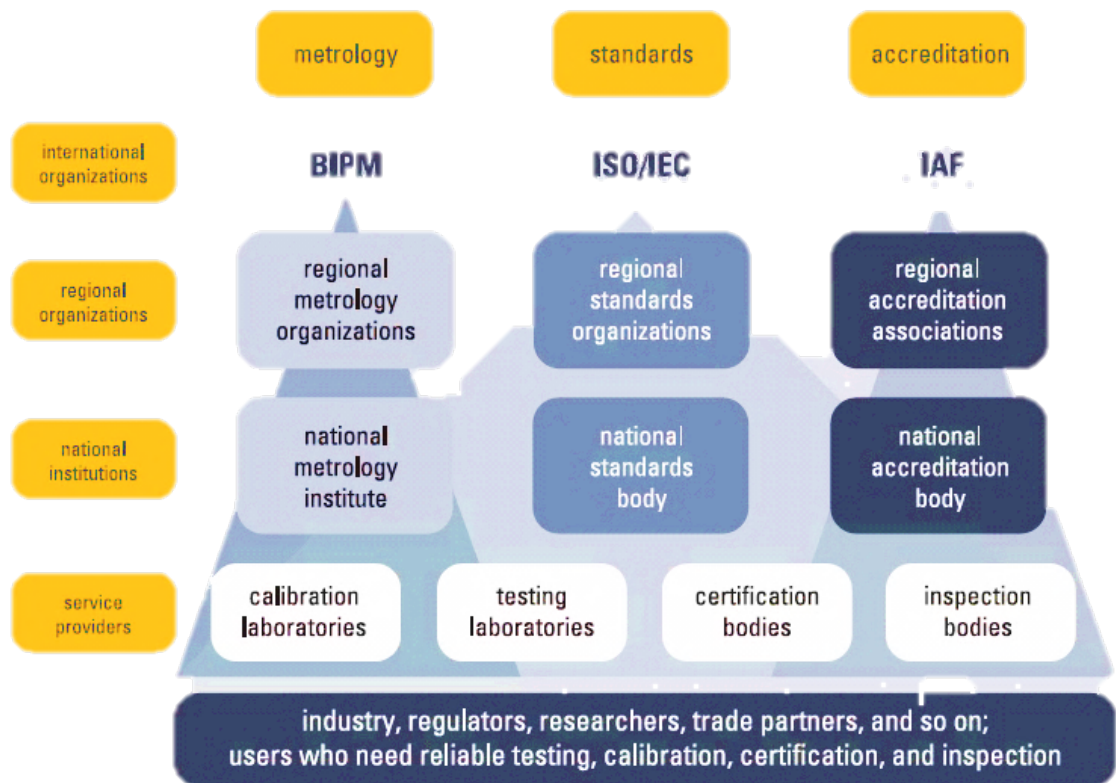


Figure 8. NQI in EU

The European Union (EU) Regulation (1025/2012), which has been adopted by the European Parliament and by the Council of the EU, and entered into force on 1 January 2013, establishes the legal framework for standardization. According to it, there are three European Standardization Organizations, namely CEN, CENELEC and ETSI, that are officially recognized as competent in the area of voluntary technical standardization (CEN/CENELEC, n.d.). They closely cooperate with such international organisations as ISO and IEC. The cooperation between ISO and CEN has been established by the Vienna Agreement in 1991 and by Dresden Agreement signed in 1996 between IEC and CENELEC. Cooperation is characterized in avoiding duplication of standards and reducing time consumption on standards developing.

The result of this close cooperation is that more than 75% of CEN/CENELEC standards are aligned with ISO and IEC standards (Figure 9 and Figure 10). The high percentage of the harmonised standards means that developed by CENELEC and IEC relationships is an excellently working mechanism, which contributes to the businesses global access.

CEN standards

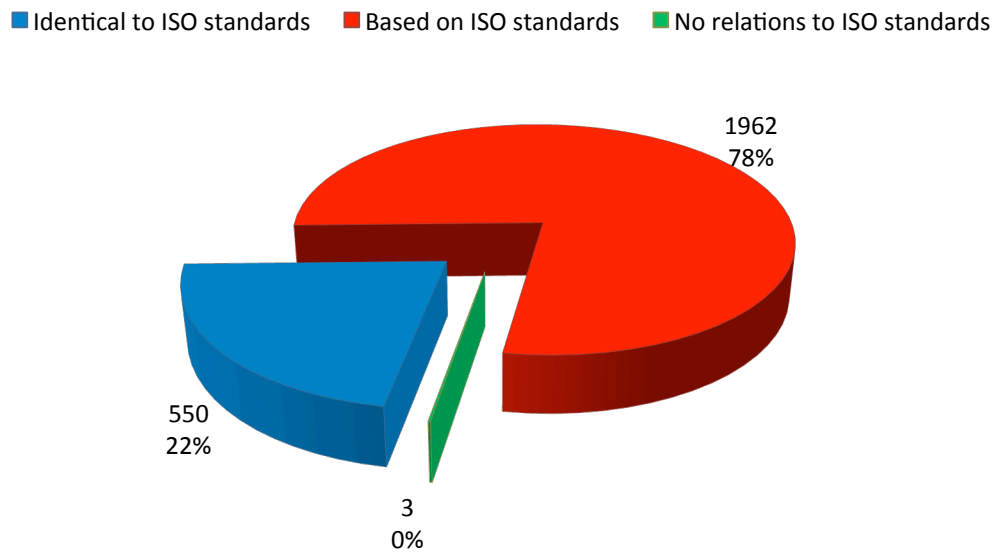


Figure 9.CEN standards harmonisation

CENELEC standards

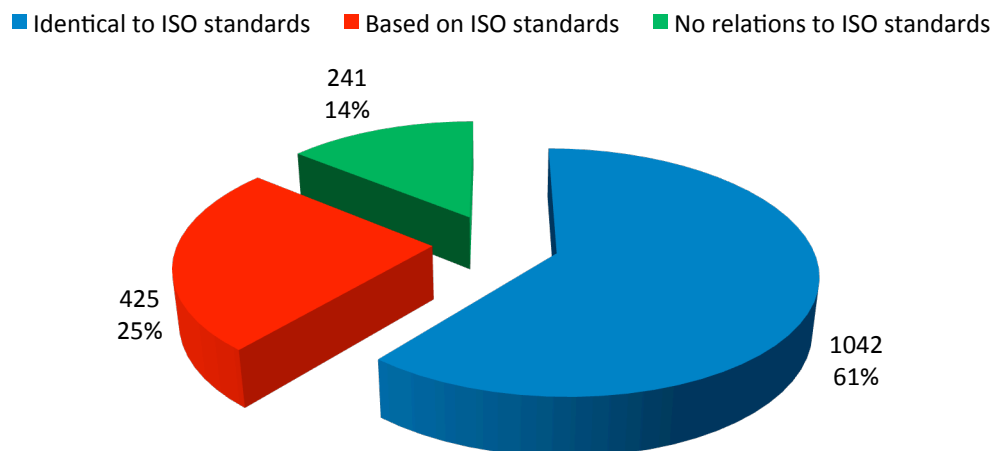


Figure 10. CENELEC standards harmonisation

The official website of CEN/CENELEC states that the purpose of setting common standards and their application across European single market, allows CEN and CENELEC to ensure consumer protection and facilitate cross-border trade. Moreover, their activities makes interoperability of products possible, with in innovation thinking

and technological development, which in its turn results in protection of environment and enable businesses growth. (CEN/CENELEC, n.d.)

Similarly to regional standards bodies did, the regional metrology bodies in Europe have harmonised their activities with international metrology bodies. Relevant to Europe European Association of National Metrology Institutes and the Euro-Asian Cooperation of National Metrological Institutions are working in cooperation with BIPM (International Bureau of Weights and Measures). BIPM is recognised as the high level authority by the Metre Convention, the document that has been signed in 1875 (BIMP, n.d.).

On the international level accreditation is governed by International Accreditation Forum (IAF) for certification and inspection bodies and the International Laboratory Accreditation Cooperation (ILAC) for laboratories, which both use ISO standards as guidelines. National accreditation bodies, in their turn, also perform accreditation on the basis of ISO and ISO harmonised standards.

Also regional accreditation organizations aim to harmonize, interpret, and implement accreditation standards and guidelines (Racine, 2011: 93). The major regional cooperations for accreditation are European co-operation for Accreditation, Asia Pacific Laboratory Accreditation Cooperation and Pacific Accreditation Cooperation.

In the OECD and EU countries national certification bodies can be involved in the standardisation and testing. However, they are never involved in mandatory technical regulation and inspection, as it is done in CIS countries (see Figure 11). This is excluded of practice to prevent the conflict of interest between the bodies.

2.2 CIS-countries NQI model

Speaking about NQI in Russia and other CIS countries makes sense to look into history as it affected current state of technical regulation to a high extent. Also it is hard to discuss each component of National Quality Infrastructure as in most of CIS countries they go in a bundle and all the activities as standardisation, metrology, accreditation and certification are performed by the same body. Afterwards, service providers do not always separated from the technical regulation institution, but appointed by it to perform such services as certification, testing, accreditation, calibration, etc. However,

it is possible to draw the analogies with European counterparty which was tried to be done.

2.2.1 History and the Heritage

The history of standardisation in CIS countries starts from Russia, where in 1925 under the Labour and Defence Council was established the Standardization Committee. It was put in charge for standard development, publishing and cancellation The Federal Agency on Technical Regulation and Metrology, n.d.). However, the history can be traced several years earlier, to 1918, the year when the international system of international system of measures and weights was introduced to the Russian Empire and first standard production started. The industries development required government control over standardization, so established Standardization Committee united all existed before standard production bodies, which lead to the systematic standards production and certification.

Simultaneously, the GOST history started. Acronym GOST comes from the Russian GOsudarstvennyi STandart and means State Standard. GOST standards were first known as “OCT” or OST (Otraslevoy STandart) standards, which translates from Russian as Industrial Standard. In 1968 was done a division of the standard creation. From this year standards are divided on state standards, republican, industrial and standards of enterprise. The system was established by the first GOST standard - GOST 1 “State Standardization System”.

Nowadays GOST standards catalogue includes more than 20 000 titles and used as base for certification in 12 countries. It has been adopted by the CIS countries: Russia, Belarus, Ukraine, Moldova, Kazakhstan, Azerbaijan, Armenia, Kyrgyzstan, Uzbekistan, Tajikistan, Georgia, and Turkmenistan.

Over the past seven years, several CIS countries made a step forward and disposed old structures to create new. Namely Georgia, the Kyrgyz Republic, Moldova, and Ukraine separated standardization body from accreditation and metrology bodies.

However, not everywhere reformations have gone successfully. For instance, in Kazakhstan in 2008 the accreditation body was excluded from the department of the Kazakh Committee for Standardization, Certification, and Metrology and established as a

separate body, but still subordinating to the Kazakh Committee for Standardization, Certification, and Metrology (Kazakhstan National Accreditation Centre, 2014).

Nowadays, each member of CIS countries has its own and independent quality institute. However, the majority of all former USSR countries' national quality systems have inherited from USSR GOSSTANDART system and still be partly governed by EuroAsian Interstate Council for Standardisation, Metrology, and Certification (EASC).

The independence of each CIS country's national quality institute is affected by EASC to the high extent. In fact, EASC is taking on the role of specialized technical regional organizations without being officially recognized by the relevant international organizations (Racine, 2011:157). The membership in EASC for CIS means recognition and adoption of each other's systems for certification and testing, as they all are having the same roots because of being issued by EASC. As a consequence, most of CIS countries follow the model of NQI under central planning (Figure 11) in which the majority of its functions are performed by the same state body (World Bank, 2007).

2.2.2 NQI

The common tendency for all CIS countries is that to count the country's total number of standards is almost impossible. Some countries tend to issue all-inclusive requirements, which are big and complex, others are producing subdivided standards, when each part of product is regulated by the own normative document. This causes standards duplication and overlapping.

In addition, the process of developing new technical regulations is not guided by WTO principles in the CIS countries not belonging to EU. This means the whole system of accepting such TRs may contradict to WTO TBT Agreement.

A study, held by International Finance Corporation (2008) on the technical regulation in Ukraine revealed the obsolescence of existing standards and the obstacles that they are imposing for trade and business. Almost every commodity that enters the market needs mandatory conformity assurance and not only for safety or environmental protection purpose, but for conformity of all technical specifications is required. It means that every innovation require new standard, which is impossible to implement. This

means that the technical specifications of the standard are making barriers to bringing new technologies and innovative products to the market.

In CIS countries the metrology institute is usually in a bundle with accreditation, standardisation and conformity assurance institutions (see Figure 11), which leads to the conflict of interest. However, the national metrology bodies have harmonised their activity with regional metrology institution - Euro-Asian Cooperation of National Metrological Institution.

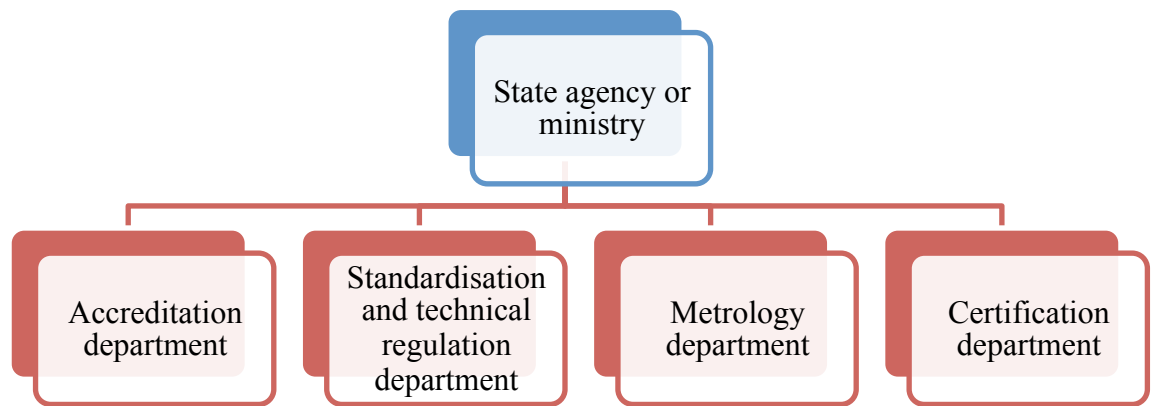


Figure 11. Conflict of interest in NQI of majority of CIS countries

In the majority of CIS countries, the national accreditation body is subject to political influence (Racine, 2011:272). The case is that in the NQI models, where accreditation body is not separated from others and goes in the bundle with technical regulation, compliance assurance and metrology, “self-accreditation” might be used to acidity certification and calibration centres, which leads to unfair competition with those certification, homologation and calibration centres and laboratories that do not belong to this structure and represent private sector.

Certification in majority of CIS member states is not seen as a tool for customer attraction and increased competitive advantage. Quite the contrary, it is perceived as a costly and time consuming burden imposed by state. On the “State and Business Are Partners” Forum, held in Ukraine in July 2008, the former president of Ukraine Viktor

Yushchenko posited the view that “mandatory certification and standardization are among the major barriers to innovation and development in Ukraine.” Moreover, Mr. Yushchenko admitted that listed above activities are making introducing a new product next to impossible and causes corruption.

Unfortunately this is true not only for Ukraine but also for other CIS countries. Standards inherited from GOST system present strict detailed product characteristics, when they should contain minimum requirements to ensure consumers’ safety and environment protection.

2.3 EU and CIS cooperation in technical regulation sphere

Although cooperation between CIS and EU countries is not obvious – mostly it is cooperation between standardisation and certification bodies, but not between countries, - they cooperate a lot. First of all, driven by the desire to be a member of the EU, CIS countries’ standardisation bodies cooperate closely with CEN/CENELEC as it is a condition for being accepted.

Also WTO accession requires such major steps as harmonisation of national standards with international, ensuring safety of products on the market and improvements in certification system. As a result during the past years, the following measures have been done:

- Committee for Standardization, Metrology and Certification Kazakhstan became CEN/CENELEC partner;
- Centre for Standardization and Metrology of Kyrgyzstan became CEN/CENELEC partner;
- Armenia, Moldova, and Ukraine join the European regional bodies as affiliate members;
- Georgia left EASC;

3 METHODOLOGY

3.1 Choice and Justification and Applying of Data Acquisition Methods

The major method used for this research compilation is data acquisition. The method is chosen in order to fulfil the research objective and answer research questions.

The major type of data that has been acquired is secondary data. Business dictionary (2014) defines secondary data as a data that was collected by someone else for the different purpose than current one. The website of Educational Portal specifies that though secondary data is a data collected by someone else, but has relevance and utility for your particular research (Education Portal, n.d.).

The method of secondary data acquisition is seen to be the most appropriate for this research as the main findings have to and are based on the current Russian trade legislation, which is essential in terms of research project as company's actions appointed by contract are fully dependant on legislation. As a consequence, the type of secondary data is documentary secondary data, which is often used in research projects (see Figure 12. Types of secondary data). Documentary secondary data can be correspondence, minutes of meeting, diaries, transcripts of speeches, administrative and public records (Saunders et al., 2009). For instance, as references were utilized BT corporate project description "Orange Book" (2014), email correspondence with Customers and colleagues, transcripts of speeches of Russian officials published on www.gost.ru or in newspapers.

The other type of secondary data used in the research is multiple-source secondary data, such as World Bank and ISO reports on standardisation or report, concerning ease of trade in various countries. This data type allow to get access to data collected over a long period of time, which makes the data visual and comparable and allow to see how the situation has been changing throughout the years.

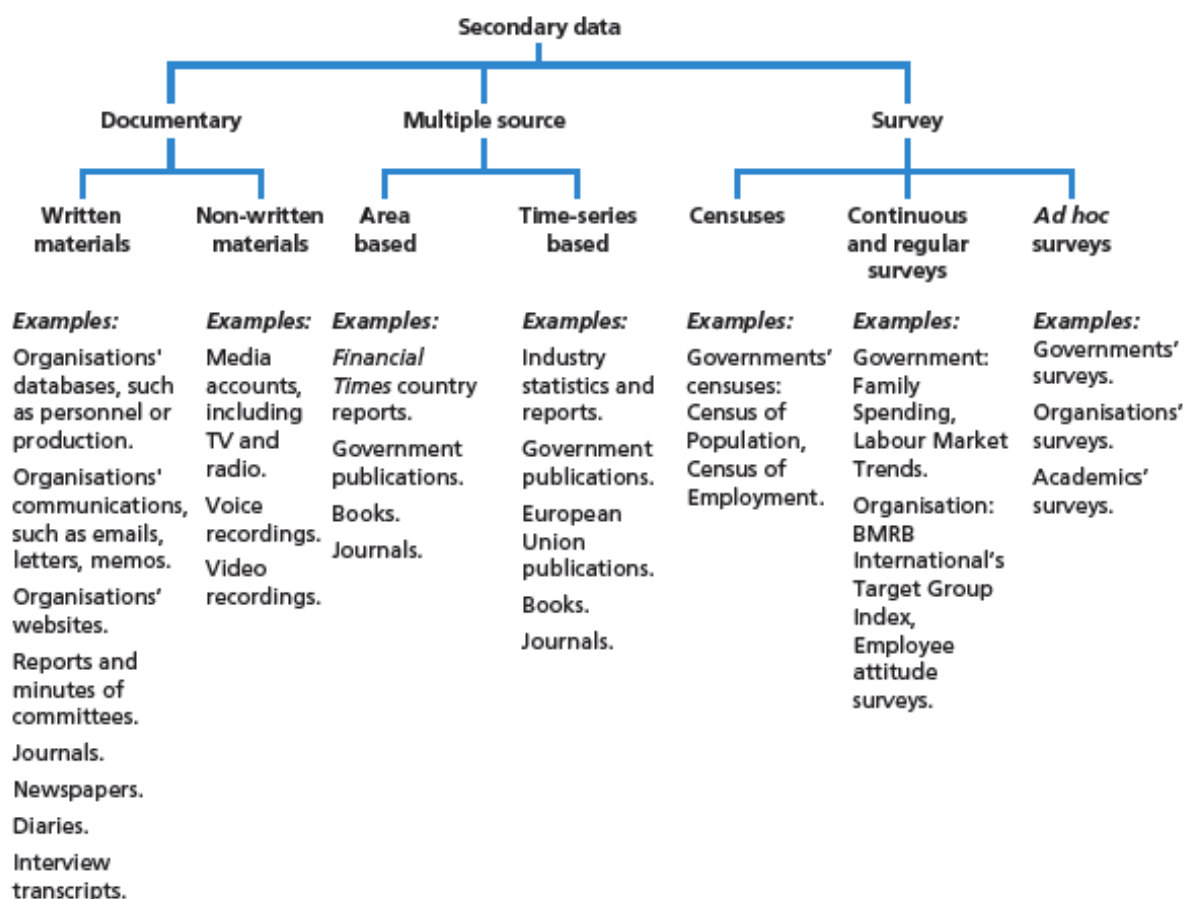


Figure 8.1 Types of secondary data

Source: © Mark Saunders, Philip Lewis and Adrian Thornhill, 2006.

