



# **UPDATING THE PARTNERSHIP DEFINITION OF ICT GOODS FROM HS 2012 TO HS 2017**

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## Updating the Partnership Definition of ICT Goods From HS 2012 to HS 2017

### I. Introduction

To maximize benefits from participation in the information economy, governments need to monitor and benchmark progress based on measurable indicators with a view to designing and reviewing national policies and strategies. The Partnership on Measuring ICT for Development<sup>1</sup> (the Partnership) is a multi-stakeholder initiative which promotes the measurement of the information society at the international level, and is aimed at improving the availability and quality of internationally comparable ICT statistics. The United Nations Conference on Trade and Development (UNCTAD) is a founding member of the Partnership, focusing on measuring the e-commerce and the digital economy. UNCTAD is among other things responsible for the collection of the two Partnership Core Indicators on trade in ICT goods: the proportion of ICT goods in total exports and total imports by country.<sup>2</sup>

The ICT goods classification adopted by the Partnership was developed by the Organization for Economic Co-operation and Development (OECD) through its Working Party on Indicators for the Information Society (WPIIS). ICT goods are defined as "those that are either intended to fulfil the function of information processing and communication by electronic means, including transmission and display, which use electronic processing to detect, measure and/or record physical phenomena, or to control a physical process". When the definition was first released in 2003 it was based on a list of 6-digit items according to the World Customs Organization (WCO) Harmonized System (HS) classification, the HS 1996 and HS 2002 editions. Since then the definition of ICT goods has been revised (2008) and the transition from HS 2002 to HS 2007 resulted in a break in time series.<sup>3</sup> UNCTAD prepared a technical note on the analytical implications of applying the new definition of ICT goods.<sup>4</sup> And subsequently a second technical note on the transition from HS 2007 to HS 2012.<sup>5</sup>

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<sup>1</sup> Members of the Partnership are Eurostat, ITU, OECD, UNCTAD, UN-DESA, UNECA, UNECLAC, UNEPSBC, UNESCAP, UNESCO UIS, UNESCWA and the World Bank.

<sup>2</sup> See the *Manual on the production of statistics on the information economy, UNCTAD 2009, revised edition*. UNCTAD publishes annually data on core ICT indicators at: <http://unctadstat.unctad.org>.

<sup>3</sup> Measuring trends in ICT trade: From HS2002 to HS2007 / ICT product definition, OECD 2011, available online at: <http://unstats.un.org/unsd/class/intercop/expertgroup/2011/AC234-23.PDF>.

<sup>4</sup> Implications of applying the new definition of "ICT goods", UNCTAD 2012, available at: [http://new.unctad.org/Documents/ICT%20sector/ICTA\\_TN\\_1\\_unedited.PDF](http://new.unctad.org/Documents/ICT%20sector/ICTA_TN_1_unedited.PDF).

<sup>5</sup> Updating the Partnership Definition of ICT Goods from HS 2007 to HS 2012, UNCTAD 2014, available at: [http://unctad.org/en/PublicationsLibrary/tn\\_unctad\\_ict4d02\\_en.pdf](http://unctad.org/en/PublicationsLibrary/tn_unctad_ict4d02_en.pdf).

This technical note follows up on this previous stream of work and focuses on the transition from HS 2012 to HS 2017. The definition of ICT goods has to be updated to reflect the adoption of the new revision of the HS classification and to enable the use of data reported under HS 2017 for describing recent trends. UNCTAD requested the United Nations Statistics Division (UNSD) to establish the exact correspondence between HS 2012 and HS 2017 as regards the current definition of ICT goods. The correspondence table covers the five categories of ICT goods: a) electronic components, b) computers and peripheral equipment, c) communication equipment, d) consumer electronic equipment, e) miscellaneous.

Annex I shows the revised list of ICT goods in HS 2017.

## II. Methodology

The step-by-step procedure applied by UNSD is described below.

The main goal was to update the ICT goods definition of the Partnership from HS 2012 to HS 2017. The HS 2012 definition of ICT goods was used together with the UNSD correlation table from HS 2017 to HS 2012.<sup>6</sup> Correlation tables specify how subheadings in a given HS edition will be converted into subheadings of a different HS edition.

