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# **Towards a definition of ICT Commodities**

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## **Abstract**

The paper discuss a definition of ICT commodities starting from the European classifications. It gives background information on the approach, comments on the principles on which the ICT sector definition is based, an overview of the detailed ICT commodity structure and a tentative proposal for ICT commodities expressed in CPA and PRODCOM. The conclusion is that the CPA should be the basic definition level for ICT commodities, because it comprises both goods and services. PRODCOM should be the basis for definition of ICT goods, but because of confidentiality reasons data on ICT goods should be reported in CPA or NACE terms. The classifications of services needs to be further developed.

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## **0. Introduction**

A definition of the industries making up the Information and Communication Technologies (ICT) Sector in terms of ISIC Rev.3/NACE Rev.1 was approved by the meeting of the OECD/ICCP Statistical Panel in June 1998. This definition is limited to those industries which facilitate processing, transmission and display of information by electronic means. It is a result the work of the ICCP Statistical Panel in collaboration with Eurostat and the Eurostat Task Force on Information Society Statistics.

The Panel decided to concentrate initially on a definition of the industries that make up the ICT sector, because of perceived difficulties with establishing a list of ICT goods and services. These difficulties relate to their rapidly changing character and the dated nature of current “ standard ” classifications. New products are continually being developed in line with technological advances and at a fast pace. At the same time, users generally require data to be comparable over time and to be able to link domestic production data with international data.

The starting point for the definition of ICT in terms of activities and commodities respectively was to consider a number of broader issues associated with the delineation of the ICT sector, hopefully leading to the compilation of internationally comparable ICT sector statistics. But it was also said that some issues of detail about precisely which parts of an industry are to be included can only be settled when the definition of the goods and services has been completed.

The next steps in developing statistics for the information society/information economy is thus to develop a definition of ICT Commodities and a definition of the content industries. France has agreed to take the lead in developing an industry definition for the content industries.

Concerning the commodity definition of ICT goods and services Eurostat undertook to lead and co-ordinate European work on a commodity classification. Denmark will participate and represent the Nordic ICT sector project under the ægis of the Council of Nordic Ministers. The United States will co-ordinate North American work and Canada will maintain a link between the North American and the European activities. Other participants in this action include Australia, France, Korea and the United Kingdom.

The purpose of this document is to launch the discussion and development of a definition of ICT Commodities.

## **I ICT Commodity definition**

### Economic activities versus commodities

Industry classifications and commodity classifications are very closely related, but serve nevertheless different purposes. An industry classification is a classification of the economic activities that result in a certain output. As it is a classification of activities it can be said to be a classification of the way production is organised. The data presented according to industrial activities are typically related to the organisation, e.g. number of enterprises, turnover, value added, number of employees, investments etc.

A commodity classification is a classification of goods and services, i.e. the output of economic activities. The data relate to what is produced or traded and is expressed in terms of value, number, weight, origin or destination etc.

### Industrial structure

The importance of gathering data on both economic activities and commodities stems from the fact that enterprises often produces more than one type of good or service – sometimes of types that are typical for different ISIC/NACE classes.

In such cases the enterprises are classified according to the product that corresponds to 50 percent or more of the turnover (in principle value added) and sometimes, following the classification rules, to less than 50 percent if it produces three or more different types of products.

The implication is that – if national comparisons are deemed to be important and relevant – different industrial structures in the countries concerned make the data to some extent incomparable. To overcome this problem as far as possible two classical statistical measures concerning the relation between classifications of economic activities and commodities – homogeneity and coverage – should be taken into account.

Homogeneity means the proportion of the total output of a given industry that is made up of commodities characteristic for that particular industry.

Coverage means the proportion of the total output of a commodity, characteristic for a particular industry, that is in fact produced by that industry

To facilitate analysis and comparisons of data between countries a “ make matrix ” would be an useful instrument that permits a more powerful description and analysis of the situation and development of the emerging information economy/information society.

### **The make matrix**

ISIC/NACE	Product classification : Goods and services				Total prod. in resp. ISIC/NACE		
	ICT goods and services				Non ICT		
	1	--	--	n			
ISIC/NACE 1							
--							
--							
--							

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ISIC/NACE n							
Tot prod. of resp. good and service							
Import							
Total supply							

The make matrix has of course great similarities to an input/output matrix but shows just one side of the supply and demand coin. But it is nevertheless a good start. I suggest that the feasibility of

initiate work on extending the PRODCOM with PRODSERV. The needs of ICT classifications stemming from the GATS/WTO activities are to be taken into account.

A candidate for a more general revision and development is distributive trade. Retail and wholesale was considered to be important to define in the context of the ICT sector, but acknowledging the difficulties to separate ICT resail and ICT wholesale from other types of wholesale and retail led to the agreement in the Panel to include wholesale and exclude retail in the ICT sector definition. It was also recognised that the borders between wholesale and resale outlets are changing. Electronic commerce is becoming increasingly important. All this together motivates an investigation of the classifications and statistical treatment of distributive trade.

Other areas that should be investigated are new but economically important phenomena like multimedia.

Eurostat has also developed a proposal for a revised CPA concerning Audio-visual services, that relates to the content industry.

### Guiding principles

The principles agreed on in the meeting of the OECD panel 18-19 June as a conceptual guide to the selection of the industries that constitute the ICT sector are :

“ For manufacturing industries, the products of a candidate industry must :

- be intended to fulfill the function of information processing and communication, including transmission and display ; or
- use electronic processing to detect, measure and/or record physical phenomena, or to control a physical process.

Components primarily intended for use in such products are also to be included.

For service industries, the products of a candidate industry must :

- be intended to enable the function of information processing and communication by electronic means. ”

The guiding principles seem to be based on the purpose of the activity ; not necessarily on likeness in process or output. The purpose of the activities the principles reflect might be summarised as follows :

<b>Catching data and information</b>	<b>Information processing</b>	<b>Databases</b>	<b>Electronic Transmission and communication</b>
<b>Creating infor- mation in a transmissible way</b>		<b>Electronically carried intellectual property</b>	

The choice of economic activities to include in the ICT sector is based on both technical aspects and policy relevans. When defining ICT commodities there is a risk that the discussion will rather be based on technical criteria than on the policy relevans. For that reason I suggest concerning commodities that to the principles, as given above, is added that an ICT commodity should typically have some “plug-in ” facility so that it might be an integrated part of an information system.

In the context of this paper information processing and information concerns measurements and signals as well as numbers, text, speech, music, images and symbols.

#### An overview of the detailed ICT commodity structure.

Below is given the number of CPA and PRODCOM positions that corresponds to the NACE Rev.1 classes of the ICT sector definition.

