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INTERNATIONAL LABOUR ORGANIZATION

Report

## **Meeting of Experts on Labour Statistics**

**Updating the International Standard Classification of Occupations  
(ISCO)**

Geneva, 2007



INTERNATIONAL LABOUR OFFICE GENEVA

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# 1 Mandate and process for updating ISCO-88

## 1.1 Background

1. The Meeting of Experts on Labour Statistics on updating the International Standard Classification of Occupations (ISCO) has been convened from 3 – 6 December 2007 by the Governing Body of the International Labour Office (ILO) in accordance with a resolution, in 2003, of the 17<sup>th</sup> International Conference of Labour Statisticians (ICLS)<sup>1</sup>. In this resolution, endorsed by the Governing Body in March 2004, the ILO was requested to update ISCO by late 2007 and convene a tripartite Meeting of Experts to adopt the classification and make appropriate recommendations to the Governing Body. The timing was required to allow sufficient time for the updated classification, or national adaptations of it, to be available for use in the 2010 round of national population censuses.
2. The original request that the ILO timetable for the revision of ISCO should meet the needs of the next Census round was made at the 34<sup>th</sup> session of the UN Statistical Commission in March 2003. At the 35<sup>th</sup> session of the Commission, held in March 2004, the ILO made a commitment to complete the work by 2007, with the expectation that the updated classification would be presented to the Commission at its meeting in March 2008.
3. The final chapter of this report presents a Draft Resolution Concerning Updating ISCO, for consideration, amendment if necessary and adoption, if appropriate, by the Meeting of Experts. A draft updated classification structure, proposed by the ILO to be adopted as an international statistical standard and to be designated as the International Standard Classification of Occupations, 2008 (ISCO-08), is presented as an Annex to the Draft Resolution.
4. Work to develop ISCO was initiated in 1947 at the Sixth ICLS, and at the Seventh ICLS in 1949 provisional major groups were adopted. At the Eighth ICLS (1954) a provisional list of minor groups was approved. The Ninth ICLS (1957) completed the work by endorsing the major, minor and unit groups of the first ISCO, which was published by the ILO in 1958 and hence was known as ISCO-58. It had been recognised at the Ninth ICLS that ISCO-58 would need to be revised after a certain time. The eleventh ICLS considered and adopted a revised edition of ISCO (ISCO-68).
5. The current version of ISCO (ISCO-88)<sup>2</sup> was adopted in 1987 by the 14<sup>th</sup> International Conference of Labour Statisticians. This classification represented a significant break from the two previous versions in that it used the concepts of skill level and skill specialisation as criteria to arrange similar occupations into progressively larger groups.
6. The main purposes and uses of ISCO are to provide:
  - a basis for the international reporting, comparison and exchange of statistical and administrative data about occupations;
  - a model for the development of national and regional classifications of occupations; and
  - a system that can be used directly in countries that have not developed their own national classifications.

<sup>1</sup> ILO, 2004. The full text of the resolution is provided as an Annex to this report

<sup>2</sup> ILO, 1990

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7. Occupation classifications are used in national contexts for the collection and dissemination of statistics from population censuses, household surveys, employer surveys and other sources. They are also used by governments and companies in activities such as matching job seekers with job vacancies, educational planning, reporting of industrial accidents, administration of workers compensation, and the management of employment related migration. Globalisation of the labour market is increasing the demand for internationally comparable occupational information for both statistical and administrative purposes, and highlights the need for a robust and contemporary framework for the reporting and exchange of information about occupations.

## **1.2 Overview of the updating process and consultations**

8. In conducting the work to update ISCO, the ILO consulted as widely as possible with stakeholders and interested parties. This was achieved mainly by means of two questionnaires that were sent to all countries through their Ministry of Labour, National Statistical Institute, Employment Services, Vocational Training Institutes, and Employers' and Workers' Organisations and by presenting successive drafts of the updated classification structure for comment. The ILO also consulted with a range of specialised agencies, workers' and employers' organisations, and stakeholders with an interest in those occupational groups where most updating is needed.
9. An important component of the work was the establishment of a Technical Expert Group for updating ISCO (TEG/ISCO), to provide the ILO with advice on and assistance with the updating work. This group is made up of national experts in occupation classification from all regions of the World, as well as experts from relevant international agencies. It has met three times in Geneva in November 2005, July 2006 and December 2006 and once in New York in April 2007. These meetings were supplemented by the use of ongoing electronic discussions through which a large number of issues and problems were resolved. The workers and employers groups of the ILO were informed of these activities and were invited to nominate experts to participate in the discussions.
10. The ILO would like to take the opportunity to express its gratitude to members of the TEG/ISCO and the agencies in which they are employed, for the high level of support and assistance provided. The ILO also consulted with the United Nations Expert Group on International Economic and Social Classifications and would like to thank members for the valuable advice and guidance provided.
11. Major issues that have been addressed in the updating work include but are not restricted to:
- The impact of information and communications technology (ICT) on the occupational structure of the labour market;
  - The need for improved coverage of health occupations;
  - User requests for more detail in agricultural, forestry and fisheries occupations;
  - The need to improve the groupings for managerial occupations;
  - Concerns that ISCO-88 is very detailed for some technical and manufacturing occupations but has much less detail, especially at intermediate levels of aggregation, for clerical and service related occupations where a large percentage of employed persons are female;
  - Concerns about the existence of parallel groups at different skill levels for occupations that involve the performance of similar or identical tasks;
  - The need for improved coverage of occupations that predominate in the informal sector and with lower skill level requirements;



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- The need to refresh and update definitions of all categories; and
  - The need for the ISCO Index to be improved and updated.
- 12.** The first, exploratory questionnaire on updating ISCO-88 sought advice on a number of conceptual issues as well as on the treatment of specific occupational groups. The replies to this questionnaire were analysed by the ILO and summarised in a paper that formed the basis for discussions about ISCO at the meeting of the United Nations Expert Group on International Economic and Social Classifications held in New York in June 2005. The Group provided advice about a number of proposals for change to the classification canvassed in this paper. It also expressed concern that the use of skill level as a method of differentiating between categories in the classification needed to be explained more clearly to allow for consistent international application of this concept. With respect to the process for updating the classification, there was concern that the scope and boundaries of the revision process needed to be clarified.<sup>3</sup>
- 13.** At the inaugural meeting of TEG/ISCO in November 2005 agreement was reached on:
- The boundaries of the work to be undertaken and the work plan for the updating process;
  - An extended definition of skill level and a method of measuring this concept operationally in an international context;
  - The most appropriate treatment in the new ISCO of a number of occupational groups that had been identified as being problematic, including managers, teachers, fast food cooks and street service workers; and
  - The development of thematic (or alternative) groupings for the classification based primarily on the goods or services produced, independently of skill level.
- 14.** Following this meeting, the ILO developed an updated classification structure to reflect the agreements that had been reached by the group. Detailed examination of this draft by both the ILO and members of TEG/ISCO led to the identification of a number of new concerns about the ISCO-88 structure and to a series of further proposals for change. Following consideration of these proposals at the second meeting of TEG/ISCO, held in July 2006, the ILO prepared a further updated draft classification structure and sought the views of countries on the draft, and on a range of outstanding issues, through a second questionnaire. The responses to the second questionnaire that had been received by the end of November 2006 were analysed and discussed at the meeting of TEG/ISCO held in December 2006. This analysis indicated strong support for most of the changes proposed to ISCO-88, although some further work was needed to resolve a number of issues of detail.
- 15.** On the basis of the responses to the second questionnaire and of advice provided by TEG/ISCO, the ILO prepared a 'close-to-final' draft classification structure which was made available for comment on the ILO Website in February 2007. Comments on this draft were sought from all countries, together with a summary of the main changes. The draft was provided as a conference room document for the information of the members of the United Nations Statistical Commission at its 38th session in February/March 2007. The Commission agreed that the draft structure was of a suitable standard for internationally comparable statistics<sup>4</sup>. This draft was also presented for discussion at the meeting of the United Nations Expert Group on International Economic and Social Classifications held in April 2007. The Expert Group reviewed the draft and discussed a number of areas where significant changes to

<sup>3</sup> United Nations, 2005

<sup>4</sup> United Nations, 2007a, Page 11

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ISCO-88 were proposed. Subject to the resolution of a small number of outstanding issues, the Expert Group concluded that the structure was 'suitable for use as an international standard'.<sup>5</sup>

16. The final draft structure presented in the Annex to the draft resolution was prepared in close consultation with TEG/ISCO, taking into consideration comments made on the draft circulated in February 2007 as well as responses to the second questionnaire received during 2007.

### 1.3 Scope of the updating work

17. The resolution of the 17<sup>th</sup> ICLS on ISCO requested the updating and overall improvement of ISCO-88 with the objective of making available a more effective classification, which can be used by countries in the next round of Population Censuses, as well as in national employment services and other client oriented applications. The full text of the resolution is provided in the Annex and specifies that:

... the basic principles and main structure of ISCO-88 should not be changed, but that nevertheless modifications are necessary in some areas, both to make improvements in light of experience gained in many countries using ISCO-88-based classifications, and as a consequence of developments in the world of work over the last 15 years...

18. In considering in detail the extent to which changes could be made in light of this specification, members of TEG/ISCO agreed on the following points with respect to the extent of the changes that might be made to ISCO-88 as part of the updating work:

- (a) The classification could be reviewed from the point of view of the relative size and diversity of groups at different levels but because of the wide differences in national circumstances, it would not be possible to impose strict guidelines on the size of groups.
- (b) Occupations with the same job content but with different formal education requirements in different countries should be classified to a single category, thus eliminating the need for "parallel groups".
- (c) Major groups should only be merged, deleted or otherwise changed in exceptional circumstances.
- (d) There is a strong need to provide comprehensive explanatory and methodological notes better describing such key characteristics as skill level requirements to assist countries wishing to adopt or adapt ISCO-08 for use in their own countries.
- (e) Sub-major and minor groups should generally only be merged or split when there is significant growth or decline in the numbers of people employed in them, and/or where groups at a lower level have been split or merged. Sub-major groups should generally contain sufficiently large numbers to allow the production of meaningful summary statistics. The total number of sub-major groups should not decrease dramatically or grow beyond about 40.
- (f) Unit groups should be split or merged and new groups created to reflect occupational change and newly identified requirements. Unit groups may also be split if this is necessary to support aggregation of data according to the proposed thematic groupings.
- (g) Unit Groups should not be created for occupations that are very small in numbers of workers or that only exist in a small number of countries. Such occupations should be

<sup>5</sup> United Nations, 2007b

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included as part of a unit group containing similar occupations, or in a suitable 'not elsewhere classified' category.

- (h) The content of residual (not elsewhere classified) groups should be reviewed. Where such groups are unavoidable, the main occupations classified there should be listed as part of the definition of the group and in the index.

#### **1.4 Definitions of groups**

- 19.** The process of updating the ISCO structure has inevitably resulted in the merging or splitting of a number of ISCO-88 unit groups. In some cases completely new unit groups have been created. There has also been structural change at the minor and sub-major group level, including both splitting and merging of groups and movement of unit groups from one part of the classification to another. These changes created a need for definitions of new groups to be developed and of other groups to be reviewed, to make sure they adequately reflect the content of the group.
- 20.** The definitions of those groups that have not been changed also need to be reviewed and updated, as the existing ISCO-88 definitions are now almost twenty years old, and there has been significant change in both technology and the organisation of work tasks within occupations since the late nineteen-eighties. A number of other problems were also identified with the content of some existing ISCO-88 definitions.
- 21.** At its meeting in April 2007, the TEG/ISCO agreed on a set of principles for developing or updating definitions of ISCO categories. The overall structure of the definitions will be similar to those in ISCO-88. To the extent possible, definitions of categories in recently revised national occupation classifications will be used as source material. During the latter part of 2007 the ILO will work closely with TEG/ISCO members to develop updated definitions of all the ISCO-88 classification categories that will also be included in ISCO-08, and to complete work on definitions of the categories that will be new for ISCO-08. It is hoped that draft definitions, at least of all new unit groups, will be available for comment by early December before the Meeting of Experts is in session.

#### **1.5 Index of occupations**

- 22.** The entries in the existing ISCO-88 index include a text description for a wider variety of terms used to describe occupations than is possible in the classification structure. Each entry is associated with an ISCO-88 code and an ISCO-68 code. The index is presented at the back of the ISCO book in alphabetical order and in code order for both ISCO-68 and ISCO-88. It is also available electronically on request from the ILO. Official versions exist in English, French, Spanish and Russian.
- 23.** The main purposes and likely uses of the ISCO-08 index are listed below (not in order of importance).
- (a) To clarify the occupational content of each ISCO unit group.
  - (b) To help users of ISCO to find particular categories in the classification and determine where particular occupations are classified.
  - (c) To assist in understanding the relationship between categories in old and new versions of the classification.
  - (d) To serve as a model for, and act as a starting point in, the development of national indexes of occupations, for national classifications based on ISCO. Such indexes are used in national settings as tools to assign responses to questions on occupation in statistical and administrative data collections (coding).

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(e) To be used directly to assign responses in statistical collections to ISCO in situations where no national index exists (this approach will not be encouraged).

24. The existing ISCO-88 index does not fully support these uses for a number of reasons. For example, many commonly used occupation titles in English do not appear in the English version of the index. The ILO has agreed with TEG/ISCO on a process to address these concerns and produce an index for ISCO-08, using the existing ISCO-88 index as a starting point. It is anticipated that a draft English version will be available by the end of 2007.

## 1.6 Planned future work

25. Following adoption of the classification it is intended that TEG/ISCO will continue to function and will provide advice to the ILO on issues associated with implementation of ISCO and on the need for further updates or revisions. ILO is currently considering plans to provide support for implementation of the updated ISCO from 2008 onwards, with the aim of ensuring that ISCO-08 (if adopted), or national adaptations of it, can be used in the round of national population censuses to be conducted from 2010 onwards.

26. To achieve this outcome, a number of steps would need to be taken to support implementation of the new classification in national and regional settings. These include publication of ISCO-08 as a book in English, French and Spanish and its release in electronic form on the ILO Website; preparation of a manual and training material on how to adapt the updated classification for use in national and regional settings; provision of training on a regional basis through a series of regional workshops; provision of technical assistance and advice directly to countries; and assistance with and review of correspondence tables between national classifications and ISCO-08.

27. The introductory material, classification structure, definitions of categories, indexes and correspondence tables between ISCO-88 and ISCO-08 will be loaded to the ISCO Website as soon as possible following adoption of the classification. French and Spanish versions will be available once translations are completed.<sup>6</sup>

<sup>6</sup> The classification structure has been made available in French and Spanish as part of the development work but translations of definitions of each category may take longer.

