CIS2 (1994-1996)

ANNEX II.1 : MANUFACTURING

ANNEX II.2 : SERVICES

ANNEX II.3: Methodological recommendations

The package consists of 3 different annexes :

Annexe II.1. CIS II core questionnaire for the manufacturing sector

Annexe II.2. CIS II core questionnaire for the services sector

Annexe II.3. Methodological recommendations

This document outlines the main recommendations concerning the target population, the survey methodology and summarises the collection and processing of data

ANNEX II.1
MANUFACTURING

The second Community Innovation Survey

CORE QUESTIONNAIRE

With variables codes

General information about the enterprise

Name of enterprise _____ ***ID***

Address (NUTS 2 code[1]) _____ ***NUTS***

Main activity (NACE Rev. 1, 4-digits code[2]) _____ ***NACE***

Is your enterprise (tick the most appropriate alternative)

Independent ? π
Part of an enterprise group ? π ***GP***

If your enterprise belongs to an enterprise group, what is the country of head office ? ***HO***[3]

Did any of the following significant changes (affecting turnover at least 10%) **occur to your enterprise between 1994 and 1996?**

	Yes	No	
Your enterprise was established	ππ	***CHG_1***	
Turnover increased due to merger with another enterprise or part of it	ππ	***CHG_2***	
Turnover decreased due to sale or closure of part of the enterprise	π	π	***CHG_3***

Please give the following basic general information on your enterprise (only domestic units should be included)

Number of employees end 1996 (or other relevant reporting time)	_____	***EMP***
change 1994-96	_____ %	***EMPC***
Turnover 1996	_____	***TURN***
change 1994-96	_____ %	***TURNC***
Exports 1996	_____	***EXP***
change 1994-96	_____ %	***EXPC***

Name of respondent _____
Job title _____
Phone _____ **Fax** _____ **E-mail** _____

[1]NUTS 2 code has to be supplied to Eurostat
[2]NACE Rev 1, 4-digits code has to be supplied to Eurostat
[3]Country code according to ISO standard has to be supplied to Eurostat

Scope and impact of technological innovation and innovation activity of the enterprise

Technological innovations comprise implemented technologically new products and processes and significant technological improvements in products and processes. An innovation has been **implemented,** if it has been introduced on the market (product innovation) or used within a production process (process innovation). The product or process should be new (or significantly improved) to the enterprise (it does not necessarily have to be new to the enterprise's market).

Technological innovation requires an objective improvement in the performance of a product or in the way in which it is produced or delivered. The following changes **are not technological innovations:**

- *improvements of products that make them more attractive to the purchasers without changing their "technological" characteristics*
- *minor technological changes of products and processes or changes which does not have the sufficient degree of novelty*
- *changes of products and processes, where the novelty does not concern the use or objective performance characteristics of the products or the way they are produced or delivered but rather their aesthetic or subjective qualities*

(see page 8 for some further examples of innovations and changes not counted as innovations)

Innovation activities are all those steps necessary to develop and implement technologically new or improved products or processes.

1.Between 1994-96, has your enterprise introduced onto the market any technologically new or improved products?[4]

A technologically new product is a product whose technological characteristics or intended uses differ significantly from those of previously produced products. Such innovations can involve radically new technologies, can be based on combining existing technologies in new uses, or can be derived from the use of new knowledge.

A technologically improved product is an existing product whose performance has been significantly enhanced or upgraded. A simple product may be improved (in terms of better performance or lower cost) through use of higher-performance components or materials, or a complex product which consists of a number of integrated technical subsystems may be improved by partial changes to one of the subsystems.

Yes π No π ***INPDT***

If yes, who developed these products? (tick appropriate alternatives for different products)

Mainly other enterprises or institutes	π	***INPDT_1***
Your enterprise and other enterprises or institutes	π	***INPDT_2***
Mainly your enterprise	π	***INPDT_3***

[4]It is recommended that national surveys include a request to describe the most important technologically new or improved product or process.

