



EUROPEAN COMMISSION  
EUROSTAT

Directorate F: Social Statistics  
**Unit F-3: Labour market and lifelong learning**



**CVTS 5 manual**

**Version 1.2**

1 December 2016

## Table of Contents

<b>LIST OF ANNEXES .....</b>	<b>3</b>
<b>SECTION 1 – INTRODUCTION .....</b>	<b>4</b>
<b>SECTION 2 – EUROPEAN STANDARD QUESTIONNAIRE .....</b>	<b>6</b>
<b>SECTION 3 – CONCEPTS AND DEFINITIONS .....</b>	<b>21</b>
3.1 Concepts – general scope of the continuing vocational training survey (CVTS 5) .....	21
3.2 Characteristics of continuing vocational training (CVT) .....	21
3.3 Characteristics of initial vocational training (IVT) .....	22
3.4 CVTS 5 framework for IVT and CVT – summary table .....	22
3.5 Definitions .....	24
<b>SECTION 4 – SURVEY GUIDELINES FOR CVTS 5 .....</b>	<b>31</b>
4.1 Background .....	31
4.2 Data collection .....	31
4.3 Sampling .....	33
4.4 Timetable and data transmission to Eurostat .....	40
4.5 National quality reports .....	40
<b>SECTION 5 – THE INFORMATICS FRAMEWORK FOR CVTS 5 .....</b>	<b>41</b>
5.1 Data transmission formats .....	41
5.2 Logical data checks .....	41
5.3 Data validation software .....	42

## List of annexes

- Annex 1: NACE Rev. 2 categories for stratification and dissemination
- Annex 2: Enterprise size classes for stratification and dissemination
- Annex 3: Participants, hours and labour costs
- Annex 4: Costs of CVT courses
- Annex 5: Questions on needs of skills and competences
- Annex 6: Other methodological issues
- Annex 7: Code book
- Annex 8: Checking rules – field level
- Annex 9: Checking rules – record level
- Annex 10: Checking rules – file level
- Annex 11: Control table
- Annex 12: Codes for country, language and region
- Annex 13: NACE Rev. 2 codes for data collection
- Annex 14: International Standard Classification of Education (ISCED) 2011
- Annex 15: Training providers
- Annex 16: Comparability between CVTS waves
- Annex 17: Standard quality report
- Annex 18: Basic legal act for CVTS
- Annex 19: Implementing regulation for CVTS 5

# Section 1 – Introduction

Enterprise investment in continuing vocational training, designed to promote human capital resources, is a key dynamic of economic performance, competitiveness, and employment in Europe and reflects the role of enterprises in resolving labour market imperfections and employment imbalances.

A high quality data set reflecting the continuing vocational training activities of European enterprises is an indispensable asset in the assessment of enterprise competitiveness and workforce employability and is key to the analysis of

- labour skills supply and demand,
- the forms, skills targeted and volume of training offered and training needs,
- the enterprises' own internal provision of vocational training as a function of that provided on the external market,
- costs of enterprise based vocational training,
- effectiveness of CVT activities and public funding initiatives.

Before 2005, the continuing vocational training survey (CVTS) has been carried out under “gentlemen’s agreements” between countries and Eurostat. As from 2005, it is based on European legislation.

## CVTS 1 (reference year 1993)

The first CVTS (CVTS 1) was carried out in 1994 in the then 12 Member States of the European Union and was part of the action programme for the development of continuing vocational training in the European Community (FORCE) based on Council Decision 90/267/EEC of 29 May 1990.

## CVTS 2 (reference year 1999)

The growing policy interest in data on continuing vocational training in enterprises together with the demand for CVT data to cover the 15 Member States led the Commission to promote a second and further developed continuing vocational training survey (CVTS 2) in 1999. This survey, coordinated by the Statistical Office of the European Union (Eurostat), was carried out in all the EU Member States, in Norway and in nine candidate countries.

## CVTS 3 (reference year 2005)

The third implementation (CVTS 3) was carried out in 2006 with reference to 2005 CVT activities. It was for the first time underpinned by a European legal act, [Regulation \(EC\) No 1552/2005](#) of the European Parliament and of the Council of 7 September 2005 on statistics relating to vocational training in enterprises. Implementing details were provided in [Commission Regulation \(EC\) No 198/2006](#).

The development of the CVTS 3 survey has been supported by all Member States and Norway, Trade Unions (ETUC), CEDEFOP, as well as the Commission Directorate-General Education and Culture (DG EAC) and the Directorate-General Employment, social affairs and equal opportunities (DG EMPL) in order to:

- retain compatibility with CVTS 2 while correcting for known deficiencies,
- focus on key policy user needs and the specific demands of the regulation,
- reduce the burden of the survey on enterprises compared to previous implementations,
- improve the quality of key variables and the dataset as a whole,
- extend the survey to cover, for the first time, questions on costs and participation in initial vocational training (IVT),
- reinforce the national quality reporting framework,
- understand better the reasons why enterprises do not train.

## CVTS 4 (reference year 2010)

An amendment to the Regulation (EC) No 198/2006 was prepared in 2009-2010 in order to further improve the quality of the results on vocational training in enterprises and lower the statistical burden on enterprises as well as to ensure coherence with the information coming from the Adult Education Survey (AES). [Commission Regulation \(EU\) No 822/2010](#) adapted the codification scheme, sampling, precision and quality requirements for CVTS 4. Compared to CVTS 3, the following was changed.

Simplification of the list of variables: CVTS 3 variables which are not required for breakdowns of the CVTS results any longer and which are available from the AES and the LFS have been suppressed. This concerns in particular some quantitative breakdowns (e.g. by sex and age or distribution of training hours by field of training or by provider) and some questions on

disadvantaged groups. The module on initial vocational training (IVT) has been significantly simplified as the 2005 data collection put forward many implementation issues which hampered the comparability across countries. Other sources can however be considered to provide information on IVT costs such as the UNESCO-OECD-Eurostat (UOE) joint data collection on education systems.

Standard questionnaire: the order of the questions was changed and few adjustments on questions related to enterprise training strategies were introduced in order to improve the relevance and quality of the results. This covered a widening of some filters on variables on enterprises strategies requested only to training enterprises in the past.

Optional variables were proposed in the implementation manual in order to contribute to the harmonisation of data collected by few Member States.

Few new variables were added to highlight in particular how continuing vocational training can reply to enterprise future skill needs.

Precision requirements were adapted to the classification of economic activities NACE Rev. 2 as well as additional requirements for the representativeness of the results in large countries. (i.e. using a stratification based on 6 enterprise classes instead of 3 in the past) as this ensures the production of more accurate EU results.

### CVTS 5 (reference year 2015)

Despite of the streamlining of contents (i.e. a significant reduction of variables) that took place for CVTS 4 (reference year 2010), the still considerable burden on respondents as well as quality concerns made the CVTS a controversial survey within the European Statistical System (ESS) and at the meeting of the ESS Committee in May 2011, CVTS was earmarked as negative priority.

Indeed, when reviewing CVTS 2010 results, issues such as the length and burden of the survey, quality problems of the quantitative variables (costs, participants), possible overlap with other enterprise surveys and low response rates were identified.

At the same time, CVTS is the only integrated source for collecting CVT costs, participation of persons employed in CVT and CVT strategies of enterprises, and there is a persistent strong policy demand for comparable data on vocational training in enterprises. In order to investigate alternative ways to collect relevant data for CVT, Eurostat together with a dedicated Task Force explored the feasibility of an alternative approach for CVT data provision but this work had to conclude that for the time being only CVTS can provide the requested data.

With the aim of further reducing the burden of CVTS to the extent possible, the list of variables was further shortened and simplified whenever possible. However, in view of the major streamlining that took place between 2005 (CVTS 3) and 2010 (CVTS 4), it was necessary to find a good balance between further burden reduction and keeping the survey relevant. This work resulted in [Commission Regulation \(EU\) No 1153/2014](#) which provides the list of variables covered by CVTS 5. The draft of this Regulation had been supported by all Member States at the meeting of the ESS Committee in May 2014 (EEA/EFTA was against. Switzerland abstained).

The changes in CVTS 5 compared to CVTS 4 are as follows:

Variables simplified in CVTS 5	CVTS 4 variables removed in CVTS 5
<p><b>A12</b> (skills important in the next years), <b>C5</b> (skills targeted), <b>C6</b> (training providers) – rather than asking to tick all relevant items from the list and then indicate the most important one, respondents are asked to tick the ‘three most important’ items.</p> <p><b>B2a-B2e</b> (other forms of CVT) – rather than asking the exact number of participants in each of the other forms of CVT, the % of all persons employed in classes is asked.</p> <p><b>F1</b> (IVT participants) – rather than asking for the number of IVT participants, it is asked whether IVT participants are usually employed in the enterprise.</p>	<p><b>A3</b> (total number of persons employed in the previous year)</p> <p><b>A6</b> (introduction of new products / services)</p> <p><b>A7</b> (own/shared training centre)</p> <p><b>A11a, A11b</b> (review of skill/training needs of individual employees)</p> <p><b>A17</b> (sources of information about CVT)</p> <p><b>D1</b> (aspects to ensure quality of CVT)</p>

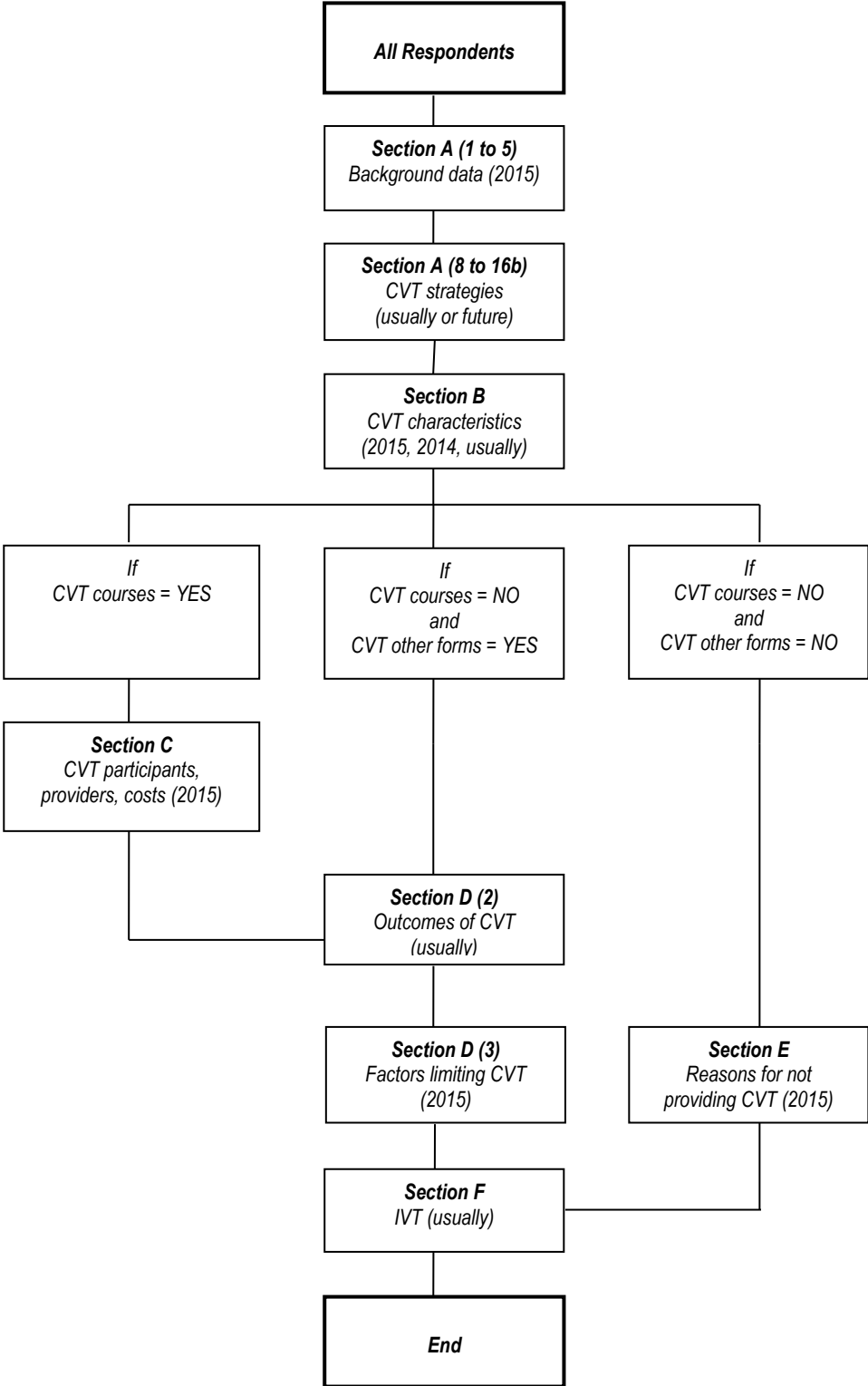
# Section 2 – European standard questionnaire

The structure of the CVTS 5 questionnaire reflects both filters (i.e. target populations: all enterprises, enterprises providing CVT courses and/or other forms of CVT, non-training enterprises) as well as the reference periods used over the questionnaire (questions on the year 2015 and questions on the usual situation or behaviour - see annex 6a of the manual).