Figure 12. Types of secondary data

As the research was limited in time – it had to be finished in 3 month, during the internship in the company – it was more logical to give preference to secondary data method whether to action research: it reduces time consumption on research, simultaneously providing the quality and promptness of data. The other advantage for this research is that collecting secondary data allows the further step as comparative data analysis method. The importance of this benefit is purely correspond to the research aim: as the part of research the author of this research hold a training for European engineers, who found it useful to have Russian standards and norms system lined with European one for the better understanding.

Furthermore, as leaving the company I was not able to continue with the research, the one who will undertake my responsibilities in the project will be provided with justification of data accuracy through the references to the governmental degrees and official statements. As a consequence, here comes the last but not the least point of using

secondary data acquisition- because most of the data was collected from the officials reports, it makes the acquired data valuable and trusted.

Among other research methods used for the research compilation are combination of primary data collection and quantitative methods: personal interviews in order to validate the data (for example, interview with Evgeniy Meluk), some parts of action research (as while research was in the ongoing stage, I could see how what is being found can be acquired right at the moment) and survey (for example, the one that was conducted after the training of European engineers – Appendix III and IV)

3.2 Choice, Justification and Applying of Data Analysis Methods

Secondary data requires very careful evaluation and assessment. Not all the sources can be trusted, so the acquired data was evaluated according:

- to the type of source (for example, preferred one was the information coming from governmental degree than some company experience description),
- to the relevance and to the date of publication (to exclude old-dated data)
- to the level of applicability to industry (as standards and conformity assurance procedures varies from one industry production to another, only those data that corresponds to the train-manufacturing was considered)

To sum up, the main criteria for the data assessment is that it has to be relevant and valid.

The acquired data is mostly qualitative data, so qualitative data analysis methods were used. Also, as an often case with qualitative data – the analysis of qualitative data was taking place at the moment of data collection. Data analysis included such steps as categorization, summarizing and structuring.

Primary data has been collected filtered and categorized by structured and appropriate questions. However, all the interviews that I took were semi-structured, i.e. the discussion on the list of themes and questions to be covered, although these may vary from interview to interview, or it were unstructured interviews with colleagues and experts who works in Bombardier Transportation (Saunders et al., 2009).

4 FINDINGS

This chapter is going to answer questions, listed above in the paragraph 1.3 (“Research and Development Questions”) with the followed chapter of discussions and analysis, providing deeper explanation of how acquired information can be implied by the commissioner. Information, gathered in this chapter is a primary interest for the commissioner, so that is why I find it essential to begin with brief introduction of the organization of National Quality Infrastructure in Russia, in order to give ability to make a parallels with organisation of European NQI (see 0 European NQI model). The organisation of NQI directly makes an impact on the problems discussed in the research. Moreover, this knowledge gives opportunity to understand where the roots of the complexity and contradiction problem come from and why such problem discussions occur.

4.1 Organisation of Russia’s NQI bodies

As was mentioned in chapter 2.2, it is typical for CIS countries to have one state agency which holds all NQI activities and Russia is not an exception. On the national level Russia has The Federal Agency on Technical Regulation and Metrology or ROSSTANDART. On the regional level of integration there is EASC which is a council consisting of presenters from each CIS member.

EuroAsian Interstate Council for Standardisation, Metrology, and Certification (EASC) was organised in 1992 by the international agreement between CIS heads of government, called “Agreement on realization of coherent policy in the field of standardization, metrology and certification”. Agreement was signed in Moscow on 13th of March, 1992 and established the main purposes of the Interstate Council, among which are:

- International coordination in standardization, metrology and certification fields;
- Interstate norms, standards and recommendations development;
- Development of mutually recognised procedures and tests for certification (EASC, n.d.).

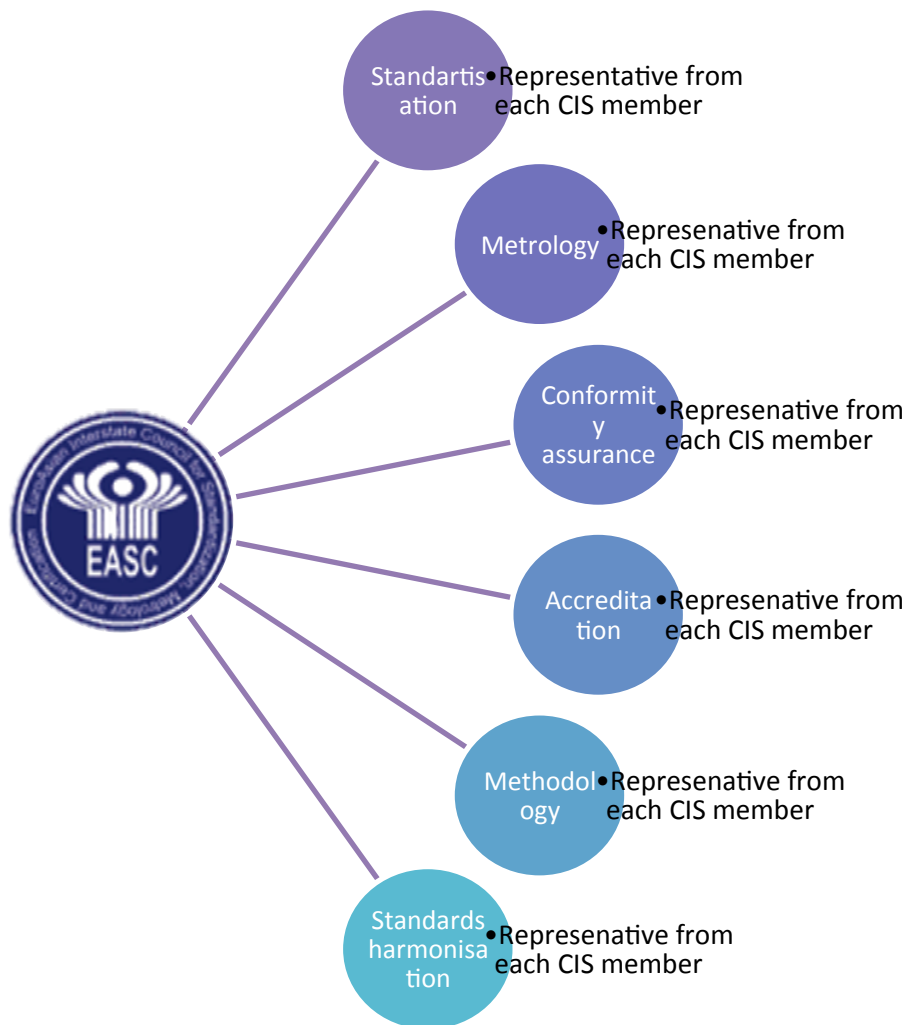


Figure 13. EASC structure

EASC is a regional organisation, but unlike of European regional CEN, SADCSTAN, EURAS, etc., it holds and performs all the activities as standardisation, metrology, certification, and accreditation altogether. Another major difference between EASC and European analogues is that EASC developing GOST standards, but EASC members are not obliged to adopt them.

The Federal Agency on Technical Regulation and Metrology (ROSTANDART) is a part of the system of federal executive bodies of the Russian Federation. The agency is under the power of the Ministry of Industry and Trade of Russia and was formed by the Decree of President of Russian Federation from 20th of May 2004 N649 “Issues of Federal Executive Bodies Structure”.

As was stated above paragraph 2.2, in Russia there is no separation between activities of standartisation, accreditation, certification and metrology. The official website states:

“Federal Agency on Technical Regulating and Metrology carries out the licensing of activity with respect to manufacture and maintenance of measurement instrumentation and also implements the functions on the state metrological control and supervision until there are changes in the Russian Federation legislation. Federal Agency also controls and supervises the compliance of mandatory requirements of state standards and technical regulations until the Government of the Russian Federation makes the decision on delegating these functions to other federal executive authority”. The Federal Agency on Technical Regulation and Metrology, n.d.)

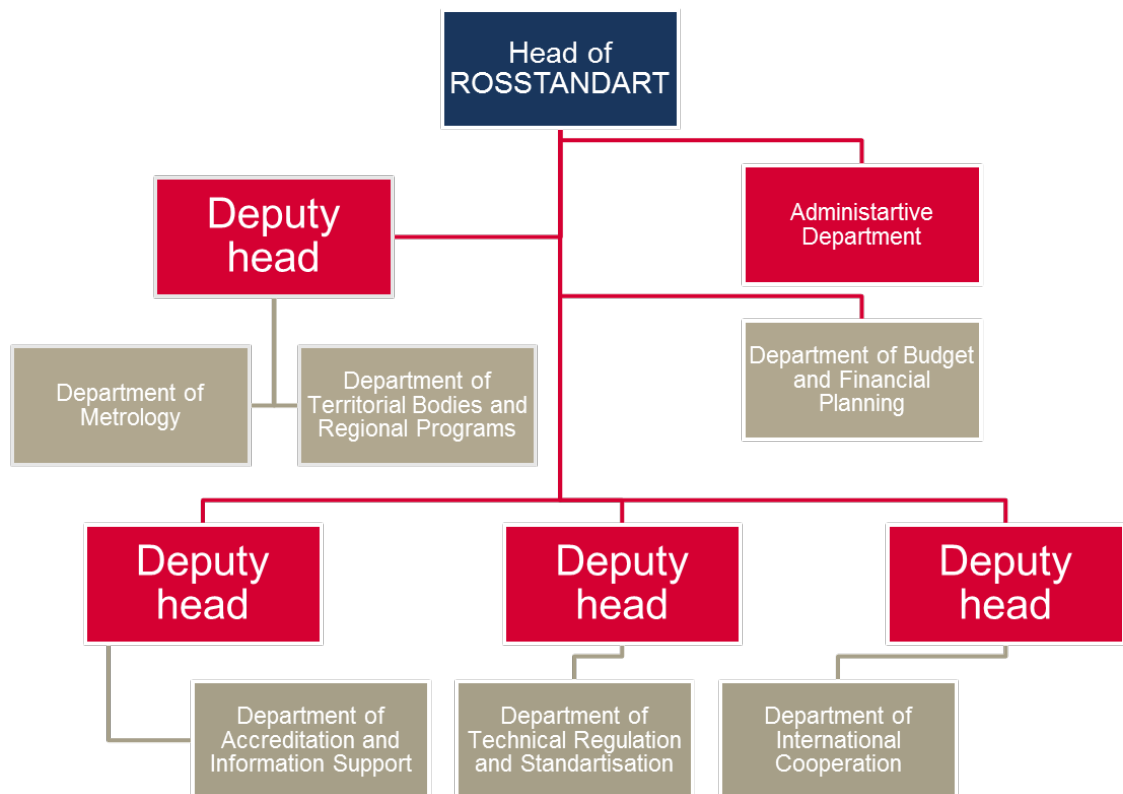


Figure 14. Structure of ROSSTANDART

Moreover, in standartisation sphere, which the prior interest of this study, ROSSTANDART also performs all the activities as accepting the plan of standart developing, coordination of technical committees work, analysis of standards projects

and acceptance of national standards. ROSSTANDART has function of national Standardisation body, but represent Russian in various international and regional organisations.

4.2 Hierarchy of normative documents and types

Normative documents in Russian Federation present in a big variety. According to the ROSSTANDART Public Declaration (2013), the Agency storages about 350 000 units of different normative documents as standards, technical regulations and norms.

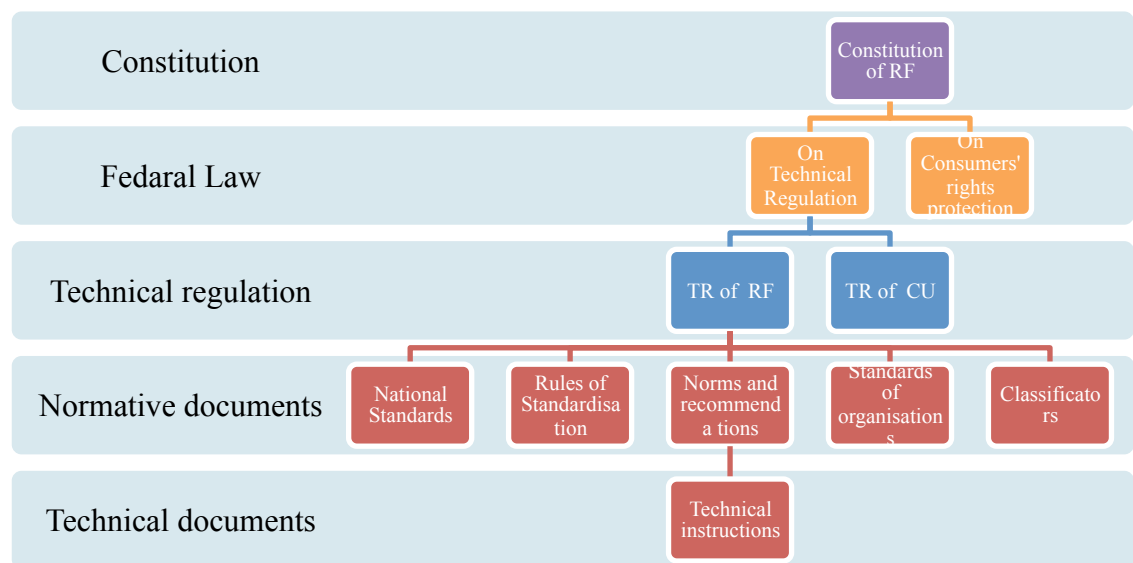


Figure 15. Hierarchy in Russia's normative documents

The major type of normative documents is standard, which is determined by hermitage from USSR, where standards were widely spread. Since this times standards are present in 4 types: Organisational, Industrial, National and International. GOST is an interstate standard system, and also one of the main categories of standards in Russian Federation. GOST system has been inherited after USSR and still be in use in many CIS countries.

GOST used to be compulsory requirement for the products and goods that have an access to the USSR market. However, the Federal Law № 184-FL adopted on 27th of December, 2002, established gradual substitution of GOSTs with Technical Regulations, which since this time are obligatory to be followed because of establishing min-

imum of mandatory requirements, while GOST carrying voluntary base for certification. Nevertheless, some of GOSTs still be obligatory for conformity assurance.

GOST standards are listed in the “Classification of State Standards” (KTC). Classification of GOSTs is done as a hierarchy, where each standard has its own code of letters and digits. Classification has 3 (sometimes, but very rare 4) levels. First level consists of 19 Cyrillic alphabet letters, where each refers to the particular category of products. The second and third levels are digits. Fourth level can be added after comma.

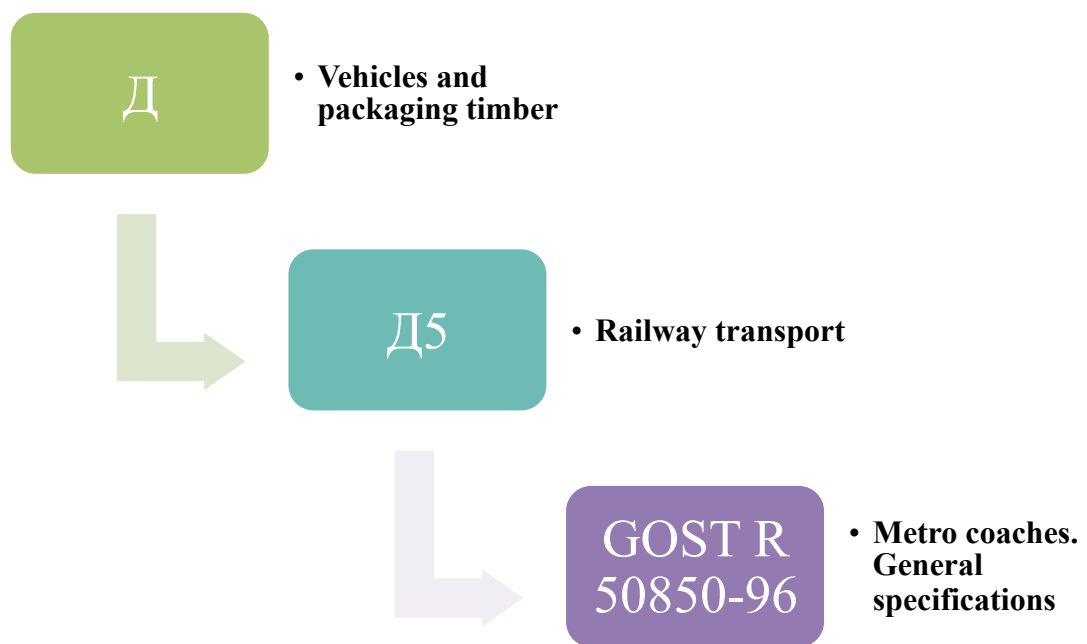


Figure 16. GOST in Classification of State Standards

“Classification of State Standards” (KTC) is still be used, although it has been substituted with the national standards classification – All-Russian Standard Classificatory (“OKC”, sometimes “OK”) in 2002 (ROSSTANDARD Resolution № 138 from 17th of May 2000, 2000). In the classification standards also have a code, which consists of 3 levels. The GOST standard can belong to the several groups, but it is not advised to include standard in more than 4 different groups.

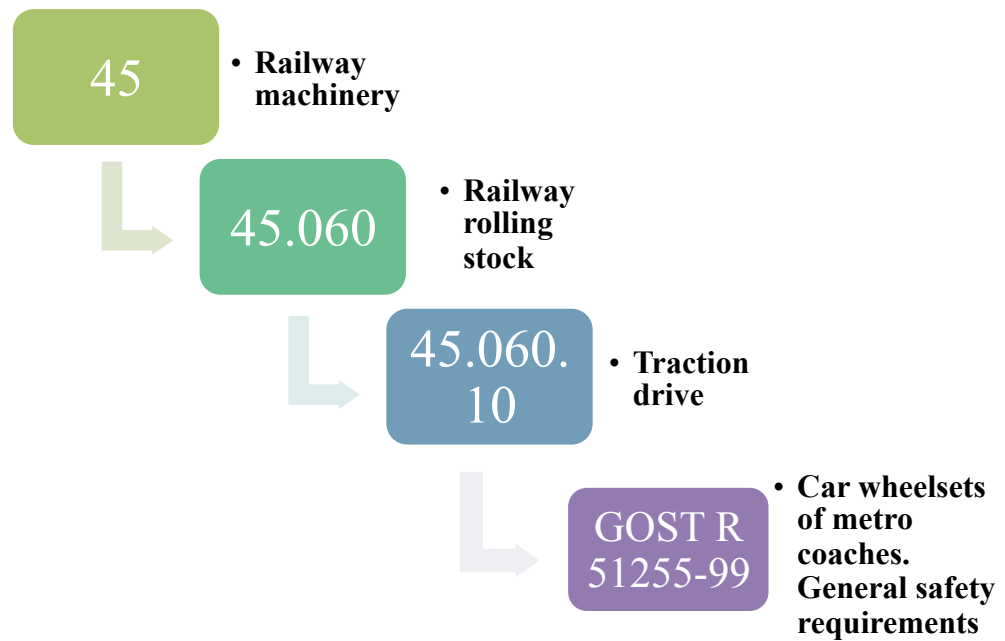


Figure 17. Example of norms classification in OKC

GOST standards (issued by EASC now) are used on the territory of CIS countries. GOST standards that are applicable only in Russian Federation are called GOST R, where “R” refers to Russia. GOST R standards are valid only on the territory of Russia.

GOST R code consists of the number of standard and the year when it entered into the force, separated from each other with hyphen. For example, standard that defines Lifecycle of the railway stock has code GOST R 53336–2009, where last 4 digits say that standard was signed and came into the force in 2009.

GOST standards catalogue consists of more than 20 000 titles, although every year hundreds of them are becoming not valid, due to the being old-dated and are being substituted with new Technical Regulation. Also GOST standards are in the process of being aligned with international standards, although only 20% correspond to the IEC and ISO standards comparing to 40 % harmonised CEN/CENELEC standards.

Another type of normative document is Technical Regulation (TR), which establishes requirements to be necessarily applied to and met by the objects of technical regulation. Technical Regulations are gradually replacing the standards. It was established in 2002 by Federal Law № 184-FL.

At the current moment¹ there are 24 valid Technical Regulations of Russian Federation. Additionally, there are 31 Technical Regulations of Customs Union, which are also valid on Russian territory The Federal Agency on Technical Regulation and Metrology, n.d.).