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## 2. Conceptual Framework for the updated ISCO

28. This chapter describes the framework and conceptual model that has been agreed by the TEG/ISCO as the basis for the design of ISCO-08. Since the proposed ISCO-08 will be an update rather than a major revision, the framework and the concepts underpinning it are essentially unchanged from those used in ISCO-88. The definitions of these concepts have been updated and guidelines for their application to the design of the classification have been strengthened and clarified, where this was necessary to address known deficiencies in ISCO-88. The most significant aspect of these improvements reflects the principle that occupations that involve the performance of the same tasks 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.
29. It is intended that the notes provided below will be incorporated into the explanatory material to be provided in the introductory chapter of the proposed ISCO publication. This material would be expanded and covered in greater depth in the proposed manual on adapting ISCO-08 for national and regional use.

### 2.1 Underlying concepts

#### *Definitions of job and occupation*

30. The framework used for the design and construction of ISCO-08 is based on two main concepts: the concept of the kind of work performed or *job*, and the concept of *skill*.
31. A *Job* is defined in ISCO-08 as ‘a set of tasks and duties performed, or meant to be performed, by one person, including for an employer or in self employment’. An *occupation* is defined as a ‘set of jobs whose main tasks and duties are characterised by a high degree of similarity’. A person may be associated with an occupation through the main job currently held, a second job or a job previously held.

#### *Skill level and skill specialisation*

32. *Skill* is defined as the ability to carry out the tasks and duties of a given job. For the purposes of ISCO-08, two dimensions of skill are used to arrange occupations into groups. These are *skill level* and *skill specialisation*.
33. *Skill level* is defined as a function of the complexity and range of tasks and duties to be performed in an occupation. Skill level is measured operationally by considering one or more of:
- The nature of the work performed in an occupation in relation to the characteristic tasks and duties defined for each ISCO-08 skill level;
  - The level of formal education defined in terms of the International Standard Classification of Education (ISCED-97)<sup>7</sup> required for competent performance of the tasks and duties involved; and
  - The amount of informal on-the-job training and/or previous experience in a related occupation required for competent performance of these tasks and duties.

<sup>7</sup>United Nations Educational, Scientific and Cultural Organization (UNESCO), 1997

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34. The concept of skill level is applied mainly at the top (major group) level of the classification. This means that, eight of the ten major groups in ISCO-08 contain occupations only at one of four skill levels. For example, ISCO Major Group 2, Professionals only includes occupations at the highest ISCO skill level, Skill Level 4.

35. *Skill specialisation* is considered in terms of four concepts:

- the field of knowledge required
- the tools and machinery used
- the materials worked on or with: and
- the kinds of goods and services produced.

36. Within each major group, occupations are arranged into unit groups, minor groups and sub-major groups, primarily on the basis of aspects of skill specialisation. In the case of ISCO-08 Major Group 1, Managers, senior official and legislators, and Major Group 0, Military occupations, the concept of skill level is applied primarily at the second hierarchical level.

## 2.2 Definitions of the four ISCO skill levels

37. Definitions of each of the four ISCO skill levels are provided below. These definitions do not change the boundaries between the skill levels used in ISCO-88. They serve to clarify these boundaries and to deal with cases where formal educational requirements may not be the most suitable method of measuring the skill level of a particular occupation. Each definition provides examples of

- the typical or characteristic tasks performed at each skill level,
- the types of skill required (in broad terms), and
- the typical occupations classified at that skill level

### ***Skill Level 1***

38. Occupations at Skill Level 1 typically require the performance of simple and routine physical or manual tasks. They may require the use of hand held tools, such as shovels, or of simple electrical equipment, such as vacuum cleaners. They involve tasks such as cleaning; digging; lifting and carrying materials by hand; sorting, storing or assembling goods by hand (sometimes in the context of mechanised operations); operating non-motorised vehicles; and picking fruit and vegetables.

39. Many occupations at Skill Level 1 may require physical strength and/or endurance. For some jobs basic skills in literacy and numeracy may be required. If required these skills would not be a major part of the job.

40. For competent performance in some occupations at Skill Level 1, completion of primary education or the first stage of basic education (ISCED Level 1) may be required. A short period of on-the-job training may be required for some jobs.

41. Occupations classified at Skill Level 1 include office cleaners, freight handlers, garden labourers and kitchen assistants

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## ***Skill Level 2***

42. Occupations at Skill Level 2 typically involve the performance of tasks such as operating machinery and electronic equipment; driving vehicles; maintenance and repair of electrical and mechanical equipment; and manipulation, ordering and storage of information.
43. For almost all occupations at Skill Level 2 the ability to read information such as safety instructions, to make written records of work completed, and to accurately perform simple arithmetical calculations is essential. Many occupations at this skill level require relatively advanced literacy and numeracy skills and good interpersonal communication skills. In some occupations these skills are required for a major part of the work. Many occupations at this skill level require a high level of manual dexterity.
44. The knowledge and skills required for competent performance in all occupations at Skill Level 2 are generally obtained through completion of the first stage of secondary education (ISCED Level 2). Some occupations require the completion of the second stage of secondary education (ISCED Level 3), which may include a significant component of specialised vocational education and on-the-job training. Some occupations require completion of vocation specific education undertaken after completion of secondary education (ISCED Level 4). In some cases experience and on the job training may substitute for the formal education.
45. Occupations classified at Skill Level 2 include butchers, bus drivers, secretaries, accounts clerks, sewing machinists, dressmakers, shop sales assistants, police officers, hairdressers, building electricians and motor vehicle mechanics.

## ***Skill Level 3***

46. Occupations at Skill Level 3 typically involve the performance of complex technical and practical tasks which require an extensive body of factual, technical and procedural knowledge in a specialised field.
47. Occupations at this skill level generally require a high level of literacy and numeracy and well developed interpersonal communication skills. These skills may include the ability to understand complex written material, prepare factual reports and communicate verbally in difficult circumstances.
48. The knowledge and skills required at Skill Level 3 are usually obtained as the result of study at a higher educational institution following completion of secondary education for a period of 1 – 3 years (ISCED Level 5b). In some cases extensive relevant work experience and prolonged on the job training may substitute for the formal education.
49. Occupations classified at Skill Level 3 include shop managers, medical laboratory technicians, legal secretaries, commercial sales representatives, ambulance officers, computer support technicians, and broadcasting and recording technicians.

## ***Skill Level 4***

50. Occupations at Skill Level 4 typically involve the performance of tasks which require complex problem solving and decision making based on an extensive body of theoretical and factual knowledge in a specialised field. The tasks performed typically include analysis and research to extend the body of human knowledge in a particular field, diagnosis and treatment of disease, imparting knowledge to others, design of structures or machinery and of processes for construction and production.
51. Occupations at this skill level generally require extended levels of literacy and numeracy, sometimes at a very high level, and excellent interpersonal communication skills. These skills generally include the ability to understand complex written material and communicate complex ideas in media such as books, reports and oral presentations.

52. The knowledge and skills required at Skill Level 4 are usually obtained as the result of study at a higher educational institution for a period of 3 – 6 years leading to the award of a first degree or higher qualification (ISCED Level 5a or higher). In some cases experience and on the job training may substitute for the formal education. In many cases appropriate formal qualifications are an essential requirement for entry to the occupation.
53. Occupations classified at Skill Level 4 include sales and marketing managers, civil engineers, secondary school teachers, medical practitioners, operating theatre nurses and computer systems analysts.

### 2.3 Application of the four skill levels to the ISCO major groups

54. The relationship between the ten proposed ISCO-08 major groups and the four skill levels is summarised below in Table 1. Within Major group 1, occupations in Sub-major group 14, Hospitality, retail and service managers are at Skill Level 3. All other occupations in Major group 1 are at Skill Level 4. Within Major group 0, Military occupations, each of the three sub-major groups is at a different skill level.<sup>8</sup>

Table 1: Mapping of ISCO-08 major groups to skill levels

ISCO-08 major groups	Skill Level
1 – Managers, senior officials and legislators,	3 + 4
2 - Professionals	4
3 - Technicians and associate professionals	3
4 - Clerks	2
5 - Service and sales workers	
6 - Skilled agricultural and fishery workers	
7 - Craft and related trades workers	
8 - Plant and machine operators, and assemblers	1
9 - Elementary occupations	
0 –Armed forces occupations	1, 2 + 4

55. In those cases where formal education and training requirements are used as part of the measurement of the skill level of an occupation, these requirements are defined in terms of the International Standard Classification of Education (ISCED). A mapping between ISCO skill levels and levels of education in ISCED 97 is provided below in Table 2.

<sup>8</sup> It should be noted that only occupations specific to military forces (excluding police) are included in Major group 0. Thus, jobs in the armed forces that have equivalents in civilian employment are classified in the appropriate ISCO category (that is as truck drivers, radio operators etc).



Table 2: Mapping of the four ISCO-08 skill levels to ISCED-97 levels of education

ISCO-08 Skill Level	ISCED-97 groups
4	6 - Second stage of tertiary education (leading to an advanced research qualification) 5a - First stage of tertiary education, 1st degree (medium duration)
3	5b - First stage of tertiary education (short or medium duration)
2	4 - Post-secondary, non-tertiary education 3 - Upper secondary level of education 2 - Lower secondary level of education
1	1 - Primary level of education

56. Formal education and training requirements are only one component of the measurement of skill level and should be seen as indicative. The most important determinant of skill level is the nature of the tasks performed in a particular occupation in relation to the characteristic tasks defined for each skill level. It is not necessary for a person to hold qualifications at a particular level in order for their job to be classified at a particular ISCO skill level.
57. The concept of skill level is generally applied by considering the level of skill required for competent performance of the tasks required for entry level jobs in a particular occupational group. Since the entity being classified is the job, not the person who holds the job, it is not relevant to consider the skills or qualifications held by the person in order to classify the job. Thus, for example, a person who is employed in a job that requires the performance of the tasks of a bricklayer should be classified in Unit group 7112, Bricklayers and related workers, whether or not that person holds formal qualifications as a bricklayer or is a good, bad or indifferent bricklayer. Some individuals employed in occupations classified at a particular skill level, may therefore possess higher or lower skills.

#### 2.4 Occupations for which formal education requirements differ between countries

58. A significant problem regarding the application of the concept of “Skill level” in ISCO-88 relates to occupations that have similar tasks and duties (or content) but have a different (higher or lower) “skill level” requirement, as measured in particular countries. This is because, given realistic differences in national education systems, the same occupation (with the same set of tasks and duties), can be undertaken by individuals with different educational levels without affecting the level of skill required for competent performance of the tasks. This is the case for some elementary, craft and technical occupations, which in many countries require higher education levels, than those assigned in ISCO-88.
59. The ISCO-88 guidelines recommend that occupations with higher or lower skill requirements than those assigned in ISCO-88 should be classified to the major group corresponding to the skill level that such jobs require in the country. There has been widespread concern, however, that this approach reduces international comparability as occupations with similar content in terms of the tasks performed have been classified in different ISCO-88 major groups depending on the country.
60. Two of the most obvious cases where this is a problem in ISCO-88, relate to the treatment of *nurses* and *primary and pre-primary school teachers*. In some countries, nurses and teachers require a University degree while in others they do not. At the time ISCO-88 was adopted, this situation was resolved by assigning these occupations to parallel minor groups, one in Major group 2 and another in Major group 3. These occupational groups were to be used alternatively, that is, countries were to

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classify all teachers and all nurses either in Major group 2 or in Major group 3, except in cases where there were real differences in the tasks and duties performed. Given that ISCO-88 descriptions for teachers and nurses are identical in both major groups, however, a number of countries have made the distinction between professional and associate professional workers on the basis of the education level of the job holder, and not on the basis of the tasks and duties actually performed.

61. For the proposed ISCO-08, this problem has been addressed by giving job content (i.e. tasks and duties) priority over national education and training requirements. In other words, occupations that involve the performance of broadly the same sets of tasks and duties are always classified in the same category in ISCO-08, even in cases where national skill level requirements measured in terms of formal education are different. It is hoped that this will lead to an improvement in international comparability.
62. A set of principles and guidelines has been developed to help decide what skill level should be assigned to occupations when education and training requirements differ among countries. These principles are outlined below and were applied **in order of precedence** in helping to determine where in the draft ISCO-08 structure certain occupations should be classified.
  - (a) The complexity and range of the tasks and duties involved in the occupation should be considered in relation to the definitions for each skill level, paying particular reference to the characteristic tasks and duties associated with each skill level.
  - (b) Where the formal education requirements are different in only a small number of countries, then the skill level should be determined on the basis of the requirements that apply in the large majority of countries.
  - (c) Where consideration of (a) and (b) above is inconclusive in distinguishing between Skill Levels 1 & 2 in ISCO, occupations which require completion of the first stage of secondary education in some countries (ISCED Level 2) and completion of primary education only (ISCED Level 1) should be classified at Skill Level 1.<sup>9</sup>
  - (d) Where consideration of (a), (b) and (c) above is inconclusive, the situation that prevails in industrialised countries should generally be used to determine the skill level of an occupation, but only where there is a consistent approach across a clear majority of these countries.<sup>10</sup> For example, if a degree is required for entry to an occupation for less than half of the countries that are members of the Organisation for Economic Cooperation and Development (OECD), but a 2 year diploma is required in most other countries, then it may be appropriate to assign the occupation to Skill Level 3. The size of countries as well as the number of countries should also be taken into consideration in making judgements of this type.

<sup>9</sup> This approach is taken because, in many highly industrialised countries, completion of the first stage of secondary education is more or less universal. In such circumstances those who have not completed the first stage of secondary education may not be able to find employment in even the most unskilled of jobs.

<sup>10</sup> The reason for adopting this approach is that the prevailing situation in industrialised countries is considered likely to eventually become the norm in other countries. Moreover, in these cases, the higher level of qualification is likely to be a requirement for many occupational migration purposes.

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### **3. Summary of major changes between ISCO-88 and the draft ISCO-08**

**63.** This chapter describes the major differences between ISCO-88 and the proposed ISCO-08. Section 3.1 presents an overview of the changes and describes the draft classification structure in broad terms. The specific areas of major change between ISCO-88 and the proposed ISCO-08 are discussed in Section 3.2, while a detailed indication of the relationship between categories is provided in Chapter 4 in the Annex to the Draft Resolution. A full correspondence table between ISCO-88 and the final ISCO-08, if adopted, will be made available on the ILO Website.

