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Abstract

This research is a comparative analysis of techniques used to translate computer terminology from the English into the Spanish and Russian languages, the material being taken from computer-related texts, entertainment portals and information network resources. In the course of this study, the concept of "computer vocabulary" has been investigated, the most frequently employed methods of translating computer terminology have been studied and difficulties resulting from such translation from English into Russian and Spanish identified. Special emphasis has been laid on an analysis of most efficient translation transformations, and the competences that a translator must have to be successful in translating computer-themed texts.

Аннотация

Данное исследование проводилось на основе сопоставительного анализа перевода компьютерной лексики с английского на русский и испанский языки. Лексика для анализа была взята из текстов на компьютерную тематику, с развлекательных порталов и из сетевых ресурсов. В ходе исследования было изучено понятие компьютерной лексики, также были рассмотрены особенности перевода лингво-культурной адаптации компьютерного термина и трудности, с которыми может столкнуться переводчик при работе с ними. Был проведен анализ переводческих трансформаций, а также были определены качества, которыми должен обладать переводчик для успешного выполнения профессиональной переводческой задачи.

Contents

Introduction

This work is devoted to a comparative study of the specifics of the translation of vocabulary related to the field of computer technology. It analyzes the ways of translating computer vocabulary from English into Russian and Spanish. Particular attention is paid to the identification of translation techniques and transformations employed for an adequate translation of computer vocabulary. The concept, origin and specificity of computer terminology have also been considered.

The **relevance** of the chosen topic is due to the increased attention specialists pay to the research of the functioning of the language in the field of computer technologies and the growing role of mass media in the global dissemination of multimedia technologies and expanded access to network databases. At the beginning of the XXI century, the post-industrial civilization entered the era of electronics and computer technology. The Internet revolutionized communication systems. A personal computer has become an integral part of both work and leisure. Computer skills came to be regarded as attributes of a modern and successful person, and are often a pre-requisite for employment. Great attention is paid to computer literacy in the educational system: classes in schools are equipped with computers, access to the Internet is provided. The development of a new branch of knowledge leads to the development and systematization of special terminology. In this connection, special attention is paid to research aimed at identifying the specificity of computer terminology and the ways of its translation and adaptation into foreign lingvo-cultural environments.

The **purpose** of this work is to analyze and compare the specifics of the translation of English-language computer vocabulary into Russian and Spanish and compare the methods of its adaptation in these two languages.

The objectives of the study are:

- understanding the concept of computer vocabulary as such;
- studying the terminology of the computer field;
- analysis of the formation of a computer term;
- identification of the specifics and features of the translation of computer vocabulary;
- analysis of the concept of abbreviation;

- methods and peculiarities of translating abbreviations;
- analysis of the reasons for borrowings and calques;
- study of the process of adaptation of borrowings;
- analysis of translation transformations used in the process of adapting computer vocabulary to Russian and Spanish linguistic environment;
- identification of the qualities that a successful interpreter must possess.

The **object** of research is computer vocabulary. The subject of the paper is a comparative study of methods and techniques of translation of computer terms from English into Russian and Spanish.

As **material** of the study we have chosen texts of computer subjects, texts of computer discourse, scientific and technical articles, reports on Internet forums as well as entertainment portals.

Structure of the work: the work consists of Introduction, two chapters of the main part – theoretical and practical, Conclusion, a list of Sources and Applications.

In the **Introduction**, the relevance of the study is justified, the goals and tasks of the work are set.

In **the first chapter** of this work, the concept of "computer vocabulary"has been examined, and the ways of forming a computer term have been investigated. We have carried out a comparative analysis of translation means of the Spanish and Russian languages. The most effective methods of translating computer vocabulary are analyzed and evaluated. The work also analyzes borrowed words, gives reasons for borrowing and also studies, as a separate problem, techniques of translation of abbreviations. This chapter also identifies the competences that an interpreter must have to be an efficient specialist.