<u>Manufacturing</u>			<u>Services</u>	
NACE	CPA	Prodc	NACE	CPA
			Goods related	
30.01	10	21	51.43	5
30.02	10	19	51.64	3
31.30	5	12	51.65	6
32.10	13	55	71.33	2
32.20	6	13		
32.30	14	54	Intangibles	
33.20	26	118	64.20	15
33.30	1	1	72.10	1
			72.20	8
			72.30	4
			72.40	1
			72.50	2
			72.60	1

That is, to the 8 manufacturing NACE classes of the ICT sector correspond 85 CPA positions and 293 Prodcom positions ; to the 4 services – goods related NACE classes correspond 16 CPA positions and to the 7 services – intangibles NACE classes correspond 32 CPA positions. (It should be noted however that 72.20 contains one good). The definition of ICT commodities with this approach is thus based on a very detailed commodity classification within the overall more general classification structure.

The PRODCOM list and survey has been created in order to satisfy market information requirements of the different services of the Commission, of national government bodies, of business generally, and of trade associations. PRODCOM has implied a major effort of the Member States to either adapt or change existing surveys, or to create a completely new survey

Great importance has been attached to the publication of PRODCOM data, and particularly to the European aggregates. Member States who have a more detailed national classification should select their secondary confidentiality in such a way as to reduce as far as possible the number of confidential headings at the PRODCOM level. The confidentiality issue is treated later on in this paper.

The discussion in the following is entirely in terms of NACE, CPA and PRODCOM, but a corresponding discussion can of course be done in terms of ISIC, CPC and HS or some detailed national product classifications. In the annex is the cross reference from CPA to CPC and HS/CN indicated.

#### Discussion of the ICT commodity definition

The starting point is, as mentioned before, the guiding principles for the ICT sector definition with the key words *information processing and communication* and by *electronic* means. In my understanding the implication is that an ICT Commodity has to be an electronic device and that it should be possible to connect it to other devices like a PC, a communication network etc; i.e. to be a part in an integrated information system. The communication aspect is a crucial element in this context. Devices, although electronic, that do not typically have a “plug-in” possibility might be considered as a non-ICT commodity.

The full CPA/PRODCOM list corresponding to NACE classes of the ICT sector is presented in the annex with a first tentative suggestion of which positions should be regarded as ICT and which as candidates for exclusion. Below follows a short comment on the situation concerning the ICT and NACE classes.

#### Manufacturing

There are two general issues that should be discussed and an agreement on how to handle them be reached. The first is what to do with CPA positions where most, but not all, of the related PRODCOM codes are considered non-ICT ? Should they be included/excluded on grounds of relative economic importance or what ? The other is how “Parts and accessories....” positions related to both ICT and non-ICT products should be treated. They might in some cases be economically be very significant.

#### 30.01 Office machinery



This is a rather mixed set of commodities. If the criterium of “ plug-in ” facilities is applied it implies that a lot of the commodities in Office machinery would not be considered as ICT commodities. (An electronic calculator or a copying machine would not be an ICT good if it can’t communicate with other systems). In fact, taking into account the development in the computer class, 30.01 might at a later stage be excluded from the ICT sector.

### 30.02 Computers

All the commodities belonging to manufacture of computers and other information would be ICT commodities.

### 31.30 Insulated wire and cable

Of insulated wire and cable energy cables would not be considered ICT.

### 32.10 Electronic components

All electronic components would be considered ICT.

### 32.20 Television and radio transmitters

### 32.30 Television and radio receivers

All or most of telecom equipment would be considered ICT.

### 33.20 Instruments and appliances for measuring, checking.....

Instruments and appliances for measuring, checking, testing, navigating and other purposes is a mixture of ICT and non-ICT products.

### 33.30 Industrial process control equipment

Included.

### Services – Goods related

In the OECD statistical panel meeting whole sale and resale of ICT goods was considered to be included in principle, but retail was excluded because the classification was felt to be inaccurate for the purpose intended. The same argument applied to wholesale trade, but it was possible here, using NACE, to offer guidelines for more precise reporting.

This means that at least parts of

51.43 Wholesale trade services of electrical households appliances, lighting equipment and other electrical installation equipment

51.43.21 Wholesale trade services of radio, television and video equipment

51.43.22 Wholesale trade services of records, tapes and compact discs

51.64 Wholesale trade services of office machinery and equipment

51.64.11 Wholesale trade services of office machinery

51.64.12 Wholesale trade services of computers and peripheral equipment

might be considered ICT. But if 30.01 Manufacture of office machinery is considered to be mostly non-ICT then 51.64.11 should also be considered non-ICT.

51.65 Wholesale trade services of other machinery and equipment for use in industry, trade and navigation

51.65.15 Wholesale trade services of professional electrical and electronic machinery, apparatus and materials, including telecommunication equipment

are considered ICT.

71.33.1 Leasing or rental services of office machinery and equipment, without operator

71.33.11 Leasing or rental services of office machinery and equipment (excluding computing machinery), without operator

71.33.12 Leasing or rental services of computing machinery, without operator

might be considered ICT. But if 30.01 Manufacture of office machinery is considered to be mostly non-ICT then 71.33.11 should also be considered non-ICT.

#### Services - intangibles

All telecommunications services would be ICT (a proposal for a revised CPA/CPC is currently being elaborated by Eurostat.)

All computer and related services would be IT (a point of discussion might be the case of customised software – a parallel to electronic components – as they might be for other purposes than pure ICT)

#### **IV. Confidentiality**

##### Legal basis for the PRODCOM survey

The basis of the PRODCOM survey is Council Regulation (EEC) No 3924/91 on the establishment of a Community survey of industrial production (PRODCOM Regulation), which stipulates that production is to be recorded according to the PRODCOM list. It is further stated that, with regard to the transmission of survey results:

“ Member States shall send the findings relating to a one-year period to the Statistical Office of the European Communities within six months after the end of the reference year. These findings shall include data which are confidential under national law ; their confidential nature shall be explicitly stated. ”

With the entry into force of Council Regulation (EC) No 322/97, of 17 February 1997, on Community Statistics, the so-called “ Statistical Law ”, some significant changes to the rules and practices on statistical confidentiality have been introduced. Article 13 of Regulation No 322/97 states that :

“ Data used by the national authorities and the Community authority for the production of community statistics shall be considered confidential when they allow statistical units to be identified, either directly or indirectly, thereby disclosing individual information.”

A revision of the confidentiality rules taking into account the new legal framework is therefore currently under way.

As a result of discussions in the PRODCOM Committee, a number of principles have been agreed upon, such as that the PRODCOM Committee should aim to disseminate as much data as possible, particularly at European level and that the Confidentiality Committee shall be involved in the procedures for the treatment of confidential data in PRODCOM.

