



International Labour Office
Updating the International Standard Classification of Occupations (ISCO-88)
Consultative Questionnaire

This is the second in a series of questionnaires seeking views on issues related to updating the International Standard Classification of Occupations (ISCO-88).

The first (exploratory) questionnaire was circulated at the end of 2004. An analysis of the responses to the first questionnaire, together with proposals for change to the ISCO-88 structure, was discussed at a meeting of the United Nations Expert Group on International Economic and Social Classifications in June 2005 and by the ILO Technical Expert Group on Updating ISCO in meetings and an electronic discussion forum from late 2005 onwards.

This process led to the identification of a significant number of additional concerns about aspects of ISCO-88. In response to these concerns an updated draft classification structure has been developed and is provided for information and comment at Annex 2. The relationship between the new groups and categories in ISCO-88 is shown together with comments where necessary indicating the nature of the change

The changes are proposed for a wide variety of reasons. The most important of these are listed below.

- The emergence of new occupations and of new ways of working in existing occupations as the result of technological change and economic development.
- The decline of some occupations due to technological and economic change.
- Difficulties experienced by some countries in making distinctions between certain categories in ISCO-88.
- The need for categories at the sub-major and minor group level of ISCO to be more even in size than was the case in some parts of ISCO-88, so that ISCO can be used more effectively for the compilation of internationally comparable estimates from sample surveys.
- Concern that ISCO-88 is very detailed in some areas (for example, machine operators), but provides insufficient detail in service and sales related occupations
- The need to ensure that there is adequate coverage of occupations that predominate in the informal economy.
- The need for certain occupational groups to be separately identified for specific analytical reasons, such as to improve understanding of issues associated with the international migration of the health work force.

The updated draft ISCO-08 has been designed to provide solutions to these problems, while adhering to the principle that the overall framework and conceptual basis for the classification should not be substantially changed. This second questionnaire seeks comment on the proposed changes. The questions in Section A invite you to comment on the overall conceptual model for ISCO-08. Section B seeks your advice about particular parts of the classification for which further information is needed. Section C seeks general comments about the changes proposed with the aim of ensuring that all issues and problems are identified.

Not all questions may be relevant or meaningful in your national circumstances. In such cases, please feel free not to respond to them, perhaps indicating why they are not relevant or meaningful. You may wish to visit the ISCO website at www.ilo.org/public/english/bureau/stat/isco/index.htm to obtain additional information.

We recommend that this questionnaire be discussed as widely as possible in your country, involving the Ministry of Labour, National Statistical Institute, Employment Services, Vocational Training Institutes, and Employers' and Workers' Organisations. While the ideal would be to have a single country position that reflects the needs of the users and producers of the classification and its by-products, separate questionnaires may also be completed by each of these institutions, if you are not able to come to a single country position.

Your responses, as well as any enquiries on the questionnaire, should be sent to the ISCO team of the ILO Bureau of Statistics, at isco@ilo.org or by fax at + 41 22 799 6957. Please provide your comments as soon as possible, preferably by 29 September 2006.

Thank you for your valuable assistance.

Country:
Agencies consulted:
Agency providing the information:
Agency's name:
Agency's address:
Contact person:
Person's name:
Tel:
Fax:
e-mail:

A. Conceptual framework

In ISCO-88 jobs are arranged into occupational groups according to similarity in the *skill level* and the *skill specialisation* of the tasks and duties performed. Organising occupations on the basis of skill level and specialisation resulted in a hierarchical structure which consists of 10 major groups at the top level of aggregation, subdivided into 28 sub-major groups, 116 minor groups and 390 unit groups, see www.ilo.org/public/english/bureau/stat/isco/isco88/publ3.htm.

Responses to the first questionnaire on updating ISCO confirmed that the framework and the concepts underpinning the classification did not need to be changed substantially from those used in the previous version of ISCO (ISCO-88)¹, see www.ilo.org/public/english/bureau/stat/isco/isco88/publ2.htm. Some problems were identified, however, in the way these concepts had been applied both in the design of ISCO-88 and in national adaptations and interpretations of ISCO-88. Accordingly, a document describing an updated conceptual framework for ISCO-08 has been developed and is provided as Annex 1. This document seeks to provide clarification of the framework, rather than making any fundamental changes. It emphasizes the principle that occupations that involve the performance of the same tasks and duties should always be classified in the same place in ISCO, even when the formal educational qualifications required or held may differ from one country to another or from one individual to another.

The paper describing the conceptual framework for ISCO-88 (Annex 1: <<http://www.ilo.org/public/english/bureau/stat/isco/isco88/quest.htm>>) gives priority to *the nature of the work performed in an occupation in relation to the characteristic tasks and duties defined for each ISCO-88 skill level* as part of the operational measure of skill level.