CVTS is structured in two parts:

- On CVT: the main focus of the survey (sections A to E) is on continuing vocational training (see definition 2). For these sections persons employed with a specific training contract (apprentices, trainees, etc.) should be excluded.
- On IVT: section F refers to initial vocational training (see definition 3).

Chart 1 – Structure of the CVTS 5 questionnaire



Please note that a few terms and expressions in the standard questionnaire might differ from the wording used in the regulation. These changes were introduced in order to make the questionnaire more explicit.

<b>A1-A2, A4-A5</b>	<b>BACKGROUND DATA ON THE ENTERPRISE (all enterprises)</b>
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**A1** What is the **principal economic activity of the enterprise** <sup>(def. 1)</sup>?

<b>Principal economic activity of the enterprise</b> <sup>(def. 7)</sup> – NACE Rev. 2 code*	<b>A1</b>
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\* This information should be entered from the business register from which the sample is selected.

**A2** What was the **total number of persons employed** <sup>(def. 8)</sup> by the enterprise on 2015-12-31?

Total number of persons employed on 2015-12-31		
Total	Males	Females
<b>A2tot</b>	<b>A2m</b>	<b>A2f</b>

**A4** In 2015, what was the **total number of hours worked** <sup>(def. 11)</sup> by persons employed <sup>(def. 8)</sup> for the enterprise?

Total number of hours worked in 2015	<b>A4</b>
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**A5** In 2015, what were the **total labour costs (direct and indirect)** of persons employed <sup>(def. 12)</sup> by the enterprise?

Total labour costs (direct + indirect) in 2015	<b>A5</b>
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This section of the questionnaire addresses Continuing Vocational Training <sup>(def.2)</sup> (CVT) strategies of the enterprise.

CVT activities <sup>(def. 4)</sup> relate to training fulfilling the following criteria:

- *The training must be planned in advance.*
- *The training must be organised or supported with the specific goal of learning.*
- *The training must be financed fully or at least partly by the enterprise.*

**A8** Is there a **specific person or unit** within the enterprise having **the responsibility for the organisation of CVT**?

		Yes	No
<b>A8</b>	Specific person or unit having the responsibility for the organisation of CVT		

**A9** Does your enterprise **regularly assess the future needs** of skills and competences <sup>(def. 32)</sup> **in the enterprise?** ("regularly" covers the recent past years and the next few years)

		A9
	No	
	Yes but not regularly (mainly linked to changes in personnel)	
	Yes, it is part of the overall planning process in the enterprise	

**A10** How does your enterprise **usually react to future needs of skills and competences?** (i.e. how did the enterprise react up to now when confronted to future skill needs)

		Yes	No
<b>a</b>	Continuing vocational training of current staff	<b>A10a</b>	<b>A10a</b>
<b>b</b>	Recruitment of new staff with the suitable qualifications, skills and competences	<b>A10b</b>	<b>A10b</b>
<b>c</b>	Recruitment of new staff combined with specific training (of the recruited staff)	<b>A10c</b>	<b>A10c</b>
<b>d</b>	Internal reorganisation to better use the existing skills and competences (in line with future needs)	<b>A10d</b>	<b>A10d</b>



**A12** In your enterprise, which **skills/competences** <sup>(def. 24)</sup> are generally **considered as most important** for the development of the enterprise in the next few years?

Tick the **three most important** skills/competences from the following list (categories “a” to “l”).  
*The respondent should tick at least one and maximum three of the categories “a” to “l”, or only category “o” in case (s)he does not know.*

	Skills/competences important in the next few years	Tick the three most important (categories “a” to “l”)
a	General IT skills	A12a
b	IT professional skills	A12b
c	Management skills	A12c
d	Team working skills	A12d
e	Customer handling skills	A12e
f	Problem solving skills	A12f
g	Office administration skills	A12g
h	Foreign language skills	A12h
i	Technical, practical or job-specific skills	A12i
j	Oral or written communication skills	A12j
k	Numeracy and/or literacy skills	A12k
l	Other skills not listed above	A12l
o	Do not know	A12o

Notes:

- (1) More information on these categories is provided in annex 5.
- (2) For the national level it is considered to be good practice to add “please specify” for A12l, to allow the respondent to detail what skills (s)he has in mind. Such an additional question is optional and there is no corresponding variable to be transmitted to Eurostat in the final dataset.

An additional variable A12flag has to be included in the final dataset before transmission to Eurostat (see the code book in annex 7).

**A13** Does the **planning of CVT** in the enterprise usually lead to a **written training plan or programme**?

		Yes	No
<b>A13</b>	Written training plan or programme		

**A14** Does your enterprise usually have an **annual training budget** which includes provision for CVT?

		Yes	No
<b>A14</b>	Annual training budget		

**A15** In your enterprise, do **written agreements between social partners** <sup>(def. 39)</sup> concluded at national, regional or sector levels usually cover the provision of CVT?

		Yes	No
<b>A15</b>	Written agreements between social partners usually cover the provision of CVT		

Notes:

- (1) This question only applies to countries in which written agreements between social partners exist. For countries in which no such agreements exist at all the question is not to be asked and variable A15 is to be coded '8 = not applicable' for all enterprises. For countries in which written agreements between social partners exist in general, '8 = not applicable' is only valid if an enterprise falls outside the coverage of such agreements.
- (2) For countries in which written agreements between social partners exist in general, an additional question on the existence of such an agreement could be introduced at national level but only one unique variable A15 is to be transmitted to Eurostat.
- (3) Agreements between the employer and works councils at the enterprise level are excluded (see definition 39).

**A16a** In your enterprise, are **staff representatives/committees** <sup>(def. 40)</sup> usually involved in the **management process** of CVT?

		Yes	No	No staff representatives/committees
<b>A16a</b>	Staff representatives/committees usually involved in the management process of CVT			

Note: an additional question on the existence of staff representatives could be introduced at national level but only one unique variable A16a is to be transmitted to Eurostat.

**If A16a=yes**

**A16b** Which aspects of the management process of continuing vocational training provision are they usually involved in?

		Yes	No
<b>a</b>	Objective setting of training	<b>A16ba</b>	<b>A16ba</b>
<b>b</b>	Establishing criteria for the selection of participants or specific target groups	<b>A16bb</b>	<b>A16bb</b>
<b>c</b>	Form/type of training (e.g. internal/external courses; other forms, such as guided-on-the-job training)	<b>A16bc</b>	<b>A16bc</b>
<b>d</b>	Content of training	<b>A16bd</b>	<b>A16bd</b>
<b>e</b>	Budget for training	<b>A16be</b>	<b>A16be</b>
<b>f</b>	Selection of external training providers	<b>A16bf</b>	<b>A16bf</b>
<b>g</b>	Evaluation/assessment of training outcomes	<b>A16bg</b>	<b>A16bg</b>

**B CVT CHARACTERISTICS (all enterprises)**

This section of the questionnaire addresses Continuing Vocational Training (CVT) activities for persons employed in the enterprise.

The qualifying criteria for a CVT activity are the following:

- *The training must be planned in advance.*
- *The training must be organised or supported with the specific goal of learning.*
- *The training must be financed fully or at least partly by the enterprise.*

**B1** In 2015, did your enterprise provide **internal** (def. 14) or **external** (def. 15) **CVT courses** (def. 5)?

	Yes / No
<b>a Internal CVT courses in 2015</b> These are courses which are <b>principally designed and managed by the enterprise itself.</b>	<b>B1a</b>
<b>b External CVT courses in 2015</b> These are courses which are <b>principally designed and managed by organisations not part of the enterprise.</b>	<b>B1b</b>

**B2** In 2015, did your enterprise provide any of the **following other forms of CVT** (def. 6)?

**a) Guided-on-the-job training**

	Yes / No
Planned training through <b>guided-on-the-job training</b> (def. 16) in 2015	<b>B2aflag</b>
<i>Planned periods of training, instruction or practical experience undertaken in the workplace using normal tools of work, either at the immediate place of work or in the work situation.</i>	

**If B2aflag=yes**

**B2a:** How many persons employed participated (def. 21) in **guided-on-the-job training** in 2015?

	B2a
Less than 10 % of all persons employed	
From 10 % to less than 50 % of all persons employed	
50 % or more of all persons employed	

**b) Job rotation, exchanges, secondments or study visits**

	Yes / No
Planned training through <b>job rotation, exchanges, secondments or study visits</b> (def. 17) in 2015	<b>B2bflag</b>
<i>Transfers of workers from one job to another, which are not part of a planned developmental programme, should <b>not</b> be included.</i>	

**If B2bflag=yes**

**B2b:** How many persons employed participated (def. 21) in **job rotation, exchanges, secondments or study visits** in 2015?

	B2b
Less than 10 % of all persons employed	
From 10 % to less than 50 % of all persons employed	
50 % or more of all persons employed	

**c) Conferences, workshops, trade fairs and lectures**

		Yes / No
	Planned training through <b>conferences, workshops, trade fairs and lectures</b> (def. 20) in 2015	<b>B2cflag</b>
	<i>Participation (instruction received) in these events is counted as training only when they are planned in advance and the primary intention of a person employed participating in them is training/learning.</i>	

**If B2cflag=yes**

**B2c:** How many persons employed participated (def. 21) in **conferences, workshops, trade fairs and lectures** in 2015?

		B2c
	Less than 10 % of all persons employed	
	From 10 % to less than 50 % of all persons employed	
	50 % or more of all persons employed	

**d) Learning or quality circles**

		Yes / No
	Planned training through participation in <b>learning or quality circles</b> (def. 18) in 2015	<b>B2dflag</b>
	<i><b>Learning circles</b> are groups of persons employed who come together on a regular basis with the primary aim of learning more about the requirements of the work organisation, work procedures and workplaces. <b>Quality circles</b> are working groups with the objective of solving production and workplace problems through discussion.</i>	

**If B2dflag=yes**

**B2d:** How many persons employed participated (def. 21) in **learning or quality circles** in 2015?

		B2d
	Less than 10 % of all persons employed	
	From 10 % to less than 50 % of all persons employed	
	50 % or more of all persons employed	

**e) Self-directed learning/e-learning**

		Yes / No
	Planned training by <b>self-directed learning/e-learning</b> (def. 19) in 2015	<b>B2eflag</b>
	<i><b>Self-directed learning</b> occurs when an individual engages in a planned learning initiative where he or she manages the settings of the learning initiative/activity in terms of time schedule and location. This covers e-learning when it is self-directed.</i>	

**If B2eflag=yes**

**B2e:** How many persons employed participated (def. 21) in **self-directed learning/e-learning** in 2015?

		B2e
	Less than 10 % of all persons employed	
	From 10 % to less than 50 % of all persons employed	
	50 % or more of all persons employed	

**B3** Did the enterprise provide **CVT courses** to its persons employed **in the previous year**, 2014?

		Yes	No	Not applicable (enterprise did not exist)
<b>B3a</b>	CVT courses for persons employed in the previous year (in 2014)			

**B4** Did the enterprise **provide other forms of CVT** to its persons employed **in the previous year**, 2014?

		Yes	No	Not applicable (enterprise did not exist)
<b>B4a</b>	Other forms of CVT for persons employed in the previous year (in 2014)			

**B5** Did the enterprise **contribute** in 2015 **to collective/mutual or other training funds**, and did it **receive payments** from such funds or any other financial subsidies for the provision of CVT courses?