The most common disclosure avoidance rules are to restrict dissemination to data concerning a minimum number of producing units and not to disseminate a total in which a single unit is dominating. Such dominance occurs if the share of the biggest unit in the total exceeds a given percentage.

When transmitting data each Member State is to indicate the groups of units and the variables for which data are confidential under Council Regulation No 322/97. The nature of the confidentiality as well as the dominance figure for any individual enterprise should also be flagged.

### The confidentiality situation

The table below shows the percentage of the value data related to the ICT area collected in the PRODCOM survey with reference year 1996, that is confidential. For quantity data the percentage of data that are confidential is still higher. It is clear that it is not meaningful to publish national ICT goods data on this detailed level. There are big differences between the countries which of course depends on the industrial structure in the countries, but also might depend on differences in national laws on confidentiality. The latter reason should disappear with the implementation of the “ statistical law ”.

PRODCOM cells, related to the ICT sector definition, containing confidential data as a percentage of the total number of cells containing data. 1996 situation.

Member State	30.01	30.02	31.30	32.10	32.20	32.30	33.20	33.30
Belgium	100	78	80	85	90	100	98	0

Denmark	0	0	0	6	0	17	11	..
Germany	56	31	0	33	23	53	23	0
Greece	100	100	14	80	89	63	100	..
Spain	100	77	0	62	23	58	72	0
France	38	24	0	50	17	42	57	0
Ireland	13	50	20	28	33	16	24	..
Italy	100	38	27	74	40	36	45	..
Luxembourg	..	..	..	..	..	100	100	..
Netherlands	86	87	42	93	82	100	90	0
Austria	100	100	25	87	55	94	89	0
Portugal	100	100	25	100	71	67	100	0
Finland	100	94	83	93	82	98	97	0
Sweden	75	56	38	87	36	88	83	100
United Kingdom	35	38	0	30	0	29	19	0

No data reported: . .

My suggestion to overcome the confidentiality problem is that the PRODCOM list will be the basis for the definition of ICT goods, but that Member States report data on the ICT goods in CPA or NACE codes. Also the CPA level seems to lead to some confidentiality problems, so NACE codes or a combination seem to be the solution. In this way national comparisons will be possible. European aggregates could be published on a more detailed level, if needed.

## Conclusion

In order to develop a definition of ICT commodities and the collection of internationally comparable data, the following actions are proposed :

- The make matrix and the feasibility to gather data in the appropriate format should be investigated.
- The CPC/CPA concerning the ICT sector (as well as the content industry) should be revised and developed, taking the general revision of the CPC/CPA into account.
- More detailed services product classifications should be considered. Work on PRODSERV should be launched.
- The classification and data collection on distributive trade and new phenomena like multimedia should be investigated.
- As the crucial element of the guiding principles for the delineation of the ICT sector seems to be the communication aspect it is suggested that for a good to be regarded as an ICT good it should have “ plug-in ” facilities. Being electronic is not enough.
- A first tentative suggestion for the definition of ICT commodities is given in the annex. Comments and proposals are invited.
- To overcome the confidentiality problem, it is suggested that data on ICT goods should be reported in NACE or CPA codes by the Member States.
- An electronic discussion group for the definition of the ICT commodities as well as other Information Society related topics is being opened by Eurostat.
- The appropriate fora for the development of the ICT commodities definition are the Voorbourg Group, the Eurostat Working Group and Task Force on Statistics for the Information Society and the OECD Statistical Panel. A concertation of the treatment of the ICT commodities

definition in these fora would speed up the process of arriving to an agreement on a definition of ICT commodities..

**ANNEX****ICT Commodities expressed in CPA and Prodcod.**

References to CPC and HS

**CPA/PRODCOD****CPC(9) HS(1996/CN(1996))**  
**1**

<b>DIVISION 30 OFFICE MACHINERY AND COMPUTERS</b>			
<b>Group 30.0 Office machinery and computers</b>			
<b>Class 30.01 Office machinery and parts thereof</b>			
30.01.1	Typewriters, word-processing and calculating machines and parts thereof	451a	
30.01.11	Automatic typewriters and word-processing machines	45110	8469.1
<i>30011100 "Word-processors (incl. automatic typewriters)", "a"</i>			
30.01.13	Calculating and accounting machines, cash registers and similar machines incorporating a calculating device	45130	8470
<i>30011320 "Calculating machines",</i>			
<i>30011330 "Accounting machines",</i>			
<i>30011350 "Cash registers", "a"</i>			
30.01.14	Parts and accessories of typewriters and calculating machines	45170.1	8473[.1 + .2]
<i>30011430 "Parts and accessories of the machines of HS 8469",</i>			
<i>30011450 "Parts and accessories of the electronic calculating of HS 8470",</i>			
30.01.2	Photo-copying apparatus, offset printing and other office machinery and parts thereof	451b	
30.01.21	Photo-copying apparatus incorporating an optical system or of the contact type and thermo-copying apparatus	45140	9009[.1 - .3]
<i>30012150 "Blueprint and diazocopyers (excl. ordinary photographic printing frames)", "a"</i>			
<i>30012170 "Electrostatic photocopyers", "a"</i>			
<i>30012190 "Photocopyers incorporating an optical system, thermocopyers and contact type photocopyers (excl. electrostatic photocopyers, blueprinters and diazocopyers)", "a"</i>			

30.01.23	Other office machines	45160	8472
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30012393 "Digital customer self-service devices : cash, money exchange",

30.01.24	Parts and accessories of other office machines	45170.2	8473.4
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30012400 "Parts and accessories of the machines of HS 8472",

30.01.25	Parts and accessories of photocopying apparatus	45180	9009.9
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30012500 "Parts and accessories for photocopiers incorporating an optical system, contact type photocopiers and thermocopiers", "a"

30.01.9	Installation services of office machinery	886w	
30.01.90	Installation services of office machinery	88630.1	

30019000 "Installation of office machinery", "a"

<b>Class 30.02 Computers and other information processing equipment</b>			
30.02.1	Computing machinery and parts and accessories thereof	452	
30.02.11	Analogue or hybrid automatic data processing machines	45210	8471.1

30021100 "Analogue or hybrid automatic data processing machines",

30.02.12	Portable digital automatic data processing machines, weighing ≤ 10 kg, such as laptops, notebooks and sub-notebooks	45220.1	8471.3
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30021200 "Laptop PCs and palm-top organisers", "a"

30.02.13	Digital automatic data processing machines, comprising in the same housing at least a central processing unit and an input and an output unit, whether or not combined	45220.2	8471.41
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30021300 "Desk top PCs", "a"

30.02.14	Digital automatic data processing machines presented in the form of systems	45220.3	8471.49
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30021400 "Digital data processing machines: presented in the form of systems",