The first step was to identify the relationship of each ICT good subheading (HS 2012) with the corresponding HS 2017 subheading(s), then select the subheadings in HS 2017 that they should be converted into, and provide the list of HS 2017 codes that correspond to the HS 2012 definition of ICT goods. Looking at the correspondence from HS 2017 to HS 2012, there are five different possible types of correlations for each subheading. A recommended action was identified for each case:

- a. Correlation 1:1. The HS 2012 subheading has an exact one-to-one match in HS 2017. In other words, this subheading did not change between the two HS editions. *Action:* Do nothing [CASE 1].
- b. Correlation 1:n. Multiple HS 2012 subheadings were merged into a single HS 2017 subheading. *Action:* Check if all HS 2012 subheadings being merged are in the same sub component. If yes, keep HS 2017 subheading in that sub component [CASE 2], otherwise designate the right sub component [CASE 3].
- c. Correlation n:1. A single HS 2012 subheading was split into multiple HS 2017 subheadings. *Action:* Keep all HS 2017 subheadings into the same sub component as the original HS 2012 subheading [CASE 4].
- d. Correlation n:n. Multiple HS 2012 subheadings were converted into multiple HS 2017 subheadings. *Action:* cross check with UNSD conversion table between HS 2017 and HS 2012 and compare the descriptions. Take a decision on a case-by-case basis [CASE 5].

In addition, ICT goods related new HS 2017 codes and discontinued HS 2017 codes are reviewed separately to ensure the full coverage of ICT goods.

## III. Analysis and results

For the total of 93 HS 2012 subheadings included under the definition of ICT goods, 195 correlation relationships were identified (table 1).

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<sup>6</sup> Available online at : <https://unstats.un.org/unsd/trade/classifications/correspondence-tables.asp>.

Table 1. Type of correlation relationships identified for the 93 HS 2012 sub-headings included in the definition of ICT goods

Type of correlation from HS 2017 to HS 2012	No of correlation relationships
CASE 1 (1:1)	57
CASE 2 OR 3 (1:n)	8
CASE 4 (n:1)	28
CASE 5 (n:n)	102

Note: More than one relationship were identified for some of the sub-headings. For example HS 2012 852849 has both an n:1 relationship and an n:n relationship.

The details of each case are elaborated below.

**CASE 1:**

Fifty-seven subheadings retain their definition and scope between HS 2012 and HS 2017.

*Action:* these subheadings are kept unchanged.

**CASE 2:**

Eight subheadings were merged into other subheadings:

- A. Subheadings 877290 and 846900 in HS 2012 were merged into subheading 847290 in HS 2017 (table 2)

Table 2. Example of HS 2012 sub-headings that were merged into one HS 2017 sub-heading

HS 2017		HS 2012	
847290	Office machines; not elsewhere classified	847290	Office machines; not elsewhere classified
		846900	Typewriters (other than printers of heading no. 8443) and word-processing machines

*Action:* HS 2017 subheading 877290 is kept on the list of ICT goods under computers and peripheral equipment. Note that HS 2012 846900 was not part of original ICT goods definition in HS 2010.

- B. Subheadings 852841 and 852849 in HS 2012 were merged into subheading 852842 in HS 2017 (table 3)

Table 3. Example of HS 2012 sub-headings that were merged into one HS 2017 sub-heading

HS 2017		HS 2012	
852842	Monitors; cathode-ray tube, capable of directly connecting to and designed for use with an automatic data processing machine of heading 84.71	852841	Cathode-ray tube monitors; of a kind solely or principally used in an automatic data processing system of heading 84.71
		852849	Cathode-ray tube monitors; other than of a kind solely or principally used in an automatic data processing system of heading 84.71

*Action:* HS 2017 subheading 852842 is kept on the list of ICT goods under computers and peripheral equipment replacing the previous HS 2012 852841.

