

Part III--Proposed New Industry Structure for Computer and Electronic Product Manufacturing

Section A--NAICS Structure

North American Industry Classification System

(NAICS)

Agreement Number 13

This Document represents the proposed agreement on the structure of the North American Industry Classification System (NAICS) for the following subsector:
Computer and Electronic Product Manufacturing

The detailed NAICS structure along with a brief description of the structure is attached (Attachments 1 and 2). Each country agrees to release a copy of the proposed NAICS structure to interested data users. Comments received will be shared among the countries and additional discussions will be held before a final decision on the structure is made. Each country may add additional detailed industries, below the 4-digit level of NAICS, as necessary to meet national needs, so long as this additional detail aggregates to a 4-digit NAICS level in order to ensure full comparability among the three countries. This NAICS structure was presented and provisionally accepted at the NAICS Committee meeting held on September 27, 1995 - September 29, 1995 in Mexico City, Mexico.

| Accepted | Signature | Date |
|---------------|----------------------|---------|
| Canada | /S/ Jacob Ryten | 9/29/95 |
| Mexico | /S/ Enrique Ordaz | 9/29/95 |
| United States | /S/ Jack E. Triplett | 9/29/95 |

ATTACHMENT 1--NAICS STRUCTURE

| | |
|------|---|
| XX | Computer and Electronic Product Manufacturing |
| XXX | Computer and Peripheral Equipment Manufacturing |
| XXXX | Computer and Peripheral Equipment Manufacturing |
| XXX | Communications Equipment Manufacturing |
| XXXX | Telephone Apparatus Manufacturing |
| XXXX | Broadcast and Studio Equipment for Radio, TV, and Cable Manufacturing |
| XXXX | Other Communications Equipment Manufacturing |
| XXX | Audio and Video Equipment Manufacturing |
| XXXX | Audio and Video Equipment Manufacturing |
| XXX | Semiconductor and Electronic Component Manufacturing |
| XXXX | Semiconductor and Electronic Component Manufacturing |
| XXX | Navigational, Measuring, Medical and Control Instrument |

| | |
|------|---|
| | Manufacturing |
| XXXX | Navigational, Measuring, Medical and Control Instrument Manufacturing |
| XXX | Manufacturing and Reproduction of Magnetic and Optical Media |
| XXXX | Manufacturing and Reproduction of Magnetic and Optical Media (Includes the manufacturing of blank audio and video tapes, diskettes and CD-ROMs, and reproduction of software, audio, video, and multimedia products) |

Attachment 2--North American Industry Classification System

Draft Classification for:

Computer and Electronic Product Manufacturing

Representatives of the statistical agencies of Canada, Mexico, and the United States agree to a draft industrial classification for these industries.

The draft classification provides for the subsector, Computer and Electronic Product Manufacturing. This subsector is further subdivided into six industry groups and eight industries. The subsector will be part of the Manufacturing sector of the classification.

A General Outline

The Computer and Electronic Product Manufacturing industries produce computers, computer peripherals, communications equipment, and similar electronic products, together with components for such products. The treatment of this subsector in NAICS differs substantially from past national classifications in all three countries, and also from other international classifications.

First, in NAICS the computer and electronic product manufacturing industries have been elevated to a separate subsector that brings together in the classification the manufacture of electronic products and their components. In previous national classification systems, and in the International Standard Industrial Classification of All Economic Activities (ISIC, Revision 3) of the United Nations, these industries are placed in machinery industries or with electrical equipment. Computer and electronic product manufacturing industries have been elevated in the hierarchy of NAICS because of the economic importance they have attained, because their rapid growth suggests that they will become even more important in the economies of all three North American countries in the future, and because their manufacturing processes are fundamentally different from the manufacturing processes of other machinery and electrical components with which they have been grouped in the past, and are grouped in ISIC.

Computers, communications equipment, and other electronic devices can of course be regarded as types of machines, which has been the view embodied in past classification systems. However, in NAICS the application of mechanical principles defines the Machinery subsector, because it describes the production processes (gear cutting and so forth) that must be used to manufacture machinery that functions on mechanical principles. Mechanical principles are not significant in the operation of computers and other electronic devices, and the production of computers, communications equipment and other electronic devices is not

characterized by the processes that are used in the Machinery subsector.

Instead, the design and use of integrated circuits and the application of highly specialized miniaturization technologies are common elements in the production technologies of the Computer and Electronic Product Manufacturing subsector. The production processes are in a constant state of technological development, such that heavy research and development expenditures are necessary to cope with rapid obsolescence of tangible and intangible assets. The manufacture of these products is grouped together because similar production processes are used.

