CPC COOPERATIVE PATENT CLASSIFICATION

G PHYSICS

NOTES

1. In this section, the following term is used with the meaning indicated :
   - "variable" (as a noun) means a feature or property, (e.g. a dimension, a physical condition such as temperature, a quality such as density or colour) which, in respect of a particular entity (e.g. an object, a quantity of a substance, a beam of light) and at a particular instant, is capable of being measured; the variable may change, so that its numerical expression may assume different values at different times or in different conditions or individual cases, but may be constant in respect of a particular entity in certain conditions or for practical purposes, (e.g. the len gth of a bar may be regarded as constant for many purposes).
2. Attention is drawn to the definitions of terms used appearing in the notes of several of the classes in this Section, particularly of "measuring" in class G01 and "control" and "regulation" in class G05.
3. The classification of inventions in this Section may present more difficulty than in others because the distinction between different fields of use rests to a considerable extent on differences in the intention of the user rather than on any constructional differences or differences in the manner of use of inventions, and also because the subjects dealt with are often in effect systems or combinations which have features or parts in common rather than "things" which are readily distinguishable as a whole. For example, information, (e.g. a set of figures) may be displayed for the purpose of education or advertising (G09), for enabling the result of a measurement to be known (G01), for signalling the information to a distant point or for giving information which has been signalled from a distant point (G08); the words used to describe the purpose depend on features which may be irrelevant to the form of the apparatus concerned - such features as the desired effect on the person who sees the display or whether the display is controlled from a remote point. Again, a device which responds to some change in a condition, e.g. in the pressure of a fluid, may be used, without modification of the device itself, to give information about the pressure (G01L) or about some other condition connected with the pressure (another subclass of G01, e.g. G01K for temperature), to make a record of the pressure or of its occurrence (G07C), to give an alarm (G08B), or to control some other apparatus (G05). The classification scheme is intended to enable things of a similar nature (as indicated above) to be classified together, and it is therefore particularly necessary for the real nature of any invention to be decided before it can be properly classified.

INSTRUMENTS

G01 MEASURING; TESTING

NOTES

1. This class covers, in addition to "true" measuring instruments, other indicating or recording devices of analogous construction, and also signalling or control devices insofar as they are concerned with measurement (as defined in Note 2 below) and are not specially adapted to the particular purpose of signalling or control.
2. In this class, the following term is used with the meaning indicated:
   - "measuring" is used to cover considerably more than its primary or basic meaning. In this primary sense, it means finding a numerical expression of the value of a variable in relation to a unit or datum or to another variable of the same nature, e.g. expressing a length in terms of another length as in measuring a length with a scale; the value may be obtained directly (as just suggested) or by measuring some other variable of which the value can be related to the value of the required variable, as in measuring a change in temperature by measuring a resultant change in the length of a column of mercury. However, since the same device or instrument may, instead of giving an immediate indication, be used to produce a record or to initiate a signal to produce an indication or control effect, or may be used in combination with other devices or instruments to give a conjoint result from measurement of two or more variables of the same or different kinds, it is necessary to interpret "measuring" as including also any operation that would make it possible to obtain such a numerical expression by the additional use of some way of converting a value into figures. Thus the expression in figures may be actually made by a digital presentation or by reading a scale, or an indication of it may be given without the use of figures, e.g. by some perceptible feature (variable) of the entity (e.g. object, substance, beam of light) of which the variable being measured is a property or condition or by an analogue of such a feature (e.g. the corresponding position of a member without any scale, a corresponding voltage generated in some way). In many cases there is no such value indication but only an indication of difference or equality in relation to a standard or datum (of which the value may or may not be known in figures); the standard or datum may be the value of another variable of the same nature but of a different entity (e.g. a standard measure) or of the same entity at a different time.

     In its simplest form, measurement may give merely an indication of presence or absence of a certain condition or quality, e.g. movement (in any direction or in a particular direction), or whether a variable exceeds a predetermined value.
3. Attention is drawn to the Notes following the titles of class B81 and subclass B81B relating to "microstructural devices" and "microstructural systems" and the Notes following the title of subclass B82B relating to "nanostructures".
4. Attention is drawn to the Notes following the title of section G, especially as regards the definition of the term "variable".

G01
(continued)

5. In many measuring arrangements, a first variable to be measured is transformed into a second, or further, variables. The second, or further, variables may be (a) a condition related to the first variable and produced in a member, or (b) a displacement of a member. Further transformation may be needed.
   When classifying such an arrangement, (i) the transformation step, or each transformation step, that is of interest is classified, or (ii) if interest lies only in the system as a whole, the first variable is classified in the appropriate place. This is particularly important where two or more conversions take place, for instance where a first variable, for example pressure, is transformed into a second variable, for example an optical property of a sensing body, and that second variable is expressed by means of a third variable, for example an electric effect. In such a case, the following classification places should be considered: the place for the transformation of the first variable, that for sensing the condition caused by that variable, subclass G01D for expression of the measurement, and finally the place for the overall system, if any.
6. The measurement of change in the value of a physical property is classified in the same subclass as the measurement of that physical property, e.g. measurement of expansion of length is classified in subclass G01B.

G01B MEASURING LENGTH, THICKNESS OR SIMILAR LINEAR DIMENSIONS; MEASURING ANGLES; MEASURING AREAS; MEASURING IRREGULARITIES OF SURFACES OR CONTOURS

NOTES

1. This subclass covers measuring of position or displacement in terms of linear or angular dimensions.
2. In this subclass, the groups are distinguished by the measurement technique which is of major importance. Thus, the mere application of other techniques or means for giving a final indication does not affect the classification.
3. Attention is drawn to the Notes following the title of class G01.
4. Machines operated on similar principles to the hand-held devices specified in this subclass are classified with these devices.
5. Measuring arrangements or details thereof covered by two or more of groups G01B 3/00 - G01B 17/00 are classified in group G01B 21/00 if no single other group can be selected as being predominantly applicable.

WARNING

{In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.}

G01C MEASURING DISTANCES, LEVELS OR BEARINGS; SURVEYING; NAVIGATION; GYROSCOPIC INSTRUMENTS; PHOTOGRAMMETRY OR VIDEOGRAMMETRY

(measuring liquid level G01F; radio navigation, determining distance or velocity by use of propagation effects, e.g. Doppler effects, propagation time, of radio waves, analogous arrangements using other waves G01S)

NOTES

1. In this subclass, the following term is used with the meaning indicated:
   "navigation" means determining the position and course of land vehicles, ships, aircraft, and space vehicles.
2. Attention is drawn to the Notes following the title of class G01.

WARNING

{In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.}

G01D MEASURING NOT SPECIALLY ADAPTED FOR A SPECIFIC VARIABLE; ARRANGEMENTS FOR MEASURING TWO OR MORE VARIABLES NOT COVERED IN A SINGLE OTHER SUBCLASS; TARIFF METERING APPARATUS; MEASURING OR TESTING NOT OTHERWISE PROVIDED FOR

NOTES

1. This subclass covers :
   - devices for indicating or recording the results of measurements, not peculiar to variables covered by a single other subclass;
   - analogous apparatus but in which the input is not a variable to be measured, e.g. a hand operation;
   - details of measuring instruments, which are of general interest;
   - measurement transducers not adapted solely for the measurement of a single specified variable and not provided for elsewhere, i.e. means for converting the output of a sensing member to another variable where the form or nature of the sensing member does not constrain the means for converting;
   - measuring or testing not otherwise provided for.
2. Attention is drawn to the Notes following the title of class G01.