30.02.15	Other digital automatic data processing machines, whether or not containing in the same housing one or two of the following types of units: storage units, input units, output units	45230	8471.5
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30021500 "Other digital automatic data processing machines whether or not containing in the same housing 1 or 2 of the following units: storage units, input/output units",

30.02.16	Input or output units, whether or not containing storage units in the same housing	45240	8471.6
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30021630 "Printers and plotters", "a"

30021650 "Keyboards and scanners", "a"

30021670 "Input or output units whether or not containing storage units in the same housing (incl. mice) (excl. printers, plotters, keyboards, scanners)", "a"

30021673 "Monitors (visual display units)",

30021677 "Digital customer self-service devices : others",

30021679 "Other input, output units (incl. mice and plotters)",

30.02.17	Storage units	45250	8471.7
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30021730 "Central storage units", "a"

30021755 "CD-ROM drives", "a"

30021757 "Hard and floppy disk drives", "a"

30021770 "Magnetic tape storage units", "a"

30021790 "Storage units (excl. central storage units, disk storage units and magnetic tape storage units)", "a"

30.02.18	Other units of automatic data processing machines n.e.c.	45260	8471[.8 + .9]
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30021800 "Other machines for processing data, n.e.c.",

30.02.19	Parts and accessories of computing machines	45270	8473[.3 + .5]
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30021900 "Parts & access. of machines of HS 8471, incl. parts & access. equally suitable for use with >= 2 machines of HS 8469 to 8472 (excl. mice & hard disk drives)",

30.02.9	Installation services of computers and other data processing equipment	886x	
30.02.90	Installation services of computers and other data processing equipment	88630.2	

30029000 "Installation of computers and other information processing equipment", "a"



<b>DIVISION 31</b>	<b>ELECTRICAL MACHINERY AND APPARATUS N.E.C.</b>		
<b>Group 31.3</b>	<b>Insulated wire and cable</b>		
<b>Class 31.30</b>	<b>Insulated wire and cable</b>		
31.30.1	Insulated wire and cable; optical fibre cables	463a	
		46310	8544.1

31.30.12	Coaxial cable and other coaxial electric conductors	46320	8544.2
31301200	<i>"Insulated coaxial cables and other coaxial electric conductors for data and control purposes whether or not fitted with connectors", "a"</i>		

31.30.13	Other electric conductors, for a voltage $\leq 1\,000$ V	46340	8544[.4+.5]
31301330	<i>"Electrics conductors used for telecommunications whether or not fitted with connectors, for a voltage <math>\leq 80</math> V",</i>		
31301350	<i>"Other electric conductors for data &amp; control purposes whether or not fitted with connectors, voltage <math>\leq 80</math> V",</i>		

		46350	8544.6
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31.30.15	Optical fibre cables made up of individually sheathed fibres	46360	8544.7
31301500	<i>"Optical fibre cables made up of individually sheathed fibres whether or not assembled with electric conductors or fitted with connectors", "a"</i>		
31301503	<i>"Optical fibre cables for information transmission: telecommunication cables",</i>		
31301505	<i>"Optical fibre cables for data transmission",</i>		

<b>DIVISION 32</b>		<b>RADIO, TELEVISION AND COMMUNICATION EQUIPMENT AND APPARATUS</b>		
<b>Group 32.1</b>		<b>Electronic valves and tubes and other electronic components</b>		
<b>Class 32.10</b>		<b>Electronic valves and tubes and other electronic components</b>		
32.10.1	Electrical capacitors		471a	
32.10.11	Fixed capacitors for 50/60 Hz circuits having a reactive power handling capacity $\geq 0.5$ kvar		47110.1	8532.1

32101100 "Fixed power capacitors with a power handling capacity of  $> 0.5$  kVAr", "a"

32.10.12	Other fixed capacitors		47110.2	8532.2
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32101230 "Fixed tantalum capacitors", "a"

32101250 "Fixed aluminium capacitors", "a"

32101273 "Fixed single layer ceramic capacitors", "a"

32101275 "Fixed multilayer ceramic capacitors", "a"

32101277 "Fixed metallised paper or plastic capacitors", "a"

32101279 "Other fixed capacitors (excl. tantalum, aluminium, single or multilayer ceramic, metallised paper or plastic)", "a"

32.10.13	Variable or adjustable (pre-set) capacitors		47110.3	8532.3
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32101300 "Variable capacitors (incl. pre-sets)", "a"

32.10.2	Electrical resistors, except heating resistors		471b	
32.10.20	Electrical resistors, except heating resistors		47120	8533[.1 - .4]

32102020 "Fixed carbon or metal film resistors", "a"

32102035 "Other fixed resistors for a power handling capacity  $\leq 20$  W (excl. heating resistors, light dependent resistors)", "a"

32102037 "Other fixed electrical resistors for a power handling capacity  $> 20$  W (excl. heating resistors, light dependent resistors)", "a"

32102055 "Wirewound variable resistors for a power handling capacity  $\leq 20$  W", "a"

32102057 "Wirewound variable resistors for a power handling capacity  $> 20$  W", "a"

32102070 "Non wirewound variable resistors (incl. rheostats, potentiometers and trimmers)", "a"

32.10.3	Printed circuits		471c	
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32.10.30	Printed circuits	47130	8534
32103050	"Bare multilayer printed circuit boards", "a"		
32103070	"Bare printed circuit boards other than multilayer", "a"		
32103075	"Rigid printed circuits only conductor elements and contacts",		
32103077	"Flexible printed circuits only conductor elements and contacts",		
32103090	"Passive networks (incl. networks of resistors and/or capacitors) (excl. resistor chip arrays, capacitor chip arrays, boards containing active components, hybrids)", "a"		
32.10.4	Thermionic, cold cathode or photo-cathode valves and tubes, including cathode ray tubes	471d	
32.10.41	Cathode-ray television picture tubes; television camera tubes; other cathode-ray tubes	47140.1	8540[.1 - .6]
32104135	"Colour TV tubes", "a"		
32104137	"Black and white, monochrome TV tubes", "a"		
1998, "32104139", "EN",	"Monitor tubes (with a phosphor dot screen pitch < 0.4 mm)", "a"		
32104150	"Television camera tubes, image converters and intensifiers and other photo-cathode tubes", "a"		
32.10.42	Magnetrons, klystrons, microwave tubes and other valve tubes	47140.2	8540[.7 + .8]
32104200	"Magnetrons, klystrons, microwave tubes, valves and tubes",		
32.10.5	Diodes and transistors	471e	
32.10.51	Diodes; transistors; thyristors, diacs and triacs	47150.1	8541[.1 - .3]
32105120	"Semiconductor diodes", "a"		
32105130	"Semiconductor power rectifier diodes", "a"		
32105155	"Semiconductor small signal transistors with a dissipation rate < 1 W", "a"		
32105157	"Semiconductor power transistors with a dissipation rate >= 1 W", "a"		
32105170	"Semiconductor thyristors, diacs and triacs", "a"		
32.10.52	Semiconductor devices; light-emitting diodes; mounted piezo-electric crystals; parts thereof	47150.2	8541[.4 - .6]
32105235	"Semiconductor light emitting diodes (LEDs)", "a"		
32105237	"Photosensitive semiconductor devices; solar cells, photo-diodes, photo-transistors, etc.",		
32105250	"Semiconductor devices (excl. photosensitive semiconductor devices, photovoltaic cells, thyristors, diacs and triacs, transistors, diodes, and light-emitting diodes)", "a"		
32105270	"Mounted piezo-electric crystals (incl. quartz, oscillator and resonators)", "a"		
32.10.6	Electronic integrated circuits and microassemblies	471f	

