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Directorate F: Social Statistics

Unit F-5: Education, health and social protection statistics



CVTS 4 manual

Version 6

Note: this version of the manual (section 1 to 5) is the same as version 5. Only annexes have been up-dated. Please note that the symbol  is used to signal the availability of useful information in the Frequently Asked Questions webpage.

26 April 2012

Foreword

Lifelong learning holds a high profile in the Lisbon strategy and more precisely in the “Education and Training 2010” work programme as well as in the European Employment Strategy, as reflected by the European Commission's 2007 Communication on the Integrated Guidelines for Growth and Jobs (2008-2010). Continuing Vocational training is a central theme in European lifelong learning strategies.

More recently, the conclusions of the Council on education and training of May 2009 confirmed that lifelong learning remains a strategic issue for the EU while setting a new target for the participation in education and training for 2020. The Europe 2020 strategy, the successor of the Lisbon strategy, calls in particular for more information in the field of skills through the flagship “an Agenda for new skills and jobs”¹.

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.

Since 2005, the CVTS is underpinned by a Regulation of the European Parliament and of the Council on statistics relating to vocational training in enterprises. Implementing details were provided in the Commission Regulation No 198/2006 of 3 February 2006 which has been amended by Commission Regulation No 822/2010 for the 4th CVTS.

Commission Regulation No 822/2010 as well as this manual were prepared with the support of a Task Force composed of 11 countries, CEDEFOP and BIBB, as well as the Commission Directorate-General Education and Culture (DG EAC) and the Directorate-General Employment, social affairs and equal opportunities (DG EMPL). The comments of all Member States were integrated at the occasion of written consultations organised regularly over 2009 and 2010.

Eurostat would like to thank the Member States and the Task Force for their support during this process as well as CEDEFOP which largely supported the work through a detailed review of CVTS3 results prepared by BIBB, Céreq and ISFOL and the organisation of a CVTS workshop in June 2009.

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¹ More recently, the conclusions of the November 2010 Council underline the need for data on Vocational Education and Training (VET) systems in the context of the Copenhagen process and of the important contribution it has to make to the Europe 2020 strategy. In particular, the [Bruges communiqué](#) of 7 December 2010 on enhanced European Cooperation in Vocational Education and Training for the period 2011-2020¹ states that “EU level policy-making in VET should be based on existing comparable data. To this end, and using the Lifelong Learning programme, Member States should collect relevant and reliable data on VET – including VET mobility – and make these available for Eurostat. Member States and the Commission should jointly agree on which data should be made available first”. See also the overall framework on VET policies on the [dedicated web page](#) managed by the Directorate-General ‘education and culture’.

Table of content

1. Introduction	page 5
2. European standard questionnaire.....	page 7
3. Concepts and definitions	page 21
4. Survey guidelines	page 31
5. Informatics framework	page 41

List of annexes

Annexes 1 and 2: NACE and enterprise size groups for stratification and publication

- *Annex 1 – NACE categories*
- *Annex 2 – Enterprise size grouping*

Annexes 3 to 6: methodology

- *Annex 3 – a.. Obligatory courses on health and safety at work
b. Participants in IVT
c. Coherence with the AES results (formal and non-formal education and training)*
- *Annex 4 – Costs*
- *Annex 5 – Questions on skill needs and reference periods*
- *Annex 6 – Other methodological issues, optional variables*

Annexes 7 to 10: code books, checking rules, control tables

- *Annex 7 – Code book, Exchange rates*
- *Annex 8 – Checking rules: field level*
- *Annex 9 – Checking rules: record level*
- *Annex 10 – Checking rules; file level*
- *Annex 11 – Control table*

Annexes 12 to 16: classifications:

- *Annex 12 – Country, regional and language codes*
- *Annex 13 – NACE Rev 2. codes (for data collection)*
- *Annex 14 – Data collection modes*
- *Annex 15 – ISCED*
- *Annex 16 – Providers*

Annexes 17 and 18: comparability with previous surveys, quality reports

- *Annex 17 – Comparability with previous surveys (summary table)*
- *Annex 18 – Quality reports*

Annexes 19 and 20: regulations

- *Annex 19 – EP/Council Regulation (consolidated version)*
- *Annex 20 – Commission Regulation (consolidated version)*

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, fields 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
- as well as the effectiveness of CVT activities as well as public funding initiatives.

The continuing vocational training survey (CVTS) has been performed under "gentlemen's agreements" between countries and Eurostat until 2005.

The first (CVTS1) 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.

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 more developed continuing vocational training survey (CVTS2) 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.

The 3rd implementation (CVTS3) 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 the Commission Regulation No 198/2006 of 3 February 2006.

The development of the CVTS3 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 CVTS2 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

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 the coherence with the information to be made available through the Regulation (EC) No 452/2008 as regards the Adult Education Survey (AES). The Regulation was published on the Official Journal in September 2010 under No 822/2010. The aim of Commission Regulation No 822/2010 is to adapt the codification scheme, sampling, precision and quality requirements of the CVTS in order to:

- Simplify of the list of variables.

The 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 joint data collection on education systems.

The order of the questions as well as few adjustments on questions related to enterprise training strategies are also proposed to improve the relevance and quality of the results. This covers a widening of some filters on variables on enterprises strategies requested only to training enterprises in the past.

Additionally, optional variables are proposed in the implementation manual in order to contribute to the harmonisation of data collected by few Member States.

- Add few variables to highlight in particular how continuing vocational training can reply to enterprise future skill needs.
- Adapt the precision requirements 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.

The Commission Regulation No 822/2010 and manual have been prepared with the support of a Task Force composed of 11 countries², CEDEFOP and BIBB, as well as the Commission Directorate-General Education and Culture (DG EAC) and the Directorate-General Employment, social affairs and equal opportunities. The work of the TF benefitted from a detailed review of CVTS3 results³ (Evaluation and interpretation of the third continuing vocational training survey) prepared by BIBB, Céreq and ISFOL for CEDEFOP and from a CVTS workshop organised by CEDEFOP in June 2009. A set of recommendations is in particular proposed from the page 137 of this report.