Other regulations (issued by Rosstandart) include documents, called norms, although they are establishing mandatory rules to be followed. They are, for instance, Safety norms and Sanitary rules. However; not all the production require mandatory conformity assurance with safety or hygienic norms, voluntary conformity is possible.

4.3 Conformity assurance

Conformity assurance is documentary stated conformity of product or other objects with the requirements of technical regulations, standard's provisions, laws and contract requirements. Conformity Assurance is established as a documentary attestation of conformity of products or other subjects to Technical Regulation requirements, Standard provisions or Contractual provisions by the Federal Law № 184-FL from 27.12.2002. Conformity assurance is determined by ROSSTANDART or Federal Agency on Technical Regulation and Metrology.

Reasons for conformity assurance are:

- To ensure compliance with Technical regulations, National and International Standards and Norms, Safety requirements or Contractual provisions;
- To protect human's life and safety;
- To eliminate harmful production from the market;
- To establish and increase competitiveness on the market;
- To help consumers to choose more competent product or service;
- To create and promote the free movement of goods on the territory of whole Russian Federation.

¹ 1st July 2014

Conformity assurance is carried out on the pre-market stage in order to ensure that products entering the territory of country respond to the appropriate requirements. Conformity assurance can be mandatory or voluntary.

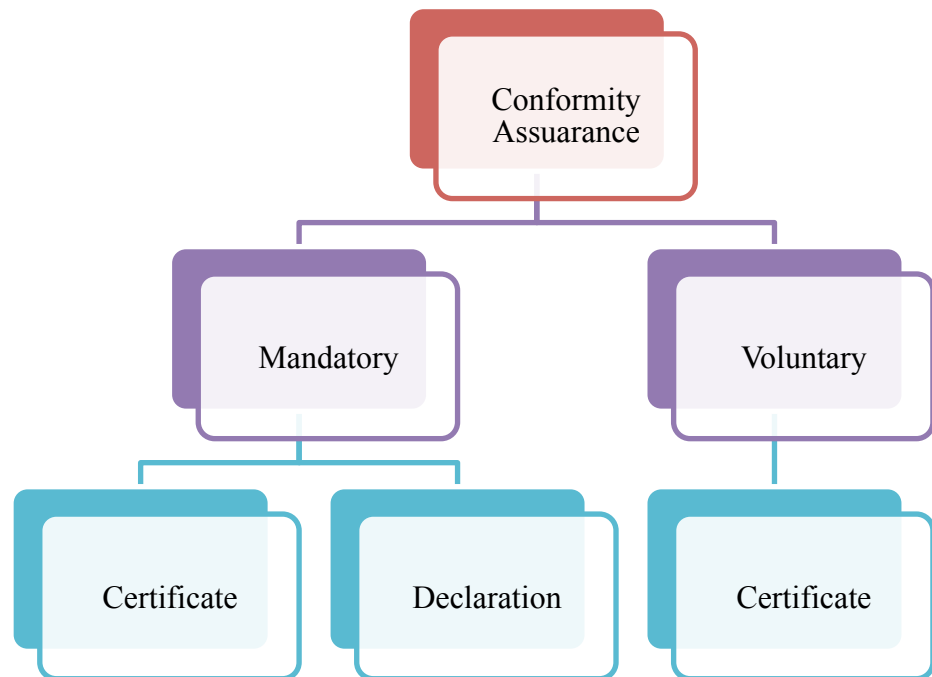


Figure 18. Conformity assurance organisation in Russia and most of CIS

For Moscow Metro project both mandatory and voluntary conformity assurance are subjects of interest as compliance of the metro rolling stock, according to different options (paragraph 6.1) is both mandatory and voluntary.

4.3.1 Mandatory conformity assurance

Mandatory conformity assurance can be done in form of certificate and declaration. The form of mandatory conformity assurance is determined by ROSSTANDART. It's description is available on the official website www.gost.ru.

Production that is a subject to the mandatory conformity assurance is listed on the official website of the Federal Agency on Technical Regulation and Metrology. Lists exist for both products that are subjects to be certified or declared with reference to the normative documents, establishing mandatory requirements.

After the technical regulations enter into force, production that is a subject to mandatory conformity assurance is defined by the technical regulation and all its components are listed in the annexes to the particular TR.

For the convenience and faster access to the information regarding required certificate for the particular type of production, in 2011 the Federal Agency on Technical Regulation and Metrology issued a Consolidated List of production that is a subject to the mandatory conformity assurance with reference to the normative documents, establishing mandatory requirements and required form of conformity assurance (GOST certificate/declaration, TR certificate/declaration, TR CU certificate/declaration, State registration, certificate RF, etc.).

4.3.1.1 Mandatory conformity certification

Mandatory conformity assurance in form of certificate is a system of product certification, safety of which is regulated by requirements of technical regulations. Obligatory certification is used for quality recognition both imported and domestic goods, which is approved by the Mandatory Certificate on Conformity. Mandatory certification is a necessity for production market access.

According to the Article 46 of Federal Law from 27.12.2002 № 184-FL this kind of certification is used for products that can somehow affect human being's safety or life, property of individuals or entities, state or municipal property, or environment. The products that require mandatory conformity assurance are listed in RF Government Decree № 1013 as of August 13, 1997 (with modifications and supplements) "On approval of List of goods subject to mandatory certification, and the List of work and services subject to mandatory certification". As the official website of Russian Federal Agency on Technical Regulating and Metrology states, products Nomenclature in respect to which acts of law provide mandatory certification is official reference information on subjects of mandatory certification in GOST R Certification System.

According to the Article 25 of Federal Law N184FL the compliance certificate should include:

- the applicant's name and location;
- the name and location of the manufacturer;

- the name and address of the certification authority that issued the compliance certificate;
- detailed description of the certification object;
- the name of the technical regulations or other document, for compliance with which certification procedures was carried out;
- information about the laboratory tests and measurement that were carried out;
- information about the set of documents presented by the applicant to the certification agency as proof of compliance with the requirements of technical regulations or other normative documents;
- the duration of the certificate validity.

The form of the compliance certificate should be approved by the federal executive body for technical regulation. The certificate can be issued for the contract, for serial production or for certain part of production.

4.3.1.2 Mandatory conformity declaration

Conformity declaration is the process of production quality confirmation and similar to the process of mandatory certification conformity. They both have the same juridical power and are valid on the whole territory of Russian Federation (The Federal Agency on Technical Regulation and Metrology, n.d.). However, the declaration covers a wider range of products.

Declaration can be registered on the basis of one's own evidence or on the person's own proof and evidence obtained with the participation of accredited testing laboratory and/or certification body (Federal Law №184 on Technical regulation, 2002).

Federal Law №184 states that the declaration of compliance should be in Russian language. It should contain the same information as conformity certificate, except the tests and measurements carried out by the laboratory, because applicant will carry tests. However, it also has to be stated on the declaration.

The form of the declaration of compliance has to be approved (validated) by the Federal Executive body for technical regulation. The products that are subject to conformity assurance in form of declaration conformity are listed on the official website of

Russian Federal Agency on Technical Regulating and Metrology. Also there could be found the documents with all the changes made and approved by ROSSTANDARD.

The main differences between mandatory conformity assurance in form of certification and form of declaration are shown in the Table 1.

Table 2. Comparison of Mandatory Certificate and Mandatory Declaration

	Mandatory Conformity Certificate	Mandatory Conformity Declaration
Issued Document	Conformity Certificate	Conformity Declaration
Issued by	Certification body/agency	Manufacturer/supplier/performer, but entity must be registered in RF After document has to be approved by certification body/agency
Stages of conformity process	<ul style="list-style-type: none"> • Application • Laboratory tests • Issuance of Certificate 	<ul style="list-style-type: none"> • Application • Laboratory tests • Issuance of Declaration
Information for customers	In supplementary documentation, sign of conformity	In supplementary documentation, sign of conformity
Sign of conformity	Sign PCT of mandatory conformity, contains information in form of code about the certification body that issued this particular certificate	Sign PCT of conformity declaration, has no information about certification body on it
<i>Sources : VNIIS, Federal Law N184-FZ on Technical Regulation 2002</i>		

4.3.2 Voluntary conformity assurance

Voluntary conformity assurance is the officially established system for prove of conformity with requirements and done in form of certification of products, services or equipment certification, which quality conformity of which is not required by any Federal or State Law.

Voluntary conformity assurance has it's own value in greater market access, higher price establishment, competitiveness on Custom Union and Russian markets and sales increase due to the higher level of trustworthy, securing import administrative obligations.

Voluntary certification is performed on the base of applicant's initiative and governed by the contract between applicant and certification body. Voluntary conformity assurance is done to prove conformity with national or state standards, standards of organisation, systems of voluntary certification and contract requirements (Federal Law №184 on Technical regulation, 2002: Article 21).

Subjects to the voluntary certification can be:

- Products;
- Processes of use;
- Processes of storage;
- Processes of transportation;
- Processes of realization;
- Processes of utilization;
- Processes of work and services;
- Technological processes;

Certificate can be issued on the name of the manufacturer and is valid up to 3 years, depending on which type of scheme is applied for certification process.

4.4 Certification systems

Certification in Russia can be done under particular certification systems. They can be mandatory and voluntary systems for mandatory and voluntary certification respectively.

There are 16 obligatory certification systems in Russia, under which falls following production, for example:

- Products for personal use (has to be certified in GOST R);
- Electronics and other gadgets;
- Railway transport;
- Geodesic, cartographic and topographic production;
- Means of protection of information;
- Materials that are proven dangerous;
- Marine civil vessels;
- On the air transport of the RF;
- Air techniques and the objects of civil aviation;
- Space craft;
- Nuclear sets and radioactive materials;
- Immune biological preparations.

The system “On the Federal Railway Transport” is to be applied for the Bombardier Transportation production, according to the mentioned earlier “Consolidated list of subjects to the mandatory conformity assurance”.

Voluntary certification system can be registered by individual or juridical entity. The process of voluntary system creation is determined by the Decree of Russian Federation Government N32 from 17.06.2004. By 1st of January, 2014 there has been officially registered 1142 systems of voluntary certification.

The Federal Agency on the Technical Regulation and Metrology is obliged to keep the register of existing voluntary systems. For instance, following systems has been registered and listed in the register:

- POCC RU.3828.04ШТ01 Voluntary certification system in the energy saving and energy efficiency sphere
- POCC RU.3829.04ФБК0 Voluntary certification system of the innovation in the production (СДС ИННОСЕРТ-ВНИИС)
- POCC RU.3212.04АА00 Voluntary certification system of sport objects "СПОРТ-СЕРТИФИКАЦИЯ"

4.5 Types of existing certificates

4.5.1 GOST R and TR conformity assurance certificates

GOST R is used to be one of the obligatory certification systems (voluntary for BT production), under which applicants may obtain a certificate that proves conformity of the product with valid standards and norms of Russian Federation. The ground for the certificate issuance is the results of laboratory tests in accredited organs. Certificate is needed for the market access and is valid on the territory of Russia.

Certificate GOST R can be issued for the contract, for serial production or for the consignment of goods.

Conformity certificate GOST R *for the contract* can be issued only with preliminary laboratory test with mentioning in certificate the number of test protocol. Also the certificate contains the following information:

- Name of manufacturer
- Name of customer
- Number and date of contract
- Scheme of certification

Conformity certificate GOST R for the contract is applied when the import of product is going to take place in several deliveries. The certificate GOST R for the contract is valid during 1 year, so the company-producer is not limited in amount of imported goods or production, but limited in the time for the delivery.

Conformity certificate GOST R *for the consignment of goods* can be issued without laboratory tests. The document is issued on the limited amount of goods, but with the open date. This certificate usually used for the import of product samples. It is most suitable type of certification for the equipment, as it is supplied in limited amounts and usually not often.

Conformity certificate GOST R *for the commercial production of goods*, i.e. serial production, requires mandatory tests in accredited bodies. Certificate is issued for the period from 1 to 3 years.

In order to apply for the certificate of conformity GOST R applicant has to submit following documents:

- Name and address of manufacturer
- Name and address of client, customer
- Contract and invoice
 - There was a question raised by the BT if the contract that has to be submitted with application should include all the prices and costs. As was discussed with chief designer of metro cars in UVZ E. Melyuk (2014b), the only document indicating relations between companies that has to be submitted is technical requirements or customer specification (TT).
- Precise name of product, including types and models
- Technical description in Russian language
- Earlier obtained certificates and tests protocols (Russian or international) if has
- Product sample

According to the Federal Law №184 (2002), Technical Regulation (TR) is “a normative document that establishes requirements to be necessarily applied to and met by to the objects of technical regulation.” It is obligatory to follow the technical regulation and obligatory to certify production in compliance with TR.

Conformity assurance with Technical Regulation can be both in form of certification or declaration, which is determined directly in the technical regulation for the particular production. Sign of conformity with the Technical regulation is to be applied after the conformity assurance is proved.

Compliance with Technical Regulation of Custom Union is obligatory as well as compliance with Technical Regulation of Russian Federation. It means that market access for the countries - members of CU requires conformity assurance with requirements of Technical Regulations of Custom Union.

Conformity assurance with Technical Regulations of Custom Union can be also in the form of certification and form of declaration. The form of conformity assurance is determined directly in the Technical Regulation of CU for the particular production.

Application for certificate can be performed both by client or manufacturer. To obtain a certificate following data has to be submitted with the application form:

- Paper that certifies registration of business entity of the applicant
- Description of the production itself, production processes, materials and equipment
- Technical Regulation compliance with which is intended to be confirmed
- Contract
- Certificates of quality of raw materials, of the production lines and of packaging materials (Rostest Latvia, n.d.)

Certificate of compliance with Technical Regulations of CU has united form for all member of CU, which was established by Committee Decision N563 (2011). Certificate includes such information as:

- Data of manufacturer
- Data of Production
- Number and date of the test protocol
- Technical regulation, according to which compliance is confirmed
- Code of TH БЭД
- Scheme of conformity assurance
- Validity of certificate
- Stamp of applicant and signature of the head of entity
- Registration number and date of registration of certificate
- Sign of conformity EAC
- Sign EAC

ТАМОЖЕННЫЙ СОЮЗ

СЕРТИФИКАТ СООТВЕТСТВИЯ

EAC

№ TC RU C-MX.AB58.A.00002

Серия RU № 0015101

ОРГАН ПО СЕРТИФИКАЦИИ АНО "По сертификации продукции, экспертизы и контроля качества "ЦЕНТРОТЕСТ": 117036, г. Москва, ул. Профсоюзная, д. 3, тел. (495) 781-34-34, (495) 771-00-56, факс (499) 124-66-72, e-mail: centro-test@mail.ru. Аттестат рег. № РОСС RU.0001.11AB58 выдан 29.07.2011 г. Федеральным агентством по техническому регулированию и метрологии.

ЗАЯВИТЕЛЬ Поставщик Общество с ограниченной ответственностью "Урал Импортёр".
Адрес: Юридический адрес: 620043, город Екатеринбург, улица Викулова, 61/1-20
Фактический адрес: 620043, город Екатеринбург, улица Викулова, 61/1-20. ОГРН: 1106658005630. Телефон (343) 237-5094. Зарегистрировано Инспекцией ФНС России по Верх-Исетскому району г. Екатеринбурга ОГРН № 1106658005630 от 14.04.2010 года.

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ПРОДУКЦИЯ Белье столовое из хлопчатобумажных, синтетических тканей и тканей из волокон бамбукового дерева: скатерти с маркировкой «MEXICO GOODS», «MEXICO AIR CARGO SYSTEMS S.A.».
Партия - 416 штук. Контракт № VL0027/1 от 20.02.2013 года. Инвойс № 2 от 24.01.2013 года.


КОД ТН ВЭД ТС 6302 59 900 0

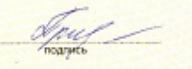
СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ
Технического регламента Таможенного союза ТР ТС 017/2011 "О безопасности продукции легкой промышленности", утв. Решением КТС от 9 декабря 2011 года № 876.


СЕРТИФИКАТ ВЫДАН НА ОСНОВАНИИ
Протоколов испытаний № 4/Л22-13, № 4/Л122-13, 4/2Л22-13 от 11.03.2013 года, ООО "ИЛ ЭП ЭМС", рег. № РОСС RU.0001.21МЛ31 до 16.03.2016, адрес: 141400, Московская обл., г. Химки, ул. Ленинградская, 29.

ДОПОЛНИТЕЛЬНАЯ ИНФОРМАЦИЯ

Срок действия с 12.03.2013 по 11.03.2014

Руководитель (уполномоченное лицо) органа по сертификации  **Пешехонова И.М.**
инициалы, фамилия

Эксперт-аудитор (эксперт)  **Привалова С.М.**
инициалы, фамилия



ООО «ЗНМО», г. Москва, 2012 г., «В», заяв. № 11452.

Figure 19. Sample of certificate of conformity with TR CU

Certificate of conformity with the Technical Regulations of CU can be issued only after applicant's submission and examination of all evidences proving compliance. After certificate has to be registered then it is considered to be valid. Certificate is valid up to 5 years.

TR CU certificate as GOST R certificate can be issued for the contract, for serial production or for the consignment of goods. However, the validity of certificate can be up to 5 years, but will depend on the used certification scheme. Also the validity can be affected by certificates issued before. For instance, if the certificate is going to be issued the second time after the previous one expired, the validity of new one will be longer than the validity of the previous certificate. The decision regarding certificate validity is taken by the certification body.

Declaration of conformity with TR CU can be issued only on the entity that officially registered on the territory of one of the country members of CU.

Declaration of conformity with TR CU contains:

- Applicant's data
- Data about Head of the entity if applicant is a juridical entity
- Production description
- Manufacture's data
- TR compliance with which is declared
- Tests' protocols
- Scheme of conformity assurance
- Validity of declaration
- Stamp of applicant and signature of the head of entity
- Registration number and date of registration of declaration
- Sign of conformity EAC



ТАМОЖЕННЫЙ СОЮЗ ДЕКЛАРАЦИЯ О СООТВЕТСТВИИ

Декларант Закрытое акционерное общество "Санкт-Петербургская Образцовая Типография"
наименование организации или фамилия, имя, отчество индивидуального предпринимателя, принявших декларацию о соответствии

Юридический адрес: Россия, 197374, Санкт-Петербург ул. Мебельная, д. 3 лит. А

Фактический адрес: Россия, 197374, Санкт-Петербург ул. Мебельная, д. 3 лит. А, тел. (812)320-56-19
адрес, телефон, факс, e-mail

Зарегистрировано Межрайонной ИФНС России №26 по Санкт-Петербургу 14.08.2002 г., ОГРН
1027807561418

сведения о регистрации организации или индивидуального предпринимателя (наименование
регистрирующего органа, дата регистрации, регистрационный номер),

в лице Генерального директора Филатова А.Г.

должность, фамилия, имя, отчество руководителя организации, от имени которой принимается декларация,

Заявляет, что

Коробки из картона для вторичной упаковки ликероводочной продукции, в том числе с разделителями,
с маркировкой «Bushmills».

Выпускаемые по ТУ 5481-002-43477095-2005

Изготовитель: Закрытое акционерное общество "Санкт-Петербургская Образцовая Типография",
197374, г. Санкт-Петербург ул. Мебельная, д. 3 лит. А, Россия.

Код ТН ВЭД ТС 4819200000

Серийный выпуск.

наименование продукции; сведения о продукции, обеспечивающие ее идентификацию (тип, марка, модель, артикул и др.); полное наимено-
вание изготовителя с указанием адреса; обозначение технического регламента, нормативных правовых актов и (или) взаимосвязанных стан-
дартов в соответствии с которыми изготовлена продукция; код ТН ВЭД ТС; наименование типа объекта декларирования.

соответствует требованиям

Технического регламента таможенного союза №005/2011 "О безопасности упаковки"

ГОСТ 12301-2006 п.п. 5.2.1, 5.2.2, 5.2.3.

обозначение технических регламентов, нормативных правовых актов и взаимосвязанных стандартов, соответствие требованиям которых пол-
тверждено данной декларацией, с указанием разделов (пунктов, подпунктов) этих нормативных документов, содержащих требования для
данной продукции (услуги)

Декларация принята на основании

Протокол испытаний № 1077-12-12, от 15.10.2012 ИЦ «Питон» ОАО «НПО Стеклопластик»

РОСС RU.0001.21АЮ24, 141551, Московская область, Солнечногорский р-н, р.п. Андреевка, стр. 3А.

информация о документах, являющихся основанием для принятия декларации

Дополнительная информация

Схема декларирования 3д

Декларация о соответствии действительна с даты регистрации по 16.10.2013г.

Сведения о регистрации декларации о соответствии



Филатов А.Г.

