

## ECLA EUROPEAN CLASSIFICATION

### G01C

**MEASURING DISTANCES, LEVELS OR BEARINGS; SURVEYING; NAVIGATION; GYROSCOPIC INSTRUMENTS; PHOTOGRAMMETRY OR VIDEOGRAMMETRY (measuring dimensions or angles of objects G01B; measuring liquid level G01F; measuring intensity or direction of magnetic fields, other than the earth`s field, in general G01R; 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; optical systems therefor G02B; maps, globes G09B) [C9509]**

#### 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.

#### G01C1/00

**Measuring angles (in compasses [G01C17/00](#))**

- G01C1/02 . Theodolites
- G01C1/04 . . combined with cameras
- G01C1/06 . . Arrangements for reading scales (in general [G01D](#))
- G01C1/08 . Sextants
- G01C1/10 . . including an artificial horizon ([G01C1/14](#) takes precedence; artificial horizons per se [G01C15/14](#))
- G01C1/12 . . . with a stabilised mirror (tilt compensation in general [G12B](#))
- G01C1/14 . . Periscopic sextants ([periscopes in general G02B23/08](#))

#### G01C3/00

**Measuring distances in line of sight; optical rangefinders (tapes, chains or wheels for measuring length [G01B](#); coupling rangefinders with operating parts of photographic apparatus [G03B](#))**

- G01C3/02 . Details
- G01C3/04 . . Adaptation of rangefinders for combination with telescopes or binoculars ([rangefinders coupled with focussing arrangements of cameras G03B13/20](#))
- G01C3/06 . . Use of electric means to obtain final indication
- G01C3/08 . . . Use of electric radiation detectors
- G01C3/08A . . . . [N: with electronic parallax measurement]
- G01C3/10 . using a parallactic triangle with variable angles and a base of fixed length in the observation station, e.g. in the instrument ([active triangulation systems, i.e. using the transmission and reflection of electromagnetic waves other than radio waves, G01S17/48](#)) [C0410]

- G01C3/12 . . with monocular observation at a single point, e.g. coincidence type ([G01C3/20](#) takes precedence)
- G01C3/14 . . with binocular observation at a single point, e.g. stereoscopic type ([G01C3/20](#) takes precedence)
- G01C3/16 . . . Measuring marks
- G01C3/18 . . with one observation point at each end of the base ([G01C3/20](#) takes precedence)
- G01C3/20 . . with adaptation to the measurement of the height of an object
- G01C3/22 . using a parallactic triangle with variable angles and a base of fixed length at, near, or formed by the object ([active triangulation systems, i.e. using the transmission and reflection of electromagnetic waves other than radio waves, G01S17/48](#)) [C0410]
- G01C3/24 . using a parallactic triangle with fixed angles and a base of variable length in the observation station, e.g. in the instrument ([active triangulation systems, i.e. using the transmission and reflection of electromagnetic waves other than radio waves, G01S17/48](#)) [C0410]
- G01C3/26 . using a parallactic triangle with fixed angles and a base of variable length, at, near, or formed by the object ([active triangulation systems, i.e. using the transmission and reflection of electromagnetic waves other than radio waves, G01S17/48](#)) [C0410]
- G01C3/28 . . with provision for reduction of the distance into the horizontal plane
- G01C3/30 . . . with adaptation to the measurement of the height of an object, e.g. tachometers
- G01C3/32 . by focusing the object, e.g. on a ground glass screen
- G01C5/00** **Measuring height; Measuring distances transverse to line of sight; Levelling between separated points; Surveyors' levels** ([G01C3/20](#), [G01C3/30](#) take precedence; tracing profiles [G01C7/00](#); levels indicating inclination at a single point [G01C9/00](#))
- G01C5/00A . [N: altimeters for aircraft ([G01C5/02](#), [G01C5/06](#) take precedence)]
- G01C5/02 . involving automatic stabilisation of the line of sight; ([tilt compensation in general G12B](#); [regulation of direction in general G05D3/00](#))
- G01C5/04 . Hydrostatic levelling, i.e. by flexibly interconnected liquid containers at separated points
- G01C5/06 . by using barometric means ([barometers per se G01L](#))
- G01C7/00** **Tracing profiles** (by photogrammetry [G01C11/00](#))
- G01C7/02 . of land surfaces
- G01C7/04 . . involving a vehicle which moves along the profile to be traced
- G01C7/06 . of cavities, e.g. tunnels ([survey of wells E21B47/00](#))
- G01C9/00** **Measuring inclination, e.g. by clinometers, by levels** [N: ([switches operated by inclination or orientation H01H35/02](#))] [C9509]
- G01C9/00A . [N: specially adapted for use in aircraft]

