

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](#)})

Definition statement

This place covers:

Traffic control; traffic monitoring.

Identification of traffic offenders.

Anti-collision systems.

Navigation systems wherein the calculation of the navigation route takes into account traffic situation. The navigation route can be carried out onboard or offboard.

Relationships with other classification places

Subclass [G08G](#) covers arrangements, located in land, water, air or space vehicles or on the ground, for controlling road vehicles, marine craft or aircraft within a traffic environment, e.g. anti-collision systems.

This subclass does not cover arrangements for the control of position, course, altitude or attitude of land, water, air or space vehicles, not being specific to a traffic environment, e.g. automatic pilots, unmanned vehicles, which are covered by group [G05D 1/00](#).

Radar or analogous systems, sonar systems or lidar systems specially adapted for traffic control or anti-collision systems are covered by specific groups of subclass [G01S](#) (see below).

References

Limiting references

This place does not cover:

Guiding railway traffic, ensuring the safety of railway traffic	B61L
Radar or analogous systems, sonar systems or lidar systems specially adapted for traffic control	G01S 13/91 , G01S 15/88 , G01S 17/88
Radar or analogous systems, sonar systems or lidar systems specially adapted for anti-collision purposes	G01S 13/93 , G01S 15/93 , G01S 17/93
Control of position, course, altitude or attitude of land, water, air or space vehicles, not being specific to a traffic environment, e.g. automatic pilots	G05D 1/00

Informative references

Attention is drawn to the following places, which may be of interest for search:

Navigation, i.e. determining the position and course of land vehicles, ships, aircrafts or space vehicles	G01C 21/00
Combined instruments indicating more than one navigational value	G01C 23/00
Head-up displays	G02B 27/01

Pattern recognition	G06F 18/00
Image analysis	G06T 7/00
Maps, route diagrams	G09B 29/00
Services making use of the location of users or terminals, specially adapted for wireless communication networks	H04W 4/02

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Fleet	Designates (land, water, air or space) vehicles belonging to a group for a specific purpose and monitored by a common central station
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G08G 1/00

Traffic control systems for road vehicles (arrangement of road signs or traffic signals [E01F 9/00](#) {; automatic vehicle control [B62D](#)})

Definition statement

This place covers:

Arrangements for controlling road vehicles within a traffic environment, e.g. anti-collision systems.

Traffic signal control.

Traffic lights per se.

Vehicle position monitoring for fleet management.

Management of passenger vehicles circulating according to a fixed time schedule, e.g. buses, trains or trams. Indication of free spaces in parking areas.

Platooning, i.e. the control of the admission or release of vehicles to or from a platoon (a synonym for "convoy", see Glossary). This includes the organisation of vehicles within platoons, involving an exchange of information between the control system and the vehicles, i.e. the number of vehicles, acceptance or refusal of new vehicles in the platoon, and where in the platoon the new vehicle may be inserted.

Relationships with other classification places

Group [B60W 30/00](#) covers drive control systems using conjoint control of vehicle sub-units for road vehicles under the drive of a human being, whereby the control is of single vehicles. Examples are: drive control systems for predicting or avoiding probable or impending collision otherwise than by control of a particular sub-unit, covered by group [B60W 30/08](#); cruise control, covered by group [B60W 30/14](#); and cruise control of distance between vehicles, e.g. keeping a distance to preceding vehicle, covered by [B60W 30/16](#).

This group covers traffic lights per se (under [G08G 1/095](#)). Mechanical aspects of light devices for fixed installations are covered by group [F21S 8/00](#), advertising or display means on roads are covered by group [G09F 19/22](#), circuits arrangements for electric light sources in general are covered by group [H05B 47/00](#).

References

Limiting references

This place does not cover:

Guiding railway traffic, ensuring the safety of railway traffic	B61L
Arrangement of road signs or traffic signals	E01F 9/00
Arrangements for measuring levels and bearings for surveillance and navigation	G01C
Radio navigation systems, e.g. for locating, measuring distances or velocity	G01S
Automatic vehicles	G05D
Road pricing or congestion charging of vehicles or vehicle users	G07B 15/06
Details of display instrumentation	G09F , G09G

Informative references

Attention is drawn to the following places, which may be of interest for search:

Safety devices for propulsion-unit control, specially adapted for or arranged in vehicles	B60K 28/00
Vehicle fittings for automatically controlling vehicle speed	B60K 31/00
Arrangements or adaptations of optical signalling or lightning devices	B60Q 1/00
Optical viewing arrangements for cars	B60R 1/00
Arrangements or fittings on vehicles for protecting or preventing injuries to occupants or pedestrians in case of accidents or other traffic risks	B60R 21/00
Vehicle fittings for preventing or indicating unauthorised use or theft of vehicles	B60R 25/00
Vehicle brake control system	B60T
Road vehicle drive control systems for predicting or avoiding probable or impending collision otherwise than by control of a particular sub-unit	B60W 30/08
Road vehicle cruise control, e.g. for controlling the distance between vehicles	B60W 30/14
Cruise control of distance between road vehicles, e.g. keeping a distance to preceding vehicle	B60W 30/16
Steering controls	B62D 1/00
Arrangement of road signs or traffic signals	E01F 9/00
Light devices intended for fixed installation	F21S 8/00
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
Registering or indicating the working of vehicles	G07C 5/00
Parking meters	G07F 17/24
Advertising or display means on roads	G09F 19/22
Circuits arrangements for electric light sources in general	H05B 47/00