инициалы, фамилия руководителя организации
(уполномоченного им лица) или индивидуального предпринимателя

Регистрационный номер декларации о соответствии №ТС RU Д-RU.АГ02.В.00363

Дата регистрации 16.10.2012г

Figure 20. Sample of declaration of conformity with TR CU

4.5.2 Others conformity documents

State Registration

State registration certificate is aimed to replace hygienic and sanitary certificates since 1st July 2010 by the Decision N299 of CCU (Committee of Custom Union). The full list of products that require State Registration is available on the official website of EEC. State Registration is valid on the whole CU territory.

Fire Safety Certificate Fire safety certificate confirms compliance with fire safety requirements and states that the product is able to prevent fire occurrence and minimize the impact on human being health and property.

According to the Federal Law N123-FL from 22.07.2008 “Technical regulation on fire safety requirements”, for surfacing materials of railway rolling stock and metro has to be certified. Fire Safety Certificate may not be requested by customs, but it might be pre-requisite to GOST R / TR / TR CU Certificate of Conformity (Intertek, 2013).

Certificate of Origin A certificate that states the country of product origin is required by customs when product is entering the territory of RF. Also it can be requested by certification body when submitting application for conformity assurance.

Exemption letter Exemption letter is a document required by customs that states that imported production is not a subject to obligatory conformity assessment and there is no technical regulation that determines conformity assurance of the product. The exemption letter can be issued by the any accredited certification body, but as practice reveals customs accept only letter issued by Ministry of Industry and Trade of Russia (МИНПРОМТОРГ) (Intertek, 2013).

The following documents have to be submitted in order to obtain exemption letter:

- Full name of the company with address info
- Exact name of the product including names of models and types
- Technical description and other relevant documentation
- Customs tariff code (Code of TH ВЭД)

- Contract and the enclosure with all technical descriptions

4.6 Conformity assurance schemes

Conformity assurance schemes are determined by the Federal Law № 184-FL. It states that conformity assurance can be held according to the various schemes. There are 10 existing certification schemes and 7 declaration schemes. Each Technical Regulation determines directly which schemes could be applied when assuring conformity of this particular product.

According to the GOST R 53603-2009 applicant should know conformity assurance schemes before the process of the certification. They are determined by respective Technical regulations or in the documentations of the voluntary certification systems.

In the one of the annexes of the Decree “On application of typical conformity assurance schemes, when proving compliance with Technical Regulations of Custom Union” provided Table 3 with typical combination of conformity assurance schemes, which was extracted and translated by me:

Table 3. Possible combination of conformity assessment forms

Registration, expertise, applicability appraisal	Conformity assurance	State control and supervision
-	Conformity Declaration	+
-	Certification	+
Product registration, including State Registration	-	+
Product registration, including State Registration	Conformity Declaration	+
Product registration	Certification	+

Expertise, applicability appraisal	-	+
Expertise, applicability appraisal	Conformity Declaration	+
Expertise, applicability appraisal	Certification	+
State registration of products, production facilities	-	+
State registration of products, production facilities	Conformity Declaration	+
State registration of production facilities	Conformity Declaration	+
State registration of production facilities	Certification	+

Schemes of certification are described in the GOST R 53603-2009. This document gives 14 schemes of certification, although usually no more than 7 are applied (TR CU 001/2011, 2011, TR CU 002/2011, 2011, and TR CU 003/2011, 2011). Yet, in this 14 scheme of certification 7 belong to the product certification and 7 to the product project certification. Another document, “Recommendation for schemes selection applied for the Technical Regulation development” (2003) proves that there are 7 schemes of certification only.

Another source, the System on Federal Railway Transport, which is applied for the production of Bombardier Transportation, according to the “Consolidated list of subjects to the mandatory conformity assurance”, is giving the list of certification schemes to be applied consisting of 9 different schemes. However, as I found out, the schemes that The Federal System on Railway Transport uses for production conformity assurance are old and obsolete.

However, even if the issue with amount of schemes could be explained by usage of old and new systems, then another issue arises. The case is that in old scheme system certification schemes has names 1, 1a, 2, 2a, 3a, 4a, etc. In new system, which is united

for the CU members, schemes are named with a digit and letter c. Concordance of schemes from old and new systems and their content is shown in the Table 4.

Table 4. Certification schemes

Scheme name	Scheme content	Scheme name in previous system
1c	<p>Accredited testing laboratory holds the testing of the typical product sample</p> <p>Accredited certification body issues a conformity certificate to the applicant</p>	1
2c	<p>Accredited testing laboratory holds the testing of the typical product sample</p> <p>Accredited certification body holds analysis of production state and issues a conformity certificate to the applicant</p>	1a
3c	<p>Accredited testing laboratory holds the testing of the typical product sample</p> <p>Accredited certification body issues a conformity certificate to the applicant and maintains inspection control of the certified production (product samples testing and analysis of production state)</p>	2,3,4
4c	<p>Accredited testing laboratory holds the testing of the typical product sample</p> <p>Accredited certification body holds analysis of production state , issues a conformity certificate to the applicant and maintains inspection control of the certified production (product samples testing and analysis of production state)</p>	2a,3a,4a
5c	<p>Accredited testing laboratory holds the testing of the typical product sample</p> <p>Accredited certification body holds certification of quality</p>	5

	system or production system, issues a conformity certificate to the applicant and maintains inspection control of the certified production (control over quality (production) system and testing of product samples, provided by manufacturer)	
6c	<p>Accredited testing laboratory holds the testing of the consignment of goods</p> <p>Accredited certification body issues a conformity certificate to the applicant</p>	7
7c	<p>Accredited testing laboratory holds the testing of the each unit of the consignment of goods</p> <p>Accredited certification body issues a conformity certificate to the applicant</p>	8

Moreover, the company has received from the Russian Client the new Technical Regulation of Customs Union “On Safety of Metro Rolling Stock”, which is in a developing stage and going to be signed in 2016. As any Technical Regulation it provides in its annexes a list of certification schemes to be applied when conforming compliance. The list contains 8 certification schemes. This causes confusion and remains an open question.

According to the Federal Law N123-FL from 22.07.2008 “Technical regulation on fire safety requirements”, for surfacing materials of railway rolling stock and metro, schemes 2c, 3c, 4c, 5c and 6c are applied (Federal Law N123-FL, Article 146, 2008).

4.7 The process of certification

The certification process is fairly complicated and depends on the production that is subject for certification, on the chosen certification scheme and on the normative document compliance with which is aimed to be confirmed. The typical process is explained in the files attached as Annex I and Annex II and reflected in Figure 17, where in blue boxes marked the processes, in grey – reports and in yellow – decisions. Some steps can be excluded, depending on with accordance to which scheme compliance is confirmed.

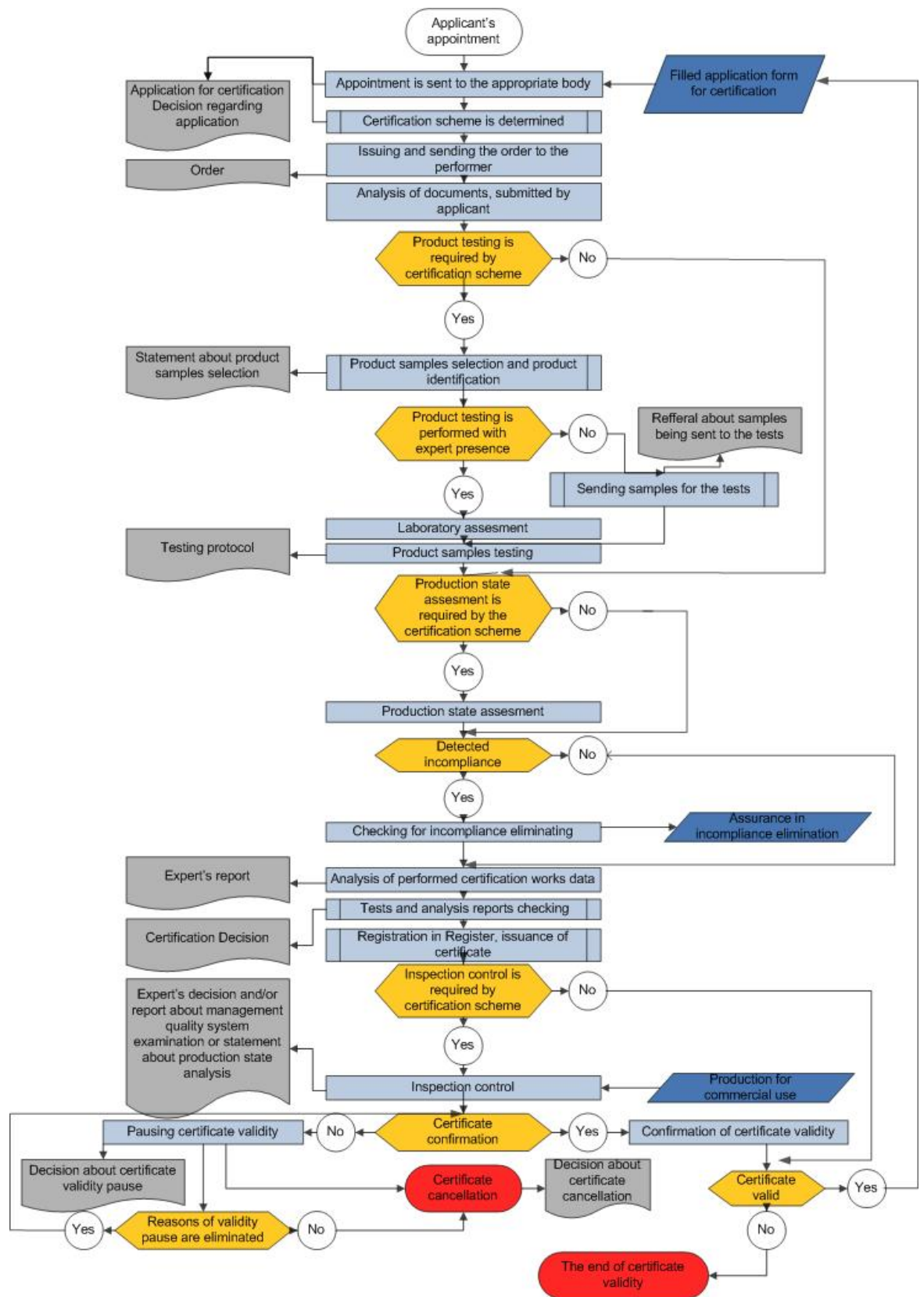


Figure 21. Certification process in Russia

4.8 Payment of quality certification

Another issue is that in Russian quality infrastructure there is no fixed payment for the conformity assurance in form of certification. Payment is determined in the Rules of certification “Services and works payment for product certification”, which is available on the official website of the Federal agency on Technical Regulation and Metrology www.gost.ru.

To register declaration of conformity will cost double minimum wage established on the territory of Russian Federation. (“Services and works payment for product certification”, 1999). The minimum wage in 2014 accounted into RUB 5 554 (ITAR-TASS, 2013). The declaration should cost to applicant RUB 11 108 which is €237.9658.²

The payment for product certification is defined by following formula:

$$C = C_{oc} + C_{ob} + C_{ip} + C_a + C_{ck} + \sum_{i=1}^n C_{iki} + \sum_{j=1}^m C_{iskj} + C_{rc} + C_d,$$

Figure 22. Certification Payment Formula

Where abbreviations means following:

- **C_{oc}** – cost of works and services, performed by certification body, RUB;
- **C_{ob}** – cost of samples selected for the certification tests, RUB;
- **C_{ip}** – cost of product tests in accredited testing laboratory, RUB;
- **C_a** – cost of production state analysis, (currency not defined);
- **C_{ck}** – cost of production certification or quality system certification, RUB;

² According to the FOREX for 04.07.14

- **Сикі** – cost of one inspection, carried within inspection control program over conformity of mandatory certified production (services) to the requirements of the normative document, RUB;
- **n** – number of inspections, under the program of inspection control over certified products during the validity of the conformity certificate;
- **Сискj** - cost of one inspection, carried within inspection control program over conformity of certified quality (production) system to the requirements of the normative document, RUB;
- **m** – number of conformity inspections of the certified quality (production) system to the requirements of the normative document, under the program of inspection control during the validity of the conformity certificate;
- **Срс** – cost of samples' package, storage, utilisation, loading and unloading works and transportation to the place of testing, RUB;
- **Сд** – cost of works of considering application-declaration.

Depending on the situation the formula of costs calculations can be changed by including in only those works indicators that actually has been held. The approximate costs for BT are calculated in the paragraph 6.1 Summary of main findings.

5 DISCUSSION AND ANALYSIS

5.1 Complexity of Russian standards: entanglement, interdependence and standards' obsolescence

Every foreign company that starts some activity in Russian market faces the problem that International Standards like DIN, ISO or CE are not applicable in Russia. (Shorsch, 2009: 55). Products that intend to get access to the Russian market require conformity assurance with Russian standards, norms, technical regulations and laws. Bombardier Transportation is not an exception and will have to come through all this procedures in order to supply it's production to the UVZ and to Moscow Metro as a final Customer.

As was found out, to obtain required certificate is not that easy. Because Russia is a member of Custom Union and Eurasian Economic Union, not only Russian normative documents are valid on it's territory. At the current moment products parameters are determined by Technical Regulations of Custom Union, by Technical Regulations of Russian Federation, Interstate Standards GOST, National standards GOST R, National Fire Safety and Hygienic norms and rules, Building and Construction norms and standards, etc. (Figure 23. Correlation of Standards in Russia). It means, that BT has take into account that it has to proceed not only under Russian legislation, but also comply it's production with requirements of Custom Union.

Furthermore, the other obstacle that BT is facing is that the major standard system that is used on the territory of Russia, GOST system, is to a little extent, comparing to it's European counterparty CEN/CENELEC, harmonised with such international standards as IEC and ISO: only 20% of standards are aligned comparing to the 40% of CEN/CENELEC (CEN/CENELEC, 2014).

Another ground of the determining Russian national quality system as a complex system is that some GOST standards are obsolete and cannot keep the same pace as their European equivalent. For comparison, CEN/CENELEC the average number of issued standards is approximately 1000 standards per year (CEN/CENELEC Annual Report, 2013). The EASC's pace of standard development is rather slow –according to the last available information, in 2008 it published only 79 new standards (EASC, n.d.). After all, the average lifecycle of ISO standard is 2,5 years (Racine, 2011:112), whereas GOST standards, published in Soviet years still be in the force.

What is more, there is no clear hierarchy in Russian normative documents, so in case a contradiction arises (paragraph 5.4) it is hard to define the more authoritative document.

Even access information about product which require mandatory certification is hard. At the current moment in the Russian Federation and Custom Union there are 4 (!) different lists of the production that is the subject to the mandatory conformity assurance (VNIIS, 2013). The lists are available on the official websites (paragraph 6.2.2) of the Federal Agency on the Technical Regulation and Metrology (ROSTANDART), Eurasian Interstate Council for standardisation, metrology and certification (EASC) and Eurasian Economic Committee (EEC). The lists are reviewed and being updated at least 1 once per year, and a various products are being excluded from the list and mandatory conformity assurance is no longer required for them. However, the information flow is not really efficient.

Examples of complexity or unclear situation:

- To begin with, published on the official website lists of products, which are subjects to mandatory conformity assurance, are not dated, which makes impossible to understand if the information is sufficient or not.
- Furthermore, various websites and organisations, which offer help and guidance through GOST certification for additional remuneration, provide not updated or not official lists.

As a consequence applicants are having troubles with the right data assessment and experiencing the feeling to be lost. Among other troubles, that companies experience, are:

- Complexity in choosing certification body;
- No common pricing policy for conformity assurance services;
- Difficulties caused with on-going changes connected with CU;
- Impossibility to choose certification scheme without consultation with expert;
- The Federal Agency on Technical Regulation and Metrology hold all the functions of NQI – conflict of interest;

- Complexity of NQI is a ground for corruption, as a consequence, dangerous and unsafe goods still get access to the market.

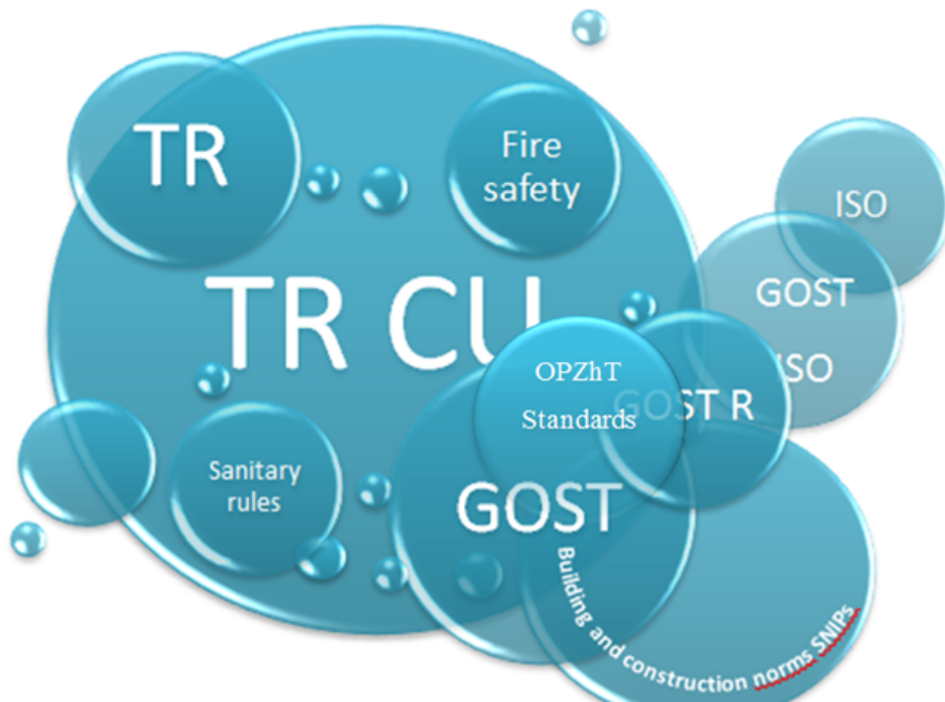


Figure 23. Correlation of Standards in Russia

5.2 On-going reformations

Reformations are one more reason for the standards and homologation procedures complexity. Reformations are mostly coming through the changes in integration with other countries. Russia has shown a strong demand for integration, both economic and political, after the collapse of Soviet Union. It resulted in various integrations attempts as Economic Union (1993), 2 Custom Unions (1995 and 2007), United Economic Space, etc., where some of them were never completed (Figure 7). There are some of the cooperation that brings particular interest and influence on the standardisation and certification sphere:

EurAsEC

The Eurasian Economic Community (EurAsEC) consists of Belarus, Kazakhstan and Russia, Tajikistan, Uzbekistan (joined in 2006 and left in 2008) and Kyrgyz Republic, whereas Ukraine, Moldova and Armenia

has a status of observer. The EurAsEC was formed in 2000 by the Treaty on the Establishment of the Eurasian Economic Community. Members have agreed that technical regulation of Community members have to be harmonized in areas of human safety and life, environmental protection and also trade barriers have to be eliminated. The EurAsEC Interstate Council signed four agreements dealing with technical regulations in 2005 and 2006. (EurAsEC, 2011)

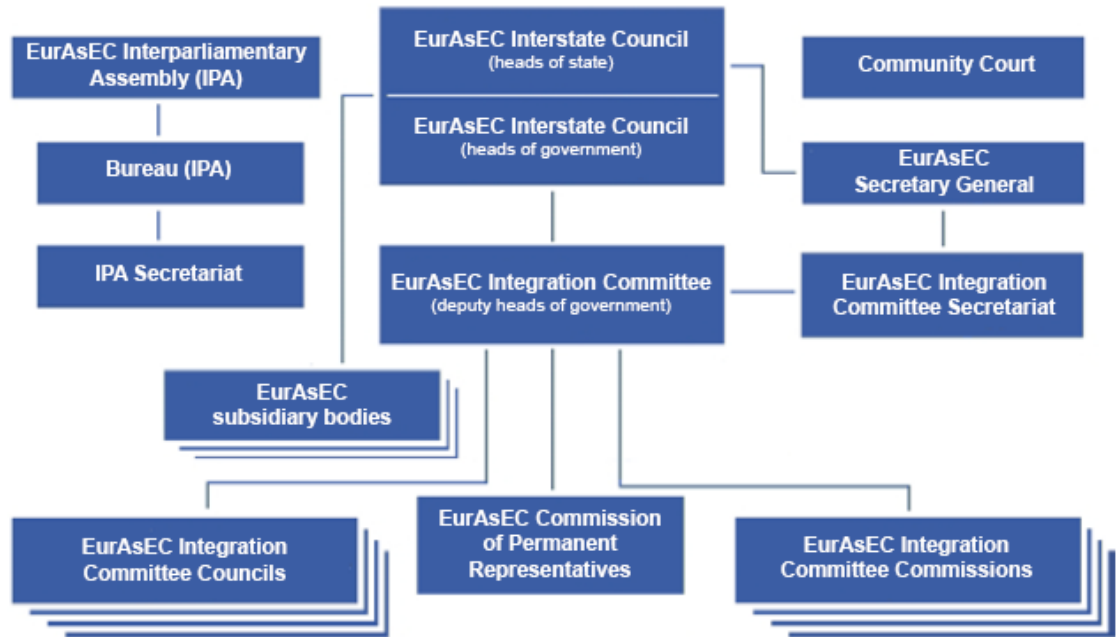


Figure 24. EurAsEC structure

CU On the basis of the EurAsEC Custom union was established. In 2010 Russia, Belarus and Kazakhstan signed the treaty. The CU is managed by the regulatory bodies of the EurAsEC. Its supreme body is the Interstate Council EurAsEC (MEZGOSSOVET), which is a supranational institution established by the Treaty Establishing the Eurasian Economic Community of 10 October 2000.