#### **3.1 Summary of changes and the reasons for them**

- 64.** The most important of the proposed changes address concerns that ISCO-88 is seriously out of date in some areas, most notably as a result of the impact of developments in technology on professional, technical and clerical work with computers and telecommunications. Some categories in ISCO-88 have therefore been merged, split or moved to reflect occupational and technological change in the labour market. New categories have been created to allow for the identification of new or emerging occupational groups. To assist time series analysis, ISCO-88 unit groups have not been split and joined to parts of other ISCO-88 Unit groups, except where this was essential.
- 65.** As discussed in Chapter 2, although the conceptual model underpinning the draft ISCO-08 remains essentially the same as that used in ISCO-88, there have been some changes in the way this model is used to design the classification. The most notable change is that, since the nature of the work performed has been given more emphasis than the formal education and training required in determining the skill level of an occupation, there is no need for parallel groups in different major groups to cater for cases where the education and training requirements for a particular occupational group differ between countries.
- 66.** Other changes in the classification structure have been made to reflect concerns that ISCO-88 is excessively detailed in some areas and inadequately detailed in others, and that there was a wide variation in the size of some sub-major and minor groups. Wherever possible, efforts have been made to ensure that the level of detail provided is appropriate and useful considering the main purposes of an international classification. Given the nature of the occupational distribution of the labour market at the international level, however, and the variety of uses of ISCO, the issues of the size of groups and differing levels of detail in different parts of the classification, were seen as important, but not overriding, considerations.
- 67.** In some cases there were concerns that it is not feasible to make distinctions between certain categories in ISCO-88 on a consistent basis internationally, especially considering the kind of data that it is possible to collect in a census or in surveys. In such cases, for example, as in the treatment of managerial occupations in agriculture, adjustments are proposed to ISCO-88 to improve international comparability and consistency of reporting.
- 68.** Some of the more significant proposed changes are summarised below.
- Reorganisation of the sections of the classification dealing with managerial occupations, so as to overcome problems with the distinction between Corporate managers and General managers experienced by users of ISCO-88.
  - A major updating and expansion of occupations associated with information and communications technology, allowing for the identification of professional and associate professional occupations in this field as sub-major groups at the second level of the classification.

- Improved coverage and upgrading of health services occupations, providing sufficient detail to allow ISCO-08 to be used as the basis for the international reporting of data on the health work force to the World Health Organisation and other international and intergovernmental organisations.
- Reorganisation of the section of the classification dealing with office clerks, to reflect the increasing impact of information and communications technology on the organisation of clerical work and provide more meaningful detail for occupations in which large numbers of women are employed.
- Reorganisation of the aggregate grouping for sales and service workers, including the provision of new groups at the second level of the classification for personal service, personal care and protective services workers
- More detailed categories for and greater clarity in the treatment of some occupational groups involved in agriculture.
- More detailed categories for occupations involved in the provision of information and services to clients, including those related to tourism.
- Rationalisation and restructuring of groups for plant and machine operators in response to concerns that this part of ISCO-88 was excessively detailed and out-of-date in some areas.
- Extended coverage of occupations that are significant in the informal sector and an associated increase in the number of sub-major groups in ISCO Major Group 9, Elementary occupations.

### **3.2 Overview of the ISCO-08 structure**

- 69.** The overall system of major groups, sub-major groups, minor groups and unit groups used in ISCO-88 has been retained in the draft ISCO-08. The 10 major groups at the top level of the draft ISCO-08 are the same as those used in ISCO-88. The names of some of the major groups have been changed slightly, so as to more clearly indicate their contents, and some occupational groups have been moved from one major group to another. A number of the sub-major groups, minor groups and unit groups in the draft, however, are different from those in ISCO-88.
- 70.** The draft ISCO-08 is designed so that occupations are arranged into 436 unit groups at the most detailed level of the classification hierarchy. It is intended that all jobs in the World can be assigned to one (and only one) of these unit groups. In general, each unit group is made up of several 'occupations' that have a high degree of similarity in terms of skill level and skill specialisation. Unit groups are in turn arranged into minor groups and minor groups into major groups, based on the concept of skill level and on successively broader applications of the concept of skill specialisation.
- 71.** All but two of the proposed ISCO-08 major groups contain occupations at only one of the four ISCO skill levels. All 42 of the sub-major groups are at only one skill level. This means that data classified at sub-major, minor or unit group level of ISCO-08 will be able to be aggregated by skill level only, if desired. This has been achieved by creating three sub-major groups in Major group 0, Armed forces occupations, for commissioned officers, non-commissioned officers and 'other ranks'; and by arranging occupations in Major Group 1, Managers, senior officials and legislators, so that all occupations not at Skill level 4, are in a single sub-major group, at Skill level 3. This is a departure from ISCO-88 in which occupations in Major group 1, Legislators, senior officials and managers, and Major group 0 Armed Forces were not assigned a skill level.
- 72.** Looking at the hierarchical structure of ISCO-08 from the top down, each of the ten major groups is made up of two or more sub-major groups, which in turn are made up of one or more minor groups.

Minor groups are made up of one or more unit groups. Each major group is denoted by a 1-digit code. Each Sub-major group is denoted by a 2-digit code, comprising the major group code plus one digit. In the same way minor groups are denoted by 3-digit codes and unit groups by 4-digit codes comprising the higher level code plus one digit in each case. This convention is illustrated by the following example

Major group:	5	Service and sales workers
Sub-major group:	51	Personal service workers
Minor group:	511	Travel attendants, conductors and guides
Unit groups	5111	Travel attendants and travel stewards
	5112	Transport conductors
	5113	Travel guides

- 73.** Other code conventions used in ISCO-88 have also been adopted in ISCO-08. In particular, where a minor group contains only one unit group the last digit in the unit group code is '0'. Where a unit group is a residual group it has the same name as the minor group followed by the words 'not elsewhere classified' and its final digit is 9.
- 74.** It is important to note that, while some ISCO-88 categories have not been changed in the draft ISCO-08, the code for a particular category may or may not have changed because of structural changes around it. Similarly some 2, 3 and 4-digit codes may refer to quite different categories in ISCO-88 and ISCO-08. This situation is unavoidable in updating any classification system unless only very small changes are made, a high degree of redundancy is used, or a completely different code convention (e.g. alphanumeric) is adopted. It highlights the importance of ensuring that information about both the classification scheme used (and the version of it) is stored and disseminated as metadata with all data coded according to a classification scheme.
- 75.** The result of these changes has been a modest increase in detail at each level of the classification except the top level, which has not changed. These changes are not distributed evenly across the classification structure however. Table 3 below shows, for example, that the number of unit groups in Major group 2, Professionals and Major group 5, Service and sales workers has increased significantly, whereas the number of unit groups in Major group 8, Plant and machine operators, and assemblers has significantly decreased.

**Table 3: Numbers of groups at each level of draft ISCO-08**

(Numbers for ISCO-88 are shown in brackets where different)

Major group	Sub-major Groups	Minor groups	Unit groups
1 Managers, senior officials and legislators	4 (3)	11(8)	30 (33)
2 Professionals	6 (4)	27(18)	92 (55)
3 Technicians and associate professionals	5 (4)	21	84 (73)
4 Clerks	4 (2)	8 (7)	29 (23)
5 Service and sales workers	4 (2)	13 (9)	40 (23)
6 Skilled agricultural, fishery, and forestry workers	2	6 (6)	15 (17)
7 Craft and related trades workers	5 (4)	14 (16)	66 (70)
8 Plant and machine operators, and assemblers	3	14 (20)	44 (70)
9 Elementary occupations	6 (3)	11 (10)	33 (25)
0 Armed forces occupations	3 (1)	3 (1)	3 (1)
<b>Total ISCO-08 (ISCO-88)</b>	<b>42 (28)</b>	<b>128 (116)</b>	<b>436 (390)</b>

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## ***Thematic groupings***

76. In addition to the changes to the main classification structure, a set of standard ‘thematic groupings’ or ‘views’ of ISCO-08 are being developed for certain groups of occupations, where there is a need to group occupations according to a particular theme. These occupations are not grouped together in the ISCO main structure because skill level takes precedence. Thematic views are a standard alternative way of aggregating occupational data classified at the 4-digit level of ISCO.
77. It is proposed to develop thematic groupings of occupations for the following areas:
- Agriculture
  - Education
  - Health
  - Information and communications technology
  - Tourism

### **3.3 Specific areas of major change**

#### ***Managers, senior officials and legislators***

78. Managerial occupations classified in Major Group 1, have been reorganised so as to overcome problems with the distinction between ‘Corporate’ managers and ‘General’ managers experienced by users of ISCO-88. These changes also address problems caused by the use of categories based on classifications of industrial activities and a number of other technical and practical concerns. Managerial occupations, except for the top managers in large organisations are now organised along functional rather than industrial lines. This means that managers that specialise in functions such as human resources or manufacturing production will be identifiable, irrespective of the industry they work in or whether they manage a department in a large enterprise or a small to medium sized enterprise whose business is to provide that function.
79. ISCO-88 Minor group 121, Directors and Chief Executives has been renamed as Managing Directors and Chief Executives and has been moved to Sub-major group 11, now termed Chief executives, senior officials and legislators. All jobs that require leadership and management of large and complex organisations, that typically have a hierarchy of managers, are thus classified in a single Sub-major group, with more detailed breakdowns at minor and unit group levels. This approach also helps to address problems experienced in the use of ISCO-88 when only small numbers of jobs were classified to the original Sub-major group 11, Legislators and senior officials.
80. The remainder of ISCO-88 Sub-major group 12 Corporate managers, and Sub-major group 13 General managers are replaced by three new Sub-major groups resulting in the following sub-major group structure for ISCO-08 Major Group 1, Managers, senior officials and legislators:
- 11 Chief executives, senior officials and legislators
  - 12 Administrative and commercial managers
  - 13 Production and specialised services managers
  - 14 Hospitality, shop and related services managers

81. Sub-major group 12, Administrative and commercial managers, is intended to include the managers of organisational units that typically provide services or support functions across organisations. They may be managers of departments within companies or government departments, or the managers of small companies that provide these services to other organisations. The recruitment manager of a large corporation and the manager of a small company that provides recruitment services to other organisations would thus both be classified, for example, in ISCO-08 Unit group 1213, Human resource managers, as they have primary skills in common. In ISCO-88 the former would be classified in Sub-major group 12, Corporate managers, and the latter in Sub-major group 13, General managers.
82. The proposed Sub-major group 13, Production and specialised services managers, is for managers responsible for producing the goods or services provided by the organisation that they work in. Jobs in both of Sub-major groups 12 and 13 generally require qualifications and experience related to an occupation in Major Group 2, Professionals.
83. Jobs in the draft Sub-major group 14, Hospitality, shop and related services managers generally, although not exclusively, involve management of relatively small organisations that do not have a hierarchy of managers and do not require formal educational qualifications at professional level.
84. The ISCO-88 Unit group 1221, Production and operations department managers in agriculture forestry and fishing, has been replaced with the following Minor group, containing two unit groups. This group is restricted to those who manage production in large scale enterprises such as ranches and plantations that typically have a hierarchy of managers.

131	Production managers in agriculture, forestry and fisheries
1311	Agricultural and forestry production managers
1312	Aquaculture and fisheries production managers

85. ISCO-88 Unit group 1311, General managers in agriculture, forestry and fishing, has been removed from Major Group 1 in the draft. The occupations included within this category have been moved to Sub-Major Group 61, Market-oriented skilled agricultural forestry and fisheries workers, and have been merged with the relevant groups of skilled agricultural workers. The distinction between this group and farmers that do not have a significant management function is not feasible in a number of countries leading to significant inconsistencies in international reporting of data.

### ***Supervisory occupations***

86. In ISCO-88 supervisors are generally classified in the same unit group as 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. To reflect this concern, unit groups for supervisory occupations have been included in the draft classification in selected areas. These areas include:

- Manufacturing
- Construction
- Administration
- Mining
- Retail
- Cleaning and housekeeping

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87. 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 Minor group 334, Administrative and specialised secretaries. The supervisory unit groups are:

- 3121 Mining supervisors,
- 3122 Manufacturing supervisors,
- 3123 Construction supervisors,
- 3341 Office supervisors,
- 5151 Cleaning and housekeeping supervisors in offices, hotels and other establishments,
- 5221 Shop supervisors.

88. All other supervisory occupations are to be classified in the same unit group as the workers supervised. Enhanced definitional material will be provided, as part of the definitions of relevant categories, to ensure that the distinctions between managerial, supervisory and other occupations in ISCO-08 are as clear as possible.

### **Information and communications technology**

89. ISCO-88 was seen to be particularly out-of-date due to technological change with respect to occupations involved in the provision of goods and services related to information and communications technology (ICT). There has, accordingly, been a significant update and expansion of categories for these occupations, allowing for the identification of professional and associate professional occupations in ICT as sub-major groups at the second level of the classification, as shown below.

25		<b>Information and communications technology professionals</b>
	251	<b>Software and applications developers and analysts</b>
	2511	Systems analysts
	2512	Software developers
	2513	Web and multimedia developers
	2514	Applications programmers
	2519	Software and multimedia developers and analysts not elsewhere classified
	252	<b>Database and network professionals</b>
	2521	Database designers and administrators
	2522	Systems administrators
	2523	Computer network professionals
	2529	Database and network professionals not elsewhere classified
35		<b>Information and communications technicians</b>
	351	<b>Information and communications technology operations and user support technicians</b>
	3511	Information and communication technology operations technicians
	3512	Information and communication technology user support technicians
	3513	Computer network and systems technicians
	3514	Web technicians
	352	<b>Communications technicians</b>
	3521	Broadcasting and audio-visual technicians
	3522	Telecommunications engineering technicians

90. The growing convergence between information and telecommunications technologies has been reflected by:

- Including unit groups that are specific to telecommunications (including broadcasting) in the same minor groups as other occupations in ICT; and
- 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



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market (for example Unit group 7422, Information and communications technology installers and servicers).