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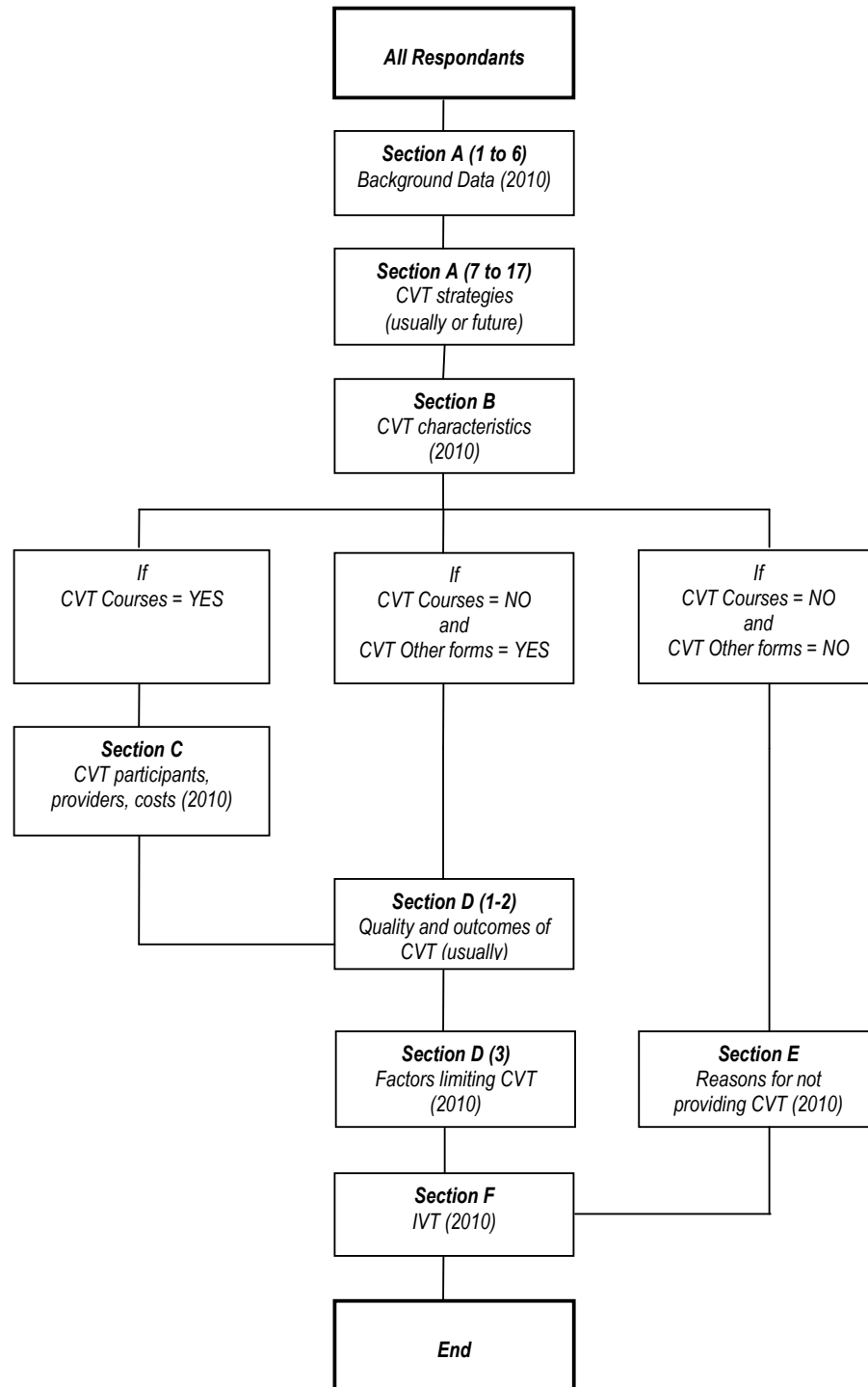
² The Czech Republic, Germany, France, Italy, Latvia, the Netherlands, Portugal, Slovenia, the United Kingdom, Turkey and Norway

³ http://www.cedefop.europa.eu/EN/Files/5502_en.pdf

Section 2 - European standard questionnaire

The structure of the CVTS 4 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 2010 and questions on the usual situation or behaviour - see annex 5 of the manual).

Chart 1 - Structure of the CVTS4 questionnaire



A1-A6 BACKGROUND DATA ON THE ENTERPRISE (all enterprises)

A1 - What is the **principal economic activity of the enterprise** (def. 1)?

Principal economic activity of the enterprise (def. 7) - NACE Rev 2 CODE*	A1
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* This information should be entered from the business register from which the sample is selected.

A1bis – Principal economic activity of the enterprise in 2010 according to NACE Rev 1.1
 OPTIONAL – See the annex 6b of the manual

A2/A3 - What was the **total number of persons employed** (def. 10) by the enterprise?

Total number of persons employed			
	Total	Males	Females
31.12.2010	A2tot	A2m	A2f
31.12.2009	A3tot		

A2bis – Average number of persons employed by the enterprise in 2010
 OPTIONAL – See the annex 6b of the manual

A2ter - What were the total number of persons employed by the enterprise by main occupational group?
 OPTIONAL – See the annex 6b of the manual

A4 - In 2010, what was the **total number of hours worked** (def. 11) by **persons employed** (def. 8) for the enterprise?

Total number of hours worked in 2010	A4
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A5 - In 2010, what were the **total labour costs of persons employed** (def. 12) by the enterprise?

Total labour costs (direct + indirect) in 2010	A5
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A6 – In the year 2010, did the enterprise introduce any **new or significantly improved** goods, services, or methods of producing or delivering these goods or services (def. 13)?

		Yes	No
A6	New or significantly improved goods, services, or methods of producing or delivering these goods or services	A6	A6

A6bis –Additional questions from the Community Innovation Survey on organisational and marketing innovation
 OPTIONAL – See the annex 6b of the manual

A7-A17 CVT STRATEGIES (all enterprises)



This section of the questionnaire addresses Continuing Vocational Training ^(def.2) (CVT) strategies of the enterprise

CVT activities ^(def. 4) 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*

A7 - Does the enterprise run a **training centre** or **share a training centre** ^(def. 36) with other enterprises or organisations to provide CVT for its persons employed?

