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DSO-Design
Statistical Methodology and Production Direction
(DIMPE)

**INTERNATIONAL TRADE IN SERVICES
QUARTERLY SAMPLE (MTCES)
GENERAL METHODOLOGY**

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PRESENTATION

The National Administrative Department of Statistics (DANE), as the coordinating entity of the National Statistical System (NSS), and in the framework of the Statistical Planning and Harmonization project, works toward the strengthening and consolidation of the NSS through the following processes: the production of strategic statistics; the generation, adaptation, adoption and dissemination of standards; the consolidation and harmonization of statistical information and the coordination of instruments, actors, initiatives and products. These actions aim at improving the quality of the strategic statistical information, its availability, timeliness and accessibility to meet the high demand that there is for it.

Following the recommendations of the United Nations (UN) it is necessary to provide users with the best products in national statistics. In this context, DANE developed a methodology that presents the manner in which the figures of International Trade in Services are processed and compiled. It aims to meet, particularly in the case of negotiations and agreements on international trade, the need for more detailed and comparable statistics, following the recommendations of the Manual on Statistics of International Trade in Services 2010¹.

By means of this document, the methodological guidelines of the statistical operation are made available to specialized users and the public in general, where the main technical characteristics of processes and sub-processes with respect to International Trade in Services Quarterly Sample (MTCES) are presented in a standard, complete and easy to read manner. Thus, transparency, trust and credibility in the technical quality of the institution are fostered for a better understanding and use of the statistical information produced in the context of the principles of consistency, comparability, completeness and quality of statistics.

¹ United Nations. Manual on Statistics of International Trade in Services 2010. It is adjusted to the System of National Accounts 2008 (SNA 2008) and the Sixth edition of the Balance of Payments and International Investment Position Manual (BPM6) of the International Monetary Fund, with which it is explicitly related.

INTRODUCTION

DANE within its mission plan has implemented projects that allow obtaining information to facilitate their analysis and contextualization in the economic sphere of the country. In 2006, an inter-administrative agreement was entered into between the National Planning Department (DNP), the Ministry of Commerce, Industry and Tourism (MCIT), the Central Bank (BR) and DANE in order to design and implement a study pertaining to the statistical figures of the International Trade in Services.

Due to the importance and impact on the national economy of the international trade operations, DANE has taken as its main objective the execution, development and delivery of statistical data that allow determining the international position of Colombia with respect to other countries of the world. This is justified by the need of both public and private entities, trade unions and regular citizens, to know and to have timely and truthful statistics that account for all the services provided and received and the manner in which such services are being provided.

The statistics of exports and imports of services were designed under the theoretical and conceptual framework of the Manual on Statistics of International Trade in Services (MSITS, 2010), designed by the United Nations, in order to obtain a detailed, clear and comprehensive system to measure levels of international trade in services in Colombia. Furthermore, international recommendations contained in the Sixth Edition of the Balance of Payments and International Investment Position Manual (BPM6) was adopted and the System of National Accounts 2008 (SNA 2008), which provided the classification for exports and imports in twelve groups of international trade in services. Among these twelve groups, it is technically feasible to obtain the information of ten, either through surveys to enterprises or administrative records.

This document is structured as follows: The first part establishes the background that gave rise to the study. The second part presents the thematic, statistical and logistical design, among other topics presented. And the third part lists all the documentation related to the study.

1. BACKGROUND

In 2006, an inter-administrative agreement was entered into between the DNP, the MCIT, the BR and DANE, in order to design and conduct a study to strengthen the international trade in services, with the aim of expanding the balance of payments registry and provide information with a greater disaggregation at the level of services, countries and provision modes.

According to the international recommendations contained in the Fifth Edition of the Balance of Payments Manual, the System of National Accounts 1993 and the Manual on Statistics of International Trade in Services 2002, international trade in services should be classified into eleven groups, as it is presented in the country's balance of payments. Among the eleven service groups, six were selected as scope of the agreement, because due to their characteristics it was technically feasible to obtain the information through surveys to enterprises.

During 2007 and 2008, the pilot was conducted that involved collecting the information of about 5,534 companies engaged in operations of international trade of services. In 2009 the MTCES reached optimum levels of quality, which allowed it to separate from the Quarterly Services Sample (MTS) acquiring its own identity within DANE studies.

Until 2013, the groupings of the Extended Balance of Payments Services classification (EBOPS), which were part of the DANE study were: transportation services; communications services; computer and information services; royalties and license fees; personal, cultural and recreational services and other services to enterprises. However, considering the update that was conducted in the Manual on Statistics of International Trade in Services (MSITS 2010), DANE started a redesign process that included the creation of an electronic form adjusted to international recommendations, the update of the capture system as well as the review and update of the registry.

According to the MSITS 2010 recommendations, as of 2014 DANE presented the information in the following groups: manufacturing services on physical inputs owned by third parties; maintenance and repair services; transportation services; construction services; charges for the use of intellectual property; telecommunications, computer and information services; enterprise, professional, and miscellaneous technical services; personal, cultural and recreational services.

2. DESIGN OF THE STATISTICAL OPERATION

2.1. THEMATIC/METHODOLOGICAL DESIGN

2.1.1. Information needs

Given the current importance of international trade in services, DANE has considered it relevant to design a series of statistical indicators that account for the behavior, at current prices, of the transactions between residents and nonresidents, allowing it to establish the international position of Colombia at the highest possible level of disaggregation. The following ten normalized components have been identified in the Balance of Payments with respect to the interest of the end users of statistical information:

Groupings according to the Extended Balance of Payments Services classification (EBOPS)²

1. Manufacturing services of physical inputs owned by others
2. Maintenance and repair services
3. Transportation services
4. Travel Services
5. Construction services
6. Charges with respect to the use of intellectual property
7. Telecommunication, computer and information services
8. Other services to enterprises
9. Personal, cultural and recreational services
10. Government goods and services

² More detailed information with respect to each of the EBOPS can be found in the MSITS 2010.

Even though the MSITS 2010 recommends that information be presented for groupings of financial services as well as insurance and pension services, currently the information necessary to produce complete and reliable statistics on such services is not available.

2.1.2. Objectives

a. General objective

To present statistical information on exports and imports of services performed by economic units residing in Colombia, for the purpose of determining the international position of the country and to create tools that allow the proper formulation of public policies.

b. Specific objectives

- To obtain information on the amounts accrued with respect to imports and exports of services according to provision modes and partner country.
- To generate statistics on international trade in services, making known the transactions performed in the short-term by economic units.
- To obtain indicators that allow establishing the type of transaction performed by units through the service provision mode.
- To establish supply and demand for services according to partner country.

2.1.3. Scope

For the MTCES it corresponds to the operations of foreign trade in services (imports exports) of enterprises from all sectors, whose main activities relate to the activities of the International Standard Industrial Classification of all economic activities (ISIC Rev.4) adapted for Colombia.

Information is presented according to the Extended Balance of Payments Services classification (EBOPS) that extends the 12 groupings of the balance of payments set forth in the Balance of Payments manual Sixth Edition (BPM6) so as to include

recommendations on foreign trade of services included in the MSITS 2010 in regards to the modes of service provisioning and partner country.

2.1.4. Reference framework

a. Theoretical framework

The MTCES draws on the recommendations of the UN's MSITS 2010. In addition, it uses the data update framework provided by the Balance of Payments and International Investment Position Manual (BPM6)³ of the International Monetary Fund.

The groupings and the Extended Balance of Payments Services classification (EBOPS) currently obtained in the MTCES are described and defined below. For the construction of these definitions, the thematic team has taken as reference the UN's Manual on Statistics of International Trade in Services (MSITS 2010), however, some differences in form may be found, in the pursuit of easy understanding for users.