A1 Do you agree with the updated definition of the concept of skill level proposed in Paragraph 9 of Annex 1? If not, please suggest how it could be improved.

A2. Do you agree with the definitions of each skill level proposed in Paragraphs 14 to 29 of Annex 1? If not, please indicate how these definitions could be improved.

A number of countries have indicated that it can be difficult in the national context to distinguish between professional occupations classified in ISCO-88 in Major Group 2 and technical occupations classified in Major Group 3. Many countries, however, have stressed the importance of the distinction in skill level between professional and technical or associate professional occupations.

A3 Do you have difficulty in distinguishing between occupations at the 3rd and 4th skill levels in ISCO-88? Do the revised definitions of each ISCO skill level make this distinction easier to make in the national context?

In ISCO-88 no skill level was assigned to Major Group 1, Legislators, senior official and managers or to Major Group 0, Armed forces. This makes it difficult for occupational data classified using ISCO to be aggregated according to skill level. To overcome this problem it

¹ ILO, 1990

is proposed to assign a skill level to each sub-major group in Major Group 1 and 0 and to design the sub-major groups so that they are only at a single skill level. In the current draft, all sub-major groups in Major group 1 are at the 4th skill level except for one group which is at the 3rd skill level.

A4 Please comment on whether or not the approach proposed to assign skill levels to occupations in Major group 1 is useful. Does this approach present any problems with the application of ISCO in your country?

B. Specific proposals for change

The questions in this section relate to areas of ISCO where proposals for change are quite extensive or where further information is needed before the classification structure can be finalised. The questions relate to the draft classification structure provided at Annex 2. This draft organises occupations into 10 Major groups as in ISCO-88, 36 Sub-major groups, 126 Minor groups and 446 unit groups.

Information and communications technology (ICT) occupations

ISCO can be seen to be particularly out-of-date due to technological change with respect to occupations involved in the provision of goods and service related to information and communications technology (ICT). Based on responses to the first questionnaire on updating ISCO, consultation with industry and analysis of recently revised national classifications of occupations, a paper discussing options for the classification of ICT occupations was circulated to stakeholders in industry for comment in May 2006. This paper can be found by using this link: <http://www.ilo.org/public/english/bureau/stat/isco/isco88/aprop.htm>. The treatment of ICT occupations proposed in this paper is summarized below in Table 1 and is used as the basis for the classification of these occupations in the draft classification structure presented in Annex 2.

Once there is agreement on a general framework for the classification of occupations in ICT, the ILO will consult with industry on definitions of each group and on the detailed occupational titles to be listed with each group. In addition, options are being considered for the separate identification of ICT sales occupations. Your advice is sought on the following issues.

B1 Is the overall approach outlined in Table 1 appropriate and useful?

A widespread criticism of ISCO-88 is that all computer programmers are classified in Major group 2 Professionals. The solution proposed is to classify those programmers who are involved in developing software in Unit group 2512 Software developers. Those who use or adapt software products to meet specific business needs would be classified in Unit group 3531, Applications programmers. Someone, whose occupation was described as 'Programmer' would, in the absence of further information, be classified as an applications programmer.

B2 Is it appropriate and feasible to classify applications and software programmers in separate major groups?

Unit Group 3532, Systems testing technicians is based on an approach used in some national occupation classifications. It includes occupations like user acceptance tester as well as those involved in testing telecommunications systems and equipment.

B3 Is it useful or appropriate to create a unit group for systems testing technicians?

Attempts have been made to reflect the growing convergence between information and telecommunications technologies by:

1. including unit groups that are specific to telecommunications (including broadcasting) in the same minor groups as other occupations in ICT; and
2. creating some unit groups that cover both information and telecommunications technologies where there appears to be real convergence in the skills required in the labour market (Unit group 7423, ICT installers and servicers is one such example).

B4 (a) Is the approach taken towards the convergence between IT and telecommunications occupations useful?

(b) Is there a need for more or less detail with respect to occupations that deal mainly with communications technology?

(c) Should telecommunications and computer hardware engineers be classified in Sub-major group 25 Information and communications technology professionals as proposed in the paper; or should they be classified with other engineers in Sub-major group 21, Science and engineering professionals.