**CASE 5, multi-component semiconductors:**

There are 102 cases in which more than one HS 2012 subheading is converted to more than one HS 2017 subheading. The large number of cases is due to the expansion of the scope of heading 8542 to include multi-component semiconductor devices (MCOs). For example, the old HS 2012 subheading 851712 is split into 851712 and several 85423 subheadings in HS 2017, then 85423 in HS 2017 is included in several subheadings in HS 2012 in chapters 84, 85, 90, 93 and 95. Subheading 85423 in HS 2017 refers to MCOs, first defined in new Note 9 (b)(iv) to Chapter 85. They are advanced semiconductor devices that must include an integrated circuit, must be multi-components, must be combined to all intents and purposes indivisibly and must be for mounting onto a printed circuit board (PCB) or other carrier. The correlation table developed by the World Customs Organization (WCO) indicates only a general comment between MCOs (HS 2017 subheadings of heading 85.42) and the subheadings under which MCOs might be classified in the HS 2012 edition (see table 4).

Table 4. Sub-headings for multi-component semiconductors

HS 2017	HS 2012	Remarks
8542.31	8542.31 [Applicable subheadings, in particular in Chapters 84, 85, 90, 93 and 95]	Expansion of the scope of heading 85.42 to include multi-component integrated circuits (MCOs). These MCOs have been defined in new Note 9 (b) (iv) to Chapter 85.
8542.32	8542.32 [Applicable subheadings, in particular in Chapters 84, 85, 90, 93 and 95]	Expansion of the scope of heading 85.42 entails the transfer of certain products currently covered by other headings of the Nomenclature (in particular, but not limited to, headings 84.22, 84.31, 84.43, 84.50, 84.66, 84.73, 84.76, 85.04, 85.17, 85.18, 85.22, 85.29, 85.30, 85.31, 85.35, 85.36, 85.37, 85.38, 85.43, 85.48, 87.08, 90.25, 90.26, 90.30, 90.31, 90.32, 90.33, 93.05, 93.06 and 95.04) to subheading 8542.31, 8542.32, 8542.33 or 8542.39.
8542.33	8542.33 [Applicable subheadings, in particular in Chapter 85]	
8542.39	8542.39 [Applicable subheadings, in particular in Chapters 84, 85, 90, 93 and 95]	

Most of the HS 2017 codes covered by this case were already previously included in the ICT goods definition in HS 2012.

*Action:* Considering that MCOs are part of ICT goods; the majority of the n:n cases are straightforward. The decision is to include most related HS 2017 sub-headings in ICT goods and identify the correct allocation by ICT sub-components (table 5).

Table 5. New HS 2017 subheadings and discontinued HS 2012 subheadings

HS 2017 new subheadings		HS 2012 discontinued subheadings	
852842	Monitors; cathode-ray tube, capable of directly connecting to and designed for use with an automatic data processing machine of heading 84.71	852841	Cathode-ray tube monitors; of a kind solely or principally used in an automatic data processing system of heading 84.71
852852	Monitors; other than cathode-ray tube; capable of directly connecting to and designed for use with an automatic data processing machine of heading 84.71	852851	Monitors other than cathode-ray tube; of a kind solely or principally used in an automatic data processing system of heading 84.71
852862	Projectors; capable of directly connecting to and designed for use with an automatic data processing machine of heading 84.71	852861	Projectors; of a kind solely or principally used in an automatic data processing system of heading 84.71
962000	Monopods, bipods, tripods and similar articles		

From the four new HS 2017 sub-headings identified as possibly falling under the ICT goods definition, three are an expansion of the scope of relevant HS 2012 sub-headings. For HS 2017 sub-headings 852442, 852852 and 852862 (Cathode-ray tubes, monitors and projectors, respectively) the definition specifies that the machines are capable of directly connecting to and designed for the use with automatic data processing machines. Therefore, all of them should be part of ICT goods definition. Whereas sub-heading HS 2017 962000 (Monopods, bipods, tripods and similar articles) is a combination of several HS 2012 codes (of which only three were part of ICT goods) see table below.