I. MANUFACTURE OF PHYSICAL INPUTS OWNED BY OTHERS

Manufacturing services OF physical inputs owned by others include activities such as processing, assembly, labeling and packaging carried out by enterprises that do not own the goods. Examples of THIS are oil refining, liquefaction of natural gas and THE assembly of garments and electronic equipment.

II. MAINTENANCE AND REPAIR SERVICES

Maintenance and repair services n.i.e.⁴ Cover the maintenance and repair work performed by residents on goods that are owned by non-residents (and vice versa). Repairs can be made at the place where the repairer is or elsewhere. This item includes maintenance and repairs performed on ships, aircraft and other transport equipment. Cleaning of transport equipment is included in transport services.

³ International Monetary Fund Balance of Payments and International Investment Position Manual, Sixth Edition (BPM6), Washington, D. C., 20109

⁴ Not Included Elsewhere.

Maintenance and repair of maritime transport - Code 102

It includes: maintenance and repair made to ships and other marine transport equipment.

Maintenance and repair of air transport - Code 103

It includes: maintenance and repair made to aircraft and other air transport equipment.

Maintenance and repair of other equipment - Code 104

It includes: maintenance and repair made to other transport equipment.

III. TRANSPORT SERVICES

Transport services encompass the process of transporting people or objects from one place to another, in addition to the related support and auxiliary services and leasing (chartering) of manned means of transport. It also includes postal and courier services. Transport can be classified according to the mode of transport or what is being transported (passengers or cargo).

Maritime transport for passengers- Code 207

It includes: the value of the tickets and other expenses related to the transfer of passengers, including taxes that may apply to passenger services, as to sales or value added.

It excludes: cruises (classified in the travel grouping).

Maritime transport for freight - Code 208

It includes: freight transport services by sea, which are provided inside and outside the customs border with respect to exports from residents in Colombia and the services provided by non-resident operators concerning imports of companies that reside in Colombia.

Other maritime transport services - Code 209

It includes: traction and towing services of coastal and transoceanic vessels, operation of ports and waterways, pilotage and berthing services, rescue and refloating services.

It excludes: loading and unloading. This service is included in the Code 232 that corresponds to «Other support and auxiliary transport services».

Air transport of passengers - Code 211

It includes: the value of the tickets and other expenses related to the transfer of passengers, including taxes that may apply to passenger services, sales or value added.

Air transport of freight - Code 212

It includes: freight services by air, provided inside and outside the customs border pertaining to exports from residents in Colombia and the services provided by non-resident operators with respect to imports of enterprises residing in Colombia.

Other air freight services - Code 213

It includes: airport operation, air traffic control and other air transport services not included in the above codes.

It excludes: loading and unloading. This service is included in the Code 232 that corresponds to «Other support and auxiliary transport services».

Rail transport for passengers - Code 220

It includes: the value of the tickets and other expenses related to the transfer of passengers, including taxes that may apply to passenger services, sales or value added.

Rail transport for freight - Code 221

It includes: freight services by rail that are provided inside and outside the customs border pertaining to exports from residents in Colombia and the services provided by non-resident operators with respect to imports of enterprises residing in Colombia.

Other railway transport services - Code 222

It includes: traction and towing services by rail and other transport services by rail not included in the above codes.

Road transport for passengers - Code 224

It includes: the value of the tickets and other expenses related to the transfer of passengers, including taxes that may apply to passenger services, sales or value added.

Road transport for freight - Code 225

It includes: freight services in refrigerated vehicles, including the transportation of freight in tankers, transport of cargo containers, and rental of trucks with driver. This code applies only to exports.

Other road transport services - Code 226

It includes: other services related to road transport not included in the previous codes.

Passenger transport by inland waterways - Code 228

It includes: international transport of passengers by rivers, canals and lakes. It includes internal waterways of a country and those that are common to two or more countries.

Freight transport by inland waterways - Code 229

It includes: international freight via rivers, canals and lakes. It includes internal waterways of a country and those that are common to two or more countries. This code applies only to exports.

Other transport services by inland waterways - Code 230

It includes: the traction and towing services on inland waterways, port and waterway operation services.

It excludes: loading and unloading services. This service is included in the Code 232 that corresponds to «Other support and auxiliary transport services».

Pipeline transport and electricity transmission - Code 231

It includes: transport of goods in pipelines, such as the transport of petroleum and related products, water and gas. It also includes electricity transmission.

It excludes: distribution services (typically from substations to consumers), water, gas and other petroleum products (included in «Other business services» n.i.e. - Code 284) and the value of the products transported.

Other support and auxiliary transport services - Code 232

It includes: handling of freight (such as loading and unloading containers), which is billed separately from freight; storage and warehousing; packaging and repackaging; the trailer is not included in freight services; piloting and ancillary services for the navigation of transport; and rescue activities as well as related broker commissions (including freight sending services and brokerage services).

Postal and courier services - Code 246

It includes: collection, transport and delivery of correspondence, newspapers, periodicals, brochures, other printed materials and packages.

It excludes: financial services provided by mail management entities, such as money orders, banking services and savings institutions.

IV. TRAVEL SERVICES

Travel services include goods and services acquired by individuals who undertake studies or receive medical treatment while they are outside of their territory of residence. It also includes purchases of goods and services by border, seasonal and other temporary workers in the economy in which they are employed.

It includes: goods and services acquired by individuals who undertake studies or receive medical treatment, purchase of goods and services by border, seasonal and other temporary workers in the economy in which they are employed, gifts, souvenirs

and other items purchased at the places visited for use by travelers, outside their country of residence. The goods and services most commonly included in the travel category are accommodation, food, and drinks as well as transport purchased within the economy visited (all consumed in the supplying economy).

It excludes: goods and services purchased by diplomats, consular officials, military personnel, etc. or by their dependents in the territory where they have been stationed or located (these goods and services are included in goods and services of the government n.i.e.).

V. CONSTRUCTION SERVICES

These include the creation, management, renovation, repair or extension of fixed assets in the form of buildings, land improvements of an engineering nature and other construction projects such as roads, bridges and dams. It also includes works related to installation and assembly, site preparation and general construction, as well as specialized services such as painting, plumbing and demolition.

Construction services performed abroad - Code 250

It includes: construction work provided to nonresidents by enterprises residing in the economy of the country compiling (exports) and goods and services purchased by residents in the host economy by these enterprises (import).

Construction Services performed in Colombia by Nonresidents - Code 251

It includes: construction work provided to residents of the compiling economy by nonresident construction enterprises (import) and goods and services purchased in the compiling economy of resident entities by these nonresident enterprises (exports).

VI. CHARGES FOR THE USE OF INTELLECTUAL PROPERTY

The charges for the use of intellectual property n.i.e. are included in the charges for the use of property rights, such as patents, trademarks, copyrights, industrial processes and design, trade secrets and concessions, rights that can arise from research and development, as well as from commercialization; charges for licenses to

reproduce or distribute intellectual property embodied in produced originals or prototypes, such as copyrights on books and manuscripts, computer software, cinematographic works and audio recordings, and related rights such as, for example, those associated with live performances and broadcasts by television, cable or satellite.

Licensing rights of franchise and trademark - Code 891

It includes: all the payments and charges for the use of trademarks and franchises.

Licenses to apply the results of research and development - Code 892

It includes: the rights and charges for the use of property rights arising from research and development.

Licenses to reproduce and/or distribute software - Code 893

It includes: the charges for authorized reproduction or distribution, or both inclusive (through licensing agreements), of the originals of the software produced. In that sense, the distribution is not defined as a wholesale or retail sale.

Licenses to reproduce and/or distribute audiovisual, related products and other royalties N.I.E. - Code 894

It includes: the rights and charges for authorized reproduction or distribution, or both inclusive, through licensing agreements, of produced audiovisual originals or prototypes (e.g., films and audio recordings).