- G01C9/02 . Details
- G01C9/04 . . Transmission means between sensing element and final indicator for giving an enlarged reading
- G01C9/06 . . Electric or photoelectric indication or reading means
- G01C9/08 . . Means for compensating acceleration forces due to movement of instrument
- G01C9/10 . by using rolling bodies [N: e.g. spheres, cylinders, mercury droplets (tilting mercury container switches [H01H29/20](#))]
- G01C9/12 . by using a single pendulum (plumb lines [G01C15/10](#))
- G01C9/14 . . movable in more than one direction
- G01C9/16 . by using more than one pendulum
- G01C9/18 . by using liquids
- G01C9/20 . . the indication being based on the inclination of the surface of a liquid relative to its container
- G01C9/22 . . . with interconnected containers in fixed relation to each other
- G01C9/24 . . in closed containers partially filled with liquid so as to leave a gas bubble
- G01C9/26 . . . Details
- G01C9/28 . . . . Mountings
- G01C9/30 . . . . Means for adjusting dimensions of bubble
- G01C9/32 . . . . Means for facilitating the observation of the position of the bubble, e.g. illuminating means
- G01C9/34 . . . of the tubular type, i.e. for indicating the level in one direction only
- G01C9/36 . . . of the spherical type, i.e. for indicating the level in all directions

**G01C11/00** **Photogrammetry or videogrammetry, e.g. stereogrammetry; Photographic surveying** (cameras combined with surveying instruments, e.g. with theodolites, [G01C1/00](#), [G01C3/00](#), [G01C5/00](#), [G01C9/00](#); surveying cameras [G03B37/00](#)) [C0410]

[N: **WARNING**

[N1207] The following IPC group is not used in the internal ECLA classification scheme: Subject-matter covered by this group is classified in the following ECLA groups:

[G01C11/36](#) covered by [G01C11/00](#) to [G01C11/34](#)

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- G01C11/02 . Picture taking arrangements specially adapted for photogrammetry or photographic surveying, e.g. controlling overlapping of pictures
- G01C11/02A . . [N: by scanning the object]
- G01C11/04 . Interpretation of pictures
- G01C11/06 . . by comparison of two or more pictures of the same area
- G01C11/08 . . . the pictures not being supported in the same relative position as when they were taken
- G01C11/10 . . . . using computers to control the position of the pictures (computers per se [G06](#))
- G01C11/12 . . . the pictures being supported in the same relative position as when they were

taken

- G01C11/14 . . . . with optical projection ([G01C11/26](#) takes precedence)
- G01C11/16 . . . . . in a common plane
- G01C11/18 . . . . . involving scanning means
- G01C11/20 . . . . . in separate planes
- G01C11/22 . . . . with mechanical projection ([G01C11/26](#) takes precedence)
- G01C11/24 . . . . with optical-mechanical projection ([G01C11/26](#) takes precedence)
- G01C11/26 . . . . using computers to control the position of the pictures (computers per se [G06](#))
- G01C11/28 . . . Special adaptation for recording picture point data, e.g. for profiles
- G01C11/30 . . by triangulation
- G01C11/32 . . . Radial triangulation
- G01C11/34 . . . Aerial triangulation

**G01C13/00** **Surveying specially adapted to open water, e.g. sea, lake, river, canal** (liquid level metering [G01F](#); measuring liquid velocity [G01P](#); determining existence of flow of underground water [G01V](#))

- G01C13/00A . [N: Measuring the movement of open water]
- G01C13/00A1 . . [N: vertical movement]
- G01C13/00A2 . . [N: horizontal movement]
- G01C13/00B . [N: measuring depth of open water]