2. Between 1994-96 has your enterprise introduced any technologically new or improved processes? [5]

Technological process innovation is the adoption of technologically new or significantly improved production methods, including methods of product delivery. These methods may involve changes in equipment, or production organisation, or a combination of these changes, and may be derived from the use of new knowledge. The methods may be intended to produce or deliver technologically new or improved products, which cannot be produced or delivered using conventional production methods, or essentially to increase the production or delivery efficiency of existing products.

Yes π No π ***INPCS***

If yes, who developed these processes? (tick appropriate alternatives for different processes)

Mainly other enterprises or institutes	π	***INPCS_1***
Your enterprise and other enterprises or institutes	π	***INPCS_2***
Mainly your enterprise	π	***INPCS_3***

3. Between 1994-96, did your enterprise have unsuccessful or not yet completed projects to develop or introduce technologically new or improved products or processes?

Yes	π	
No	π	***INUN***

If questions 1-3 above have all been answered with no, please still answer question 12 at the end of the questionnaire.

4. Turnover in 1996 due to technologically new or improved products to your enterprise (see definitions for question 1, page 3)

Please estimate how your turnover in 1996 was distributed between

Technologically new products introduced between 1994 and 1996	_____ %	***TURNNEW***
Technologically improved products introduced between 1994 and 1996	_____ %	***TURNIMP***
Unchanged or only marginally modified products between 1994 and 1996, other turnover	_____ %	***TURNUNG***
Total turnover in 1996	100 %	

5. Turnover in 1996 due to technologically new or improved products also new to your enterprise's market

Some of the technologically new or improved products included in the previous question might be new not only for your enterprise but also to your enterprise's market

Between 1994 and 1996, did your enterprise introduce technologically new or improved products new not only to your enterprise but also to your enterprise's market?

Yes	π	
No	π	***INMAR***

If yes, please estimate the share of turnover due to these products in 1996 _____ % ***TURNMAR***

[5] It is recommended that national surveys include a request to describe the most important technologically new or improved product or process.

6. Resources devoted to innovation activities in 1996

In this question some information is asked about engagement in and resources devoted to the following innovation activities of the enterprise.

Research and experimental development (R&D) [6]comprises creative work undertaken on a systematic basis in order to increase the stock of knowledge, and the use of this stock of knowledge to devise new applications, such as technologically new or improved products and processes. Construction, design and testing of a prototype is often the most important phase of R&D. Software development is included as long as it involves making a scientific or technological advance. R&D can be carried out within the enterprise or R&D services can be acquired.

Acquisition of machinery and equipment(including integrated software) **linked to product and process innovations** implemented by the enterprise

Acquisition of other external technology linked to product and process innovations in the form of patents, non-patented inventions, licenses, know-how, trademarks, drawing plans and consultancy services (excluding R&D), related to the implementation of technological innovations, plus the acquisition of packaged software that is not classified elsewhere.

Industrial design and other production preparations for technologically new or improved products include plans and drawings aimed at defining procedures, technical specifications and operational features necessary for the production of technologically new or improved products and the implementation of technologically new processes. This item also include changes in production and quality control procedures, methods and standards and associated software required to produce the technologically new or improved product or to use the technologically new or improved process. Product or process modifications needed to start production, including trial production (not included in R&D) are also included.

Training directly linked to technological innovations is training for the implementation of a technologically new or improved product or process. Expenditure for training might include acquisition of external services and expenditure for in-house training.

Market introduction of technological innovations includes activities in connection with the launching of a technologically new or improved product. These may include preliminary market research, market tests and launch advertising, but will exclude the building of distribution networks to market innovations.

Did your enterprise engage in the following innovation activities in 1996?

	Yes	No		**if yes, please estimate expenditure involved**
- Research and experimental development within the enterprise (intramural R&D)	π	π	***RRDIN***	***RRDINX***
- Acquisition of R&D services (extramural R&D)	π	π	***RRDEX***	***RRDEXX***
- Acquisition of machinery and equipment linked to product and process innovations	π	π	***RMAC***	***RMACX***
- Acquisition of other external technology linked to product and process innovations	π	π	***ROET***	***ROETX***
- Industrial design, other production preparations for technologically new or improved products	π	π	***RID***	***RIDX***
- Training directly linked to technological innovations	π	π	***RTR***	***RTRX***
- Market introduction of technological innovations	π	π	***RMAR***	***RMARX***
Total expenditure				**RTOT**

The expenditure items should cover current (labour costs, acquisition of services, materials, etc.) and capital expenditure (instruments and equipment, computer software, land and buildings). If it is not possible to estimate all expenditure items involved, please at least indicate, if your enterprise has been engaged in a particular innovation activity or not.