VII. TELECOMMUNICATIONS, COMPUTER AND INFORMATION SERVICES

Telecommunications, computer and information services include the broadcast or transmission of sound, images, data or other information by telephone, telex, telegram, radio and television broadcasted via cable, radio and television by satellite, email, services related to computer equipment and software, news agency services and database services, such as the design of the database, data storage and dissemination of data and databases.

Telecommunications services - Code 247

It includes: the broadcast or transmission of sound, images, data or other information by telephone, telex, telegram, radio and television broadcasted via cable, satellite radio and television, electronic mail and facsimile, among others.

It excludes: installation services of equipment for telephone networks (construction services) and databases services (Other services of information provisioning - Code 890) and Call center services (Code 284-1).

Computer services - Code 263

It includes: information Technology (IT) for repairs and maintenance of hardware as well as the provisioning of technical expertise, design and development of applications or software, networks and systems, purchases that are not personalized by internet and subscriptions to use applications, web hosting, service provisioning of applications and management of business processes.

It excludes: software royalties and license rights (charges for use of intellectual property).

News agency services - Code 889

It includes: the provisioning of news, photographs and articles to the media.

Other information provisioning services - Code 890

It includes: Database services (design, storage and dissemination of data and databases online for example, Reuters, Bloomberg, etc.) including the directories and mailing lists on the Internet and by magnetic means, optical or printed, and Internet search portals.

VIII. OTHER BUSINESS SERVICES

Other business services include services related to basic research, applied research and experimental development of new products; legal services, accounting, management consulting and public relations, advertising services, as well as market research and public opinion surveys; architectural, engineering, scientific and other

technical services; waste treatment and decontamination, agricultural and mining services; operational leasing services; trade-related services; and other business services.

Other trade-related services - Code 271

It includes: transaction fees for the purchase and sale of goods and services between merchants, products brokers, sales agents, sales representatives and resident and non-resident brokers.

Operational leasing services - Code 272

It includes: leasing (rental) and chartering between residents and non-residents of unmanned ships and aircraft and means of transport, such as rail cars, containers and rigs without operators.

It excludes: leasing of real estate, leasing of transport equipment or machinery and equipment with operators, car rental for tourism.

Legal services - Code 275

It includes: counseling and legal representation in any legal, judicial and regulatory proceedings; services of formulation of documents and legal instruments; the consultancy in terms of certification; security deposits and settlement services.

Accounting, auditing, bookkeeping and tax consultancy services- Code 276

It includes: accounting, compilation of financial statements, preparation of returns, tax planning and consultancy.

It excludes: financial advisory services (it is not part of the scope of the study).

Business consulting services in business administration and public relations - Code 277

It includes: advisory services, guidance and operational assistance services provided to businesses for the formulation of their policy and business strategy, also the overall planning, structuring and control of the organization.

It excludes: consulting services on computer matters (Computer Services - Code 263) and engineering (Construction Services).

Advertising, market research and public opinion polls - Code 278

It includes: the design, creation, commercialization and placement of ads, public opinion polls, market research and other sales promotion services.

Research and Development R & D - Code 279

It includes: services related to basic and applied research in physical sciences, social sciences, humanities and technology activities among others and the experimental development with respect to new products and processes.

It excludes: software development (Computer services - Code 263) or market research (Advertising, market research and public opinion polling - Code 278).

Architectural, engineering and other technical services - Code 280

It includes: consulting services in construction projects, architectural design of urban and other development projects, as well as services relating to auditing, surveying, mapping, soil studies, planning, design and supervision of works in dams, bridges, airports, etc.

It excludes: the creation, management, renovation, repair or extension of fixed assets in the form of buildings, land improvements of an engineering nature and other construction works such as roads, bridges and dams that are compiled by the construction grouping.

Waste treatment and decontamination - Code 282

It includes: scraping of contaminated soil; cleaning of contamination including oil spills; restoration of mining operations; and decontamination and sanitation services.

Agricultural and mining services - Code 283

It includes: services provided in agriculture, such as the provisioning of agricultural machinery with crew, harvesting, treatment of crops, pest control, animal housing, animals care and animal husbandry services, hunting services; trapping; forestry,

logging and fishing; as well as veterinary services. On the other hand it also includes mining services provided at oil and gas extraction fields, including drilling, construction services, repair and dismantling of drilling rigs and consolidation of pipes in oil and gas wells; it also includes services related to mineral prospecting and exploration, as well as mining engineering and geological studies.

Call center services - Code 284-1

It includes: call center services.

Travel agencies - Code 284-2

It includes: commissions for selling tickets or tourism packages, group travel organization services, tourist information, tourist guides and in general all activities specific to travel agencies.

Personnel placement - Code 284-3

It includes: search, personnel placement and supply services.

Other services - Code 284-4

It includes: security and research services, translation and interpretation, photographic services, building cleaning, real estate services provided to businesses and any other business services that cannot be classified in any of the business services listed above.

IX. PERSONAL, CULTURAL AND RECREATIONAL SERVICES

Personal, cultural and recreational services include services related to audiovisual activities (movies, music, radio and television) as well as the services related to the performing arts, general and specialized human health services provided by hospitals, doctors, nurses and paramedical personnel and similar, such as laboratory services; services related to all levels of education, such as courses by correspondence; courses on television, satellite or the Internet; or taught by teachers; services related to museums and other cultural, sports, gambling and recreational activities.

Audiovisual and related services - Code 288

It includes: production of motion pictures (in films, video tapes, discs or electronically transmitted) and the costs associated with these productions (fees of the directors, actors, etc.), radio and television shows (live or recorded), music recordings, promotion and presentation services related to the performing arts and other live events (concerts and theatre plays), recording of live performances, amounts receivable or payable for the lease of audiovisual and related products and charges for access to encrypted television channels.

Education services - Code 895

It includes: all services related to education either face-to-face or online.

It excludes: payments of students not residing in Colombia who are enrolled in education for more than one year.

Health services - Code 896

It includes: services provided by doctors, paramedics, nurses and the like, as well as laboratory and similar services provided remotely or on site.

It excludes: income paid by patients not residing in Colombia who stay more than one year in the country.

Other personal services - Code 897

It includes: services associated with museums, libraries and other cultural, sports, gambling and recreational activities, except those involving people outside of their economy of residence (which is not covered by this study).

b. Conceptual framework

This research uses the United Nations Manual Statistics of International Trade Services (MSITS 2010) and the concepts related to international trade in services as a benchmark. The concepts that are most relevant for the study are listed below:

International trade in services: transactions (purchase and sale of services) made between residents and non-residents of a country.

Modes of provisioning: they is defined on the basis of the location of the provider and the consumer at the time of the provisioning of the service. Usually modes are referred to as follows:

- a. **Cross-border provisioning (Mode 1):** when both the provider and the consumer remain in their respective territories (which would correspond to the traditional notion of trade in goods and would cover the services provided by telephone or Internet).
- b. **Consumption abroad (Mode 2):** when the consumer receives the service outside the territory of their country (as is the typical case of the activities of international tourists and theme parks abroad).
- c. **Commercial presence (Mode 3)⁵:** when service providers establish (or acquire) an affiliate, a branch or a representation office in the territory of another country through which they provide their services (for example, when a foreign bank that invests in a host economy creates an affiliate in order to provide banking services).
- d. **Presence of natural persons (Mode 4):** when a natural person (or service provider, whether he or she is a self-employed worker or his/her employee) is abroad in order to provide a service (e.g. when an independent architect supervises a construction project abroad or a computer specialist is sent by an employer in order to provide an information technology service).

Non-resident: an institutional unit is considered non-resident if its center of economic interest is outside of the country where the measurement is made. If it is in this one, their economic activities are carried out in a specific manner or for a limited period in the national territory.

⁵ The MTCES does not publish statistics for the «commercial presence» mode of provision (Mode 3).

Resident: an institutional unit is resident in an economic territory when there is a location, dwelling, place of production or other premises in such territory where or from which the unit engages and intends to continue engaging, either indefinitely or during a finite but long time, in economic activities and transactions on a significant scale.