**G01C15/00** **surveying instruments or accessories not provided for in groups [G01C1/00](#) to [G01C13/00](#)**

- G01C15/00A . [N: Active optical surveying means (optical plumbing [G01C15/10A](#))] [C9504]
- G01C15/00A1 . . [N: Reference lines, planes or sectors] [C0801]
- G01C15/00A1D . . . [N: Detectors therefor]
- G01C15/00A3 . . [N: combined with inclination sensor] [C9602]
- G01C15/02 . Means for marking measuring points
- G01C15/04 . . Permanent marks; Boundary markers
- G01C15/06 . . Surveyors` staffs; Movable markers
- G01C15/08 . . . Plumbing or registering staffs or markers over ground marks
- G01C15/10 . Plumb lines
- G01C15/10A . . [N: Optical plumbing] [N9504]
- G01C15/12 . Instruments for setting out fixed angles, e.g. right angles
- G01C15/14 . Artificial horizons (tilt compensation in general [G02B](#))

**G01C17/00** **Compasses; Devices for ascertaining true or magnetic north for navigation or surveying purposes** (using gyroscopic effect [G01C19/00](#); for geophysical or prospecting purposes [G01V3/00](#))

- G01C17/02 . Magnetic compasses
- G01C17/04 . . with north-seeking magnetic elements, e.g. needles
- G01C17/06 . . . Suspending magnetic elements
- G01C17/08 . . . . by flotation
- G01C17/10 . . . Comparing observed direction with north indication
- G01C17/12 . . . . by sighting means, e.g. for surveyors` compasses
- G01C17/14 . . . . by reference marks, e.g. for ships` compasses
- G01C17/16 . . . . by clinometers, e.g. for determining dip or strike of geological strata
- G01C17/18 . . . Supporting or suspending compasses, e.g. by gimbal, by flotation
- G01C17/20 . . . Observing the compass card or needle
- G01C17/22 . . . . by projection
- G01C17/24 . . . . Illumination
- G01C17/26 . . . . using electric pick-offs for transmission to final indicator, e.g. photocell
- G01C17/28 . . Electromagnetic compasses (with north seeking magnetic elements and having electric pick-offs [G01C17/26](#))
- G01C17/30 . . . Earth-inductor compasses
- G01C17/32 . . . Electron compasses
- G01C17/34 . Sun- and astro-compasses
- G01C17/36 . Repeaters for remote indication of readings of a master compass
- G01C17/38 . Testing, calibrating, or compensating of compasses
  
- G01C19/00** **Gyroscopes; Turn-sensitive devices using vibrating masses; Turn-sensitive devices without moving masses; Measuring angular rate using gyroscopic effects** [\[C1106\]](#) [\[C1208\]](#)
- G01C19/02 . Rotary gyroscopes
- G01C19/02A . . [\[N: Special arrangements for gyros functioning during a short period\]](#)
- G01C19/04 . . Details
- G01C19/06 . . . Rotors
- G01C19/06A . . . . [\[N: Measurement or control of angular velocity, specifically adapted to gyrorotors \(measuring angular speed in general \[G01P\]\(#\); controlling angular speed \[G05D13/00\]\(#\); controlling electrical motors \[H02P\]\(#\)\)\]](#)
- G01C19/08 . . . . electrically driven ([G01C19/14](#) takes precedence; dynamoelectric machines [H02K](#))
- G01C19/10 . . . . . Power supply
- G01C19/12 . . . . fluid driven ([G01C19/14](#) takes precedence)
- G01C19/14 . . . . Fluid rotors
- G01C19/16 . . . Suspensions; Bearings (bearings in general [F16C](#); balancing rotors [G01M](#))
- G01C19/18 . . . . providing movement of rotor with respect to its rotational axes ([G01C19/20](#), [G01C19/24](#) takes precedence)
- G01C19/20 . . . . in fluid
- G01C19/22 . . . . torsional

- G01C19/24 . . . . using magnetic or electrostatic fields
- G01C19/26 . . . Caging, i.e. immobilising moving parts, e.g. for transport ([applicable to instruments in general G01D11/20](#))
- G01C19/28 . . . Pick-offs, i.e. devices for taking-off an indication of the displacement of the rotor axis
- G01C19/30 . . . Erection devices, i.e. devices for restoring rotor axis to a desired position ([for instrument indicating the vertical G01C19/46](#))
- G01C19/32 . . . Indicating or recording means specially adapted for rotary gyroscopes ([in general G01D](#))
- G01C19/34 . . for indicating a direction in the horizontal plane, e.g. directional gyroscopes
- G01C19/36 . . . with north-seeking action by magnetic means, e.g. gyromagnetic compasses
- G01C19/38 . . . with north-seeking action by other than magnetic means, e.g. gyrocompasses using earth's rotation
- G01C19/40 . . for control by signals from a master compass, i.e. repeater compasses
- G01C19/42 . . for indicating rate of turn; for integrating rate of turn
- G01C19/44 . . for indicating the vertical
- G01C19/46 . . . Erection devices for restoring rotor axis to a desired position
- G01C19/48 . . . . operating by electrical means ([G01C19/54 takes precedence](#))
- G01C19/50 . . . . operating by mechanical means ([G01C19/54 takes precedence](#))
- G01C19/52 . . . . operating by fluid means ([G01C19/54 takes precedence](#))
- G01C19/54 . . . . with correction for acceleration forces due to movement of instrument
  