R&D personnel within the enterprise in 1996 (in full time equivalents) **RDPER**

Did your enterprise engage in R&D between 1994 and 1996?

Continuously	π	
Occasionally	π	***RDCON***
Not at all	π	

[6]The definition of R&D should be translated according to usual practise in R&D surveys.

7.Did your enterprise receive any government support (money allocation) **for innovation activities in 1996?** (loans including a subsidy element, grants)

Yes	π	
No	π	***GMTSUP***

8. Did your enterprise apply for at least one patent between 1994 and 1996 in any country?

Yes	π	
No	π	***PAT***

Factors influencing innovation activity

9. Objectives of innovation between 1994 and 1996

The main reasons for developing and introducing innovations are asked in this question
Please indicate the degree of importance attached to various alternative objectives by ticking 0=not relevant 1= slightly important 2=moderately important 3=very important

Objective	Not relevant	Importance		
	0	1	2	3
Replace products being phased out **OREP**	π	π	π	π
Improving product quality ***OIMP***	π	π	π	π
Extend product range ***OEXT***	π	π	π	π
Open up new markets or increase market share ***OOPN***	π	π	π	π
Fulfilling regulations, standards ***OSTD***	π	π	π	π
Improve production flexibility ***OPDT***	π	π	π	π
Reduce labour costs ***OLBR***	π	π	π	π
Reduce materials consumption ***OMAT***	π	π	π	π
Reduce energy consumption ***ONRG***	π	π	π	π
Reduce environmental damage ***OENV***	π	π	π	π

10. Sources of information for innovation between 1994 and 1996

The main sources of information needed for suggesting new innovation projects or contributing to completion of existing projects are asked in this question.
Please indicate the degree of importance attached to various alternatives by ticking 0=not used 1=slightly important 2=moderately important 3=very important

Information source		Not used	If used Importance		
		0	1	2	3
Sources within the enterprise	***SENT***	π	π	π	π
Other enterprises within the enterprise group	***SGRP***	π	π	π	π
Competitors	***SCOM***	π	π	π	π
Clients or customers	***SCLI***	π	π	π	π
Consultancy enterprises	***SCON***	π	π	π	π
Suppliers of equipment, materials, components or software	***SSUP***	π	π	π	π
Universities or other higher education institutes	***SUNI***	π	π	π	π
Government or private non-profit research institutes	***SGMT***	π	π	π	π
Patent disclosures	***SPAT***	π	π	π	π
Professional conferences, meetings, journals	***SPRO***	π	π	π	π
Computer based information networks	***SNET***	π	π	π	π
Fairs, exhibitions	***SEXB***	π	π	π	π

11. Innovation cooperation between 1994 and 1996

Innovation cooperation means active participation in joint R&D and other innovation projects with other organisations. It does not necessarily imply that both partners derive immediate commercial benefit from the venture. Pure contracting out work, where there is no active participation, is not regarded as cooperation.

Did your enterprise have any cooperation arrangements on innovation activities with other enterprises or institutions in 1994-1996?

Yes π
No π (go to question 12) ***CO***

If yes, please indicate by ticking the type of organisation and location of your cooperation partner

Type of partner	Location of partner				
	National	EU	USA	Japan	Other
Other enterprises within the group	***CO11***	***CO12***	***CO13***	***CO14***	***CO15***
Competitors	***CO21***	***CO22***	***CO23***	***CO24***	***CO25***
Clients or customers	***CO31***	***CO32***	***CO33***	***CO34***	***CO35***
Consultancy enterprises	***CO41***	***CO42***	***CO43***	***CO44***	***CO45***
Suppliers of equipment, materials, components or software	***CO51***	***CO52***	***CO53***	***CO54***	***CO55***
Universities or other higher education institutes	***CO61***	***CO62***	***CO63***	***CO64***	***CO65***
Government or private non-profit research institutes	***CO71***	***CO72***	***CO73***	***CO74***	***CO75***