		Yes	No
A7	Training centre	A7	A7

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

		Yes	No
A8	Specific person or unit having the responsibility for the organisation of CVT	A8	A8

A9 - Does your enterprise **assess regularly the needs** of skills and competences ^(def. 32) **in the enterprise?**

("regularly" covers the recent past years and the next few years)

		A9
a	No	
b	Yes but not regularly (mainly linked to changes in personnel)	
c	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
a	Continuing vocational training of available staff	A10a	A10a
b	Recruitment of new staff with the suitable qualifications, skills and competences	A10b	A10b
c	Recruitment of new staff combined with specific training	A10c	A10c
d	Internal reorganisation to better use the existing skills and competences (in line with future needs)	A10d	A10d

A11a - Does your enterprise usually **review the skill and training needs** ^(def. 33) of the **individual employees?**

		A11a
A	Yes, mainly by way of structured interviews ^(def.38)	
B	Yes, but mainly by way of other methods	
C	No	

IF Yes: **A11b** - Do these reviews focus on



		Yes	No
a	Occupations or group of occupations	A11ba	A11ba
b	Skills and competences	A11bb	A11bb
c	Working tasks and activities	A11bc	A11bc
d	Formal qualifications	A11bd	A11bd

NOTE: examples should be provided at national level especially for categories a and b.

A11abis –Additional questions on the occupational groups concerned

A11ater –Additional questions on the type of interviews

OPTIONAL – See the annex 6b of the manual

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

	Skills important in the next few years	Tick those which apply	Most important
a	General IT skills	A12a	A12Main
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 (none of these)	A12l	
o	Do not know	A12o	X

Note: more information on these categories is provided in the annex 5

An additional variable A12flag is used for the data transmission (see the coding book in annex 7)

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

		Yes	No	Do not know	Not applicable
A13	Written training plan or programme	A13	A13	A13	A13

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

		Yes	No	Do not know	Not applicable
A14	Annual training budget	A14	A14	A14	A14

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

		Yes	No	Do not know	Not applicable (optional)
A15	Written agreements between social partners usually cover the provision of CVT	A15	A15	A15	A15

Note: the category "do not know" covers "not applicable" for dissemination, i.e. when there are no written agreements between social partners. Countries can add and transmit to Eurostat an optional category 'Not applicable'. A15 can cover type and frequency of training by branch and occupations as well as financial aspects.

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

		Yes	No	Not applicable
A16a	Staff representatives/committees usually involved in the management process of CVT	A16a	A16a	A16a

Note: a preliminary question on the existence of staff representatives can be introduced at national level (although one unique variable A16a would be transmitted to Eurostat).

If yes to A16a

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

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

A17 – Which **sources of information or advice** does your enterprise usually use to be informed about continuing vocational training providers and offerings?

		Yes	No
a	Public information centres/services and authorities (e.g., public employment service, training advisory councils etc)	A17a	A17a
b	Private training providers	A17b	A17b
c	Personnel/staff representatives	A17c	A17c
d	Others	A17d	A17d
e	Do not use any specific source of information	A17e	A17e

Note: some items in brackets might not be included if they are not relevant at national level (e.g. training advisory councils).

B1-B6 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 2010, did your enterprise provide **Internal** (def. 14) or **External** (def. 15) **CVT courses** (def. 5)?

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

B2 – In 2010, did your enterprise provide any of the following other forms of CVT (def. 6)?

	OTHER FORMS OF CVT in 2010	Yes / No	If yes, how many persons employed participated in each of the relevant other forms of CVT?
a)	Planned training through guided on-the-job-training (def. 16)	B2aflag	B2a
	<i>Planned periods of training, instruction or practical experience undertaken in the work place using normal tools of work, either at the immediate place of work or in the work situation.</i>		
b)	Planned training through job-rotation, exchanges, secondments or study visits (def. 17)	B2bflag	B2b
	<i>Transfers of workers from one job to another, which are not part of a planned developmental programme, should not be included.</i>		
c)	Attendance at conferences, workshops, trade fairs and lectures (def. 20)	B2cflag	B2c
	<i>Attendance (instruction received) at these events is counted as training, only when they are planned in advance and the primary intention of a person employed attending them is training/learning.</i>		

d)	Planned training through participation in learning or quality circles (def. 18)		
	<i>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 work places. Quality circles are working groups with the objective of solving production and work place problems through discussion.</i>	B2dflag	B2d
e)	Planned training by self directed learning (def. 19) (e.g. self-directed e-learning)		
	<i>Self directed learning occurs when an individual engages in a planned learning initiative where he or she manages the, training time and the place at which the learning takes place. This covers e-learning when it is self-directed.</i>	B2eflag	B2e

B3 - Did the enterprise provide **CVT Courses** for its persons employed in the previous year, 2009? 


		Yes	No	Not applicable
B3a	CVT Courses for persons employed in the previous year	B3a	B3a	B3a

B3b – CVT courses planned during the year (2011)
OPTIONAL – See the annex 6b of the manual

B4 - Did the enterprise **provide other Forms of CVT** for its persons employed in the previous year, 2009? 


		Yes	No	Not applicable
B4a	Other forms of CVT for persons employed in the previous year	B4a	B4a	B4a

B4b – Other forms of CVT planned during the year (2011)
OPTIONAL – See the annex 6b of the manual

B5 – Did the enterprise **contribute** in 2010 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 ? 

B5		Yes / No	Amount
a	CVT Contributions (def. 30)	B5aflag	B5a
b	CVT Receipts (def. 31)	B5bflag	B5b

If B5bflag=yes, **B6: Which measures your enterprise usually benefits from** for providing CVT? 

		YES	NO
a	Tax incentives (Tax allowances, tax exemptions, tax credits, tax relief, tax deferrals)	B6a	B6a
b	Receipts from training funds (national, regional, sectoral)	B6b	B6b
c	EU subsidies (e.g., European Social Fund)	B6c	B6c
d	Government subsidies	B6d	B6d
e	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)	B6e	B6e
f	None of these 	B6f	B6f

Note: the term "usually" is used since "2010" might be too restrictive (even it might not be in line with the filter). Certain measures might not apply in at national level.

Filter for the following sections of the questionnaire

If persons employed by the enterprise participated in CVT courses during the reference year 2010

[(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 2010

[(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 2010

[(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 COST (CVT courses)

This section of the questionnaire relates to an enterprise's provision of CVT courses for their persons employed. 

C1 – In 2010, how many **persons employed** by the enterprise participated (^{def. 21}) 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
Number of <u>persons employed</u> participating in at least one CVT course in 2010	C1tot	C2m	C2f

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" are not reported. It is strongly recommended to collect both "participants" and "participants-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".

C2bis - How many persons employed by the enterprise participated in one or more CVT course (either internal or external) by occupational group?