TABLE 1
Proposed sub-major, minor and unit groups containing ICT occupations in ISCO-08

13	Production and operations managers

133	Information and communications technology services managers
	1330 Information and communications technology services managers
23	Teaching professionals

235	Other Teaching professionals

	2356 Information technology trainers
25	Information and communications technology (ICT) professionals
251	Software and multimedia developers and analysts
	2511 Systems analysts
	2512 Software developers
	2513 Web and multimedia developers
	2519 Software and multimedia developers and analysts not elsewhere classified
252	Database specialists and systems administrators
	2521 Database designers and administrators
	2522 Systems administrators
253	ICT Network and Hardware Professionals
	2531 Computer network professionals
	2532 Telecommunications engineering professionals
35	Information and communications technicians
351	ICT operations and user support technicians
	3511 ICT operations technicians
	3512 ICT user support technicians
352	Web technicians
	3520 Web technicians
353	Applications development and testing technicians
	3531 Applications programmers
	3532 Systems Testing Technicians
354	Communications Technicians
	3541 Broadcasting and recording technicians
	3542 Telecommunications engineering technicians
74	Electrotechnology trades workers

742	Electronics and telecommunications installers and repairers
	7421 Electronics mechanics and servicers
	7422 Information and communications technology installers and servicers

Managers

The idea behind the classification of managerial occupations in ISCO-88 was to identify legislators and senior executives (Sub-major group *11 Legislators and senior officials*), managers of large enterprises, and those that head departments in them (Sub-major group *12 Corporate managers*) separately from managers of small businesses (Sub-major group *13 General managers*). This distinction was designed to reflect the differences in the range, complexity and variability of the skills, tasks and duties of managers of small and large organisations.

The distinction between *122 Production and operations department managers* (corporate managers) and *13 General managers* proved to be problematical, however, for a number of reasons. Firstly it requires information which provides some signal on the number of managers (e.g. from the job title, the place of work, etc) in the organization. Secondly, it places in separate sub-major groups some occupations that are very similar in terms of the field of knowledge required. Thirdly, the use within these minor groups of unit groups based on the industrial activity of the economic unit in which a jobholder is employed has the effect of masking distinctions between certain management specialisations. An additional problem is that statistics for Sub-major group 11, Legislators and senior officials, were rarely provided because of the very small numbers of persons employed in jobs classified in these groups.

An approach which replaces the ISCO-88 structure for Major group 1 with 4 new sub major groups is presented in the draft classification structure provided in Annex 2. It contains the following sub-major groups:

- 1 Managers, senior officials and legislators**
- 11 Chief executives, senior official and legislators
- 12 Corporate administration managers
- 13 Production and operations managers
- 14 Hospitality, Retail and Service Managers

Although no distinction between these groups is made on the basis of the size of the particular organisation in which an individual works, the first three groups include occupations which predominantly exist in large organisations with hierarchies of managers. It should also be noted that the proposed Sub-major Group 14 is made up of occupations which predominantly, although not exclusively, exist in relatively small organisations. The proposed Sub-major group 11 combines the ISCO-88 Sub-major group 11 Legislators and senior officials with Minor group 121 Directors and senior executives.

A number of changes to the *names* of groups in Major Group 1 have also been proposed, so that the first or second words in the names give a clearer impression of the content of the groups. Improved guidelines will also be provided on the general distinction between managers, supervisors and skilled workers in relation to the owner operators of small businesses.

B5 Please comment on the approach being taken in the draft ISCO-08 towards the classification of managers, senior officials and legislators and suggest, if necessary, how it could be improved.

Supervisors

ISCO-88 did not retain the separate groups for supervisors that had been part of ISCO-68. They are, as a consequence, classified with the workers they supervise. Many countries, however, consider it important to distinguish supervisors from other workers, including managers, in specific sectors where supervisors do not mainly perform the same tasks as the workers supervised but do not generally perform tasks that are characteristic of management. To reflect this concern, unit groups for supervisory occupations have been included in the draft classification in selected areas. These areas include:

- Manufacturing
- Construction
- Mining
- Retail
- Farming
- Administration

Due to the additional skill level requirements for some supervisory jobs, a new minor group has been created in Sub major group 31, Science and engineering associate professionals, for supervisors in manufacturing construction and mining. For the same reason a unit group for office supervisors has been included in Sub major group 33, Financial and administrative associate professionals. The remaining supervisory unit groups are:

5221 Shop supervisors
6111 Crop farm supervisors
6121 Livestock farm supervisors
8211 Product assembly supervisors

B6 (a) Please comment on whether or not it is useful to include unit groups for supervisory occupations in selected areas.

(b) Are there any other areas where you consider that there is a need to separately identify supervisory occupations?

Occupations in agriculture

In ISCO-88 occupations related to agriculture, forestry and fisheries can be found in major groups 1, 2, 3 6, 8 and 9. The first questionnaire on updating ISCO-88 sought advice about difficulties in distinguishing between agricultural occupations in Major groups 1, 6 and 9, the need for further disaggregation of some or all of these groups, in particular Sub-major group 62 subsistence agricultural and fishery workers.