A second substantive difference between NAICS and most other classification systems involves the grouping itself. In NAICS, the manufacture of integrated circuits and related electronic components is placed in the same subsector as the manufacturing of computers, communications equipment and other end products for which these components are an essential part of the end-product technology. Moreover, NAICS combines in the same subsector end products that have different uses--for example, computers, communications equipment, and audio equipment--but have similar and converging technologies.

Convergence of technology motivates the NAICS groupings. Digitalization of sound recording, for example, causes both the medium (the "compact disk") and the equipment to resemble the technologies for recording, storing, transmitting and manipulating data. Communications technology and equipment have been converging with computer technology. Machines already exist that can send fax messages, copy electronically, and print documents. Transmission technology may take the form of a dedicated, separately-housed machine (end product), or the same technology may be incorporated into a board mounted inside a computer (in which case it is technically an electronic component); thus, the component/end product distinction no longer justifies separating electronic components in a separate part of the classification system from electronic end products. Combining in the same subsector the production of equipment designed for different end uses, and also combining in the same subsector the components with the end-use equipment, is justified by rapid convergence in the production technologies and by the expected continued convergence of technology.

When technologically related components are in the same sector, it makes it easier to adjust the classification for future changes, without needing to redefine its basic structure. The creation of the Computer and Electronic Product Manufacturing subsector will assist in delineating new and emerging industries because the activities that will serve as the probable sources of new industries--such as computer manufacturing and communications equipment manufacturing, or computers and audio equipment--are brought together. As new activities emerge, they are less likely therefore to cross the subsector boundaries of the classification.

In addition, the three countries put a priority in NAICS on the delineation of industries engaged in the production of advanced technologies. The creation of this subsector is a response to that priority. It groups activities that are constantly developing and applying new scientific and engineering knowledge.

Though the three countries' statistical agencies agree that the growth of computer and electronic components in all three countries is likely to be significant in the future, and that accordingly it merits treatment as a subsector in NAICS, many differences currently exist in the degrees of specialization and differentiation in the three countries. The United States has more diversification and more specialization in these high technology sectors than does either Canada or Mexico. For this reason, it was necessary to specify NAICS 4-digit industries in

this sector at a relatively broad level of detail. By setting up a forward-looking classification, it will be easier to subdivide NAICS 4-digit industries in the future, as the sector expands in all three countries, without requiring major shifts in the classification system. This is especially important in view of the fact that the technologies that are common across all of the industries in this subsector may converge in the future as well as differentiate.

The Computer and Electronic Product Manufacturing subsector is subdivided into six industry groups. Computer and Peripheral Equipment Manufacturing comprises the production of computers and associated products such as storage devices and monitors. Communication Equipment Manufacturing includes the manufacture of telephone apparatus and radio and television studio and broadcast equipment. Audio and Video Equipment Manufacturing covers household and commercial radios, televisions, video equipment and similar articles. Semiconductor and Electronic Component Manufacturing includes the manufacture of a broad range of components used as parts in this subsector. The loading of circuit boards is classified here. Navigational, Measuring, Medical and Control Instrument Manufacturing includes the manufacture of such products as radar and sonar equipment and industrial process control equipment.

The sixth industry group, Manufacturing and Reproduction of Magnetic and Optical Media, includes the production of media such as video tapes and CD-ROMs, and the mass duplication of these media. It should be noted that the manufacture of packaged software is placed in this sector; however, the publishing of software, and its distribution electronically, is placed in the new NAICS Information sector, to be published separately, while traditional custom applications of software to client specification are in the Professional, Scientific and Technical Services subsector. These changes were made to represent better the different ways that software is produced and distributed. Sources within the industry and without have noted that the attempt, in past classification systems, to locate all software in a single portion of the classification system (the Services sector, or the Manufacturing sector) obliterates useful distinctions in software production and distribution, and tends, whatever the decision, to become rapidly obsolete as the nature and use of software changes. The NAICS structure is intended to facilitate the production of data on such changes, rather than obliterating them.

Consideration was given to subdividing this industry. Two possibilities were considered. Establishments could be distinguished based on the type of media, for example, CD-ROMs and diskettes or on the type of application, for example software and entertainment. This was not done for two reasons. First, the production process is often the same for a particular medium regardless of the application. For example, a blank CD-ROM can be used for recording music or for recording software. The format used for recording music CD-ROMs is also commonly used in multimedia software applications. Secondly, some establishments combine the production of the possible subdivisions. Establishments exist that produce both diskettes and CD-ROMs. These technological and establishment organization issues precluded a subdivision of the industry for NAICS. It is also the case that any subdivisions would be very small in Canada and Mexico.