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

C onvoy / platoon	means a group of vehicles which is controlled as a whole by exchange of data or information between the vehicles themselves (i.e. inter-vehicle communication) or with one or more external sources (i.e. central source or distributed sources)
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G08G 1/005

including pedestrian guidance indicator

Definition statement

This place covers:

Devices for pedestrians in road traffic situations.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Aiding invalids to walk about with electronic detecting means	A61H 3/061 , G09B 21/00
Counting means; controlling and registering access of persons to restricted areas or devices	G07C 9/00
The pass performing a presence indicating function	G07C 9/28

G08G 1/01

Detecting movement of traffic to be counted or controlled
([G08G 1/07](#) - [G08G 1/14](#) take precedence)

References

Limiting references

This place does not cover:

Controlling traffic signals to indicating individual free spaces in parking areas	G08G 1/07 - G08G 1/14)
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Arrangements or apparatus for collecting fares, tolls or entrance fees at a control point	G07B 15/00
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G08G 1/0104

{Measuring and analyzing of parameters relative to traffic conditions}

Definition statement

This place covers:

Statistic measurements by means of data collection.

Traffic data analysis by means of mathematical methods.

Floating car (FCD): the data is collected by the vehicle and it is then transferred to a central station.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Machine learning	G06N 20/00
Registering or indicating the working of vehicles	G07C 5/00:
Communicating information to a remotely located station	G07C 5/008
Locating users or terminals	H04W 64/00
With additional information processing	H04W 64/006

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

FCD	Floating Car Data
xFCD	extended Floating Car Data

G08G 1/015

with provision for distinguishing between two or more types of vehicles, e.g. between motor-cars and cycles

Definition statement

This place covers:

to distinguish between car, bus, truck and different categories of vehicles being able to make a distinction between the type of vehicles.

G08G 1/017

identifying vehicles ([G08G 1/015](#), [G08G 1/054](#) take precedence)

Definition statement

This place covers:

To identify a specific car, for example plate number, driver, colour etc. How to recognize specific vehicles overtrading a highway rule.

Identifying the specific vehicle, plate number, colour etc.

References

Limiting references

This place does not cover:

Distinguishing between two or more types of vehicles	G08G 1/015
Photographing over speeding vehicles	G08G 1/054

Informative references

Attention is drawn to the following places, which may be of interest for search:

Gantries or semi-gantries	E01F 9/696
Image acquisition, target detection	G06V 10/255
Toll systems	G07B 15/00
Individual entry or exit registers	G07C 9/00

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

AVI	Automatic Vehicle Identification
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G08G 1/02

using treadles built into the road (pads or other sensitive devices responsive to passage of vehicles [E01F 11/00](#))

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Road surface markings, informing road users e.g. illuminated	E01F 9/50
Pads or other sensitive devices responsive to passage of vehicles	E01F 11/00
Piezoelectric devices; electrostrictive devices; magnetostrictive devices	H10N 30/00
Sensors	H10N 30/30

G08G 1/04

using optical or ultrasonic detectors

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Housing arrangements	G01S 7/4813:
Imaging using radar	G01S 13/89

Informative references

Interferometer, Doppler SAR	G01S 13/90
Systems using the reflection or reradiating of electromagnetic waves other than radio waves	G01S 17/00
For detecting the presence of an object	G01S 17/04
Recognising traffic patterns	G06V 20/54
Video recorder in combination with video camera	G07C 5/0891
Television	H04N 1/38
Closed TV Systems	H04N 7/18

G08G 1/042**using inductive or magnetic detectors****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Electric or magnetic prospecting or detecting	G01V 3/00:
Operating with magnetic or electric fields produced or modified by objects or geological structures or by detecting devices	G01V 3/08
Using induction coils	G01V 3/10
Antennas in association with traffic control	H01Q 1/3225

G08G 1/048**with provision for compensation of environmental or other condition, e.g. snow, vehicle stopped at detector****Definition statement**

This place covers:

With the aim that the identification systems work properly

To ensure the proper functioning of the device.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Meteorology	G01W 1/00
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G08G 1/052

with provision for determining speed or overspeed {(speed measuring in general [G01P](#))}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Controlling speed by externally generated signals	B60K 31/0058
Including a device to audibly, visibly or otherwise signal the existence of unusual or unintended speed	B60K 31/18
Speed measuring in general	G01P
Velocity or direction measurement instrument designed for traffic control	G01S 13/92
Cameras for overspeed	H04N 23/60

G08G 1/07**Controlling traffic signals****Definition statement**

This place covers:

For crossings or accesses to highways.