Based on responses to the questionnaire, submissions from interested parties, discussions among experts in occupation classification and examination of occupational data from a number of countries, it can be concluded that there are a number of problems in the use of ISCO-88 for occupations related to agriculture. These problems and the proposed solutions to them are discussed in the paper presented in Annex 3, see <http://www.ilo.org/public/english/bureau/stat/isco/isco88/quest.htm>. Your advice is sought on the following issues:

- B7 Please comment on the general approach proposed for the classification of occupations in agriculture forestry and fisheries proposed in Annex 3? In particular, is the level of detail proposed at unit group level appropriate?**
- B8 Are subsistence agricultural, forestry and fisheries workers a significant group in your country? If they are, do they need to be separately identified in ISCO as a sub-major, minor or unit group? Is it appropriate to restrict the definition of this group to those who do not produce, or aim to produce, a surplus for the market on a regular basis?**

Occupations related to health services

During the early stages of consultation aimed at identifying areas of ISCO-88 that need to be updated, several interrelated issues were raised in relation to the classification of occupations in health care. A number of proposed changes to ISCO-88 were developed and have been discussed with interested parties.

Whilst there is agreement on the general approach being adopted, there are several areas where further information or clarification is needed before ISCO-08 can be finalised

The main outstanding issues relating to the classification of health occupations in ISCO-08 and the solutions proposed for the resolution of these issues are summarised in *Options for the classification of Health Occupations in the updated International Standard Classification of Occupations (ISCO-08)* which can be downloaded from the following Web page: <http://www.ilo.org/public/english/bureau/stat/isco/isco88/aprop.htm>

Your views are requested on the following specific issues.

- B9 Is it appropriate to create a sub-major group for health professionals and merge the minor group for life science professionals with Sub-major group 21 Physical, mathematical and engineering science professionals**
- B10 Should Veterinarians be moved from the group for Health professionals to the group for Life science professionals?**
- B11 Do you agree with the proposal to move life science technicians to Sub-major group 31, so that a sub-major group can be created for Health Associate Professionals? If you do agree with this proposal, where should health, medical and pathology laboratory technicians be classified?**

- B12 **Is the distinction between professional and associate professional nurses feasible and useful? If it is not, where should nursing occupations be classified in the ISCO-08 structure?**
- B13 **Do faith healers need to be identified as a separate unit group? Is it appropriate to include them in the same group as fortune tellers and astrologers or in a residual (not elsewhere classified) category?**
- B14 **Do you agree with the proposal to create more detailed unit groups in Minor Group 513, Personal care and related workers, to separately identify aged care workers and carers for the disabled?**

Medical Physicists

In the first questionnaire an occupational description for *Medical Physicists* prepared by The International Union for Physical and Engineering Science in Medicine (IUPESM) was presented for comment. An updated definition is presented here: <http://www.ilo.org/public/english/bureau/stat/isco/isco88/aprop.htm>. It was concluded from the responses to the first questionnaire that medical physicists are not sufficiently numerous to justify the creation of a unit group but opinion was divided about whether they should be classified in ISCO-88 Unit Group 2111 *Physicists and astronomers*, or somewhere in Minor Group 222 *Health Professionals (except nursing)*.

Since the first questionnaire was developed, there has been a significant reorganisation of groups related to health and science in the draft classification. Medical Physicists could be classified either in Unit Group 2111, Physicists and astronomers or in Unit Group 2239, Other Health Professionals not elsewhere classified. In both cases they could be listed as an occupation classified in that group.

- B15. **Please comment on**
(a) where medical physicists are classified in your national classification of occupations;
(b) where in the ISCO-08 draft structure they should be classified.

Occupations related to environmental and occupational health

Occupations related to environmental and occupational health can be found in ISCO-88 unit groups 3152, Safety, health and quality inspectors and 3222 Sanitarians. Since ISCO-88 was developed there has been an increasing focus in industry, government and the community at large on issues associated with environmental and occupational health and safety and on the economic and social costs of environmental and occupational hazards. This has led to the emergence of a number of occupations of a professional nature aimed at reducing such hazards and developing and implementing policies and practices related to these issues. There has also been a growth in the number of occupations of a more technical nature that are concerned with the administration of such policies and practices. In response it is proposed to:

- Create a new unit group in Major group 2 of Environmental and occupational health and hygiene professionals. It is likely that these occupations are currently being classified in ISCO-88 unit groups 3152 and 3222 although some may be included in various parts of Major group 2 depending on national practice.
- Merge the remaining occupations that are associated with health and occupational health safety in ISCO-88 Unit Group 3152, Safety, health and quality inspectors, with those currently classified in Unit Group 3222 Sanitarians. A new unit group 3237, Environmental and occupational health inspectors and associates is proposed in the draft structure.
- Move the remaining occupations classified in ISCO-88 Minor group 315, Safety and quality inspectors to the relevant unit groups in Minor group 311, Physical and engineering science technicians. Their primary skills are associated with the relevant branch of engineering. Building and fire inspectors for example require knowledge of technical issues associated with building design and construction, interpreting plans, and building regulations similar to that held by building technicians classified in Unit Group 3112 Civil Engineering Technicians

B16 Do you agree with the proposals listed below? If you disagree with these proposals please give reasons and suggest an alternative solution.