Country sender or recipient of services: location where the economic activity is developed.

Value of the transaction (export/import): value accrued in thousands of pesos, for the provision or purchase of services to or from abroad. This information is recorded according to EBOPS code, by country and by mode of provision.

c. International benchmarks

The MTCES takes into account the United Nations guidelines set forth in the Manual on Statistics of International Trade in Services (MSITS, 2010) prepared by this Organization. This manual in turn complies with the System of National Accounts (SNA 2008) and the Sixth Edition of the Balance of Payments and International Investment Position Manual (BPM6) of the International Monetary Fund.

2.1.5. Design of indicators

DANE, as part of its plan to modernize the measurement instruments of economic surveys and in order to expedite and facilitate the accurate and timely reporting of statistical data required by end users of the information, uses the variation (%), the contribution (percentage points) and participation (%) as descriptive statistics instruments, which apply to the total by groupings, EBOPS, countries and modes of provision.

Calculation of the change

A change is a measurement that indicates the relative change of a variable in a period with respect to another. The percentage change calculated from the quarter of the reference year and the same quarter of the previous year defines the annual change as:

$$V_{iy} = \left(\frac{T_{iy}}{T_{(i-1)y}} - 1 \right) * 100$$

Where,

y = Study variable or variable of interest

V_{iy} = Percentage change of the total of y in the time period i with respect to the previous period

T_{iy} = Total estimated of variable y in the period of time i

$T_{(i-1)y}$ = Total estimated of variable y in the period of time $i-1$

Calculation of the contribution

The percentage contribution shows the importance of a change on a total change, i.e., it accounts for the contribution of such change with respect to the total change.

$$\text{Contribución}_{(iy)} = \left(\frac{(T_{(i-1)y} - T_{iy})}{\sum T_{(i-1)y}} \right) * 100$$

Where,

Contribution (iy) = Percentage contribution of the total of T_{iy} in period of time $T_{(i-1)y}$ over the previous period.

T_{iy} = Total estimated variable y in period of time i

$T_{(i-1)y}$ = Total estimated of variable y in period of time $i-1$

Sum $T_{(i-1)y}$: Sum of the estimated total of the variable in period of time $i-1$

Calculation of participation

Participation is a measure that indicates the percentage weight of a variable within a total.

$$\textit{Participación} (iy) = \left(\frac{Tiy}{\sum Tiy} \right)$$

Where,

Participation (iy) = Percentage participation of a sector on the sum of all sectors in a given period of time

Tiy = Total estimated of variable y the period of time i

Tiy sum: Sum of the total estimated of the variable in the period time i

2.1.6. Plan of results

The plan of results of the MTCES follows the schedule of activities defined in Central DANE by the respective team on a timely manner. This schedule is made one month before the end of the year, which allows establishing the dates of publication of statistical results and determining the date in which the technical committee meetings are carried out.

The plan of results includes the development of a technical bulletin (PDF format) where the results of foreign trade in services for the reference quarter are presented in detail. Two statistical annexes (Excel files) containing the most relevant historical statistical information are developed for exports and imports of services by groupings, EBOPS codes, countries and modes of provision and calculation of the respective statistical indicators such as variation, contribution and participation.

And lastly, each quarter a presentation (PowerPoint file) and a press release (PDF document) are published. The first contains graphic information of the main results for the quarter and summary tables. The second consists of a communication containing the most important findings of the behavior of international trade in services in the country are highlighted in the quarter under study.

2.1.6.1. Design of output tables or results tables

The output tables of the MTCES show the behavior of exports and imports of services, according to the study variables. Since its initial production, output tables have undergone significant changes. An expansion of statistical data and the inclusion of new variables studied can be found. Thus, while the output tables have a defined format, according to the information needs of users, they can be extended as many times as necessary. The current scheme of output tables is as follows:

Table 1. List of output Tables of the MTCES

Table 1. Exports and/or imports of services according to EBOPS grouping.

Table 2. Exports and/or imports of services according to EBOPS grouping and codes.

Table 2.1. Change and contribution of exports and/or imports of services according to grouping and EBOPS.

Table 3. Exports and / or imports of services by country.

Table 3.1. Change in exports and/or imports, according to groupings by countries.

Table 4. Exports and/or imports of services according to main EBOPS and countries.

Table 5. Exports and/or imports of services according to modes of provision and EBOPS grouping.

Table 6. Exports and/or imports of services according to main countries and EBOPS.

Table 7. Exports and/or imports of services according to departments.

Source: DANE, MTCES.

Tables 1, 2, 3, 4, 5 and 6 contain historical information broken down for each of the study variables. Tables 2.1 and 3.1 contain indicators as variations and contributions of each of the study variables.

2.1.7. Design of the form or questionnaire

In order to collect the information that companies provide to DANE, an electronic form located on the main page of the MTCES is used. This form is divided into three modules, which are detailed below:

a. Module I. Identification, location and general information

This module collects the identification, location and general information of the enterprise that provides the information with the purpose of generating a large database of sources and to make the necessary monitoring. It consists of:

Section I. Respondent information

Section II. Location and general data of the enterprise

Section III. Operations of international trade in services

Section I: it corresponds to the contact details of the person responsible for completing the online form. Data such as name, position within the enterprise, phone, extension and email will be requested. This in order to contact the person in the event that questions arise or further information is required.

Section II: it corresponds to pre-completed data of the enterprise, such as: identification, location and general data, which cannot be modified. In addition, in this section the system will prompt the list, in terms of participation, of the operations of international trade in services made by the enterprise at the regional level, i.e., if the enterprise makes exports and/or imports of services, indicate the (the three) department (s) most important along with the municipality (i.e.s) from which these services are provided. This section has an additional question, which allows determining whether the operation of foreign trade in services is being conducted with a parent, subsidiary or branch.

Section III: it corresponds to the information of imports or exports of services in the reference quarter and according to EBOPS groupings.

b. Module II. Description and selection of services

This module seeks to identify the operations and values of the international trade in services developed by enterprises during a given period. It consists of:

Table 2. List of services according to EBOPS

I.	Manufacturing Services in Physical Inputs
II.	Maintenance and Repair Services
III.	Transport services
IV.	Construction services.
V.	Charges for the Use of Intellectual Property
VI.	Telecommunications, Computer & Information Services
VII.	Other Business Services
VIII.	Personal, cultural and recreational services

Source: DANE, MTCES.

Section IV: input of transactions of exports/imports of services. (The following are listed: the country with which the transaction took place; the value of the transaction in thousands of pesos and the mode in which the service was provided).

c. Module III. Summary of transactions

This module presents a summary table of the records that were inputted, so that the total amount of exports and/or imports relating to services as appropriate can be seen. Additionally, it shows quarterly and annual changes experienced by the services reported by the sources and comments that the critique area collects during the operation of information collection.

2.1.8. Validation, consistency and imputation standards, specifications or rules

For specifications related to the database, the respective correspondence tables are created and loaded into the system so that the validation processes and consistency of the information to be published can be performed.

Validation and consistency rules for the most important variables of the database of the MTCES are as follows⁶:

Table 3. Validation rules for variables base MTCES

Variables

IDNOREMP: Number of order

Type: Numeric

Length: 8

Consistency and validation: It should always be pre-completed. The number assigned should be unique for each enterprise. The code should start with 1 or 2.

IDACT: Economic activity code

Type: Numeric

Length: 4

Consistency and validation: It should always be pre-completed. The code must correspond to the economic activity carried out by the enterprise

⁶ For more details, see the document «Specifications of the Validation and Consistency of the Database» MTCES (DOS-MTCES-EVA-02).

IDNIT: Identification number

Type: Numeric

Length: 9

Consistency and validation: The NIT⁷ should be unique for each enterprise. Maximum length is nine digits. It does not include verification digits.