Refers especially to traffic lights / for control or monitoring of a multiplicity of traffic signals and not individual ones

Cycle: of traffic light, i.e. red/green/yellow / Green wave etc.

G08G 1/075**{Ramp control}****Definition statement**

This place covers:

Access to highways: e.g. monitoring driving on the wrong way, warning when entering in the wrong direction etc.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Road crossings on different levels; interconnections between roads on different levels; Structure of roads	E01C 1/04
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G08G 1/085

using a free-running cyclic timer

Definition statement

This place covers:

Fixed frequency without external triggers.

G08G 1/087

Override of traffic control, e.g. by signal transmitted by an emergency vehicle

Definition statement

This place covers:

When emergency vehicle brakes the cycle for passing and in this way it changes the light of traffic lights to prevent collisions with emergency vehicle

Changing the green light cycles so that emergency vehicles find the traffic lights always in green and avoid possible accidents.

G08G 1/09

Arrangements for giving variable traffic instructions ({railroad crossing signals [B61L](#); reflectors [E01F](#), [G08B](#)}; indicating arrangements for variable information by selection or combination of individual elements [G09F 9/00](#))

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Electric circuits in a car	B60R 16/02
Railroad crossing signals	B61L
Reflectors	E01F , G08B
Road surface markings	E01F 9/50 , E01F 9/576 , E01F 9/594
Specially adapted for audible or vibrational signalling, e.g. rumble strips across a lane, or for enforcing reduced speed, e.g. speed	E01F 9/529
Arrangements for executing specific programmes	G06F 9/44
Information retrieval	G06F 16/00
Systems or methods specially adapted for administrative, commercial, financial, managerial or supervisory purposes, not involving significant data processing	G06Q 90/00
Traffic signs	G09F 7/00 , G09F 9/00 , G09F 11/00
Indicating arrangements for variable information by selection or combination of individual elements	G09F 9/00
Radio transmission systems, i.e. using radiation field	H04B 7/00
Adapted for handsfree use in a vehicle	H04M 1/6075
By interfacing with the vehicle audio system	H04M 1/6083

Including a wireless interface	H04M 1/6091
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G08G 1/091

{Traffic information broadcasting (broadcasting communication [H04H](#))}

Definition statement

This place covers:

Structure and reception of radio messages such as RDS, TMC.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Construction details of receivers to be used in vehicles	H04B 1/082
Broadcasting communication	H04H
Digital broadcasting	H04H 20/00 - H04H 60/98
Broadcasting communication, signal waveform	H04H 20/65

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

DAB	Digital Audio Broadcasting
RDS-TMC	Traffic Message Control

G08G 1/095

Traffic lights

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Control	G08G 1/07
Supervision	G08G 1/097
Appliances for aiding invalids to walk about	A61H 3/00
Arrangement of road signs or traffic signals. Only for mechanical aspects	E01F 9/00
Mobile luminous signs	E01F 9/615
Arrangements for obstructing or restricting traffic, e.g. gates, barricades (for railway crossings B61L); preventing passage of vehicles of selected category or dimensions (E01F 13/12 , E01F 13/126 take precedence)]	E01F 13/00
free-standing; portable, e.g. for guarding open manholes	E01F 13/02
For supporting on, or attaching to, an object, e.g. tree, gate, window-frame, cycle	F16M 13/02
Traffic lights, pillar shaped lights	F21S 8/00

Informative references

Traffic lights; devices intended for fixed installation; pillar shaped lights; lights arranged on top of each other	F21S 8/00
Optical elements other than lenses	G02B 5/00
With means for preventing ghost images	G02B 27/0018
Audible signalling systems	G08B 3/00
Audible signalling systems; Audible personal calling systems	G08B 3/00
Signalling systems according to more than one of groups	G08B 7/00
Signalling systems according to more than one of groups, personal calling systems.	G08B 7/00
Combination of elements; lights composed of LED's. No lightning, more arrangement	G09F 9/33
Lights composed of LEDs	G09F 9/33
Illuminated signs / luminous advertising	G09F 13/00
Miscellaneous advertising or display means not provided for elsewhere	G09F 19/00
Using special optical effects	G09F 19/12
Combined visual and audible advertising or displaying	G09F 27/00
Combined visual and audible advertising or displaying, e.g. for public address	G09F 27/00
Semiconductor devices sensitive to infrared radiation, light, electromagnetic radiation of shorter wavelength or corpuscular radiation and adapted either for the conversion of the energy of such radiation into electrical energy or for the control of electrical energy by such radiation.	H01L 31/00
Including a panel or array of photoelectric cells, e.g. solar cells	H01L 31/042
Electroluminescent light sources.	H05B 33/00
LEDs	H05B 33/00
Electric light sources using a combination of different types of light generation.	H05B 35/00
Detecting lamp failure, circuits for controlling signals. lightning	H05B 47/20 , H05B 47/29