<b>B5</b>		Yes / No	Amount (in euros / national currency)
<b>a</b>	<b>CVT contributions</b> (def. 30)	<b>B5aflag</b>	<b>B5a</b>
<b>b</b>	<b>CVT receipts</b> (def. 31)	<b>B5bflag</b>	<b>B5b</b>

**If B5bflag=yes**

**B6:** In 2015 which **measures did your enterprise benefit from** for providing CVT?

		Yes	No
<b>a</b>	Tax incentives (tax allowances, tax exemptions, tax credits, tax relief, tax deferrals)	<b>B6a</b>	<b>B6a</b>
<b>b</b>	Receipts from training funds (national, regional, sector)	<b>B6b</b>	<b>B6b</b>
<b>c</b>	EU subsidies (e.g. European Social Fund)	<b>B6c</b>	<b>B6c</b>
<b>d</b>	Government subsidies	<b>B6d</b>	<b>B6d</b>
<b>e</b>	Other sources (e.g. receipts from private foundations, receipts from external bodies/persons for the use of the enterprise's own training centre, receipts for training provision to external bodies/persons that are not part of the enterprise)	<b>B6e</b>	<b>B6e</b>

Notes:

- (1) Certain measures might not apply at national level.
- (2) The CVTS 5 regulation also contains the category "none of these" but as this category is redundant it is removed from the questionnaire and the code book and not to be transmitted to Eurostat.

**Filter for the following sections of the questionnaire**

If persons employed by the enterprise participated in CVT courses during the reference year 2015

**[(B1a or B1b) = YES]**  
then answer  
**sections C, D, F**

If persons employed by the enterprise did **NOT** participate in CVT courses but did participate in other forms of CVT during the reference year 2015

**[(B1a and B1b) = NO  
and  
(B2aflag or B2bflag or B2cflag or B2dflag or B2eflag) = YES]**  
then answer  
**sections D, F**

If persons employed by the enterprise did NOT participate in CVT courses nor participate in other forms of CVT during the reference year 2015

**[(B1a and B1b) = NO  
and  
(B2aflag and B2bflag and B2cflag and B2dflag and B2eflag) = NO]**  
then answer  
**sections E, F**

**C CVT PARTICIPANTS, SUBJECTS, PROVIDERS and COSTS (CVT courses)**

This section of the questionnaire relates to an enterprise's provision of **CVT courses** (internal or external) for their persons employed.

- C1** In 2015, how many **persons employed** by the enterprise participated <sup>(def. 21)</sup> in one or more **CVT course** (either **internal** or **external**)? Each person should be counted **only ONCE**, irrespective of the number of CVT courses the person has participated in.

	Total	Males	Females
<b>Number of persons employed participating in at least one CVT course in 2015</b>	<b>C1tot</b>	<b>C2m</b>	<b>C2f</b>

Note to countries

*Reliable and high quality data are needed for these variables.*

*Countries should implement whichever method they consider appropriate to assure this quality and to ensure that "participant events" <sup>(def. 22)</sup> are not reported. It is strongly recommended to collect both "participants" and "participant events" in order to avoid any ambiguity and to be able to make imputations for those who do not answer to the question on "participants".*

**C2** See variables C2m and C2f above.

**C3** In 2015, what was the **total paid working time** <sup>(def. 23)</sup> (in hours) spent on **ALL CVT courses** broken down by **internal or external CVT courses**?

	Total (hours)	INTERNAL CVT courses (hours)	EXTERNAL CVT courses (hours)
<b>Paid working time (in hours) spent on ALL CVT courses in 2015</b>	<b>C3tot</b>	<b>C3i</b>	<b>C3e</b>

**C5** In 2015, which **skills/competences targeted by CVT courses** were the most important ones in terms of training hours?

Tick the **three most important** skills/competences from the following list (categories "a" to "l"), i.e. the most important in relation to the number of all training hours within paid working time. *If a course does not fit exactly to one class please select the nearest class.*

*The respondent should tick at least one and maximum three of the categories "a" to "l".*

	Skills/competences	Tick the three most important (categories "a" to "l")
<b>a</b>	General IT skills	<b>C5a</b>
<b>b</b>	IT professional skills	<b>C5b</b>
<b>c</b>	Management skills	<b>C5c</b>
<b>d</b>	Team working skills	<b>C5d</b>
<b>e</b>	Customer handling skills	<b>C5e</b>
<b>f</b>	Problem solving skills	<b>C5f</b>
<b>g</b>	Office administration skills	<b>C5g</b>
<b>h</b>	Foreign language skills	<b>C5h</b>
<b>i</b>	Technical, practical or job-specific skills	<b>C5i</b>
<b>j</b>	Oral or written communication skills	<b>C5j</b>
<b>k</b>	Numeracy and/or literacy skills	<b>C5k</b>
<b>l</b>	Other skills not listed above	<b>C5l</b>

Notes:

- (1) The question relates to CVT courses undertaken during paid working time as in question C3. More information on these categories is provided in annex 5. The regulation presents variable C4 before variable C5 while it is preferable to ask question C4 (variable C4 of the regulation) after question C5 (variable C5 of the regulation). This will avoid misunderstanding between the list of skills in question C5 and the notion of obligatory courses on health and safety at work used in question C4.
- (2) For the national level it is considered to be good practice to add "please specify" for C5l, to allow the respondent to detail what skills (s)he has in mind. Such an additional question is optional and there is no corresponding variable to be transmitted to Eurostat in the final dataset.

An additional variable C5flag has to be included in the final dataset before transmission to Eurostat (see the code book in annex 7).

- C4** Some CVT courses on **occupational health and safety** are **obligatory** <sup>(def. 34)</sup>. What **share of all training hours in CVT courses in 2015** was spent on such obligatory courses on health and safety at work (CVT courses during paid working time)?

	Share of training hours in 2015 (%)
Obligatory courses on health and safety at work	<b>C4</b>
All other courses	(2)
100% = all paid working time spent on CVT courses	100%

Notes:

- (1) The question relates to CVT courses undertaken during paid working time as in question C3. The regulation presents variable C4 before variable C5 while it is preferable to ask question C4 (variable C4 of the regulation) after question C5 (variable C5 of the regulation). This will avoid misunderstanding between the list of skills in question C5 and the notion of obligatory courses on health and safety at work used in question C4.
- (2) It is suggested to use such a table with a category "all other courses" to avoid a long question referring to the percentage of all paid working time spent on CVT courses. Only one value (for the item 'obligatory courses on health and safety at work') corresponds to variable C4 for transmission to Eurostat.

- C6** In 2015, which were the **most important training providers** <sup>(def. 25)</sup> the enterprise used **for all external CVT courses?**

Tick the **three most important** training providers from the following list (categories "a" to "g"), i.e. the most important in relation to the number of all training hours during paid working time in **external** courses – including those referred to in question C4 if any. *If a course does not fit exactly to one class please select the nearest class.*

*The respondent should tick at least one and maximum three of the categories "a" to "g".*

	Groups of <u>external</u> CVT course providers	Tick the three most important (categories "a" to "g")
<b>a</b>	Schools, colleges, universities and other higher education institutions	<b>C6a</b>
<b>b</b>	Public training institutions (financed or guided by the government, e.g. adult education centres)	<b>C6b</b>
<b>c</b>	Private training companies	<b>C6c</b>
<b>d</b>	Private companies of which the main activity is not training (e.g. equipment suppliers, parent/associate companies)	<b>C6d</b>
<b>e</b>	Employers' associations, chambers of commerce, sector bodies	<b>C6e</b>
<b>f</b>	Trade unions	<b>C6f</b>
<b>g</b>	Other training providers	<b>C6g</b>

Note: the question relates to CVT courses undertaken during paid working time as in question C3.

An additional variable C6flag has to be included in the final dataset before transmission to Eurostat (see the code book in annex 7).



## C7

In 2015, what were the **costs incurred by the enterprise for the provision of CVT courses**?

Costs of CVT courses	Did the enterprise incur costs in this category? Yes / No	Costs (in euros / national currency)
<b>a) Fees and payments</b> for courses for persons employed <sup>(def. 26)</sup> Payments made to <b>external organisations</b> for the provision of <b>CVT courses</b> and services, including course fees, the cost of assessors and examiners and the <b>cost of external trainers</b> used to support internal courses.	<b>C7aflag</b>	<b>C7a</b>
<b>b) Travel and subsistence payments</b> <sup>(def. 27)</sup> Payments made in relation to the travel and subsistence of participants engaged in <b>CVT courses</b> .	<b>C7bflag</b>	<b>C7b</b>
<b>c) Labour costs of internal trainers</b> for CVT courses <sup>(def. 28)</sup> Labour costs of staff of own training centre and other staff <b>exclusively or partly</b> involved in designing and managing <b>CVT courses</b> .	<b>C7cflag</b>	<b>C7c</b>
<b>d) Costs for training centre, training premises or specific training rooms of the enterprise</b> , in which CVT courses take place and costs for <b>teaching materials</b> for CVT courses <sup>(def. 29)</sup> Annual depreciation for rooms and equipment, running costs for training centre or other premises and costs of materials bought specifically for CVT courses.	<b>C7dflag</b>	<b>C7d</b>

Note to countries

In the exceptional case that an enterprise cannot establish a costs breakdown using the above framework they may enter a total costs figure.

**Countries should ensure that this is the exception rather than the general rule and should ensure the quality of the total costs figure.**

Where there is an initial non-response to this question, only asking for variable C7sub might be an option in the re-contact.

Costs – “sub-total only”	C7sflag (1)	C7sub
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(1) The variable C7sflag has to be included in the final dataset before transmission to Eurostat only (see the code book in annex 7), but not in the questionnaire.

Note to countries

The variables PAC (personal absence cost) and C7tot (total CVT costs) are derived (=calculated) variables and only to be included in the final dataset before transmission to Eurostat (see the code book in annex 7), not in the questionnaire.

**D2 OUTCOMES  
(training enterprises)**

The following question(s) are to be answered by enterprises that provided CVT courses or other forms of CVT for their persons employed during 2015.

**D2a** Does the enterprise usually **assess the outcomes** of CVT activities?

	Assessment of the outcomes of CVT activities	D2a
	Yes, for all activities	
	Yes, for some activities	
	No, proof of participation is sufficient	

**If D2a=yes**

**D2b:** Which **methods** are used?

	Which methods are used?	Yes	No
<b>a</b>	Certification after written or practical test	<b>D2ba</b>	<b>D2ba</b>
<b>b</b>	Satisfaction survey amongst participants	<b>D2bb</b>	<b>D2bb</b>
<b>c</b>	Assessment of participants' behaviour or performance in relation to training objectives	<b>D2bc</b>	<b>D2bc</b>
<b>d</b>	Assessment/measurement of the impact of training on performance of relevant departments or the whole enterprise	<b>D2bd</b>	<b>D2bd</b>
<b>e</b>	Other	<b>D2be</b>	<b>D2be</b>

**D3 FACTORS LIMITING CVT PROVISION IN 2015  
(training enterprises)**

The following question is to be answered by enterprises that provided CVT courses or other forms of CVT for their persons employed during 2015.

**D3** Did any of the following **factors limit the provision of CVT courses or other forms of CVT** in your enterprise in 2015?

		Yes	No
<b>a</b>	The level of the training provided was appropriate to the needs of the enterprise (no limiting factors).	<b>D3a</b>	<b>D3a</b>
<b>b</b>	The preferred strategy of the enterprise was to recruit individuals with the required qualifications, skills and competences.	<b>D3b</b>	<b>D3b</b>
<b>c</b>	Difficulties in assessing training needs in the enterprise.	<b>D3c</b>	<b>D3c</b>
<b>d</b>	Lack of suitable offers of CVT courses in the market.	<b>D3d</b>	<b>D3d</b>
<b>e</b>	High costs of CVT courses.	<b>D3e</b>	<b>D3e</b>
<b>f</b>	Higher focus on IVT provision than on CVT.	<b>D3f</b>	<b>D3f</b>
<b>g</b>	Major efforts in CVT made in recent years.	<b>D3g</b>	<b>D3g</b>
<b>h</b>	High workload and limited time available for staff to participate in CVT.	<b>D3h</b>	<b>D3h</b>
<b>i</b>	Other reasons.	<b>D3i</b>	<b>D3i</b>

Note: For this question, it can be useful to put item 'a' at the end of the list.

<b>E</b>	<b>REASONS FOR THE NON-PROVISION OF CVT ACTIVITIES IN 2015 (non-training enterprises)</b>
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The following question is to be answered by enterprises that did not provide any CVT (neither courses nor other forms of CVT) for their persons employed in 2015.

**E1** What were the **reasons not to provide CVT (neither CVT courses nor other forms of CVT)** for persons employed in 2015?