IDPRORAZ: Business name

Type: Alphabetical

Length: 60

Consistency and validation: It should always be pre-completed and capitalized

IDMPION: Geo-referencing code of the location from which the source of information is reporting.

Type: Numeric

Length: 4

Consistency and validation: The code should be consistent with the current Divipola⁸

CODCABPS: Classification codes for international trade in services

Type: Numeric

Length: 3

⁷ Spanish acronym for tax payer identification number.

⁸ Spanish acronym for Political Administrative Division of Colombia.

Consistency and validation: The code should always be 3 digits and consistent with the table of codes EBOPS

NOMCABPS: Service (exported - imported) or characterization of service

Type: Alphabetical

Length: 60

Consistency and validation: The name of the service selected by the source should be consistent with the EBOPS code selected in the previous step.

MODOS: Modality to provide services

Type: Numeric

Length: 1

Consistency and validation: The mode should be consistent with the modes validation table with respect to EBOPS code EXPO-IMPO

CODPAIS: Identification codes for countries according to LAIA⁹

Type: Numeric

Length: 2 to 3

Consistency and validations: The code should be at least 2, maximum 3-digit length and should be consistent with the ISO 3166 classification.

⁹ Latin American Integration Association.

NOMPAIS: Country name

Type: Alphabetical

Length: 60

Consistency and validation: The name of the country selected by the source should be consistent with the LAIA code selected in the previous step.

VROCE: Value of the commercial operation

Type: Numeric

Length: 8

Consistency and validation: It should not be negative nor less than 2 digits nor should it be null if the OCISER is 1.

Source: DANE, MTCES.

When performing any imputation exercise, the following elements are considered: the sources' structures, the regularity with which they report information and the economic sector of services to which it belongs. This implies the following:

1. The sources that are not reporting information for the reference quarter are detected.
2. The justification of why no information was reported is requested.
3. If an inconsistency was confirmed, we proceed to analyze the historical series and request the missing data from the source.
4. If the source cannot send the data, we proceed to assess the best way to perform the corresponding imputation. It is analyzed if the source reports data for other codes and the stability of the data series.
5. Data is imputed.

Additionally, cross-referencing with other types of research is conducted so as to determine the feasibility and structure of a possible imputation.

2.1.9. Nomenclatures and classifications used

The basis for the codification of services is the Extended Balance of Payments Services classification (EBOPS), in relation to the Manual on Statistics of International Trade in Services (MSITS, 2010). However, DANE has designed a classification of services that follows in structure and definition the one presented in the above-mentioned manual. This is due in practical terms, to the fact that not all services that are broken down in the manual are likely to be captured by the study, it may even occur that Colombia does not have international trade of any service related to the original structure.

2.2. STATISTICAL DESIGN

2.2.1. Basic components of the statistical design

Universe

Enterprises formally established that are residing in the country in all sectors, which are engaged in international trade in services.

Target population

It consists of formally established enterprises that are residing in the country, from all sectors, which are engaged in international trade in services¹⁰.

Statistical framework

Up to 2013 the statistical framework consisted of 2,305 enterprises that conducted foreign trade operations, taken from the directory provided by the Ministry of

¹⁰ See Appendix 1.

Commerce, Industry and Tourism and the base of clearing accounts and exchange means of the Central Bank.

In 2014, during the redesign process of the study, a directory populated by the records of the following directories was built and debugged:

- Directory of International Trade in Services of the Geo-statistics Division of DANE - DIG of year 2013
- Directories of annual surveys of DANE (Annual Trade Survey, Annual Services Survey and Annual Manufacturing Survey)
- Free Trade Zones (operations services)

Currently the directory consists of 2.339 enterprises that actually record operations with respect to international trade in services.

Definition of variables

The study variables of the MTCES for which the study is designed are:

- Grouping
- Type of service according EBOPS code
- Value of the transaction for the service provided or acquired
- Mode of provisioning
- Partner country
- Period

Source of data

The MTCES uses two sources of information, which are described below:

- A survey of enterprises that meet the parameters of forced inclusion and develop international trade in services is conducted on a quarterly basis.

- Information of an administrative record nature is included for the following groupings:
 - Imports of transport services (freight): administrative record of DIAN.
 - Exports and imports of travel services: spending structure taken from the survey of international travelers of DANE and updated with the passenger flow provided by Migración Colombia¹¹.
 - Exports and Imports of government services: administrative record of the Ministry of Foreign Affairs.

2.2.2. Statistical units

Statistical unit: enterprises with NIT, of all sectors; formally established, residing in the country that perform operations of international trade in services.

Observation unit: enterprises with NIT, of all sectors; formally established, residing in the country that perform operations of international trade in services.

Analysis unit: enterprises with NIT, of all sectors; formally established, residing in the country that perform operations of international trade in services.

Information unit: manager, accountant, owner or person who handles the financial statements of the enterprise.

2.2.3. Reference and collection periods

Reference period: quarter prior to that of data collection.

Collection period: it starts on the first business day after the reference quarter and extends up to 60 calendar days.

¹¹ Migration control and Alien affairs authority.

2.2.4. Sample design

Type of study

For the collection of data a non-probability sample without inclusion parameters is used. The selected sources are the enterprises that actually perform foreign trade in services. Administrative records of DIAN, Ministry of Foreign Affairs and Migración Colombia also supplement the information.

Definition of the sample size

It includes enterprises of all sectors, formally established and residing in Colombia that develops activities of international trade in services. In this sense, each quarter the thematic and logistical team meets with the objective of evaluating the possible inclusion of new sources to strengthen the statistical directory of the study.

Scope

It corresponds to the operations of international trade in services (exports and imports) of enterprises of all sectors, whose main activities are related to the activities of the International Standard Classification of all economic activities (ISIC Rev.4) adapted for Colombia.

Coverage

National

Sample¹²

2.339 enterprises.

¹² The sample size may vary from one quarter to another, as the possibility of including new sources of information is assessed.

2.3. EXECUTION DESIGN

2.3.1. Learning system

Regional branches, the Innovation and Learning Area Group (GAIA¹³) designed, under the methodological framework of the b-learning model, a series of courses and workshops which aim to assess and determine the best human talent needed to perform all the functions so as to ensure the quality of the information collected.

According to the above, we have designed two training phases: the online and the face-to-face. The first, in turn, is divided into three online courses, which aim to provide the tools and knowledge necessary to perform the functions that are contracted. The first course shows an overview of the study, the next course teaches the variables of the research study and the last course teaches about data collection and the completion of the form. Under this scheme the three roles of staff are assessed: critique official, coordinator and technical assistant.

The face-to-face phase is divided into two learning sections. The knowledge acquired by the applicants in the online phase is reinforced and both the concerns and suggestions are addressed. The first section covers the generalities of the MTCES and the analysis of the study variables. In the second section, feedback is given with respect to the knowledge acquired in the completion of the electronic form and critique of sources.

Also, the technical assistants of the territorial offices, branches and sub-branches, through a seminar-workshop, train the persons who will be part of the collection operation. In short, this is the training scheme implemented as of the second quarter of 2016:

The contents of the online and face-to-face training are:

- Presentations on general methodological aspects of the MTCES (online and face-to-face).
- Analysis of variables: case studies and exercises (online and face-to-face).

¹³ Spanish acronym.

- Analysis of completion and critique: case studies and exercises (online and face-to-face).

In addition, the MTCES has established the technical strengthening of the study so that when each operation starts, the group of professional analysts conducts re-training, using the tools available in DANE Central (videoconferencing), in order to ensure and solve the specific questions of each of the groups or roles of operational personnel. During the development of the operation in a permanent manner, the professionals responsible in branches and sub-branches should perform this reinforcement in order to ensure the final consistency of information.