As a continuation of EurAsEC, countries members arranged on harmonised technical regulations implemented the plan inside the CU. For the

moment³ there are 31 valid Technical Regulation of Custom Union for various products.

Certification schemes inside CU also have been changed comparing to the schemes of the countries-members. According to the presentation of conformity assurance rules inside CU (www.eurasiancommission.org), now there is set of 9 certification schemes and 7 declaration schemes which vary from one technical regulation to the other.

Customs Union of Russia, Belarus and Kazakhstan

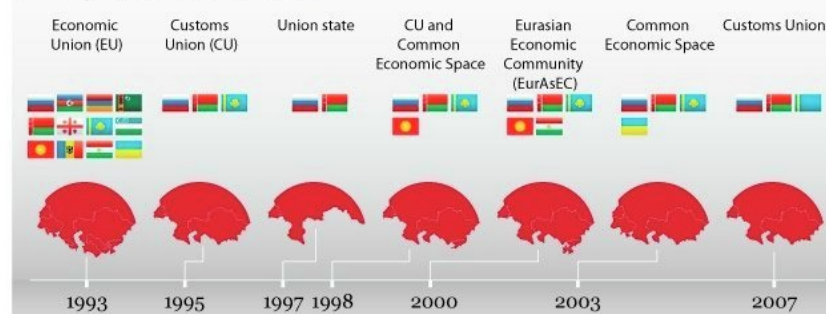
A common Customs Code for the three countries will take effect on July 1, 2010

Main provisions of the new code

- 1** Within the Common Customs Area, all customs duties and economic restrictions will be lifted (with some possible exceptions)
- 2** Goods imported from outside countries will be subject to a Common Customs Tariff (an agreed list of customs duty rates)

Attempts at economic integration within the CIS (involving Russia)

Most integration commitments were never met



Foreign trade of Customs Union (CU)

(2009, \$ million)

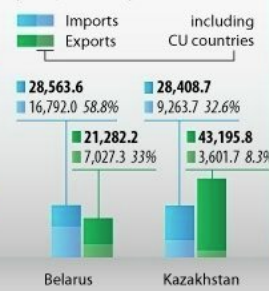


Figure 25. CU and other Russia's integrations

Since 2010 Russia has also engaged into harmonising its sanitary norms with Kazakhstan and Belarus, in the framework of a CU (EU, n.d.). The harmonised rules set at CU level prevail over the national norms. Also international sanitary norms could be applied according to the new CU directives. These mechanisms enter into force since the Russian Federation joined World Trade Organisation.⁴

³ 1st July 2014

⁴ 22nd August 2012

EU After more than 2 years of negotiations, ROSSTANDART or Federal Agency on Technical Regulation and Metrology of the Russian Federation by signing the Agreement on Cooperation with European Standardisation Agencies CEN and CENELEC on 17th of September, 2013 during the 36th General Assembly of ISO , have committed themselves to work together for the common interest (www.cencenelec.eu). The Agreement establishes such principles as mutual recognition and compatibility. By this Agreement the framework for communication will be established, allowing mutual data, information, knowledge and best practices exchange. Moreover, it will increase amount of standards in Russia aligned with European norms. Also it will facilitate trade between two powerful economies and which is therefore will lead to the sustainable growth.

Moreover, the project of the new Federal Law “On standardisation in Russian Federation” is going to be implemented soon. In April 2014, the project of the Law was submitted to the Russian Parliament by MINPROMTORG and is going to be reviewed for the 1st time in the autumn 2014 (Rossiyskaya Gazeta, 2014). According to the interview with the new head of ROSSTANDART, who has been introduced this position on 15.07.2014 by MINPROMTORG, the new vector of ROSSTANDART development is “to make an efficient tool in standardisation system, which will be a reliance for all industries of economy”. The new law project defines some concepts of standardisation more clearly and precisely: for example, Industrial standards (OCT) will be abolished, and Technical Conditions and Standards of Organisation (CTO) will be merged as a concept and get the same power. (MINPROMTORG, 2014).

Russia has understood the weaknesses of its NQI and is making steps for the reformations. So far, with the birth of Custom Union, the certification policy became stricter, which raises quality checking to the higher level. Also the new technical regulations that are entering into force are aimed to substitute old and obsolete GOSTs (Zubareva, 2014).

According to the ROSSTANDART Public Declaration (2013), in 2014 The Federal Agency on Technical Regulation and Metrology starts to develop the concept of the new organisational model of ROSSTANDART. The declaration states as the goal to build by 2018 modern and highly efficient national body on standardisation and

metrology. However, how is going to be done it is not stated and separation of such activities as certification, standardisation and metrology is unlikely to be foreseen.

5.3 Applicable certificates

As the research revealed, railway or metro production does not belong to any of lists of subjects to mandatory conformity assurance, neither in form of certification nor in form of declaration (Federal Agency on Technical Regulation and Metrology, 2014). However, in the “consolidated list of products that are subjects to the mandatory conformity assurance” it listed as a subject to obligatory conformity assurance under the mandatory conformity assurance system “on the federal Railway transport”. The form of conformity assurance stated as a certificate of this particular system (see Figure 26, 1st line). The system of the Federal Agency for Railway Transport or FBO RC FRT is an obligatory system of certification (FBO RC FRT, 2014). According to this metro rolling stock is a subject to mandatory conformity assurance under the mentioned below system.

Furthermore, there are 2 Technical Regulation of Custom Union exist, that are an interest to the study. TR CU 001/2011 “About safety of railway rolling stock” and TR CU 002/2011 “About safety of high-speed railway transport” are defining minimal mandatory technical requirements to the railway production. As any technical regulation there are list of all the components of railway rolling stock and high-speed railway transport. As the majority of the components are similar to the components of the metro train and the each component of the train has to be certified separately, then it appears that components of metro train are regulated by Technical Regulations of Custom union and has to be certified under the system of TR CU, which is obligatory system.

On the other hand, Technical Regulation regulating metro rolling stock is going to enter into force not earlier than 2015 and before the TR appears this kind of production is determined by the GOST and GOST R standards. According to the Federal Law № 184-FL adopted on 27th of December, 2002, the standards since this date are recognised as voluntary requirement, whereas technical regulations must to be followed. As metro and railway production is not in any lists of subjects to the mandatory conformity assurance (except “Consolidated list”), then metro production does not have to be certified obligatory as it is under voluntary system.

The other option is that conformity assurance will be voluntary, but the compliance with other document has to be confirmed. The STO SDS OPZhT-07-2010 "Requirements for Voluntary Certification of Metro Coaches" is a document that collects all the applicable to the metro train voluntary standards. It means that compliance can be confirmed with the one united document. It will avoid costs of compliance with every single GOST separately.

Moreover, the compliance certificate can be issued for the TT, or Customer Specifications. However, the TT is based on the OPZhT-07-2010 (for the current moment) and it is unlikely that customer, who is in charge of certification, will carry conformity assurance with the own requirements.

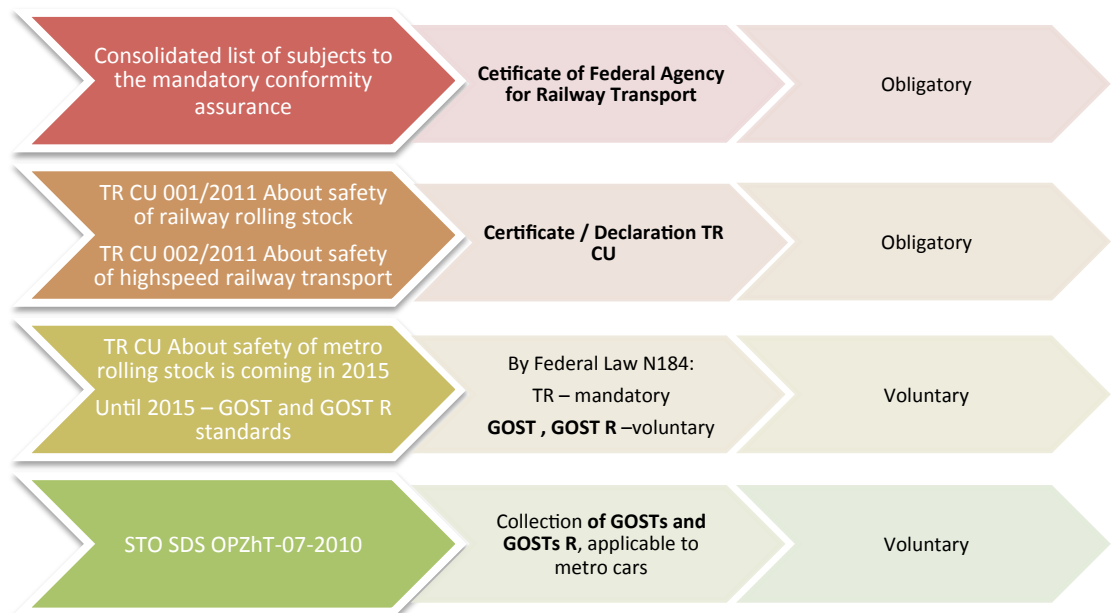


Figure 26. Certification system issue

As was discussed with the head designer of UVZ, Evgeniy Melyuk (2014a), the solution is to work assuming the certification will be compulsory, and expect the Technical Regulation for metro rolling stock to enter into force in the course of the project. Technical Regulation will cover the whole minimum of mandatory requirements.

Among other certificates, that BT has to obtain before importing production to Russia, BT might be requested to present Fire Safety Certificate for proven dangerous materials (the list can be found on the www.gost.ru). Exemption letter might be requested in case of uncertain and ambiguous product coding, which is caused by difference of

Russian and European Trade Classifications. Even if it is certain that product do not belong to mandatory conformity assurance, better to have exemption letter to avoid time consumption and possible money loss.

5.4 Standard's contradiction

During the project by the Advanced Engineering department was found out the contradiction of the applicable normative documents, namely between documents containing specifications and documents describing test methods that are called by the specifications. The Advance Engineering department of the project made and outline of main contradictions (see Appendix II). Some of the findings are illustrated in the Table 5.

GOST and OPZhT norms hold the character of voluntary applicable standards, so in case if contradiction arises, they both have the equal power. However, as we have a Customer specification, named TT, it has to be followed. The customer is paying money for the result, so he is in power to request the product to be compliant with requirements. Yet, the conformity assurance is going to be performed by Moscow Metro with the requirements of OPZhT. In this case the strictest requirements have to be followed, which are written down in TT. The strictest requirements cannot be determined by GOSTs or OPZhT norms. If this is revealed (for example, train speed for measurement), the following parameter indicators have to be discussed with the Customer, who should make it clear.

Table 5.Contradiction of norms (extract).

	General specifications giving external noise requirements				Test methods called by the specifications	
	TT_Metro_21_red_171212_ENG (Specification MM)	GOST 50850-96 "Under-ground cars, general specifications"	STO SDS OPZhT-07-2010 "Requirements for Voluntary Certification of Metro Coaches"	GOST 30487-97 "General safety requirements for Suburban electric trains"	GOST 26918-86 "methods for measuring noise of a railway rolling stock"	ST SSFZhT CT 019 "Typical test procedure to define sound and sound pressure levels, external noise (sound) and vibration (mean-square value of vibration accelerations) levels"
Train Speed for the measurement	2/3 of design speed = 67kph	70 kph	cf. ST SSFZhT CT 019 & GOST 26918	cf. GOST 26918	60 kph AND 100 kph	2/3 of design speed = 67kph
Post processing parameters	Noise level with A-weighting	Noise level with A-weighting	cf. ST SSFZhT CT 019 & GOST 26918	cf. GOST 26918	Noise level with A-weighting Time characteristic = S (slowly)	Noise level with A-weighting Maximum value Time characteristic = F (fast)
Requirement concerning pass-by noise level	≤ 84 dBA - when moving along continuous welded rail track; ≤ 87 dBA - when moving along jointed track;	90dBA	90dBA	≤ 84 dBA - when moving along continuous welded rail track; ≤ 87 dBA - when moving along jointed track;	No requirement	No requirement

6 CONCLUSIONS

6.1 Summary of main findings

For the moment, the railway production falls under two categories of conformity assurance: mandatory conformity compliance with System of Federal Agency for Railway transport and voluntary with requirements of OPZhT, which is obligatory for Moscow Metro (Figure 27). Since there is no Technical Regulation for Railway Production, both named above systems are presented as a collection of state standards GOSTs, national standards GOST-Rs and standard of organization (in this case – OPZhT).

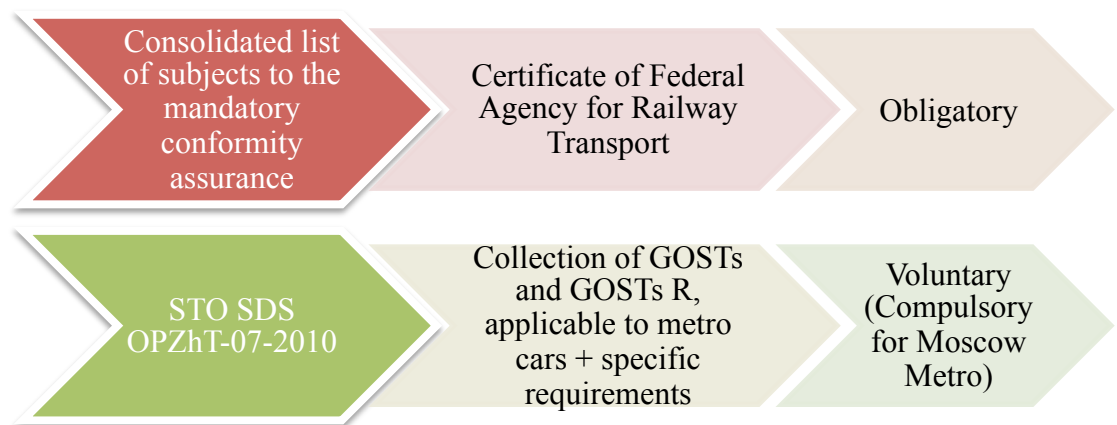


Figure 27. Recommendations for the company: certificates required for metro production

In case on the stage of manufacturing contradiction between Customer requirements and State standards is revealed, the strictest requirements have to be applied. The strictest requirements cannot be determined by GOSTs or OPZhT norms. Other case is determined in paragraph 6.3.

As for the conformity assessment fee, approximate payment calculation for BT's bogie, that it has to supply to Russia is accounting to €30 000 and RUB 1 000 000. The calculation has imprecise nature as calculations were done without following any particular conformity assurance scheme and prices considered to be calculated without currency rate dependence and inflation level. According to the website of Sertificat Test (2013) the prices for certification works ($C_{oc} + C_{ип} + C_{ск} + C_{д}$) equals to amount of 10 000 RUB. C_a was considered as 3 000€ (visit of 2 experts to the place

of production and their stay for 2-3 days) and bogie cost(**Соб**) as 20 000€ , **Сиски** = **Сики** = 2 000 €+160 000 RUB and **Спс** approximately equals to 100 000 RUB, then the total possible cost is 33 000 € + 910 000 RUB.

The other subject that company has to be aware is on-going reformation in the standardisation sphere in Russian Federation. The constant contact with Customer and with those, who represent railway industry in standards making bodies in Russia, has to be maintained in order to be able adapt to changes and be informed on any standards withdrawals or adoptions.

6.2 Implications for the Commissioner

As the result of the research commissioner got a training material handbook on Russian Standards and Norms, which closely interdependent with this thesis and utilizes data acquired in this research. It provides less analysis but more facts on the Russian National Quality Infrastructure.

The other outcome of the research is the engineers' training held inside the company on 3rd of September 2014. The training aimed to explain Russian standards and conformity assurance systems with a comparison to European counterparties. Training also gave the outlook on the possibly required certificates and stated all the uncertainties that need to be investigated deeper and discussed directly with the Customer (both UVZ and Moscow Metro) as it is also their part of responsibilities. The training material is available in the Appendix III.

After the training the survey has been conducted in order to get a feedback about the done work (Appendix IV and V). Feedback was positive, though respondents stated that it would be more effective to have such training on the earlier stage of the project.

As the result of this thesis, BT got a response to the questions that framed this research, namely:

- How to apply Russian Standards and Norms? What are these standards and norms? When are they applicable? (Paragraphs 4.2 and 4.5)
- What are the other or implied/connected norms (fire safety, sanitary norms, etc.)? (Paragraph 4.5.2)

- Which norms to follow if they contradict to each other? (Paragraphs 5.3, 5.4 and 6.1)
- What the voluntary certification provides? (Paragraph 4.3.2)
- What is being prepared, and what is the future of certification for Metros in Russia? (Paragraph 5.2)

However, some research questions were not answered and remain open-questions. In more details they are discussed in the paragraph 6.3.

6.2.1 Contribution to Russia's NQI

Also the suggestion will be to lobby the requirements known by BT but which do not present in Russian normative documents (for instance, crash calculations for metro rolling stock are absent) to UVZ. UVZ, in their turn, is a member of OPZhT and OPZhT is taking part of development of new TR. So that, when new TR will come into force, BT will have advantage of having already known requirements. Simultaneously, countries members of CU will benefit of having in its TR innovative and up-to-dated requirements and specifications.

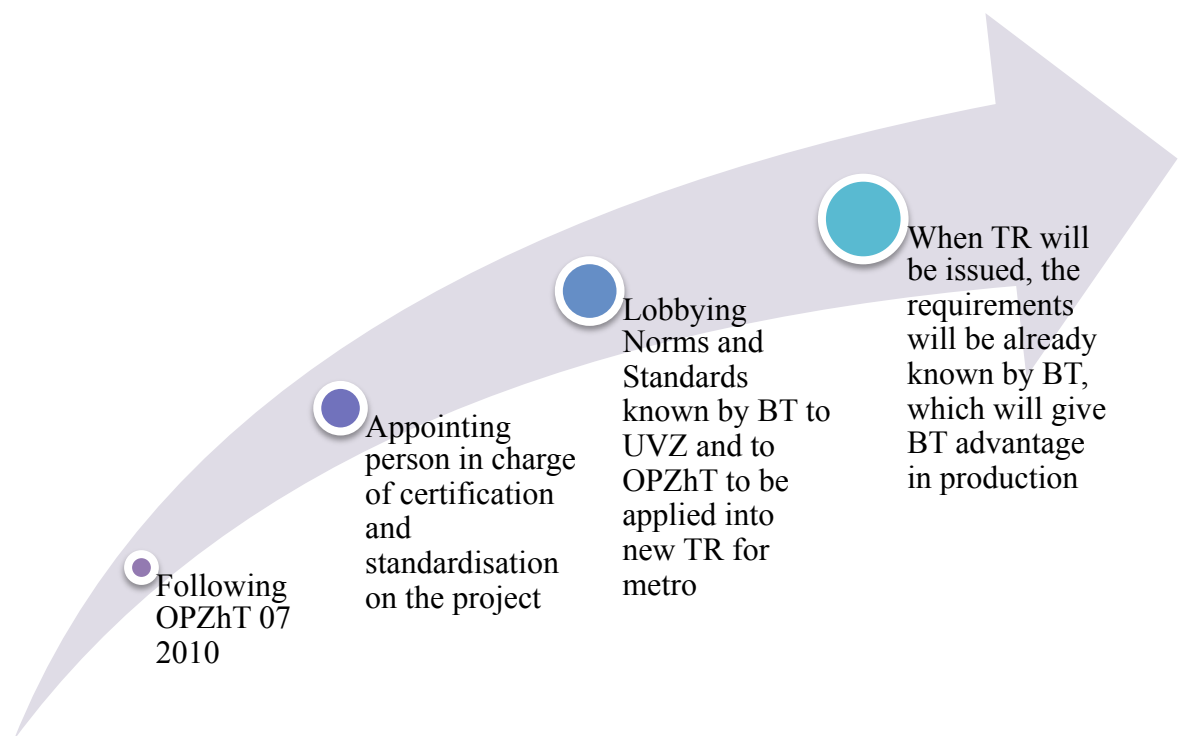


Figure 28. Recommendations for the company: Expected steps

Until the new TR comes into force, the metro rolling stock falls under two categories of certification: mandatory and voluntary. If the components of metro production are listed in the “Consolidated list of subjects to the mandatory conformity assurance” with the reference to the certification system on the Federal System on Railway Transport, then these components are mandatory to certification or declaration under this particular system.