The **second chapter**, a practical one, represents a comparative analysis of the translation transformations used in translating terms found in computer-themed texts from English into Russian and Spanish.
The following theses have been contended:

1. Russian and Spanish are relatively poor (compared to English) in computer terminology, so they have to borrow words from English with all inevitable

grammatical, graphical and semantic modifications.

2. There are different ways to translate computer terminology from English into Russian and Spanish, the most frequent ones being transliteration, calques, semi-calques.

3. Earlier, Russian computer vocabulary developed exclusively on the basis of the Russian language. But with the ever-going development of computer technologies, the number of new terms dramatically increased, and along with the spread of personal computers, a huge number of English-language vocabulary entered our language.

4. Spanish computer terminology appeared as a compilation of terms from various related sciences. The main development of computer vocabulary began in the early 1990s, mainly as a result of contacts with the US and English-speaking countries.

5. When translating computer vocabulary in the scientific texts, an interpreter can face other problems, such as complex grammatical constructions, turns, transformations, which he can avoid only provided he is fully immersed in the computer environment, constantly enhancing his professional competence.

6. There are several ways to translate abbreviations in Russian, such as translation with equivalent Russian abbreviation, also frequently used are borrowing and descriptive translation.

7. English computer abbreviations are not generally translated into Spanish, they are, more often than not, grammatically adapted by assigning the gender article to them.

Practical relevance of this diploma paper lies in the possibility of practical use of research findings by both computer users and programmers, as well as students in their translation classes.

Chapter 1

Theoretical basis for the investigation

1.1 The concept of computer vocabulary and computer term

The development of the Internet and computer technologies, as well as the development of any other sphere of human activity, contributes to the emergence of new lexical units in the language. L. S. Barkhudarov says that practically all areas of human activity are associated with the use of language, and the Internet is no exception [1]. A lot of specialists mentioned what came to be known as a kind of "terminological explosion which we have witnessed in recent decades. Computer terminology is a relatively young lexical layer, lately it has expanded exponentially, becoming more open to the general public. Today, each user of a personal computer (PC) has a certain lexical stock in the field of computer terminology. The terminology refers to a variety of the national language, a set of lexical units that "denote the concepts of a particular area of knowledge or activity"[14].

By computer vocabulary we mean a kind of special language used by both a professional group of IT specialists and other computer users.

According to S.V. Grinev [7], terminology is based on terminological units, such as:

1. terms (lexical units of a special language, words or word-combinations used for the exact designation of specific concepts);
2. terminoids (words for denoting still unsettled, emerging concepts);
3. preterms (model of terms characterized by semantic fuzziness, distribution

in colloquial speech among representatives of a certain professional sphere). Computer terminology is a part of special (computer) vocabulary. I.L. Komleva calls this vocabulary "computer language meaning by this definition "a special language formed in the subject area, technologically related to the production of personal computers and software to them"[10, p. 16].

The central concept around which this language is formed is the concept of "computer". The popular notion of "information and communication technologies" (ICT) is broader and includes other technologies (television, cellular communications, etc.). Accordingly, the terminological vocabulary of the computer language will be called "computer terminology".

Russian computer terminology began to develop on the basis of the Russian language. However, as the personal computer use expanded, a huge amount of English-language vocabulary came into our language, and many of the familiar concepts were replaced by borrowed analogues.

Spanish computer terminology appeared in the middle of the 20th century as a compilation of terms from various related sciences. The main replenishment and development of computer vocabulary began in the early 1990s, mainly as a result of contacts with the US and English-speaking countries and it still continues enriching with new modern terms.

An important feature of the formation of computer terminology of the Spanish language is its origin on the Anglo-American soil, which was expressed in a large number of borrowed words from the English language.

It would be no exaggeration to state that today, the international computer language has a pronounced English-speaking color. The overwhelming majority of modern computer terms are neologisms: **a processor, a scanner, an interface, a monitor, a modem, etc.**, borrowed from the English language (usually having Greek-Latin roots).