2.3.2. Preparatory activities

Recruitment of staff

For the recruitment of staff, the B-learning model evaluates the candidates in its two phases; the test of the online phase has a weight of 30 %, which should be passed by at least 60 points to access the face-to-face phase that has a weight of 70 %; these scores are then weighted. Those achieving higher results with respect to the number of staff requested in the statistical operation will be recruited, whereas those who pass the evaluations but whose scores are not sufficient to be recruited will remain as eligible.

In addition, in order to perform the recruitment of staff, the study follows the guidelines and procedures established in the recruitment process, which can be seen in the procedure «Contracting of professional and management support services in Branches and Sub-branches» whose link is provided below:

<http://danenet/sistemadocumental/files/sda/16.%20Gestion%20Contractual/2.%20Contratacion%20de%20Servicios%20Personales/GCO-020-PD-09%20V2.pdf>

Summary of the recruitment process:

- Estimate of resource needs and request for approval
- Summons
- Study of candidates and first selection, according to the requested profile

- Online and face-to-face training course
- Face-to-face classification test
- Personal interview
- Final selection of staff
- Strengthening of the training performed by the Central DANE methodological team during the development of the operation

Awareness raising and/or notification

The awareness raising process is performed when a new source is incorporated in the directory; there are changes in the personnel responsible for providing the information or when a company is reluctant.

The persons appointed for the notification process communicate via web, by phone or by personal visit to each of the enterprises in order to perform the notification process; for this effect, the contracting of a monitor-interviewer is arranged, who in addition to complying with the activities of the collection process, shall perform the notification process to the sources with respect to the quarterly surveys of services: Quarterly Sample of Services and Quarterly Sample of International Trade in Services, so as to ensure that once the collection process starts on specified dates, the critique of information begins.

It is very important that this activity is carried out before the start of each operational process, in which the keys and passwords for entering the electronic form will be delivered through the DANE website. Once the enterprises are notified, the territorial office performs the awareness raising process and provides permanent support to the enterprises assigned to each interviewer-monitor.

According to the collection scheme, the electronic form will be opened as of the first business day of each quarter. The sources start providing information on this date and with prior notification. It is important to reiterate that the work of the interviewer-monitor should focus on advising the enterprise on the right completion of information through the web, using the electronic form, thus the processes involving

the development of the operation will become agile and information will be obtained with the required quality standards.

For the enterprises that express that they cannot provide information through this means, the form should be requested in the Excel form.

2.3.3. Design of instruments

The MTCES requires extensive and detailed documentation in order to make known all the features of the study and the description of each of the processes that are carried out for the production and dissemination of information. Consequently, each area prepares and implements various technical and operational manuals.

The most important can be listed for each area:

Thematic area:

- General methodology
- Methodological datasheet

Logistics area:

- Completion manual of the electronic form
- Critique manual
- Operational manual
- Manual for the field coordinator and those responsible for the MTCES
- Manual for handling novelties

IT area:

- System Design
- System User's Manual

2.3.4. Collection of information

The collection of information for the MTCES involves the following stages: monitoring, critique, technical assistance as well as verification and consistency of information. Each of the above are described below.

Supervision

The monitoring of the operation at the central and territorial level is performed in real time, i.e., in parallel with the development of the operation. Coverage and quality of information as well as the debt are permanently monitored, i.e. enterprises that have not completed or inputted the information, this being the responsibility of the territorial offices.

Critique of information

Once the enterprise has completed the information, the critique process is developed, which consists of validating the information captured in the system through the analysis datasheet, supported by phone calls, emails and other types of resources that allow supporting changes «outside of the range of acceptance» according to parameters established in the critique manual, or to otherwise modify the data as applicable and which are pointed out by the source.

The activities of critiquing and assuring the consistency of the information provided on the forms submitted through the electronic capture application, are developed simultaneously with the development of the operation. In the critique process relating to enterprises, the information for the same period with respect to the previous year and the immediately preceding quarter need to be taken into account, this is done in order to analyze and justify the variations that are out of range.

Verification and consistency of information¹⁴

For the MTCES, there are mailing percentages or preliminary cut-offs of information, corresponding to 20 %, 50 % and 80 % of enterprises collected and critiqued by each branch and sub-branch. With this information, the group of professional analysts of

¹⁴ See Appendix 3 - General structure of the electronic form of the MTCES.

the study performs the processes of verification, consistency and detailed analysis per record, in order to detect inconsistencies that need to be resolved in a timely and parallel manner to the development of the information collection operation.

In this process, we proceed to the acceptance of the form or returns of information, which are made through the system, allowing traceability of information requirements. The branches and sub-branches in the return process shall perform the critique of the requested information again, if the information is endorsed by the coordinator or professional in charge of the study as appropriate, it will be taken as verified and accepted, otherwise it will continue under analysis and verification status at branch or sub-branch. For the last cut-off date of information corresponding to 100 %, the team of professional analysts of the MTCES again reviews the information at the microdata level taking into account the participation of each source by EBOPS code in 85 % of the total, this in order to respond to the changes within each of the EBOPS groupings.

The above-described process is carried out with the support of the territorial offices that are responsible for reviewing and ensuring the quality of the information issued to DANE Central.

2.4. IT DESIGN

The IT area has the necessary technological infrastructure in order to support the development of electronic forms to be disseminated via the web, formed by MySQL database servers and web server that is currently hosting the institutional website that supports PHP, the language used to develop this form. Historical information is stored in these servers ensuring the security of information.

An electronic form is used as the capture mechanism that is anchored to a MySQL database server (test), where the preliminary development of the questionnaire is done in order to determine on it potential changes or requirements of final users. After completing the development and having carried out the tests and correcting errors, the entire source code (development) is transferred to another MySQL database server (Athenea) from which the information of the enterprises considered in the sample starts to be received.

Starting from a modification to the design of the traditional form, where the type of information required in the MCTES is observed, the structure of the database (tables, fields, data types, size) is then formed, to then reach the normalization thereof, so that there is no redundancy in the stored information.

On the control and monitoring, the online work performed by sources at the national level is used; the registration process of new products is performed as well as the coverage reports and follow-up to the operation is performed, so that the persons responsible for the operation have the necessary tools to raise the awareness of the sources again and verify the assigned coverage. The study does not publish anonymised data.

2.5. DESIGN OF METHODS AND MECHANISMS FOR QUALITY CONTROL

For the MTCES, the quality analysis results are based on the review to be performed by the coordinator or the person directly responsible for the study in the territorial office. In order to have full control of monitoring processes with respect to critique staff, the branches and sub-branches on the opportunity in the verification of electronic forms, a local quality indicator has been designed that will account for, in real-time, the status of all processes.

This indicator is based on the review to be performed by the Technical Assistant of the study (permanent staff) or its delegate in each Regional Office, of the information contained in the collection system through the application. In order to carry out the quality control of each process and obtain a rough indicator of quality, the Technical Assistant should review 10 % of the forms that underwent a critique process performed by each of the persons responsible for such process.

The follow-up to the operation is performed permanently and the coverage, the information requested as well as the debt in information should be monitored. The indicator has the following reports:

- **Operation enquiry:** at the national level and/or by branch and sub-branch, the progress with respect to the notification to the sources (distribution) in inputting, analysis - verification and verified.
- **Track changes:** it describes the changes made in a given processing quarter for the users, the source, the critique technical assistant, and logistics.

Users responsible for monitoring the operation are the professionals responsible for the study in the territorial offices and the sub-branches. Under this condition, they can only view the reports within their competence, i.e. the portion of the operation that corresponds to their branch or sub-branch. Finally, monitoring is performed with respect to the operation by those responsible for the study in the Logistics division in Central DANE.

2.6. PILOT TEST DESIGN

For the MTCES, a pilot test was conducted in 2005 - IV quarter, which involved the movement of DANE staff, for the orientation of the corresponding enterprises that were previously selected to provide the information with respect to the international trade in services. Among other things, the pilot test allowed it to confirm that many companies did not know that they were conducting international trade in services, nor did they have knowledge of how to register or categorize them. This served to implement strategies that strengthened the process of awareness raising, guidance and support for the correct completion of information.