However, as the metro trains are going to be used in the Moscow Metro, it has to be certified as a minimum under voluntary system. It means that the parts that are not subject to mandatory conformity assurance have to be certified under voluntary system. The voluntary certification can be performed directly by Moscow Metro. Voluntary conformity assurance will be held to establish conformity with Moscow Metro specifications called OPZhT, namely: STO SDS OPZhT-07-2010"Requirements for Voluntary Certification of Metro Coaches". OPZhT is a document which is combining all the appropriate GOSTs that correspond to this production type. However, there can be several OPZhT norms, for example, regarding testing as shown in Table 7.

Also, the voluntary certificate can be issued for the conformity with the requirements of TT. However, it may be not needed as the TT requirements are provided with references to the STO SDS OPZhT-07-2010 and GOSTs.

For proving compliance with TR/GOST/OPZhT/etc. may be requested other certificates as certificate of origin, state registration, etc. They are more precisely described in the paragraph 4.5.2. Basically, certification body, which will held conformity assurance should request particular certificates from applicant to do conformity assurance or propose help with issuance of these particular certificates.

6.2.2 Sources to be used

In continuation of research on certification and standards infrastructure of Russian Federation, both as research resumption or continuous work on the project, the following suggestion has to be given regarding the sources: There is plenty resources on the web with information about certification and standardisation in Russian Federation and Custom Union, provided by agencies that are assisting companies in obtaining needed certificates for remuneration. However, the recommendation regarding accessing missing information is to use official sources as only there the information is up-

dated and not obsolete. It is harder to access information from official resources that from agencies websites for various reasons:

- Russian and English version varies for a big extent
- Normative documents usually provided only in Russian language, translation has to be requested and may cost money
- Normative documents usually are stored only in Russian version of website, which make it almost impossible to find the needed document
- The language used on the official web sources is formal and sometimes hard to understand

Nevertheless, my recommendation is to avoid the websites of companies providing help with certification, for the following reasons:

- This kind of websites use their own lists of products that are subject to any form of conformity assurance and information in the lists as a rule is obsolete
- The references to normative documents are very often provided with old dated and already substituted with new laws and regulations
- They are using not official names of the documents or systems, which may cause misunderstanding and miscomprehension

That is why here is the list of official bodies that I have complied. These links were very essential for the present research and it is advisable to seek further information here:

EASC

<http://www.easc.org.by/index.php>

List of member with coordinate people data, the documents regulating activity of EASC, information about council's meetings, etc.

EEC

<http://www.eurasiancommission.org/ru/Pages/default.aspx>

TRs of CU, various decrees and regulations adopted by CU, information about meetings of the council, agenda of the meetings and direction of development.

FBO RC FRT

<http://rsfgt.ru/fgt>

Information about certification of metro and railway production under this particular certification system, various blanks, application forms, etc.

MINPROMTORG

<http://minpromtorg.gov.ru/>

Ministry of Trade of Russian Federation is publishing latest news, among which are changes in ROSSTANDART, new directives adoption and international cooperation.

ROSSTANDART

<http://gost.ru/wps/portal/pages/main>

The official source for reviewing updates in Russian legislation regarding technical regulation sphere.

ROSZHELDOR

<http://www.roszeldor.ru/>

The website of the The Federal Agency for Railway Transport. Here can be found plan of Agency development, it's goals, structure, history; information about certification of railway transport and certification bodies accredited to perform homologation.

CCU

<http://www.tsouz.ru>

Website moved to the website EEC (see above), but still available the archive of the website. Here could be found statistics, custom policy of CU, decrees and regulations adopted by Comission, etc.

FCS CSFT

<http://stat.customs.ru>

Available statistics from Federal Customs of Russian Federation.

Non-profit partnership "Union of industries of Railway Equipment".

6.3 Open questions

By the moment when the research has been finished some of the questions are still to be considered as open questions. Some of them have to be investigated further, whereas for the other one the solution will be waiting for the appropriate government decree or resolution. The following issues remain unclear:

1. The number of the conformity assurance schemes and the validity dependence. The number of conformity schemes (and its content as well as a name) varies from system to system. As for the moment part of production belongs to the conformity assurance under obligatory system of the Federal Agency on the Railway Transport and part of production is under voluntary certification, then the applied schemes will vary to the high extent. More likely that schemes with the same name will differ in content, in the process, in certificate validity, etc. because:
 - The system of Federal Agency on the Railway system uses old schemes;
 - Compliance with GOSTs or STO SDS OPZhT-07-2010 will be done according to the new schemes;
 - Compliance of some component that are regulated by TR CU will be under schemes of CU, which differ from Schemes of RF.

The solution will be to wait for the Technical Regulation on safety of metro rolling stock, which beside defining the conformity of which components has to be assured, will also determine in accordance with which schemes it should be done.

However, the option “to wait” is unacceptable for both financial and logical reasons. If the company has to start production before the new regulation comes into force, then the solution will be address the question to the UVZ, who is according to the contract, is responsible for all the certification. Also, UVZ is a part of OPZhT and if the conformity assessment is performed by

OPZhT, UVZ can request information about the required certificate and recommendations regarding scheme.

For the moment, the certification and declaration schemes will be proposed by the certification body that will hold the conformity assurance services. It is assumed that it is going to be done by OPZhT, so OPZhT will take decision regarding schemes and make proposal to applicant, indicating the validity of issuing certificate.

2. The certification body that will hold certification.

In this case the TR CU on the safety of metro rolling stock is also being awaited as it will define all the bodies that have power to issue certificate proving conformity with this particular TR. It is assumed that TR will enter in force in 2016 and as it is regulated in TR for railway cars certification will be done by FBO RC FRT and OPZhT and companies will have 2 years after TR enter the force to become compatible or to reconfirm compliance with new technical regulation. Before the part of production will be certified in the Federal Agency on the Railway Transport and voluntary certification can be done by OPZhT, by Moscow Metro or by any other certification body. The question is that what are the “other bodies” and who will they be when new TR CU will enter the force. However, for BT is more essential to rely on OPZhT only as the conformity certificate issued by this organisation has to be submitted later to the interdepartmental council of Moscow Metro.

3. What is the sequence of actions in case if customer requirements do not fit Russian standards?

The question was discussed in the interview with Evgeniy Meluk, who said that basically such situation should not occur, but it is possible. In case if so happens and TT is not compatible with state requirements, then the discussion with Customer should be held

4. How to be if the Europe has better and less costly practices in manufacturing, but they do not respond to Russian norms?

Lobbying this practice to be adopted into new TR or standard, which is extremely time consuming. The fear is, that company can not do much about it.

6.4 Research resumption

The main recommendations regarding research resumption is to use only official sources of information and avoid the websites of agencies that are proposing help regarding Russian certification system. The list of the governmental websites applicable to the research topic can be found in the paragraph 7.1.3 Sources to be used.

The questions needed to be investigated are the questions, listed in the paragraph 7.2 Open questions. It is important to understand the right amount of conformity assurance schemes. However, as was mentioned above, the only way understanding may come is the adoption of new TR CU specialized for the metro production.

Then, even if the payment issue is not causing a lot of questions, there is not much available information about it. Furthermore, because there is no fixed price for the conformity assurance services and certificate issuance, it makes a field for corruption and causes unjustified price tagging. The separate research only regarding the prices of conformity assurance services can be conducted, with collecting and analysing data from companies-respondents that did certification for the same kind of production. It could be interesting to make a questionnaire for both Russian and foreign companies and find out if their payments were the same and why if they were not.

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APPENDICIES

Appendix I. Contradiction of norms and standards

	General specifications giving external noise requirements				Test methods called by the specifications	
	TT_Metro_21_red_171212_ENG (Specification MM)	GOST 50850-96 "Underground cars, general specifications"	STO SDS OPZhT-07-2010 "Requirements for Voluntary Certification of Metro Coaches"	GOST 30487-97 "General safety requirements for Suburban electric trains"	GOST 26918-86 "methods for measuring noise of a railway rolling stock"	ST SSFZhT CT 019 "Typical test procedure to define sound and sound pressure levels, external noise (sound) and vibration (mean-square value of vibration accelerations) levels"
Train Speed for the measurement	2/3 of design speed = 67kph	70 kph	cf. ST SSFZhT CT 019 & GOST 26918	cf. GOST 26918	60 kph AND 100 kph	2/3 of design speed = 67kph
Position of microphone from the track centerline	25 m	no information	cf. ST SSFZhT CT 019 & GOST 26918	25 m + cf. GOST 26918	25m AND 7,5m	25m

Post processing parameters	Noise level with A-weighting	Noise level with A-weighting	cf. ST SSFZhT CT 019 & GOST 26918	cf. GOST 26918	Noise level with A-weighting Time characteristic = S (slowly)	Noise level with A-weighting Maximum value Time characteristic = F (fast)
Track conditions	continuous welded rail track OR jointed track	grade "well"	cf. ST SSFZhT CT 019 & GOST 26918	continuous welded rail track + cf. GOST 26918	grade "well" or better rails without joints (welded)	continuous track (jointed tracks with wooden sleepers are allowed) with health status conform to assessment "good"
Requirement concerning pass-by noise level	≤ 84 dBA - when moving along continuous welded rail track; ≤ 87 dBA - when moving along jointed track;	90dBA	90dBA	≤ 84 dBA - when moving along continuous welded rail track; ≤ 87 dBA - when moving along jointed track;	No requirement	No requirement

Appendix II. Training material



STANDARDIS ATION AND CERTIFICATI ON IN RUSSIA

Event

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Standardisation and certification in
Russia

Date 2014-09-03

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List of participants

- **ETPO Director:** Damaury Canonne
- **System Engineers:** Gregoire Seijnaehve, Laurent Beaurain, Anthony Camus, Renaud Brassard, Alain Villain, Christophe Bracq
- **Electrical Architect:** CiryI Jonvel
- **Carbody Responsible:** Olivier Luc
- **Project director/manager:** Vincent Thomas, Stéphane Tavernier
- **Procurement responsible:** Mark Amstutz

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Agenda

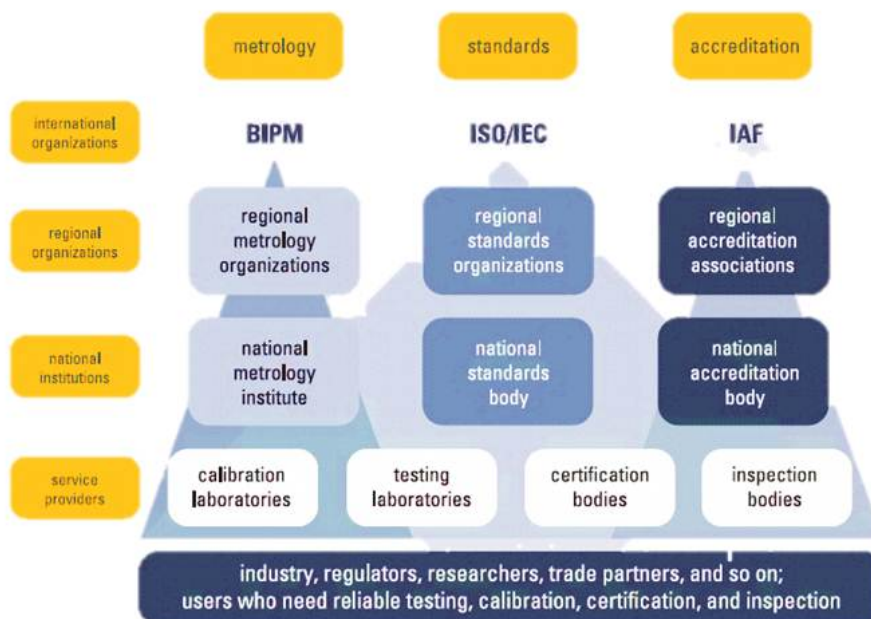
- 1 Organisation of national quality infrastructure
- 2 Standardisation
- 3 Certification
- 4 Results
- 5 Recommendations for the company

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Organisation of national quality infrastructure Difference from Europe

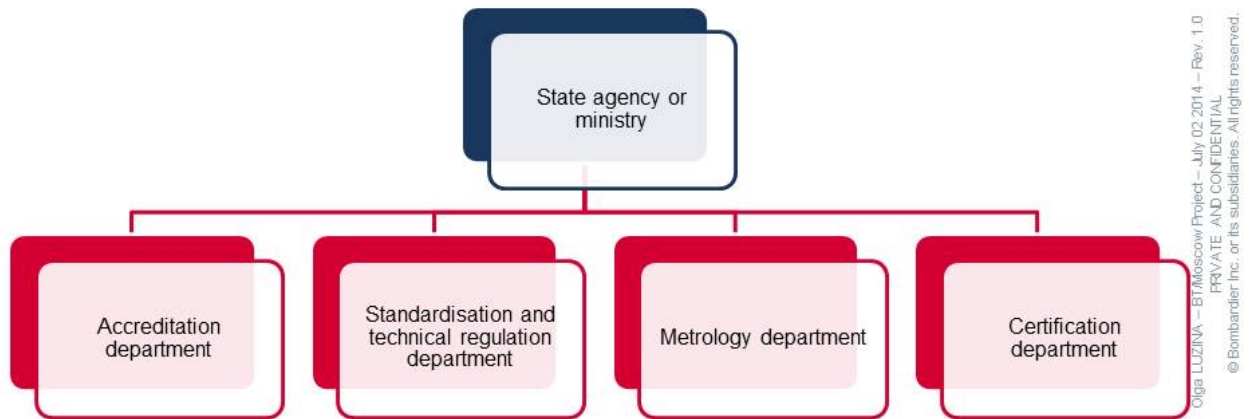


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3 Source: Racine, J. (2011)

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Organisation of national quality infrastructure Russia and CIS



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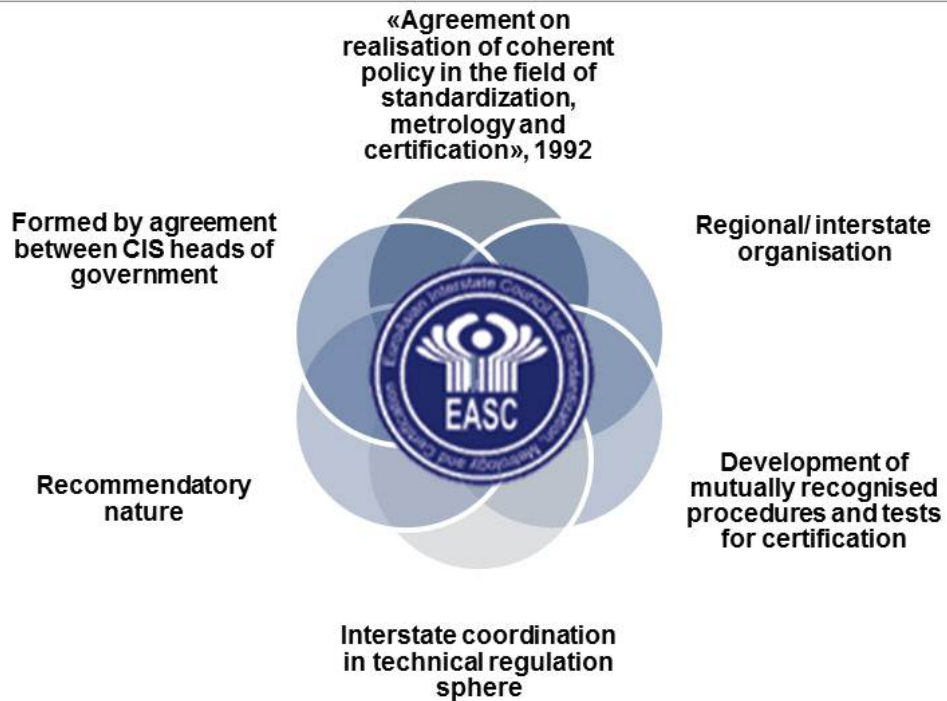
Organisation of national quality infrastructure Russia



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Organisation of national quality infrastructure EASC



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Organisation of national quality infrastructure EASC Structure

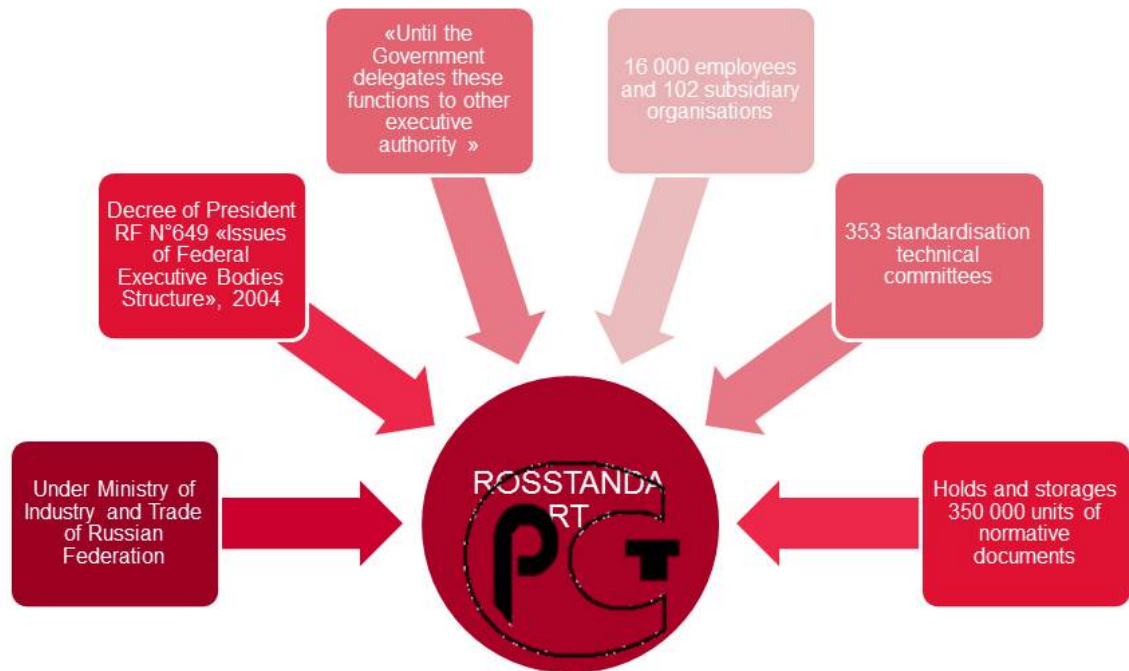


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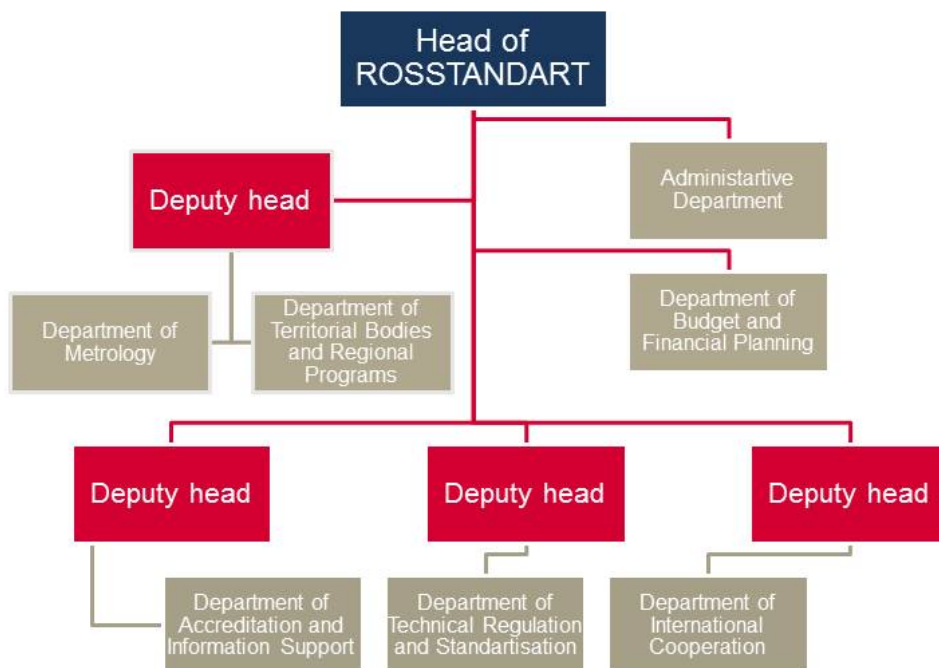
Organisation of national quality infrastructure ROSSTANDART