Computer language is characterized by stylistic heterogeneity. It includes literary vocabulary, represented by general technical terminology, and non-literary: computer professionalisms and jargon. The vocabulary of each category fulfills its function and has its own area of use. The computer terminology does not differ from other terminology systems. The main purpose of its units is the designation of specific concepts of the computer sphere.

1.1.1 Formation and evolution of computer terminology

The processes of development of computer science and technology are so fast that the Russian and Spanish languages are constantly updated with new computer terms, gradually getting rid of the old ones and often changing the meaning of the already established ones. Alongside with the other ways of forming computer vocabulary, borrowing is the most productive way.

Borrowing of foreign words is one of the ways to develop a modern language. Language always reacts quickly and flexibly to the needs of society. Borrowings are the result of contacts, relationships between peoples and states.

The main reason for borrowing of foreign vocabulary is the absence of the corresponding concept in the cognitive basis of the recipient language.

During the research, it was revealed that all the reasons for the penetration of Anglicisms into the computer terminology of the Spanish and Russian languages can be divided into two types: intra-linguistic and extra-linguistic reasons [19].

Among extra-linguistic reasons for borrowing, most researchers mention:

- increased interest in learning English, associated with the promotion of Anglo-American culture through Internet resources;
- historically determined leadership of the United States in the production and distribution of computer equipment;
- availability of oral and written contacts, provided by cultural and economic cooperation of countries;
- the cultural affinity of languages that has developed over many years and creates favorable conditions for the integration of new terms in the language culture of various social strata of the population of Spain and Russia.

Among intra-linguistic reasons are:

- the absence, in the native language, of an equivalent word for a new subject or concept;
- tendency to use one borrowed word instead of descriptive phrase;
- the need for detailed elaboration of the corresponding meaning, the designation with the help of a foreign language of some special kind of objects or concepts;
- tendency to replenish foreign-language stylistic synonyms.

Borrowing of words is a natural process of language development. It enriches the language and, if certain reasonable limits are met, does not affect its identity in any way, as new words are sooner or later adapted in accordance with the norms of the language and gradually, as they become assimilated, become an organic part of it.

Borrowed words from the English language, which are embedded in the structure

of another language and influence all meaningful language levels, are commonly called Anglicisms, that is the direct or indirect influence of the English language on the phonetic, lexical and syntactic structures of another language [1].

This term is usually understood as various borrowings from the English language: direct borrowing, semantic and word-forming calque, occasional terms and turns.

In the Russian and Spanish languages, there are several ways to borrow, that is to create computer vocabulary [21]:

- Graphical way – is the transmission of a word using the letters of a borrowing language [15], for example:

UV laser gives the possibility of almost all insulation materials marking without any material damage [38].	УФ лазер дает возможность маркировать практически все изоляционные материалы без повреждений защитного слоя.	El láser UV ofrece la posibilidad de marcar casi todos los materiales de aislamiento sin ningún daño material.

- Grammatical way – is the subordination of borrowed word to the rules of the grammar of the borrowing language [15], for example:

As developing countries industrialize, emissions are likely to increase [38].	По мере расширения индустриализации в развивающихся странах эмиссия, вероятно, будет возрастать.	A medida que los países en desarrollo se industrialicen, es probable que aumenten las emisiones.

- Semantic way – refers to such a process, as a result of which a foreign language enters the system of concepts of the borrowing language [15], for example:

Google+ is a new social net [38].	Google+ - это новая социальная сеть.	Google+ es una nueva red social.

1.1.2 Techniques used for translation of computer terms

These are the most frequent translation means and transformations [11]:

1. Lexical transformations

- **Transliteration** – expression of English pronunciation with recipient language letters, i.e reproduction of its phonetic form [11]:

I'll bet the audio files are still in the local server's cache [38].	Готов поспорить, аудиофайлы все еще находятся в кеше локального сервера.	Apuesto a que los archivos de audio todavía están en el caché del servidor local.