- G01C19/56 . Turn-sensitive devices using vibrating masses, e.g. vibratory angular rate sensors based on Coriolis forces [[C1106](#)]
  
- [N: Notes**
- [\[C1106\] Attention is drawn to the Notes following the titles of class B81 and subclass B81B relating to "micro-structural devices" and "micro-structural systems"](#)
- ]**
  
- G01C19/5607 . . using vibrating tuning forks ([double-ended tuning forks using planar vibrating masses suspended at opposite ends G01C19/5719](#)) [[N1106](#)]
- G01C19/5614 . . . Signal processing [[N1106](#)]
- G01C19/5621 . . . the devices involving a micro-mechanical structure [[N1106](#)]
- G01C19/5628 . . . Manufacturing; Trimming; Mounting; Housings [[N1106](#)]
- G01C19/5635 . . using vibrating wires or strings [[N1106](#)]
- G01C19/5642 . . using vibrating bars or beams [[N1106](#)]
- G01C19/5649 . . . Signal processing [[N1106](#)]
- G01C19/5656 . . . the devices involving a micro-mechanical structure [[N1106](#)]
- G01C19/5663 . . . Manufacturing; Trimming; Mounting; Housings [[N1106](#)]
- G01C19/567 . . using the phase shift of a vibration node or antinode [[N1106](#)]
- G01C19/5677 . . . of essentially two-dimensional vibrators, e.g. ring-shaped vibrators [[N1106](#)]
- G01C19/5684 . . . . the devices involving a micro-mechanical structure [[N1106](#)]
- G01C19/5691 . . . of essentially three-dimensional vibrators, e.g. wine glass-type vibrators [[N1106](#)]
- G01C19/5698 . . using acoustic waves, e.g. surface acoustic wave gyros [[N1106](#)]
- G01C19/5705 . . using masses driven in reciprocating rotary motion about an axis [[N1106](#)]
- G01C19/5712 . . . the devices involving a micro-mechanical structure [[N1106](#)]

- G01C19/5719 . . . using planar vibrating masses driven in a translation vibration along an axis [N1106]
- G01C19/5726 . . . . Signal processing [N1106]
- G01C19/5733 . . . . Structural details or topology [N1106]
- G01C19/574 . . . . . the devices having two sensing masses in anti-phase motion [N1106]
- G01C19/5747 . . . . . . each sensing mass being connected to a driving mass, e.g. driving frames [N1106]
- G01C19/5755 . . . . . the devices having a single sensing mass [N1106]
- G01C19/5762 . . . . . . the sensing mass being connected to a driving mass, e.g. driving frames [N1106]
- G01C19/5769 . . . . Manufacturing; Mounting; Housings [N1106]
- G01C19/5776 . . . Signal processing not specific to any of the devices covered by groups [G01C19/5607](#) to [G01C19/5719](#) [N1106]
- G01C19/5783 . . . Mountings or housings not specific to any of the devices covered by groups [G01C19/5607](#) to [G01C19/5719](#) [N1106]
  