G01D (continued)

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G01F MEASURING VOLUME, VOLUME FLOW, MASS FLOW OR LIQUID LEVEL; METERING BY VOLUME

NOTE

Attention is drawn to the Notes following the title of class G01.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G01G WEIGHING (sorting by weighing B07C 5/16)

NOTE

Attention is drawn to the Notes following the title of class G01.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G01H MEASUREMENT OF MECHANICAL VIBRATIONS OR ULTRASONIC, SONIC OR INFRASONIC WAVES

NOTES

1. This subclass covers the combination of generation and measurement of mechanical vibrations.
2. Attention is drawn to the Notes following the title of class G01.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G01J MEASUREMENT OF INTENSITY, VELOCITY, SPECTRAL CONTENT, POLARISATION, PHASE OR PULSE CHARACTERISTICS OF INFRARED, VISIBLE OR ULTRAVIOLET LIGHT; COLORIMETRY; RADIATION PYROMETRY (light sources F21, H01J, H01K, H05B; investigating properties of materials by optical means G01N)

NOTES

1. This subclass covers the detection of the presence or absence of infrared, visible, or ultraviolet light, not otherwise provided for.
2. Attention is drawn to the Notes following the title of class G01.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G01K MEASURING TEMPERATURE; MEASURING QUANTITY OF HEAT; THERMALLY-SENSITIVE ELEMENTS NOT OTHERWISE PROVIDED FOR (radiation pyrometry G01J 5/00)

NOTES

1. In this subclass, the following term is used with the meaning indicated :
   - "thermometer" includes thermally-sensitive elements not provided for in other subclasses.
2. Attention is drawn to the Notes following the title of class G01.
3. Attention is drawn to the Notes following the titles of class B81 and subclass B81B relating to "microstructural devices" and "microstructural systems".

G01K (continued)

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G01L MEASURING FORCE, STRESS, TORQUE, WORK, MECHANICAL POWER, MECHANICAL EFFICIENCY, OR FLUID PRESSURE (weighing G01G)

NOTE

Attention is drawn to the Notes following the title of class G01.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G01M TESTING STATIC OR DYNAMIC BALANCE OF MACHINES OR STRUCTURES; TESTING OF STRUCTURES OR APPARATUS, NOT OTHERWISE PROVIDED FOR

NOTE

Attention is drawn to the Note following the title of Class G01.

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:
   G01M 1/38 covered by G01M 1/14 and G01M 1/30 and subgroups
2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G01N INVESTIGATING OR ANALYSING MATERIALS BY DETERMINING THEIR CHEMICAL OR PHYSICAL PROPERTIES (measuring or testing processes other than immunoassay, involving enzymes or microorganisms C12M, C12Q)

NOTES

1. In this subclass, the following terms are used with the meanings indicated :
   - "investigating" means testing or determining;
   - "materials" includes solid, liquid or gaseous media, e.g. the atmosphere.
2. Attention is drawn to the Notes following the title of class G01.
3. Investigating the properties of materials, specially adapted for use in processes covered by subclass B23K, is classified in group B23K 31/12.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G01P MEASURING LINEAR OR ANGULAR SPEED, ACCELERATION, DECELERATION, OR SHOCK; INDICATING PRESENCE, ABSENCE, OR DIRECTION, OF MOVEMENT (measuring or recording blood flow A61B 5/02, A61B 8/06; monitoring speed or deceleration of electrically-propelled vehicles B60L 3/00; vehicle lighting systems adapted to indicate speed B60Q 1/54; determining position or course in navigation, measuring ground distance in geodesy or surveying G01C; combined measuring devices for measuring two or more variables of movement G01C 23/00; measuring velocity of sound G01H; measuring velocity of light G01J 7/00; measuring direction or velocity of solid objects by reception or emission of radiowaves or other waves and based on propagation effects, e.g. Doppler effect, propagation time, direction of propagation, G01S; measuring speed of nuclear radiation G01T; measuring acceleration of gravity G01V; {measuring or recording the speed of trains B61L 23/00; speed indicators incorporated in motor vehicles B60K 35/00; measuring frequency or phase G01R; traffic control G08G})

NOTES

1. This subclass covers measuring direction or velocity of flowing fluids using propagation effects of radiowaves or other waves caused in the fluid itself, e.g. by laser anemometer, by ultrasonic flowmeter with "sing-around-system".
2. Attention is drawn to the Notes following the title of class G01.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G01Q SCANNING-PROBE TECHNIQUES OR APPARATUS; APPLICATIONS OF SCANNING-PROBE TECHNIQUES, e.g. SCANNING PROBE MICROSCOPY [SPM]

NOTE

In this subclass, the first place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the first appropriate place.

G01R MEASURING ELECTRIC VARIABLES; MEASURING MAGNETIC VARIABLES (indicating correct tuning of resonant circuits H03J 3/12)

NOTES

1. This subclass covers:
   - measuring all kinds of electric or magnetic variables directly or by derivation from other electric or magnetic variables;
   - measuring all kinds of electric or magnetic properties of materials;
   - testing electric or magnetic devices, apparatus or networks, (e.g. discharge tubes, amplifiers) or measuring their characteristics;
   - indicating presence or sign of current or voltage;
   - NMR, EPR or other spin-effect apparatus, not specially adapted for a particular application;
   - equipment for generating signals to be used for carrying out such tests and measurements.
2. In this subclass, the following terms or expressions are used with the meanings indicated :
   - "measuring" includes investigating;
   - "instruments" or "measuring instruments" means electro-mechanical measuring mechanisms;
   - "arrangements for measuring" means apparatus, circuits, or methods for measuring;
3. Attention is drawn to the Notes following the title of class G01.
4. In this subclass, instruments or arrangements for measuring electric variables are classified in the following way:
   - Electromechanical instruments where the measured electric variables directly effect the indication of the measured value, including combined effects of two or more values, are classified in groups G01R 5/00 - G01R 11/00.
   - Details common to different types of the instruments covered by groups G01R 5/00 - G01R 11/00 are classified in group G01R 1/00.
   - Arrangements involving circuitry to obtain an indication of a measured value by deriving, calculating or otherwise processing electric variables, e.g. by comparison with another value, are classified in groups G01R 17/00 - G01R 29/00.
   - Details common to different types of arrangements covered by groups G01R 17/00 - G01R 29/00 are classified in group G01R 15/00.
5. In this subclass, group G01R 17/00 takes precedence over groups G01R 19/00 - G01R 31/00.

G01R (continued)

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G01S RADIO DIRECTION-FINDING; RADIO NAVIGATION; DETERMINING DISTANCE OR VELOCITY BY USE OF RADIO WAVES; LOCATING OR PRESENCE-DETECTING BY USE OF THE REFLECTION OR RERADIATION OF RADIO WAVES; ANALOGOUS ARRANGEMENTS USING OTHER WAVES

NOTES

1. In this subclass, the following term is used with the meaning indicated:
   - "transponder" means an arrangement which reacts to an incoming interrogating or detecting wave by emitting a specific answering or identifying wave.
2. Attention is drawn to the Notes following the title of class G01 and to Note (1) following the title of subclass G09B.

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:
   G01S 7/26 covered by G01S 7/06
2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G01T MEASUREMENT OF NUCLEAR OR X-RADIATION (radiation analysis of materials, mass spectrometry G01N 23/00; tubes for determining the presence, intensity, density or energy of radiation or particles H01J 47/00)

NOTES

1. This subclass covers the measurement of X-radiation, gamma radiation, corpuscular radiation, cosmic radiation or neutron radiation.
2. Attention is drawn to the Notes following the title of class G01.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G01V GEOPHYSICS; GRAVITATIONAL MEASUREMENTS; DETECTING MASSES OR OBJECTS; TAGS (means for indicating the location of accidentally buried, e.g. snow-buried persons A63B 29/02)

NOTES

1. This subclass covers radar, sonar, lidar or analogous systems specifically designed for geophysical use. Radar, sonar, lidar or analogous systems, or details of such systems, if of a general interest, are also classified in subclass G01S.
2. In this subclass, the following term is used with the meaning indicated:
   - "tags" means arrangements cooperating with a detecting field, e.g. near field, and designed to produce a specific detectable effect; "tags" also means active markers capable of generating a detectable field.
3. In this subclass, the geophysical methods apply both to the earth and to other celestial objects, e.g. planets.
4. Attention is drawn to the Notes following the title of class G01.

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:
   G01V 3/11 covered by G01V 3/101, G01V 3/104
2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G01W METEOROLOGY (influencing weather conditions A01G 15/00; dispersing fog E01H 13/00; instruments for measuring single variable in general, see the appropriate subclass of G01, e.g. G01K, G01L; obtaining meteorological information by radar G01S 13/95)

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G02 OPTICS

NOTE

In this class, the following terms are used with the meaning indicated:
- "optical" or "optics" apply not only to visible light but also to ultraviolet or infrared radiation.