32.10.60	Electronic integrated circuits and microassemblies	47160	8542[.1 - .5]
32106015	"Digital MOS integrated circuits (ICs): wafers not yet cut into chips", "α"		
32106017	"Digital MOS integrated circuits (ICs): chips", "α"		
32106025	"Digital MOS integrated circuits (ICs), DRAM (incl. modules) with a capacity <= 4 Mbits", "α"		
32106027	"Digital MOS integrated circuits (ICs), DRAM (incl. modules) with a capacity > 4 Mbits", "α"		
32106033	"Digital MOS integrated circuits (ICs), SRAM (incl. modules) with a capacity <= 256 Kbits", "α"		
32106035	"Digital MOS integrated circuits (ICs), SRAM (incl. modules) with a capacity > 256 Kbits but <= 1 Mbit", "α"		
32106037	"Digital MOS integrated circuits (ICs), SRAM (incl. modules) with a capacity > 1 Mbit", "α"		
32106053	"MOS UV erasable, programmable, read only memories: EPROMs: storage cap. <= 1 Mbit",		
32106055	"MOS UV erasable, programmable, read only memories: EPROMs: 1 Mbit < storage cap. <= 4 Mbit",		
32106057	"MOS UV erasable, programmable, read only memories: EPROMs: storage cap. > 4 Mbit",		
32106065	"Digital MOS integrated circuits (ICs) EEPROMS and flash EEPROMS", "α"		
32106069	"Digital MOS integrated circuits (ICs) memories (incl. ROM, FIFO, LIFO (excl. circuits consisting solely of passive elements, DRAMS, SRAMS, Cache-RAMS, [E]EPROMS)", "α"		
32106070	"Digital MOS integrated circuits (ICs), (CPUs and MPUs)", "α"		
32106093	"Other digital MOS integrated circuits (ICs) (incl. MPR, MCU, ASIC, standard logic, PLD and other logic)", "α"		
32106095	"Linear (analogue) integrated circuits (ICs)", "α"		
32106097	"Hybrid integrated circuits (excl. circuits consisting solely of passive elements)", "α"		
32106099	"Electronic microassemblies (excl. circuits consisting solely of passive elements, assemblies formed by mounting one or more discrete components on a support)", "α"		
32.10.7	Parts of electronic valves and tubes and of other electronic components	471g	
32.10.71	Parts of electrical capacitors	47171	8532.9
32107100	"Parts of fixed, variable or adjustable (pre-set) electrical capacitors", "α"		
32.10.72	Parts of electrical resistors, rheostats and potentiometers	47172	8533.9

32107200 "Parts of electrical resistors (incl. for rheostats and potentiometers) (excl. for heating resistors)", "a"

32.10.73	Parts of electronic valves and tubes and of other electronic components n.e.c.	47173	8540.9 + 8541.9 + 8542.9
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32107320 "Parts of cathode-ray tubes", "a"

32107330 "Parts of tubes and valves of HS 8540 (excl. parts of cathode-ray tubes)",

32107350 "Parts of devices of HS 8541",

32107370 "Parts of integrated circuits and microassemblies (excl. circuits consisting solely of passive elements)", "a"

<b>Group 32.2</b>		<b>Television and radio transmitters; apparatus for line telephony and telegraphy</b>	
<b>Class 32.20</b>		<b>Television and radio transmitters; apparatus for line telephony and telegraphy</b>	
32.20.1	Radio or television transmission apparatus; television cameras	472a	
32.20.11	Transmission apparatus for radio-telephony, radio-telegraphy, radio broadcasting or television	47211	8525[.1 + .2]

32201150 "Radio/tv transmission apparatus without reception apparatus",

32201170 "Radio transmission apparatus with reception apparatus",

32.20.12	Television cameras	47212	8525.3
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32201290 "Television cameras (incl. closed circuit TV cameras) (excl. camcorders)", "a"

32.20.2	Electrical apparatus for line telephony or line telegraphy; videophones	472b	
32.20.20	Electrical apparatus for line telephony or line telegraphy; videophones	47220	8517[.1 - .8]

32202020 "Telephone sets (incl. line telephone sets with cordless handsets, videophones) (excl. telephone answering machines not an integral part of the set)", "a"

32202030 "Teleprinters", "a"

32202040 "Telephonic or telegraphic switching apparatus (excl. relays and switching equipment such as selectors for automatic telephone exchangers)", "a"

32202050 "Telephonic/telegraphic apparatus for carrier-current line systems, n.e.c.",

32202060 "Electrical telephonic and telegraphic apparatus, n.e.c.",

32202075 "Facsimile machines", "a"

32.20.3	Parts of electrical telephonic or telegraphic apparatus	474a	
32.20.30	Parts of electrical telephonic or telegraphic apparatus	47401	8517.9

32203030 "Parts of electrical telephonic or telegraphic apparatus",

32203060 "Parts of electrical telephonic or telegraphic apparatus",

32.20.9	Installation, maintenance and repair services of television and radio transmitters and of apparatus for line telephony and telegraphy	886bb	
32.20.91	Installation services of television and radio transmitters and of apparatus for line telephony and telegraphy	88650.1	

32209100 "Installation of television and radio transmitters", "a"

32.20.92	Maintenance and repair services of television and radio transmitters and of apparatus for line telephony and telegraphy	88650.2	
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32209200 "Repair and maintenance of television and radio transmitters", "a"

<b>Group 32.3</b>		<b>Television and radio receivers; sound or video recording or reproducing apparatus and associated goods</b>	
<b>Class 32.30</b>		<b>Television and radio receivers; sound or video recording or reproducing apparatus and associated goods</b>	
32.30.1	Radio broadcast receivers	473a	
32.30.11	Radio broadcast receivers (except for cars), capable of operating without an external source of power	47311	8527[.1 + .3]