Limitations and Constraints of the Classification

In the Computer and Electronic Product Manufacturing subsector, most activities that were identified in one country exist in the others. However, as noted above, often an activity

is not economically significant to the same degree in all countries. For example, a broad NAICS Computer and Peripheral Equipment Manufacturing industry was created because in Canada and Mexico establishments that primarily manufacture computers also produce peripherals to a significant degree. In Canada, a computer manufacturing industry would have a specialization ratio of only 70%. In addition, there is evidence that the lines between computer and peripheral equipment manufacturing are becoming less precise even in the U.S. The U.S. specialization ratio for computer manufacturing declined from 87% to 82% between 1987 and 1992. As another example, a relatively broad NAICS industry was created for Semiconductor and Electronic Component Manufacturing, partly because any possible subdivisions are small or confidential in Canada and Mexico.

Each country may publish additional national industries that comprise subdivisions of NAICS industries, to present data for activities that are nationally significant. Though these national industries are also constrained by the desire to preserve time series comparability within each country's statistics, so far as possible, the three countries are committed to increased international comparability of industrial statistics in these high technology sectors, as development in the three economies makes it feasible.

Bringing electronic components and end products together in the classification has inevitably produced some anomalies at the boundary of the sector. For example, most of the traditional instrument industries have been located in this subsector because electronic measuring devices and instruments have rapidly displaced mechanical and electrical types that served similar functions. It was, however, not practical to split off all of the traditional forms of instruments, partly for the sake of preserving time series, partly because the establishments themselves have shifted from the old to the new technology, and partly because the rapid eclipse of some traditional instrument types may mean that an industry or industries for mechanical instrument manufacturing (in Miscellaneous Manufacturing) would soon become obsolete, even if it were established in NAICS. As a consequence, however, some activities that are neither electronic nor "high tech" (watch springs, for example) appear anomalously in this subsector.

For those users requiring detailed commodity information, each country will publish information on the products of these industries. Efforts are also underway to harmonize the commodity classifications to allow for greater comparability of these statistics.

Relationship to ISIC

The Computer and Electronic Product Manufacturing subsector does not closely match any existing Division of the current International Standard Industrial Classification of all Economic Activities (ISIC, Revision 3) of the United Nations. Computers and peripherals are classified in ISIC Division 30, Manufacture of Office, Accounting and Computing Machinery. Communications equipment, audio and video equipment and most electronic components are in ISIC Division 32, Manufacture of Radio, Television and Communication Equipment and Apparatus. Navigational, measuring and controlling equipment are included in ISIC Division 33, Manufacture of Medical, Precision and Optical Instruments, Watches and Clocks. Other activities in this subsector are classified in three additional ISIC Divisions.

However, of the eight NAICS 4-digit industries in this subsector, six of them are each contained entirely within a single ISIC Division. The other two NAICS industries cross two

ISIC Divisions: Semiconductor and Electronic Component Manufacturing is largely included in ISIC Division 32, but includes the manufacture of electronic coils, transformers, connectors and switches that are classified in ISIC Division 31, Manufacture of Electrical Machinery and Apparatus, NEC. Manufacturing and Reproduction of Magnetic and Optical Media is split between ISIC Division 24, Manufacture of Chemicals and Chemical Products (the manufacture of media) and ISIC Division 22, Publishing, Printing and Reproduction of Recorded Media (mass duplication); in North America, these activities take place in the same establishments, so they are combined in NAICS.

Most of ISIC Division 32 is included in this subsector. However, the other ISIC Divisions (31, 24 and 22) linked to the Computer and Electronic Component Manufacturing subsector all have significant activities that are classified elsewhere in NAICS.

Some Changes to the National Classifications

For all countries, the creation of the Computer and Electronic Product Manufacturing subsector represents a significant change to the structure of the current national classifications.

For Canada, the subsector is largely the sum of three industry groups in Electrical and Electronic Products Industries (CSIC 334, 335 and 336) and instruments now in Other Manufacturing Industries (part of 391). The amount of detail of this NAICS subsector is less than that contained in the Canadian classification.

For Mexico, the Computer and Electronic Product Manufacturing subsector has coverage similar to the Mexican classification's Manufacture and Assembly of Electronic Radio, Television, Communications and Medical Equipment (CMAP 3832), combined with the computers and peripherals activities from Manufacture and Assembly of Office Calculating and Data Processing Machines (3823). The amount of detail of this NAICS subsector is similar to that of these areas of the Mexican classification.