91. It is envisaged that the thematic grouping for ICT occupations will include all of the occupations in Sub-major groups 25 and 35 listed above, as well as a number of other unit groups that primarily involve the production of ICT good and services such as:

1330	Information and communications technology service managers
2152	Electronics engineers
2153	Telecommunications engineers
2166	Graphic and multimedia designers
2356	Information technology trainers
2434	Information and communications technology sales professionals
7422	Information and communications technology (ICT) installers and servicers

### **Health Services Occupations**

92. The coverage of health services occupations has been extended to provide sufficient detail to allow ISCO-08 to be used as the basis for the international reporting of data on the health work force to the World Health Organisation. The changes also seek to address problems of comparability between countries caused by difficulties in distinguishing between certain occupational groups, particularly in nursing.
93. To improve the visibility of statistics on the health work force, new sub-major groups for health occupations have been created in Major groups 2 and 3. The structure of the proposed Sub-major groups, 22, Health professionals and 32, Health associate professionals is presented below:

<b>22</b>		<b>Health professionals</b>
	<b>221</b>	<b>Medical doctors</b>
	2211	Generalist medical practitioners
	2212	Specialist medical practitioners
	<b>222</b>	<b>Nursing and midwifery professionals</b>
	2221	Nursing professionals
	2222	Midwifery professionals
	<b>223</b>	<b>Traditional and complementary professionals</b>
	2230	Traditional and complementary professionals
	<b>224</b>	<b>Paramedical practitioners</b>
	2240	Paramedical practitioners
	<b>225</b>	<b>Veterinarians</b>
	2250	Veterinarians
	<b>226</b>	<b>Other health professionals</b>
	2261	Dentists
	2262	Pharmacists
	2263	Environmental and occupational health and hygiene professionals
	2264	Physiotherapists
	2265	Dieticians and nutritionists
	2266	Audiologists and speech therapists
	2267	Optometrists and ophthalmic opticians
	2249	Health professionals not elsewhere classified
<b>32</b>		<b>Health associate professionals</b>
	<b>321</b>	<b>Medical and pharmaceutical technicians</b>
	3211	Medical imaging and therapeutic equipment technicians
	3212	Medical and pathology laboratory technicians
	3213	Pharmaceutical technicians and assistants
	3214	Medical and dental prosthetic technicians
	<b>322</b>	<b>Nursing and midwifery associate professionals</b>
	3221	Nursing associate professionals

	3222	Midwifery associate professionals
323		<b>Traditional and complementary medicine associate professionals</b>
	3230	Traditional and complementary medicine associate professionals
324		<b>Veterinary technicians and assistants</b>
	3240	Veterinary technicians and assistants
325		<b>Other health associate professionals</b>
	3251	Dental assistants and therapists
	3252	Medical records and health information technicians
	3253	Community health workers
	3254	Dispensing opticians
	3255	Physiotherapy technicians and assistants
	3256	Doctors' assistants
	3257	Environmental and occupational health inspectors and associates
	3258	Ambulance workers
	3259	Health associate professionals not elsewhere classified

94. A number of points of difference between ISCO-88 and the draft ISCO-08 in the treatment of professional and associate professional occupations in health should be noted. In the draft ISCO-08:

- Separate unit groups are provided for generalist and specialist medical practitioners;
- Separate unit groups are provided for nursing and midwifery occupations at both professional and associate professional level;
- The distinction between professional and associate professional nurses and midwives is to be made on the basis of the type of work performed and not on the basis of the qualifications held (or typically held) by individuals in the country concerned, and will be made clear in the definitions of these categories;
- A new Minor group 224, Paramedical practitioners has been created and jobs that are classified to ISCO-88 Unit group 3221, Medical assistants, should be classified in this minor group, if they involve the independent provision of primary health care services such as diagnosis and treatment of illness (e.g. 'Feldschers' in Eastern Europe and Central Asia and 'Clinical officers' in some African countries);
- Veterinarians and Veterinary technicians and assistants are included in the sub-major groups for health professionals and associate professionals respectively, because of the strong similarity with human health occupations in the field of knowledge required and tasks performed, they are identified at minor group level so that data on occupations that involve the provision of human health services can be compiled from data reported at this level,
- Ambulance officers have been moved from Major group 5, Service and sales workers, to Sub-major group 32;
- Emergency paramedics are classified in the same unit group as ambulance officers as it is difficult to distinguish them from ambulance officers in statistical collections in some countries; and
- Medical and dental prosthetic and related technicians have been moved from Major group 7, Craft and related trades workers, to Sub-major group 32.

95. Changes proposed in the classification of practitioners of traditional and complementary medicine are particularly significant. Practitioners of traditional medicine exist at professional level (ISCO Skill Level 4) in large numbers in many Asian countries, and are increasing in number in North America and Europe. These occupations generally require extensive formal education in both traditional and modern (allopathic) medicine. The specialised areas of practice in the Asian countries are very similar, the numbers in these countries are of the same order as those practising modern medicine. It is

generally possible to identify those working at a professional level in these countries based on occupation titles. Minor groups have therefore been created for Traditional and complementary medicine professionals and for Traditional and complementary medicine associate professionals, replacing the single unit group provided in ISCO-88. A comprehensive list of the occupational titles to be included in each group has been developed and will be included in the definitions of categories and in the ISCO index.

96. In addition to the changes proposed for professional and associate professional occupations in health, a separate Sub-major group 53, Personal care workers is proposed. This group replaces ISCO-88 Minor group 513, Personal care and related workers. Those involved in the provision of health services are identified separately at minor group level from those involved in child care.

53		<b>Personal care workers</b>
531		<b>Child care workers and teachers' aides</b>
	5311	Child care workers
	5312	Teachers' aides
532		<b>Carers in health services</b>
	5321	Health care assistants
	5322	Home-based personal care workers
	5329	Carers in health services not elsewhere classified

97. It is intended that the occupations involved in the provision of human health services in Sub-major groups 21, 31 and 53 (that is, excluding those minor groups relating to veterinary care and child care) will be included in the thematic view for health occupations. A number of other unit groups that were not separately identified in ISCO-88 may also be included, in particular:

1342	Health service managers
1343	Aged care service managers
3344	Medical secretaries

98. It is hoped that the provision of more detailed, contemporary and internationally meaningful categories for health occupations, will facilitate the production of more useful information from statistical sources, such as national censuses and surveys, and also from health work force collections based on administrative records. This is seen as particularly relevant to providing better information to support policy debate about concerns that there are major problems of supply and demand in the health work force, and that policy initiatives to address shortages of skilled workers are complicated by global work force mobility and differences in pay and working conditions between countries and regions.

### **Teachers**

99. In ISCO-88, primary school teachers and pre-primary school teachers are classified in either Major group 2, Professionals or Major Group 3, Technicians and associate professionals, depending on the qualifications held by individuals or predominantly held in a particular country. This is not consistent with the principle adopted for ISCO-08 that occupations that require the performance of similar tasks should be classified in the same group. Although, in a number of countries, these teachers do not require the same level of education and training as secondary school teachers, it has been agreed that, on the basis of the nature of the work performed and the requirement in many countries that primary and pre-primary school teachers should be educated at least to university degree level, they should be classified in Major Group 2.
100. Categories have also been provided for vocational education teachers and for a number of specialised categories of teacher. It is not practical, however, to provide separate categories for higher, vocational, and secondary education teachers according to the subject matter taught.

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101. The following classification structure is proposed for teaching professionals:

23		<b>Teaching professionals</b>
231		<b>University and higher education teachers</b>
	2310	University and higher education teachers
232		<b>Vocational education teachers</b>
	2320	Vocational education teachers
233		<b>Secondary education teachers</b>
	2330	Secondary education teachers
234		<b>Primary school and early childhood teachers</b>
	2341	Primary school teachers
	2342	Early childhood educators
235		<b>Other teaching professionals</b>
	2351	Education methods specialists
	2352	Special needs teachers
	2353	Other language teachers
	2354	Other music teachers
	2355	Other arts teachers
	2356	Information technology trainers
	2359	Teaching professionals not elsewhere classified

### ***Arts, entertainment, design and sports occupations***

102. 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 means that musicians and dancers, for example, are classified in different major groups depending on whether or not they perform in classical or less formal settings. This does not 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 ISCO-88 Minor group 347 have been merged, where possible, with the equivalent unit groups from ISCO-88 Minor group 245;
- A new Minor group 264, Authors, journalists and linguists has been created and allows for the separate identification of Authors and related writers, Journalists, and Translators, interpreters and other linguists;
- The remaining arts workers are classified in a new Minor group, 265 Creative and performing artists, where additional detail is also provided at unit group level by separately identifying Actors from Film, stage and related directors and producers;
- ISCO-88 Unit group 3471, Decorators and commercial designers has been split to form three new unit groups:

2163	Product and garment designers,
2166	Graphic and multimedia designers,
3442	Interior designers and decorators;
- A new Minor group 216, Architects, planners, surveyors and designers has been created;
- A new Minor group 343, Sports and fitness workers has been created;
- Photographers have been separately identified from other image and sound recording equipment operators (who are classified in Sub-major group 35, Information and communications technicians); and

- A new Minor group 344, Artistic and cultural associate professionals has been created and contains the new unit groups for photographers and interior designers and decorators as well as a group for gallery, library and museum technicians.

### ***Engineering professionals***

- 103.** ISCO-88 Minor group 214, Architects, engineers and related professionals, has been split. This allowed the inclusion of architects, surveyors and related occupations in the new Minor group 216 mentioned above. A separate minor group for Electrotechnology engineers has also been created and contains separate unit groups for electrical, electronics and telecommunications engineers. 'Industrial and production engineers' and 'Environmental engineers' are now separately identified as unit groups in Minor group 214 Engineering professionals (excluding electrotechnology).

### ***Specialised administrative occupations***

- 104.** New minor groups and unit groups have been created in Major groups 1, 2 and 3 to allow for the better identification of occupations that involve the development, implementation and administration of government and corporate policy, and of administrative occupations requiring highly specialised skills. These include:

<b>121</b>	<b>Business services and administration managers</b>
1211	Corporate services managers
1212	Finance managers
1213	Human resource managers
1214	Policy and administration managers
<b>122</b>	<b>Sales, marketing and development managers</b>
1221	Sales and marketing managers
1222	Advertising and public relations managers
1223	Research and development managers
<b>242</b>	<b>Administration professionals</b>
2421	Management and organisation analysts
2422	Policy administration professionals
2423	Personnel and careers professionals
2424	Training and staff development professionals
<b>334</b>	<b>Administrative and specialised secretaries</b>
3341	Office supervisors
3342	Legal secretaries
3343	Administrative and executive secretaries
3344	Medical secretaries
3349	Administrative and specialised secretaries not elsewhere classified

## **Sub-major and minor group structures for Major groups 2 and 3**

**105.** The changes discussed in the sections above, combined with the provision of additional detail in a number of other areas of the classification, necessitated a significant reorganisation of the structures of Major group 2, Professionals and Major group 3, Technicians and associate professionals. This reorganisation was also guided by a desire to avoid retaining groups at the second and third levels of the classification hierarchy that were excessively small in terms of the total number of jobs counted in each group. The Sub-major and minor group structure of ISCO-88 and the current draft are compared in Tables 4 to 7 below.

**Table 4: Sub-major groups in Major group 2, Professionals - ISCO-88 and draft ISCO-08**

ISCO 88 code	ISCO-88 Title	ISCO 08 Code	ISCO-08 Title
21	Physical, mathematical and engineering science professionals	21	Science and engineering professionals
22	Life science and health professionals	22	Health professionals
23	Teaching professionals	23	Teaching professionals
24	Other professionals	24	Business and administration professionals
		25	Information and communications technology professionals
		26	Legal, social and cultural professionals

**Table 5: Sub-major groups in Major group 3, Technicians and associate professionals - ISCO-88 and draft ISCO-08**

ISCO 88 code	ISCO-88 Title	ISCO 08 Code	ISCO-08 Title
31	Physical and engineering science associate professionals	31	Science and engineering associate professionals
32	Life science and health associate professionals	32	Health associate professionals
33	Teaching associate professionals	33	Business and administration associate professionals
34	Other associate professionals	34	Policing, legal, social, cultural and related associate professionals
		35	Information and communications technicians

Table 6: Sub-major and minor groups in Major group 2, Professionals - ISCO-88 and draft ISCO-08

ISCO 88 code	ISCO-88 Title	ISCO 08 Code	ISCO-08Title
<b>21</b>	<b>Physical, mathematical and engineering science professionals</b>	<b>21</b>	<b>Science and engineering professionals</b>
211	Physicists, chemists and related professionals	211	Physical and earth sciences professionals
212	Mathematicians, statisticians and related professionals	212	Mathematicians, actuaries and statisticians
213	Computing professionals	213	Life science professionals
214	Architects, engineers and related professionals	214	Engineering professionals (excluding electrotechnology)
		215	Electrotechnology engineers
		216	Architects, planners, surveyors and designers
<b>22</b>	<b>Life science and health professionals</b>	<b>22</b>	<b>Health professionals</b>
221	Life science professionals	221	Medical doctors
222	Health professionals (except nursing)	222	Nursing and midwifery professionals
223	Nursing and midwifery professionals	223	Traditional and complementary medicine professionals
		224	Paramedical practitioners
		225	Veterinarians
		226	Other health professionals
<b>23</b>	<b>Teaching professionals</b>	<b>23</b>	<b>Teaching professionals</b>
231	College, university and higher education teaching professionals	231	University and higher education teachers
232	Secondary education teaching professionals	232	Vocational education teachers
233	Primary and pre-primary education teaching professionals	233	Secondary education teachers
234	Special education teaching professionals	234	Primary school and early childhood teachers
235	Other teaching professionals	235	Other teaching professionals
<b>24</b>	<b>Other professionals</b>	<b>24</b>	<b>Business and administration professionals</b>
241	Business professionals	241	Finance professionals
242	Legal professionals	242	Administration professionals
243	Archivists, librarians and related information professionals	243	Sales, marketing and public relations professionals
244	Social science and related professionals	<b>25</b>	<b>Information and communications technology professionals</b>
245	Writers and creative or performing artists	251	Software and applications developers and analysts
246	Religious professionals	252	Database and network professionals
		<b>26</b>	<b>Legal, social and cultural professionals</b>
		261	Legal professionals
		262	Librarians, archivists and curators
		263	Social and religious professionals
		264	Authors, journalists and linguists
		265	Creative and performing artists

Table 7: Sub-major and minor groups in Major group 3, Technicians and associate professionals - ISCO-88 and draft ISCO-08

ISCO 88 code	ISCO-88 Title	ISCO 08 Code	ISCO-08 Title
31	<b>Physical and engineering science associate professionals</b>	31	<b>Science and engineering associate professionals</b>
311	Physical and engineering science technicians	311	Physical and engineering science technicians
312	Computer associate professionals	312	Mining, manufacturing and construction supervisors
313	Optical and electronic equipment operators	313	Process control technicians
314	Ship and aircraft controllers and technicians	314	Life science technicians and related associate professionals
315	Safety and quality inspectors	315	Ship and aircraft controllers and technicians
32	<b>Life science and health associate professionals</b>	32	<b>Health associate professionals</b>
321	Life science technicians and related associate professionals	321	Medical and pharmaceutical technicians
322	Modern health associate professionals (except nursing)	322	Nursing and midwifery associate professionals
323	Nursing and midwifery associate professionals	323	Traditional and complementary medicine associate professionals
		324	Veterinary technicians and assistants
		325	Other health associate professionals
324	Traditional medicine practitioners and faith healers		
33	<b>Teaching associate professionals</b>	33	<b>Business and administration associate professionals</b>
331	Primary education teaching associate professionals	331	Financial and mathematical associate professionals
332	Pre-primary education teaching associate professionals	332	Sales and purchasing agents and brokers
333	Special education teaching associate professionals	333	Business services agents
334	Other teaching associate professionals	334	Administrative and specialised secretaries
		335	Customs, tax and related government associate professionals
34	<b>Other associate professionals</b>	34	<b>Policing, legal, social, cultural and related associate professionals</b>
341	Finance and sales associate professionals	341	Policing and legal associate professionals
342	Business services agents and trade brokers	342	Social and religious associate professionals
343	Administrative associate professionals	343	Sports and fitness workers
344	Customs, tax and related government associate professionals	344	Artistic and cultural associate professionals
345	Police inspectors and detectives	35	<b>Information and communications technicians</b>
346	Social work associate professionals		
347	Artistic, entertainment and sports associate professionals	351	Information and communications technology operations and user support technicians
348	Religious associate professionals	352	Communications technicians

### **Office clerks**

**106.** Sub-major group 41, Office clerks, has been reorganised to reflect the impact of developments in information and communications technology on the organisation of work, and to provide more meaningful detail for occupations in which large numbers of women are employed. It has been subdivided into three new Sub-major groups, providing the following four sub-major groups in Major Group 4, clerks.