2.7. DESIGN OF ANALYSIS OF RESULTS

2.7.1. Statistical analysis

Statistical analysis of the data regarding international trade in services is carried out in two stages. Firstly, statistical exercises are performed such as finding the change, contribution and participation of groupings, countries and EBOPS codes. Thus, preliminary results are generated that are compared with other studies being conducted by DANE. Secondly, the consistency of the results obtained is determined

by performing comparison exercises with the economic and political phenomena relevant to the period analyzed. Thus, it is ensured that the results reflect the economic facts.

Finally, tables are prepared to present exports and imports by grouping, partner countries; the mode of provision and the Extended Classification of the Balance of Payments (EBOPS), these are the result of the whole process of analysis of the data collected.

It is important to note that the data being obtained matches the economic reality. Thus, errors can be detected in processing the figures or phenomena can be discovered that should be carefully explained with arguments for specific cases.

2.7.2. Context Analysis

In the MTCES, comparisons are made with the information produced by the Central Bank for the balance of payments of services during the quarter under analysis. These exercises allow identifying gaps and most significant differences of absolute values between the two entities. In addition, comparative exercises are performed with various studies conducted by DANE, which ensures the consistency and, quality of the published data.

For the comparative exercise with the Central Bank it should be clarified that only comparable EBOPS are analyzed and no totals are generated with respect to exports and imports of services. Thus, the information is analyzed through change, contribution and participation.

2.7.3. Expert committees

In the MTCES similarly to the rest of the studies of DANE, two committees are prepared in which the results obtained are presented and evaluated. The internal committee is composed of officials of DANE who review and evaluate the final information and the external committee where experts from different public and private entities meet to analyze the information obtained.

2.8. DESIGN OF DISSEMINATION

Through the DANE website, on the right menu in STATISTICS BY TOPIC on the link «International Trade», users will have access to: The technical bulletins of the MTCES, the press release, the presentation of results and statistical annexes of the reference quarter and previous periods.

2.8.1. Data repository management

The files used for the production of the newsletters that disseminate the information of the MTCES are stored in the computers of the Foreign Trade area of the Coordination of Trade of DANE and the servers of DANE managed by the IT office.

2.8.2. Dissemination products and tools

The results obtained for the MTCES are published on the DANE website. Specifically, the following documents are published:

- **Technical bulletin:** this is a PDF document where the behavior for the analyzed period of exports and imports of services is described. To this end, bar graphs, participation distribution pie charts and data tables are used.
- **Presentation:** this is a Power Point document where the behavior for the analyzed period of exports and imports of services is described. To this end, bar graphs, participation distribution pie charts and data tables are used.
- **Statistical annexes:** this is an Excel document that contains the data of all the variables analyzed in the reference period. It also contains historical information for the variables of groupings and partner countries.
- **Press release:** this is a PDF document prepared by the Press office in order to inform the general public with respect to the main results for the period under analysis.

2.9. EVALUATION DESIGN

In December 2015, the Quarterly Sample of International Trade in Services was evaluated by DANE's Statistical Regulation, Planning, Standardization and Normalization Division (DIRPEN) under the respective certification process conducted by the entity to ensure statistical quality. Three independent experts evaluated the research, each respectively in the thematic, logistics and sample design area.

3. RELATED MATERIALS

The statistics relating to exports and imports of services are designed under the framework of the Manual on Statistics of International Trade of Services (2010), obtaining a detailed, clear and comprehensive system for measuring the international trade in services and it conforms to the System of National Accounts 2008 (SNA 2008) and the Sixth Edition of the Balance of Payments and International Investment Position Manual (BPM6) of the International Monetary Fund, with which it is explicitly associated.

Additionally, this manual contains information that can be enquired in more detail in the following related materials:

- DSO-MTCES-DFU-01. Functional model of the MTCES
- DSO-MTCES-DFU-02. Description of the Functional Model
- PES-MTCES-GLO-01. Glossary of terms
- DSO-MTCES-CSA-01. Specifications of Output Tables
- DSO-MTCES-DID-01. Database Dictionary
- DSO-MTCES-DIN-01. Specifications of the Local Quality Index
- DSO-MTCES-EVA-01. Electronic Form Validation Specifications
- DSO-MTCES-EVA-02. Database Validation Specifications and Consistency
- PES-MTCES-MDI-01. Completion Manual

GLOSSARY

Annual change. Percentage change calculated between the quarter of the reference year (i, t) and the same quarter of the immediately previous year (i, t-1) (DANE, COMEX 2016).

Extended Balance of Payments of Services (EBOPS) features. It contains the classifications of the various transactions of international trade in services performed by an economic unit (MSITS, 2010).

Modes of provision. It is the way adopted by the resident or non-resident to make an international transaction of services. There are four modes of provision for a transaction: cross-border provision, which does not require the displacement of the parties involved; consumption abroad, the party that consumes the service travels abroad to receive it; commercial presence, when the service providers establish (or acquire) a subsidiary, a branch or a representative office in the territory of another country whereby they provide their services and presence of natural persons, which implies that the service provider moves to the territory of the consumer to provide it on the enterprise's name (MSITS, 2010).

Non-resident. A person or enterprise is not a resident if it has a center of economic interest and does not maintain in the country a home or primary residence. The center of economic interest of that person or enterprise is located outside of the country. Their economic activities are carried out in a defined manner or limited period in the national territory (MSITS, 2010) period.

Resident. A person or enterprise is a resident of a country if it has its center of economic interest in it, i.e., if it circulates freely within the territory and has any dwelling, production establishment or other facilities within the territory on or from which it carries out its economic activities and transactions indefinitely or for a prolonged period (MSITS, 2010).

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^a The translation of bibliographic titles is for reference purposes only.

APPENDICES

Appendix A. Groupings and EBOPS codes comprised in the MTCES

MANUFACTURING OF PHYSICAL INPUTS THAT ARE THE PROPERTY OF OTHERS	<ul style="list-style-type: none"> ▪ Manufacturing of physical inputs that are the property of third parties
TRAVELS	<ul style="list-style-type: none"> ▪ Travels
MAINTENANCE AND REPAIR SERVICES	<ul style="list-style-type: none"> ▪ Maintenance and repair of maritime transport ▪ Maintenance and repair of air transport ▪ Maintenance and repair of transport equipment
SERVICES OF TRANSPORT	<ul style="list-style-type: none"> ▪ Maritime passenger transport ▪ Maritime freight transport ▪ Other maritime transport services ▪ Air transport of passengers ▪ Air transport of freight ▪ Other air transport of freight services ▪ Rail passenger transport ▪ Rail freight ▪ Other rail transport services ▪ Passenger transport by road ▪ Freight transport by road ▪ Other transport services by road ▪ Passenger transport by inland waterways ▪ Freight transport by inland waterways ▪ Other transport services by inland waterways ▪ Pipeline transport and electricity transmission ▪ Other supporting and auxiliary transport ▪ Postal and courier services
CONSTRUCTION SERVICES	<ul style="list-style-type: none"> ▪ Construction services performed abroad ▪ Construction services performed in Colombia by nonresidents
CHARGES FOR USE OF PROPERTY	<ul style="list-style-type: none"> ▪ Rights for the granting of license of franchise and trademark ▪ Licenses to apply the results of research and development