(a) To delete ISCO-88 Minor group 315, Safety and quality inspectors

(b) To create a new unit group Environmental and occupational health and hygiene professionals and to include it in the proposed new Sub-major group 22 Health professionals

(c) To merge the remaining occupations that are associated with health and occupational health safety in ISCO-88 Unit Group 3152, Safety, health and quality inspectors, with those currently classified in Unit Group 3222 Sanitarians.

(d) To classify the remaining occupations in Unit Group 3152 with the relevant unit groups in Minor Group 311, Physical and engineering science technicians.

Occupations related to research

A proposal has been made to create special occupational groups for researchers as follows:

26 Researchers

261 Researchers in natural sciences

2610 Researchers in natural sciences

262 Researchers in social sciences and humanities

2620 Researchers in social sciences and humanities

263 Other researchers

2630 Other researchers

As part of this proposal it was suggested that the following classification rule (p. 11 in the ISCO-88 manual) should be adopted, so that priority is given to occupations that involve teaching:

Occupations concerned with research and development are classified in the relevant minor groups in the sub-major group 26 Researchers if research and development constitute the main task(s) of the job. When a researcher is also exercising a teaching profession, he or she should be classified as a teacher, at the appropriate educational level.

Currently researchers are identified as a separate category in some national occupational classifications. For example, the UK SOC 2000 identifies them as a separate minor group.² The proposal to adopt a similar approach in ISCO, at the 2-digit level, is motivated by a desire to produce internationally harmonized statistics on researchers and their mobility. At the global level data on this category could be used to produce estimates on the international migration of researchers. In countries with a more pronounced policy to enhance the attractiveness of the research profession and to eliminate the barriers to the mobility of researchers, these data are needed for benchmarking purposes.

Opinion about the merits of this proposal is divided, however. Research is a component of almost all occupations in ISCO Major Group 2, Professionals. The proposal would effectively mean that occupations that are very similar according to all aspects of skill specialisation would be classified in different sub-major groups depending on the amount of research involved and whether or not teaching is involved. A number of experts in occupation classification consider that that this would be a departure from the existing conceptual framework for ISCO-88 and therefore go beyond the ILO mandate for updating ISCO-88.

It is felt by these observers that the proposal would not satisfy its stated purpose, as those combining research with other activities would not be identified, and additional questions on

² *Standard Occupational Classification 2000, Volume 1, Structure and descriptions of unit groups*, Office for National Statistics, London, 2000.

the amount of research and teaching involved in a job would need to be asked on Census and Survey forms in order to identify researchers accurately. It may be, therefore, that data on the proportion of time devoted to research activities might better be obtained by including such questions in labour force surveys and censuses, or by conducting special surveys. As there is no consensus on this proposal, it has not been incorporated into the draft structure presented in Annex 1.

B17 Please comment on the proposal to create a separate Sub-major group in ISCO-08 for researchers.

Teachers and Early childhood educators

In ISCO-88, categories for primary school teachers, pre-primary school teachers and special education teachers are provided in Major group 2, Professionals and Major group 3, Technicians and associate professionals. Sub-major groups for teaching occupations are provided in both Major Groups 2 and 3.

Since the principle has been adopted for ISCO-08 that jobs requiring the performance of the same tasks should always be classified in a single group, a decision has to be made about the location in the new classification for each teaching occupation. Although in a number of countries primary school teachers do not require the same level of education and training as secondary school teachers, it has been decided on the basis of the nature of the work performed and the predominant educational requirements in many countries, that they should be classified in Major Group 2. It has also been decided that special education teachers should be classified in Major group 2 in the draft ISCO-08.

The situation is less clear cut for pre-primary school teachers. In many industrialised as well as developing countries these teachers do not require the same level of training as primary school teachers. The tasks performed by pre-primary school teachers may also vary considerably between countries. It would be difficult to distinguish reliably in data collections, however between those who perform tasks at professional and associate professional levels. On balance, the Technical Expert Group for Updating ISCO recommended that this group should be classified in Major Group 3 in a unit group termed 'Early childhood educators'.

Since almost all teaching occupations except early childhood educators are to be classified in Major Group 2, a sub-major group for teaching associate professionals cannot be justified in ISCO-08. Accordingly, a Minor group 341, Teaching associate professionals is included in Sub-major group 34, Teaching, policing, legal, social and related associate professionals. This minor group is made up of two unit groups: Early childhood educators and Other teaching associate professionals (this includes occupations such as driving instructors and flying instructors).

B18 Is it more appropriate in your country for early childhood educators (pre-primary school teachers) to be classified in Major group 2 along with most other teaching occupations or in Major group 3 as proposed in the draft provided at Annex 2?