Table 6. HS 2017 code 962000 full correlation with the corresponding HS 2012 sub-headings

<b>HS 2012</b>	<b>ICT sub-component</b>	<b>Description</b>
392690	None	Plastics; other articles n.e.c. in chapter 39
442190	None	Wood; articles of wood n.e.c. in heading no. 4414 to 4420 (excluding clothes hangers)
681510	None	Stone articles and other mineral substances, non-electrical articles of graphite or other carbon
732690	None	Iron or steel; articles n.e.c. in heading 7326
761699	None	Aluminum; articles n.e.c. in heading 7616
843139	None	Machinery; parts of the machinery of heading no. 8428, (other than lifts, skip hoists or escalators)
847330	A-Computers and peripheral equipment	Machinery; parts and accessories of the machines of heading no. 8471 (other than covers, carrying cases)
848790	None	Machinery parts; not containing electrical connectors, insulators, coils, contacts or other electrical features, n.e.c. in chapter 84
852290	C-Consumer electronic equipment	Sound or video recording apparatus; parts and accessories thereof, other than pick-up cartridges
852990	E- Miscellaneous	Reception and transmission apparatus; for use with the apparatus of heading no. 8525 to 8528, excluding aerials and aerial reflectors
900590	None	Binoculars, monoculars, other optical telescopes, astronomical instruments (excluding those of radio-astronomy); parts and accessories (including mountings)
900691	None	Cameras, photographic (excluding cinematographic); parts and accessories
900791	None	Cameras, cinematographic; parts and accessories, whether incorporating sound recording apparatus
901590	None	Surveying equipment; parts and accessories for articles of heading no. 9015
903300	None	Machines and appliances; instruments or apparatus of chapter 90; parts and accessories n.e.c. in chapter 90
920999	None	Musical instruments; parts and accessories for musical instruments n.e.c. in heading no. 9209; metronomes, tuning forks and pitch pipes

*Action 1:* Include HS 2017 codes 852842, 852852 and 852862 in the ICT goods list with the respective sub-component.

*Action 2:* After reviewing the relevant HS explanatory notes, do not add the HS 2017 code 962000 to the ICT goods list as this does not fulfil the function of information processing and communication.

A complete list of ICT goods based on HS 2017 is provided in Annex I (total of 94 HS 2017 subheadings).

## Annex I. List of ICT goods based on HS 2017

<b>A-Computers and peripheral equipment</b>	
844331	Printing, copying, and facsimile machines; machines which perform two or more of the functions of printing, copying or facsimile transmission, capable of connecting to an automatic data processing machine or to a network
844332	Printing, copying, and facsimile machines; single-function printing, copying or facsimile machines, capable of connecting to an automatic data processing machine or to a network
847050	Cash registers
847130	Automatic data processing machines; portable, weighing not more than 10kg, consisting of at least a central processing unit, a keyboard and a display
847141	Automatic data processing machines; comprising in the same housing at least a central processing unit and an input and output unit, whether or not combined, n.e.c. in item no. 8471.30
847149	Automatic data processing machines; presented in the form of systems, n.e.c. in item no. 8471.30 or 8471.41
847150	Units of automatic data processing machines; processing units other than those of item no. 8471.41 or 8471.49, whether or not containing in the same housing one or two of the following types of unit: storage units, input units or output units
847160	Units of automatic data processing machines; input or output units, whether or not containing storage units in the same housing
847170	Units of automatic data processing machines; storage units
847180	Units of automatic data processing machines; n.e.c. in item no. 8471.50, 8471.60 or 8471.70
847190	Magnetic or optical readers, machines for transcribing data onto data media in coded form and machines for processing such data, not elsewhere specified or included
847290	Office machines; not elsewhere classified
847330	Machinery; parts and accessories (other than covers, carrying cases and the like) of the machines of heading no. 8471
847340	Machinery; parts and accessories (other than covers, carrying cases and the like) of the machines of heading no. 8472
847350	Machines; parts and accessories (other than covers, carrying cases and the like) equally suitable for use with machines of two or more of the headings 8470 to 8472
852842	Monitors; cathode-ray tube, capable of directly connecting to and designed for use with an automatic data processing machine of heading 84.71
852852	Monitors; other than cathode-ray tube; capable of directly connecting to and designed for use with an automatic data processing machine of heading 84.71
<b>B-Communication equipment</b>	
851711	Line telephone sets with cordless handsets
851712	Telephones for cellular networks or for other wireless networks
851718	Telephone sets n.e.c. in item no. 8517.1
851761	Base stations
851762	Communication apparatus (excluding telephone sets or base stations); machines for the reception, conversion and transmission or regeneration of voice, images or other data, including switching and routing apparatus
851769	Communication apparatus (excluding telephone sets or base stations); machines for the transmission or reception of voice, images or other data (including wired/wireless networks), n.e.c. in item no. 8517.6