		Yes	No
<b>a</b>	The existing qualifications, skills and competences of the persons employed were appropriate to the current needs of the enterprise.	<b>E1a</b>	<b>E1a</b>
<b>b</b>	The preferred strategy of the enterprise was to recruit individuals with the required qualifications, skills and competences.	<b>E1b</b>	<b>E1b</b>
<b>c</b>	Difficulties in assessing training needs in the enterprise.	<b>E1c</b>	<b>E1c</b>
<b>d</b>	Lack of suitable offers of CVT courses in the market.	<b>E1d</b>	<b>E1d</b>
<b>e</b>	High costs of CVT courses.	<b>E1e</b>	<b>E1e</b>
<b>f</b>	Higher focus on IVT provision than on CVT.	<b>E1f</b>	<b>E1f</b>
<b>g</b>	Major efforts in CVT made in recent years.	<b>E1g</b>	<b>E1g</b>
<b>h</b>	High workload and no time available for staff to participate in CVT.	<b>E1h</b>	<b>E1h</b>
<b>i</b>	Other reasons.	<b>E1i</b>	<b>E1i</b>

<b>F</b>	<b>IVT – INITIAL VOCATIONAL TRAINING (all enterprises)</b>
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The following questions are to be answered by all enterprises.

**F1** Does the enterprise **usually employ IVT participants** (apprentices) <sup>(def. 3)?</sup>

	Yes	No
IVT participants (apprentices) usually employed in the enterprise An apprenticeship leads to a <b>formal qualification or certificate</b> , i.e. must be a formal education programme (or a component of it)	F1	F1

Note: for definitions see section 3.3, definition 3 in section 3.5 and annex 3a.

**If F1=yes**

**F2:** For which **main reason(s)** does your enterprise usually provide IVT/offer apprenticeships?

	Reasons	Yes	No
<b>a</b>	To qualify future employees according to the needs of the enterprise.	F2a	F2a
<b>b</b>	To choose the best apprentices for future employment after completion of apprenticeship.	F2b	F2b
<b>c</b>	To avoid possible mismatch with enterprise needs in case of external recruitment.	F2c	F2c
<b>d</b>	To make use of the productive capacities of apprentices already during their apprenticeship	F2d	F2d
<b>e</b>	Other reasons (e.g. to make the enterprise more attractive to potential staff).	F2e	F2e

Note: category 'e' can be broken down in several categories at national level.

<b>End of Questionnaire</b>
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## Section 3 – Concepts and definitions

### 3.1 Concepts – general scope of the continuing vocational training survey (CVTS 5)

The primary objective of CVTS 5 is to collect data on **continuing vocational training** (CVT) in enterprises, and in particular

- the strategies of enterprises in training their persons employed,
- the costs of training (CVT courses),
- the training modalities,
- the training intensity (number of participants, training hours), and
- the strategies of enterprises offering initial vocational training (IVT).

An important quality characteristic of statistics is **relevance**. As far as possible, data produced should be understood correctly by users within their policy context, as well as within a conceptual framework where the statistical information collected can be clearly identified and located.

### 3.2 Characteristics of continuing vocational training (CVT)

The training activity must be the result of a **decision in the enterprise**. The line-manager of the person employed or the general management of the enterprise normally take this decision.

The primary objective must be the **acquisition of new competences** or the **development and improvement of existing competences**. Routine work-adjustment training (i.e. basic familiarisation with the job, organisation or working environment) and passing of routine information should be excluded.

CVT refers to persons employed excluding those holding an apprenticeship or training contract (see definition 8). **Included** are working proprietors, partners working regularly in the enterprise and unpaid family workers, as well as persons who work outside the enterprise but belong to it and are paid by it (e.g. sales representatives, delivery personnel, repair and maintenance teams). People absent for a short period (e.g. sick leave, paid leave or special leave) and also those on strike but not absent for an indefinite period are included. Part-time workers, as well as seasonal workers and home workers on the payroll of the enterprise are included. **Excluded** are persons employed with a specific training contract (apprentices, trainees, etc.) as are those people working in the enterprise and who are subcontracted or have a working contract with another firm (e.g. building cleaners).

A training measure or activity should be **financed in total or at least partly by the enterprise** (directly or indirectly). Part financing could include the use of work-time for the training activity as well as the financing of training equipment (books, computers, CD-ROMs, etc.). VAT paid by the enterprises should be excluded from the expenses.

There must be an **actual activity or event or set of activities or events, which can be identified as a specific and separate period of training**, rather than an on-going activity that cannot be distinguished from work (learning by experience or random learning is to be excluded).

There must be a **training mediator** (either a person, i.e. a trainer, coach or supervisor, or a piece of equipment used for training, i.e. a computer or other training medium).

Other aspects to be considered in identifying continuing vocational training measures are:

- Measures for unemployed persons initiated and financed by the Public Employment Services are not part of CVT. Measures for previously unemployed persons who are recruited by the enterprise and given a contract of employment are part of CVT even if financial support is given for them by the Public Employment Services.
- Training measures for employed persons leaving the enterprise (measures which are targeted to improve their situation on the external labour market) which are financed at least partly by the enterprise are part of CVT.
- Training measures for post-university graduates who are financed at least partly by the enterprise are part of CVT, unless the graduates are engaged on training contracts. Work experience by undergraduates in enterprises as part of their degree courses (e.g. sandwich courses) is not CVT.
- If an enterprise does not pay for CVT courses but gives time off work, this is to be considered as included in enterprise-provided CVT.

### 3.3 Characteristics of initial vocational training (IVT)

Initial Vocational Training (IVT) should be clearly distinguished from CVT and defined in such a way that the same kind of information can be collected from all participating countries, irrespective of the specific national or regional regulatory environment, particular education and training systems or common practices in place.

For CVTS 5, the following operational definition for IVT participants referring to apprentices should be used. This definition applies to section F of the questionnaire.

Annex 3a of the manual gives an operational definition of apprentices and trainees for sample surveys (i.e. for the CVTS, the LFS and the AES) and sets the following criteria to define apprenticeships:

- 1) The apprenticeship must be a **formal education programme** (or a component of it). Within the programme **learning time alternates** between periods of practical training (workplace) and general/theoretical education (educational institution/training centre).
- 2) Successful completion of the programme is evidenced by a **qualification**.
- 3) The duration of the apprenticeship is **from 6 months to 6 years**.
- 4) The apprentices receive **remuneration** (wage or allowance, in cash or in kind).
- 5) **Usually**, there is a **training contract** (work contract) defining the characteristics of the apprenticeship

These principles are meant to **select eligible educational programmes** and avoid referring to a general concept of “apprenticeships” in questionnaires which would not allow for comparable results across the EU.

In the context of CVTS 5, the questions related to IVT **focus on apprentices in ISCED 2011 level 2 to 5 programmes** (see annex 14) fulfilling the above criteria. This will enhance the comparability of the results across Member States and avoid burden related to internships at ISCED 2011 level 6, 7 or 8.

Initial vocational training within enterprises is classified as **formal learning** and will lead to a formal qualification in ISCED 2011 level 2 to 5. It is essential for the training of apprentices within enterprises that it has a **work-based element**. Initial vocational training are training measures or activities, which the enterprises often (but not always) **finance either partly or fully**. Apprentices are however always paid.

The **general purpose** of apprenticeships is to educate the apprentices by means of a **combination of work experience and training**. Apprentices **can sometimes have the status of persons employed** (e.g. by having a work contract), however their function is not primarily to produce goods and services, but to be trained and learn. The existence in itself of a **training contract** between the enterprise and the apprentices is not a qualifying criterion for the distinction between IVT and CVT. In many cases however, such a training contract does exist.

The **duration of the apprenticeship** refers to the programme and not only to the work-based component. The **duration** should not in itself be the only qualifying criterion. A minimum period of 6 months is a useful discriminator as it allows among others, **distinguishing between proper IVT and short-term work placements whose primary objective is not formal training**.

### 3.4 CVTS 5 framework for IVT and CVT – summary table

CVT excludes all persons employed with a specific training contract (apprentices, trainees, etc.) while IVT refers to the operational definition of “IVT participants/apprentices” provided in section 3.3 above. Accordingly “IVT participants/apprentices” are by definition excluded from CVT. However, depending on the country the group to be excluded from CVT (sections A to E of the questionnaire) can be larger than the group covered by IVT (section F of the questionnaire).

The table below presents, for CVTS 5 purposes, a summary of IVT and CVT on a number of relevant dimensions. It offers a framework for countries to establish their own CVTS 5 specific definition of IVT and CVT. In the table the possible overlaps between the two concepts of CVT and IVT proposed for CVTS are essentially resolved **by giving priority to the primary objective of CVTS which is collecting data on CVT**.

	<b>IVT in enterprises</b>	<b>CVT in enterprises</b>
<b>Main activity of the persons</b>	Student, apprentice, trainee, ... (restriction to apprentices in the context of CVTS 5)	Employed by the enterprise
<b>Type of contract</b>	Non-qualifying criteria (national laws differ; in many cases a training contract exists)	Non-qualifying criteria In general, most persons employed are employees, i.e. a work contract exists
<b>Type of learning activity</b>	<b>Essential Element</b> Formal learning	Non-qualifying criteria
<b>Work-based element</b>	<b>Essential Element</b> Must have a work-based element	Non-qualifying criteria
<b>School-based element</b>	Non-qualifying criteria (national laws differ, however, exists in a majority of situations)	Non-qualifying criteria
<b>Costs for the enterprise</b>	Non-qualifying criteria although by definition apprentices always receive a remuneration (scope of IVT in CVTS 5)	<b>Essential Element</b> CVT is financed fully or partly by the enterprise
<b>Time period of the study</b>	Non-qualifying criteria for general IVT For apprentices the duration must be from 6 months to 6 years (scope of IVT in CVTS 5)	Non-qualifying criteria

Countries should assess possible borderline and special cases and report their treatment in the national quality report.

The following examples of training **are not covered**, neither by IVT nor by CVT:

- Training in the enterprise for the benefit of a participant who is not a member of the staff of the company nor registered in a formal education and training programme that has a work-based component.
- Training of unemployed people at the request of (and nearly always funded by) Public Employment Services.
- Voluntary traineeship of a person who wants to be trained.
- Short (a few weeks) exposure to work environment, part of a curriculum, but without structured programmes and knowledge and skills acquisition, intention and assessment.
- Internships (e.g. for physicians, ...) and a period of practise after courses and before recognition (e.g. for lawyers, ...) should be considered as work and not as CVT or IVT in the scope of CVTS.

### 3.5 Definitions

NOTE: the numbering used in the manuals of previous CVTS waves is kept to avoid any misunderstanding.

Term	Definition
<p><b>1 Enterprises</b></p>	<p>According to <a href="#">Council Regulation (EEC) No 696/93</a> of 15 March 1993 on the statistical units for the observation and analysis of the production system in the Community:</p> <p>"The enterprise is the smallest combination of legal units that is an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources. An enterprise carries out one or more activities at one or more locations. An enterprise may be a sole legal unit."</p>
<p><b>2 Continuing vocational training (CVT)</b></p>	<p>Continuing vocational training are training measures or activities which have as their primary objectives the acquisition of new competences or the development and improvement of existing ones and which must be financed at least partly by the enterprises for their persons employed who either have a working contract or who benefit directly from their work for the enterprise such as unpaid family workers and casual workers. Persons employed holding an apprenticeship or training contract should not be taken into consideration for CVT. (These could be relevant candidates for IVT – see def. 3.)</p> <p>The training measures or activities must be planned in advance and must be organised or supported with the special goal of learning. Random learning and initial vocational training (IVT) are explicitly excluded.</p>
<p><b>3 Initial vocational training (IVT)</b></p>	<p>In CVTS 5, initial vocational training (IVT) is restricted to apprenticeships at ISCED 2011 level 2 to 5. The following criteria need to apply:</p> <ol style="list-style-type: none"> <li>(1) The apprenticeship must be a <b>formal education programme</b> (or a component of it). Within the programme <b>learning time alternates</b> between periods of practical training (workplace) and general/theoretical education (educational institution/training centre).</li> <li>(2) The completion of the apprenticeship is <b>mandatory to obtain a qualification or certification</b> for this programme.</li> <li>(3) The duration of the apprenticeship is <b>from 6 months to 6 years</b>. The duration refers to the programme and not only to the work-based component.</li> <li>(4) The apprentices receive <b>remuneration</b> (wage or allowance, in cash or in kind).</li> </ol> <p>The measure is often financed (partly or fully) by the enterprise although this is not a mandatory condition. Apprentices/IVT participants often have a special training contract.</p> <p>Annex 3a provides more details in particular to implementation issues and differences with traineeships.</p>
<p><b>4 Continuing vocational training measures and activities</b></p>	<p>Continuing vocational training measures and activities cover both CVT courses (def. 5) and other forms of CVT (def. 6).</p>