OPTIONAL – See the annex 6b of the manual

C2 - See variables C2m and 2f above

C3 - In 2010, what was the **total paid working time** ^(def. 23) (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)
Paid working time (in hours) spent on ALL CVT courses in 2010	C3tot	C3i	C3e

C3bis – Did certain employees have to spend a significant number of hours outside paid working time on CVT courses paid fully or partially by the enterprise? (the question should be asked after C6).

OPTIONAL – See the annex 6b of the manual

C5 - In 2010, which **skills/competences were targeted by CVT courses**?

Please tick all categories which apply and then select the most important/relevant one (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*).

	Skills/competences	Tick those which apply	Most relevant in volume (training hours)
a	General IT skills	C5a	C5Main
b	IT professional skills	C5b	
c	Management skills	C5c	
d	Team working skills	C5d	
e	Customer handling skills	C5e	
f	Problem solving skills	C5f1	
g	Office administration skills	C5g	
h	Foreign language skills	C5h	
i	Technical, practical or job-specific skills	C5i	
j	Oral or written communication skills	C5j	
k	Numeracy and/or literacy skills	C5k	
l	Other (none of these)	☒ C5l	


Note: the question relates to CVT courses undertaken during paid working time as in question C3. More information on these categories is provided in the annex 5. The Regulation presents in a logical order the **variable C4** before the **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. ☒

An additional variable C5flag is used for the data transmission (see the coding book in annex 7)

C5bis:skills/competences by main occupational group


OPTIONAL – See the annex 6b of the manual

- C4** Some CVT courses on **occupational health and safety** are **obligatory** ^(def 34) and have to be organised regularly. What **share of all training hours in CVT courses in 2010** was spent on such obligatory courses (for CVT courses during paid working time)?

		Share in training hours in 2010 (%)
a	Obligatory courses on health and safety at work	C4
b	Any other reason (all other courses) 	(2)
	100% = all paid working time spent on CVT courses	100%

Note: (1) the question relates to CVT courses undertaken during paid working time as in question C3. The Regulation presents in a logical order the **variable** C4 before the **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 of such a table with a category "any other reason (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 item 'Obligatory courses on health and safety at work') correspond to the variable for transmission to Eurostat.

- C6 –** In 2010, **which training providers** ^(def. 25) did the enterprise choose **for all external CVT courses?** 

Please tick all categories which apply and then select the most important one (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.*

	Groups of EXTERNAL CVT Course providers	Tick those which apply	Most relevant in volume (training hours)
a	Schools, colleges, universities and other higher education institutions	C6a	C6Main
b	Public training institutions (financed or guided by the government; e.g. adult education centres)	C6b	
c	Private training companies	C6c	
d	Private companies whose main activity is not training. (e.g. equipment suppliers, parent/associate companies)	C6d	
e	Employer's associations, chambers of commerce, sector bodies	C6e	
f	Trade unions	C6f	
g	Other training providers	C6g	

Note: the question relates to CVT courses undertaken during paid working time as in question C3. An additional variable C6flag is used for the data transmission (see the coding book in annex 7)

C6bis: shares of paid training hours
OPTIONAL – See the annex 6b of the manual



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

In the exceptional case that an enterprise cannot or is unable to establish a costs breakdown using the above framework they may enter a total costs figure below

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


It could well be used as an option for a revisit where there is an initial non-response to this question



f) Sub Total Costs	C7sflag (1)	C7sub
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(1) used only for the data transmission (see the coding book in annex 7), note in the questionnaires

D1-D2 QUALITY and OUTCOMES (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 2010.

D1 – In 2010, which aspects does your enterprise usually consider to ensure the quality ^(def. 35) of continuing vocational training? 

		Yes	No
a	Certification of external providers (e.g., use of national registers)	D1a	D1a
b	Continuous training of internal trainers	D1b	D1b
c	Continuing vocational training and certification is based on national/sectoral recognised standards or frameworks 	D1c	D1c
d	Others	D1d	D1d
e	No particular aspect considered 	D1e	D1e

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

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


If yes to D2a:

D2b: Which **methods** are used?

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

**D3 FACTORS LIMITING CVT PROVISION IN 2010
(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 2010.

D3 Did any of the following **factors limit the provision of CVT courses or other forms of CVT** in your enterprise in 2010? 

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

**E1 REASONS FOR THE NON-PROVISION OF CVT ACTIVITIES IN 2010
(non-training enterprises)**

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 during 2010.

E1 - What were the **reasons not to provide CVT (neither courses nor other forms of CVT)** for persons employed in 2010?

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

F IVT - Initial Vocational Training (all enterprises)

FO – Existence of apprentices in 2010
 OPTIONAL – See the annex 6b of the manual

F1 – What was the total number of apprentices in ISCED 2-4 programmes ^(def 3) in the enterprise during 2010?

	Total
Number of apprentices in ISCED 2-4 programmes during 2010	F1tot
Apprenticeships leads to a formal qualification or certificate (i.e. must be a component of a formal education programme)	

Note: A definition of apprenticeship is available in the annex 3b besides definitions 3 in section 3.

F1bis – Average number of apprentices in 2010
 OPTIONAL – See the annex 6b of the manual

If F1tot >0 then

F2– For which main reason(s) does your enterprise usually offer apprenticeships?

	Reasons	Yes	No
a	To qualify future employees according to the needs of the enterprise	F2a	F2a
b	To choose the best apprentices for future employment after completion of apprenticeship	F2b	F2b
c	To avoid possible mismatch with enterprise needs in case of external recruitment	F2c	F2c
d	To make use of the productive capacities of apprentices already during their apprenticeship	F2d	F2d
e	None of these (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
 Although the question is relevant to all enterprises, it is addressed to enterprises which had apprentices in 2010 in order to lower the burden on respondents.

F3 – What were the costs incurred by the enterprise in relation to apprentices working in the enterprise in 2010, broken down by the cost categories indicated below?

OPTIONAL – See the annex 6b of the manual

F4 - In this question, we would like to know whether the enterprise contributed to collective or other funds, or received payments from such funds or other sources of grants/subsidies, in the context of apprentices working in the enterprise in 2010?