- G01C19/58 . Turn-sensitive devices without moving masses
- G01C19/60 . . . Electronic or nuclear magnetic resonance gyrometers ([magnetic resonance arrangements in general G01R33/20](#))
- G01C19/62 . . . . with optical pumping
- G01C19/64 . . . Gyrometers using the Sagnac effect, i.e. rotation-induced shifts between counter-rotating electromagnetic beams
- G01C19/66 . . . . Ring laser gyrometers ([ring lasers in general H01S3/083](#))
- G01C19/66D . . . . . [N: details]
- G01C19/66D2 . . . . . . [N: signal readout; dither compensators]
- G01C19/66D2R . . . . . . . [N: means for removing the dither signal]
- G01C19/66D4 . . . . . . [N: control of the cavity ([of lasers in general H01S3/10](#))]
- G01C19/66M . . . . . [N: using a multioscillator ring laser]
- G01C19/66T . . . . . [N: Assemblies for measuring along different axes, e.g. triads]
- G01C19/68 . . . . . Lock-in prevention
- G01C19/70 . . . . . . by mechanical means
- G01C19/72 . . . . with counter-rotating light beams in a passive ring, e.g. fibre laser gyrometers
- G01C19/72D . . . . . [N: Details]
- G01C19/72D2 . . . . . . [N: of the mechanical construction]
- G01C19/72H . . . . . [N: Heterodyning fibre optic gyrometers]
- G01C19/72K . . . . . [N: using nxn optical couplers, e.g. 3x3 couplers]
- G01C19/72N . . . . . [N: Phase nulling gyrometers, i.e. compensating the Sagnac phase shift in a closed loop system]
- G01C19/72P . . . . . [N: using a passive ring resonator]
- G01C19/72T . . . . . [N: Assemblies for measuring along different axes, e.g. triads]
  
- G01C21/00** . **Navigation; Navigational instruments not provided for in preceding groups** (measuring distance traversed on the ground by a vehicle [G01C22/00](#); measuring linear or angular speed or acceleration [G01P](#); control of position, course, altitude or attitude of vehicles [G05D1/00](#); traffic control systems [G08G](#)) [C0109]
  
- G01C21/00C . . [N: with correlation of navigation data from several sources, e.g. map or contour]

- matching ([G01C21/30](#) takes precedence)] [C1207]
- G01C21/02 . by astronomical means ([G01C21/24](#), [G01C21/26](#) take precedence; measuring time by using position of the sun, moon, or stars [G04B49/00](#)) [C0109]
  - G01C21/02A . . [N: with the use of startrackers]
  - G01C21/04 . by terrestrial means ([G01C21/24](#), [G01C21/26](#) take precedence; marking of navigation route for ships [B63B51/00](#)) [C0109]
  - G01C21/06 . . involving measuring of drift angle; involving correction for drift
  - G01C21/08 . . involving use of the magnetic field of the earth
  - G01C21/10 . by using measurements of speed or acceleration ([G01C21/24](#), [G01C21/26](#) take precedence) [N0109]
  - G01C21/12 . . . . . executed aboard the object being navigated; Dead reckoning
  - G01C21/14 . . . . . by recording the course traversed by the object ([G01C21/16](#) takes precedence)
  - G01C21/16 . . . . . by integrating acceleration or speed, i.e. inertial navigation
  - G01C21/16A . . . . . [N: combined with non-inertial navigation instruments]
  - G01C21/18 . . . . . Stabilised platforms, e.g. by gyroscope
  - G01C21/20 . Instruments for performing navigational calculations ([G01C21/24](#), [G01C21/26](#) take precedence; adaptations of digital computers to a specific function or application [G06F17/00](#), [G06F19/00](#)) [C0109]
  - G01C21/20A . . [N: Specially adapted for sailing ships]
  - G01C21/20B . . [N: specially adapted for indoor navigation] [N1204]
  - G01C21/22 . . Plotting boards (in general [B43L](#))
  - G01C21/24 . specially adapted for cosmonautical navigation
  - G01C21/26 . specially adapted for navigation in a road network [N0001]
  - G01C21/26C . . [N: constructional aspects of navigation devices, e.g. housings, mountings, displays ([G01C21/36S](#) takes precedence)] [N1204]
  - G01C21/28 . . with correlation of data from several navigational instruments [N0001]
  - G01C21/30 . . . . . Map- or contour-matching [N0001]
  - G01C21/32 . . . . . Structuring or formatting of map data [N0001]
  - G01C21/34 . . Route searching; Route guidance [N0001]
  - G01C21/34A . . . . . [N: specially adapted for specific applications] [N1106] [C1207]
  - G01C21/34A1 . . . . . [N: Dynamic re-routing, e.g. recalculating the route when the user deviates from calculated route or after detecting real-time traffic data or accidents] [N1106]
  - G01C21/34A2 . . . . . [N: Multimodal routing, i.e. combining two or more modes of transportation, where the modes can be any of e.g. driving, walking, cycling, public transport] [N1106]
  - G01C21/34A3 . . . . . [N: Calculating itineraries, i.e. routes leading from a starting point to a series of categorical destinations using a global route restraint, round trips, touristic trips ([travelling salesman problem](#) [G06Q10/00B](#); optimisation of routes [G06Q10/00B4](#))] [N1106]
  - G01C21/34A4 . . . . . [N: Rendez-vous, i.e. searching a destination where several users can meet, and the routes to this destination for these users; Ride sharing, i.e.