G02B OPTICAL ELEMENTS, SYSTEMS OR APPARATUS

NOTES

1. Attention is drawn to the Notes following the titles of class B81 and subclass B81B relating to "microstructural devices" and "microstructural systems".
2. This subclass does not cover:
   - devices or arrangements, the optical operation of which is modified by changing the optical properties of the medium of the devices or arrangements for the control of the intensity, colour, phase, polarisation or direction of light, frequency-changing, non-linear optics, optical logic elements;
   - optical analogue/digital converters;

   which are covered by subclass G02F.

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:
   G02B 11/00 – G02B 11/34 covered by G02B 9/00 and G02B 13/00
2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G02C SPECTACLES; SUNGLASSES OR GOGGLES INSOFAR AS THEY HAVE THE SAME FEATURES AS SPECTACLES; CONTACT LENSES (trial frames for testing the eyes A61B 3/04; goggles or eyeshields not having the same features as spectacles A61F 9/00)

NOTE

This subclass also covers monocles, pince-nez or lorgnettes.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G02F OPTICAL DEVICES OR ARRANGEMENTS FOR THE CONTROL OF LIGHT BY MODIFICATION OF THE OPTICAL PROPERTIES OF THE MEDIA OF THE ELEMENTS INVOLVED THEREIN; NON-LINEAR OPTICS; FREQUENCY-CHANGING OF LIGHT; OPTICAL LOGIC ELEMENTS; OPTICAL ANALOGUE/DIGITAL CONVERTERS

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

   Subject matter covered by these groups is classified in the following CPC groups:
   G02F 1/13357 covered by G02F 1/1336 and subgroups
2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G03 PHOTOGRAPHY; CINEMATOGRAPHY; ANALOGOUS TECHNIQUES USING WAVES OTHER THAN OPTICAL WAVES; ELECTROGRAPHY; HOLOGRAPHY

NOTES

1. This class does not cover reproduction of pictures or patterns by scanning and converting into electrical signals, which is covered by subclass H04N.
2. In this class, the following terms are used with the meaning indicated:
   - "records" means photographs or any other kind of latent, directly-visible or permanent storage of pictorial information, which consist of an imagewise distribution of a quantity, e.g. an electric charge pattern, recorded on a carrier member;
   - "optical" applies not only to visible light but also to ultraviolet or infrared radiations.

G03B APPARATUS OR ARRANGEMENTS FOR TAKING PHOTOGRAPHS OR FOR PROJECTING OR VIEWING THEM; APPARATUS OR ARRANGEMENTS EMPLOYING ANALOGOUS TECHNIQUES USING WAVES OTHER THAN OPTICAL WAVES; ACCESSORIES THEREFOR (optical parts of such apparatus G02B; photosensitive materials or processes for photographic purposes G03C; apparatus for processing exposed photographic materials G03D)

NOTES

1. This subclass covers, as far as processes are concerned, only processes characterised by the use or manipulation of apparatus classifiable per se in this subclass.
2. In this subclass, the following term is used with the meaning indicated:
   "camera" means apparatus or arrangements for taking photographs.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G03C PHOTOSENSITIVE MATERIALS FOR PHOTOGRAPHIC PURPOSES (for photomechanical purposes G03F); PHOTOGRAPHIC PROCESSES, e.g. CINE, X-RAY, COLOUR, STEREO-PHOTOGRAPHIC PROCESSES; AUXILIARY PROCESSES IN PHOTOGRAPHY (photographic processes characterised by the use or manipulation of apparatus classifiable per se in subclass G03B, see G03B; photomechanical production of textured or patterned surfaces G03F; electrophotography, magnetography G03G)

NOTE

In this subclass, the following expressions are used with the meanings indicated :
- "photosensitive compositions" covers photosensitive substances, e.g. silverhalides, and, if applicable, binders or additives;
- "photosensitive materials" covers the photosensitive compositions, e.g. emulsions, the bases carrying them, and, if applicable, auxiliary layers.

WARNING

{In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.}

G03D APPARATUS FOR PROCESSING EXPOSED PHOTOGRAPHIC MATERIALS (apparatus specially adapted for photomechanical production of textured or patterned surfaces G03F); ACCESSORIES THEREFOR (photosensitive materials or processes for photographic purposes G03C; electrographic, electrophotographic, or magnetographic methods or apparatus G03G)

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G03F PHOTOMECHANICAL PRODUCTION OF TEXTURED OR PATTERNED SURFACES, e.g. FOR PRINTING, FOR PROCESSING OF SEMICONDUCTOR DEVICES; MATERIALS THEREFOR; ORIGINALS THEREFOR; APPARATUS SPECIALLY ADAPTED THEREFOR; (phototypographic composing devices B41B; photosensitive materials or processes for photographic purposes G03C; electrophotography, sensitive layers or processes therefor G03G)

NOTE

In this subclass, the following terms or expressions are used with the meanings indicated :

- "photosensitive" means not only sensitive to electro- magnetic radiation but also to corpuscular radiation;
- "photosensitive compositions" covers photosensitive substances, e.g. quinonediazides, and, if applicable, binders or additives;
- "photosensitive materials" covers the photosensitive compositions, e.g. photoresists, the bases carrying them and, if applicable, auxiliary layers.

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

G03F 3/08	covered by	H04N 1/46
G03F 7/207	covered by	G03F 7/20
G03F 7/23	covered by	G03F 7/22
G03F 9/02	covered by	G03F 9/00

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G03G ELECTROGRAPHY; ELECTROPHOTOGRAPHY; MAGNETOGRAPHY (information storage based on relative movement between record carrier and transducer G11B; static stores with means for writing-in or reading-out information G11C; recording of television signals H04N 5/76)

NOTES

1. This subclass covers:
   - the production of permanent directly-visible pictures in conformity with an original picture or document, using an intermediate imagewise distribution of an electric or magnetic quantity, such as a charge pattern, an electric conductivity pattern, or a magnetic pattern;
   - the production of permanent directly-visible pictures using an intermediate imagewise distribution of an electric or magnetic quantity, when the origin and the way of generating said intermediate distribution are not relevant.
2. This subclass does not cover:
   - use of electric signals for the transmission of the picture information from the original to the reproduction, i.e. pictorial communication, which is covered by subclass H04N;
   - production of pictures by heat patterns exclusively, not using an electrostatic or magnetic pattern, which is covered by group B41M 5/00;
   - production of prints by transferring ink from a printing form to a printing surface, without physical contact and using the force of an electrostatic field, which is covered by subclass B41M;
   - selective printing mechanisms characterised by the selective supply of electric current, or the selective application of magnetism or radiation, to a printing material or impression-transfer material, which are covered by groups B41J 2/385, B41J 2/435.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G03H **HOLOGRAPHIC PROCESSES OR APPARATUS** (holograms, e.g. point holograms, used as ordinary optical elements G02B 5/32; producing stereoscopic or other three-dimensional effects G02B 30/00; diffraction-grating systems G02B 27/44; systems using moiré fringes G02B 27/60; optical logic elements G02F 3/00; stereo-photography G03B 35/00; photosensitive materials or processes for photographic purposes G03C; {stereo-photographic or similar processes G03C 9/00}; apparatus for processing exposed photographic materials G03D; analogue computers performing mathematical operations with the aid of optical elements G06E 3/00; authentication by radiation, of concealed information carried by holograms or diffraction gratings G06K 19/16; holographic storage G11B 7/0065, G11C 13/04; {stereoscopic or other three dimensional effects in television systems H04N 13/00})

NOTE

This subclass covers means for producing a record of the phase and amplitude information of a wave-front, which information can be used to reconstruct the original wave-front, or means to reconstruct the original wave-front from a record containing the phase and amplitude information of the wave-front.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G04 HOROLOGY