- **Calque** - literal translation of English term [11]:

In modern trains low-noise engines are used [38].	В современных поездах используют малошумовые двигатели.	En los trenes modernos se usan motores de bajo ruido.

As for the Spanish language, it has its own types of calque. Calques are used as a way to avoid direct borrowings, for example: *high memory — memoria alta – 'высокая память', yellow pages — páginas amarillas - 'желтые страницы', laser printer — impresora láser - 'лазерный принтер'.*

Calques can be divided into word-formating, phraseological and semantic. By phraseological calques we can mean the literal translation of English expression, also used as computer slang: *caballo de Troya — Trojan horse 'троянский конь, mi grano de arena — my two cents 'внести свою лепту', huevo de Pascua — Easter egg 'пасхальное яйцо'.* When semantic calque is used the original word receives an additional meaning, sound and graphic similarity also occurs: a*rgumento — argument 'аргумент', clarificar — (to) clarify 'объяснять', destinación — destination 'адресация'.* And word-formating calque is an imitation of the model typical for English with added morphemic material of Spanish. Such ways of translation are typical only for Spanish, because of Latin origin of both English and Spanish. Russian, in this case, uses transliteration.

1.2 Translation of computer terms in computer texts: challenges and techniques

Computer vocabulary refers to the vocabulary of scientific and technical texts, and, therefore, it carries with it the features and specifics of such texts.

The following lexical and stylistic features are characteristic of computer texts:

Lexical peculiarities of computer texts:

A large number of special terms and abbreviations are used. *(ESM- управление системами масштаба предприятия, ergo – эргономичный)*. Words are selected with great care for the most accurate expression of thoughts. There is a large proportion of general words (prepositions and conjunctions) and words that provide logical links between individual elements of utterances (adverbs).

- This method was adopted as the most economical one.
- In 1866 after many tribulations, the telegraph became a means of communication on a world scale.
- Since the first computer appeared many changes have taken place in this area [10].

Widely used lexical synonymy, suggesting the designation of the same thing or action in different words. For example, instead of the verb to say (сказать), the verbs to assert (утверждать), to state (настаивать), to declare, to reply (объявлять) are used; instead of to clean (для очистки) – to purify. This is necessary for more precise differentiation of individual processes, as well as giving the language of technical literature a specific language coloring.

Stylistic features of computer texts

The main task of the scientific and technical literature is the extremely clear and accurate conveyance of certain information to readers. This is achieved with logically consistent and stylistically neutral presentation of the actual material, any use of emotionally colored and evaluative words, expressions and excessively emphatic grammatical constructions being avoided.

The main problem of the translation of computer vocabulary and texts is that any scientific and technical literature seeks to convey to the reader the necessary information as clearly as possible, as well as to ensure its adequate understanding. Such text is inherent by laconic, logical, but at the same time, if possible, full presentation of the material, without the use of emotionally rich and evaluative vocabulary, used in fiction. For the most accurate expression of thoughts such texts use a large number of terminological lexicon [22].

Terminological vocabulary - words and phrases that define objects and concepts related to specific areas of human scientific activity, and are not commonly used

in everyday life [40].

Terminological vocabulary makes it possible to present the content of this subject most accurately, clearly and economically and provides a correct understanding of the subject of discussion. In specialized literature, terms bear the main burden, occupying a central place among other general literary words. According to the syntactic structure, English texts of computer content differ in their constructive complexity: they are rich in *participial, infinitive and gerundial phrases, passive and impersonal constructions [20].*

- *The operating system tested required further improvement. Протестированная операционная система потребовала дальнейших улучшений.*
- *The development of a new operating system kernel was much spoken about. О разработке нового ядра операционной системы много говорили.*
- *Considered in the next section are the most important reacting of this type. О наиболее важных реакциях данного типа говорится в следующем разделе[10].*

In the Spanish language you can also face a great variety of special grammatical construction which purpose is to shorten the sentence or for the economy of space. Such constructions as: hasta+infinitivo, nunca+participio, ademas de+infinitivo and etc [12].