Term	Definition
<p><b>5 CVT courses</b></p>	<p>CVT courses are typically clearly separated from the active workplace (learning takes place in locations specially assigned for learning like a class room or training centre).</p> <p>They show a high degree of organisation (time, space and content) by a trainer or a training institution.</p> <p>The content is designed for a group of learners (e.g. a curriculum exists).</p> <p>Two distinct types of CVT courses are identified</p> <ul style="list-style-type: none"> <li>• internal CVT courses (def. 14)</li> <li>• external CVT courses (def. 15)</li> </ul>
<p><b>6 Other forms of CVT</b></p>	<p>Other forms of continuing vocational training are typically connected to the active work and the active workplace, but they can also include participation (instruction) in conferences, trade fairs etc. <b>for the purpose of learning.</b></p> <p>These other forms of CVT are often characterised by a degree of self-organisation (time, space and content) by the individual learner or by a group of learners.</p> <p>The content is often tailored according to the learners' individual needs in the workplace.</p> <p>The following types of other forms of CVT are identified:</p> <ul style="list-style-type: none"> <li>• planned training through guided-on-the-job training (def. 16)</li> <li>• planned training through job rotation, exchanges, secondments or study visits (def. 17)</li> <li>• planned training through participation (instruction received) in conferences, workshops, trade fairs and lectures (def. 20)</li> <li>• planned training through participation in learning or quality circles (def. 18)</li> <li>• planned training through self-directed learning/e-learning (def. 19)</li> </ul>
<p><b>7 Principal economic activity of the enterprise</b></p>	<p>According to the NACE Rev. 2 classification, the principal economic activity of the organisation is the activity that contributes most to the gross value added at factor cost. The NACE code of the enterprise should be taken from the statistical business register (SBR) or be coded to the NACE 4-digit level on the basis of information supplied by the enterprise (see annex 13).</p>

Term	Definition
<p><b>8 Persons employed</b></p>	<p>The number of persons employed is defined as the total number of persons who work in the observation unit <b>excluding persons employed holding an apprenticeship or training contract</b> (in line with the coverage of CVT, see def. 3).</p> <p>Persons employed includes:</p> <ul style="list-style-type: none"> <li>• working proprietors</li> <li>• partners working regularly in the enterprise</li> <li>• unpaid family workers working regularly in the enterprise</li> <li>• persons who work outside the enterprise who belong to it and are paid by it (e.g. sales representatives, delivery personnel, repair and maintenance teams)</li> <li>• persons absent for a short period (e.g. sick leave, paid leave or special leave)</li> <li>• part-time workers</li> <li>• seasonal workers</li> <li>• home workers</li> </ul> <p>Persons employed exclude anyone who is working at the enterprise but whose salary is paid by another company, e.g. persons employed by firms under contract or seconded staff. Also not included are persons absent and not being paid during the whole reference period (e.g. for parental leave or long time compulsory military service).</p> <p>The definition of persons employed in general follows the one used for structural business statistics (SBS, see <a href="#">Commission Regulation (EC) No 250/2009</a>, as amended by <a href="#">Commission Regulation (EU) No 439/2014</a>) but deviates in the treatment of persons employed holding an apprenticeship or training contract which are excluded from the definition of persons employed in CVTS 5.</p>
<p><b>11 Total number of hours worked</b></p>	<p>The total number of hours worked refers to the total number of <b>hours actually worked</b> by all persons employed (excluding persons employed holding an apprenticeship or training contract, see def. 8), in 2015.</p> <p>It includes time worked during normal periods of work (in the enterprise or teleworking), time worked in addition to normal periods of work and generally paid at a higher rate (overtime), time spent at the place of work in standby or during which no work is done (but for which payment is made) and time corresponding to short rest periods, including tea and coffee breaks.</p> <p>It excludes time spent on paid leave, paid public holidays, paid sick leave, paid meal breaks.</p> <p>The definition of hours actually worked follows the one used for the labour cost survey (<a href="#">Commission Regulation (EC) No 1737/2005</a>).</p>
<p><b>12 Total labour costs of persons employed</b></p>	<p><b>Total labour costs</b> of persons employed (excluding persons employed holding an apprenticeship or training contract, see def. 8), is defined as the sum of the <b>direct and indirect labour costs</b>. The estimate of total labour costs represents all expenditure borne by employers in order to employ workers.</p> <p>It should include:</p> <ul style="list-style-type: none"> <li>• <b>direct labour costs:</b> direct pay, other bonuses and gratuities, payments for days not worked, benefits in kind, and</li> <li>• <b>indirect labour costs:</b> statutory social security contributions and family allowances, non-statutory payments, other social expenditure, vocational training costs, taxes, minus subsidies on labour.</li> </ul> <p>The definition of total labour costs follows the one used for the labour cost survey (<a href="#">Commission Regulation (EC) No 1737/2005</a>).</p>

Term	Definition
<b>14 Internal CVT courses</b>	<p>Internal CVT courses are principally designed and managed by the enterprise itself.</p> <p>It is important that the responsibility for the content of the course lies within the enterprise. Courses are for example designed and managed by the internal training department of the enterprise, however the course can physically take place either within or outside the enterprise i.e. the geographic location relative to the enterprise is not the important issue.</p>
<b>15 External CVT courses</b>	<p>External CVT courses are principally designed and managed by organisations which are not part of the enterprise itself (e.g. 3<sup>rd</sup> party organisations).</p> <p>These courses are designed and managed by a training organisation which is not part of the enterprise or by a training organisation which belongs to the parent company of the enterprise. It is important that the responsibility for the content of the course lies outside the enterprise; the course is then selected and ordered/ purchased by the enterprise. The course can physically take place either within or outside the enterprise i.e. the geographic location relative to the enterprise is not the important issue.</p>
<b>16 Guided-on-the job training</b>	<p>Guided-on-the-job training is one of the other forms of CVT. It is characterised by planned periods of training, instruction or practical experience in the workplace using the normal tools of work, either at the immediate place of work or in the work situation. The training is organised (or initiated) by the employer. A tutor or instructor is present. It is an individual-based activity, i.e. it takes place in small groups only (up to five participants).</p>
<b>17 Job rotation, exchanges, secondments or study visits</b>	<p>Job rotation within the enterprise and exchanges with other enterprises as well as secondments and study visits are other forms of CVT only if these measures are planned in advance with the primary intention of developing the skills of the workers involved. Transfers of workers from one job to another which are not part of a planned developmental programme should be excluded.</p>
<b>18 Learning or quality circles</b>	<p>Learning or quality circles are other forms of CVT. Learning circles are groups of persons employed who come together on a regular basis with the primary aim of learning more about the requirements of the work organisation, work procedures and workplaces.</p> <p>Quality circles are working groups, having the objective of solving production and workplace-based problems through discussion. They are counted as other forms of CVT only if the primary aim of the persons employed who participate is learning.</p>
<b>19 Self-directed learning/e-learning</b>	<p>Self-directed learning/e-learning are other forms of CVT. It occurs when an individual engages in a planned learning initiative where he or she manages the settings of the learning initiative/activity in terms of time schedule and location.</p> <p>Self-directed learning means planned individual learning activities using one or more learning media. Learning can take place in private, public or job-related settings.</p> <p>Self-directed learning might be arranged using open and distance learning methods, video/audio tapes, correspondence, computer based methods (including internet, e-learning) or by means of a Learning Resources Centre.</p> <p>It has to be part of a planned initiative. Simply surfing the internet in an unstructured way should be excluded. Self-directed learning in connection with CVT courses should not be included here.</p>
<b>20 Participation in conferences, workshops, trade fairs and lectures</b>	<p>Participation in conferences, workshops, trade fairs and lectures are other forms of CVT. Participation (instruction received) in conferences, workshops, trade fairs and lectures are considered as training actions only when they are planned in advance and if the primary intention of the person employed for participating is training/learning.</p>

Term	Definition
<b>21 Participants</b>	<p>Participant in CVT courses</p> <p>A participant is a person who has taken part in one or more CVT courses during the reference year. Each person should be counted only once, irrespective of the number of CVT courses he or she has participated in. E.g. if a person employed has participated in two externally managed courses and one internally managed course, he or she should be counted as one participant.</p> <p>Participant in other forms of CVT</p> <p>The concept 'participant' is to be applied analogously for each other form of CVT.</p>
<b>22 Participant events ("participations")</b>	<p>Participant events ("participations") are the number of times participants participated in CVT courses (or – analogously – in one of the other forms of CVT). E.g. if a person employed has attended two externally managed courses and one internally managed course, this will be counted as three participant events. Typically the number of participants will be lower than the number of participant events ("participations") for an enterprise.</p>
<b>23 Paid working-time (in hours) spent on CVT courses</b>	<p>Paid working time (in hours) spent on CVT courses is the total time that all participants have spent in total in CVT courses during 2015.</p> <p>Where courses fell only partly within 2015, only the time spent during 2015 should be included.</p> <p>The number of hours spent in CVT courses should only cover the actual training time, and only the time spent during the paid working time of the person employed should be included (i.e. any period of time where participants are in training when they normally would be working or a time when they are being paid for by the enterprise).</p> <p>It should exclude any periods of normal working between several training sessions and any time spent on travelling to the course.</p> <p>For example, if a training course lasts for one week, only the time spent actually in the training course or working on training material should be included. If a person attends a course one day per week for several weeks, the one day per week should be included and added up, but the days spent on working between the training days should be excluded.</p>
<b>24 Skills and competences</b>	<p>Question A12 focuses on skills and competences important in the next few years. Question C5 however collects data on the basis of the most important skills and competences in terms of volume of courses related to them. In that context, it should be noted that a particular course may cover more than one category. The volume of training hours related to a course can be assigned to a category based on the most important aspect it covered.</p> <p>The list of skills and competences are meant to be self-explanatory. However, it could help for the purpose of translation to provide some examples as shown in annex 5 (table A5.a).</p>
<b>25 Providers of external CVT courses</b>	<p>Providers of external CVT courses are the persons or organisations which deliver the training (see annex 15 for a more detailed description):</p> <ul style="list-style-type: none"> <li>• Schools, colleges, universities and other higher education institutions</li> <li>• Public training institutions (financed or guided by the government; e.g. adult education centres)</li> <li>• Private training companies</li> <li>• Private companies of which the main activity is not training (e.g. equipment suppliers, parent/associate companies)</li> <li>• Employers' associations, chambers of commerce, sector bodies</li> <li>• Trade unions</li> <li>• Other training providers</li> </ul>
<b>26 Fees and payments</b>	<p>These are the costs of external courses, made to external organisations for the provision of CVT courses and services. They include course fees, the cost of assessors and examiners as well as the cost of external trainers used to support internal courses. VAT should be excluded from the expenses (see annex 4 for a more detailed description).</p>