G04B **MECHANICALLY-DRIVEN CLOCKS OR WATCHES; MECHANICAL PARTS OF CLOCKS OR WATCHES IN GENERAL; TIME PIECES USING THE POSITION OF THE SUN, MOON OR STARS** (spring- or weight-driven mechanisms in general F03G; electromechanical clocks or watches G04C; electromechanical clocks with attached or built-in means operating any device at pre-selected times or after predetermined time intervals G04C 23/00; clocks or watches with stop devices G04F 7/08)

NOTE

This subclass covers mechanically-driven clocks or clockwork calendars, and the mechanical part of such clocks or calendars.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G04C **ELECTROMECHANICAL CLOCKS OR WATCHES** (mechanical parts of clocks or watches in general G04B; electronic time-pieces with no moving parts, electronic circuitry for producing timing pulses G04G)

NOTE

This subclass covers electric features of mechanically-driven clocks or watches, such as electric winding of such clocks or the provision of electric contacts thereon.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G04D **APPARATUS OR TOOLS SPECIALLY DESIGNED FOR MAKING OR MAINTAINING CLOCKS OR WATCHES**

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G04F TIME-INTERVAL MEASURING (measuring pulse characteristics G01R, e.g. G01R 29/02; in radar or like systems G01S)

NOTE

This subclass covers:
- apparatus for measuring-off predetermined time intervals;
- apparatus for producing such intervals as timing standards, e.g. metronomes;
- apparatus for measuring unknown intervals, e.g. precision systems for short time interval measurement.

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:
   G04F 10/08 covered by G04F 5/16
2. {In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.}

G04G ELECTRONIC TIME-PIECES

NOTES

1. This subclass covers:
   - electronic time-pieces with no moving parts;
   - electronic circuitry for producing timing pulses irrespective of the nature of the time indicating means utilised.
2. This subclass does not cover electronic time-pieces with moving parts, which are covered by subclass G04C.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G04R RADIO-CONTROLLED TIME-PIECES

G05 CONTROLLING; REGULATING

NOTES

1. This class covers methods, systems, and apparatus for controlling, in general.
2. In this class, the following terms or expressions are used with the meanings indicated:
   - "controlling" means influencing a variable in any way, e.g. changing its direction or its value (including changing it to or from zero), maintaining it constant, limiting its range of variation;
   - "regulation" means maintaining a variable automatically at a desired value or within a desired range of values. The desired value or range may be fixed, or manually varied, or may vary with time according to a predeterminated "programme" or according to variation of another variable. Regulation is a form of control;
   - "automatic control" is often used in the art as a synonym for "regulation".
3. Attention is drawn to the Notes following the title of section G, especially as regards the definition of the term "variable".

G05B CONTROL OR REGULATING SYSTEMS IN GENERAL; FUNCTIONAL ELEMENTS OF SUCH SYSTEMS; MONITORING OR TESTING ARRANGEMENTS FOR SUCH SYSTEMS OR ELEMENTS (fluid-pressure actuators or systems acting by means of fluids in general F15B; valves per se F16K; characterised by mechanical features only G05G; sensitive elements, see the appropriate subclass, e.g. G12B, subclass of G01, H01; correcting units, see the appropriate subclass, e.g. H02K)

NOTES

1. This subclass covers features of control systems or elements for regulating specific variables, which are clearly more generally applicable.
2. This subclass does not cover:
   a. systems for controlling or regulating non-electric variables in general, which are covered by subclass G05D;
   b. systems for regulating electric or magnetic variables in general, which are covered by subclass G05F;
   c. systems specially adapted for the control of particular machines or apparatus provided for in a single other subclass, which are classified in the relevant subclass for such machines or apparatus, provided that there is specific provision for control or regulation relevant to the special adaptation. Otherwise, classification is made in the most appropriate place in this subclass.
3. IIn this subclass, the following terms or expressions are used with the meanings indicated:

G05B (continued)

- "automatic controller" means a system, circuit, or device in which a signal from the detecting element is compared with a signal representing the desired value and which operates in such a way as to reduce the deviation. The automatic controller generally does not include the sensitive element, i.e. that element which measures the value of the condition to be corrected, or the correcting element, i.e. that element which adjusts the condition to be corrected;
- "electric" includes "electromechanical", "electrohydraulic" or "electropneumatic".

4. In this subclass, details or specific control systems are classified in the group relevant to that system, if not otherwise provided for.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G05D SYSTEMS FOR CONTROLLING OR REGULATING NON-ELECTRIC VARIABLES

NOTES

1. This subclass does not cover features of general applicability to regulating systems, e.g. anti-hunting arrangements, which are covered by subclass G05B.
2. In this subclass, the following term is used with the meaning indicated:
   - "systems" includes self-contained devices such as speed governors, pressure regulators.
3. Control systems specially adapted for particular apparatus, machines or processes are classified in the subclasses for the apparatus, machines or processes, provided that there is specific provision for control or regulation relevant to the special adaptation, either at a detailed level, e.g. A21B 1/40: "for regulating temperature in bakers' ovens", or at a general level, e.g. B23K 9/095: "for automatic control of welding parameters in arc welding". Otherwise, classification is made in the most appropriate place in this subclass.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G05F SYSTEMS FOR REGULATING ELECTRIC OR MAGNETIC VARIABLES (regulating the timing or recurrence frequency of pulses in radar or radio navigation systems G01S; regulation of current or voltage, specially adapted for use in electronic time-pieces G04G 19/02; closed-loop systems for regulating non-electric variables by electric means G05D; regulating power supply of digital computers G06F 1/26; for obtaining desired operating characteristics of electromagnets with armatures H01F 7/18; regulating electric power distribution networks H02J; regulating the charging of batteries H02J 7/00; regulation of the output of static converters, e.g. switching regulators H02M; regulation of the output of electric generators H02N, H02P 9/00; controlling transformers, reactors or choke coils H02P 13/00; regulating frequency response, gain, maximum output, amplitude or bandwidth of amplifiers H03G; regulating tuning of resonant circuits H03J; regulating characteristics of transmission lines H04B; controlling electric light sources H05B 39/04, H05B 41/36, H05B 45/10, H05B 45/20, H05B 47/10; electric control of X-ray apparatus H05G 1/30)

NOTES

1. This subclass covers:
   - systems only;
   - use of hydraulic, pneumatic, mechanical, and electrical motors for varying electric characteristics of devices which restore the quantity regulated;
   - the combination of static converters and current or voltage regulators, if the invention resides in the combination.
2. This subclass does not cover elements per se, which are covered by the relevant subclasses.

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

G05F 3/28	covered by	G05F 3/26
G05F 5/02	covered by	G05F 5/00
G05F 5/04	covered by	G05F 5/00
G05F 5/06	covered by	G05F 5/00
G05F 5/08	covered by	G05F 5/00

G05F (continued)

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G05G CONTROL DEVICES OR SYSTEMS INSOFAR AS CHARACTERISED BY MECHANICAL FEATURES ONLY ("Bowden" or like mechanisms F16C 1/10; gearings or mechanisms not peculiar to this purpose F16H; speed changing or reversing mechanisms for gearings conveying rotary motion F16H 59/00 - F16H 63/00)

NOTES

1. This subclass covers:
   - members of general applicability for mechanical control;
   - mechanical systems for moving members to one or more definite settings.
2. Systems peculiar to the control of particular machines or apparatus provided for in a single other class are classified in the relevant class for such machines or apparatus.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G06 COMPUTING; CALCULATING OR COUNTING

NOTES

1. This class covers:
   - simulators which are concerned with the mathematics of computing the existing or anticipated conditions within the real device or system;
   - simulators which demonstrate, by means involving computing, the function of apparatus or of a system, if no provision exists elsewhere;
   - image data processing or generation.
2. This class does not cover:
   - combinations of writing implements with computing devices, which are covered by group B43K 29/08;
   - control functions derived from simulators, in general, which are covered by class G05, although such functions may be covered by the subclass of this class for the device controlled;
   - measurement or analysis of an individual variable to serve as an input to a simulator, which is covered by class G01;
   - simulators regarded as teaching or training devices which is the case if they give perceptible sensations having a likeness to the sensations a student would experience in reality in response to actions taken by him. Such simulators are covered by class G09;
   - components of simulators, if identical with real devices or machines, which are covered by the relevant subclass for these devices or machines and not by class G09.
3. In this class, the following terms or expressions are used with the meanings indicated:
   - "data" is used as the synonym of "information". Therefore, the term "information" is not used in subclass G06C;
   - "ICT [information and communication technology]" also covers "IT [information technology]";
   - "calculating or computing" includes, inter alia, operations on numerical values and on data expressed in numerical form. Of these terms "computing" is used throughout the class;
   - "computation" is derived from this interpretation of "computing". In the French language, the term "calcul" will serve for either term;
   - "simulator" is a device which may use the same time scale as the real device or operate on an expanded or compressed time scale. In interpreting this term models of real devices to reduced or expanded scales are not regarded as simulators;
   - "record carrier" means a body, such as a cylinder, disc, card, tape or wire, capable of permanently holding information, which can be read-off by a sensing element movable relative to the recorded information.
4. Attention is drawn to the Notes following the title of section G, especially as regards the definition of the term "variable".