851770	Telephone sets and other apparatus for the transmission or reception of voice, images or other data, via a wired or wireless network; parts
852550	Transmission apparatus for radio-broadcasting or television, whether or not incorporating sound recording or reproducing apparatus, not incorporating reception apparatus
852560	Transmission apparatus for radio-broadcasting or television, whether or not incorporating sound recording or reproducing apparatus, incorporating reception apparatus
853110	Signaling apparatus; electric, sound or visual, burglar or fire alarms and similar, other than those of heading no. 8512 or 8530

**C-Consumer electronic equipment**

851810	Microphones and stands therefore
851821	Loudspeakers; single, mounted in their enclosures
851822	Loudspeakers; multiple, mounted in the same enclosure
851829	Loudspeakers; not mounted in their enclosures
851830	Headphones and earphones, whether or not combined with a microphone, and sets consisting of a microphone and one or more loudspeakers
851840	Amplifiers; audio-frequency electric
851850	Amplifier sets; electric sound
851890	Microphones, headphones, earphones, amplifier equipment; parts of the equipment of heading no. 8518
851920	Sound recording or reproducing apparatus; operated by coins, banknotes, bank cards, tokens or by other means of payment
851930	Sound recording or reproducing apparatus; turntables (record-decks)
851950	Sound recording or reproducing apparatus; telephone answering machines
851981	Sound recording or reproducing apparatus; using magnetic, optical or semiconductor media, n.e.c. in item no 8519.20, 8519.30 or 8519.50
851989	Sound recording or reproducing apparatus; n.e.c. in heading no 8519
852110	Video recording or reproducing apparatus; magnetic tape-type
852190	Video recording or reproducing apparatus; other than magnetic tape-type
852210	Sound recording or reproducing apparatus; parts and accessories thereof, pick-up cartridges
852290	Sound or video recording or reproducing apparatus; parts and accessories thereof, other than pick-up cartridges
852580	Television cameras, digital cameras and video camera recorders
852712	Radio broadcast receivers capable of operating without an external power source; pocket-size radio cassette-players
852713	Radio broadcast receivers capable of operating without an external power source; apparatus (other than pocket-size radio cassette-players), combined with sound recording or reproducing apparatus
852719	Radio broadcast receivers capable of operating without an external power source; n.e.c. in item no. 8527.1
852721	Radio-broadcast receivers not capable of operating without an external source of power, of a kind used in motor vehicles; combined with sound recording or reproducing apparatus
852729	Radio-broadcast receivers not capable of operating without an external source of power, of a kind used in motor vehicles; not combined with sound recording or reproducing apparatus



852791	Radio-broadcast receivers n.e.c. in heading no. 8527; combined with sound recording or reproducing apparatus
852792	Radio-broadcast receivers n.e.c. in heading no. 8527; not combined with sound recording or reproducing apparatus but combined with a clock
852799	Radio-broadcast receivers n.e.c. in heading no. 8527; not combined with sound recording or reproducing apparatus and not combined with a clock
852849	Monitors; cathode-ray tube, n.e.c. in subheading 8528.42, whether or not colour
852859	Monitors other than cathode-ray tube; n.e.c. in subheading 8528.52, whether or not colour
852862	Projectors; capable of directly connecting to and designed for use with an automatic data processing machine of heading 84.71
852869	Projectors; n.e.c. in subheading 8528.62, whether or not colour
852871	Reception apparatus for television, whether or not incorporating radio-broadcast receivers or sound or video recording or reproducing apparatus; not designed to incorporate a video display or screen
852872	Reception apparatus for television, whether or not incorporating radio-broadcast receivers or sound or video recording or reproducing apparatus; incorporating a colour video display or screen
852873	Reception apparatus for television, whether or not incorporating radio-broadcast receivers or sound or video recording or reproducing apparatus; incorporating a monochrome video display or screen
950450	Games; video game consoles and machines, other than those of subheading 9504.30