Term	Definition
27 <b>Travel and subsistence payments</b>	These are costs made to participants for travelling to training courses and the payments or subsistence allowances. VAT should be excluded from the expenses (see annex 4 for a more detailed description).
28 <b>Labour costs of internal trainers for CVT courses</b>	<p>These are the <b>direct and indirect labour costs</b> of staff of training centres and other staff exclusively or partly involved in providing, designing and managing CVT courses (for labour costs, see def. 12, and annex 4 for a more detailed description).</p> <p>If those trainers are only partly involved in CVT courses, only the time spent on CVT courses should be taken into account.</p> <p>If total labour costs of internal trainers for CVT courses are not available from enterprise records, then the labour costs may be estimated by using data on the total number of internal trainers for CVT courses and average remuneration plus indirect labour costs (see annex 4 for a more detailed description).</p>
29 <b>Costs for training centre, training premises or specific training rooms of the enterprise, in which CVT courses take place</b>  <b>Costs for teaching materials for CVT courses</b>	<p>These costs include the costs of running the training rooms and annual depreciation for these rooms and equipment.</p> <p>It also includes the costs of materials bought specifically to support the provision of CVT courses.</p> <p>VAT should be excluded from the expenses (see annex 4 for a more detailed description).</p>
30 <b>Contributions</b>	The costs of contributions made by the enterprise to collective funding arrangements through government and intermediary organisations (see annex 4 for a more detailed description, in particular on the coverage of CVT contributions).
31 <b>Receipts</b>	The receipts from collective funding arrangements, subsidies and financial assistance from government and other sources (see annex 4 for a more detailed description, in particular on the coverage of CVT receipts).
32 <b>Assessment of skills and competences needs of the enterprise</b>	This assessment concerns the need for skills and competences relevant to the overall training needs or development of the enterprise. It should refer to the method that has usually been used for the assessment of skill needs over the recent years and/or will be used for the assessment of skill needs for the year to come or for the next few years.
34 <b>Obligatory occupational health and safety courses</b>	<p>The activities referred to under point 1 and 2 below should be considered as obligatory from the perspective of the Community legislation in the sense that they are needed to comply with legal obligations in the field of occupational health and safety. Based on such obligations the employer has to make sure that a worker received a proper training on occupational health and safety at the workplace. This is generally although not necessarily tailored to the needs and conditions of the specific workplace.</p> <ol style="list-style-type: none"> <li>1. Obligatory CVT activities by law for some dangerous or potentially dangerous tasks, such as driving a fork lift, training for preventive services (e.g. occupational physicians may be required by law to do some training regularly), training for safety representatives who deal with occupational safety and health questions at the enterprise level (also mandatory by law in some Member States) and training for first aid measures (by law, a certain number of people have to be able to offer first aid).</li> <li>2. CVT activities for workers to protect themselves and others. This is for example to train doctors how to use and discard needles to avoid needle stick injuries, or to train a laboratory worker how to work safely. This kind of training is normally included in the category “guided-on-the-job” training and cannot always be singled out. That knowledge has to be refreshed and updated regularly. Another simple example would be fire exercises.</li> </ol>

Term	Definition
<b>36 Training centre</b>	<p>A training centre is a training unit with training personnel, training premises and training equipment. The training centre can be located within or outside the enterprise or it can be shared with other enterprises. The ownership of the training centre is not the important issue, as some enterprises may run a training centre jointly with other enterprises, although they do not actually own it.</p>
<b>39 Agreements between the social partners</b>	<p>The social partners are representative organisations of the employers and the persons employed (employer associations and trade unions). The social partners negotiate on a regular basis at the national, regional or sector level and conclude collective agreements (collective bargaining). Collective agreements normally regulate wages and working conditions. Collective agreements can also regulate vocational training provisions, such as national, regional or sector training funds, employability measures, vocational training measures for older persons employed.</p> <p>Agreements between the employer and works councils at the enterprise level are excluded from this definition.</p>
<b>40 Formal structure involving employee representatives (staff representatives/committees)</b>	<p>Formal structures involving employee representatives are often committees or works councils. They are "shop-floor" organisations representing workers, which function as local/firm-level complements to national labour negotiations. Works councils exist in a variety of related forms in a number of European countries. A special form of works councils are the European works councils. On 22 September 1994, the European Council of Ministers decided on a Directive (94/45/EC) on the establishment of a European Works Council or similar procedure for the purposes of informing and consulting persons employed in companies which operate at EU level (amended by Council Directive 97/74/EC of 15 December 1997). The directive applies to companies with at least 1 000 persons employed within the EU and at least 150 persons employed in each of at least two Member States.</p>

## Section 4 – Survey guidelines for CVTS 5

### 4.1 Background

The specifications of the methods to be used in CVTS have been designed to:

- ensure that data are collected in a consistent manner across all participating countries and to match quality requirements as stated in the EU regulations;
- ensure that the sampling design is in accordance with statistical theory;
- be sufficiently flexible to cope with the different systems for data collection in different participating countries and in different enterprise forms (e.g. multiple/sole establishments, large/small firms, trainers/non-trainers).

These principles have been guiding all waves of CVTS. They are to be respected by each participating country.

For data sources, article 6 of Regulation (EC) No 1552/2005 on data sources is reminded (<http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1415879108236&uri=CELEX:32005R1552>) which states that the required data shall be acquired using either a survey in enterprises or a combination of a survey in enterprises and other sources, including administrative data.

### 4.2 Data collection

#### 4.2.1 Reference period

The reference period of the CVTS 5 survey is the calendar year 2015.

#### 4.2.2 National sampling plan

The national sampling plan is to be communicated to Eurostat in the quality report. The national sampling plan shall contain the following elements:

- description of the sampling frame,
- sample selection (sample size, sample structure, sampling method, estimated response rate),
- data collection issues (including deviations from the standard questionnaire, data collection methods, fieldwork),
- treatment of non-response,
- data processing and modalities of data transmission.

The national sampling plan must give a complete picture of CVT in the country within the scope specified by the regulation in terms of enterprise sizes and economic sectors. Further practical aspects and further details on the implementation and performance of the survey, as well as on the treatment of non-response and data processing have to be described in the quality reports to be submitted to Eurostat.

#### 4.2.3 Questionnaire

The European standard questionnaire shall be used as the basis for the survey. National questionnaires should be drawn up using this European standard questionnaire and customised to the particular data collection methods to be used – see 4.2.4 below.

**Deviations from the standard questionnaire should be noted in the national quality report.**

**It is considered important that the sequence of questions as set out in the standard questionnaire is followed** as this ensures that the data are as comparable as possible across countries because the ordering of questions may influence the answers provided. If a country considers some re-ordering beneficial, the deviations should be reported accordingly in the quality report.

It is accepted that, where a country will provide the data needed from other sources, the relevant questions will not be asked. It may also be necessary, in exceptional cases, to deviate from the agreed sequence of questions during face-to-face interviews. If countries change the order of response alternatives or sub-items, the corresponding order in the micro data set (data record) must NOT be changed.

Countries shall comply in **all cases**, with the standard data record format for the non-imputed and imputed datasets, to be sent to Eurostat.

The translation of the questionnaire to the national language must be performed with utmost care, making sure that the concepts and definitions to be used for CVTS 5 are not distorted through translation. This is a key issue towards the objective of establishing comparable results from CVTS 5 across countries. As there are only few changes in variables/questions in CVTS 5 compared to CVTS 4, the questionnaires of the two waves should be consistent. The implementation of variables that remain the same as in CVTS 4 should only be changed if CVTS 4 experiences justify a change / improvement.

In case national examples are needed in order to help the enterprise to give an answer (whether in the questionnaire or through instructions to interviewers, e.g. training providers), those examples must be consistent with the relevant classifications and definitions.

#### **4.2.4 Different data collection approaches**

In its choice of data collection methodology each country shall consider the approach which best meets its needs in obtaining a sufficiently high response rate to assure the required minimum quality standard. In this, the funding available for the survey also needs to be considered.

The data collection approach will be determined nationally. It is expected that national instruments will be tested, if not through piloting by other means (e.g. measurement laboratory) and that some follow-up will be made with the enterprises to check that the data provided conform to the definitions and the prescribed quality standard.

Regardless of the data collection method chosen, the following aspects should be considered:

- Pre-information policy in preparation of the survey to inform enterprises on the upcoming survey; this is particularly important for face-to-face and telephone interviews.
- Support during the fieldwork through a service centre (hotline/helpdesk).

Different data collection methods and recommendations for their respective implementations are presented below.

##### ***Face-to-face interviews***

In CVTS 2 it was expected that face-to-face data collection would produce better data than other methods, especially for the quantitative questions, such as those on costs. A general pre-requisite, however, is the availability of a good organisation to perform the fieldwork and interviewers, who are experienced in interviewing enterprises and where possible, familiar with training issues. Face-to-face interviews guarantee high response rates and permit flexibility in interviewing different persons within the enterprise with respect to the different parts of the questionnaire. Good field control and documentation are additional advantages of face-to-face interviews. The use of computer-assisted methods during face-to-face interviews is convenient for automatic filtering and data checking during the interview.

##### ***Telephone interviews***

The telephone is often useful for establishing contact with the respondents in advance, motivating the respondents by explaining the purpose of the survey and reminding the enterprises to fill in the questionnaire. From CVTS 2 it has proven to be both suitable for the interviewers and successful in terms of obtaining enterprise co-operation, and hence satisfactory response rates. Telephone interviews as a data collection method, like other methods, is characterised by a mixture of advantages and disadvantages. Telephone interviews present higher response rates compared to postal methods (but lower response rates compare to face-to-face). However, some types of information are hard to collect in a pure telephone interview, especially information requiring the respondent to look up in records or to discuss questions with colleagues. Such problems can be addressed by sending the questionnaire in advance, either by post or electronically. Though raising costs of the survey, this measure is justified by the increased quality of the data. If telephone interviews are conducted for CVTS 5 the recommendation is to implement a computer-assisted approach (CATI) to enable the advantages of automatic filtering and immediate data checking routines.

##### ***Postal questionnaire***

The results of previous CVTS waves confirmed that a "pure" postal questionnaire generates lower unit response rates than other data collection methods. However, concerning the coverage of complicated quantitative variables such as number of participants in training, training hours and training costs, self-administered questionnaires seem to generate better data quality. The simplifications introduced from CVTS 4 and further simplifications in CVTS 5 should make it easier to fill in a self-administered questionnaire. For the quantitative information the respondents often have to look up in the accounting systems,



or exchange views with other colleagues. Self-administration of the interview makes time management more convenient and may therefore lead to better answers. But quality gains on the one side have to be balanced with the potential quality risks on the other side: filter questions are more often subject to errors in self-administered questionnaires. In addition checking of the data can only be performed ex post and may necessitate re-contacts with the enterprises. The latter may severely influence the costs of the method, moving it from a cheap method to at least a medium expensive one. There is often a lack of field control in mail surveys and unit response is likely to be low. If mail surveys are chosen as the method of data collection for CVTS 5 the **strong recommendation is to create a service centre (hotline/helpdesk) for the respondents**. This helpdesk should be available by phone and by email to answer queries from enterprises. To raise unit response rates, it is useful to make initial telephone contact. Multiple contacts and reminders should also be envisaged and included in the budget. In addition countries are encouraged to use incentives, such as sector reports presenting interesting CVTS data for special branches of industry, to motivate enterprises' participation.

### **Web-based questionnaire**

Compared to paper questionnaires a web instrument has the following advantages: first, it enables the routing of questions and modules according to different choices that enterprises make during the flow of the questionnaire. It also enables immediate checking of the internal consistency of given answers by summing up figures or comparing figures from different questions concerning the same piece of information. Another advantage is the decreased effort in data entry and data editing, which reduces mistakes in this phase of the processing which therefore contributes to higher reliability.

Compared to a computer assisted telephone or face-to-face interview a web questionnaire gives:

- the respondent the freedom to fill in the questionnaire at any convenient moment,
- the possibility to read additional information (definitions and explanatory text) at his/her own pace when needed,
- the possibility to return to previous questions of the questionnaire to confirm or correct previous entries or to fill in unanswered questions.

However, not all enterprises may respond positively to web-based questionnaires and this data collection mode also suffers from the problem of possible low response rates because of a lack of direct personal contact from an interviewer. Furthermore the expected technical standards in the enterprises have to be taken into account.

If a web-based questionnaire is chosen as the method of data collection for CVTS 5 the **strong recommendation is to create a service centre (hotline/helpdesk) for the respondents** (as for the postal questionnaire, see above).

### **4.2.5 Recommendations for the organisation of the fieldwork**

The survey organisation responsible for data collection at national level should be carefully chosen based upon the following criteria (if that organisation is not the statistical office itself):

- Good reputation.
- Experienced interviewers, preferably permanent and full-time.
- Interviewers are paid for the working time (the danger otherwise that they will not be careful with the quality of the responses).
- Organisation takes good care of interviewers' continuous training and plans special training for the survey.
- Organisation has well established procedures for all survey operations, including guiding, monitoring and reporting fieldwork operations.
- In the ideal case interviewers would have prior experience in the performance of enterprise surveys. However, these professional interviewers are not always experts on training matters. An optional role for interviews in an enterprise survey is to use them in contacting, motivating and persuading respondents.
- The number of contact attempts an interviewer is allowed to undertake to the enterprise must not be too limited.
- Every participating country should establish a dedicated service centre (hotline/helpdesk) for the survey to handle respondents' and interviewers' questions and problems.

## **4.3 Sampling**

### **4.3.1 Definition of the population**

The population of interest for CVTS 5 are the enterprises within each participating country with 10 or more persons employed belonging to the 20 NACE Rev. 2 categories [B, C10-C12, C13-C15, C17-C18, C19-C23, C24-C25, C26-C28+C33, C29-C30, C16+C31-C32, D-E, F, G45, G46, G47, H, I, J, K64-K65, K66, L+M+N+R+S], see annex 1.