- searching a route such that at least two users can share a vehicle for at least part of the route] [N1108]
- G01C21/34B . . . [N: Details of route searching algorithms, e.g. Dijkstra, A\*, arc-flags, using precalculated routes] [N1108]
- G01C21/34C . . . [N: Special cost functions, i.e. other than distance or default speed limit of road segments] [N1106]
- G01C21/34C1 . . . . [N: Preferred or disfavoured areas, e.g. dangerous zones, toll or emission zones, intersections, manoeuvre types, segments such as motorways, toll roads, ferries] [N1106]
- G01C21/34C2 . . . . [N: Fuel consumption; Energy use; Emission aspects] [N1106] [C1207]
- G01C21/34C3 . . . . [N: using point of interest [POI] information, e.g. a route passing visible POIs] [N1106]
- G01C21/34C4 . . . . [N: Personalized, e.g. from learned user behaviour or user-defined profiles] [N1106]
- G01C21/34C5 . . . . [N: employing speed data or traffic data, e.g. real-time or historical (traffic control systems for road vehicles involving transmission of navigation instructions to the vehicle [G08G1/0968](#))] [N1106]
- G01C21/36 . . . Input/output arrangements of navigation systems; [N: Input arrangements for transferring data to be processed into a form capable of being handled by the computer, and output arrangements for transferring data from processing unit to output unit, e.g. interface arrangements [G06F3/00](#); pointing devices displaced or positioned by the user, e.g. mice, trackballs, pens or joysticks, and accessories therefor [G06F3/033](#); interaction techniques for graphical user interfaces, e.g. interaction with windows, icons or menus [G06F3/048](#); Manipulating 3D models or images for computer graphics [G06T19/00](#)] [N0001] [C1106]
- G01C21/36C . . . . [N: Input other than that of destination using image analysis, e.g. detection of road signs, lanes, buildings, real preceding vehicles using a camera (image data processing per se [G06T](#))] [N1106]
- G01C21/36D . . . . [N: Destination input or retrieval] [N1106]
- G01C21/36D1 . . . . . [N: using speech input, e.g. using speech recognition (speech recognition per se [G10L15/00](#))] [N1106]
- G01C21/36D2 . . . . . [N: using character input or menus, e.g. menus of POIs (character input methods in general [G06F3/023M](#))] [N1106]
- G01C21/36D3 . . . . . [N: through interaction with a road map, e.g. selecting a POI icon on a road map] [N1106]
- G01C21/36D4 . . . . . [N: using user history, behaviour, conditions or preferences, e.g. predicted or inferred from previous use or current movement] [N1106] [C1207]
- G01C21/36D5 . . . . . [N: received from an external device or application, e.g. PDA, mobile phone or calendar application] [N1106]
- G01C21/36D6 . . . . . [N: using a camera or code reader, e.g. for optical or magnetic codes] [N1106]
- G01C21/36G . . . . [N: Details of the output of route guidance instructions (Traffic control systems for road vehicles involving transmission of navigation instructions to the vehicle [G08G1/0968](#))] [N1106]
- G01C21/36G1 . . . . . [N: Guidance using speech or audio output, e.g. text-to-speech (text to speech systems per se [G10L13/00](#))] [N1106]
- G01C21/36G2 . . . . . [N: Guidance using simplified or iconic instructions, e.g. using arrows (G01C 21/36G7 takes precedence)] [N1106]
- G01C21/36G3 . . . . . [N: Guidance using 3D or perspective road maps] [N1106]