12. Factors hampering innovation

The innovation activity of your enterprise could be hampered by various factors, which might prevent innovation projects or slow up or stop projects in progress.

a) Has at least one innovation project in 1994-1996 been

	Yes	No	
- seriously delayed	π	π	***H1***
- abolished	π	π	***H2***
- not even started	π	π	***H3***

b) **If yes on at least one question, tick the relevant factors in the respective columns**

Hampering factors	seriously delayed	abolished	not even started
Excessive perceived economic risks	***H11***	***H12***	***H13***
Innovation costs too high	***H21***	***H22***	***H23***
Lack of appropriate sources of finance	***H31***	***H32***	***H33***
Organisational rigidities	***H41***	***H42***	***H43***
Lack of qualified personnel	***H51***	***H52***	***H53***
Lack of information on technology	***H61***	***H62***	***H63***
Lack of information on markets	***H71***	***H72***	***H73***
Fulfilling regulations, standards	***H81***	***H82***	***H83***
Lack of customer responsiveness to new products	***H91***	***H92***	***H93***

Selected examples of innovation and other changes not regarded as innovation

In custom production (production of single products on order), a criterion for qualifying as a technological innovation could be that the planning of the product includes construction and testing of a prototype or other research and development activities in order to change one or more of the product's attributes.

Change in clothing production is very largely a matter of fashion. For these firms, rapid introduction of the latest colours and cut is a key element in their competitiveness. But colour and cut do not change the essential characteristics or performance of clothing, i.e. that it should keep the body at an appropriate temperature, be comfortable to wear and easy to maintain. Technologically improved products here almost always involve the use of new materials diffused by the textile industry and, before that, the chemical industry. For example, the introduction of drip-dry shirts, or “breathable” waterproof mountain gear, is a technological product innovation.

The implementation of a quality standard such as ISO 9000 is not technological innovation unless it is directly related to the introduction of technologically new or significantly improved products or processes

The retitling and repackaging of an existing soft drink popular with older people, to establish a link with a football team in order to reach the youth market, is not technological innovation.

New models of complex products, such as cars or television sets, are not product innovation, if the changes are minor compared with the previous models, for example offering a radio in a car. If the changes are significant, based on new designs or technical modifications to subsystems, the improved products could be considered as product innovations.

ANNEX II.2
SERVICES

The second Community Innovation Survey

CORE QUESTIONNAIRE

With variables name

General information about the enterprise

Name of enterprise _____ ***ID***

Address (NUTS 2 code[7]) _____ ***NUTS***

Main activity (NACE Rev 1, 4-digits code[8]) _____ ***NACE***

Is your enterprise (tick the most appropriate alternative)

Independent ? ρ
Part of an enterprise group ? ρ ***GP***

If your enterprise belongs to an enterprise group, what is the country of head office ? ***HO***[9]

Did any of the following significant changes (affecting turnover at least 10%) **occur to your enterprise between 1994 and 1996?**

	Yes	No	
Your enterprise was established	ρ	ρ	***CHG_1***
Turnover increased due to merger with another enterprise or part of it	ρ	ρ	***CHG_2***
Turnover decreased due to sale or closure of part of the enterprise	ρ	ρ	***CHG_3***

Please give the following basic general information on your enterprise (only domestic units should be included)

Number of employees end 1996 (or other relevant reporting time)	_____	***EMP***
change 1994-96	_____ %	***EMPC***
Turnover[10] 1996	_____	***TURN***
change 1994-96	_____ %	***TURNC***
Exports[11] 1996	_____	***EXP***
change 1994-96	_____ %	***EXPC***

Name of respondent _____
Job title _____
Phone _____ **Fax** _____ **E-mail** _____

[7]NUTS 2 code has to be supplied to Eurostat
[8]NACE Rev 1, 4-digits code has to be supplied to Eurostat
[9]Country code according to ISO standard has to be supplied to Eurostat
[10]For banks interests and commissions received, for insurance gross premium written
[11]Does not apply for banks and insurance

Scope and impact of technological innovation and innovation activity of the enterprise

Technological innovations comprise implemented new or significantly improved services and new or significantly improved ways of producing or delivering a service. An innovation has been **implemented** if it has been introduced on the market or used in producing or delivering services. The service should be new (or significantly improved) to the enterprise (it does not necessarily have to be new to the enterprise's market).