For the United States, this subsector includes activities from three major groups. Computers and peripherals are now in Computer and Office Equipment, 1987 Industry Group 357; instruments are now a large part of 1987 SIC Major Group 38, Measuring, Analyzing, and Controlling Instruments; Photographic, Medical and Optical Goods; Watches and Clocks; and the remaining NAICS activities in this subsector are largely classified in 1987 Major Group 36, Electronic and Other Electric Equipment (especially 365, 366 and 367). NAICS provides much less industry detail than the 1987 U.S. SIC. However, the U.S. national industries will provide similar detail below the NAICS industry level.

Achievement of Objectives

The classification meets the objectives for the North American Industry Classification System (NAICS). It includes industries that group establishments with similar production processes, that is, it applies the production-oriented economic concept. The hierarchical structure of the classification also follows the production concept. For example, computer peripherals and electronic components are both used in the manufacture of computers; however, components are separated from peripherals in the hierarchy because the production process used in the manufacture of peripherals is more like that of computers, with assembly

of parts being important, while the manufacture of electronic components is driven by miniaturization techniques.

The industries have high specialization ratios, and they are economically significant. Some are much larger than others, but this was necessitated by the considerations discussed above under *Limitations and Constraints of the Classification*. The classification is still suitable for sampling, data-publishing and other aspects of survey operations. Finally, while disruptions to time series exist, they are mostly at the level of the aggregation structure. The statistical agencies can develop statistical "links" to enable the re-tabulation of time series on the new NAICS classification structure.

The classification achieves comparability for the three participating countries. Based on existing data, all three countries expect to be able to publish data regularly at the industry (4-digit) level of the structure. All countries agree on the detailed definitions of the industries.

Section B-Annex: United States National Industry Detail

As explained in the *Structure* presentation of this notice, for a number of reasons 4-digit industries in the NAICS industry subsector presented in *Part III, Section A--Attachment 1*, contain less detail than is currently in the U.S. SIC system, and less detail than is required to meet important analytical requirements in the U.S. The three country agreement on NAICS envisions that each country may develop national detailed industries below the NAICS industry level, so long as the national detail can be aggregated to the NAICS classification, thus assuring full North American comparability.

The ECPC is proposing U.S. 5-digit industry detail for the NAICS subsector covered in Part III of this notice. For cases where no 5-digit detail is shown, the ECPC is proposing that the NAICS 4-digit industries will also represent the most detailed U.S. industries.

TABLE 1

The definitions of status codes are as follows: E-existing industry; N-new industry; R-revised industry; and * means "part of". The abbreviation NEC is used for Not Elsewhere Classified.

| 1997 NAICS & U.S. description | Status code | 1987 SIC code | 1987 SIC description |
|--|-------------|---------------|--|
| XX Computer and Electronic Product Manufacturing | | | |
| XXX Computer and Peripheral Equipment Manufacturing | | | |
| XXXX Computer and Peripheral Equipment Manufacturing | | | |
| XXXXX Electronic Computer Manufacturing | E | 3571 | Electronic Computers |
| XXXXX Computer Storage Device Manufacturing | E | 3572 | Computer Storage Devices |
| XXXXX Computer Terminal Manufacturing | E | 3575 | Computer Terminals |
| XXXXX Other Computer Peripheral Equipment Manufacturing | R | 3577 | Computer Peripheral Equipment, NEC |
| | | *3578 | Calculating and Accounting Machines, Except Electronic Computers (point of sale terminals and fund transfer devices) |
| | | *3699 | Electrical Machinery Equipment and Supplies, NEC (bar code scanners) |
| XXX Communication Equipment Manufacturing | | | |
| XXXX Telephone Apparatus Manufacturing | R | *3661 | Telephone and Telegraph Apparatus (except telephone transformers and external PC consumer modems) |
| XXXX Broadcast and Studio Equipment for Radio, TV, and Cable Manufacturing | R | 3663 | Radio and Television Broadcasting and Communication Equipment |
| | | *3679 | Electronic Components, NEC (communication equipment) |
| XXXX Other Communication Equipment Manufacturing | E | 3669 | Communications Equipment, NEC |
| XXX Audio and Video Equipment Manufacturing | | | |
| XXXX Audio and Video Equipment Manufacturing | E | 3651 | Household Audio and Video Equipment |
| XXX Semiconductor and Electronic Component Manufacturing | | | |