- 41 General and keyboard clerks
- 42 Customer services clerks
- 43 Numerical and material recording clerks
- 44 Other clerks



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107. The main other changes affecting office clerks are:

- 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);
- The provision of only two unit groups for keyboard operators: Typists and word processing operators, and Numerical keyboard operators;
- the separate identification of Library clerks from Filing and copying clerks; and
- A new unit group for Personnel clerks.

### ***Occupations involved in the provision of information and services to clients***

108. More detailed categories are proposed for occupations involved in the provision of information and services to clients, including those related to tourism. The number of unit groups in Minor group 422, Client information workers, has, as a result, increased from 3 to 8.

422	Client information workers
4221	Travel consultants and clerks
4222	Contact centre information clerks
4223	Telephone switchboard operators
4224	Hotel receptionists
4225	Inquiry clerks
4226	Receptionists (general)
4227	Survey and market research interviewers
4229	Client information workers not elsewhere classified

109. ISCO-88 Unit group 3414, Travel consultants and organisers has been merged with Unit group 4221, Travel agency and related clerks on the basis that the distinction between these groups is not clear. The merged group has been renamed 'Travel consultants and clerks' and its scope will be defined to include those who make travel and accommodation bookings, issue travel tickets, and/or provide advice and information on local attractions and accommodation etc. 'Tour operators', who plan, design and organise package and group tours, make bulk travel bookings (including things such as chartering aircraft and ships) and make bulk accommodation bookings will be explicitly listed as an occupation included in Unit group 3339, Business services agents not elsewhere classified.

### ***Cashiers and ticket clerks***

110. ISCO-88 Unit Group 4211, Cashiers and ticket clerks has been moved to ISCO-08 Sub-major group 52, Sales workers because of the close relationship of the work performed in many jobs in this unit group with that performed by sales assistants. The group is also represented as a minor group, so as to improve the visibility of this large group in summary statistics.

### ***Sales workers***

111. The number of unit groups in Sub-major group 52, Sales workers, has increased from 3 to 12 and the minor group structure of the group has been modified. This increase is in part a result of the movement to Sub-major group 52 of Street food vendors, and Door-to-door and telephone sales

persons from Major group 9, Elementary occupations and the movement of Cashiers and ticket salespersons from Major group 4, Clerks. Additional detail is also provided through the separate identification of the following unit groups:

5221	Shop supervisors
5222	Shop sales assistants
5242	Sales demonstrators
5243	Door to door salespersons
5244	Contact centre salespersons <sup>11</sup>
5245	Service station attendants
5246	Food service counter attendants
5249	Sales workers not elsewhere classified

### **Personal and protective services workers**

**112.** In addition to the creation of a separate sub-major group for personal care workers discussed above in the sub-section on health services occupations, ISCO-88 Sub-major group 51, Personal and protective services workers, has been further subdivided to allow the creation of separate sub-major groups for Personal service workers and for Protective services workers. Additional detail is also provided at minor and unit group levels. The following sub-major groups and minor groups are thus provided in Major group 5, Service and Sales workers.

<b>51</b>	<b>Personal service workers</b>
511	Travel attendants, conductors and guides
512	Chefs and cooks
513	Waiters and bartenders
514	Hairdressers, beauticians and related workers
515	Building and housekeeping supervisors
516	Other personal services workers
<b>52</b>	<b>Sales workers</b>
521	Street and market salespersons
522	Shop salespersons
523	Cashiers and ticket clerks
524	Other sales workers
<b>53</b>	<b>Personal care workers</b>
531	Child care workers and teachers' aides
532	Carers in health services
<b>54</b>	<b>Protective services workers</b>
541	Protective services workers

**113.** 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. The Technical Expert Group for updating ISCO has recommended that ILO make a note, as part of the definition of Unit Group 5169, Personal services workers not elsewhere classified to the effect that:

- In countries where there is a requirement for the collection of data on sex workers they should be included in Unit Group 5169, Personal service workers not elsewhere classified.
- Where separate identification of this group of workers is required at the unit group level, unit group code 5168 be recommended for this purpose in national adaptations of ISCO-08.

<sup>11</sup> Includes Internet salespersons.

114. The views of countries on this suggestion were requested in the second questionnaire and the proposed approach was generally considered to be appropriate.

### ***Chefs, cooks and food preparation assistants***

115. The ISCO-88 Unit group 5122, Cooks, contains a wide range of occupations involved in the preparation of meals including Chefs de cuisine, Cooks, Short order cooks and Fast food preparers. Kitchen helpers in ISCO-88 are classified in Unit groups 9131, Domestic helpers and cleaners and 9132, Helpers and cleaners in offices, hotels and other establishments. The draft ISCO-08 provides two minor groups and additional detail at the unit group level for these occupations.

512	Chefs and cooks
5121	Chefs
5122	Cooks
941	Food preparation assistants
9411	Fast-food preparers
9412	Kitchen helpers

### ***Occupations in agriculture, forestry and fisheries***

116. More detailed categories are provided in the draft ISCO-08 for some occupational groups involved in agriculture, including the creation of additional unit groups in Minor group 921, Agricultural, fishery and forestry labourers. These categories reflect the minor group structure used in Sub-major group 61, Market-oriented skilled agricultural, fishery and forestry workers. In this way those working on crop farms, livestock farms, and mixed crop and livestock farms can be identified separately, regardless of any national variations in practice for coding farm jobs to Major groups 6 and 9. A separate unit group is also provided for Garden and horticultural labourers. Hunting and trapping labourers are no longer included in the same unit group as forestry labourers, on the basis that they can not be distinguished from skilled hunters and trappers.

92	Agricultural, forestry and fishery labourers
921	Agricultural, forestry and fishery labourers
9211	Crop farm labourers
9212	Livestock farm labourers
9213	Mixed crop and livestock farm labourers
9214	Garden and horticultural labourers
9215	Forestry labourers
9216	Fishery and aquaculture labourers

117. In Major group 6, Skilled agricultural forestry and fishery workers, the changes made are more modest, with the principle difference being the inclusion in relevant categories in Sub-major group 61, of most jobs classified in Unit group 1311, General managers in agriculture, hunting forestry and fishing. The reason for this is that the distinction between these groups is not feasible in a number of countries leading to significant inconsistencies in international reporting of data, as indicated above in the discussion on managerial occupations.

118. With respect to subsistence workers, Sub-major group 62, called 'Subsistence agricultural workers' in ISCO-88, has been retained without structural change. The definitional material for this group and for Sub-major groups 61 and 92 will be improved to make it clear that:

- All workers engaged in agricultural, forestry and fisheries activities should be classified in Sub-major group 62 if the main aim of the production is to provide goods (mainly food) for consumption by the workers' own household;
- Those who only perform simple tasks requiring little judgement or experience should nevertheless be classified in Sub major group 92;

- 
- Subsistence hunters, trappers and collectors should be classified in Sub-major group 62.

- 119.** In view of this last point, the name of Sub-major group 62 has been changed to ‘Subsistence farmers, fishers, hunters and gatherers.’ For countries and regions in which subsistence activities are virtually non-existent, Sub-major group 62 can be excluded from national and regional adaptations of ISCO-08 without loss of international comparability.
- 120.** It should be noted that a new unit group 9624, Water and firewood collectors has been created. Although many water collectors are employed in agricultural settings the unit group is included in Minor group 962, Other elementary workers, as the activity does not necessarily involve agricultural production, and jobs in this unit group are common in urban as well as agricultural settings.

### ***Electrotechnology trades workers***

- 121.** ISCO-88 Minor group 724, Electrical and electronic equipment mechanics and fitters, has been upgraded to form a new Sub-major group 74, Electrotechnology trades workers and has been extended in scope. ISCO-88 Unit group 7137, Building and related electricians previously classified with building workers has been moved into the new Sub-major group. Separate minor groups are provided for electrical and for electronics equipment installers and repairers. The unit groups have also been restructured to reflect the growing convergence between computer and telecommunications technologies, and to provide a clear distinction between those working with high tension and low tension equipment.

### ***Handicraft workers***

- 122.** A new Minor group, 731 Handicraft workers has been created. It comprises most of the occupations included in ISCO-88 Minor groups 731, Precision workers in metal and related materials, 732, Potters, glass-makers and related trades workers, and 733, Handicraft workers in wood, textile, leather and related material, as well as ISCO-88 Unit groups 7424 Basketry weavers, brush makers and related workers, 7431, Fibre preparers, and 7431, Weavers knitters and related workers.
- 123.** Some of the unit groups that have been moved to the new minor group have been merged, due to the very small numbers employed in many of these occupations and the difficulty in distinguishing between occupations such as ‘Handicraft worker, reed weaving’ and ‘Basket maker’

### ***Printing occupations***

- 124.** The printing occupations classified in Major Groups 7 and 8 in ISCO-88 are severely out of date due to developments in printing technology. In particular the distinction between machine operators and trades workers is no longer seen as meaningful. Accordingly a simplified arrangement is proposed, involving only three unit groups for ‘Pre-press technicians’, ‘Printers’ and ‘Print-finishing and binding workers’. These unit groups form a single Minor group 732, Printing trades workers. This minor group has been aggregated with the new Minor group 731, Handicraft workers, to form a Sub-major group, 73 Handicraft and printing workers, reflecting the combination of manual dexterity, use of specialised tools, and artistic skill that are involved in both groups.

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## ***Plant and machine operators***

- 125.** There has been significant rationalisation and reorganisation of the groups for plant and machine operators in response to concerns that this part of ISCO-88 was excessively detailed and out-of-date in some areas. There was also difficulty in distinguishing reliably between Stationary plant operators and Machine operators and there was fragmentation of data as a result of this distinction. Another concern was that some occupations should be classified at a higher skill level due to technological developments and automation of large scale industrial processes that are frequently controlled by technicians from a central control room or console.
- 126.** The main features of the changes proposed to address these concerns are:
- ISCO-88 Sub-major groups 81 Stationary-plant and related operators and 82 Machine operators and assemblers have been replaced by two new sub-major groups:
    - 81 Stationary plant and machine operators,
    - 82 Assemblers;
  - Merging of some minor groups where there are parallel groups in related fields in ISCO-88 for stationary plant operators and machine operators;
  - Creation of a new Minor group 313, Process control technicians, and movement of a number of unit groups, or parts of unit groups from ISCO-88 Sub-major group 81 into this new group, reflecting the need for these occupations to be classified at a higher skill level; and
  - Merging of a number of unit groups where there is a perception that the categories in ISCO-88 are too detailed.
- 127.** In addition, a number of groups in Major group 8 have been merged with groups of related occupations in Major group 7, where the distinction between craft and related trades workers on the one hand, and plant and machine operators on the other hand, was no longer meaningful. This was the case, for example, for printing occupations, mining occupations and for some machine tool setters and operators.

## Occupations predominant in the informal sector

- 128.** The coverage of occupations that are significant in the informal sector has been extended. Although jobs in the informal sector can be found in all ISCO Major groups, the structure of Major group 9, Elementary occupations has been significantly affected by these changes. In particular there has been an increase from 3 to 6 in the number of sub-major groups in Major group 9, to allow these occupational groups to be more easily visible in internationally reported data.
- 129.** The ISCO-88 and draft ISCO-08 Sub-major and minor group structures for Major Group 9, Elementary occupations are compared in Table 8 below.

Table 8: Sub-major and minor groups in Major group 9, Elementary occupations - ISCO-88 and draft ISCO-08

ISCO 88 code	Title	ISCO 08 Code	Title
91	Sales and services elementary occupations	91	Cleaners and helpers
911	Street vendors and related workers	911	Domestic, hotel and office cleaners and helpers
912	Shoe cleaning and other street services elementary occupations	912	Vehicle, window, laundry and other hand cleaning workers
913	Domestic and related helpers, cleaners and launderers		
914	Building caretakers, window and related cleaners		
915	Messengers, porters, doorkeepers and related workers		
916	Garbage collectors and related labourers		
92	Agricultural, fishery and related labourers	92	Agricultural, fishery and forestry labourers
921	Agricultural, fishery and related labourers	921	Agricultural, fishery and forestry labourers
93	Labourers in mining, construction, manufacturing and transport	93	Labourers in mining, construction, manufacturing and transport
931	Mining and construction labourers	931	Mining and construction labourers
932	Manufacturing labourers	932	Manufacturing labourers
933	Transport labourers and freight handlers	933	Transport and storage labourers
		94	Food preparation assistants
		941	Food preparation assistants
		95	Street and related sales and service workers
		951	Street and related service workers
		952	Street vendors
		96	Refuse workers and other elementary service workers
		961	Refuse workers
		962	Other elementary service workers

- 130.** It should be noted that ISCO-88 Minor Group 913, Building caretakers, window and related cleaners, has been split. It is proposed that building caretakers be identified as a unit group in Minor group 515, renamed as Building and housekeeping supervisors. Separate unit groups are provided in Minor group 912 in the draft for Vehicle cleaners, Window cleaners, and Other cleaning workers.
- 131.** With respect to ISCO-88 Minor group 915, Messengers, porters, doorkeepers and related workers, the bulk of occupations classified in Unit group 9152, Doorkeepers, watchpersons and related workers, are included in the draft in the new Unit group 5414, Security guards. The remaining unit groups in this minor group are now included in Minor group 962, Other elementary service workers.