A new or improved service is considered to be a **technological innovation** when its characteristics and ways of use are either completely new or significantly improved qualitatively or in terms of performance and technologies used.The adoption of a production or delivery method which is characterised by significantly improved performance is also a technological innovation. Such adoption may involve change in equipment, organisation of production or both and may be intended to produce or deliver new or significantly improved services which cannot be produced or delivered using existing production methods or to improve the production or delivery efficiency of existing services.

The introduction of a new or significantly improved service or production or delivery method can require the use of radically new technologies or a new combination of existing technologies or new knowledge. The technologies involved are often embodied in new or improved machinery, equipment or software. The new knowledge involved could be the result of research, acquisition or utilisation of specific skills and competencies.

The following changes **are not technological innovations** if they are not directly related to the introduction of new or significantly improved services or ways of producing or delivering them:
- *organisational and managerial changes such as the implementation of advanced management techniques, the introduction of significantly changed organisational structures and the implementation of new or substantially changed corporate strategic orientations*
- *the implementation of a quality standard such as ISO 9000*

(see page 7 for some more specific examples of innovations)

Innovation activities are all those steps necessary to develop and implement new or significantly improved services or methods to produce or deliver services

1. Between 1994-96, has your enterprise introduced onto the market any new or significantly improved services or methods to produce or deliver services?[12] (see definition of technological innovation above)

Yes ρ No ρ ***INSER***

If yes, who developed these services or methods? (tick appropriate alternatives for different services or methods)

Mainly other enterprises or institutes	ρ	***INSER_1***
Your enterprise together with other enterprises or institutes	ρ	***INSER_2***
Mainly your enterprise	ρ	***INSER_3***

2. Between 1994-96, did your enterprise have unsuccessful or not yet completed projects to develop or introduce new or significantly improved services or methods to produce or deliver services?

Yes	ρ	
No	ρ	***INUN***

If both questions above have been answered with no, please still answer question 9 at the end of the questionnaire.

[12] It is recommended that national surveys include a request to describe the most important new or substantially improved service or method to produce or deliver services.

3. Resources devoted to innovation activities in 1996

In this question some information is asked about engagement in and resources devoted to innovation activities of the enterprise

Research and experimental development (R&D) [13]comprises creative work undertaken on a systematic basis in order to increase the stock of knowledge, and the use of this stock of knowledge to devise new applications, such as new or significantly improved services or methods to produce or deliver services. Construction, design and testing of a prototype is often the most important phase of R&D. Software development is included as long as it involves making a scientific or technological advance. R&D can be carried out within the enterprise or R&D services can be acquired.

Acquisition of machinery and equipment (including integrated software) **linked to technological innovations**, implemented by the enterprise

Acquisition of software and other external technology linked to technological innovations includes the acquisition of packaged software, acquisition of patents, non-patented inventions, licenses, know-how, trademarks, drawing plans and consultancy services (excluding R&D), related to the implementation of technological innovations.

Preparations to introduce new or significantly improved services or methods to produce or deliver them comprise activities aimed at defining procedures, specifications and operational features (including final tests) necessary for the introduction of innovations.

Training directly linked to technological innovations is training for the implementation of new or substantially improved services or methods to produce or deliver them. Expenditure for training might include acquisition of external services and expenditure for in-house training.

Market introduction of technological innovations includes activities in connection with the launching of new services. These may include preliminary market research, market tests and launch advertising, but will exclude the building of distribution networks to market innovations.

Did your enterprise engage in the following innovation activities in 1996?