| | | | | |
|-------|---|---|-------|---|
| XXXX | Semiconductor and Electronic Component Manufacturing | | | |
| XXXXX | Electron Tube Manufacturing | E | 3671 | Electron Tubes |
| XXXXX | Printed Circuit Board Manufacturing | E | 3672 | Printed Circuit Boards |
| XXXXX | Semiconductor and Related Device Manufacturing | E | 3674 | Semiconductors and Related Devices |
| XXXXX | Electronic Capacitor Manufacturing | E | 3675 | Electronic Capacitors |
| XXXXX | Electronic Resistor Manufacturing | E | 3676 | Electronic Resistors |
| XXXXX | Electronic Coil, Transformer, and Other Inductor Manufacturing | R | *3661 | Telephone and Telegraph Apparatus (telephone transformers) |
| | | | 3677 | Electronic Coils, Transformers, and Other Inductors |
| | | | *3825 | Instruments for Measuring and Testing of Electricity and Electrical Signals (portable instrument transformers) |
| XXXXX | Electronic Connector Manufacturing | E | 3678 | Electronic Connectors |
| XXXXX | Other Electronic Component Manufacturing | R | *3661 | Telephone and Telegraph Apparatus (external PC consumer modems) |
| | | | *3679 | Electronic Components, NEC (other electronic components including loaded printed circuit boards) |
| XXX | Navigational, Measuring, Medical, and Control Instrument Manufacturing | | | |
| XXXX | Navigational, Measuring, Medical, and Control Instrument Manufacturing | | | |
| XXXXX | Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing | E | 3812 | Search, Detection, Navigation, Guidance, Aeronautical, and Nautical Systems and Instruments |
| XXXXX | Automatic Control for Regulating Residential and Commercial Environment and Appliance Manufacturing | E | 3822 | Automatic Controls for Regulating Residential and Commercial Environments and Appliances |
| XXXXX | Industrial Instrument for Measurement, Display, and Control of Process Variables, and Related Products | E | 3823 | Industrial Instruments for Measurement, Display, and Control of Process Variables; and Related Products |
| XXXXX | Totalizing Fluid Meter and Counting Device Manufacturing | E | 3824 | Totalizing Fluid Meters and Counting Devices |
| XXXXX | Instruments for Measuring and Testing of Electricity and Electrical Signal Manufacturing | R | *3825 | Instruments for Measuring and Testing of Electricity and Electrical Signals (except portable instrument transformers) |
| XXXXX | Analytical Instrument Manufacturing | E | 3826 | Laboratory Analytical Instruments |

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|-------|---|---|-------|---|
| XXXXX | Other Measuring and Controlling Device Manufacturing | R | *3829 | Measuring and Controlling Devices, NEC (except medical thermometers) |
| XXXXX | Watch, Clock, and Part Manufacturing | R | *3495 | Wire Springs (clock and watch springs) |
| | | | *3579 | Office Machines, NEC (time clocks and other time recording devices) |
| | | | 3873 | Watches, Clocks, Clockwork Operated Devices, and Parts |
| XXXXX | X-Ray Apparatus and Tubes and Related Irradiation Apparatus | E | 3844 | X-Ray Apparatus and Tubes and Related Irradiation Apparatus |
| XXXXX | Electromedical and Electrotherapeutic Apparatus | R | *3842 | Orthopedic, Prosthetic, and Surgical Appliances and Supplies (electronic hearing aids) |
| | | | 3845 | Electromedical and Electrotherapeutic Apparatus |
| XXX | Manufacturing and Reproduction of Magnetic and Optical Media | | | |
| XXXX | Manufacturing and Reproduction of Magnetic and Optical Media | | | |
| XXXXX | Reproduction of Software | R | *7372 | Prepackaged Software (reproduction of software) |
| XXXXX | Prerecorded Compact Disk, Except Software, Tape, and Record Manufacturing | N | *3652 | Phonograph Records and Prerecorded Audio Tapes and Disks (reproduction of all other media except video) |
| | | | *7819 | Services Allied to Motion Picture Production (Reproduction of video) |
| XXXXX | Magnetic and Optical Recording Media Manufacturing | E | 3695 | Magnetic and Optical Recording Media |

TABLE 2

The abbreviation "pt" means "part of", @ means time series break has been created that is greater than 3% of the 1992 value of shipments for the 1987 SIC industry. The abbreviation NEC is used for Not Elsewhere Classified.