G06C DIGITAL COMPUTERS IN WHICH ALL THE COMPUTATION IS EFFECTED MECHANICALLY (score computers for card games A63F 1/18)

NOTE

This subclass does not cover details of mechanisms covered by main groups G06C 9/00, G06C 11/00 or G06C 15/00, which are applicable to mechanical counters driven only through the lowest denomination. Such details are covered by subclass G06M.

G06D DIGITAL FLUID-PRESSURE COMPUTING DEVICES

NOTE

This subclass includes all devices in which at least one computing function is performed by hydraulic or pneumatic means

G06D (continued)

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G06E OPTICAL COMPUTING DEVICES; {COMPUTING DEVICES USING OTHER RADIATIONS WITH SIMILAR PROPERTIES}(optical logic elements per se G02F 3/00; digital storage using optical elements G11C 13/04)

NOTES

1. This subclass covers all devices in which at least one computing function is performed by optical means.
2. If other aspects, for example mechanical, fluid pressure or electrical computing, are of interest, classification is also made in the relevant subclass for such aspects.

G06F ELECTRIC DIGITAL DATA PROCESSING (computer systems based on specific computational models G06N)

NOTE

In this subclass, the following terms or expressions are used with the meaning indicated:
- "handling" includes processing or transporting of data;
- "data processing equipment" means an association of an electric digital data processor classifiable under group G06F 7/00, with one or more arrangements classifiable under groups G06F 1/00 - G06F 5/00 and G06F 9/00 - G06F 13/00.

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

G06F 3/18	covered by	G06F 3/00, G06K 11/00
G06F 7/04	covered by	G06F 7/02
G06F 9/302 - G06F 9/318	covered by	G06F 9/30

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G06G ANALOGUE COMPUTERS (analogue optical computing devices G06E 3/00)

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G06J HYBRID COMPUTING ARRANGEMENTS (optical hybrid computing devices G06E 3/00; {fuzzy computing G06N 7/02}; neural networks for image data processing G06T; analog/digital conversion, in general H03M 1/00)

NOTE

In this subclass, the following expression is used with the meaning indicated:
- "hybrid computing arrangement" is an arrangement in which part of the computation is digital and part is analogue.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G06K GRAPHICAL DATA READING (image or video recognition or understanding G06V); PRESENTATION OF DATA; RECORD CARRIERS; HANDLING RECORD CARRIERS

NOTE

This subclass covers:
- marking, sensing, and conveying of record carriers;
- reading graphical representations from record carriers, e.g. barcodes;
- presenting visually or otherwise the data recognised or the result of a computation.

G06K (continued)

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G06M COUNTING MECHANISMS; COUNTING OF OBJECTS NOT OTHERWISE PROVIDED FOR (counting by measuring volume or weight of articles to be counted G01F, G01G; computers G06C - G06J; counting electric pulses H03K; counting characters, words or messages in switching networks for transmission of digital information H04L 12/08)

NOTE

This subclass covers:
- stepping or continuously-moving mechanical counters operated through one or more inputs applied to the lowest order mechanically or electrically;
- counting systems involving applications of either mechanical, electrical, or electronic counters.

WARNING

{In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.}

G06N COMPUTING ARRANGEMENTS BASED ON SPECIFIC COMPUTATIONAL MODELS

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G06Q INFORMATION AND COMMUNICATION TECHNOLOGY [ICT] SPECIALLY ADAPTED FOR ADMINISTRATIVE, COMMERCIAL, FINANCIAL, MANAGERIAL OR SUPERVISORY PURPOSES; SYSTEMS OR METHODS SPECIALLY ADAPTED FOR ADMINISTRATIVE, COMMERCIAL, FINANCIAL, MANAGERIAL OR SUPERVISORY PURPOSES, NOT OTHERWISE PROVIDED FOR

NOTES

1. Groups G06Q 10/00 - G06Q 50/00 and G06Q 99/00 only cover systems or methods that involve significant data processing operations, i.e. data processing operations that need to be carried out by a technological, e.g. computing, system or device. Group G06Q 90/00 covers systems or methods that do not involve significant data processing, when both of the following conditions are fulfilled:
   - the systems or methods are specially adapted for the purposes mentioned in the subclass title or the titles of groups G06Q 10/00 - G06Q 50/00; and
   - the systems or methods cannot be classified elsewhere, for example by applying the principles described in paragraph 96 of the Guide to the IPC.
2. When classifying such systems or methods in group G06Q 90/00, additional classification may be made in the most closely related group of this or any other subclass, if this classification gives information about the application of the systems or methods that could be of interest for search. Such non-obligatory classification must be given as "additional information".

WARNINGS

1. G06Q has been largely refined to bring most of the former USPC 705 groups into ECLA, prior to CPC launch. Therefore, most of the new G06Q subdivisions are not complete pending reclassification. Users are invited to systematically consult also the hierarchically higher groups, up to the first valid IPC group. For example, while searching in G06Q 50/2053, it is appropriate to consult also G06Q 50/205 and G06Q 50/20
2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G06T IMAGE DATA PROCESSING OR GENERATION, IN GENERAL

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:
   G06T 1/40 covered by G06T 1/20
2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G06V IMAGE OR VIDEO RECOGNITION OR UNDERSTANDING

NOTES

1. This subclass covers:
   - methods or arrangements for pattern recognition or machine learning specially adapted for images or video.
2. In this subclass, the following terms or expressions are used with the meaning indicated:
   - "pattern recognition" means detection, categorisation, authentication and identification of patterns for explanatory purposes or to derive a certain meaning in images or video, by acquiring, preprocessing or extracting distinctive features and matching, clustering or classifying these features or representations thereof;
   - "feature extraction" means deriving descriptive or quantitative measures from images or video;
   - "clustering" means grouping or separating patterns according to their closeness or dissimilarity;
   - "classification" means the identification of an object/feature as belonging to a class of objects/features by assigning of a label.
3. In this subclass, subject matter classified in groups G06V 20/00 - G06V 40/00 is also classified in groups G06V 10/10 or G06V 10/20 respectively, if recognition relies on specific processing at the stages of acquisition or preprocessing.

G07 CHECKING-DEVICES

G07B TICKET-ISSUING APPARATUS; FARE-REGISTERING APPARATUS; FRANKING APPARATUS

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G07C TIME OR ATTENDANCE REGISTERS; REGISTERING OR INDICATING THE WORKING OF MACHINES; GENERATING RANDOM NUMBERS; VOTING OR LOTTERY APPARATUS; ARRANGEMENTS, SYSTEMS OR APPARATUS FOR CHECKING NOT PROVIDED FOR ELSEWHERE

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G07D HANDLING OF COINS OR VALUABLE PAPERS, e.g. TESTING, SORTING BY DENOMINATIONS, COUNTING, DISPENSING, CHANGING OR DEPOSITING

NOTE

In this subclass, the following terms or expressions are used with the meaning indicated:
- "coins" also covers tokens of similar nature;
- "valuable papers" covers paper currency, banknotes, bills, cheques, vouchers, securities, bonds or similar valuable papers, irrespective of the material used for these, which represent monetary value that can be measured or verified.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G07F COIN-FREED OR LIKE APPARATUS (coin sorting G07D 3/00; coin testing G07D 5/00; {handling coins or paper currencies apart from payment activated apparatus G07D; payment architectures, schemes or protocols G06Q 20/00})

NOTES

1. This subclass does not cover constructions or details of apparatus which includes, or is combined with, coin-actuated mechanisms but is not specially adapted or modified for use therewith. Such constructions or details are covered by the relevant subclass for the particular apparatus.
2. In this subclass, the following term are used with the meaning indicated:
   - {"coin-freed" means "payment activated"}
   - "coins" covers also tokens or the like.