G08G 1/096

provided with indicators in which a mark progresses showing the time elapsed, e.g. of green phase

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Illuminated signs in general	G09F 13/00
Advertising or display means on roads, walls, or similar surfaces, e.g. illuminated	G09F 19/22

G08G 1/0962

having an indicator mounted inside the vehicle, e.g. giving voice messages

Definition statement

This place covers:

Management of the information to be presented to the driver. Docs in this group cover two possible aspects:

- The information is neither traffic nor navigation information, since we have 0967 and 0968 for these. "Other" information such as events, advertisements, weather, emails, agenda, music, films, games etc. It can also be the combination of different kinds of information and how the information is outputted e.g. definition of priority, factors for selecting information.
- Details on the output of information to the driver. e.g. on the display using map (not for navigation route! for route display use [G08G 1/0969](#)), highlighting, acoustic, haptic etc. Documents concerning the display of information to the driver, from a general perspective. Also the voice information provided.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Instruments for indicating weather conditions	G01W 1/02
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G08G 1/0967

Systems involving transmission of highway information, e.g. weather, speed limits (transmission of navigation instructions to the vehicle [G08G 1/0968](#))

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Transmission of navigation instructions to the vehicle	G08G 1/0968
Controlling speed by externally generated signals	B60K 31/0058
For measuring distance travelled or combinations of speed and distance	G01C
Engine indicators	G01L
Devices for measuring speed or acceleration	G01P
Registering or indicating the working of vehicles	G07C 5/00

G08G 1/0968

Systems involving transmission of navigation instructions to the vehicle

Definition statement

This place covers:

Navigation systems where traffic info is being transmitted or taken into account for the route

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Dashboard	B60K 37/00
Navigation; Navigational instruments not provided for in preceding groups	G01C 21/00
Navigation or navigational instruments specially adapted for navigation in a road network	G01C 21/26
With correlation of data from several navigational instruments	G01C 21/28
Map- or contour-matching	G01C 21/30
Structuring or formatting of map data	G01C 21/32
Route searching; Route guidance	G01C 21/34
Input/output arrangements for on-board computers	G01C 21/36
Measuring distance traversed on the ground by a vehicle	G01C 22/00
Measuring linear or angular speed or acceleration	G01P
Beacons or beacon systems transmitting signals having a characteristic or characteristics capable of being detected by non-directional receivers and defining directions, positions, or position lines fixed relatively to the beacon transmitters	G01S 1/00
GPS NAVSTAR	G01S 5/145
Control of position, course, altitude or attitude of vehicles	G05D 1/00
Digital computing for optimisation of routes	G06Q 10/047
Optimisation	G06Q 10/047
Locate: mobile terminal for navigation through cellular network	H04Q

G08G 1/096855

{where the output is provided in a suitable form to the driver (details on I/O arrangements for onboard navigation computers [G01C 21/36](#))}

Definition statement

This place covers:

"Suitable" means in this context route instructions readable and understandable by a driver, contrary to coded information which should be interpreted.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Details on I/O arrangements for onboard navigation computers	G01C 21/36
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G08G 1/096877

{where the input to the navigation device is provided by a suitable I/O arrangement (details of I/O arrangements for onboard navigation computers [G01C 21/36](#); I/O arrangements for general purpose computers [G06F 3/00](#))}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Details of I/O arrangements for onboard navigation computers	G01C 21/36
I/O arrangements for general purpose computers	G06F 3/00

G08G 1/0969

having a display in the form of a map

Definition statement

This place covers:

Systems with display appearance of the route in the navigation systems (e.g. bird's eye view, division of the display into different areas, way of representing an arrow).

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

dashboards	B60K 37/00
head-up displays	G02B 27/01
input and output arrangements for transferring data into a form capable to be handled	G06F 3/00
data computing in geographical databases	G06F 16/29
advertisements	G06Q 30/02
2D image generation	G06T 11/00
3D modeling	G06T 17/00
electronic maps	G09B 29/106

G08G 1/097

Supervising of traffic control systems, e.g. by giving an alarm if two crossing streets have green light simultaneously

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Detecting lamp failure	H05B 47/20 , H05B 47/29
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G08G 1/123

indicating the position of vehicles, e.g. scheduled vehicles; {Managing passenger vehicles circulating according to a fixed timetable, e.g. buses, trains, trams} (transmission of navigation instructions to vehicles [G08G 1/0968](#))

Definition statement

This place covers:

for public transport, scheduled vehicles (bus, trams, information transmitted to trains, vehicles using scheduled routes AND scheduled times, bus stop and time table related devices)