#### **D- Electronic components**

852321	Magnetic media; cards incorporating a magnetic stripe, whether or not recorded, excluding products of Chapter 37
852352	Semiconductor media; smart cards, whether or not recorded, excluding products of Chapter 37
853400	Circuits; printed
854011	Tubes; cathode-ray television picture tubes, including video monitor cathode-ray tubes, colour
854012	Tubes; cathode-ray television picture tubes, including video monitor cathode-ray tubes, monochrome
854020	Tubes; television camera tubes, image converters and intensifiers, other photocathode tubes
854040	Tubes; data/graphic display tubes, monochrome; data/graphic display tubes, colour, with a phosphor dot screen pitch smaller than 0.4mm
854060	Tubes; cathode ray, n.e.c. in heading no. 8540
854071	Tubes; microwave, magnetrons, excluding grid-controlled tubes
854079	Tubes; microwave (for example klystrons, travelling wave tubes, carlinotrons), excluding magnetrons and grid-controlled tubes
854081	Valves and tubes; receiver or amplifier
854089	Valves and tubes; n.e.c. in heading no. 8540
854091	Tubes; parts of cathode-ray tubes
854099	Valves and tubes; parts of the valves and tubes of heading no. 8540, excluding parts of cathode-ray tubes
854110	Electrical apparatus; diodes, other than photosensitive or light-emitting diodes (LED)
854121	Electrical apparatus; transistors, (other than photosensitive), with a dissipation rate of less than 1W
854129	Electrical apparatus; transistors, (other than photosensitive), with a dissipation rate of 1W or more

854130	Electrical apparatus; thyristors, diacs and triacs, other than photosensitive devices
854140	Electrical apparatus; photosensitive, including photovoltaic cells, whether or not assembled in modules or made up into panels, light-emitting diodes (LED)
854150	Electrical apparatus; photosensitive semiconductor devices n.e.c. in heading no. 8541, including photovoltaic cells, whether or not assembled in modules or made up into panels
854160	Crystals; mounted piezo-electric
854190	Electrical apparatus; parts for diodes, transistors and similar semiconductor devices and photosensitive semiconductor devices
854231	Electronic integrated circuits; processors and controllers, whether or not combined with memories, converters, logic circuits, amplifiers, clock and timing circuits, or other circuits
854232	Electronic integrated circuits; memories
854233	Electronic integrated circuits; amplifiers
854239	Electronic integrated circuits; n.e.c. in heading no. 8542
854290	Parts of electronic integrated circuits
<b>E- Miscellaneous</b>	
852351	Semiconductor media; solid-state non-volatile storage devices, whether or not recorded, excluding products of Chapter 37
852359	Semiconductor media; other than smart cards, whether or not recorded, excluding products of Chapter 37
852380	Media n.e.c. in heading 8523, whether or not recorded, excluding products of Chapter 37
852910	Reception and transmission apparatus; aerials and aerial reflectors of all kinds and parts suitable for use therewith
852990	Reception and transmission apparatus; for use with the apparatus of heading no. 8525 to 8528, excluding aerials and aerial reflectors
901320	Lasers; other than laser diodes



## UNCTAD Technical Notes on ICT for Development

1. Implications of Applying the New Definition of «ICT Goods», May 2011
2. Updating the Partnership Definition of ICT Goods From HS 2007 to HS 2012, January 2014
3. International Trade in ICT Services and ICT-enabled Services: Proposed Indicators from the Partnership on Measuring ICT for Development, October 2015
4. Global Assessment of Sex-disaggregated ICT Employment Statistics: Data Availability and Challenges on Measurement and Compilation, December 2015
5. Trade in ICT Goods and the 2015 Expansion of the WTO Information Technology Agreement, December 2015
6. In Search of Cross-border E-commerce Trade Data, April 2016
7. UNCTAD B2C E-commerce Index 2016, April 2016
8. The «New» Digital Economy and Development, October 2017
9. UNCTAD B2C E-commerce Index 2017, October 2017
10. Updating the Partnership Definition of ICT Goods From HS 2012 to HS 2017, February 2018

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