G07F (continued)

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G07G REGISTERING THE RECEIPT OF CASH, VALUABLES, OR TOKENS (digital computing in general G06C, G06F)

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G08 SIGNALLING

G08B SIGNALLING OR CALLING SYSTEMS; ORDER TELEGRAPHS; ALARM SYSTEMS

NOTES

1. This subclass covers also means for identifying or incapacitating burglars or the like.
2. This subclass does not cover:
   - the mere provision of an audible or visible signalling device on measuring or switching apparatus;
   - alarm systems for indicating that a specific variable has exceeded, or fallen below, a predetermined value, which are covered by the relevant subclasses of class G01 for the measurement of that variable.
   - alarms for specific processes or types of machines or apparatus, which are covered by the relevant subclasses for the processes, machines, or apparatus.
3. In this subclass, the following term is used with the meaning indicated:
   - "systems" may cover also devices peculiar thereto.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G08C TRANSMISSION SYSTEMS FOR MEASURED VALUES, CONTROL OR SIMILAR SIGNALS (fluid pressure transmitting systems F15B; mechanical means for transferring the output of a sensing member into a different variable G01D 5/00; mechanical control system G05G)

G08G TRAFFIC CONTROL SYSTEMS (guiding railway traffic, ensuring the safety of railway traffic B61L; arrangement of road signs or traffic signals E01F 9/00; radar or analogous systems, sonar systems, lidar systems specially adapted for traffic control G01S 13/91, G01S 15/88, G01S 17/88; {radar or analogous systems, sonar systems, lidar systems specially adapted for anti-collision purposes G01S 13/93, G01S 15/93, G01S 17/93})

NOTES

1. This subclass covers:
   - identification of traffic offenders;
   - indicating the position of vehicles for traffic control purposes;
   - navigation systems for traffic control purposes, i.e. systems in which the navigation is not performed autonomously by or in the vehicles, but where the vehicles are guided by instructions transmitted to them;
   - indication of free spaces in parking areas.
2. This subclass does not cover:
   - arrangements for measuring levels and bearings for surveillance and navigation, which are covered by G01C;
   - radio navigation systems, e.g. for locating, measuring distances or velocity, which are covered by G01S;
   - details of display instrumentation, which are covered by G09F, G09G

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G09 EDUCATION; CRYPTOGRAPHY; DISPLAY; ADVERTISING; SEALS

G09B EDUCATIONAL OR DEMONSTRATION APPLIANCES; APPLIANCES FOR TEACHING, OR COMMUNICATING WITH, THE BLIND, DEAF OR MUTE; MODELS; PLANETARIA; GLOBES; MAPS; DIAGRAMS (devices for psychotechnics or for testing reaction times A61B 5/16; games, sports, amusements A63; projectors, projector screens G03B)

NOTES

1. This subclass covers:
   - simulators regarded as teaching or training devices, which is the case if they give perceptible sensations having a likeness to the sensations a student would experience in reality in response to actions taken by him;
   - models of buildings, installations, or the like.
2. This subclass does not cover:
   - simulators which demonstrate, by means involving computing, the function of apparatus or of a system, which are covered by class G06, if no provision exists elsewhere
   - components of simulators, if identical with real devices or machines, which are covered by the relevant subclasses for these devices or machines (and not by class G09).

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G09C CIPHERING OR DECIPHERING APPARATUS FOR CRYPTOGRAPHIC OR OTHER PURPOSES INVOLVING THE NEED FOR SECRECY

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G09D RAILWAY OR LIKE TIME OR FARE TABLES; PERPETUAL CALENDARS (calendar blocks B42D 5/04; clockwork driven G04B; comprising computing means G06C)

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G09F DISPLAYING; ADVERTISING; SIGNS; LABELS OR NAME-PLATES; SEALS

NOTES

1. In this subclass, the following term is used with the meaning indicated :
   - "sign" designates a mark or indication serving to make something recognisable, the information presented being non-varying, even if it is flashing; by way of example it covers, therefore, advertising hoardings, or luminous, or light reflecting, safety arrangements.
2. Attention is drawn to the Notes following the titles of class B81 and subclass B81B relating to "microstructural devices" and "microstructural systems".

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G09G ARRANGEMENTS OR CIRCUITS FOR CONTROL OF INDICATING DEVICES USING STATIC MEANS TO PRESENT VARIABLE INFORMATION (lighting in general F21; arrangements for displaying electric variables or waveforms G01R 3/00; devices or arrangements for the control of light beams G02F 1/00; indicating of time by visual means G04B 19/00, G04C 17/00, G04G 9/00; arrangements for transferring data between computers and peripheral equipment G06F 3/00; visible signalling arrangements or devices G08B 5/00; traffic control systems G08G; display, advertising, signs G09F, e.g. static indicating arrangements comprising an association of a number of separate sources or light control cells G09F 9/00; static indicating arrangements comprising integral associations of a number of light sources H01J, H01K, H01L, H05B 33/12; circuits in pulse counters for indicating the result H03K 21/18; coding, decoding or code conversion, in general H03M; reproducing a picture or pattern using electric signals representing parts thereof and produced by scanning an original H04N)

NOTES

1. This subclass covers indicator consoles, i.e. arrangements or circuits for processing control signals to achieve the display, e.g. for the calling up, reception, storage, regeneration, coding, decoding, addressing of control signals.
2. This subclass does not cover the structural details of the indicating devices, such as panels or tubes per se, or assemblies of individual light sources, which are covered by the relevant subclasses, e.g. H01J, H01K, H01L, H10K, G02F, G09F, H05B.
3. Contrary to subclass H04N, in which are classified display devices capable of representing continuous brightness value scales, this subclass is limited to devices using only a discrete number of brightness values, e.g. visible/non-visible.
4. The visual effect may be produced by a luminescent screen scanned by an electron beam, directly by controlled light sources, by projection of light, from controlled light sources onto characters, symbols, or elements thereof drawn on a support, or by electric, magnetic, or acoustic control of the parameters of light rays from an independent source.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G10 MUSICAL INSTRUMENTS; ACOUSTICS

NOTES

1. This class covers all sound-emitting devices, in general, whether or not they may be considered as being musical.
2. In this class, the following expression is used with the meaning indicated:
   - "musical instrument" does not exclude devices emitting a single sound signal.
3. The following Class Index is given in place of subclass indexes, to show the grouping of the elaborations belonging to different subclasses, under the following three fundamental types:
   - wind instruments;
   - string instruments;
   - percussion instruments,

   which relate clearly to the majority of instruments.
4. There are of course some instruments of which the principle of operation belongs less clearly to one of the three types mentioned in Note 3. They correspond to groups G10D 17/00 or G10K 7/00, G10K 9/00 or G10K 15/04, all the other groups normally finding a definite place.

G10B ORGANS, HARMONIUMS OR SIMILAR WIND MUSICAL INSTRUMENTS WITH ASSOCIATED BLOWING APPARATUS (accordions, concertinas or the like or keyboards therefor G10D 11/00; automatic wind instruments G10F 1/12)

NOTE

In this subclass, the type of instrument is classified in group G10B 1/00, while details or accessories thereof are classified in group G10B 3/00.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G10C PIANOS, HARPSICHORDS, SPINETS OR SIMILAR STRINGED MUSICAL INSTRUMENTS WITH ONE OR MORE KEYBOARDS (automatic musical instruments G10F)

NOTE

In this subclass, the specific types of musical instruments are covered by group G10C 1/00, while aspects relevant to the details thereof or the accessories therefor are covered by groups G10C 3/00-G10C 9/00.