Office clerks

A number of concerns about ISCO-88 Sub-major group 41, Office clerks, have been identified. These include the impact of information and communications technology on the nature of the work performed by secretaries and keyboard operators, large numbers of jobs counted in Unit group 4190, Other office clerks, and the inability to separately identify general office clerks who provide a wide range of clerical functions particularly working in small businesses. To address these problems the following changes are proposed:

- A new minor group for general office clerks, in line with practice in a number of national occupation classifications;
- Splitting ISCO-88 Minor group 411, Secretaries and keyboard operating clerks to provide separate minor groups for those clerks who primarily operate keyboards and for general secretaries (note that specialised and executive secretaries are now classified in Major group 3 because of their higher skill level requirements);
- Providing only 2 unit groups for keyboard operators: Typists and word processing operators, and Numerical keyboard operators;
- A new unit group for personnel clerks.

B19 Please comment on any aspect of these proposals and, in particular, on whether any large occupational groups (other than general clerks and personnel clerks) are currently classified in ISCO-88 Unit group 4190, Other office clerks in your country.

Arts, entertainment, design and sports occupations

Occupations in arts, entertainment, design and sport are classified in ISCO-88 in Minor groups 245, Writers and creative or performing artists and 347, Artistic, entertainment and sports associate professionals. This meant that musicians and dancers, for example, could be classified in different major groups depending on whether or not they perform in classical or less formal settings. This was not seen to reflect the reality of the modern entertainment industry. In response to this and a wide range of other concerns about the treatment of these occupations in ISCO-88 the following changes are proposed in the draft ISCO-08 structure:

- The arts and media related unit groups in Minor group 347 have been merged, where possible, with the equivalent unit groups in Minor group 245.
- Journalists are identified separately from other writers and media presenters within the new group.
- Unit group 3471 has been split to form 3 new unit groups
 - 2155, Product and garment designers
 - 2453, Graphic and multimedia designers
 - 3452, Interior designers and decorators
- Photographers have been separately identified from other image and sound recording equipment operators (who are classified in the new sub-major group for Information and communications technicians)
- A new minor group 345 Artistic associate professionals has been created and contains the new unit groups for photographers and interior designers and decorators

- A new minor group 344 has been created for sports and fitness workers

B20 Please comment on any aspect of the proposed treatment in ISCO-08 of arts, entertainment, design and sports occupations

Commercial sex workers

Commercial sex workers, or prostitutes, are not identified as a separate occupational group in ISCO-88. Such occupations are classified in unit group 5149 *Other personal service workers not elsewhere classified* (www.ilo.org/public/english/bureau/stat/isco/isco88/5149.htm), together with social escorts, club hosts and dancing partners. Although it is true that in statistical enquiries and employment services such occupations may be underreported, there is a widespread view that this occupational group should be separately identified as it can employ a significant share of workers, mostly women, and because there is a need for data to inform policy debate on issues associated with health, exploitation and regulation.

At the time ISCO-88 was developed, a proposal to include a separate unit group for “sex workers” was presented to the 14th International Conference of Labour Statisticians but was not accepted. In the first questionnaire on updating ISCO-88 countries were asked to comment on this issue.

The results of the first questionnaire revealed that there are differing requirements in countries around the world for data about workers who provide sexual services on a commercial basis. In a number of countries there is a demand for data about this group, who may operate lawfully and be regulated by government authorities. In many countries, however, it is unlawful to pay for or receive money for sexual services, and public discussion about the issue may be difficult. A clear majority of countries indicated that sex workers should not be separately identified as a unit group in ISCO-88.

The Technical Expert Group for updating ISCO recommended that ILO make a note as part of the definition of Unit Group 5159 *Other personal services workers not elsewhere classified* to the effect that:

- 1) In countries where there is a requirement for the collection of data on sex workers they be included in Unit Group 5159, *Other personal service workers not elsewhere classified*.
- 2) Where separate identification of this group of workers is required at the unit group level, it should be recommended that unit group code 5158 be used for this purpose in national adaptations of ISCO-08.

B21 Please comment whether the approach proposed above for the classification of commercial sex workers in ISCO-08 is useful and appropriate.

Shop sales assistants and cash register operators

Sales assistants in shops are a very large occupational group in almost all countries. Although skill specialisation differences between most occupations within this group are small, there are some occupations where detailed product knowledge is required. There may, therefore, be

some benefit in providing a more detailed break down at the unit group level of ISCO-08. The proposals suggested below have not been incorporated in the draft ISCO-08 structure.