OPTIONAL – See the annex 6b of the manual

End of Questionnaire

Section 3 - Concepts and definitions

3.1 Concepts - General scope of the continuing vocational training survey (CVTS4)

The primary objective of CVTS4 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
- 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

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

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

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 apprentices, trainees etc. with a special training contract 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 labour market authorities are not part of CVT. Measures for previously unemployed persons recruited by the enterprise and given a contract of employment are part of CVT even if financial support is given for them by the labour market authorities.
- 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

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 system or common practices in place. Annex 3b 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 **component of a formal education programme**
2. The completion of the apprenticeship is **mandatory to obtain a qualification or certification** for this programme
3. The duration of the apprenticeship is **from 6 months to 6 years**
4. The apprentices receive a **remuneration**

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 the CVTS 4, the questions related to IVT **focus on apprentices in ISCED 2 to 4 programmes** (see annex 15). This will enhance the comparability of the results across Member States compared to CVTS3 and avoid burden related to internships at ISCED 5 or 6 levels.

Initial vocational training within enterprises is classified as **formal learning** and will lead to a formal qualification in ISCED levels 2 to 4. 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 wholly**. 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 training** should not in itself be the only qualifying criterion neither. A minimum period of 6 months is a useful discriminator as it allows among others, **distinguishing between true IVT and short term work placements whose primary objective is not formal training**.

3.4 CVTS4 Framework for IVT and CVT – Summary table

The table below presents, for CVTS4 purposes, a summary of IVT and CVT on a number of relevant dimensions. It offers a framework for countries to establish their own CVTS4 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 to CVT**.

	IVT in enterprises	CVT in enterprises
Main activity of the persons	Student, apprentice, trainee, ... (Restriction to apprentices in the context of CVTS4)	Employed by the enterprise
Type of contract	Non-qualifying criteria as national laws differ	Essential Element Work contract required
Type of learning activity	Essential Element Formal learning	Non-qualifying criteria
Work based element	Essential Element Must have a work based element	Non-qualifying criteria
School based element	Non-qualifying criteria Even if it does exist in a majority of situations	Non-qualifying criteria
Costs for the enterprise	Non-qualifying criteria although apprentices (scope of IVT in CVTS 4) always receive a remuneration	Essential Element CVT is financed wholly or partly by the enterprise
Time period of the study	Non-qualifying criteria for general IVT For apprentices (scope of IVT in CVTS 4), the duration must be from 6 months to 6 years)	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**, by either IVT or 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 the formal education and training system that has a work based component, for instance
- Training of unemployed people at the request of (and nearly always funded by) employment authorities and agencies
- 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 understood as **work** and not as CVT or IVT in the scope of CVTS4.

3.5 Definitions

NOTE: the numbering used in previous versions of this manual is kept to avoid any misunderstanding.

Term	Definition
<p>1 Enterprises</p>	<p>"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"</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>2 Continuing vocational training (CVT)</p>	<p>Continuing vocational training is a training measures or activity which have as their primary objectives the acquisition of new competencies 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 definition Nr. 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>3 Initial vocational training (IVT)</p>	<p>In CVTS4, initial vocational training (IVT) is restricted to apprenticeships at a ISCED 2 to 4 level. The following criteria need to apply:</p> <ol style="list-style-type: none"> (1) The apprenticeship must be a component of a formal programme at ISCED 2-4 level (2) The completion of the apprenticeship is mandatory to obtain a qualification or certification for this programme (3) The duration of the apprenticeship is from 6 months to 6 years (4) The apprentices receive a remuneration <p>The measure is often financed (partly or wholly) by the enterprise although this is not a mandatory condition. Apprentices often have a special training contract</p> <p>Annex 3b provides more details in particular to implementation issues and differences with traineeships.</p>
<p>4 Continuing vocational training measures and activities:</p>	<p>Continuing vocational training measures and activities includes CVT courses and "Other" forms of CVT</p>
<p>5 CVT courses</p>	<p>CVT courses are typically clearly separated from the active work place (learning takes place in locations specially assigned for learning like a class room or training centre)</p> <p>They exhibit 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> <p>internal CVT courses (def. 14)</p> <p>external CVT courses (def. 15)</p>

<p>6 Other” forms of CVT</p>	<p>“Other” forms of continuing vocational training are typically connected to the active work and the active work place, but they can also include attendances (instruction) at conferences, trade fairs etc. for the purpose of learning. They are often characterised by a degree of self-organisation (time, space and content) by the individual learner or by a group of learners The content is often tailored according to the learners’ individual needs in the workplace.</p> <p>In the context of CVTS4 the following types of Other forms of CVT are identified: Planned training through guided on-the job-training (def. 16) Planned training through job-rotation, exchanges, secondments or study visits (def. 17) Planned training through participation in learning or quality circles (def. 18) Planned training through self directed learning (def. 19) Planned training through attendance (instruction received) at conferences, workshops, trade fairs and lectures (def. 20)</p>
<p>7 Principal economic activity of the enterprise</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 SBR or be coded to the NACE 4-digit level on the basis of information supplied by the enterprises (see annex 1 for a more detailed description).</p>
<p>8 Persons employed</p>	<p>working proprietors partners working regularly in the enterprise unpaid family workers persons from the enterprise and paid by it who work away from the enterprise (e.g. sales representatives, delivery personnel, repair and maintenance teams) part-time workers and seasonal workers people absent for a short period (e.g. sick leave, paid leave or special leave) those on strike but not absent for an indefinite period</p> <p>It excludes anyone who is working at the enterprise but whose salary is paid by another company, e.g. persons employed of 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>10 Total number of persons employed</p>	<p>The total number of persons employed includes all full-time and part-time persons employed.</p>
<p>11 Total number of hours worked</p>	<p>The total number of hours worked refers to the total number of hours actually worked by all persons employed, excluding persons employed holding an apprentice or training contract, in 2010. It includes time worked during normal periods of work (in the enterprise or telecommuting), time worked in addition to normal periods of work and generally paid at a higher rate (overtime), time spent at the place of work standing by 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. It excludes time spent on paid leave, paid public holidays, paid sick leave, paid meal breaks.</p>
<p>12 Total labour costs of persons employed</p>	<p>Total labour costs of persons employed (excluding persons employed holding an apprentice or training contract) is defined as the sum of the direct and indirect labour costs. The estimate of total labour costs represents all expenditure borne by employers in order to employ workers. It should include</p> <ul style="list-style-type: none"> - direct labour costs, direct pay, other bonuses and gratuities, payments for days not worked, benefits in kind, - and indirect labour costs, statutory social security contributions and family allowances, non-statutory payments, other social expenditure, vocational training costs (gross), taxes, less subsidies on labour.