G10D STRINGED MUSICAL INSTRUMENTS; WIND MUSICAL INSTRUMENTS; ACCORDIONS OR CONCERTINAS; PERCUSSION MUSICAL INSTRUMENTS; AEOLIAN HARPS; SINGING-FLAME MUSICAL INSTRUMENTS; MUSICAL INSTRUMENTS NOT OTHERWISE PROVIDED FOR (organs, harmoniums or similar wind musical instruments with associated blowing apparatus G10B; pianos, harpsichords, spinets or similar stringed musical instruments with one or more keyboards G10C; automatic musical instruments G10F; electrophonic musical instruments in which tones are generated by electromechanical means G10H)

NOTES

1. In this subclass, the specific types of musical instruments are covered in groups G10D 1/00, G10D 7/00 or G10D 13/01, while aspects relevant to the arrangements thereof or the accessories therefor are covered in groups G10D 3/00, G10D 9/00 or G10D 13/10.
2. This subclass does not cover pianos, harpsichords, spinets or similar stringed musical instruments with keyboards that cause the strings to be struck or plucked, which are covered by subclass G10C.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G10F AUTOMATIC MUSICAL INSTRUMENTS (non-musical aspects of toy instruments A63H 5/00; sound recording or reproducing G11B; working in association with recording or reproducing apparatus G11B 31/02)

NOTE

This subclass does not cover aspects of musical instruments which are independent of the automatic actuation, which are covered by subclass G10B, G10C or G10D.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G10G REPRESENTATION OF MUSIC; RECORDING MUSIC IN NOTATION FORM; ACCESSORIES FOR MUSIC OR MUSICAL INSTRUMENTS NOT OTHERWISE PROVIDED FOR, e.g. SUPPORTS (music stands A47B; non-musical aspects of musical toy instruments A63H 5/00; metronomes G04F 5/02; teaching music G09B 15/00)

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G10H ELECTROPHONIC MUSICAL INSTRUMENTS; INSTRUMENTS IN WHICH THE TONES ARE GENERATED BY ELECTROMECHANICAL MEANS OR ELECTRONIC GENERATORS, OR IN WHICH THE TONES ARE SYNTHESISED FROM A DATA STORE

NOTE

This subclass covers musical instruments in which individual notes are constituted as electric oscillations under the control of a performer and the oscillations are converted to sound-vibrations by a loud-speaker or equivalent instrument.

G10H (continued)

WARNING

{In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.}

G10K SOUND-PRODUCING DEVICES; METHODS OR DEVICES FOR PROTECTING AGAINST, OR FOR DAMPING, NOISE OR OTHER ACOUSTIC WAVES IN GENERAL; ACOUSTICS NOT OTHERWISE PROVIDED FOR

NOTES

1. This subclass covers arrangements for generating mechanical vibrations in fluids.
2. This subclass covers also the production of sounds which may not be audible to human beings but which are audible to animals.
3. In this subclass, the following terms are used with the meanings indicated:
   - "acoustics" and "sound" cover the technical field dealing with mechanical vibrations at all infrasonic -, sonic - and ultrasonic frequencies. However, generation or transmission of mechanical waves, in general, is covered by subclass B06B, subject to the exception specified in Note (1) above.

WARNING

{In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.}

G10L SPEECH ANALYSIS OR SYNTHESIS; SPEECH RECOGNITION; SPEECH OR VOICE PROCESSING; SPEECH OR AUDIO CODING OR DECODING

NOTE

This subclass does not cover:
- devices for the storage of speech or audio signals, which are covered by subclasses G11B and G11C;
- encoding of compressed speech signals for transmission or storage, which is covered by group H03M 7/30.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G11 INFORMATION STORAGE

G11B INFORMATION STORAGE BASED ON RELATIVE MOVEMENT BETWEEN RECORD CARRIER AND TRANSDUCER (recording measured values in a way that does not require playback through a transducer G01D 9/00; recording or playback apparatus using mechanically marked tape, e.g. punched paper tape, or using unit records, e.g. punched or magnetically marked cards G06K; transferring data from one type of record carrier to another G06K 1/18; circuits for coupling output of reproducer to radio receiver H04B 1/20; gramophone pick-ups or like acoustic electromechanical transducers or circuits therefor H04R)

NOTES

1. This subclass covers :
   - recording or playback of information by relative movement between a record track and a transducer, the transducer directly producing, or being directly actuated by, modulation in the track being recorded or played-back, and the extent of modulation corresponding to the signal being recorded or played-back;
   - apparatus and machines for recording or playback, and parts thereof such as heads;
   - record carriers for use with such apparatus and machines;
   - associated working of other apparatus with such apparatus and machines;
   - {relative positioning or movement of transducers and record carriers before, during or after transducing operation, e.g. for accessing record carriers or parts thereof, or for track change, selection or acquisition or for track following or for accessing parts of tracks;}
   - {driving or moving of heads or record carriers or both heads and record carriers for increasing, maintaining or decreasing the relative speed before, during or after transducing operation}
2. In this subclass, the following terms or expressions are used with the meanings indicated :
   - "head" includes any means for converting sinusoidal or non-sinusoidal electric wave-forms into variations of the physical condition of at least the adjacent surface of the record carrier, or vice versa;
   - "record carrier" means a body, such as a cylinder, disc, card, tape, or wire, capable of permanently holding information, which can be read-off by a sensing element movable relatively to the record carrier.

G11B (continued)

3. Documents concerning relative positioning or movement of transducers and record carriers are classified in groups G11B 3/00 - G11B 7/00 and G11B 21/00 when only the transducer is controlled and in groups G11B 15/00, G11B 17/00 and G11B 19/00 when only the record carrier is controlled. When both record carrier and head are controlled, the documents are classified in G11B 15/1808, G11B 15/1816, G11B 19/00 and G11B 27/002.

   When a plurality of record carriers are controlled, the documents are classified in G11B 15/68, G11B 17/08, G11B 17/22 and G11B 27/002.
4. By "access" is meant an operation including a relative movement for positioning between record carrier and head before, during or after transducing; this operation including "seek", "select", "change", "acquire" and "follow" functions for at least a part of a track on at least one record carrier. By "programmed access" is meant a sequence of access operations the result of the sequence being to acquire a wanted sequence of parts of tracks or a wanted sequence of tracks. Relative movement between head and record carrier also covers the movement of a coupling beam such as a light beam between the head and a stationary record carrier.
5. "Movement of the head" also covers any virtual movement or any physical movement such as obtained by switching between successive transducing parts of the head or by moving the transducing zone of the head, i.e. by "scanning". If different transducing parts of the head are switchable, the number of transducing parts should be much smaller than the number of individual storage areas of the record carrier.
6. Attention is drawn to the notes of subclass G11C.

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

G11B 5/673	covered by	G11B 5/66 and G11B 5/672 - G11B 5/678
G11B 5/738	covered by	G11B 5/73, G11B 5/733, G11B 5/7334 and G11B 5/736 - G11B 5/7377
G11B 7/30	covered by	G11B 7/00

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G11C STATIC STORES (semiconductor memory devices H10B)

NOTES

1. This subclass covers devices or arrangements for storage of digital or analogue information:
   - in which no relative movement takes place between an information storage element and a transducer;
   - which incorporate a selecting-device for writing-in or reading-out the information into or from the store.
2. This subclass does not cover elements not adapted for storage and not provided with such means as referred to in Note (3) below, which elements are classified in the appropriate subclass, e.g. of H01, H03K.
3. In this subclass, the following terms are used with the meaning indicated:
   - "storage element" is an element which can hold at least one item of information and is provided with means for writing-in or reading-out this information;
   - "memory" is a device, including storage elements, which can hold information to be extracted when desired.