| 1987 SIC code | 1987 SIC description | 1997 U.S. description |
|---------------|---|--|
| 3495 | Wire Springs Clock and Watch Springs Wire Springs, Except Clock and Watch Springs | Watch, Clock and Part Manufacturing (pt) Wire Spring Manufacturing (Included in Fabricated Metal Product Manufacturing subsector) |
| 3571 | Electronic Computers | Electronic Computer Manufacturing |
| 3572 | Computer Storage Devices | Computer Storage Device Manufacturing |
| 3575 | Computer Terminals | Computer Terminal Manufacturing |
| 3577 | Computer Peripheral Equipment, NEC | Other Computer Peripheral Equipment Manufacturing (pt) |
| 3578@ | Calculating and Accounting Machines, Except Electronic Computers Point of Sales Terminals and Fund Transfer Devices Calculating and Accounting Machines, Except Point of Sales Terminals and Fund Transfer Devices | Other Computer Peripheral Equipment Manufacturing (pt) Office Machinery Manufacturing (pt) (Included in Machinery Manufacturing subsector) |
| 3579@ | Office Machines, NEC Pencil Sharpeners and Staplers Timeclocks and Other Time Recording Devices Other | Lead Pencils, Crayons and Artists' Supplies (pt) (Included in Miscellaneous Manufacturing subsector) Watch, Clock, and Part Manufacturing (pt) Office Machinery Manufacturing (pt) (Included in Machinery Manufacturing subsector) |
| 3651 | Household Audio and Video Equipment | Audio and Video Equipment Manufacturing |
| 3652@ | Phonograph Records and Prerecorded Audio Tapes and Disks Record Publishing Reproduction of All Other Media Except Video External PC Consumer Modems Telephone Transformers Telephone and Telegraph Apparatus, Except Telephone Transformers and Consumer External Modems | (Included in Information subsector) Prerecorded Compact Disk, Tape and Record Manufacturing (pt) Other Electronic Component Manufacturing (pt) Electronic Coil, Transformer, and Other Inductor Manufacturing (pt) (Included in Electrical Equipment, Appliance and Component Manufacturing subsector) Telephone Apparatus Manufacturing |
| 3663 | Radio and Television Broadcasting and Communication Equipment | Broadcast and Studio Equipment for Radio, TV, and Cable (pt) Manufacturing |
| 3669 | Communications Equipment, NEC | Other Communication Equipment Manufacturing |

| | | |
|-------|--|---|
| 3671 | Electron Tubes | Electron Tube Manufacturing |
| 3672 | Printed Circuit Boards | Printed Circuit Board Manufacturing |
| 3674 | Semiconductors and Related Devices | Semiconductor and Related Device Manufacturing |
| 3675 | Electronic Capacitors | Electronic Capacitor Manufacturing |
| 3676 | Electronic Resistors | Electronic Resistor Manufacturing |
| 3677 | Electronic Coils, Transformers, and Other Inductors | Electronic Coil, Transformer, and Other Inductor Manufacturing (pt) |
| 3678 | Electronic Connectors | Electronic Connector Manufacturing |
| 3679 | Electronic Components, NEC Communication Equipment | Broadcast and Studio Equipment for Radio, TV and Cable Manufacturing (pt) |
| | Electronic Control Modular Chips for Motor Vehicles | Electrical Equipment for Internal Combustion Engine Manufacturing (pt) (Included in Transportation Equipment Manufacturing subsector) |
| | Other Electronic Components Including Loaded PC Boards | Other Electronic Component Manufacturing (pt) |
| 3695 | Magnetic and Optical Recording Media | Magnetic and Optical Recording Media Manufacturing |
| 3699@ | Electrical Machinery, Equipment, and Supplies, NEC Bar Code Scanners Christmas Tree Lighting Sets and Electric Insect Lamps | Other Computer Peripheral Equipment Manufacturing (pt) Other Lighting Equipment Manufacturing (pt) (To Be Included in Electrical Equipment, Appliance and Component Manufacturing subsector) |
| | Electric Outboard Motor; | Other Engine Manufacturing (pt) (Included in Machinery Manufacturing subsector) |
| | Lasers | Classified according to function |
| | Other Electrical Machinery, Equipment, and Supplies | Other Electrical Industrial Apparatus Manufacturing (pt) (Included in Electrical Equipment, Appliance, and Component Manufacturing subsector) |
| 3812 | Search, Detection, Navigation, Guidance, Aeronautical, and Nautical Systems and Instruments | Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing |
| 3822 | Automatic Controls for Regulating Residential and Commercial Environment and Appliances | Automatic Control for Regulating Residential and Commercial Environment and Appliance Manufacturing |
| 3823 | Industrial Instruments for Measurement, Display, and Control of Process Variables; and Related Products | Industrial Instrument for Measurement, Display, and Control of Process Variables; and Related Product Manufacturing |
| 3824 | Totalizing Fluid Meters and Counting Devices | Totalizing Fluid Meter and Counting Device Manufacturing |
| 3825 | Instruments for Measuring and Testing of Electricity and Electrical Signals Portable Instrument Transformers Except Portable Instrument Transformers | Electronic Coil, Transformer, and Other Inductor Manufacturing (pt) Instruments for Measuring and Testing of Electricity and Electrical Signal Manufacturing |
| 3826 | Laboratory Analytical Instruments | Analytical Instrument Manufacturing |