Enterprises are defined according to Council Regulation (EEC) No 696/93 of 15 March 1993 on the statistical units for the observation and analysis of the production system in the Community<sup>1</sup>:

*"The enterprise is the smallest combination of legal units that is an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources. An enterprise carries out one or more activities at one or more locations. An enterprise may be a sole legal unit."*

#### **4.3.2 Sampling frame**

The sampling frame is the database or register that delimits, identifies and allows access to – ideally – all of the enterprises in the population.

The Statistical Business Register (SBR) described in Regulation (EC) No 177/2008 establishing a common framework for business registers for statistical purposes<sup>2</sup> will be the main source for the sampling frame in Member States.

The sampling frame must be of good quality and contain up-to-date information. This means that:

- a) The number of enterprises not represented in the frame must be small.
- b) It must, to a sufficiently large extent, be possible to identify enterprises in the frame that do not belong to the population of interest before the sample is taken. If this cannot be done, enterprises of no interest for the survey will be included in the sample and this could result in biased estimates.
- c) Variables that are used to identify strata (NACE and size) must have correct values. Otherwise precision in the estimates will be lower than what is expected.

For each unit in the frame it must be possible to decide whether it belongs to the population or not. The rule for this must clearly be stated. The frame quality should be clearly stated, especially for a), in the national sampling plan.

Countries should contact persons responsible for the SBR or the corresponding register to be used, in order to assess clearly the frame quality. In case the quality of an existing register is too poor (e.g. not covering all enterprises of interest, important variables are missing or error prone, not up-to-date etc.), it is necessary to improve it or to complement it by using other sources. Otherwise the survey coverage will be incomplete and inadequately defined.

#### **4.3.3 Sampling units**

Case 1: The sampling frame consists of a register or list of enterprises; then sampling units and observation units are the same.

Case 2: In some countries there is no register of enterprises as such but there is a register of local units. Then a sample of local units may be used to get in touch with the enterprise to which the sampled local unit is associated. The estimation procedure then has to take this into account since enterprises with many local units will have a larger probability to be included in the sample than enterprises with fewer local units. However, when using this approach one cannot be sure to present reliable estimates for enterprises in all intended NACE categories or all size classes.

#### **4.3.4 Frame problems**

##### ***Over- and under-coverage***

Over-coverage is a common problem, i.e. there are enterprises in the sample that no longer are in business or for other reasons do not belong to the target population. There is probably also a problem with under-coverage, i.e. enterprises that do belong to the target population but which have no chance to be included in the sample because they are not in the sampling frame. To reduce both problems it is recommended that the sampling frame be updated as close as possible to the end of the reference period.

What to do in the case of over- and under-coverage? If one accepts three simple assumptions, a simple procedure to adjust for over- and under-coverage by weighting may be applied.

These assumptions are made for each stratum:

- The first assumption is that the over-coverage rate among the respondents is the same as that among the non-respondents.

<sup>1</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31993R0696:EN:HTML>

<sup>2</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:061:0006:0016:EN:PDF>

- The second assumption is that the number of unwanted enterprises in the frame (over-coverage) is the same as the number of missing enterprises (under-coverage), this means that the size of the population is not changing during the survey period.
- The third assumption is that the mean value of any variable of interest is the same in the part of the sample that belongs to the target population as in the under-coverage part.

These three assumptions can of course be questioned but they lead to a simple procedure. If these assumptions are accepted then the number of responding enterprises in stratum  $h$ ,  $m_h$  shall not contain the number of over-coverage enterprises. Note that  $N_h$  shall not be reduced for the number of discovered over-coverage. For example if there are 100 enterprises in the response set, of which 10 do not belong to the target population, then  $m_h=90$  should be used in the weighting procedure in that strata.

#### ***“Stratum switchers”***

In practice it is not uncommon that some enterprises turn out to have changed stratum at the time for data collection. The enterprise might have grown or changed NACE group. It is important to note that it is the stratum identity at the sampling occasion that counts, i.e. if an enterprise is sampled in NACE group E and size class 10-49 and it turns out that it has 62 persons employed, then  $N_h / m_h$  comes from stratum (E, 10-49). However, if the Statistical Business Register (SBR) has been updated and the enterprise belongs to the true size class in the updated register then it is probably a good idea to use the updated information as additional information in the construction of the final weights.

For example the updated division indexed by  $g$  may cross the original division into strata indexed by  $h$  and each responding enterprise is classified into the classes  $hg$ . The totals  $N_h$  are known from the sample procedure and the totals  $N_g$  and possibly  $tx_g$  are known from the updated register. Note that the known totals should contain data from enterprises that are members of the target population only.

The use of additional information may have the twofold effect on the estimates that the bias is decreased and the precision is increased when the information is correlated with the variable(s) of interest. Otherwise it will probably have a small or no impact at all on the estimates.

#### ***Split or merged enterprises***

An enterprise in the sampling frame might have been split into two or more different units. Conversely, it may also happen that two or more enterprises in the sampling frame have merged into a new single unit. This is not just a weighting problem although weighting may be used as one solution to at least a part of it. It is only possible to give general advice on how to handle some typical situations. The suggestions are highly dependent on the available information on the enterprises.

##### *a) Split enterprises*

The following suggestion may be used when the split occurs during the reference period (2015). When an enterprise is split into two or more separate units the “mother” enterprise has to be treated from the frame as a cluster of “daughter” enterprises. The “daughters” may belong to different NACE categories and/or different size classes. Countries should try to collect the data for each “daughter” and include it in the final data set as separate enterprises with the same identity and weight as the “mother”.

When the split occurs after 2015 it should be treated as a measurement problem.

##### *b) Merged enterprises*

In the case of merged enterprises the problem should be handled in different ways depending on whether the merge occurs before year 2016 or not. First, if we assume that the merge occurs before year 2016. When two or more frame enterprises merge into one single unit it means that this unit is included in the sample if at least one of its (eligible) frame enterprises is included. The increased inclusion probability should be adjusted.

When the merger occurred after 2015 it should be treated as a measurement problem. The collected data about the frame enterprise are not the “true” values and have to be corrected for example by splitting the values that were obtained from the merged enterprise, i.e. imputation.

#### **4.3.5 Stratification and allocation of the sample**

The sample shall be stratified by NACE Rev. 2 and size category according to the following minimum specifications:

- 20 NACE Rev. 2 categories [B, C10-C12, C13-C15, C17-C18, C19-C23, C24-C25, C26-C28+C33, C29-C30, C16+C31-C32, D-E, F, G45, G46, G47, H, I, J, K64-K65, K66, L+M+N+R+S],
- 3 enterprise size categories, according to their number of persons employed: (10-49) (50-249) (250 and more) for countries with fewer than 50 million inhabitants,
- 6 enterprise size categories, according to their number of persons employed: (10-19) (20-49) (50-249) (250-499) (500-999) (1 000 and more) for Member States with 50 million inhabitants or more.

A sample size shall be calculated to ensure a maximum half-length of 0.2 of the 95 % confidence interval for the estimated parameters, which are a proportion of "training enterprises" (after allowance for the non-response rate in the sample) for each of the 60 stratified elements identified above (120 stratified elements for Member States with 50 million inhabitants or more).

The following formula may be used in determining the sample size:

$$n_h = 1 / \left( \left( C^2 * te_h + \frac{1}{N_h} \right) * r_h \right)$$

Where:

$n_h$  = the number of sampling units in the stratum cell, h

$r_h$  = the anticipated response rate in the stratum cell, h

$c$  = maximum length of half the confidence interval

$te_h$  = the anticipated proportion of training enterprises in the stratum cell, h

$N_h$  = the total number of enterprises (training and non-training) in the stratum cell, h

The derivation of the formula, which is used for calculating sample sizes in each stratum is presented below. In CVTS, we are mainly interested in estimating proportions, for example the proportion of training enterprises offering external courses,  $p_h$ .

$$C = 2 \sqrt{p_h(1-p_h) \left( \frac{1}{n_h r_h} - \frac{1}{N_h} \right)}$$

$$\frac{C^2}{2^2} = p_h(1-p_h) \left( \frac{1}{n_h r_h} - \frac{1}{N_h} \right)$$

Assume that  $p_h = 0.5$

$$\Rightarrow C^2 = \frac{1}{n_h r_h} - \frac{1}{N_h}$$

$$\frac{1}{n_h r_h} = C^2 + \frac{1}{N_h}$$

$$n_h r_h = 1 / \left( C^2 + \frac{1}{N_h} \right)$$

$$n_h = 1 / \left( \left( C^2 + \frac{1}{N_h} \right) * r_h \right)$$

Allocate the sample sizes in such a way that the expected number of training enterprises will be roughly the same in each stratum.

$$n_h = 1 / \left( \left( C^2 * te_h + \frac{1}{N_h} \right) * r_h \right)$$

Sample sizes should be calculated for a maximum **C-values of 0.2** on the basis of a **20 x 3 (NACE x size) matrix** (20 x 6 matrix in Member States with 50 million inhabitants or more).

Expansion of these NACE and size classes for the purpose of analysis is possible. However, it is important to note that when one expands the "base" 20 x 3 strata (or 20 x 6; NACE x size) by splitting them into the agreed categories for analysis, those must be identified before drawing the sample. The number of sampled enterprises in the expanded categories must sum up at least to the agreed number in each "base" stratum. The recommended way to divide an "old" cell in the 20 x 3 matrix, where it already has been calculated to select  $n$  enterprises from a total of  $N$  enterprises, is to divide this cell into, say,  $G$  parts, each part containing  $N_g$  enterprises, according to the 20 x 3 matrix and select  $n \times N_g / N$  in part  $g$ , that is a proportional sample selection.

The overall sample of enterprises must be designed in a way that leads to results that are representative for the national economy and for each size and sector of enterprise included in the survey. This means that, within each size/activity cell used for sample stratification, a random sample should be drawn covering enterprises irrespective of whether and how much training they provide. It will also be necessary to ensure that there are sufficient responses from enterprises providing CVT to obtain enough detail for cross-classifications by person employed characteristics and subject and provider of CVT.

If the here described sample procedures are not used, countries must justify their diverging choices of sampling procedures and mention them in the standard quality report. Samples not fulfilling the criteria above could be deemed insufficient. Particular attention is to be given to the expected non-response rates within each cell when calculating the sample sizes for CVTS 5. This may help to ensure that there are enough enterprises in each cell for the estimation process.

#### 4.3.6 Sampling procedure

For each sample stratum,

- the number of sampling units in the frame has to be counted and recorded,
- the pre-defined number of sampling units has to be taken by simple random sampling. The number of sampled units must be recorded.

Note that if there are units in the sample that are recognised as not belonging to the population, these units must not be discarded or replaced by another unit. Of course no data is collected for these units but their records should be kept since they may be needed in the (re-)weighting procedures.

#### 4.3.7 Editing and control

Editing and control of incoming data have to be carried out by countries. This includes validity checks for the variables and consistency checks between different variables. Call-backs may be necessary to find out the correct values for an enterprise. As much as possible, countries should use "direct" methods to reduce the missing information or editing errors, seeking additional contacts with respondents with a view to clarifying responses and/or obtaining additional information. This will help to increase the item response rates.

#### 4.3.8 Treatment of non-response

After the data collection phase, when the non-response is a fact, **it is important that all available data about the sampling units (response and non-response) are saved. Countries shall submit to Eurostat the checked dataset before imputation and the checked dataset after imputation.** This information will make it possible to analyse the structure of the non-response and possibly compensate for the assumed effects of the non-response.

There are two types of non-response:

- **Unit non-response** arises when no survey data are collected at all for a given unit (information is missing on all the questionnaire variables).
- **Item non-response** arises when some data are collected for a unit but values of some items are missing (information is missing on at least one, but not all, of the questionnaire variables).

Non-response causes at least two types of problems. Firstly, by reducing the sample size, unit non-response might cause less precise estimates for important indicators regarding different population groups. The second and more essential problem caused by non-response is the introduction of bias. Unit non-response can lead to over- or under-representation of some groups in the population. If these groups have different training patterns compared with other groups in the population, the estimates based on the respondents in the sample will be biased and therefore not representative for the entire population.

It is well known that the bias tends to increase with the rate of non-response. If there is no evidence showing the opposite, it can be assumed that the estimates are biased. It is very difficult to estimate the impact of non-response on the estimates. Non-response rates are useful for describing response patterns in the survey, but will not give enough information to analyse the effects of non-response on bias in the survey estimates.