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

G11C 8/02	covered by	G11C 8/00, H03K 17/00
G11C 11/4193	covered by	G11C 11/00
G11C 11/4195	covered by	G11C 11/00
G11C 11/4197	covered by	G11C 11/00

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G12 INSTRUMENT DETAILS

G12B CONSTRUCTIONAL DETAILS OF INSTRUMENTS, OR COMPARABLE DETAILS OF OTHER APPARATUS, NOT OTHERWISE PROVIDED FOR

NOTES

1. This subclass covers only details which are not restricted to measuring instruments or to any other apparatus covered by a single class.
2. This subclass does not cover:
   - details covered by any other subclass in section A, F, G or H. In particular, details restricted to the measuring instruments are covered by the relevant subclasses of class G01, e.g. G01D;
   - constructional details restricted to electric apparatus, e.g. casings, screenings, which are covered by subclass H05K or the relevant subclass in section H.

G12B (continued)

3. Attention is drawn to the Notes following the title of section G, especially as regards to the definition of the term "measuring" in Note (2) following the title of class G01.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G16 INFORMATION AND COMMUNICATION TECHNOLOGY [ICT] SPECIALLY ADAPTED FOR SPECIFIC APPLICATION FIELDS

NOTES

1. This class does not cover:
   a. pattern recognition, which is covered by group G06F 18/00;
   b. digital computing or data processing systems or methods specially adapted for administrative, commercial, financial, managerial or supervisory purposes, which are covered by subclass G06Q;
   c. image data processing or generation, which is covered by subclass G06T.
2. In this class, the following terms or expressions are used with the meaning indicated:
   a. "ICT [information and communication technology]" also covers "IT [information technology]";
   b. "ICT specially adapted for" also covers the expression "digital computing or data processing systems or methods specially adapted for", which is used in group G06F 17/00.

G16B BIOINFORMATICS, i.e. INFORMATION AND COMMUNICATION TECHNOLOGY [ICT] SPECIALLY ADAPTED FOR GENETIC OR PROTEIN-RELATED DATA PROCESSING IN COMPUTATIONAL MOLECULAR BIOLOGY

G16C COMPUTATIONAL CHEMISTRY; CHEMOINFORMATICS; COMPUTATIONAL MATERIALS SCIENCE

G16H HEALTHCARE INFORMATICS, i.e. INFORMATION AND COMMUNICATION TECHNOLOGY [ICT] SPECIALLY ADAPTED FOR THE HANDLING OR PROCESSING OF MEDICAL OR HEALTHCARE DATA

NOTES

1. This subclass covers cross-sectional aspects of computer, information or communication science with medical or healthcare science, where the focus is clearly placed on digital computing or data processing systems or methods, which are specially adapted for medical or healthcare science.
2. This subclass does not cover:
   a. medical equipment, medical methods, methods of diagnosis, methods of treatment or therapy, clinical care or surgical procedures per se, which are covered by the relevant subclasses of A61;
   b. signal processing or signal transmission associated to diagnostic measurements, e.g. signal waveform analysis, which are covered by group A61B 5/00.
3. In order to determine whether a technical subject relating to medical or healthcare science is classified in this subclass or in the relevant subclasses of A61, the following should be observed:
   a. to classify a technical subject in this subclass it is required that the essential technical features of the subject focus onto digital computing or data processing systems or methods;
   b. if the technical subject focuses onto aspects of medical science, e.g. physiological signals or medical conditions, or if the subject involves a significant interaction with the patient, e.g. details of a diagnostic measurement, then classification shall be directed to the appropriate subclasses of class A61;
   c. the mere presence of "a computer" or "a flowchart" in relation to medical devices or procedures is not a key element for classifying in this subclass. In this case classification shall rather be directed to the appropriate subclasses covering those medical devices or procedures.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G16Y INFORMATION AND COMMUNICATION TECHNOLOGY SPECIALLY ADAPTED FOR THE INTERNET OF THINGS [IoT]

NOTES

1. This subclass covers inter-networking of physical objects ("things") that embed technology enabling the things to sense and collect information from their internal state or their external environment, wherein the information is processed by the things or by other devices, e.g. servers, to be output to the things, to other things or to other devices, and enabling these things to be connected to the Internet either directly or indirectly.
   - "Directly connected to Internet" means that a thing possesses a network address of the Internet address space, which is used to communicate over the Internet.
   - "Indirectly connected to Internet" means that a thing is connected to a proxy device, which possesses a network address of the Internet address space and which communicates over the Internet on behalf of the thing.
   - A network address of the Internet address space is an address uniquely identifying a device in the Internet.
2. This subclass does not cover:
   - Mere monitoring, e.g. security cameras, or mere controlling, e.g. remote control arrangements.
   - Generic computing and communicating devices, e.g. computers or telephones
3. This subclass is intended to enable a complementary search of subject matter related to IoT by combination of classification symbols of this subclass with classification symbols from other subclasses. Therefore this subclass covers aspects of IoT (e.g. detection or navigation) that might also be entirely or partially covered elsewhere in the IPC.
4. This subclass is for obligatory supplementary classification of subject matter already classified as such in other classification places, when the subject matter contains an aspect of IoT.
5. The classification symbols of this subclass are not listed first when assigned to patent documents.
6. No systematic reclassification was done when this subclass was introduced. When searching using the symbols of this subclass it should be noted that many documents published before 2020 are not classified in subclass G16Y.

G16Z INFORMATION AND COMMUNICATION TECHNOLOGY [ICT] SPECIALLY ADAPTED FOR SPECIFIC APPLICATION FIELDS, NOT OTHERWISE PROVIDED FOR

NUCLEONICS

G21 NUCLEAR PHYSICS; NUCLEAR ENGINEERING

G21B FUSION REACTORS (uncontrolled reactors G21J)

G21C NUCLEAR REACTORS (fusion reactors, hybrid fission-fusion reactors G21B; nuclear explosives G21J)

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

G21C 19/33	covered by	G21C 19/34

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G21D NUCLEAR POWER PLANT

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G21F PROTECTION AGAINST X-RADIATION, GAMMA RADIATION, CORPUSCULAR RADIATION OR PARTICLE BOMBARDMENT; TREATING RADIOACTIVELY CONTAMINATED MATERIAL; DECONTAMINATION ARRANGEMENTS THEREFOR (radiation protection by pharmaceutical means A61K 8/00, A61Q 17/04; in cosmonautic vehicles B64G 1/54; combined with a reactor G21C 11/00; combined with X-ray tubes H01J 35/16; combined with X-ray apparatus H05G 1/02)

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G21G CONVERSION OF CHEMICAL ELEMENTS; RADIOACTIVE SOURCES (applications of radiation in general G21H 5/00; handling particles, e.g. neutrons, or electromagnetic radiation not otherwise provided for G21K)

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G21H OBTAINING ENERGY FROM RADIOACTIVE SOURCES; APPLICATIONS OF RADIATION FROM RADIOACTIVE SOURCES, NOT OTHERWISE PROVIDED FOR; UTILISING COSMIC RADIATION (measurement of nuclear or X-radiation G01T; fusion reactors G21B; nuclear reactors G21C; lamps in which a gas filling is excited to luminescence by external corpuscular radiation or by radioactive material structurally associated with the lamp H01J 65/04, H01J 65/06)

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G21J NUCLEAR EXPLOSIVES; APPLICATIONS THEREOF (electric or magnetic analogue computers, e.g. simulators, for nuclear physics G06G 7/54)

NOTE

This subclass covers uncontrollable fission or fusion reactions.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G21K TECHNIQUES FOR HANDLING PARTICLES OR IONISING RADIATION NOT OTHERWISE PROVIDED FOR; IRRADIATION DEVICES; GAMMA RAY OR X-RAY MICROSCOPES

NOTE

In this subclass, the following term is used with the meaning indicated:
"particle" means a molecular, atomic or subatomic particle

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:
   G21K 3/00 covered by G21K 1/10
2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

G99 SUBJECT MATTER NOT OTHERWISE PROVIDED FOR IN THIS SECTION

G99Z SUBJECT MATTER NOT OTHERWISE PROVIDED FOR IN THIS SECTION

NOTE

This subclass covers subject matter that:

a. Is not provided for, but is most closely related to, the subject matter covered by the subclasses of this section, and

b. Is not explicitly covered by any subclass of another section.