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|-------|--|--|
| 3829 | Measuring and Controlling Devices, NEC Medical Thermometers | Surgical Appliance and Supply Manufacturing (pt) (Included in Miscellaneous Manufacturing Subsector) |
| | Except Medical Thermometers | Other Measuring and Controlling Device Manufacturing |
| 3842@ | Orthopedic, Prosthetic, and Surgical Appliances and Supplies Electronic Hearing Aids Other | Electromedical and Electrotherapeutic Apparatus (pt.) Surgical Appliance and Supply Manufacturing (pt.) (To be Included in Miscellaneous Manufacturing subsector) |
| 3844 | X-Ray Apparatus and Tubes and Related Irradiation Apparatus | X-Ray Apparatus and Tubes and Related Irradiation Apparatus |
| 3845 | Electromedical and Electrotherapeutic Apparatus | Electromedical and Electrotherapeutic Apparatus (pt.) |
| 3873 | Watches, Clocks, Clockwork Operated Devices and Parts | Watch, Clock, and Part Manufacturing (pt) |
| 7372@ | Prepackaged Software Reproduction of Software Other | Reproduction of Software (Included in Information subsector) |
| 7819@ | Services Allied to Motion Picture Production Reproduction of Video Other | Prerecorded Compact Disk, Tape and Record Manufacturing (pt) (Included in Services subsector) |

Description of Changes to the U.S. System

A number of the changes listed in this section were made for reasons of international comparability. Where one or more of the three North American countries had different definitions of an industry classification, adjustments to the definitions in one or more countries were required. In constructing NAICS, the three countries agreed to move, where change was required to attain international comparability, in the direction of the country or countries whose existing classification definitions most closely corresponded to the production-oriented concept adopted for NAICS. Cases where the U.S. changed are listed below; other cases where Canada Mexico moved toward the U.S. classification are not, of course, listed in this section.

This is a new subsector for 1997. Computer and Electronic Product Manufacturing is composed of industries from 1987 Major Group 35, Industrial Commercial Machinery and Computer Equipment; 1987 Major Group 36, Electronic and Other Electrical Equipment and Components, Except Computer Equipment; and 1987 Major Group 38, Measuring, Analyzing and Controlling Instruments; Photographic, Medical and Optical Goods; Watches and Clocks.

The following four complete industries were transferred into this subsector from 1987 Major Group 35, Industrial Commercial Machinery and Computer Equipment:

- SIC 3571, Electronic Computers
- SIC 3572, Computer Storage Devices
- SIC 3575, Computer Terminals
- SIC 3577, Computer Peripheral Equipment, NEC

The following twelve complete industries were transferred into this subsector from 1987 Major Group 36, Electronic and Other Electrical Equipment and Components, Except Computer Equipment:

- SIC 3651, Household Audio and Video Equipment
- SIC 3661, Telephone and Telegraph Apparatus
- SIC 3663, Radio and Television Broadcasting and Communication Equipment
- SIC 3669, Communications Equipment, NEC
- SIC 3671, Electron Tubes
- SIC 3672, Printed Circuit Boards
- SIC 3674, Semiconductors and Related Devices
- SIC 3675, Electronic Capacitors
- SIC 3676, Electronic Resistors
- SIC 3677, Electronic Coils, Transformers, and Other Inductors
- SIC 3678, Electronic Connectors
- SIC 3695, Magnetic and Optical Recording Media

Eight complete industries were transferred into this subsector from 1987 Major Group 38, Measuring, Analyzing and Controlling Instruments; Photographic, Medical and Optical Goods; Watches and Clocks. Those industries are:

- SIC 3812, Search, Detection, Navigation, Guidance, Aeronautical, and Nautical Systems and Instruments
- SIC 3822, Automatic Controls for Regulating Residential and Commercial Environments and Appliances

SIC 3823, Industrial Instruments for Measurement, Display, and Control of Process Variables; and Related Products

SIC 3824, Totalizing Fluid Meters and Counting Devices

SIC 3826, Laboratory Analytical Instruments

SIC 3844, X-Ray Apparatus and Tubes and Related Irradiation Apparatus

SIC 3845, Electromedical and Electrotherapeutic Apparatus

SIC 3873, Watches, Clocks, Clockwork Operated Devices, and Parts

These 34 complete industries were transferred into this new subsector for one or more of the following reasons: (1) the changes were in response to public requests; (2) the changes were supported by similar processes; and (3) the changes produced international comparability.