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#### 4. Draft Resolution Concerning Updating the International Standard Classification of Occupations

The Meeting of Experts in Labour Statistics on Updating the International Standard Classification of Occupations (ISCO),

Having been convened at Geneva by the Governing Body of the ILO and having met from 3 to 6 December 2007;

Recalling the Resolution of the Fourteenth International Conference of Labour Statisticians, made on 6 November 1987, endorsing the International Standard Classification of Occupations, 1988 (ISCO-88);

Recalling the request made by the Statistical Commission of the United Nations at its 34th session (March 2003) that the timetable for the revision of ISCO should meet the needs of the 2010 round of population and housing censuses; and

Concurring that, whilst the basic principles and main structure of ISCO-88 remain valid, significant modifications reflecting experience gained in many countries using ISCO-88-based classifications and new developments in the world of work, are necessary to allow ISCO to continue to be a useful model for the development of national classifications and a basis for international comparison and exchange of information classified by occupation;

Recalling the recommendation adopted by the Seventeenth International Conference of Labour Statisticians in 2003 for the meeting to evaluate the work of the ILO to update ISCO-88 and to make appropriate recommendations on the results to the Governing Body; and

Having examined the report to the Meeting describing the work of the International Labour Office on updating ISCO-88;

Adopts, this sixth day of December 2007, the following resolution

1. The occupational classification system of major, sub-major, minor and unit groups shown in the Annex to this resolution is endorsed by the Meeting of Experts in Labour Statistics and is designated the International Standard Classification of Occupations, 2008 (ISCO-08).

2. ISCO classifies jobs, past, present or future. A *Job* is defined in ISCO-08 as *a set of tasks and duties performed, or meant to be performed, by one person, including for an employer or in self employment.*

3. An *occupation* is defined as a *set of jobs* whose main tasks and duties are characterised by a high degree of similarity. A person may be associated with an occupation through the main job currently held, a second job or a job previously held.

4. Jobs are classified by occupation with respect to the type of work performed, or to be performed. The basic criteria used to define the system of major, sub-major, minor and unit groups are the “skill level” and “skill specialisation” required to competently perform the tasks and duties of the occupations.

5. In collecting and processing statistics classified by occupation (e.g. for use in fields such as labour market analysis, educational planning, human resource planning,

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occupational health and safety analysis, wages analysis, etc.), each country should ensure that data can be converted to the ISCO-08 system, to facilitate the international use and comparison of occupational information.

6. Countries should make available to and discuss with the ILO information about how the groups defined in the classification (or classifications) of occupations used for national purposes, aggregates thereof or subdivisions thereof, can best be related to the major, sub-major, minor and unit groups of ISCO-08.

7. The Meeting of Experts notes that the ILO has provided:

- (a) draft updated definitions of the major, sub-major, minor and unit groups;
- (b) an updated draft index of occupations.

8. The Meeting of Experts notes that the ILO plans to:

- (a) publish ISCO-08 as a book in English, French and Spanish as well as providing it in electronic form on the ILO Website;
- (b) provide a manual and training material on how to adapt ISCO-08 for use in national and regional settings; and provide training on a regional basis through a series of regional workshops;
- (c) ensure that, as the custodian of the *International Standard Classification of Occupations (ISCO-08)*, it will have the capacity to provide the technical advisory services that will be needed particularly by the developing countries to ensure that national occupational classifications can be developed or improved correspondingly and be used effectively and reliably.



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## **Annex: Proposed ISCO-08 Structure, Group Titles and Codes**

### ***Major Groups***

- 1 Managers, senior officials and legislators
- 2 Professionals
- 3 Technicians and associate professionals
- 4 Clerks
- 5 Service and sales workers
- 6 Skilled agricultural, forestry and fishery workers
- 7 Craft and related trades workers
- 8 Plant and machine operators, and assemblers
- 9 Elementary occupations
- 0 Armed forces occupations

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## **Major groups and sub-major groups**

- 1 Managers, senior officials and legislators
  - 11 Chief executives, senior officials and legislators
  - 12 Administrative and commercial managers
  - 13 Production and specialised services managers
  - 14 Hospitality, shop and related services managers
- 2 Professionals
  - 21 Science and engineering professionals
  - 22 Health professionals
  - 23 Teaching professionals
  - 24 Business and administration professionals
  - 25 Information and communications technology professionals
  - 26 Legal, social and cultural professionals
- 3 Technicians and associate professionals
  - 31 Science and engineering associate professionals
  - 32 Health associate professionals
  - 33 Business and administration associate professionals
  - 34 Policing, legal, social, cultural and related associate professionals
  - 35 Information and communications technicians
- 4 Clerks
  - 41 General and keyboard clerks
  - 42 Customer services clerks
  - 43 Numerical and material recording clerks
  - 44 Other clerks
- 5 Service and sales workers
  - 51 Personal service workers
  - 52 Sales workers
  - 53 Personal care workers
  - 54 Protective services workers
- 6 Skilled agricultural, forestry and fishery workers

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- 61 Market-oriented skilled agricultural, forestry and fishery workers
  - 62 Subsistence farmers, fishers, hunters and gatherers
  - 7 Craft and related trades workers
    - 71 Building and related trades workers
    - 72 Metal, machinery and related trades workers
    - 73 Handicraft and printing workers
    - 74 Electrotechnology trades workers
    - 75 Food processing, wood working, textile and other craft and related trades workers
  - 8 Plant and machine operators, and assemblers
    - 81 Stationary plant and machine operators
    - 82 Assemblers
    - 83 Drivers and mobile plant operators
  - 9 Elementary occupations
    - 91 Cleaners and helpers
    - 92 Agricultural, forestry and fishery labourers
    - 93 Labourers in mining, construction, manufacturing and transport
    - 94 Food preparation assistants
    - 95 Street and related sales and service workers
    - 96 Refuse workers and other elementary workers
  - 0 Armed forces occupations
    - 01 Commissioned armed forces officers
    - 02 Non-commissioned armed forces officers
    - 03 Armed forces occupations, other ranks

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## **Major group, sub-major groups and minor groups**

- 1 Managers, senior officials and legislators
  - 11 Chief executives, senior officials and legislators
    - 111 Legislators and senior officials
    - 112 Managing directors and chief executives
  - 12 Administrative and commercial managers
    - 121 Business services and administration managers
    - 122 Sales, marketing and development managers
  - 13 Production and specialised services managers
    - 131 Production managers in agriculture, forestry and fisheries
    - 132 Manufacturing, mining, construction, and distribution managers
    - 133 Information and communications technology service managers
    - 134 Education, health, welfare and other professional services managers
  - 14 Hospitality, shop and related services managers
    - 141 Hotel and restaurant managers
    - 142 Shop managers
    - 143 Other services managers
- 2 Professionals
  - 21 Science and engineering professionals
    - 211 Physical and earth science professionals
    - 212 Mathematicians, actuaries and statisticians
    - 213 Life science professionals
    - 214 Engineering professionals (excluding electrotechnology)
    - 215 Electrotechnology engineers
    - 216 Architects, planners, surveyors and designers
  - 22 Health professionals
    - 221 Medical doctors
    - 222 Nursing and midwifery professionals
    - 223 Traditional and complementary medicine professionals
    - 224 Paramedical practitioners

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- 225 Veterinarians
  - 226 Other health professionals
  - 23 Teaching professionals
    - 231 University and higher education teachers
    - 232 Vocational education teachers
    - 233 Secondary education teachers
    - 234 Primary school and early childhood teachers
    - 235 Other teaching professionals
  - 24 Business and administration professionals
    - 241 Finance professionals
    - 242 Administration professionals
    - 243 Sales, marketing and public relations professionals
  - 25 Information and communications technology professionals
    - 251 Software and applications developers and analysts
    - 252 Database and network professionals
  - 26 Legal, social and cultural professionals
    - 261 Legal professionals
    - 262 Librarians, archivists and curators
    - 263 Social and religious professionals
    - 264 Authors, journalists and linguists
    - 265 Creative and performing artists
  - 3 Technicians and associate professionals
    - 31 Science and engineering associate professionals
      - 311 Physical and engineering science technicians
      - 312 Mining, manufacturing and construction supervisors
      - 313 Process control technicians
      - 314 Life science technicians and related associate professionals
      - 315 Ship and aircraft controllers and technicians
    - 32 Health associate professionals
      - 321 Medical and pharmaceutical technicians
      - 322 Nursing and midwifery associate professionals

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- 323 Traditional and complementary medicine associate professionals
  - 324 Veterinary technicians and assistants
  - 325 Other health associate professionals
  - 33 Business and administration associate professionals
    - 331 Financial and mathematical associate professionals
    - 332 Sales and purchasing agents and brokers
    - 333 Business services agents
    - 334 Administrative and specialised secretaries
    - 335 Customs, tax and related government associate professionals
  - 34 Policing, legal, social, cultural and related associate professionals
    - 341 Policing and legal associate professionals
    - 342 Social and religious associate professionals
    - 343 Sports and fitness workers
    - 344 Artistic and cultural associate professionals
  - 35 Information and communications technicians
    - 351 Information and communications technology operations and user support technicians
    - 352 Communications technicians
  - 4 Clerks
    - 41 General and keyboard clerks
      - 411 General office clerks
      - 412 Secretaries (general)
      - 413 Keyboard operators
    - 42 Customer services clerks
      - 421 Tellers, money collectors and related clerks
      - 422 Client information workers
    - 43 Numerical and material recording clerks
      - 431 Numerical clerks
      - 432 Material-recording and transport clerks
    - 44 Other clerks
      - 441 Other clerks

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- 5 Service and sales workers
    - 51 Personal service workers
      - 511 Travel attendants, conductors and guides
      - 512 Chefs and cooks
      - 513 Waiters and bartenders
      - 514 Hairdressers, beauticians and related workers
      - 515 Building and housekeeping supervisors
      - 516 Other personal services workers
    - 52 Sales workers
      - 521 Street and market salespersons
      - 522 Shop salespersons
      - 523 Cashiers and ticket clerks
      - 524 Other sales workers
    - 53 Personal care workers
      - 531 Child care workers and teachers' aides
      - 532 Carers in health services
    - 54 Protective services workers
      - 541 Protective services workers
  - 6 Skilled agricultural, forestry and fishery workers
    - 61 Market-oriented skilled agricultural, forestry and fishery workers
      - 611 Market gardeners and crop growers
      - 612 Animal producers
      - 613 Mixed crop and animal producers
      - 614 Forestry and related workers
      - 615 Fishery workers, hunters and trappers
    - 62 Subsistence farmers, fishers, hunters and gatherers
      - 621 Subsistence farmers, fishers, hunters and gatherers
  - 7 Craft and related trades workers
    - 71 Building and related trades workers
      - 711 Building frame and related trades workers
      - 712 Building finishers and related trades workers

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- 713 Painters, building structure cleaners and related trades workers
  - 72 Metal, machinery and related trades workers
    - 721 Sheet and structural metal workers, moulders and welders, and related workers
    - 722 Blacksmiths, toolmakers and related trades workers
    - 723 Machinery mechanics and repairers
  - 73 Handicraft and printing workers
    - 731 Handicraft workers
    - 732 Printing trades workers
  - 74 Electrotechnology trades workers
    - 741 Electrical equipment installers and repairers
    - 742 Electronics and telecommunications installers and repairers
  - 75 Food processing, wood working, textile and other craft and related trades workers
    - 751 Food processing and related trades workers
    - 752 Wood treaters, cabinet-makers and related trades workers
    - 753 Textile, garment and related trades workers
    - 754 Other craft and related workers
  - 8 Plant and machine operators, and assemblers
    - 81 Stationary plant and machine operators
      - 811 Mining and mineral processing plant operators
      - 812 Metal processing and finishing plant operators
      - 813 Chemical and photographic products plant and machine operators
      - 814 Rubber, plastic and paper products machine operators
      - 815 Textile, fur and leather products machine operators
      - 816 Food and related products machine operators
      - 818 Other stationary plant and machine operators
    - 82 Assemblers
      - 821 Assemblers
    - 83 Drivers and mobile plant operators
      - 831 Locomotive engine drivers and related workers
      - 832 Car, van and motorcycle drivers
      - 833 Heavy truck and bus drivers



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- 834 Mobile plant operators
  - 835 Ships' deck crews and related workers
  - 9 Elementary occupations
    - 91 Cleaners and helpers
      - 911 Domestic, hotel and office cleaners and helpers
      - 912 Vehicle, window, laundry and other hand cleaning workers
    - 92 Agricultural, forestry and fishery labourers
      - 921 Agricultural, forestry and fishery labourers
    - 93 Labourers in mining, construction, manufacturing and transport
      - 931 Mining and construction labourers
      - 932 Manufacturing labourers
      - 933 Transport and storage labourers
    - 94 Food preparation assistants
      - 941 Food preparation assistants
    - 95 Street and related sales and service workers
      - 951 Street and related service workers
      - 952 Street vendors
    - 96 Refuse workers and other elementary workers
      - 961 Refuse workers
      - 962 Other elementary workers
  - 0 Armed Forces occupations
    - 01 Commissioned armed forces officers
      - 011 Commissioned armed forces officers
    - 02 Non-commissioned armed forces officers
      - 021 Non-commissioned armed forces officers
    - 03 Armed forces occupations, other ranks
      - 031 Armed forces occupations, other ranks