References

Limiting references

This place does not cover:

Non-scheduled vehicles	G08G 1/20
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Bus stop signs (constructional details)	E01F 9/60
Position-fixing by co-ordinating two or more direction or position line determinations; Position-fixing by co-ordinating two or more distance determinations	G01S 5/00
Digital computing for optimisation of routes	G06Q 10/047
Location of subscribers	H04W 64/00

G08G 1/127

to a central station {; Indicators in a central station}

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Arrangements or apparatus for collecting fares, tolls or entrance fees at a control point with provision for taking into account a variable factor such as distance or time, e.g. for passenger transport (RENTAL)	G07B 15/02
Communicating information to a remotely located station	G07C 5/008
Adapted for proprietary or special purpose networking environments	H04L 67/12
Ad-hoc network	H04W 84/18

Transmission of position of a stolen car to a central station	B60R 25/102
Transmission from mobile station to base station	G01S 5/0018
Transmission of position information	G01S 2205/001 , G01S 2205/002 , G01S 2205/006

Informative references

Analogue computers for direction-finding, locating or velocity	G06G 7/78
Freight tracking	G06Q 10/08 , G06F 16/40
Digital computing for logistics, e.g. distribution or shipping	G06Q 10/08
Emergency signalling	G08B 25/016
Wireless LAN (WAN)	H04W 88/02

G08G 1/14**indicating individual free spaces in parking areas****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Using electronic distance sensors	B60Q 1/48
Vehicle fittings for preventing or indicating unauthorized use or theft of vehicles	B60R 25/00
Parking in general as buildings	E04H 6/42
Collecting fares, tolls	G07B 15/00
Parking meter	G07C 1/30
Parking time	G07C 5/02
Coin-free apparatus for payments	G07F 17/24

G08G 1/16**Anti-collision systems (road vehicle drive control systems for predicting or avoiding probable or impending collision otherwise than by control of a particular sub-unit [B60W 30/08](#))****Definition statement**

This place covers:

Stand-alone systems, like for example distance regulating systems or parking. Anti-collision when a real danger exists

Collision with another vehicle or an obstacle.

References**Limiting references**

This place does not cover:

Parking aids	B60Q 1/48 , B60T 2201/10
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Safety devices for propulsion-unit control, specially adapted for, or arranged in, vehicles, e.g. preventing fuel supply or ignition in the event of potentially dangerous conditions	B60K 28/00
Responsive to incapacity of driver	B60K 28/06
Vehicle fittings for automatically controlling, i.e. preventing speed from exceeding an arbitrarily established velocity or maintaining speed at a particular velocity, as selected by the vehicle operator	B60K 31/00
Adaptative cruise control (ACC), including means for detecting potential obstacles in vehicle path, speed control (distance)	B60K 31/0008
Responsive to externally generated signalling	B60K 31/0058
Responsive to vehicle path curvature, speed control.	B60K 31/0066
Responsive to vehicle steering angle	B60K 31/0075
Responsive to centrifugal force acting on vehicle due to the path it is following	B60K 31/0083
Arrangements or adaptations of optical signalling or lighting devices.	B60Q 1/00
Use of optical means for parking	B60Q 1/48
Indicating risk of collision between vehicles (active). Signalling inside and outside the vehicle.	B60Q 1/525
Optical viewing arrangements, mirrors	B60R 1/00
Transmission of signals measuring vehicle parameters and indicating critical, abnormal or dangerous conditions	B60R 16/0232
Electric or fluid circuits specially adapted for vehicles /for occupant comfort	B60R 16/037
Arrangements or fittings on vehicles for protecting or preventing injuries to occupants or pedestrians in case of accidents or other traffic risks	B60R 21/00
Brake-action initiating means	B60T 7/00
For automatic initiation; for initiation not subject to will of driver or passenger	B60T 7/12
Arrangements for adjusting wheel-braking force to meet varying vehicular or ground-surface conditions	B60T 8/00
Road vehicle drive control systems for predicting or avoiding probable or impending collision otherwise than by control of a particular sub-unit	B60W 30/08
Travel path/likelihood collision	B60W 30/08
Action on the steering wheel; steering control; changing direction of vehicle	B62D 1/28
Automatic changing of lane, e.g. for passing another vehicle]	B62D 15/0255
Combined with automatic distance control, i.e. electronic to bar]	B62D 15/026
Automatic obstacle avoidance by steering]	B62D 15/0265
Steering not otherwise provided for / parking aids	B62D 15/027
Measuring arrangements characterised by the use of optical means	G01B 11/00
Measuring distances in light of sight (use of electric radiation detectors)	G01C 3/08
Transmission between mobile stations, e.g. anti-collision systems	G01S 5/0072