One industry, SIC 3825, Instruments for Measuring and Testing of Electricity and Electrical Signals, moved in its entirety to this subsector, but was split; portable instrument transformers to NAICS industry, Electronic Coil, Transformer, and Other Inductor Manufacturing, and the rest going to NAICS industry, Instruments for Measuring and Testing of Electricity and Electrical Signal Manufacturing.

Two new industries were formed from very similar activities that were formerly partly included in manufacturing and partly in services.

Prerecorded Compact Disk, Except Software, Tape, and Record Manufacturing was formed from part of 1987 SIC 3652, Phonograph Records and Prerecorded Audio Tapes and Disks, and from part of 1987 SIC 7819, Services Allied to Motion Picture Production.

Reproduction of Software was created from part of 1987 SIC 7372, Prepackaged Software. The ECPC recognizes that some establishments combine the production of prepackaged software and the production of other prerecorded compact disks, tapes, and records and that the production process is often the same. Therefore, it may be necessary to combine these activities into one industry. The ECPC requests specific comments on this proposal. (The publishing portions of these three 1987 SIC industries have been moved to the new NAICS Information sector.) These changes are made in response to an industry proposal, to improve international comparability, and to recognize that the production of prepackaged software is a manufacturing, not a services, activity.

Eleven activities were transferred into 1997 Computer and Electronic Product Manufacturing.

Point of sales terminals and fund transfer devices were transferred from 1987 SIC 3578, Calculating and Accounting Machines, Except Electronic Computers, into Other Computer Peripheral Equipment Manufacturing, in response to a proposal from the industry and to create a better production-oriented industry.

Time clocks and other time recording devices were transferred from 1987 SIC 3579, Office Machines, NEC, into Watch, Clock and Part Manufacturing. This improves international comparability and is supported by similarity in production processes.

Phonograph records and prerecorded audio tapes and disks, except record publishing, were transferred from 1987 SIC 3652, Phonograph Records and Prerecorded Audio Tapes and Disks, into Prerecorded Compact Disk, Tape, and

Record Manufacturing. This improves international comparability and is supported by similarity in production processes.

Telephone and telegraph apparatus, except telephone transformers and consumer external PC modems, were transferred from 1987 SIC 3661, Telephone and Telegraph Apparatus, into Telephone Apparatus Manufacturing. This improves international comparability and is supported by similarity in production processes.

The communication equipment formerly in 1987 SIC 3679, Electronic Components, NEC, was transferred into Broadcast and Studio Equipment Manufacturing for Radio, TV, and Cable. This improves international comparability and is supported by similarity in production processes.

Other electronic components, including loaded printed circuit boards, were transferred from 1987 SIC 3679, Electronic Components, NEC, into Other Electronic Component Manufacturing. This improves international comparability and is supported by similarity in production processes.

Other measuring and controlling devices, except medical thermometers, were transferred from 1987 SIC 3829, Measuring and Controlling Devices, NEC, into Other Measuring and Controlling Device Manufacturing. This improves international comparability and is supported by similarity in production processes.

Bar code scanners were transferred from 1987 SIC 3699, Electrical Machinery, Equipment and Supplies, NEC, into Other Computer Peripheral Equipment Manufacturing. This improves international comparability and is supported by similarity in production processes.

Reproduction of software was transferred from 1987 SIC 7372, Prepackaged Software, into Reproduction of Software. This improves international comparability and is supported by similarity in production processes.

Reproduction of video was transferred from 1987 SIC 7819, Services Allied to Motion Picture Production, into Magnetic and Optical Media Manufacturing. This improves international comparability and is supported by similarity in production processes.

Clock and watch springs were transferred from 1987 SIC 3495, Wire Springs, into Watch, Clock, and Part Manufacturing. This improves international comparability with Mexico, Canada, and the ISIC.

There are 29 industries in this new subsector. For time series linkage 19 of the 29 1997 industries are comparable within three percent of the old 1987 industries.