<p>13 New or significantly improved goods, services or methods of producing or delivering these goods or services</p>	<p>A new or significantly improved good or service is one whose characteristics or intended uses differs significantly from those of previously produced products or has been significantly enhanced or upgraded.</p> <p>A significantly new method of production or delivery of goods and services should represent a significant difference from those of previously utilised.</p>
<p>14 Internal CVT courses</p>	<p>Internal CVT courses are principally designed and managed by the enterprise itself. (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>
<p>15 External CVT courses</p>	<p>External CVT courses are principally designed and managed by organisations which are not part of the enterprise itself (e.g. 3rd party organisations). (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>
<p>16 Guided on-the job-training</p>	<p>Guided on-the job-training is characterised by planned periods of training, instruction or practical experience in the work place using the normal tools of work, either at the immediate place of work or in the work situation.</p>
<p>17 Job-rotation, exchanges, secondments or study visits</p>	<p>Job-rotation within the enterprise and exchanges with other enterprises 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>
<p>18 Learning or quality circles</p>	<p>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 work places.</p> <p>Quality circles are working groups, having the objective of solving production and work place based problems, through discussion. They are counted as “other” forms of CVT only if the primary aim of the persons employed attending them, is learning.</p>
<p>19 Self directed learning</p>	<p>Self directed learning occurs when an individual engages in a planned learning initiative where he or she manages the training time and the place at which the training takes place.</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. 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>
<p>20 Attendance at conferences, workshops, trade fairs and lectures</p>	<p>Attendance (instruction received) at conferences, workshops, trade fairs and lectures are considered as training actions, only when they are planned in advance and where the primary intention of a person employed attending them is training/learning.</p>

21 Total number of participants	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. Eg. if an person employed has attended two externally managed courses and one internally managed course, he or she should be counted as one participant.
22 Participant events	Participant events are the number of times participants participated in CVT courses. Eg. 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 for an enterprise.
23 Paid working-time (in hours) spent on CVT courses	Paid working time (in hours) spent on CVT courses is the total time that all participants have spent in total in CVT courses during 2010. Where courses fell only partly within 2010, only the time spent during 2010 should be included. The number of hours spent in CVT courses should cover only the actual training time and only the time spent in persons employed' paid working time should be included (i.e. any time where participants are training when they would normally be working or in time being paid for by the enterprise). It should exclude any periods of normal working between training and any time spent travelling to the course. 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 a week, for several weeks, the one day a week should be included and summated, but the days spent working between the training days should be excluded.
24 Skills and competences	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 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 it can assigned based on the most important factor it covered. 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).
25 External CVT courses providers	Provider of external training courses means the person or organisation, which delivers the training (see annex 16 for a more detailed description): Schools, colleges, universities and other higher education institutions Public training institutions (financed or guided by the government; e.g. adult education centres) Private training companies Private companies whose main activity is not training (e.g. equipment suppliers; parent/associate companies) Employer's associations, chambers of commerce, sector bodies Trade unions Other training providers
26 Fees and payments	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 and 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).
27 Travel and subsistence payments	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).

<p>28 Labour costs of internal trainers for CVT courses</p>	<p>These are the direct and indirect labour costs of staff of a training centres and other staff exclusively or partly involved in providing, designing and managing CVT courses (see annex 4 for a more detailed description). 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>
<p>29 Costs for training centre, training premises or specific training rooms of the enterprise, in which CVT courses take place Costs for teaching materials for CVT courses</p>	<p>These costs include the costs of running the training rooms and annual depreciation for these rooms and equipment. It also includes the costs of materials bought specifically to support the provision of CVT courses. VAT should be excluded from the expenses (see annex 4 for a more detailed description).</p>
<p>30 Contributions</p>	<p>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).</p>
<p>31 Receipts</p>	<p>The receipts from collective funding arrangements, subsidies and financial assistance from Government and other sources. (see annex 4 for a more detailed description).</p>
<p>32 Assessment of skills and competences needs of the enterprise</p>	<p>This assessment concerns the need for skills and competences relevant to the overall training or development of the enterprise. The method 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.</p>
<p>33 Review of skill and training needs of the individual employees</p>	<p>This category refers to the methods generally used to assess individual skills and related training needs. The methods have usually been used for the review of skill needs in the recent years and/or will be used for the reviews of skills for the year to come or the next few years.</p>
<p>34 Obligatory occupational health and safety courses</p>	<p>The activities referred to under points 1 and 2 below should be considered as obligatory from the perspective of the Community legislation in the sense that the employer has to make sure that a worker received a proper training tailored to the needs and conditions of the workplace.</p> <p>1. Obligatory CVT activities by law for some tasks, such as driving a fork lift, training for preventive services – for example 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)</p> <p>2. CVT activities for workers to enable them to do their work adequately and to protect themselves and others. They have to be tailored to the needs and conditions of the respective workplaces and the knowledge of the worker(s). 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, or to train an apprentice how to use the protective guards when using a circular saw. This kind of training is normally included in the category “guided on the job” training and cannot always be separated out. That training has to be refreshed and updated regularly. Another simple example would be fire exercises.</p>
<p>35 Quality of CVT courses</p>	<p>The Recommendation of the European Parliament and of The Council of 18 June 2009 establishes a European Quality Assurance Reference Framework for Vocational Education and Training which should guide the implementation of this question: see http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:155:0001:0010:EN:PDF</p>

36 Training centre	<p>A training centre is a training unit with training personnel, training premises and training equipment. The training centre can be located with or out with 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 in fact own it.</p>
38 Structured interviews	<p>Structured interviews are a regular (typically annual) communication between an enterprise management and its persons employed.</p> <p>An individual and a superior discuss the past work experiences of the person employed. Often both sides agree on goals for the future and evaluate the past goal achievement of the person employed. Problems and difficulties at the work place are analysed and it is looked for possibilities of improving the working conditions. The collaboration between the superior and the person employed is also discussed. The main aims of these interviews are the guidance of the person careers, the screening of individual employment situations, possible training needs and suitable training offers.</p>
39 Agreements between the social partners	<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 and sectoral 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 or sectoral training funds, employability measures, vocational training measures for older persons employed. Agreements between the employer and works councils at the enterprise level are excluded from this definition.</p>
40 Formal structure involving employee representatives	<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.</p> <p>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>
41 Labour costs of individuals registered on an IVT activity (OPTIONAL variable)	<p>Labour costs of individuals registered on an IVT activity (apprenticeship in ISCED 2-4 programmes) in consist of the direct remuneration and indirect labour costs. If total labour costs of individuals registered on an IVT activity are not available from the enterprise records, then the labour costs may be estimated by using data on the total number of individuals registered on an IVT activity and average remuneration plus indirect labour costs (see annex 4 for a more detailed description). The labour costs for all persons that participated in IVT (apprentices in ISCED 2-4 programmes) during the year 2010 must be provided.</p>
42 Labour costs of IVT trainers or mentors (OPTIONAL variable)	<p>These costs are the direct and indirect labour costs of IVT trainers or mentors (for apprenticeship in ISCED 2-4 programmes). If those trainers or mentors are only partly involved in IVT training, only the proportion of their time spent on IVT training should be taken into account.</p> <p>If total labour costs of IVT trainers or mentors are not available from the enterprise records, then the labour costs may be estimated by using data on the total number of IVT trainers and mentors and average remuneration plus indirect labour costs (see annex 4 for a more detailed description).</p>