	Yes	No		**if yes, please estimate expenditure involved**
- Research and experimental development within the enterprise (intramural R&D)	ρ	ρ	***RRDIN***	***RRDINX***
- Acquisition of R&D services (extramural R&D)	ρ	ρ	***RRDEX***	***RRDEXX***
- Acquisition of machinery and equipment linked to technological innovations	ρ	ρ	***RMAC***	***RMACX***
- Acquisition of software and other external technology linked to technological innovations	ρ	ρ	***ROET***	***ROETX***
- Preparations to introduce new or significantly improved services or methods to produce or deliver them	ρ	ρ	***RPRE***	***RPREX***
- Training directly linked to technological innovations	ρ	ρ	***RTR***	***RTRX***
- Market introduction of technological innovations	ρ	ρ	***RMAR***	***RMARX***
Total expenditure				**RTOT**

The expenditure items should cover current (labour costs, acquisition of services, materials, etc.) and capital expenditure (instruments and equipment, computer software, land and buildings). If it is not possible to estimate all expenditure items involved, please at least indicate, if your enterprise has been engaged in a particular innovation activity or not.

R&D personnel within the enterprise in 1996 (in full time equivalents) ***RDPER***

Did your enterprise engage in R&D between 1994 and 1996?

Continuously	ρ	
Occasionally	ρ	***RDCON***
Not at all	ρ	

[13]The definition of R&D should be translated according to usual practise in R&D surveys.

4. Did your enterprise receive any government support (money allocation) **for innovation activities in 1996?** (loans including a subsidy element, grants)

Yes ρ
No ρ ***GMTSUP***

5. Did your enterprise apply for at least one patent between 1994 and 1996 in any country?

Yes ρ
No ρ ***PAT***

Factors influencing innovation activity

6. Objectives of innovation between 1994 and 1996

The main reasons for developing and introducing innovations are asked in this question
Please indicate the degree of importance attached to various alternative objectives by ticking 0=not relevant 1= slightly important 2=moderately important 3=very important

Objective		Not relevant	Importance		
		0	1	2	3
Replace services being phased out	***OREP***	ρ	ρ	ρ	ρ
Improving service quality	***OIMP***	ρ	ρ	ρ	ρ
Extend service range	***OEXT***	ρ	ρ	ρ	ρ
Open up new markets or increase market share	***OOPN***	ρ	ρ	ρ	ρ
Fulfilling regulations, standards	***OSTD***	ρ	ρ	ρ	ρ
Improve internal business process flexibility	***OPCS***	ρ	ρ	ρ	ρ
Reduce labour costs	***OLBR***	ρ	ρ	ρ	ρ
Reduce materials consumption	***OMAT***	ρ	ρ	ρ	ρ
Reduce energy consumption	***ONRG***	ρ	ρ	ρ	ρ
Reduce environmental damage	***OENV***	ρ	ρ	ρ	ρ

7. Sources of information for innovation between 1994 and 1996

The main sources of information needed for suggesting new innovation projects or contributing to completion of existing projects are asked in this question.
Please indicate the degree of importance attached to various alternatives by ticking 0=not used 1=slightly important 2=moderately important 3=very important

Information source		Not used	If used Importance		
		0	1	2	3
Sources within the enterprise	***SENT***	ρ	ρ	ρ	ρ
Other enterprises within the enterprise group	***SGRP***	ρ	ρ	ρ	ρ
Competitors	***SCOM***	ρ	ρ	ρ	ρ
Clients or customers	***SCLI***	ρ	ρ	ρ	ρ
Consultancy enterprises	***SCON***	ρ	ρ	ρ	ρ
Suppliers of equipment, materials, components or software	***SSUP***	ρ	ρ	ρ	ρ
Universities or other higher education institutes	***SUNI***	ρ	ρ	ρ	ρ
Government or private non-profit research institutes	***SGMT***	ρ	ρ	ρ	ρ
Patent disclosures	***SPAT***	ρ	ρ	ρ	ρ
Professional conferences, meetings, journals	***SPRO***	ρ	ρ	ρ	ρ
Computer based information networks	***SNET***	ρ	ρ	ρ	ρ
Fairs, exhibitions	***SEXB***	ρ	ρ	ρ	ρ

8. Innovation cooperation between 1994 and 1996

Innovation cooperation means active participation in joint R&D and other innovation projects with other organisations. It does not necessarily imply that both partners derive immediate commercial benefit from the venture. Pure contracting out work, where there is no active participation, is not regarded as cooperation.