8 Dark blue – head of organisation, red – deputy head, grey - department

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Organisation of national quality infrastructure ROSSTANDART structure



9 Dark blue – head of organisation, red – deputy head, grey - department

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Agenda

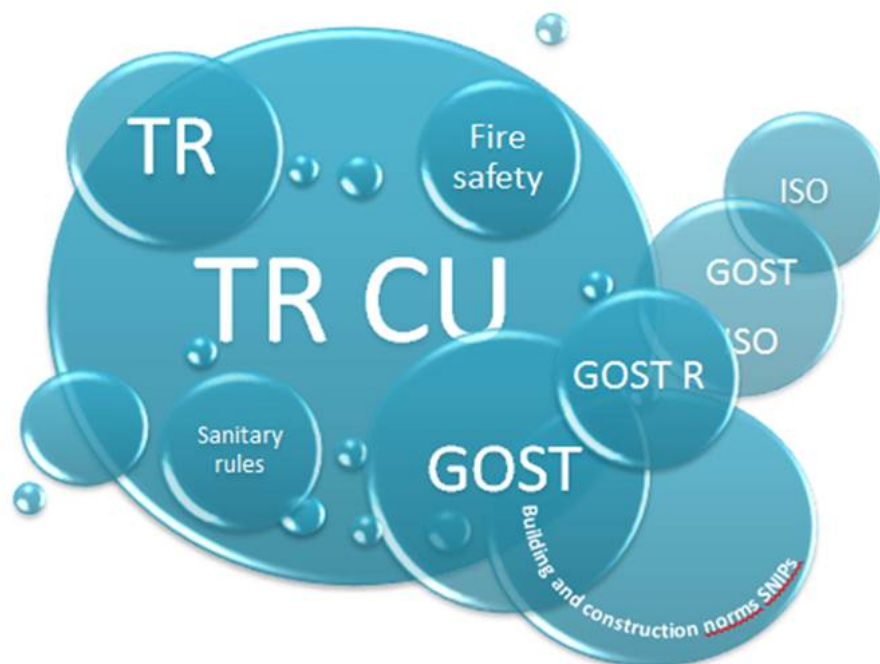
- 1 Organisation of national quality infrastructure
- 2 **Standardisation**
- 3 Certification
- 4 Open questions
- 5 Recommendations for the company

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Standardisation Complexity



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Standardisation Complexity

Enormous amount of various normative documents

- TR CU, TR RF, GOST, GOST R, ISO, GOST ISO, Sanitary and Hygienic rules, Building and Construction SNIPS, STO and OST standards, etc. and no clear hierarchy

Standards dictate detailed technical prescriptions

- Not minimum safety requirements
- Every innovation require new standard

Harmonised with IEC and ISO to a little extent (around 20%)

- Comparing to 40% of harmonised CEN/CENELEC standards

Standard obsolesce

- Some still be in force since USSR period without changes when ISO standard's average LC is 2,5 years

Bundled metrology, standardisation, certification and accreditation activities

- Causes conflict of interest

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Standardisation Standardisation in numbers



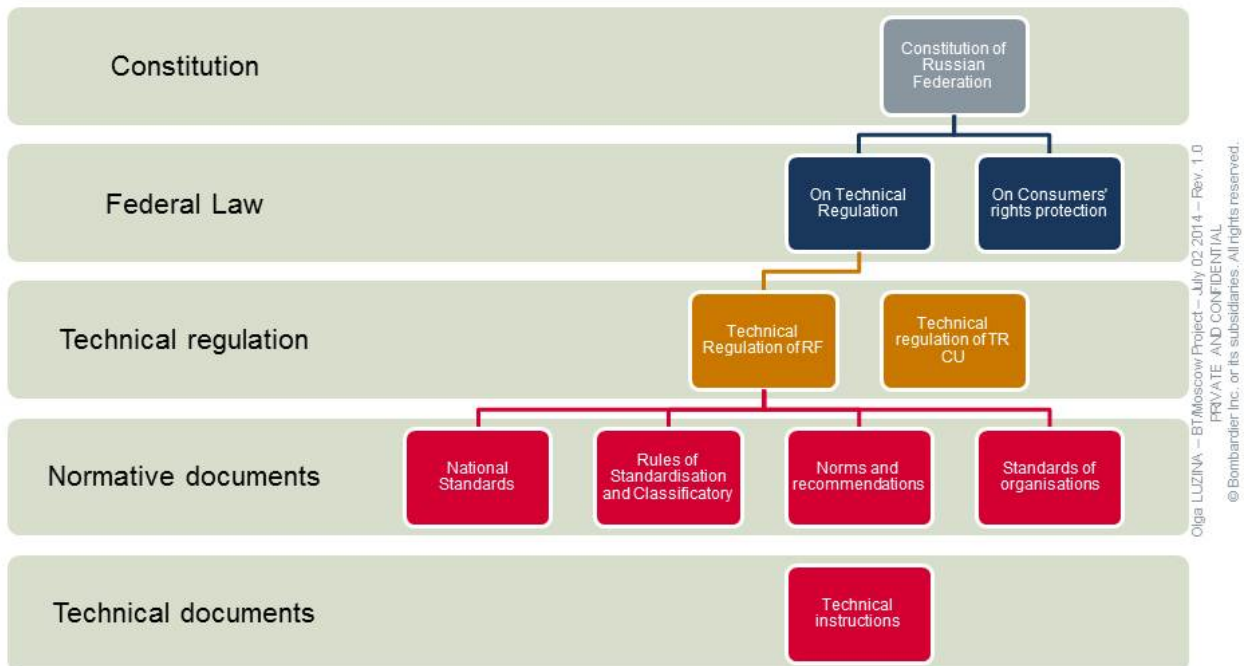
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Standardisation

Standards hierarchy



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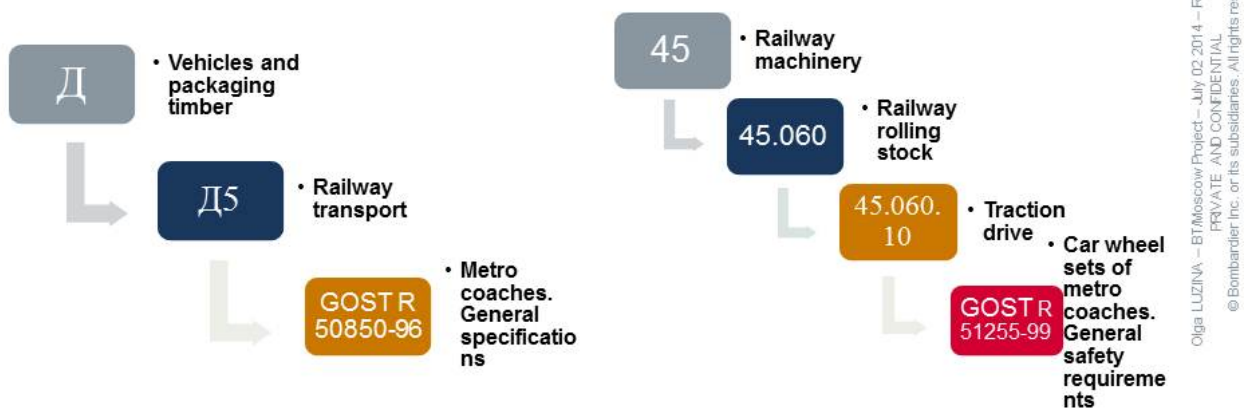
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Standardisation

Standards classificatory

“Classification of State Standards” (KFC)

All-Russian Standard Classificatory (OKC)



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Standardisation

Where to find normative documents

Web / Public (Voluntary nature, not official, not reliable, not legal, but available)

[OKC \(Full standards in Russian\)](#)

[Catalogue of normative documents belonging to standardisation sphere \(standards, TRs, etc.\)](#)

[Standard search - info \(Name rus/en, date, status\)](#)

Web / Public (Official)

[Valid Technical Regulations](#)

[Database of CU documents](#)

[Standards search - info](#)

BT servers

Name	Date modified	Type	Size
Audits	20/01/2014 15:00	File folder	
BT material data	08/04/2014 17:07	File folder	
Change Control	20/01/2014 14:58	File folder	
Contract annexes and related documents	20/01/2014 14:59	File folder	
Customer Documentation	29/01/2014 09:30	File folder	
Design Orientation	15/04/2014 16:03	File folder	
Existing depots data	24/03/2014 11:06	File folder	
Existing Material Data	23/07/2014 11:32	File folder	
Interface Bogie-WMA	05/05/2014 12:54	File folder	
Minutes of meetings	18/04/2014 08:53	File folder	
Norms and Standards	26/05/2014 10:42	File folder	
OIL_PPC_Bogie_WMA	02/06/2014 19:09	File folder	
OPTRD	09/04/2014 10:41	File folder	
Orange Book	04/07/2014 09:59	File folder	
PPC	11/07/2014 13:10	File folder	
ROP	12/05/2014 14:28	File folder	
Start up documents are stored in PTD	04/07/2014 09:51	File folder	
WMA	01/04/2014 11:34	File folder	

Norms and Standards Date modified: 26/05/2014 10:42 Offline status: Online
File folder Offline availability: Not available

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Agenda

- 1 Organisation of national quality infrastructure
- 2 Standardisation
- 3 **Certification**
- 4 Open questions
- 5 Recommendations for the company

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Certification

Certification in Russia

Federal Law № 184-FL “On Technical Regulation in RF” adopted on 27th of December, 2002 established:

Technical Regulation – is a minimum set of mandatory requirements - obligatory to follow;

GOST and GOST R – voluntary nature, except if the product is in the list

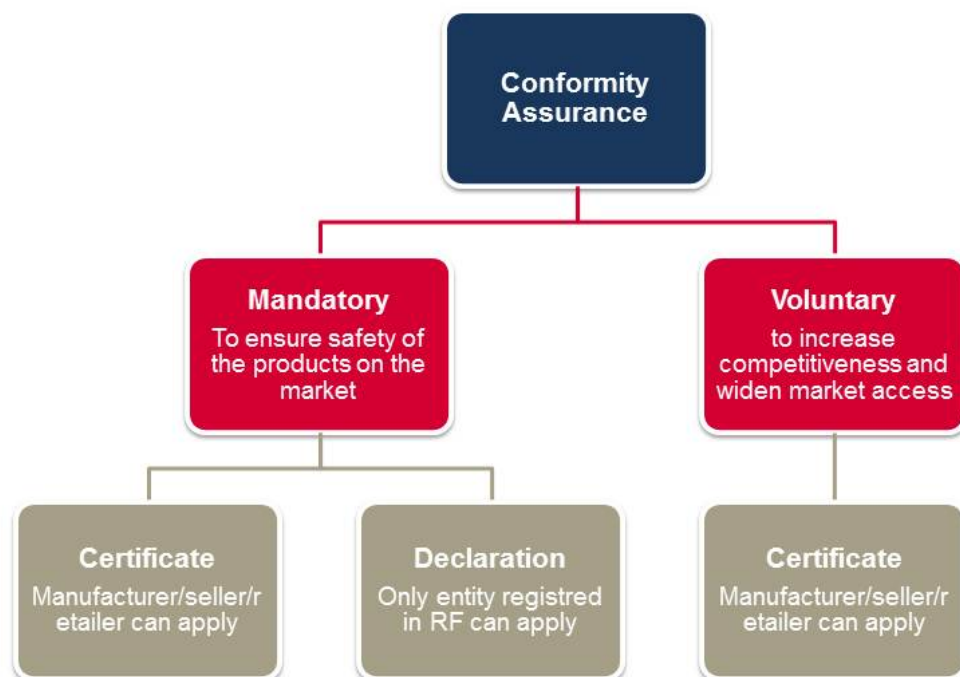
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Certification

Certification in Russian Federation



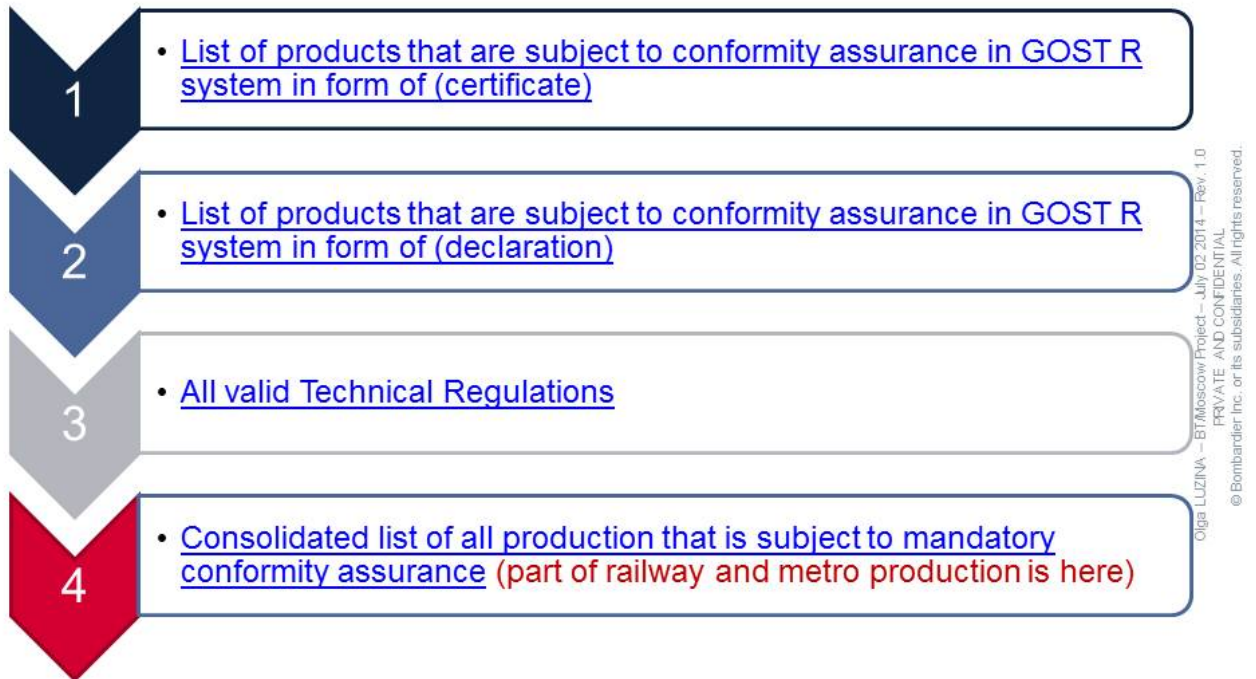
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Certification

Lists of the products – subjects to **mandatory** conformity assurance



21 **IMPORTANT:** All the lists are in Russian. There is no such documents available in the English version of www.gost.ru
Also track changes made to the lists [here](#)

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Certification

Certification in Russian Federation

Types of GOST R certification

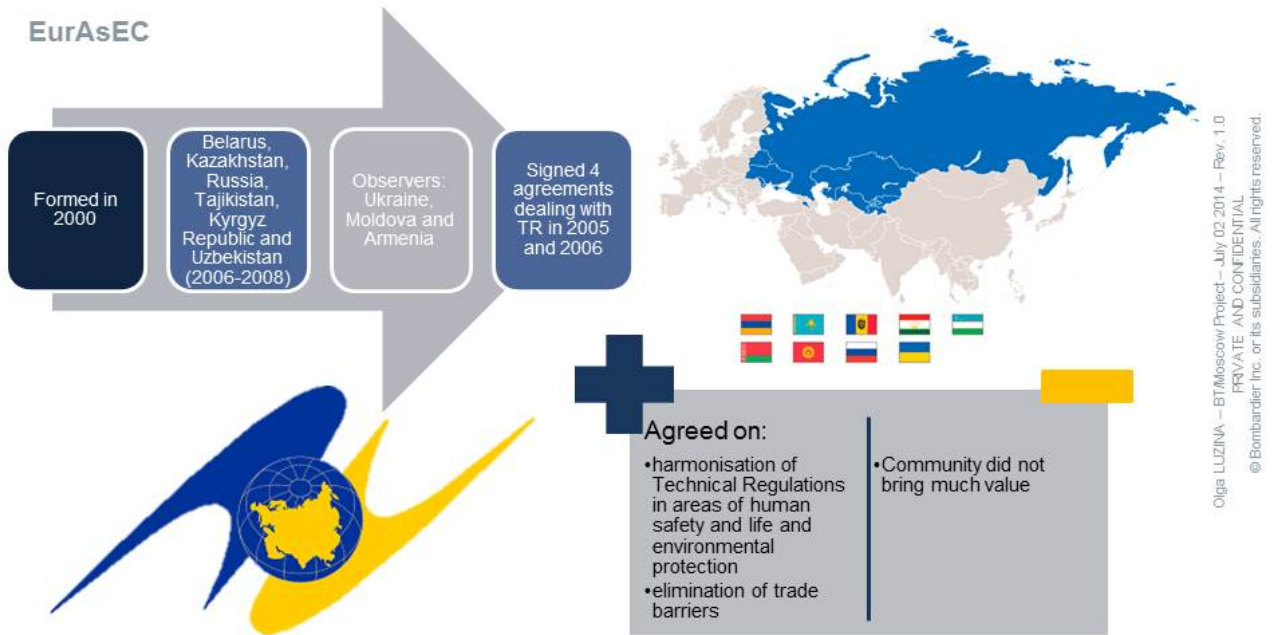
For the contract	For the consignment of goods	For the commercial use of goods
With laboratory test only	Possible without laboratory test	With laboratory test only
Unlimited amount of goods and deliveries during 1 year	Limited amount of goods to be delivered with open date	Certificate can be valid from 1 to 3 years

Other required certificates

State Registration <ul style="list-style-type: none"> Valid on CU territory Replacing hygienic and sanitary certificate Proved dangerous materials – Decision N299 of CCU from 28.05.2010
Fire Safety Certificate <ul style="list-style-type: none"> Compliance with fire safety requirements Product ability to prevent fire occurrence and minimize the impact on human being health and property Surfacing materials of railway and metro rolling stock - Federal Law N123-FL from 22.07.2008 "Technical regulation on fire safety requirements" May be a pre-requisite for TR certification
Certificate of Origin
Exemption letter <ul style="list-style-type: none"> Required by customs States that imported production is not a subject to obligatory conformity assessment No TR for metro rolling stock, only GOSTs - voluntary

Certification

Reformations done under the framework of various integrations



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Certification

Custom Union and other Russia's integrations

Customs Union of Russia, Belarus and Kazakhstan

A common Customs Code for the three countries will take effect on July 1, 2010

Main provisions of the new code

1

Within the Common Customs Area, all customs duties and economic restrictions will be lifted (with some possible exceptions)

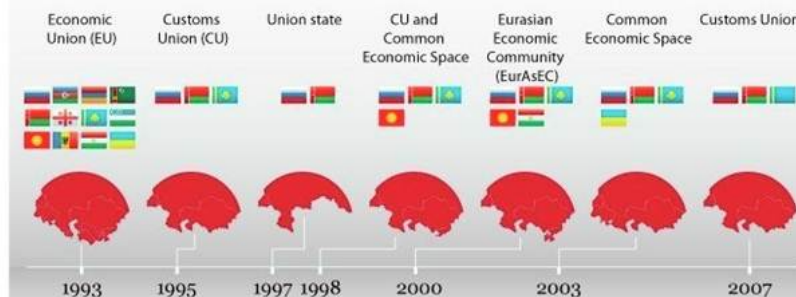
2

Goods imported from outside countries will be subject to a Common Customs Tariff (an agreed list of customs duty rates)



Attempts at economic integration within the CIS (involving Russia)

Most integration commitments were never met



Foreign trade of Customs Union (CU)

(2009, \$ million)