Informative references

Radars for anti-collision;	G01S 13/93
For land vehicles.	G01S 13/931
Systems using the reflection or reradiating of acoustic waves, e.g. sonar systems	G01S 15/00
Systems using the reflection or reradiation of electromagnetic waves other than radio waves, e.g. lidar systems	G01S 17/00
Position-fixing by co-ordinating two or more direction or position line determinations; Position-fixing by co-ordinating two or more distance determinations	G01S 2205/00
Transmission of position information to remote stations	G01S 2205/001
Or traffic control, mobile tracking, guidance, surveillance or anti-collision	G01S 2205/002
Head-up displays	G02B 27/01
Control of position, course, altitude or attitude of land, water, air or space vehicles using means capturing signals occurring naturally from the environment for determining position or orientation	G05D 1/243
Coordinated control of the position or course of two or more vehicles	G05D 1/69
Coordinated control of the position or course of two or more vehicles for avoiding collisions between vehicles	G05D 1/693
Image analysis, e.g. from bit-mapped to non bit-mapped Algorithms, mathematical calculations	G06T 7/00
3D modeling	G06T 17/00
Extraction of features or characteristics of the image / Detecting partial patterns or configurations, e.g. loops, strokes, intersections] Image recognition	G06V 10/44
Recognizing scenes under surveillance. (surveillance equipment installed on the infrastructure, not portable)	G06V 20/52
Methods or arrangements for reading or recognizing printed or written characters or for recognizing	G06V 20/54
Recognition of scenes perceived from the perspective of a land vehicle (e.g.road recognition) (road lanes, markers, traffic signs; classifying obstacles)	G06V 20/56
Recognition of pedestrian obstacles	G06V 40/103
Registering or indicating the working of vehicles	G07C 5/00
Recording in case of crash	G07C 5/08
Burglar, theft, or intruder alarms / using television cameras	G08B 13/196
Alarms responsive to a single specified undesired or abnormal operating condition and not elsewhere provided for 718 status alarms	G08B 21/00
Alarms for ensuring the safety of persons	G08B 21/02
Indicating a condition of sleep, e.g. anti-dozing alarms	G08B 21/06
Simulators for teaching or training purposes/ for teaching control of vehicles or other craft	G09B 9/02
Closed circuit television systems, i.e. systems in which the signal is not broadcast	H04N 7/18
For receiving images from a plurality of remote sources	H04N 7/181

G08G 1/161**{Decentralised systems, e.g. inter-vehicle communication}****Definition statement***This place covers:*

Two-way communication between vehicles.

G08G 1/162**{event-triggered}****Definition statement***This place covers:*

Two way communication between vehicles determined or triggered by an event like turning, braking, accident,...

Alerting surrounding vehicles of an accident situation: emission of signal to oncoming vehicles after first collision.

G08G 1/20**{Monitoring the location of vehicles belonging to a group, e.g. fleet of vehicles, countable or determined number of vehicles}****Definition statement***This place covers:*

Fleet: vehicles responding to one or several criterias, e.g. vehicle under a common authority, vehicles in a determined area.

References**Limiting references***This place does not cover:*

This is a group which should be outside of G08G 1/123 but for historical reasons it was made a two dot group and we have to cope with this structure.	G08G 1/123
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Informative references*Attention is drawn to the following places, which may be of interest for search:*

stolen cars	B60R 2025/1016
ACC	B60W 30/14
Distance control	B60W 30/16
Transmission of location from mobile stations to central station	G01S 5/0018
Combination of GPS with other systems	G01S 19/45
Transmission of position information	G01S 2205/001
Coordinated control of the position or course of two or more vehicles	G05D 1/69

Informative references

Coordinated control of the position or course of two or more vehicles for maintaining a fixed relative position of the vehicles, e.g. for convoy travelling or formation flight	G05D 1/695
Coordinated control of the position or course of two or more vehicles using a lead vehicle, e.g. primary-secondary arrangements	G05D 1/6985
Coordinated control of the position or course of two or more vehicles by centralised control off-board any of the vehicles	G05D 1/6987
Organisation (systems or methods specially adapted for administrative, commercial, financial, managerial or supervisory purposes)	G06Q
Cargo logistics / routing	G06Q 10/00
Systems or methods specially adapted for administrative, commercial, financial, managerial or supervisory purposes, not involving significant data processing	G06Q 90/00
Transmitting operation measurements to the central station	G07C 5/008
Emergency signalling	G08B 25/016
Simulators for teaching or training purposes	G09B 9/04
Wireless LANs	H04L 12/28
Communication control / in which the network application is adapted for the location of the user terminal	H04L 67/52
Cordless telephones	H04M 1/725
Telephonic communication system with fire, police, burglar or other alarm systems	H04M 11/04
Services specially adapted for wireless communication networks making use of the location of users or terminals	H04W 4/02
Mobile subscribers locations	H04W 64/00