**Major groups, sub-major groups, minor groups and unit groups with contributing ISCO-88 groups**

ISCO 08 Code	Group title	Contributing ISCO-88 code (for unit groups only) 'p' indicates part of group
1	Managers, senior officials and legislators	
11	Chief executives, senior officials and legislators	
111	Legislators and senior officials	
1111	Legislators	1110
1112	Senior government officials	1120
1113	Traditional chiefs and heads of village	1130
1114	Senior officials of special-interest organisations	1141, 1142, 1143
112	Managing directors and chief executives	
1120	Managing directors and chief executives	1210
12	Administrative and commercial managers	
121	Business services and administration managers	
1211	Corporate services managers	1227p, 1317p, 1228p, 1231p
1212	Finance managers	1231p, 1317p
1213	Human resource managers	1232, 1317p
1214	Policy and planning managers	1239p, 1229p
122	Sales, marketing and development managers	
1221	Sales and marketing managers	1233, 1317p
1222	Advertising and public relations managers	1234, 1317p
1223	Research and development managers	1237, 1319p
13	Production and specialised services managers	
131	Production managers in agriculture, forestry and fisheries	
1311	Agricultural and forestry production managers	1211p, 1311p
1312	Aquaculture and fisheries production managers	1221p, 1311p
132	Manufacturing, mining, construction, and distribution managers	
1321	Manufacturing managers	1222, 1312
1322	Mining managers	1222p
1323	Construction managers	1223, 1313
1324	Supply and distribution managers	1226p, 1235, 1316p
133	Information and communications technology service managers	
1330	Information and communications technology service managers	1226p, 1236, 1316p
134	Education, health, welfare and other professional services managers	
1341	Child care service managers	1229p, 1319p
1342	Health service managers	1229p, 1319p, 2230p
1343	Aged care service managers	1229p, 1319p
1344	Social welfare managers	1229p, 1319p

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1345	Education managers	1229p, 1319p, 1210p
1346	Other professional services managers	1229p, 1319p
14	Hospitality, shop and related services managers	
141	Hotel and restaurant managers	1315p
1411	Hotel managers	1315p, 1225p
1412	Restaurant managers	1315p, 1225p
142	Shop managers	
1420	Shop managers	1314, 1224
143	Other services managers	
1431	Sports, recreation and cultural centre managers	1319p
1439	Services managers not elsewhere classified	1319p, 1229p
2	Professionals	
21	Science and engineering professionals	
211	Physical and earth science professionals	
2111	Physicists and astronomers	2111
2112	Meteorologists	2112
2113	Chemists	2113
2114	Geologists and geophysicists	2114
212	Mathematicians, actuaries and statisticians	
2120	Mathematicians, actuaries and statisticians	2121, 2122
213	Life science professionals	
2131	Biologists, botanists, zoologists and related professionals	2211p, 2212p
2132	Farming, forestry and fisheries advisers	2213, 3213
2133	Environmental protection professionals	2211p
214	Engineering professionals (excluding electrotechnology)	
2141	Industrial and production engineers	2149p
2142	Civil engineers	2142
2143	Environmental engineers	2149p
2144	Mechanical engineers	2145
2145	Chemical engineers	2146
2146	Mining engineers, metallurgists and related professionals	2147
2149	Engineering professionals not elsewhere classified	2149p
215	Electrotechnology engineers	
2151	Electrical engineers	2143
2152	Electronics engineers	2144p
2153	Telecommunications engineers	2144p
216	Architects, planners, surveyors and designers	
2161	Building architects	2141p
2162	Landscape architects	2141p
2163	Product and garment designers	3471p
2164	Town and traffic planners	2141p

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2165	Cartographers and surveyors	2148
2166	Graphic and multimedia designers	3471p
22	Health professionals	
221	Medical doctors	
2211	Generalist medical practitioners	2221p
2212	Specialist medical practitioners	2221p, 2212p
222	Nursing and midwifery professionals	
2221	Nursing professionals	2230p
2222	Midwifery professionals	2230p
223	Traditional and complementary medicine professionals	3421, 3229p
2230	Traditional and complementary medicine professionals	3241, 3229p
224	Paramedical practitioners	
2240	Paramedical practitioners	3221p
225	Veterinarians	
2250	Veterinarians	2223, 2212p
226	Other health professionals	
2261	Dentists	2222
2262	Pharmacists	2224
2263	Environmental and occupational health and hygiene professionals	2229p, 3152p, 2412p
2264	Physiotherapists	3226p
2265	Dieticians and nutritionists	3223
2266	Audiologists and speech therapists	3229p
2267	Optometrists and ophthalmic opticians	3224p, 3229p
2269	Health professionals not elsewhere classified	2229p, 3229p, 3226p
23	Teaching professionals	
231	University and higher education teachers	
2310	University and higher education teachers	2310p
232	Vocational education teachers	
2320	Vocational education teachers	2310p, 2320p
233	Secondary education teachers	
2330	Secondary education teachers	2320p
234	Primary school and early childhood teachers	
2341	Primary school teachers	2331, 3310
2342	Early childhood educators	2332, 3320
235	Other teaching professionals	
2351	Education methods specialists	2351
2352	Special needs teachers	2340, 3320
2353	Other language teachers	2359p
2354	Other music teachers	2359p
2355	Other arts teachers	2359p

2356	Information technology trainers	2359p
2359	Teaching professionals not elsewhere classified	2359p
24	Business and administration professionals	
241	Finance professionals	
2411	Accountants	2411
2412	Financial and investment advisers	2419p, 3419p
2413	Financial analysts	2419p, 3419p
242	Administration professionals	
2421	Management and organisation analysts	2419p
2422	Policy administration professionals	2419p
2423	Personnel and careers professionals	2412p
2424	Training and staff development professionals	2412p
243	Sales, marketing and public relations professionals	
2431	Advertising and marketing professionals	2419p
2432	Public relations professionals	2419p
2433	Technical and medical sales professionals (excluding ICT)	3415p
2434	Information and communications technology sales professionals	3415p
25	Information and communications technology professionals	
251	Software and applications developers and analysts	
2511	Systems analysts	2131p, 2139p
2512	Software developers	2131p
2513	Web and multimedia developers	2131p, 2132p, 2139p
2514	Applications programmers	2132p
2519	Software and applications developers and analysts not elsewhere classified	2131p, 2132p, 2139p
252	Database and network professionals	
2521	Database designers and administrators	2131p, 2132p
2522	Systems administrators	2131p
2523	Computer network professionals	2131p
2529	Database and network professionals not elsewhere classified	2131p, 2132p, 2139p
26	Legal, social and cultural professionals	
261	Legal professionals	
2611	Lawyers	2421
2612	Judges	2422
2619	Legal professionals not elsewhere classified	2429
262	Librarians, archivists and curators	243
2621	Archivists and curators	2431
2622	Librarians and related information professionals	2432
263	Social and religious professionals	
2631	Economists	2441
2632	Sociologists, anthropologists and related professionals	2442

2633	Philosophers, historians and political scientists	2443
2634	Psychologists	2445
2635	Social work and counselling professionals	2446
2636	Religious professionals	2460
264	Authors, journalists and linguists	
2641	Authors and related writers	2451p
2642	Journalists	2451p
2643	Translators, interpreters and other linguists	2444
265	Creative and performing artists	
2651	Visual artists	2452
2652	Musicians, singers and composers	2453, 3473p
2653	Dancers and choreographers	2454, 3473p
2654	Film, stage and related directors and producers	2455p, 1229p
2655	Actors	2455p
2656	Announcers on radio, television and other media	3472
2659	Creative and performing artists not elsewhere classified	3474
3	Technicians and associate professionals	
31	Science and engineering associate professionals	
311	Physical and engineering science technicians	
3111	Chemical and physical science technicians	3111
3112	Civil engineering technicians	3112, 3151
3113	Electrical engineering technicians	3113, 3152p
3114	Electronics engineering technicians	3114p, 3152p
3115	Mechanical engineering technicians	3115, 3152p
3116	Chemical engineering technicians	3116
3117	Mining and metallurgical technicians	3117, 3152p
3118	Draughtspersons	3118
3119	Physical and engineering science technicians not elsewhere classified	3119
312	Mining, manufacturing and construction supervisors	
3121	Mining supervisors	7111p, 8111p
3122	Manufacturing supervisors	3123, 8211p, 8231p, 8232p, 8171, 8172
3123	Construction supervisors	7129p
313	Process control technicians	
3131	Power production plant operators	8161
3132	Incinerator and water treatment plant operators	8163
3133	Chemical processing plant controllers	8152p, 8153p, 8154p
3134	Petroleum and natural gas refining plant operators	8155p
3135	Metal production process controllers	8121, 8122, 8123, 8124p
3139	Process control technicians not elsewhere classified	3123, 8142p, 8143p, 8162p, 8172, 8171
314	Life science technicians and related associate professionals	
3141	Life science technicians (except medical)	3211p

3142	Agricultural and fisheries technicians	3212p
3143	Forestry technicians	3212p
315	Ship and aircraft controllers and technicians	
3151	Ships' engineers	3141
3152	Ships' deck officers and pilots	3142
3153	Aircraft pilots and related associate professionals	3143
3154	Air traffic controllers	3144
3155	Air traffic safety electronics technicians	3145
32	Health associate professionals	
321	Medical and pharmaceutical technicians	
3211	Medical imaging and therapeutic equipment technicians	3133
3212	Medical and pathology laboratory technicians	3211p
3213	Pharmaceutical technicians and assistants	3228
3214	Medical and dental prosthetic technicians	7311p
322	Nursing and midwifery associate professionals	
3221	Nursing associate professionals	2230p, 3231p
3222	Midwifery associate professionals	3232p, 2230p
323	Traditional and complementary medicine associate professionals	3241, 3229p
3230	Traditional and complementary medicine associate professionals	3241, 3229p
324	Veterinary technicians and assistants	
3240	Veterinary technicians and assistants	3227
325	Other health associate professionals	
3251	Dental assistants and therapists	3225
3252	Medical records and health information technicians	4143p
3253	Community health workers	3221p
3254	Dispensing opticians	3224p
3255	Physiotherapy technicians and assistants	3226p
3256	Doctors' assistants	3221p
3257	Environmental and occupational health inspectors and associates	3152p, 3222
3258	Ambulance workers	5132p
3259	Health associate professionals not elsewhere classified	3226p, 3229p
33	Business and administration associate professionals	
331	Financial and mathematical associate professionals	
3311	Securities and finance dealers and brokers	3411
3312	Credit and loans officers	1317p 3419p
3313	Accounting associate professionals	3433
3314	Statistical, mathematical and actuarial associate professionals	3434
3315	Valuers and loss assessors	3417p
332	Sales and purchasing agents and brokers	
3321	Insurance representatives	3412
3322	Commercial sales representatives	3415p

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3323	Buyers	3416
3324	Trade brokers	3421
333	Business services agents	
3331	Clearing and forwarding agents	3422
3332	Conference and event planners	3439p
3333	Employment agents and contractors	3423
3334	Real estate agents and property managers	3413
3339	Business services agents not elsewhere classified	3414p, 3417p, 3429
334	Administrative and specialised secretaries	
3341	Office supervisors	4115p
3342	Legal secretaries	4115p
3343	Administrative and executive secretaries	3431p
3344	Medical secretaries	4115p
3349	Administrative and specialised secretaries not elsewhere classified	3431p, 4115p
335	Customs, tax and related government associate professionals	
3351	Customs and border inspectors	3441
3352	Government tax and excise officials	3442
3353	Government social benefits officials	3443
3354	Government licensing officials	3444
3359	Customs, tax and related government associate professionals not elsewhere classified	3449
34	Policing, legal, social, cultural and related associate professionals	
341	Policing and legal associate professionals	
3411	Police inspectors and detectives	3450
3412	Legal and related associate professionals	3432
342	Social and religious associate professionals	
3421	Social work associate professionals	3460
3422	Religious associate professionals	3480
343	Sports and fitness workers	3475p
3431	Athletes and sports players	3475p
3432	Sports coaches, instructors and officials	3475p
3433	Fitness and recreation instructors and program leaders	3340p, 3475p
344	Artistic and cultural associate professionals	
3441	Photographers	3131p
3442	Interior designers and decorators	3471p
3443	Gallery, museum and library technicians	3349p
3449	Artistic and cultural associate professionals not elsewhere classified	3340p
35	Information and communications technicians	



351	Information and communications technology operations and user support technicians	
3511	Information and communications technology operations technicians	3121p, 3122p
3512	Information and communications technology user support technicians	3121p
3513	Computer network and systems technicians	2139p 3121p
3514	Web technicians	3121p, 3122
352	Communications technicians	
3521	Broadcasting and audio-visual technicians	3131p, 3132p
3522	Telecommunications engineering technicians	3114p, 3132p
4	Clerks	
41	General and keyboard clerks	
411	General office clerks	
4110	General office clerks	4190p
412	Secretaries (general)	
4120	Secretaries (general)	4115p
413	Keyboard operators	
4131	Typists and word processing operators	4111, 4112
4132	Data entry clerks	4113, 4114
42	Customer services clerks	
421	Tellers, money collectors and related clerks	
4211	Bank tellers and related clerks	4212
4212	Bookmakers, croupiers and related gambling workers	4213
4213	Pawnbrokers and money-lenders	4214
4214	Debt-collectors and related workers	4215
422	Client information workers	
4221	Travel consultants and clerks	3414, 4221
4222	Contact centre information clerks	4222p
4223	Telephone switchboard operators	4223
4224	Hotel receptionists	4222p
4225	Enquiry clerks	4222p
4226	Receptionists (general)	4222p
4227	Survey and market research interviewers	4222p
4229	Client information workers not elsewhere classified	4222p
43	Numerical and material recording clerks	
431	Numerical clerks	
4311	Accounting and bookkeeping clerks	4121p
4312	Statistical, finance and insurance clerks	4122
4313	Payroll clerks	4121p
432	Material-recording and transport clerks	
4321	Stock clerks	4131

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4322	Production clerks	4132
4323	Transport clerks	4133
44	Other clerks	
441	Other clerks	
4411	Library clerks	4141p
4412	Mail carriers and sorting clerks	4142
4413	Coding, proof-reading and related clerks	4143p
4414	Scribes and related workers	4144
4415	Filing and copying clerks	4141p
4416	Personnel clerks	4190p
4419	Clerks not elsewhere classified	4190p
5	Service and sales workers	
51	Personal service workers	
511	Travel attendants, conductors and guides	
5111	Travel attendants and travel stewards	5111
5112	Transport conductors	5112
5113	Travel guides	5113
512	Chefs and cooks	5122p
5121	Chefs	5122p
5122	Cooks	5122p
513	Waiters and bartenders	5123p
5131	Waiters	5123p
5132	Bartenders	5123p
514	Hairdressers, beauticians and related workers	
5141	Hairdressers	5141p
5142	Beauticians and related workers	5141p
515	Building and housekeeping supervisors	
5151	Cleaning and housekeeping supervisors in offices, hotels and other establishments	5121p
5152	Domestic housekeepers	5121p
5153	Building caretakers	9141
516	Other personal services workers	
5161	Astrologers, fortune-tellers and related workers	5151, 5152
5162	Companions and valets	5142
5163	Undertakers and embalmers	5143
5164	Pet groomers and animal care workers	6129p
5165	Driving instructors	3340p
5169	Personal services workers not elsewhere classified	3342, 5149
52	Sales workers	
521	Street and market salespersons	
5211	Stall and market salespersons	5230