43 IVT trainers and mentors (OPTIONAL variable)	IVT trainers and mentors are persons employed of the enterprises and fully or partly involved in the initial vocational training activities of the enterprises (especially for on-the-job-training). It should include: internal trainers and staff of training centres directors and other top managers concerned with training policy instructors and training managers or officers clerical/administrative and other personnel supporting these activities
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Section 4 - Survey guidelines for CVTS4

4.1 Background

The specification of the methods to be used in CVTS has been designed to:

- ensure that data are collected in a consistent manner across all participating countries and to a prescribed minimum quality standard, 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. multiples/sole establishments, large/small firms, trainers/non-trainers);

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

CVTS4 addressed in particular the reduction of burden on enterprises in the light of the data available from the AES and the LFS.

A document on the "evaluation and interpretation of the third continuing vocational training survey"⁴ has been prepared by BIBB, Céreq and ISFOL for CEDEFOP. The recommendations proposed from the page 137 of the report are of particular importance to enhance the comparability of the data. More information is available in the annex 18 to this manual on quality reports.

4.2 Data collection

4.2.1 Reference period

The reference period of the CVTS4 survey is the calendar year 2010.

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 outline 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 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.

Any deviations from the common questionnaire must be noted in the national quality report.

However, it is important that the sequence of questions as set out in the standard questionnaire should be followed in all cases. This is necessary to ensure that the data are as comparable as possible because the ordering of questions may influence the answers provided.

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⁴ http://www.cedefop.europa.eu/EN/Files/5502_en.pdf

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 CVTS4 are not distorted through translation. This is a key issue towards the objective of establishing comparable results from CVTS4 across countries.

In questions where it may assist the enterprise to give national examples, whether in the questionnaire or through instructions to interviewers, e.g. training providers, it will be important, also, for these to be consistent with the appropriate classification 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, within the available funding for the survey.

The precise data collection approach will be determined nationally. However, 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 within enterprises will be made to check that the data provided conforms to the definitions and conforms to the prescribed quality standard.

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

Face-to-face interviews

In CVTS2 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 have the advantage of guaranteeing high response rates and permit a flexibility in interviewing different persons within the enterprise in respect of 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 advantageous for automatic filtering and data checking during the interview.

Telephone interviews

In general the telephone is useful for establishing contact the respondent in advance, motivating the respondents and reminding the enterprises to fill in the questionnaire. From CVTS2 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. Compared to face-to-face interviews telephone interviews present higher response rate compared to postal methods. However, some kinds of information are hard to collect in a pure telephone interview, especially those requiring the respondent to look up records or to discuss questions with colleagues. Such problems could be addressed by sending the questionnaire in advance, either by post or electronically. Though raising costs of the survey, this measure is likely to be justified by the increased quality in the data. If telephone interviews are conducted for CVTS4 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 confirmed once again that a "pure" postal questionnaire generates lower unit response rates than other data collection methods. Concerning the coverage of complicated quantitative data such as participants in training, hours, fields of training or costs, self-administered questionnaires seem to generate better data quality. For this kind of information the respondents often have to look up 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 error-prone 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 CVTS4 the **strong recommendation is to use a service centre for the respondents**. This centre should be available by phone and by email to answer queries from

enterprises. To raise unit response rates, it is probably useful to make preliminary telephone contact. Multiple contacts and reminders should also be envisaged and factored into 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
- gives the possibility to read additional information (definitions and explanatory text) at his/her own pace when needed
- gives the possibility to return to earlier questions in the questionnaire for ascertaining previous entries or making corrections.

However, not all enterprises may respond positively to web based questionnaires and they also suffer 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.

4.2.5 Recommendations for the organisation of the field work

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 arranges special training for the survey
- organisation has well established procedures for all survey operations, including guiding, monitoring and reporting field work operations.
- In the ideal case interviewers would have prior experience in the performance of enterprise surveys. However, it should be clear that these professional interviewers mostly are not 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 form a survey special help-desk to handle respondents' and interviewers' questions and problems.

4.3 Sampling

4.3.1 Definition of the population

The population of interest for the CVTS4 is 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 and C33, C29-C30, C16+C31-32, D-E, F, G(45), G(46), G(47), I, H, J, K(64,65), K(66), L+M+N+R+S (see annex 1).

Optionally separate strata with enterprises of less than 10 persons employed belonging to the NACE-categories above and also enterprises belonging to other NACE categories may be included. Eurostat recommends in particular to cover the health, education and public administration sectors as these sectors have usually a high CVT intensity.

An enterprise is defined by the legal text of the 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 Community⁵ (confirmed by Regulation (EC) No 177/2008 of the European Parliament and of the Council of 20 February 2008 establishing a common framework for business registers for statistical purposes⁶):

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⁵ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31993R0696:EN:HTML>

⁶ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:061:0006:0016:EN:PDF>

"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 device that delimits, identifies and allows access to the enterprises in the population. Ideally, there exists a register or list of all enterprises in the population of interest.

The Statistical Business Register (SBR) described in the Regulation (EC) No 177/2008 Regulation (EC) No 177/2008 of the European Parliament and of the Council establishing a common framework for business registers for statistical purposes establishing a common framework for business registers for statistical purposes, 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 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 to a very large extent have correct values. Otherwise precision in the estimates will be lower as needed.

For each unit in the frame it must be possible to decide whether it belongs to the population or not. A rule for this must clearly be stated. The frame quality should be clearly stated, especially 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, 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 the observational units are the same.