G08G 3/00**Traffic control systems for marine craft (marking of navigational route [B63B 22/16](#), [B63B 51/00](#))****Definition statement**

This place covers:

Arrangements, located in marine craft or in the sea, for controlling marine craft within a traffic environment, e.g. anti-collision systems.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Buoys specially adapted for marking a navigational route	B63B 22/16
Marking of navigational route	B63B 22/16 , B63B 51/00

G08G 3/02

Anti-collision systems

Definition statement

This place covers:

Warning to avoid collision with other vessels or fixed obstacles.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Arrangements of nautical instruments or navigational aids	B63B 49/00
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G08G 5/00

Traffic control systems for aircraft {, e.g. air-traffic control [ATC]}

Definition statement

This place covers:

This groups covers arrangements, located in the aircraft or on the ground, for controlling aircraft within a traffic environment, and anti-collision systems.

Automatic landing aids

Systems for air traffic control with exchange of information;

- Plurality of aircrafts
- Military including flight formation
- Exchange of information
- Stand-alone with multiple sources of information (e.g. for control)

References

Limiting references

This place does not cover:

Landing aids fitted in or to aircraft; safety measures fitted in or to aircraft to prevent collision with earth's surface	B64D 45/04
Visual or acoustic landing aids on the ground or on aircraft-carrier decks	B64F 1/18
Arrangements for control of position, course, altitude or attitude of aircraft not specific to a traffic environment, e.g. automatic pilots	G05D 1/00

Informative references

Attention is drawn to the following places, which may be of interest for search:

Mechanical aspects of equipment for fitting in or to aircraft combined instruments indicating more than one navigational value	B64D , G01C 23/00
Refuelling during flight	B64D 39/00
Aircraft indicators	B64D 45/00 and subgroups

Informative references

Devices specially adapted for the protection against criminal attack, e.g. anti-hijacking systems	B64D 45/0015
Ground installations (lighting, etc)	B64F
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	G01C 23/00
Flight directors	G01C 23/005
GPS	G01S 5/145
Radar for traffic control	G01S 13/91 and subgroups
Radar for anti-collision	G01S 13/93 and subgroups
Radar for terrain avoidance	G01S 13/935 and subgroups
Radar for meteorological use mounted on aircraft	G01S 13/953
Lidar systems between aircrafts	G01S 17/933
Meteorology	G01W 1/00
Control of position or course in two dimensions	G05D 1/43
Control of position or course in two dimensions for aircraft during their ground movement, e.g. taxiing	G05D 1/437
Control of altitude or depth	G05D 1/48
Control of attitude	G05D 1/49
Arrangements for reacting to or preventing system or operator failure	G05D 1/80
Handing over between on-board automatic and on-board manual control	G05D 1/81 , B60W 60/005
Optimisation of routes	G06Q 10/047
Airborne radio transmission systems	H04B 7/185
Radio transmission via aircrafts	H04B 7/185 and subgroups
Real-time session management in data packet switching networks	H04L 65/1066
Session management in data packet switching networks	H04L 67/14
Airborne wireless networks	H04W 84/06

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Air Traffic Control (ATC)	is a service provided by ground-based controllers who direct aircraft on the ground and in the air
TCAS	traffic collision avoidance system or traffic alert and collision avoidance system

G08G 5/0004

{Transmission of traffic-related information to or from an aircraft (airborne radio transmission systems in general [H04B 7/185](#); airborne wireless networks [H04W 84/06](#))}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Arrangements or adaptations of instruments	B64D 43/00
For indicating aircraft speed or stalling conditions	B64D 43/02
Airborne radio transmission systems in general	H04B 7/185
Airborne network topologies	H04W 84/06

G08G 5/0017

{Arrangements for implementing traffic-related aircraft activities, e.g. arrangements for generating, displaying, acquiring or managing traffic information (head-up displays [G02B 27/01](#); ground or aircraft-carrier-deck-installations [B64F](#))}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Arrangements or adaptations of instruments	B64D 43/00
For indicating aircraft speed or stalling conditions	B64D 43/02
Ground or aircraft-carrier-deck-installations	B64F
Head-up displays	G02B 27/01

G08G 5/0043

{Traffic management of multiple aircrafts from the ground ([G08G 5/003](#) takes precedence; data processing specially designed for resource management, e.g. scheduling or allocating time, human or machine resources [G06Q 10/06](#))}

References**Limiting references**

This place does not cover:

Flight plan management	G08G 5/003
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Data processing specially designed for resource management, e.g. scheduling or allocating time, human and machine resources	G06Q 10/06
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G08G 5/0047

{Navigation or guidance aids for a single aircraft (details of equipment [G08G 5/0017](#))}

Definition statement

This place covers:

Navigation aids within the aircraft to help the pilots in a determined flight situation.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Details of equipment	G08G 5/0017
Position-fixing by co-ordinating two or more direction or position line determinations; Position-fixing by co-ordinating two or more distance determinations	G01S 2205/00
Transmission of position information to remote stations	G01S 2205/001
or traffic control, mobile tracking, guidance, surveillance or anti-collision	G01S 2205/002
For aircraft positioning relative to the ground	G01S 2205/003
For aircraft positioning relative to other aircraft	G01S 2205/005

G08G 5/0052

{for cruising (combined instruments indicating more than one navigational value [G01C 23/00](#))}

Definition statement

This place covers:

Cruising excludes the landing, take-off and taxiing phases.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Combined instruments indicating more than one navigational value	G01C 23/00
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G08G 5/0073**{Surveillance aids (scene image recognition [G06V 20/00](#))}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Systems using the reflection or reradiation of radio waves	G01S 13/00
Systems using reradiation of radio waves, e.g. secondary radar systems; Analogous systems	G01S 13/74
Secondary surveillance radar (SSR) in general	G01S 13/781
Scene image recognition	G06V 20/00

G08G 5/0078**{for monitoring traffic from the aircraft (radar or analogous systems specially adapted for traffic control [G01S 13/91](#))}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Radar or analogous systems specially adapted for traffic control	G01S 13/91
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G08G 5/0082**{for monitoring traffic from a ground station (radar or analogous systems specially adapted for traffic control [G01S 13/91](#))}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Radar or analogous systems specially adapted for traffic control	G01S 13/91
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G08G 5/0086**{for monitoring terrain (radar or analogous systems specially adapted for terrain avoidance [G01S 13/935](#))}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Radar or analogous systems specially adapted for terrain avoidance	G01S 13/935
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G08G 5/0091

{for monitoring atmospheric conditions (radar or analogous systems specially adapted for meteorological use [G01S 13/95](#); meteorology [G01W](#))}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Radar or analogous systems specially adapted for meteorological use	G01S 13/95
Meteorology	G01W

G08G 5/02

Automatic {approach or} landing aids, i.e. systems in which flight data of incoming planes are processed to provide landing data (landing aids fitted in or to aircraft [B64D 45/04](#); visual or acoustic landing aids [B64F 1/18](#))

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Alighting gear for aircraft / brakes / hooks	B64C 25/00
Aircraft indicators or protectors not otherwise provided for / Devices specially adapted to indicate the position of a movable element of the aircraft, e.g. landing gear	B64D 45/0005
Landing aids fitted in or to aircraft	B64D 45/04
Ground or aircraft-carrier-deck-installations	B64F 1/00
Visual or acoustic landing aids	B64F 1/18
Radar or analogous systems, designed for traffic	G01S 13/91
For landing purposes	G01S 13/913
Automatic pilot	G05D 1/00
Control of position or course in two dimensions for aircraft during their ground movement, e.g. taxiing	G05D 1/437
Scheduling in real time	G06F 9/48

G08G 5/025

{Navigation or guidance aids (radar or analogous systems specially adapted for landing purposes [G01S 13/913](#))}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Radar or analogous systems specially adapted for landing purposes	G01S 13/913
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G08G 5/04

Anti-collision systems

Definition statement

This place covers:

This subgroup covers arrangements, located in the aircraft or on the ground, for warning the crew about a collision to be avoided with other aircrafts or flying itenties.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Avoid collision with earth for plane	B64D 45/04
Measuring height (altimeters for aircraft)	G01C 5/005
Contour matching (correction of navigation data)	G01C 21/005
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	G01C 23/00
Indicating value of two or more variables simultaneously	G01D 7/02
Radar for anti-collision between aircraft	G01S 13/933
Radars for terrain avoidance systems	G01S 13/935
Control of position, course, altitude or attitude of land, water, air or space vehicles	G05D 1/00
Control of attitude	G05D 1/49
Control of attitude to ensure stability	G05D 1/495
Obstacle avoidance by following the obstacle profile, e.g. a wall or undulated terrain	G05D 1/628

G08G 5/045

{Navigation or guidance aids, e.g. determination of anti-collision manoeuvres (radar or analogous systems specially adapted for anti-collision between aircraft [G01S 13/933](#))}

Definition statement

This place covers:

Anti-collision systems where maneuver instructions are given to the pilots to avoid collision and not limited to a warning indication.

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Radar or analogous systems specially adapted for anti-collision between aircraft	G01S 13/933
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G08G 5/06**for control when on the ground****Definition statement**

This place covers:

This subgroup covers arrangements, located in the aircraft or on the ground, for controlling aircraft when on the ground, i.e. on the airport

References***Informative references***

Attention is drawn to the following places, which may be of interest for search:

Ground or aircraft-carrier-deck-installations	B64F 1/00
Visual or acoustic landing aids	B64F 1/18
Arrangement of optical beacons	B64F 1/20
Control of position or course in two dimensions for aircraft during their ground movement, e.g. taxiing	G05D 1/437