32301155 "Radio receivers, portable, sound recording or reproducing apparatus",

32301159 "Radio receivers, portable, n.e.c.",

32301175 "Radio receivers, with sound recording or reproducing apparatus",

32301177 "Other radio receivers not combined with sound recording or reproducing apparatus but combined with a clock",

32301179 "Radio receivers, n.e.c.",

32.30.12	Radio broadcast receivers not capable of operating without an external source of power	47312	8527.2
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32301270 "Radio receivers motor vehicles with sound recording or reproducing apparatus",

32301290 "Radio receivers for motor vehicles, n.e.c.",

32.30.2	Television receivers	473b	
32.30.20	Television receivers	47313	8528

32302020 "Colour television projection equipment and videoprojectors", "a"

32302030 "Colour televisions with a video recorder or player", "a"

32302045 "Colour video monitors with cathode-ray tube", "a"

32302049 "Flat panel video monitor, LCD or plasma, etc., without tuner (colour video monitors) (excl. with cathode-ray tube)", "a"

32302050 "Colour television receivers with integral tube (excl. television projection equipment, apparatus with a video recorder or player, video monitors)", "a"

32302060 "Colour television receivers with other screens",

32302075 "Tuner blocks for CTV/VCR and cable TV receiver units (colour video tuners) (excl. those which isolate high-frequency television signals)", "a"

32302079 "Satellite TV Receiver/Decoder (colour television receivers) (excl. with a screen, video tuners, video monitors, television projection equipment, with integral tube)", "a"

32302083 "Black and white or other monochrome video monitors", "a"

32302085 "Black and white or other monochrome television receivers (excl. video monitors)", "a"

32.30.3	Apparatus for sound and video recording and reproducing	473c	
32.30.31	Turntables, record-players, cassette-players and other sound reproducing apparatus	47321	8519

32303135 "Jukeboxes and the like (coin or disc-operated record-players)", "a"

32303139 "Record-players and turntables (record decks) (excl. coin or disc-operated record-players)", "a"

32303150 "Transcribing machines", "a"

32303175 "Sound reproducing apparatus, cassette type, unable to record",

32303179 "Other sound reproducing apparatus",

32.30.32	Magnetic tape recorders and other sound recording apparatus	47322	8520
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32303230 "Dictating machines operated by an external source of power", "a"

32303250 "Telephone answering machines with sound recording apparatus (excl. those forming an integral part of a telephone set)", "a"

32303275 "Cassette recorders (cassette player/recorders) (incl. recording personal stereos) (excl. those combined with a radio or television receiver, dictating machines, etc.)", "a"

32303279 "Other tape recorders (magnetic tape player/recorders) (excl. those combined with a radio or television receiver, dictating machines, telephone answering machines, cassette-type)", "a"

32303290 "Sound recording apparatus (incl. digital disc audio recorders) (excl. dictating machines, telephone answering machines, magnetic tape player/recorders)", "a"

32.30.33	Video recording or reproducing apparatus; camcorders and still image video cameras	47323	8521 + 8525.4
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32303335 "Electronic stills cameras and video camcorders (still image video cameras and other video camera recorders) (excl. closed circuit TV cameras)", "a"

32303339 "Other video apparatus (+ video tuner) with tapes  $\leq 1.3$  cm, speed  $\leq 50$  mm/s",

32303350 "Other magnetic tape-types video apparatus (incl. or not video tuner)",

32303370 "Video recorders or player/recorders (incl. laser or digital video disc players/recorders) (excl. those combined with a television, for magnetic tape)", "a"

32.30.4	Microphones, loudspeakers, reception apparatus for radio-telephony or telegraphy	473d	
32.30.41	Microphones and stands thereof	47331.1	8518.1
32304100	<i>"Microphones and their stands (excl. cordless microphones with a transmitter)", "a"</i>		
32.30.42	Loudspeakers; headphones, earphones and combined microphone/speaker sets	47331.2	8518[.2 + .5]
32304235	<i>"Single loudspeakers mounted in their enclosures (incl. frames or cabinets mainly designed for mounting loudspeakers)", "a"</i>		
32304237	<i>"Multiple loudspeakers mounted in the same enclosure (incl. frames or cabinets mainly designed for mounting loudspeakers)", "a"</i>		
32304239	<i>"Loudspeakers (incl. speaker drive units, frames or cabinets mainly designed for mounting loudspeakers) (excl. those mounted in their enclosures)", "a"</i>		
32304270	<i>"Headphones, earphones and combined microphone/speaker sets (excl. airmen's headgear with headphones, telephone sets, cordless microphones with a transmitter, hearing aids)", "a"</i>		
32.30.43	Audio-frequency electric amplifiers; electric sound amplifier sets	47331.3	8518[.4 + .5]
32304355	<i>"Telephonic and measurement amplifiers (excl. high or intermediate frequency amplifiers)", "a"</i>		
32304359	<i>"Audio-frequency electric amplifiers (incl. hi-fi amplifiers) (excl. high or intermediate frequency amplifiers, telephonic and measurement amplifiers)", "a"</i>		
32304370	<i>"Electric sound amplifier sets (incl. public address systems with microphone and speaker)", "a"</i>		
32.30.44	Reception apparatus for radio-telephony or radio-telegraphy n.e.c.	47332	8527.9
32304450	<i>"Portable receivers for calling or paging", "a"</i>		
32304490	<i>"Radio-telephony or radio-telegraphy reception apparatus (excl. portable receivers for calling or paging, those combined with radio receivers)", "a"</i>		
323044Z0	<i>"Portable receivers",</i>		
32.30.5	Parts of sound and video equipment; aerials	474b	
32.30.51	Parts and accessories of sound and video equipment	47402	8518.9 + 8522
32305130	<i>"Pick-up cartridges for discs or mechanically recorded sound films", "a"</i>		
32305150	<i>"Precious or semi-precious stones for styli", "a"</i>		
32305170	<i>"Other parts and accessories of 8519, 8520, 8521",</i>		
32305180	<i>"Parts of apparatus of 8518",</i>		
32.30.52	Aerials and reflectors of all kind and parts thereof; parts of radio receivers and transmitters; parts of radar equipment	47403	8529



32305220 "Telescopic and whip-type aerials for portable apparatus or for apparatus for fitting in motor vehicles", "a"

32305235 "Outside aerials for radio or television reception via satellite (incl. rotor systems) (excl. aerial amplifiers and radio frequency oscillator units)", "a"

32305239 "Outside aerials for radio or television reception (incl. rotor systems) (excl. for reception via satellite, aerial amplifiers and radio frequency oscillator units)", "a"

32305250 "Inside aerials for radio or television reception (incl. built-in types) (excl. aerial amplifiers and radio frequency oscillator units)", "a"