- *Los transistores son mucho mas pequenos y nas resistentes que las valvulas, ademas de necesitar menos energia para funcionar. Транзисторы намного меньше и более устойчивы, чем клапаны, к тому же, им необходимо меньше энергии для работы.*
- *Velocidades jamas alcanzadas. Скорости, которые никогда не достигались.*
- *El motor cohte actua hasta consumir su combustible. Ракетный двигатель работает до тех пор, пока не израсходует топливо.*

The translator of a computer text should not resort to arbitrary interpretation of the text. In this regard, we can highlight one more feature of computer vocabulary: an almost complete absence of metonymy, ellipses, antithesis and other stylistic figures. A professional translator always performs the translation, taking into account the context, because many words are employed in a great variety of meanings, sometimes completely opposite. And for English, in particular, polyseman-

tic words are peculiar.

Another specificity of translation of computer vocabulary is the necessity for translation, linguistic and professional competence. Translation competence makes it possible to do technical translation at a high professional level, and linguistic competence – to master the language translation perfectly. For an adequate translation, you need to know the field of information and computer technology, to which this terminology applies and, in addition, you need to be able to work with the dictionary. From this it follows that the translator of scientific and technical literature should have a good command of not only relevant languages and subjects, but also scientific thinking, logical categories. In order to make good translations, you need to know the language of scientific and technical literature, to know its patterns. Many philologists become excellent translators if they have the potential for logical thinking, if they are able to develop a scientific approach to translation and, what is very important, if they are able to love their new specialty, to treat it with creative enthusiasm and to see the beauty and harmony of the formal-logical style of scientific and technical literature. Even a great specialist in a particular field of science or technology cannot make an adequate translation without knowing the lexical and grammatical patterns that underlie the language of English scientific and technical literature.

In both Russian and Spanish we can emphasize three features when working with terms [16]:

1. To correctly define the concept expressed by the term, it is necessary to know the area of science and technology to which this terminology refers.
2. In spite of the fact that the term refers to a certain concept, it tends to be unambiguous, it cannot be regarded as an isolated semantic unit, since a whole series of terms, behind which a certain technical value is fixed, can change their content depending on the branch in which it is used in this particular context.
3. In order to correctly understand and translate terms, it is also necessary to know the morphological structure of terms, semantic features that distinguish them from common words, the main types of terminology, their structural features and specific usage.

From this it follows that the translator of computer literature should have a good command of not only relevant languages and subjects, but also scientific thinking and logical categories.

Y. I. Retsker distinguishes two basic requirements for the translator of both technical and computer literature [25]:

- Translation must be accurate, i.e. it must convey exactly what is contained in the original;
- Translation must be clear and precise, regardless of the degree of clarity of the original.

1.3 The concept of abbreviation

Language as a social phenomenon is in the process of constant development and various transformations that stimulate a special interest on the part of linguists. Global changes taking place in the modern information space, the continuously increasing opportunities for mass information put forward the problems of mass-media communication. Nowadays, it is impossible to imagine the life of a modern person without using advanced developments in the field of computer technology and software [10].

This sphere develops at a tremendous speed, replenishing the vocabulary of the Russian and Spanish language with new technical terms and lexical units.

The creation of abbreviated lexical units has become the leading way to replenish terminology, and thus the need for a thorough study of the abbreviation has increased.

In our time, in scientific and technical literature, be it English, Spanish or Russian, there is a large number of different kinds of abbreviations. The widespread development of abbreviations and the use of abbreviated lexical units have become a common trend for many national languages.

The consequence of the development of science and technology, international integration processes are the emergence of ever new concepts that need to be determined.