Did your enterprise have any cooperation arrangements on innovation activities with other enterprises or institutions in 1994-1996?

Yes ρ
No ρ (go to question 9) ***CO***

If yes, please indicate the type of organisation and location of your cooperation partner

Type of partner	Location of partner				
	National	EU	USA	Japan	Other
Other enterprises within the group	***CO11***	***CO12***	***CO13***	***CO14***	***CO15***
Competitors	***CO21***	***CO22***	***CO23***	***CO24***	***CO25***
Clients or customers	***CO31***	***CO32***	***CO33***	***CO34***	***CO35***
Consultancy enterprises	***CO41***	***CO42***	***CO43***	***CO44***	***CO45***
Suppliers of equipment, materials, components or software	***CO51***	***CO52***	***CO53***	***CO54***	***CO55***
Universities or other higher education institutes	***CO61***	***CO62***	***CO63***	***CO64***	***CO65***
Government or private non-profit research institutes	***CO71***	***CO72***	***CO73***	***CO74***	***CO75***

9. Factors hampering innovation

The innovation activity of your enterprise could be hampered by various factors, which might prevent innovation projects or slow up or stop projects in progress.

a) Has at least one innovation project in 1994-1996 been

	yes	no	
- seriously delayed	ρ	ρ	***H1***
- abolished	ρ	ρ	***H2***
- not even started	ρ	ρ	***H3***

b) **If yes on at least one question, tick the relevant factors in the respective columns**

Hampering factors	seriously delayed	abolished	not even started
Excessive perceived economic risks	***H11***	***H12***	***H13***
Innovation costs too high	***H21***	***H22***	***H23***
Lack of appropriate sources of finance	***H31***	***H32***	***H33***
Organisational rigidities	***H41***	***H42***	***H43***
Lack of qualified personnel	***H51***	***H52***	***H53***
Lack of information on technology	***H61***	***H62***	***H63***
Lack of information on markets	***H71***	***H72***	***H73***
Fulfilling regulations, standards	***H81***	***H82***	***H83***
Lack of customer responsiveness to new products	***H91***	***H92***	***H93***

SELECTED EXAMPLES OF INNOVATION IN SERVICE SECTORS

- Use of cellular phones to reroute drivers troughout the day.
- A new computer mapping system, used by drivers to work out the fastest delivery route
- Introduction of a new switching system that allows the digital transfer of information across the telecommunications net
- The introduction of smart cards and multipurpose plastic cards
- A new bank office without any personnel where clients conducted business through computer terminals
- Telephone banking
- Development of customer software packages with various degreees of support for customers
- The introduction of new multi-media software applications for educational purposes
- The introduction of qualification procedures for medicine testing methods

eurostat

ANNEX II.3

The second Community Innovation Survey

1.Target population

The target population of the next CIS should be the total population of enterprises of a certain size and industry.

The following industries should be included in the target population of the next CIS;

- all manufacturing industries (NACE 15-37)
- electricity, gas and water supply (NACE 40-41)
- wholesale (NACE 51)
- transport (NACE 60-62)
- telecommunications (NACE 64.2)
- financial intermediation (NACE 65-67)
- computer and related activities (NACE 72)
- engineering services(NACE 74.2 part)

The cut off point for inclusion in the target population should not be more than 20 employees in the manufacturing sector and electricity, gas and water supply, 10 employees in the service sectors. Countries may also include enterprises with 10-19 employees in manufacturing sectors and electricity, gas and water supply in the target population, *if they are treated separately*.

The statistical unit for CIS 2 should be the enterprise, as defined in the Council Regulation[14] on statistical units or as defined in the statistical business register. If the enterprise for some exceptional reasons is not feasible as statistical unit other units like divisions of enterprise groups or kind of activity units could be used. These exceptional units should be indicated in the data base. Some adjustments for these might be needed in the processing of the data.