Including CU countries

Imports Exports

28,563.6 16,792.0 58.8%

21,282.2 7,027.3 33%

28,408.7 3,601.7 8.3%

43,195.8

Belarus Kazakhstan Russia

RIANOVOSTI © 2010

www.rian.ru

21 Source: RIANOVOSTI (2010)

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Certification

Reformations done under the framework of various integrations

Custom Union



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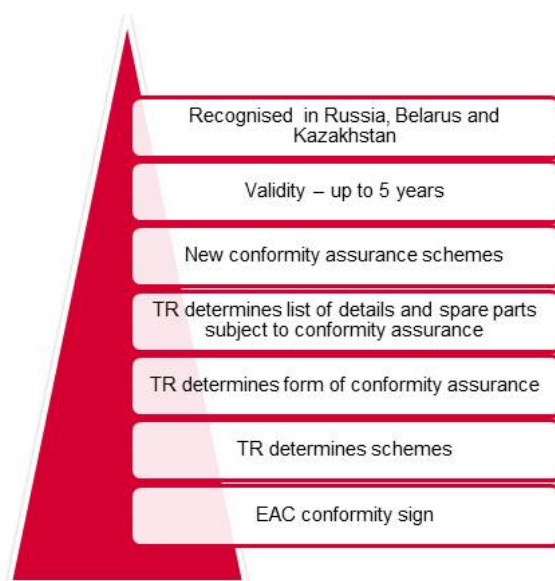
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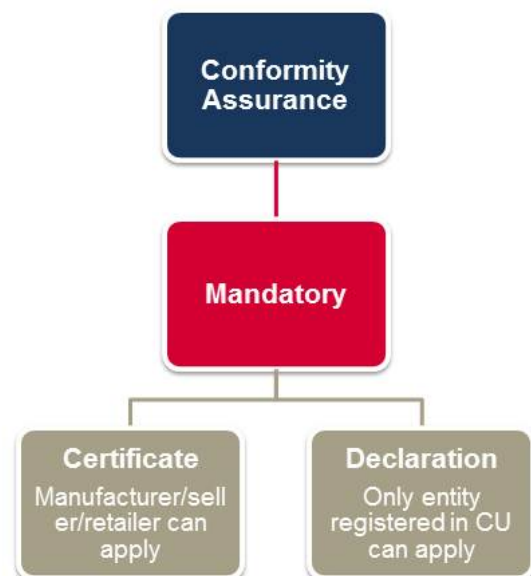
Certification

Custom Union

Changes connected with TR CU



Conformity with TR



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Certification

Current situation

TR CU «On safety of metro rolling stock»

- To be issued in 2016

Mandatory certification according to Consolidated list

- System of Federal Railway Transport

Voluntary conformity with OPZhT, but required (mandatory) by Moscow Metro

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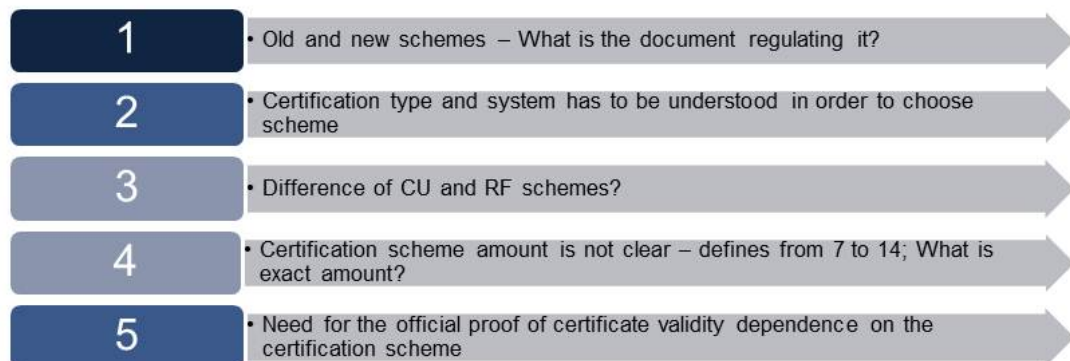
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Certification

Certification/Declaration schemes



Not clear:



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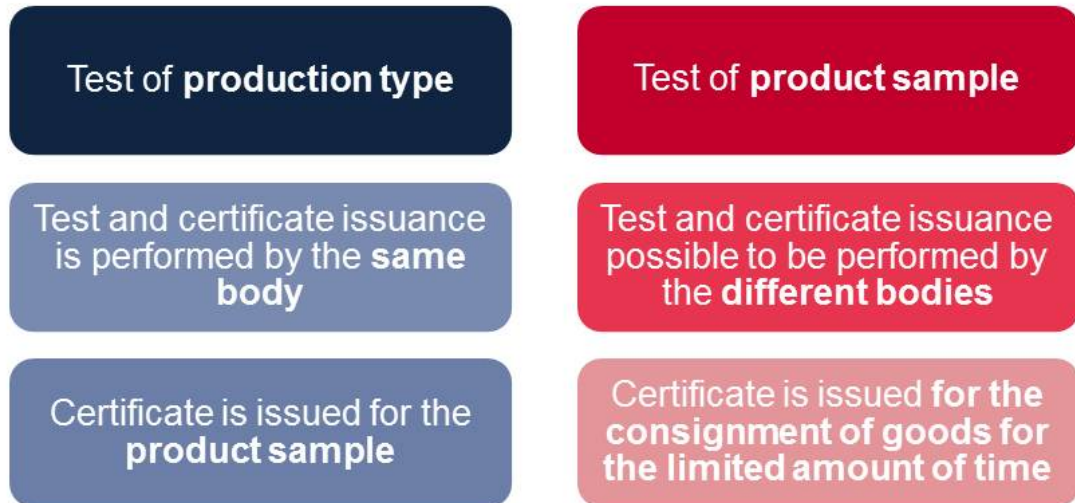
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Certification

Certification schemes

Old scheme “1” = New scheme “1c”



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Certification

Typical certification process



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Certification

Conformity assurance fees

Conformity in form of declaration

Determined in the Rules of certification "Services and works payment for product certification"

Declaration cost = Double minimum wage of Russian Federation = about €240

Conformity in form of certification

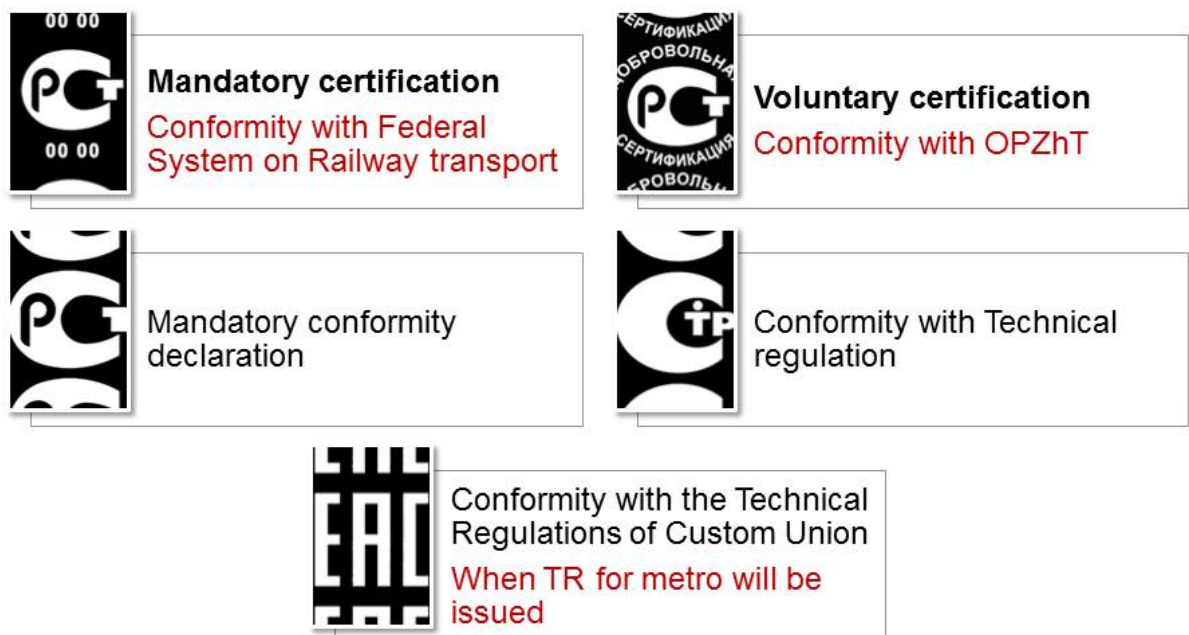


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Certification

Conformity assurance signs



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Agenda

- 1 Organisation of national quality infrastructure
- 2 Standardisation
- 3 Certification
- 4 Results
- 5 Recommendations for the company

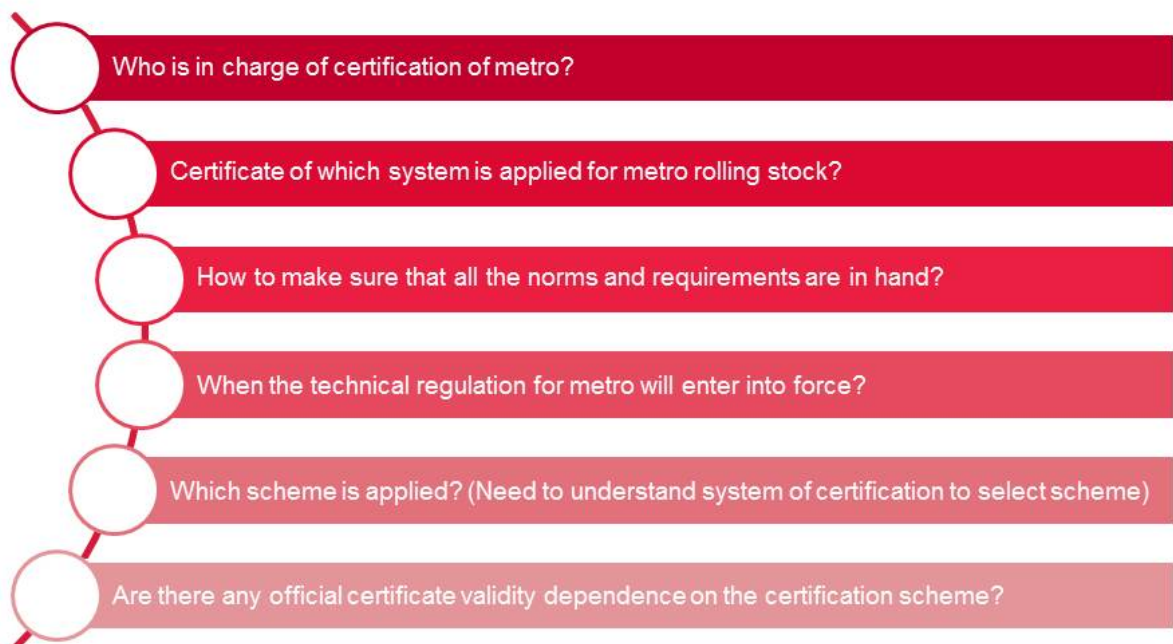
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Results

Questions occurred



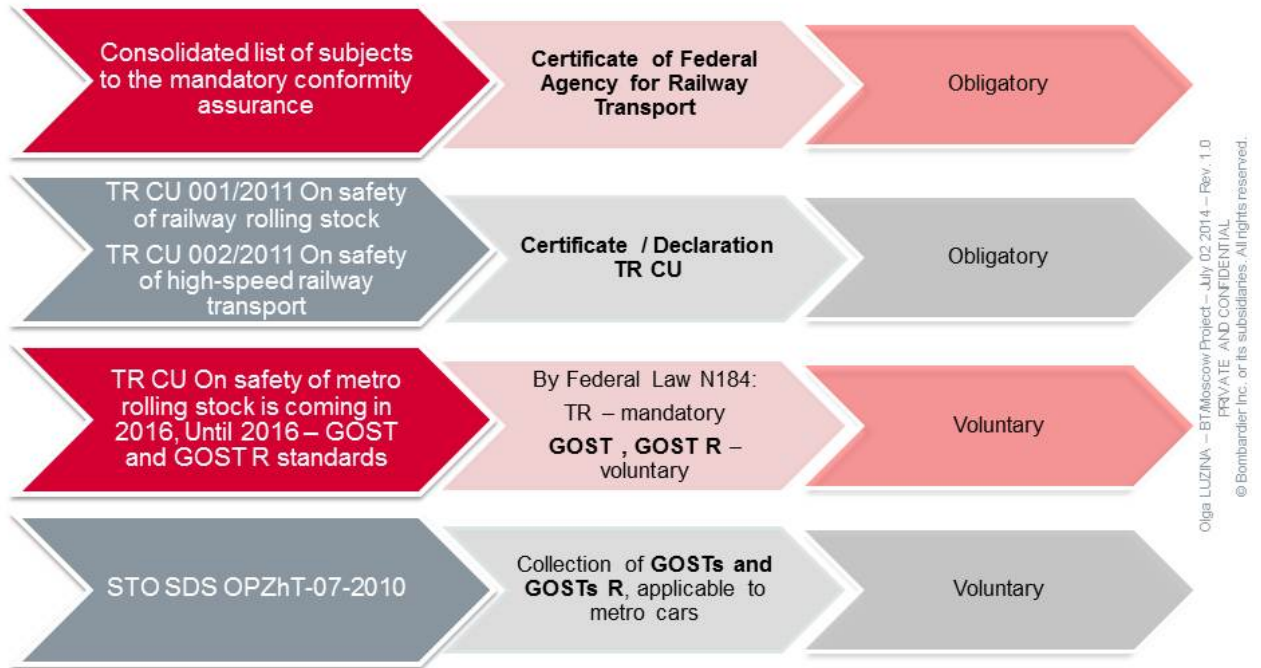
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Results

Open questions: Mandatory or Voluntary? Under which system compliance to be confirmed?



31 In bold – system of certification / add up OPZhT, add up comment about « everything is applicable, depending on the system »

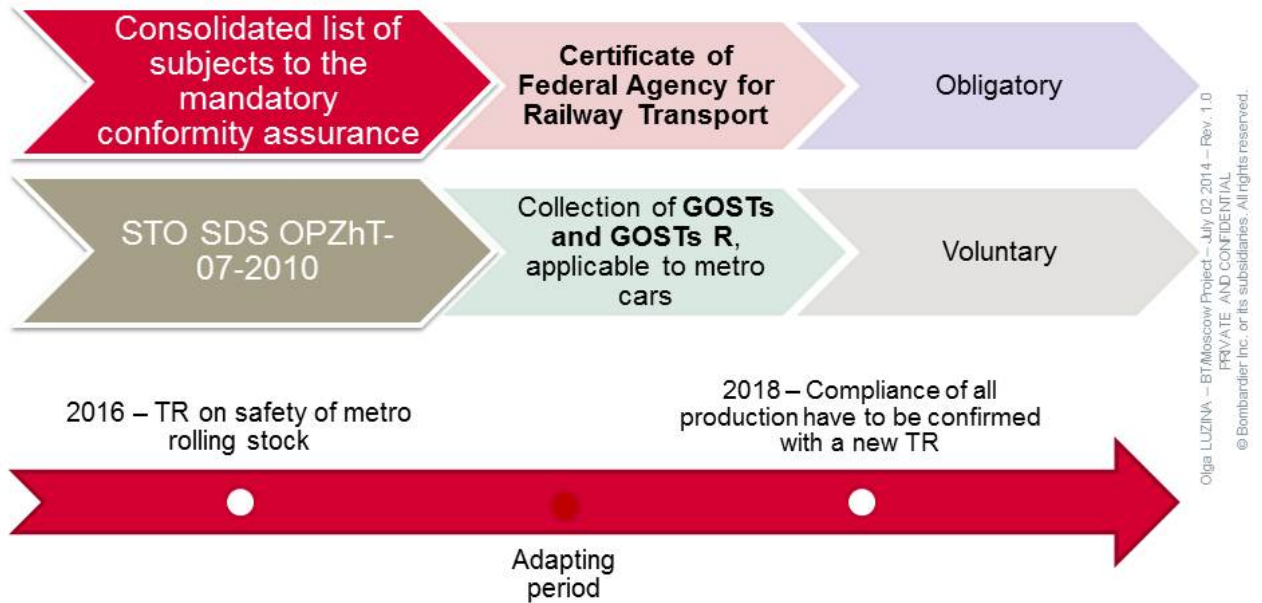
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Agenda

- 1 Organisation of national quality infrastructure
- 2 Standardisation
- 3 Certification
- 4 Results
- 5 Recommendations for the company

Recommendations for the company

Conclusion

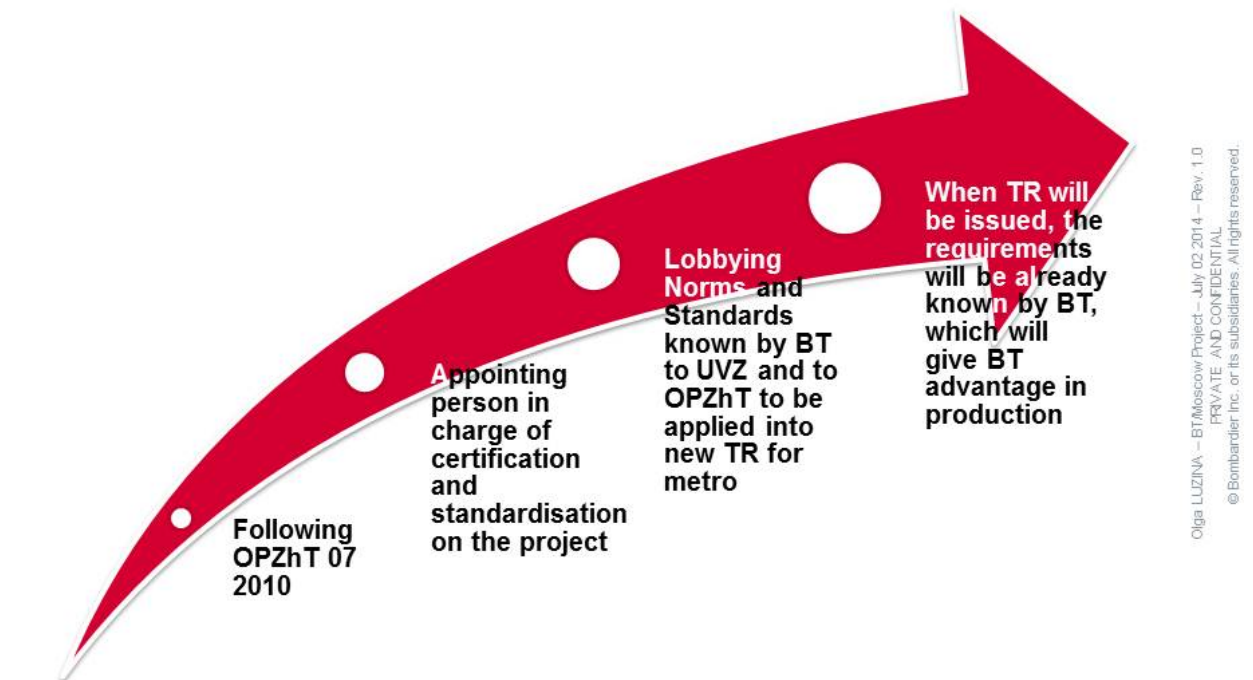


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Recommendations of the company

Excepted steps



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Appendix III. Training feedback questionnaire

Thank you to help us improve this training session.

Please respond to those questions:

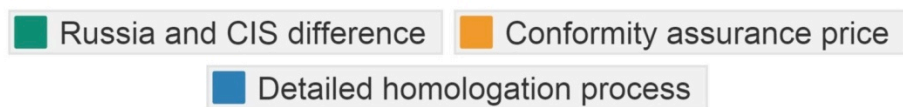
1. What did you expect from this training?
2. Did the training meet your need?
3. What chapters/items should be further developed and explained?
4. Would you recommend this training to your colleagues? At which project stage?
5. Please list 3 good points from the training
 - 1.
 - 2.
 - 3.
6. Please list 3 points to improve in the training
 - 1.
 - 2.
 - 3.

Appendix IV. Feedback questionnaire results

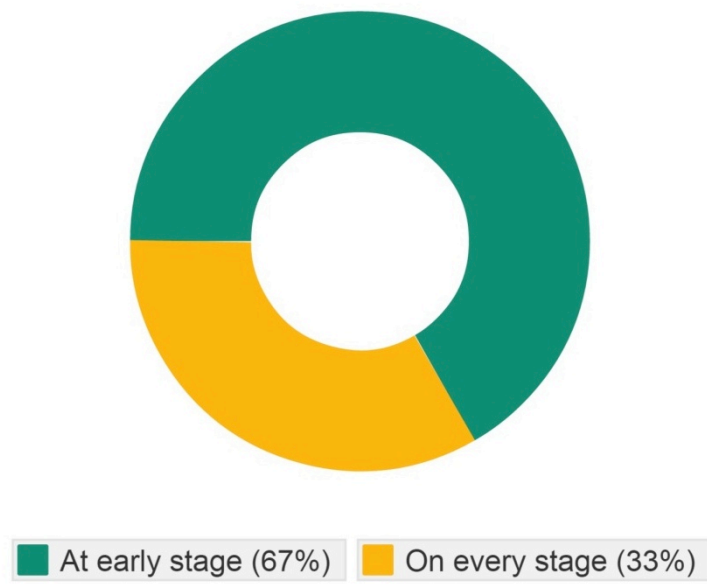
1. Participated /left feedback/ satisfied with the training (out of those who left training)



2. Expressed interest in following topics:



3. Training usability



4. Areas of company and study interest (in yellow)