Most new concepts in Russian, English, and Spanish are expressed using word combinations or complex words. However, terms – complex words and phrases –are huge. Therefore, there is a need to reduce them in one way or another.

In some cases, this leads to the use of short versions of the term in the form of only one main component, in others – to the use of various kinds of abbreviations.

Abbreviation – (from Latin ‘abbrevio‘) a noun consisting of reduced words included in the original word combination, or from reduced components of the original compound word [38], for example:

- BIOS – Basic Input Output System
- BYTE – A byte is a storage unit for data.

The creation of abbreviated neologisms, which have significantly expanded the vocabulary of the English language in recent decades, demonstrates the productivity of this type of word formation and the economical use of language resources by native speakers.

In the English scientific and technical literature, there are a large number of different kinds of abbreviations, and both individual words and phrases are reduced.

Since they function independently, they are fixed in lexicographic sources and often become more known than their sources (radar - радар, sonar - сонар, laser - лазер), they can be considered as lexical units of scientific and technical language.

Abbreviations, according to sound and graphic design, are usually divided into abbreviations as such and acronyms.

Acronyms – are reduced words that, unlike abbreviations (readable, pronounced and perceived by the names of letters), are read and perceived as ordinary lexical units [38]. Acronyms are formed from different combinations of letters (from the first letters, from the first few with the last, etc.), for example:

- RADAR - Radio detecting and ranging;
- LASER - Light amplification by the stimulated emission of radiation;
- SCUBA - Self-contained underwater breathing apparatus.

1.4 Methods and peculiarities of translation of abbreviations

Interest in the method of the formation of abbreviated lexical units in various structures of the language and the peculiarities of their use is due to the fact that today, abbreviation has become one of the ways of word formation that meet all the needs of the modern language [26].

The main reasons for the appearance of abbreviations include the purpose for saving of space. The phenomenon of various kinds of abbreviations, which lead only to a simplification of the structure of the linguistic unit, is often associated with a tendency to save linguistic resources, mental efforts and the improvement of the linguistic form [26].

In the process of abbreviation, lexical units are formed including all the features of words. During the use of the abbreviation, the speaker uses the expression with the same accuracy as when using the full form. Existing differences in the systems of Russian, English and Spanish lead to difficulties in translation and to the need to apply special methods of translation.

Since the special difficulty in translating arises from the absence of abbreviations in dictionaries, the translation process can be divided into two steps:

1. "decoding"the abbreviation (the process of establishing a correlate, as well as determining its meaning in a specific context);
2. expression of foreign abbreviation equivalent with the Russian or Spanish abbreviation [26].

The Spanish language usually tends to follow English in technological matters and this is the case of computer terminology, so most of these words are never translated or are just partially adapted into Spanish.

There have been recent attempts to translate some of these abbreviations and even adopt a corresponding Spanish abbreviated form, but generally they have been unsuccessful, for example *'WWW' (from World Wide Web) in English and 'MMM' (from Malla Máxima Mundial)* in Spanish, which was proposed by the CVC or Centro Virtual Cervantes.

English computer abbreviations are not generally translated into Spanish, which is constantly adopting new contracted forms, e.g. *WWW, URL, ISP*. But sometimes it is necessary to provide the meaning of these forms, particularly when the abbreviated expression is not yet popular with or familiar to, computer users [26].

In Spanish, abbreviations are grammatically adapted by assigning the gender endings to them. The definition of the genus for words of English origin does not occur on the basis of the formal appearance of these words, but, as Pedro José Sampedro Lozada notes in the article "Anglicisms, barbarisms, neologisms and false friends in the language of informatics,"there is a certain rule in determining the genus of Anglicisms and the use of the corresponding article with a noun (the formal index of the genus in nouns in Spanish is the article: la - feminine, el - masculine) [17].