Another matter is that non-response may lead to extended costs. High non-response rates will increase the administrative burden, postage fees, and so on.

***(Re-)weighting and imputation***

It is important to have **sufficient resources to establish re-contacts with the enterprises in order to reduce the unit and item non-response rates as much as possible**. In case re-contacts do not solve the problem it is then necessary to consider how to treat the non-response at the estimation stage of the survey. Estimation typically involves the construction of a point estimator (and weights) and an associated variance estimator. The principal methods used to correct for bias due to non-response and to make efficient use of data are imputation and re-weighting. It is recommended in CVTS 5 that re-weighting is used to treat the problem of unit non-response, while imputation is used to treat problems of item non-response.

Re-weighting entails changing the weights of the respondents, compared to the weights that would have been used if no non-response had occurred. Since observations are lost by unit non-response, re-weighting will imply increased weights for most of the responding enterprises. Imputation entails replacing missing values by a fabricated value (e.g. by using another source or by using the value given by a similar enterprise or by imputing the mean, etc.). **Note that replacement ("imputation") for unit non-response is not allowed**. See below for further details.

Variance estimation in the presence of imputation is a complex statistical problem, which means that more advanced formulas for estimating the variance according to statistical theory should be used. If the variance is estimated in the same way as when imputation has not been used, it will be underestimated, which means that the length of the confidence intervals are too short. Non-response brings additional variance over and above the sampling variance.

***Imputation in respect of item non-response***

It is to be expected that the initial response from some enterprises will yield data, which are incomplete with respect to some variables (item non-response). When this occurs, it is important that countries should first try to encourage enterprises to provide these missing data by re-contacting enterprises (especially for important quantitative variables) to see if estimates can be provided and, if necessary, to assist them in doing this.

If some data are still missing after all other efforts have been made to get the information directly from the enterprise, these data may be imputed, i.e. estimated using other information available. The purpose of imputation is to provide a sample and, hence, population estimate of a given variable which are better than that which would be obtained by simply distributing the "not known" or "not available" totals in a table according to the positive responses in that table. This is because imputation, normally, will take into account more information than is available in a single table. Imputation may reduce bias arising from the item non-response.

The basic principle assumed for imputation is that, as far as possible, countries should try to make use of all the information collected when interpreting the data. The imputation methods used may have an impact on the distribution of data. In general, the greater the degree and impact of imputation, the greater care needs to be taken in using the data.

**Core variables**, for which neither missing values shall be accepted nor imputation permitted, are detailed in the table below. If there is still item non-response in several of these variables after **re-contact** with the enterprise, it should be a clear indication that the record should be converted to a unit non-respondent and taken into account for the adjustment of the weight. Exceptions to this rule may be accepted, and fully justified and detailed in the quality report.

<b>A1</b>	Actual NACE Rev. 2 code of the enterprise
<b>A2tot</b>	Total number of persons employed on 2015-12-31
<b>B1a</b>	Provision of internal CVT courses
<b>B1b</b>	Provision of external CVT courses
<b>B2aflag, B2bflag, B2cflag, B2dflag, B2eflag</b>	Provision of other forms of CVT
<b>F1</b>	IVT participants usually employed in the enterprise

**Key variables**, for which every effort should be made to avoid missing values and for which imputation is permitted, are:

<b>A4</b>	Total number of hours worked in the reference year (2015) by persons employed
<b>A5</b>	Total labour costs (direct + indirect) of all persons employed in the reference year (2015)
<b>C1tot</b>	Total number of participants in all CVT courses
<b>C3tot</b>	Paid working time (in hours) spent on all CVT courses
<b>C7sub</b>	CVT costs sub-total (amount in euros)
<b>C7tot</b>	Total CVT costs (amount in euros)
<b>PAC</b>	Personal absence costs

Imputation for item non-response shall not be made without first considering the impact of imputation when analysing data.

Imputation for item non-response shall be recommended within the following general limits; Member State experts should at all times apply their professional judgement in the application of these rules.

- 1) When a **record** contains less than **50 % of variables** presented then this record shall normally be considered as a unit non-response.
- 2) For a single NACE Rev. 2/size cell imputations shall not be allowed if **more than 50 %** of the **responding enterprises** have missing data for **more than 25 %** of the quantitative variables.
- 3) For a single NACE Rev. 2/size cell, no imputation shall be performed on a **quantitative variable** if the proportion of responding enterprises for that particular variable is **less than 50 %**.
- 4) For a single NACE Rev. 2/size cell, no imputation shall be performed on a **qualitative variable** if the proportion of responding enterprises for that particular variable is **less than 80 %**.

Imputations for which other sources can be used as **an alternative source** of information are only allowed if the quality of these data can be guaranteed and the data are sufficiently recent.

These rules above imply that imputations should not be made when the variable to be imputed is missing from too many enterprises. It is possible to imagine complex rules for determining what percentage of item response is required before imputation can be allowed. In this case the imputation can be carried out if the item response rate for the variable to be imputed concerning responding enterprises within a stratum is 50 % or more except when there is reason to believe that there is a strong association between the probability of responding and the required answer. In this latter situation an item response rate of 70 % should be required. If after aggregation the item response rate within a stratum is still less than 50 % (or 70 % if applicable) the actual responses for this item should be converted to missing values in the whole data set supplied to Eurostat.

**All countries, therefore, should impute missing values according to the rules set out in these guidelines but should, afterwards, inform Eurostat, via the standard quality report of their actions and argumentation.**

### **Types of imputation**

Two types of data are collected in CVTS 5, quantitative data and qualitative data, for which different imputation procedures are required. It would be ideal if missing values for both types of data could be imputed so that enterprise records sent to Eurostat would be complete with respect to all variables. However, it is not possible to base the imputation of qualitative variables on a model, which uses a combination of other information in the enterprise record. This means that there exist some doubts whether imputation of qualitative variables would give better quality in the estimates than simply distributing the "not known" or "not available" totals in a table. There are therefore doubts if imputation of qualitative variables will improve the quality of the estimates. **If countries should decide to impute qualitative variables, the item non-response rate should not exceed 20 %.** Otherwise it is better that the item non-responses for the qualitative variables are shown in the tables under the category "not known". It is also recommended that qualitative variables, which have been imputed, will not be used for further breakdown of enterprises within a NACE group or size class when the results are presented.

Whatever method is used, however, it is an essential requirement, following the imputation of missing data, that the enterprise record should be internally consistent. It is important, therefore, that the imputation procedures are used in such a way that this internal consistency is preserved and verified using the Eurostat data validation software (EDIT). It is also important that the original data records (before imputation) are kept (and sent to Eurostat) and that a detailed description of the imputation procedure used is contained in the quality reports.

Countries should at all times use their professional judgement. Deviations from the recommendations set out in these guidelines should be clearly mentioned and justified in the standard quality report.

#### 4.4 Timetable and data transmission to Eurostat

Countries shall take all measures necessary to avoid delays in carrying out the survey which would affect the availability, quality and timeliness of the data as stated in the regulations.

The **preparation of the survey** normally should start during 2015 to ensure a launch date for the survey as early as possible in 2016.

**Fieldwork** normally should begin in early 2016. The phase of data collection as well as of the treatment of initial non-response, data validation and cleaning by re-contacting enterprises should be completed towards the end of 2016.

Further **data processing** would normally then take place towards the end of 2016.

Validated clean data shall be transmitted to Eurostat **by the end of June 2017**<sup>3</sup> at the latest, as explained in section 5.1 below.

#### 4.5 National quality reports

A national standard quality report in accordance with the ESS Standard Quality Report Structure shall be transmitted to Eurostat **by the end of September 2017**<sup>4</sup> at the latest. The tool to be used is the ESS Metadata Handler (ESS-MH, <https://webgate.ec.europa.eu/estat/spe/metaconv/>). It is planned that the application is available for CVTS 5 quality reporting by the end of February 2017. An excel version of the quality report template is available for information on the requirements for quality reporting: [CVTS 5 \(2015\) - Implementation manual \(quality report template\)](#).

Standard quality reporting shall conform to the requirements presented in the Annex V of the CVTS 5 Commission Regulation (see annex 19 of the manual). More details on quality reports are also provided in annex 17.

The quality report should inform the users on factors of vital importance for a correct interpretation of the statistics. Each process during the development of statistics such as collection of data, editing, treatment of non-response and estimation shall be described in detail. This information should include the concepts and methodology used in collecting and processing the data and other characteristics of the data that may affect their quality and use or interpretation. The users should be able to evaluate if the objects, variables, statistical measures and reference periods match with his/her interests and if they can rely on the statistics from an overall point of view. The users can then analyse the survey results from their own particular objectives. All deviations from the common approach for CVTS 5 should therefore be reported in detail in the standard quality report to let the users know about any deviations that could lead to comparability problems.

<sup>3</sup> See <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1415879108236&uri=CELEX:32005R1552>

<sup>4</sup> See <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1415879108236&uri=CELEX:32005R1552>



## Section 5 – The informatics framework for CVTS 5

### 5.1 Data transmission formats

Validated clean micro data shall be transmitted to Eurostat **by the end of June 2017** at the latest. This shall be done in electronic form by means of a secure data transmission software application (EDAMIS) made available by Eurostat.

Countries shall transmit **two checked data sets** to Eurostat as well as a **control table** as follows:

- 1) The data set **prior to imputation** with preliminary quality checks performed.
- 2) The fully checked data set **after imputation**.
- 3) The standard **control table** filled in with the indicators requested in annex 11.

Each file should be transmitted after encryption using the CSV format according to the following principles:

- The header of each file should contain the variable names separated by a semicolon.
- Each subsequent line should correspond to the values provided by each enterprise for all variables. The values are separated by a semicolon. The separator for decimals is a 'dot'.
- The codes to be used for each variable are described in annex 7 (code book).
- The number of variables is fixed according to Commission Regulation (EU) No 1153/2014. There are no optional variables to be submitted.
- Each file has to comply with the set of checking rules presented in section 5.2 below. For this purpose, a software is provided by Eurostat as explained in section 5.3 below.
- Each checked (validated) dataset is to be zipped and encrypted before transmission to Eurostat through EDAMIS (i.e. using the option 'encryption' available in the EDAMIS application).

An example of a CSV file for imputed and non-imputed micro data as well as a description of the file structure for the control table are available on [CIRCABC](#).

The data is disseminated on Eurostat's website upon acceptance of the control table by Eurostat and agreement of each country on the list of standard tables to be published in order to comply with confidentiality rules applicable at national level (e.g. NACE and enterprise size breakdowns).

### 5.2 Logical data checks

Annexes 8 and 9 of this manual set out a list of checking rules which are implemented in the Eurostat data validation software (EDIT, see 5.3 below).

There are two main levels for checking:

- **Field level checks** – simple coherence check between a variable entry and the possible allowed entries (valid codes and ranges). It will detect missing values and incompleteness of the file, see annex 8.
- **Record level checks** – arithmetic checks to test the consistency between variables for a single enterprise record. This covers routing/filter tests (target enterprises for each question as defined in the regulation, e.g. training or non-training enterprises) as well as logical tests within a single record (e.g. coherence of data for total and for males and females separately), see annex 9.

The output from the checking programme is an error report, available by enterprise record (i.e. validation at micro data level).

For validation of main results of the survey, a set of indicators is defined in the "control table", see annex 11.

### 5.3 Data validation software

The validation tool is available in CIRCABC via the following links:

- <https://circabc.europa.eu/w/browse/fe71fadb-3c94-4456-bb61-3f03ddd45b1f> (via the restricted CVTS domain)
- <https://circabc.europa.eu/w/browse/f28bc47b-d162-4129-b5f6-a91d6711c37e> (via the EDIT domain)

The objective of this tool is to check the compliance of each data set at micro data level with the pre-defined checking rules presented in annexes 8 and 9. The data validation software shall be used by all the countries for checking their data sets before transmission to Eurostat.

The tool outputs an error report. The data validation software does not implement any automatic cleaning of data. A specific user-manual as well as an installation manual are provided along with the software.

The validation rules are on the 'conservative' side, i.e. some cases identified as error by the tool could be justified exceptions. For example, in an enterprise that provided CVT courses in 2015 [(B1a or B1b)=1]), C3tot (paid working time spent on all CVT courses) could be 0 if all courses took place outside paid working time. Nevertheless, the tool reports an error if C3tot=0 in a CVT course enterprise. In such cases countries should carefully double-check if this value '0' is correct. If the country confirms that the value was double-checked and is correct, the file can be accepted, even if it does not formally pass the validation rules.