32305270 "Other aerials and parts",

32305280 "Parts of apparatus of 8525, 8526, 8527, 8528",

32.30.9	Installation, maintenance and repair services of professional radio, television, sound and video equipment	886cc	
32.30.91	Installation services of professional radio, television, sound and video equipment	88650.3	

32309100 "Installation services of professional radio, television, sound and video equipment", "a"

32.30.92	Maintenance and repair services of professional radio, television, sound and video equipment	88650.4	
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32309200 "Repair and maintenance services of professional radio, television, sound and video equipment", "a"

<b>DIVISION 33</b>		<b>MEDICAL, PRECISION AND OPTICAL INSTRUMENTS; WATCHES AND CLOCKS</b>	
<b>Group 33.2</b>		<b>Instruments and appliances for measuring, checking, testing, navigating and other purposes</b>	
<b>Class 33.20</b>		<b>Instruments and appliances for measuring, checking, testing, navigating and other purposes</b>	
33.20.1	Navigational, meteorological, geophysical and similar instruments and appliances	482a	
33.20.11	Direction-finding compasses; other navigational instruments and appliances	48211	9014[.1 - .8]

33201155 "Instruments and appliances for aeronautical or space navigation (excl. compasses)", "a"

33.20.12	Surveying, hydrographic, oceanographic, hydrological, meteorological or geophysical instruments and appliances	48212	9015[.1 - .8]
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33201215 "Electronic surveying and hydrographic instruments and appliances (incl. rangefinders, levels, theodolites and tacheometers, photogrammetrical instruments and appliances) (excl. comp)", "a"

33201219 "Other rangefinders, theodolites and tacheometers, levels, photogrammetrical applications",

33201235 "Other electronic instruments for meteorological purposes",

33201239 "Other electronic instruments, n.e.c.",

33.20.2	Radar apparatus, radio navigational aid apparatus and radio remote control apparatus	482b	
33.20.20	Radar apparatus, radio navigational aid apparatus and radio remote control apparatus	48220	8526

33202030 "Radar apparatus",

33202050 "Radio navigational aid apparatus (incl. radio beacons and radio buoys, receivers, radio compasses equipped with multiple aerials or with a directional frame aerial)", "a"

33202070 "Radio remote control apparatus (incl. for ships, pilotless aircraft, rockets, missiles, toys, and model ships or aircraft, for machines, for the detonation of mines)", "a"

33.20.3	Precision balances; instruments for drawing, calculating, measuring length and the like	482c	
		48231	9016

		48232	9017[.1 + .2]
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33.20.33	Instruments for measuring length, for use in the hand	48233	9017[.3 + .8]
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3203310 "Micrometers and callipers (incl. vernier, dial indicating or electronic callipers)", "a"

33.20.4	Instruments for measuring electrical quantities or ionizing radiations	482d	
33.20.41	Instruments and apparatus for measuring or detecting ionizing radiations	48241	9030.1

33204100 "Instruments and apparatus for measuring or detecting ionising radiations",

33.20.42	Cathode-ray oscilloscopes and cathode-ray oscillographs	48242	9030.2
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33204200 "Cathode-ray oscilloscopes and cathode-ray oscillographs", "a"

33.20.43	Instruments for measuring electrical quantities without a recording device	48243	9030.3
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33204310 "Multimeters", "a"

33204330 "Instruments and apparatus, for measuring or checking voltage... : electronic",

33204355 "Voltmeters", "a"

33204359 "Non-electronic instruments and apparatus, for measuring or checking voltage, current, resistance or power, without a recording device (excl. multimeters, voltmeters)", "a"

33.20.44	Instruments and apparatus for telecommunications	48244	9030.4
33204400	<i>"Instruments and apparatus, for telecommunications",</i>		
33.20.45	Instruments and apparatus for measuring or checking electrical quantities n.e.c.	48245	9030.8
33204520	<i>"Instruments and apparatus for measuring or checking semiconductor wafers or devices", "α"</i>		
33204530	<i>"Instruments and apparatus, with a recording device, for measuring or checking electric gains (excl. gas, liquid or electricity supply or production meters)", "α"</i>		
33204555	<i>"Electronic instruments and apparatus, WITHOUT a recording device, for measuring or checking electric gains (excl. gas, liquid or electricity supply or production meters)", "α"</i>		
33.20.5	Instrument for checking other physical characteristics	482e	
33.20.51	Hydrometers, thermometers, pyrometers, barometers, hygrometers and psychrometers	48251	9025[.1 + .8]
33205135	<i>"Electronic thermometers and pyrometers, not combined with other instruments (excl. liquid filled)", "α"</i>		
33.20.52	Instruments for measuring or checking the flow, level, pressure or other variables of liquids and gases	48252	9026[.1 - .8]
33205235	<i>"Electronic flow meters (excl. supply meters, hydrometric paddle-wheels)", "α"</i>		
33205239	<i>"Electronic instruments and apparatus for measuring or checking the level of liquids", "α"</i>		
33205271	<i>"Instruments... for measuring or checking pressure : electronic",</i>		
33.20.53	Instruments and apparatus for physical or chemical analysis n.e.c.	48253	9027[.1 - .8]
33205313	<i>"Electronic gas or smoke analysers", "α"</i>		
33205340	<i>"Exposure meters", "α"</i>		
33205350	<i>"Instruments and apparatus using optical radiations, n.e.c.",</i>		
33205381	<i>"Electronic pH and rH meters and other apparatus for measuring conductivity", "α"</i>		
33205383	<i>"Other electronic instruments and apparatus",</i>		
33.20.6	Other measuring, checking and testing instruments and appliances	482f 48261	9012.1
33.20.62	Machines and appliances for testing the mechanical properties of	48262	9024[.1 + .8]

materials			
33206210	"Electronic machines and appliances for testing the mechanical properties of metals (excl. metallographic machines or appliances, instruments for detecting defects)", "a"		
33206255	"Electronic machines and appliances for testing the properties of materials (excl. for metals)", "a"		
		48263	9028[.1 - .3]
		48264	9029[.1 + .2]
33.20.65	Measuring or checking instruments, appliances and machines n.e.c.	48265	9031[.1 - .8]
33206510	"Machines for balancing mechanical parts", "a"		
33206540	"Optical instruments and appliances for measuring or checking, n.e.c.",		
33206543	"Optical instruments and appliances for measuring or checking, n.e.c. : for cars",		
33206549	"Optical instruments and appliances for measuring or checking, n.e.c. : others",		
33206550	"Electronic instruments, appliances and machines for measuring or checking geometrical quantities (incl. comparators, coordinate measuring machines (CMMs))", "a"		
33206553	"Electronic instruments...measuring, checking geometrical quantities: 3 D",		
33206559	"Electronic instruments...measuring, checking geometrical quantities: others",		
33206570	"Other electronic instruments, appliances,... for measuring or checking",		
33206573	"Machines for measuring, checking materials by ultrasonic, eddycurrent, similar",		
33206579	"Other electronic instruments, appliances,... for measuring or checking",		
33206583	"Other instruments, appliances,... for measuring or checking geometrical quantities",		
33206589	"Other instruments, appliances and machines for measuring or checking",		
33.20.7	Thermostats, manostats and other automatic regulating or controlling instruments and apparatus	482g	
33.20.70	Thermostats, manostats and other automatic regulating or controlling instruments and apparatus	48270	9032[.1 - .8]
33207015	"Electronic thermostats", "a"		