2.Core questionnaires

Eurostat has developed two core questionnaires for use in the next Community Innovation Survey, one for the manufacturing industries and one for the service industries. Enterprises whose main activity is in the manufacturing industry should receive the questionnaire for the manufacturing sectors; those whose main activity is in the service sector will receive the questionnaire for the service sector. The variables of the core questionnaires should be included in all national innovation surveys. If found necessary, some national modifications to the order of the questions or variables could be made. The final design of the questionnaire has also to be determined by the national contractor. The instructions and examples of the core questionnaire should be introduced into the national questionnaires (in national languages) as far as possible.

[14] Council Regulation (EEC) N° 696/93 of 15 March 1993, OJ N° L76 of the 3 March.

3.Survey methodology

It is assumed that the second Community Innovation Survey should be based on mail surveys. It is suggested to use a combination of census and sampling (census down to a certain threshold 1000, 500, 250 or 100 employees and sampling for the rest). The samples should be *stratified random* samples. Stratification variables should be *NACE Rev. 1* (2 digits level) and size of enterprise. The following size classes is recommended for the stratification; *10-19* (for service sectors and also for manufacturing sectors if 10 employees is used as cut-off point), *20-49*, *50-99*, *100-**249*** (if applicable), ***250**-499* (if applicable), *500-999* (if applicable). If the strata in the population are too small, they should not be combined to achieve a sufficient number of enterprises. A full census should be applied if the total number of enterprises in the frame population in a certain NACE 2-digit class and a certain size stratum is 5 enterprises or below.

In every stratum at least 5 enterprises should be included to as far as possible avoid estimates based on only one or two enterprises. The methods which could be applied to determine sample size within strata could be based on proportional allocation or optimal allocation.

The sampling frame should be a business register with as good quality as possible. The official statistical business register of the country should be used. If that is not available, other registers have to be used.

4.Collecting and processing of data

All efforts should be made to minimise the unit non response. To secure an acceptable response rate, at least two reminders have to be made. If the non response exceeds 30% based on the ratio between non responding and operating enterprises in the sample population as a whole (exclusion of no longer operating enterprises or not found enterprises), a non-response analysis is needed. The experience from CIS 1 showed that non-respondents might be biased towards a certain type of enterprises.

The non-response analysis should include the introductory questions of the questionnaires (questions 1-3 for the manufacturing sectors, questions 1-2 for service sectors). The breakdown of each question (i.e. ‘mainly other enterprises or institutes’, ‘your enterprise and other enterprises or institutes’, ‘mainly your enterprise’) should not be part of the non-response analysis. From these questions it should be possible to distinguish innovators from non innovators. At least a 10% sample of the non-respondents where no longer operating enterprises have been excluded should be drawn. Given that the sample size of the non-response analysis is relatively small and given the large number of strata, NACE and size classes should not be used as stratification variable. The non response analysis should be made on the basis of a **simple random** sample of the non-respondent population. However information on the NACE and size class must be available.

The initial non response analysis should be a mail survey. It is recommended to send questionnaire to the right person (for example enterprises can be contacted by phone

to know who is the responsible person, e.g. R&D manager for large enterprises, managing directors for small enterprises). All enterprises not responding to the mail survey should be contacted by phone several times. In order for the non-response analysis to be useful, it should have a very high response rate (preferably 100%).

Item non response and partial item non response should be kept at a minimum by contractors by asking the enterprises for additional information. Item non-response for variables on general information about the enterprises should not exist. These information should be available in the business registers or from other sources (Chamber of Commerce, etc.). Contractors should as far as possible estimate item non response and partial item non response on the basis of instructions by Eurostat. If they are not in a position to carry out these estimations and logical consistency checks they will be asked to comment on the controls and estimations carried out by Eurostat.

The weighting factors will be based on shares between the numbers of enterprises in the realised sample and total number of enterprises in each stratum of the frame population (combined non response correction and weighting). In case a non-response analysis is carried out then the results of the non response analysis will be used in the calculation of weighting factors. The weighting factors will be calculated by Eurostat and/or contractors on the basis of information on realised samples and total number of enterprises in different strata of the frame population, if possible with adjustments for enterprises not found or no longer active.