5212	Street food salespersons	9111
522	Shop salespersons	
5221	Shop supervisors	5220p
5222	Shop sales assistants	5220p
523	Cashiers and ticket clerks	
5230	Cashiers and ticket clerks	4211
524	Other sales workers	
5241	Fashion and other models	5210
5242	Sales demonstrators	5220p
5243	Door to door salespersons	9113p
5244	Contact centre salespersons	9113p
5245	Service station attendants	5220p
5246	Food service counter attendants	5220p
5249	Sales workers not elsewhere classified	
53	Personal care workers	
531	Child care workers and teachers' aides	
5311	Child care workers	5131p
5312	Teachers' aides	5131p
532	Carers in health services	
5321	Health care assistants	5132p
5322	Home-based personal care workers	5133
5329	Carers in health services not elsewhere classified	5139p
54	Protective services workers	
541	Protective services workers	
5411	Fire-fighters	5161
5412	Police officers	5162
5413	Prison guards	5163
5414	Security guards	5169p, 9152p
5419	Protective services workers not elsewhere classified	5169
6	Skilled agricultural, forestry and fishery workers	
61	Market-oriented skilled agricultural, forestry and fishery workers	
611	Market gardeners and crop growers	
6111	Field crop and vegetable growers	6111, 1311p
6112	Tree and shrub crop growers	6112, 1311p
6113	Gardeners, horticultural and nursery growers	6113, 1311p
6114	Mixed crop growers	6114, 1311p
612	Animal producers	
6121	Livestock and dairy producers	6121p, 6124p, 1311p
6122	Poultry producers	6122, 6124p, 1311p
6123	Apiarists and sericulturists	6123, 6124p
6129	Animal producers not elsewhere classified	6129

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613	Mixed crop and animal producers	
6130	Mixed crop and animal producers	6130p, 1311p
614	Forestry and related workers	
6140	Forestry and related workers	6141, 6142
615	Fishery workers, hunters and trappers	
6151	Aquaculture workers	6151
6152	Inland and coastal waters fishery workers	6152
6153	Deep-sea fishery workers	6153
6154	Hunters and trappers	6154
62	Subsistence farmers, fishers, hunters and gatherers	
621	Subsistence farmers, fishers, hunters and gatherers	
6210	Subsistence farmers, fishers, hunters and gatherers	6210
7	Craft and related trades workers	
71	Building and related trades workers	
711	Building frame and related trades workers	
7111	House builders	7121, 7129p
7112	Bricklayers and related workers	7122p
7113	Stonemasons, stone cutters, splitters and carvers	7113, 7122p
7114	Concrete placers, concrete finishers and related workers	7123
7115	Carpenters and joiners	7124
7119	Building frame and related trades workers not elsewhere classified	7129
712	Building finishers and related trades workers	
7121	Roofers	7131
7122	Floor layers and tile setters	7132
7123	Plasterers	7133
7124	Insulation workers	7134
7125	Glaziers	7135
7126	Plumbers and pipe fitters	7136p
7127	Air conditioning and refrigeration mechanics	7136p, 7233p
713	Painters, building structure cleaners and related trades workers	
7131	Painters and related workers	7141
7132	Spray painters and varnishers	7142
7133	Building structure cleaners	7143p
72	Metal, machinery and related trades workers	
721	Sheet and structural metal workers, moulders and welders, and related workers	
7211	Metal moulders and coremakers	7211
7212	Welders and flamecutters	7212
7213	Sheet-metal workers	7213
7214	Structural-metal preparers and erectors	7214
7215	Riggers and cable splicers	7215

722	Blacksmiths, toolmakers and related trades workers	
7221	Blacksmiths, hammersmiths and forging press workers	7221p
7222	Toolmakers and related workers	7222
7223	Metal working machine tool setters and operators	7223, 8211
7224	Metal polishers, wheel grinders and tool sharpeners	7224
723	Machinery mechanics and repairers	
7231	Motor vehicle mechanics and repairers	7231p
7232	Aircraft engine repairers and mechanics	7232
7233	Agricultural and industrial machinery mechanics and repairers	7233
7234	Bicycle and related repairers	7231p
73	Handicraft and printing workers	
731	Handicraft workers	
7311	Precision-instrument makers and repairers	7311p
7312	Musical instrument makers and tuners	7312
7313	Jewellery and precious-metal workers	7313
7314	Potters and related workers	7321
7315	Glass makers, cutters, grinders and finishers	7322p
7316	Sign writers, decorative painters, engravers and etchers	7323, 7324
7317	Handicraft workers in wood, basketry and related materials	7331, 7424
7318	Handicraft workers in textile, leather and related materials	7332, 7431p, 7432
7319	Handicraft workers not elsewhere classified	7221p, 7223p, 7331p
732	Printing trades workers	
7321	Pre-press technicians	7341, 7342, 7343
7322	Printers	7346, 8251
7323	Print finishing and binding workers	7345, 8252
74	Electrotechnology trades workers	
741	Electrical equipment installers and repairers	
7411	Building and related electricians	7137
7412	Electrical mechanics and fitters	7241
7413	Electrical line installers and repairers	7245p
742	Electronics and telecommunications installers and repairers	
7421	Electronics mechanics and servicers	7242p, 7243p
7422	Information and communications technology (ICT) installers and servicers	7242p, 7243p, 7244, 7245
75	Food processing, wood working, textile and other craft and related trades workers	
751	Food processing and related trades workers	
7511	Butchers, fishmongers and related food preparers	7411
7512	Bakers, pastry-cooks and confectionery makers	7412
7513	Dairy-products makers	7413
7514	Fruit, vegetable and related preservers	7414
7515	Food and beverage tasters and graders	7415

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7516	Tobacco preparers and tobacco products makers	7416
752	Wood treaters, cabinet-makers and related trades workers	
7521	Wood treaters	7421
7522	Cabinet-makers and related workers	7422
7523	Woodworking-machine tool setters and operators	7423, 8240
753	Textile, garment and related trades workers	
7531	Tailors, dressmakers, furriers and hatters	7433, 7434
7532	Textile, leather and related pattern-makers and cutters	7435
7533	Sewers, embroiderers and related workers	7436
7534	Upholsterers and related workers	7437
7535	Pelt dressers, tanners and fellmongers	7441
7536	Shoemakers and related workers	7442
754	Other craft and related workers	
7541	Underwater divers	7216
7542	Shotfirers and blasters	7112
7543	Product graders and testers (except foods and beverages)	3152p, 7431p
7544	Fumigators and other pest and weed controllers	7143p
7549	Craft and related workers not elsewhere classified	7322p
8	Plant and machine operators, and assemblers	
81	Stationary plant and machine operators	
811	Mining and mineral processing plant operators	
8111	Miners and quarriers	8111, 7111
8112	Mineral ore and stone processing plant operators	8112
8113	Well drillers and borers and related workers	8113
8114	Cement, stone and other mineral products machine operators	8212
812	Metal processing and finishing plant operators	
8121	Metal processing plant operators	8121, 8122, 8123, 8124
8122	Metal finishing, plating and coating machine operators	8223
813	Chemical and photographic products plant and machine operators	
8131	Chemical products plant and machine operators	8151, 8152, 8153, 8154, 8155, 8159, 8221, 8222, 8229
8132	Photographic products machine operators	7344, 8224
814	Rubber, plastic and paper products machine operators	
8141	Rubber products machine operators	8231
8142	Plastic products machine operators	8232
8143	Paper products machine operators	8253
815	Textile, fur and leather products machine operators	
8151	Fibre preparing, spinning and winding machine operators	8261
8152	Weaving and knitting machine operators	8262
8153	Sewing machine operators	8263

8154	Bleaching, dyeing and fabric cleaning machine operators	8264p
8155	Fur and leather preparing machine operators	8265
8156	Shoemaking and related machine operators	8266
8157	Laundry machine operators	8264p
8159	Textile, fur and leather products machine operators not elsewhere classified	8269
816	Food and related products machine operators	
8160	Food and related products machine operators	8271, 8272, 8273, 8274, 8275, 8276, 8277, 8278, 8279
817	Wood processing and papermaking plant operators	
8171	Pulp and papermaking plant operators	8142p, 8143p
8172	Wood processing plant operators	8141
818	Other stationary plant and machine operators	
8181	Glass and ceramics plant operators	8131, 8139
8182	Steam engine and boiler operators	8162p
8183	Packing, bottling and labelling machine operators	8290p
8189	Stationary plant and machine operators not elsewhere classified	8290p
82	Assemblers	
821	Assemblers	
8211	Mechanical machinery assemblers	8281
8212	Electrical equipment assemblers	8282
8213	Electronic equipment assemblers	8283
8214	Metal, rubber and plastic products assemblers	8284
8215	Wood and related products assemblers	8285
8216	Paperboard, textile and related products assemblers	8286
8219	Assemblers not elsewhere classified	8290p
83	Drivers and mobile plant operators	
831	Locomotive engine drivers and related workers	
8311	Locomotive engine drivers	8311
8312	Railway brakemen, signallers and shunters	8312
832	Car, van and motorcycle drivers	
8321	Motorcycle drivers	8321
8322	Car, taxi and van drivers	8322
833	Heavy truck and bus drivers	
8331	Bus and tram drivers	8323
8332	Heavy truck and lorry drivers	8324
834	Mobile plant operators	
8341	Mobile farm and forestry plant operators	8331
8342	Earthmoving and related plant operators	8332
8343	Crane, hoist and related plant operators	8333
8344	Lifting truck operators	8334
835	Ships' deck crews and related workers	

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8350	Ships' deck crews and related workers	8340
9	Elementary occupations	
91	Cleaners and helpers	
911	Domestic, hotel and office cleaners and helpers	
9111	Domestic cleaners and helpers	9131
9112	Cleaners and helpers in offices, hotels and other establishments	9132p
912	Vehicle, window, laundry and other hand cleaning workers	
9121	Hand launderers and pressers	9133
9122	Vehicle cleaners	9142p
9123	Window cleaners	9142p
9129	Other cleaning workers	9142p
92	Agricultural, forestry and fishery labourers	
921	Agricultural, forestry and fishery labourers	
9211	Crop farm labourers	9211p
9212	Livestock farm labourers	9211p
9213	Mixed crop and livestock farm labourers	9211p
9214	Garden and horticultural labourers	6113p
9215	Forestry labourers	9212
9216	Fishery and aquaculture labourers	9213
93	Labourers in mining, construction, manufacturing and transport	
931	Mining and construction labourers	
9311	Mining and quarrying labourers	9311
9312	Civil engineering labourers	9312
9313	Building construction labourers	9313
932	Manufacturing labourers	
9321	Hand packers	9322p
9329	Manufacturing labourers not elsewhere classified	9321p, 9322p
933	Transport and storage labourers	
9331	Hand and pedal vehicle drivers	9331
9332	Drivers of animal-drawn vehicles and machinery	9332
9333	Freight handlers	9333p
9334	Shelf fillers	9333p
94	Food preparation assistants	
941	Food preparation assistants	
9411	Fast food preparers	5122p
9412	Kitchen helpers	9132p
95	Street and related sales and service workers	9112p
951	Street and related service workers	
9510	Street and related service workers	9120
952	Street vendors	
9520	Street vendors	9112p



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96	Refuse workers and other elementary workers	
961	Refuse workers	
9611	Garbage collectors	9161p
9612	Refuse sorters	9161p, 9321p
9613	Sweepers and related labourers	9162p
962	Other elementary workers	
9621	Messengers, package deliverers and luggage porters	9151
9622	Odd job persons	9162p
9623	Meter readers and vending-machine collectors	9153
9624	Water and firewood collectors	9162p
9629	Elementary service workers not elsewhere classified	9152p
0	Armed forces occupations	
01	Commissioned armed forces officers	
011	Commissioned armed forces officers	
0110	Commissioned armed forces officers	0110p
02	Non-commissioned armed forces officers	
021	Non-commissioned armed forces officers	
0210	Non-commissioned armed forces officers	0110p
03	Armed forces occupations, other ranks	
031	Armed forces occupations, other ranks	
0310	Armed forces occupations, other ranks	0110p

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## Annex: Resolution III of Seventeenth ICLS concerning further work on the International Standard Classification of Occupations

The Seventeenth International Conference of Labour Statisticians,

Having examined the report to the Conference of the International Labour Office's work with classifications,

Recognizing the valuable work that the International Labour Office (ILO) has carried out over the years to develop the current version of the *International Standard Classification of Occupations (ISCO-88)* and to advise on its use as a model for national occupational classifications as well as on their effective and reliable use for statistics and in client-related applications,

Recognizing that some countries have national occupational classifications that differ significantly from *ISCO-88* to well reflect their national circumstances,

Concluding that the basic principles and main structure of *ISCO-88* should not be changed, but that nevertheless modifications are necessary in some areas, both to make improvements in light of experience gained in many countries using *ISCO-88*-based classifications, and as a consequence of developments in the world of work over the last 15 years,

Observing that the custodians of national standard occupational classifications as well as the users of such classifications and of occupational statistics significantly benefit from the technical advisory services that the ILO is uniquely qualified to provide, and

Recalling the request made by the Statistical Commission of the United Nations at its 34th session (March 2003) that the timetable for the revision of *ISCO* should meet the needs of the 2010 round of population and housing censuses;

Requests the Governing Body of the International Labour Organization to:

- (a) ensure that the ILO, as the custodian of the *International Standard Classification of Occupations (ISCO-88)*, will have the capacity to:
  - (1) undertake the research and consultations necessary to formulate the modifications and updates of *ISCO-88* that are necessary to ensure that it can continue to serve as a good model for national occupational classifications to be used for statistics as well as for client-related applications;
  - (2) complete this work not later than the end of 2007 for the results to be taken into account in national preparations for the majority of population censuses that are to be undertaken in the 2010 round;
- (b) develop and implement mechanisms for this work to be done in cooperation and consultation with representatives of custodians of national occupational classifications as well as other experts and interested parties;
- (c) convene an ILO meeting of experts to evaluate and make appropriate recommendations on the results to the Governing Body; and
- (d) ensure that the ILO will have the capacity to provide the technical advisory services that will be needed particularly by the developing countries to ensure that national occupational classifications can be developed or improved correspondingly and be used effectively and reliably.