G01C21/36G3D	. . . . .	[N: including 3D objects and buildings (three dimensional [3D] modelling, e.g. data description of 3D objects <a href="#">G06T17/00</a> ; geographic models <a href="#">G06T17/05</a> ] [N1106]
G01C21/36G4	. . . . .	[N: Personalized guidance, e.g. limited guidance on previously travelled routes] [N1106]
G01C21/36G5	. . . . .	[N: Landmark guidance, e.g. using POIs or conspicuous other objects] [N1106]
G01C21/36G6	. . . . .	[N: Guidance involving output of stored or live camera images or video streams] [N1106]
G01C21/36G7	. . . . .	[N: Guidance using head up displays or projectors, e.g. virtual vehicles or arrows projected on the windscreen or on the road itself] [N1106]
G01C21/36G8	. . . . .	[N: Guidance using non-audiovisual output, e.g. tactile, haptic or electric stimuli] [N1106]
G01C21/36G9	. . . . .	[N: Timing of guidance instructions] [N1106]
G01C21/36G10	. . . . .	[N: Lane guidance] [N1106]
G01C21/36G11	. . . . .	[N: Guidance output on an external device, e.g. car radio] [N1106]
G01C21/36K	. . . . .	[N: Details of the user input interface, e.g. buttons, knobs or sliders, including those provided on a touch screen; remote controllers; input using gestures] [N1106]
G01C21/36M	. . . . .	[N: Display of a road map (G01C 21/36D3 takes precedence; guidance using 3D or perspective road maps G01C 21/36G3) [N1106]
G01C21/36M1	. . . . .	[N: Details, e.g. road map scale, orientation, zooming, illumination, level of detail, scrolling of road map or positioning of current position marker] [N1106]
G01C21/36M2	. . . . .	[N: Labelling using text of road map data items, e.g. road names, POI names] [N1106]
G01C21/36M3	. . . . .	[N: Overview of the route on the road map] [N1106]
G01C21/36P	. . . . .	[N: Retrieval, searching and output of POI information, e.g. hotels, restaurants, shops, filling stations, parking facilities (G01C 21/36D2 takes precedence)] [N1106]
G01C21/36P1	. . . . .	[N: output of POI information on a road map ( <a href="#">G01C 21/36D3</a> , <a href="#">G01C21/36P2</a> take precedence)] [N1106] [C1207]
G01C21/36P2	. . . . .	[N: the POI's being parking facilities] [N1204]
G01C21/36S	. . . . .	[N: Systems comprising multiple parts or multiple output devices (not client-server), e.g. detachable faceplates, key fobs or multiple output screens] [N1106]
G01C21/36T	. . . . .	[N: Retrieval, searching and output of information related to real-time traffic, weather, or environmental conditions ( <a href="#">arrangements for giving variable traffic instructions G08G1/09</a> )] [N1106] [M1207]
G01C21/36T1	. . . . .	[N: Output thereof on a road map] [N1106]
G01C21/36W	. . . . .	[N: output of additional, non-guidance related information, e.g. low fuel level, fuel efficient driving, gear change, speeding, dangerous curve ahead, slippery road, school zone, speed traps, driving behaviour feedback, advertising, virtual billboards or road signs ( <a href="#">G01C21/36P</a> takes precedence)] [N1106] [C1207]
<b>G01C22/00</b>		<b>Measuring distance traversed on the ground by vehicles, persons, animals, or other moving solid bodies, e.g. using odometers, using pedometers (<a href="#">counting mechanisms per se G06M</a>)</b>
G01C22/00B	. . . . .	[N: for cycles] [N9501]

- G01C22/00G . [N: for golf carts (wheeled carriers for golf bags [A63B55/08](#))] [N9502]
- G01C22/00P . [N: Pedometers] [N9501]
- G01C22/00S . [N: for skates] [N0009]
- G01C22/02 . by conversion into electric waveforms and subsequent integration, e.g. using tachometer generator [N: ([G01C22/00B](#), [G01C22/00G](#), [G01C22/00P](#) take precedence)] [C9502]
- G01C22/02D . . [N: Differential odometers] [N9501]
  
- G01C23/00** **Combined instruments indicating more than one navigational value, e.g. for aircraft; Combined measuring devices for measuring two or more variables of movement, e.g. distance, speed, acceleration**
  
- G01C23/00A . [N: Flight directors (indicating arrangements specially adapted for rotary gyroscopes [G01C19/32](#); indicating or recording in connection with measuring, in general [G01D](#); control of course of land or air vehicles by controlling or regulating non-electric variables [G05D1/00](#); arrangements or adaptations of instruments for aircraft [B64D43/00](#))]
  
- G01C25/00** **Manufacturing, calibrating, cleaning, or repairing instruments and devices referred to in the preceding groups (testing, calibrating and compensating compasses [G01C17/38](#))**
  
- G01C25/00A . [N: initial alignment, calibration or starting-up of inertial devices]