B22 Please comment on the usefulness of creating separate unit groups within Minor group 522, Shop salespersons for the following occupations:

- **Shop supervisors**
- **General shop sales assistants**
- **Motor vehicle and vehicle parts salespersons**
- **Pharmacy sales assistants**
- **Information and communications technology sales assistants**

Checkout or cash register operators are a very large group who work in supermarkets and other retail establishments. They are frequently associated with Shop sales assistants as sales assistants are required to operate cash registers as part of their normal duties. Some employees in shops and other retail establishments may alternate between assisting with sales and operating cash registers. In ISCO-88 this occupation is classified in Unit Group 4211, Cashiers and ticket clerks. In several national occupation classifications, checkout operators are identified separately and are grouped with sales rather than clerical occupations

B23 Please comment on (a) whether or not a separate unit group for Cash register operators should be created and (b) where in the ISCO-08 structure such a group should be located.

Service station attendants and console operators

In ISCO-88 automobile service station attendants are classified in Unit group 5220, Shop demonstrators and sales assistants. Traditionally the work performed by this group included operating fuel pumps, assisting clients with minor maintenance tasks such as checking oil levels as well as selling fuels, oils, vehicle accessories and other products. Increasingly service stations are taking on the role of the convenience store and may sell a wide range of household products and groceries. The widespread introduction of self-service petrol stations has meant that, in many countries, the main work performed by service station attendants involves the operation of a cash register linked to a console which remotely controls pumps on the station forecourt. A specialised group of service station console operators has emerged in some countries.

Although these workers do not require significant detailed product knowledge compared to other shop sales assistants, it could be argued that the use of specialised equipment and the stringent safety and security requirements justify the creation of a separate unit group for service station attendants. It could also be argued that the service station console operators could be identified as a special kind of cashier. This second argument is more difficult to sustain, however, as the extent of specialisation among individuals working in service stations may vary and almost all are involved in the sale of products from behind the counter.

B24 Is there a need to create in ISCO-08 a separate unit group for automobile service station attendants? If yes, should service station console operators (cashiers) be included in the new group?

Miners, shotfirers, stone cutters and carvers

ISCO-88 Minor group 711, Miners, shotfirers, stone cutters and carvers contains three unit groups:

- 7111 Miners and quarry workers
- 7112 Shotfirers and blasters
- 7113 Stone splitters, cutters, and carvers

Since almost all work performed by miners and quarry workers now involves the operation of plant and machinery, the distinction between Unit group 7111 Miners and quarry workers and Unit group 8111 Mining plant operators, is no longer thought to be useful or viable. Accordingly it is proposed to merge these two unit groups to form a new unit group 8111 Miners and mining plant operators.

Since ISCO-88 Minor group 711 is not very useful without miners and quarry workers it is proposed to move Shotfirers and blasters to Minor group 754, Other craft and related workers and to move Stone splitters, cutters, and carvers to Minor group 712, Building frame and related trades workers.

B 25 Please comment on any aspects of the proposed treatment in ISCO-08 of Miners, shotfirers, stone cutters and carvers

Builders – traditional and non-traditional materials

In ISCO-88 Unit group 7121, Builders, traditional materials is conceived as a group for workers who build houses using traditional (in other words pre-industrial) building materials. Materials such as bamboo, straw and mud are mentioned as examples. House builders who use non-traditional materials are listed an example of occupations classified in Unit group 7129, Building frame and related trades workers not elsewhere classified. The usefulness of this approach has been questioned for a number of reasons.

- A large amount of the type of traditional material building work described in the definition of Unit group 7121 is undertaken in subsistence economies. The subsistence farmer and traditional builder may therefore be the same person who devotes some of his or her time to house construction and maintenance as and when needed.
- The occupation of “house builder” is important in many industrialised countries and may need to be separately identified.
- The definition of traditional materials is not always clear cut. Materials such as stone and timber, for example, continue to be used in many highly industrialised countries and were used before industrialisation.

A number of options to address these issues have been considered. For example a single unit group for all house builders could be created. This could remain in Minor group 712 or could be moved to Major Group 1 or 3 because of the skill level required and the importance of the management component of the work. Alternatively, non-traditional house builders could be classified in the same unit group as Construction supervisors. There are several other possibilities.

- B 26 (a) Is there a significant group of workers in your country who specialise in the construction of houses using traditional materials such as straw, mud, reeds, poles or leaves?
 (b) Is there a need to separately identify house builders who use traditional materials from those who use modern materials?
 (c) Where in ISCO-08 should house builders be classified?

Stationary plant and machine operators

There have been a number of criticisms about the structure and content of ISCO-88 Sub-major groups 81 Stationary-plant and related operators and 82 Machine operators and assemblers. These criticisms relate mainly to the following issues:

- Excessive detail at unit group level in some of the minor groups
- Difficulty in distinguishing reliably between stationary plant operators and machine operators and fragmentation of data as the result of this distinction
- The need for some occupations to be classified at a higher skill level due to technological developments and automation of large scale industrial processes which are frequently controlled by technicians from a central control room or console

To address these concerns a number of proposals for change have been incorporated in the draft classification structure provided in Annex 2. The main features of these changes are:

- Replacement of the existing Sub-major groups 81 and 82 with two new sub-major groups:
 81 Stationary plant and machine operators
 82 Assemblers
- Merging of some minor groups where there are parallel groups in ISCO-88 for stationary plant and machine operators
- Creation of a new minor group 314, Process control technicians and movement of a number of unit groups from ISCO-88 Sub-major group 81 into this new group
- Merging of a number of unit groups where there is a perception that the categories in ISCO-88 are too detailed.