Case 2: In some countries there is no useful register of enterprises but there is a useful 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

No doubt all countries will have problems with over-coverage, 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.

- The second assumption is that the number of enterprises in the over-coverage in the frame is the same as the number of under-coverage enterprises, 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 are simple and lead to a simple procedure. If we are willing to accept these assumptions 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 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 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 (2010). 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 2010 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 2011 or not. First, assume that it occurs before year 2011. 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 2010 it should be treated as a measurement problem. The collected data about the frame enterprise is not the “true” values and has 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 specification:

20 NACE Rev.2 categories [B, C10-C12 ,C13-C15 ,C17-C18 ,C19-C23 ,C24-C25, C26-C28 and C33, C29-C30, C16+C31-32, D-E, F, G(45), G(46), G(47), I, H, J, K(64,65), K(66), L+M+N+R+S],

Member States can cover other sectors and use additional categories for the stratification (e.g. O, P, and Q) on an optional basis,

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) (1000 and more) for Member States with 50 million inhabitants and more.

A sample size shall be calculated to assure a **maximum** half-length of the 95 % confidence interval of 0.2 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 and more).

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

$$n_h = 1/[c^2 \cdot t_{eh} + 1/N_h] / r_h$$

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

t_{eh} = 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.

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

Sample sizes should be calculated for a maximum **C-values of 0.2** on the basis of a **20x3 (NACE x size) matrix** (20x6 matrix in Member States with 50 million inhabitants and 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 (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 Ng enterprises, according to the 20 x 3 matrix and select nxNg/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. 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 CVTS4. 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 estimation and imputation 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. Re-contacting enterprises may help to receive high unit and 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) is 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 for a 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 the non-response rate in the survey is high, one really has reason to worry about its effects on the survey estimates. If there is no evidence, which shows 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**. However, in practice some amount of non-response certainly arises. 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 CVTS4 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. **Note that replacement ("imputation") for unit non-response is not allowed.**

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 an estimate cannot be provided, another approach is to use reliable data for the enterprise from other sources, which are compatible with the concepts and definitions adopted for the CVTS4.

If some data are still missing, after all other efforts have been made, then 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 more care needs to be taken in using the data.

Core variables, for which no missing value 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


A1	Actual NACE-code of the enterprise
A2tot	Total number of persons employed 31-12-2010
B1a	Internal CVT courses
B1b	External CVT courses
B2aflag, B2bflag, B2cflag, B2dflag, B2eflag	"Other" forms of CVT
F1tot	Total number of IVT participants

For **key variables** listed in the following table every effort should be made to avoid "no missing", but imputation is permitted.

A3	Total number of persons employed 31-12-2009
A4	Total number of hours worked in the reference year 2010 by persons employed
A5	Total labour costs (direct + indirect) of all persons employed in the reference year 2010

C1tot	Total CVT course participants
C3tot	Paid working time (in hours) spent on all CVT courses
C7sub	CVT costs sub-total
C7tot	Total costs CVT
PAC	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 | 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 / 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 / size cell imputations are not allowed on a **quantitative variable** if the proportion of responding enterprises for that particular variable is **less than 50 %**.
4. For a single NACE / size cell imputations are not allowed 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 the paper but should, afterwards, inform Eurostat, via the quality report of their actions and argumentation.

Types of imputation

Two types of data are collected in CVTS4, 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 exists 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 Data Checking Tool. It is also important that the original data records (before imputation) are kept (and are to be 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. If they depart from the framework outlined here, they must justify their reasons and their procedures in the quality report.

4.4 Timetable and data transmission to Eurostat

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

The **preparation of the survey** should normally start during 2010 to ensure a launch date for the survey as early as possible in 2011.

Field work should normally begin in early 2011. The phase of data collection as well as of the treatment of initial non-response, data validation and cleaning in contact with enterprises should be completed towards the end of 2011.

Further **data processing** would normally then take place towards the end of 2011.

Clean data shall be transmitted to Eurostat **by end of June 2012** as explained in section 5.1 below.

4.5 National Quality Reports

A national quality report shall be transmitted to Eurostat **by end of September 2012**.

The national quality reports shall conform to the detail presented in the Annex 5 of the CVTS4 Commission regulation. (see the annex 20 of the manual). More details on quality reports are also provided in the annex 18.

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 correspond with his/her interests and if they can rely on the statistics from an overall point of view. The users can then analyze the survey results from their own particular objectives. All deviations from the common approach on CVTS4 shall be reported in detail.

5 The informatics framework for CVTS4

5.1 Data transmission formats

Clean data shall be transmitted to Eurostat **by end of June 2012**. This shall be done in electronic form by means of a secure data transmission software application (STADIUM / 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 comma
- Each subsequent line should correspond to the values provided by each enterprise for all variables. The values are separated by a comma. The separator for decimals is a 'dot'.
- The codes to be used for each variable are described in annex 7.
- The number of variables is fixed **and contains optional variables at the end of the file**. In case there is no information to a given optional variable, the code corresponding to a 'no answer' for this variable should be used.
- Each file has to comply to 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 dataset is to be zipped and encrypted before transmission to Eurostat through Stadium / Edamis, (i.e. using the option 'encryption' available in the Edamis application).

An example of CSV file is made available on Circa for both micro-data and control table.

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, 9 and 10 of this manual set out a list of checking rules which are implemented in the Eurostat data validation software.

Three basic levels of checking are foreseen

- **Field level checks (former data entry checks)** – simple coherency check between a variable entry and the possible allowed entries. 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 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 both gender and for males and females separately) - see annex 9.
- **File level checks** –checks of the country file as a whole which will include some reasonableness checks including suggestions for cleaning of data and totals - Annex 10 presents the few checks included in the software distributed to countries. Additional "file level" checks are performed by Eurostat after the data transmission.

The country operator will be able to run the 3 checking programme levels. The output from the checking programme will be an error report, available by enterprise record. A set of indicators are defined in the "control tables" to validate the main results of the survey (annex 11).

5.3 Data validation software

Eurostat has prepared a checking tool which is distributed to countries on Circa from end June 2011. The objective of this tool is to check the compliance of each dataset with the pre-defined checking rules presented in annexes 8, 9 and 10.. 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, most probably sorted by enterprise record. The data validation software does not implement any automatic cleaning of data. A specific user-manual as well as an installation manual are provided on Circa along with the software.