INTELLECTUAL	<ul style="list-style-type: none"> ▪ Licenses to reproduce and/or distribute software ▪ Licenses to reproduce and/or distribute audiovisual and related products ▪ Other royalties N.I.E.
TELECOMMUNICATIONS, COMPUTERS AND INFORMATION SERVICES	<ul style="list-style-type: none"> ▪ Telecommunications services ▪ Computer services ▪ News agency services ▪ Other information provision services
OTHER BUSINESS SERVICES	<ul style="list-style-type: none"> ▪ Other services related to trade ▪ Operational leasing services ▪ Legal services ▪ Accounting, auditing, bookkeeping and tax advice ▪ Business consulting services in business administration and public relations ▪ Advertising, market research and public opinion polls ▪ Research and Development R & D ▪ Architectural, engineering and other technical services ▪ Waste treatment and decontamination ▪ Agricultural and mining services ▪ Other business services
PERSONAL, CULTURAL AND RECREATIONAL SERVICES	<ul style="list-style-type: none"> ▪ Audiovisual and related services ▪ Education services ▪ Health services ▪ Other personal services
GOVERNMENT GOODS AND SERVICES	<p>Government goods and services</p>

Appendix B. Structure of the electronic form

MODULE I. Identification, location and general data

Modulo I - Carátula Única ACTIVIDAD ACTUAL: 7310 - Investigación y desarrollo experimental en el campo de las Ciencias naturales y la Ingeniería

SECCIÓN I - DATOS DEL INFORMANTE

En caso de tener inquietudes con quién nos podríamos comunicar?		Trimestre de Referencia	
Nombre:	<input type="text"/>	Trimestre 1	Año 2014
Cargo:	<input type="text"/>		
Teléfono	<input type="text"/>	Extensión	<input type="text"/>
E-mail:	<input type="text"/>	criticado por	Nombre:

Upon entering Module I, there are three sections, the first of which is referred to as RESPONDENT DATA and it corresponds to the provision of the contact information of the person who will be responsible for completing the online form.

MODULE I. Identification, location and general data

Modulo I - Carátula Única ACTIVIDAD ACTUAL: 7310 - Investigación y desarrollo experimental en el campo de las Ciencias naturales y la Ingeniería

SECCIÓN I - DATOS DEL INFORMANTE

En caso de tener inquietudes con quién nos podríamos comunicar?		Trimestre de Referencia	
Nombre:	<input type="text"/>	Trimestre 1	Año 2014
Cargo:	<input type="text"/>		
Teléfono	<input type="text"/>	Extensión	<input type="text"/>
E-mail:	<input type="text"/>	criticado por	Nombre:

In the second section called LOCATION AND GENERAL INFORMATION OF THE ENTERPRISE some pre-completed data of the source can be visualized, such as: identification, location and general data, which cannot be modified.

Regionalización de las exportaciones e importaciones de servicios

En cuál departamento del país se efectuó la transacción de Exportación de servicios.

Departamento: participación %:

Departamento: participación %:

Departamento: participación %:

En cuál departamento del país se efectuó la transacción de Importación de servicios.

Departamento: participación %:

Departamento: participación %:

Departamento: participación %:

Naturaliza accionaria de la empresa

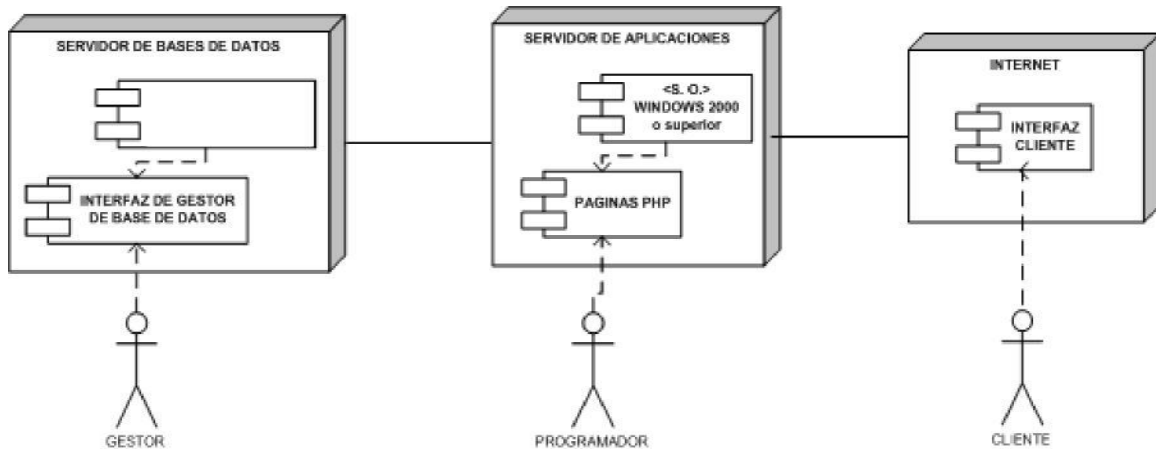
La empresa es casa matriz de filiales o sucursales ubicadas fuera del territorio colombiano o por el contrario es una vinculada (filial, sucursal, subsidiaria o Agente comercial) de una compañía extranjera?

Vinculada (Filial, sucursal, subsidiaria o agente comercial) Casa Matriz No Aplica

MODULE II. DESCRIPTION AND SELECTION OF SERVICES

DESCRIPCIÓN Y SELECCIÓN DE SERVICIOS	
<p>I. SERVICIOS DE MANUFACTURA EN INSUMOS FÍSICOS, PROPIEDAD DE TERCEROS</p> <p>Incluye: Comprende los cargos que se generan por la transformación de materias primas en productos finales, es decir, actividades como el procesamiento, montaje y empaclado que llevan a cabo empresas que no son propietarias de los bienes. Por ejemplo, el refinado de petróleo, la licuación del gas natural y el ensamblaje de vestimentas y equipos electrónicos.</p>	<p>V. CARGOS POR EL USO DE PROPIEDAD INTELECTUAL</p> <p>Incluye: Los derechos de franquicias y marcas registradas; licencias para aplicar los resultados de la investigación y el desarrollo; licencias para reproducir y/o distribuir programas informáticos; licencias para reproducir y/o distribuir productos audiovisuales, conexos y otras regalías N.I.O.P.</p>
<p>II. SERVICIO DE MANTENIMIENTO Y REPARACIÓN</p> <p>Incluye: El mantenimiento y reparación de transporte marítimo, aéreo y otros equipos de transporte.</p>	<p><input checked="" type="checkbox"/> VI. SERVICIO DE TELECOMUNICACIONES, INFORMÁTICA E INFORMACIÓN</p> <p>Incluye: Los servicios de telecomunicaciones; Informática; servicios de agencias de noticias; otros servicios de suministro de información.</p>
<p><input checked="" type="checkbox"/> III. SERVICIO DE TRANSPORTE</p> <p>Incluye: Los servicios de transporte marítimo de pasajeros, carga y otros marítimo; transporte aéreo de pasajeros, carga y otros aéreo; transporte ferroviario de pasajeros, carga y otros ferroviarios; transporte por carretera de pasajeros, carga y otros de carretera, transporte por vías de navegación interiores, tuberías, transmisión de energía eléctrica, otros de apoyo y auxiliares; servicios postales y de mensajería.</p>	<p><input checked="" type="checkbox"/> VII. SERVICIOS EMPRESARIALES, PROFESIONALES Y TÉCNICOS VARIOS</p> <p>Incluye: Los servicios relacionados con el comercio; de arrendamiento y explotación; jurídicos; contables y auditorías; consultoría empresarial y relaciones públicas; publicidad, estudios de mercado y encuestas de opinión pública; investigación y desarrollo; arquitectónicos y de ingeniería; tratamiento de residuos y descontaminación; servicios agrícolas y mineros; servicios de call center; agencias de viajes; colocación de personal y otros servicios.</p>
<p>IV. SERVICIO DE CONSTRUCCIÓN</p> <p>Incluye: Los servicios de construcción realizados en el extranjero por residentes y los realizados en Colombia por no residentes.</p>	<p><input checked="" type="checkbox"/> VIII. SERVICIOS PERSONALES, CULTURALES Y DE ESPARCIMIENTO</p> <p>Incluye: Los servicios audiovisuales y conexos; de educación; salud; otros servicios personales.</p>

Appendix C. Information system architecture X4



Source: DANE, MTCES