B27 **Please comment on any aspect of the proposed re-organisation of Sub major groups 81 and 82?**

B28 (a) **Is the proposed new Minor group 314, Process control technicians useful?**
 (b) **Are there any cases where there is a need for categories for both process control technicians in Major Group 3 and Plant operators in Major group 8? (For example is there a need for a category for both paper and pulp making plant operators as well as paper and pulp making process control technicians?)**

Packing, bottling and labelling machine operators

ISCO-88 Minor group 829, Other machine operators and assemblers contains only one unit group in ISCO-88. For some countries, however, quite large numbers of people are reported as being employed in jobs in this minor group. Information available suggests that a significant proportion of this group may operate machines for the packing, labelling and bottling of products. It is proposed, therefore, to create a new unit group 8193, Packing bottling and labelling machine operators.

B29 Do you agree with the proposal described above to create a new unit group for packing, bottling and labelling machine operators?

B30 Are there any other occupations classified in ISCO-88 Minor Group 829 that you believe should be separately identified in the updated ISCO?

Machine tool setters and operators

The need for the distinction between ISCO-88 Unit group 7223 Machine-tool setters and setter-operators and Unit group 8211, Machine-tool operators has been called into question. It is believed that almost all Machine tool operators are able to set as well as operate the machine tools they work with.

B31 Is it appropriate to merge Unit group 7223 Machine-tool setters and setter-operators with Unit group 8211, Machine-tool operators? If this is appropriate where in ISCO-08 should the merged group be classified?

Elementary occupations

Sub-major group 91, Sales and services elementary occupations has been split into 4 new sub-major groups so that data on occupations that predominate in the informal economy might be more visible in international statistical reports. This has resulted in an increase from three to six in the number of sub-major groups in Major group 9. This may be considered appropriate since, in many countries, Major group 9 represents 25% or more of the employed labour force. Even in highly industrialised regions such as the European Union some 10 % of all jobs are in Major group 9.

It has been suggested, however, that the number of sub-major groups could be reduced, perhaps by merging Sub-major group 91, Cleaners and helpers with Sub-major group 94 Food preparation assistants. Since some domestic helpers assist in the preparation of food and an important component of the work performed by kitchen assistants involves washing dishes and performing other cleaning tasks this grouping makes sense conceptually.

B32 Please comment on the new structure for Major Group 9, Elementary occupations and in particular on the suggestion to merge Sub-major group 91 Cleaners and helpers with Sub-major group 94, Food preparation assistants.

C. Classification structure - general issues

Main structure

The questions below refer to the draft structure of ISCO-08 presented in Annex 2 and are aimed at ensuring that all issues and problems have been identified.

- C1 **Are there any occupations in your country or area of occupational interest that cannot be classified appropriately in the draft classification structure provided at Annex 1? If yes, please indicate where in the draft structure you believe these occupations should be classified and, if possible, provide descriptive information about the occupations concerned.**
- C2 **Are there any occupations that, although they may be included within an ISCO unit group, should be identified separately at the unit group level of ISCO-08? In other words, are there any unit groups in the draft that should be split?**
- C3 **Are there any unit groups, minor groups or sub-major groups that are not relevant for use in your country because they do not exist, or exist only in small numbers?**
- C4 **Do you disagree with any of the changes that are proposed in the draft ISCO-08 structure?**
- C5 **Are there any other improvements to the classification structure that you would like to propose?**

Thematic groupings

It has been agreed that standard ‘thematic groupings’ or ‘views’ of ISCO-08 should be considered for certain groups of occupations. Thematic groupings can be developed when there is a need to group occupations according to a particular theme, although these occupations are not grouped together in the ISCO main structure because skill level takes precedence. They are a standard alternative way of aggregating occupational data classified at the 4-digit level of ISCO.

It is proposed to develop thematic groupings for the following groups of occupations with assistance from the stakeholders listed in brackets:

- Health (WHO)
- Teaching (UNESCO)
- Agriculture (FAO)
- Information and communications technology (OECD, Computer Technology Industry Association, ITU and WWIIS)
- Tourism occupations (World Tourism Organisation)

- Research occupations (EUROSTAT)

Examples of thematic groupings are provided in the papers discussing occupations in agriculture and information and communications technology.

C6 **Are there any other thematic (or alternative) groupings that you believe should be developed?**