33.20.8	Parts of instruments and appliances for measuring, checking, testing, navigating and other purposes	482h	
		48281	9014.9 + 9015.9 + 9017.9 + 9024.9 + 9025.9 + 9026.9 + 9027.9 + 9030.9 + 9031.9 + 9033

		48282	9012.9
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33.20.83	Parts and accessories for the goods of 33.20.63 and 33.20.64	48283	9028.9 + 9029.9
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33208333 "Parts and accessories of electricity meters",

33208350 "Parts and accessories of 9029",

33.20.84	Parts and accessories of instruments and apparatus of 33.20.7	48284	9032.9
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33208400 "Parts and accessories for automatic regulating or controlling instruments and apparatus", "α"

33.20.9	Installation, maintenance and repair services of instruments and apparatus for measuring, checking, testing, navigating and other purposes	886ee	
33.20.91	Installation services of instruments and apparatus for measuring, checking, testing, navigating and other purposes	88660.3	

33209100 "Installation of instruments and apparatus for measuring, checking, testing, navigating and other purposes (excl. industrial process control equipment)", "α"

33.20.92	Maintenance and repair services of instruments and apparatus for measuring, checking, testing, navigating and other purposes	88660.4	
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33209200 "Repair and maintenance of instruments and apparatus for measuring, checking, testing, navigating and other purposes (excl. industrial process control equipment)", "α"

<b>Group 33.3 Industrial process control equipment</b>			
<b>Class 33.30 Industrial process control equipment</b>			
33.30.1	Design and assembly services of industrial process control equipment, also for automated production plants	885k	
33.30.10	Design and assembly services of industrial process control equipment, also for automated production plants	88570	

33301000 "Design and assembly of industrial process control equipment and automated production plants", "α"

**SERVICES - GOODS RELATED**

<b>Class 51.43      Wholesale trade services of electrical household appliances and radio and television goods</b>	
51.43.2	Wholesale trade services of radio and television equipment and records
51.43.21	Wholesale trade services of radio, television and video equipment
51.43.22	Wholesale trade services of records, tapes and compact discs
<b>Class 51.64      Wholesale trade services of office machinery and equipment</b>	
51.64.1	Wholesale trade services of office machinery and equipment
51.64.11	Wholesale trade services of office machinery
51.64.12	Wholesale trade services of computers and peripheral equipment
<b>Class 51.65      Wholesale trade services of other machinery and equipment for use in industry, trade and navigation</b>	
51.65.1	Wholesale trade services of other machinery and equipment for use in industry, trade and navigation
51.65.15	Wholesale trade services of professional electrical and electronic machinery, apparatus and materials, including telecommunication equipment
51.65.16	Wholesale trade services of other general and special purpose machinery, apparatus and equipment

<b>Class 71.33      Renting services of office machinery and equipment including computers</b>	
71.33.1	Leasing or rental services of office machinery and equipment, without operator
71.33.11	Leasing or rental services of office machinery and equipment (excluding computing machinery), without operator
71.33.12	Leasing or rental services of computing machinery, without operator

**SERVICES - INTANGIBLE**

<b>Group 64.2      Telecommunications services</b>	
<b>Class 64.20      Telecommunications services</b>	
64.20.1	Data and message transmitting services
64.20.11	Public local telephone services
64.20.12	Public long distance telephone services
64.20.13	Mobile telephone services
64.20.14	Shared business network services
64.20.15	Dedicated business network services
64.20.16	Data network services
64.20.17	Electronic message and information services
64.20.2	Other telecommunications services
64.20.21	Television broadcast transmission services
64.20.22	Radio broadcast transmission services
64.20.23	Interconnection services
64.20.24	Integrated telecommunications services

64.20.25	Paging services
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64.20.26	Teleconferencing services
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64.20.27	Other telecommunications services
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64.20.3	Radio and television cable services
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64.20.30	Radio and television cable services
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DIVISION 72 COMPUTER AND RELATED SERVICES			
<b>Note:</b> The structure as well as the explanatory notes of CPA Division 72 do not follow the provisional CPC, but are based on "A Model Survey of Computer Services", United Nations, Statistical Papers, Series M, No 81, New York 1991.			
<b>Group 72.1 Hardware consultancy services</b>			
<b>Class 72.10 Hardware consultancy services</b>			
72.10.1	Hardware consultancy services	842a	
72.10.10	Hardware consultancy services	8421	
<b>Group 72.2 Software consultancy and supply services</b>			
<b>Class 72.20 Software consultancy and supply services</b>			
72.20.1	Recorded data bearing media of a kind used in automatic data processing machines	475c	
72.20.10	Recorded data bearing media of a kind used in automatic data processing machines	47520.3	8524[.31 + .4 + .6 + .91]
72.20.2	Programming services of packaged software products	841	
72.20.21	Programming services of systems and user tools software	8411	
72.20.22	Programming services of application software	8412	
72.20.3	Software consultancy and other supply services	842b	
72.20.31	Systems and technical consulting services	8422	
72.20.32	Custom software development services	8423	



72.20.33	Systems analysis and programming services	8424	
72.20.34	Systems maintenance services	8426	
72.20.35	Other professional computer-related services	8429	
<b>Group 72.3 Data processing services</b>			
<b>Class 72.30 Data processing services</b>			
72.30.1	Computer facilities management services	842c	
72.30.10	Computer facilities management services	8425	
72.30.2	Computer processing services	843	
72.30.21	Data processing and tabulation services	8431	
72.30.22	Data entry services	8432	
72.30.23	Other computer processing services	8439	
<b>Group 72.4 Database services</b>			
<b>Class 72.40 Database services</b>			
72.40.1	Database services	844	
72.40.10	Database services	84400	
<b>Group 72.5 Maintenance and repair services of office, accounting and computing machinery</b>			
<b>Class 72.50 Maintenance and repair services of office, accounting and computing machinery</b>			
72.50.1	Maintenance and repair services of office, accounting and computing machinery	845	
72.50.11	Maintenance and repair services of office and accounting machinery	84500.1	
72.50.12	Maintenance and repair services of computing machinery	84500.2	
<b>Group 72.6 Other computer-related services</b>			
<b>Class 72.60 Other computer-related services</b>			