The use of the article *el* or *la* influences the translation of English into Spanish (more precisely, the genus of that Spanish noun, which is the equivalent of Anglicism). For example, if the English *WWW (World Wide Web)* is translated as *telaraña mundial*, the article will be la, the same article will also be used if the translation of this English is *página (page)*. In Spanish, the nouns telaraña and *página* are nouns of the feminine gender. Further, the author writes that WWW English can be translated as *"servidor o sitio"* (these both are masculine words) and in this case the masculine article *el* will be used [8].

One of the major problems for translators is how to deal with all these abbreviations since English is the source language and these forms are frequently adopted into Spanish without any previous modification. As a result, very few of these terms have a corresponding abbreviated form that is widely known and accepted among computer users and professionals in Spanish. Usually, all the abbreviations remain unchanged, only description of the abbreviation should be translated, for example:

The LCD-8000U offers a resolution of 800× 600 pixels, connects to a PC via a USB port, and compatibility with Macs.	La LCD-8000U ofrece una resolución de 800 × 600 píxeles, se conecta a una PC a través de un puerto USB y es compatible con Mac.
It has 2GB of RAM and a SATA hard disk 250GB.	Tiene 2 GB de memoria RAM y un disco duro SATA de 250 GB.

As for the Russian, abbreviations can be translated. There are the ways of translation of abbreviations from English into Russian:

1. Expression of English abbreviation with equivalent Russian abbreviation

For example:

CAD (computer-aided design)	САПР (система автоматизированного проектирования)
RCS (radar cross section)	ЭПР (эффективная площадь рассеивания)
AFS (automatic feed system)	САП (система автоматической погрузки
VLSI (very large scale integration)	СБИС (сверхбольшая интегральная схема)

When searching for an equivalent in Russian, the translator finds one, as close to the microcontext of the abbreviation as possible. In the absence of a Russian equivalent, the translator conveys the meaning of the root using one of the methods given below.

2. Borrowing of English abbreviations

This method is used for the expression of alphanumeric abbreviations, which are included in various notation or indexing systems, lists of parts parks, specifications, etc.

BNG737 was developed for the market of passenger airplanes of relatively small capacity and short range, where the main role was played by BAC 1-11 and DC-9.	BNG737 был разработан для рынка пассажирских самолётов сравнительно малой вместимости и малой дальности, где основную роль играли BAC 1-11 и DC-9.
ATR 42 - passenger twin-engine turboprop aircraft for medium-haul flights	ATR 42 — пассажирский двухмоторный турбовинтовой самолёт для среднемагистральных перелётов
The AN/ARC-182 is a family of military aircraft radio transceivers designed for two-way, multi-mode voice communications over a 30 to 400 MHz frequency range.	AN/ARC-182 - это семейство радиоприемопередатчиков для военных самолетов, предназначенных для двухсторонней многорежимной речевой связи в диапазоне частот от 30 до 400 МГц.

3. Expression of English abbreviation by the method of transliteration

For example:

ARTRAC (advanced real-time range control)	Перспективная система управления «Артрак» с автоматическим преобразованием в режиме реального времени, получаемых при радиосопроводжднии сигналов
FORTRAN (formula translation)	Процедурный алгоритмический язык «Фортран»
TACAN (tactical air navigation)	Тактическая навигационная система «Такан»

A lot of assimilated terms are written without quotes and capital letters. They were, at one time, borrowed from the English language, using transliteration (such as laser, maser, radar, etc.).

4. Descriptive translation of English abbreviations

This way of expression is usually focused on translating the root of the abbreviation, taking into account its microcontext. The method is used in cases when the other methods described above seem either overcomplicated or impossible. It often takes place when the abbreviations can‘t be found in dictionaries.

Descriptive translation should completely determine the technical nature of the root, for example:

WIDE (wide-angle infinity display equipment)	Предназначенная для наземных тренажеров, широкоугольная система предоставления визуальной информации о воздушной обстановке, которая передается с ЭВМ.

Chapter 2

Comparative analysis of translation from English into Russian and Spanish

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