

## 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	<a href="#">B61L</a>
Radar or analogous systems, sonar systems or lidar systems specially adapted for traffic control	<a href="#">G01S 13/91</a> , <a href="#">G01S 15/88</a> , <a href="#">G01S 17/88</a>
Radar or analogous systems, sonar systems or lidar systems specially adapted for anti-collision purposes	<a href="#">G01S 13/93</a> , <a href="#">G01S 15/93</a> , <a href="#">G01S 17/93</a>
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	<a href="#">G05D 1/00</a>

#### 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	<a href="#">G01C 21/00</a>
Combined instruments indicating more than one navigational value	<a href="#">G01C 23/00</a>
Head-up displays	<a href="#">G02B 27/01</a>

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

## **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	<a href="#">B61L</a>
Arrangement of road signs or traffic signals	<a href="#">E01F 9/00</a>
Arrangements for measuring levels and bearings for surveillance and navigation	<a href="#">G01C</a>
Radio navigation systems, e.g. for locating, measuring distances or velocity	<a href="#">G01S</a>
Automatic vehicles	<a href="#">G05D</a>
Road pricing or congestion charging of vehicles or vehicle users	<a href="#">G07B 15/06</a>
Details of display instrumentation	<a href="#">G09F</a> , <a href="#">G09G</a>

### 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	<a href="#">B60K 28/00</a>
Vehicle fittings for automatically controlling vehicle speed	<a href="#">B60K 31/00</a>
Arrangements or adaptations of optical signalling or lightning devices	<a href="#">B60Q 1/00</a>
Optical viewing arrangements for cars	<a href="#">B60R 1/00</a>
Arrangements or fittings on vehicles for protecting or preventing injuries to occupants or pedestrians in case of accidents or other traffic risks	<a href="#">B60R 21/00</a>
Vehicle fittings for preventing or indicating unauthorised use or theft of vehicles	<a href="#">B60R 25/00</a>
Vehicle brake control system	<a href="#">B60T</a>
Road vehicle drive control systems for predicting or avoiding probable or impending collision otherwise than by control of a particular sub-unit	<a href="#">B60W 30/08</a>
Road vehicle cruise control, e.g. for controlling the distance between vehicles	<a href="#">B60W 30/14</a>
Cruise control of distance between road vehicles, e.g. keeping a distance to preceding vehicle	<a href="#">B60W 30/16</a>
Steering controls	<a href="#">B62D 1/00</a>
Arrangement of road signs or traffic signals	<a href="#">E01F 9/00</a>
Light devices intended for fixed installation	<a href="#">F21S 8/00</a>
Radar or analogous systems, sonar systems, lidar systems specially adapted for traffic control	<a href="#">G01S 13/91</a> , <a href="#">G01S 15/88</a> , <a href="#">G01S 17/88</a>
Radar or analogous systems, sonar systems, lidar systems specially adapted for anti-collision purposes	<a href="#">G01S 13/93</a> , <a href="#">G01S 15/93</a> , <a href="#">G01S 17/93</a>
Registering or indicating the working of vehicles	<a href="#">G07C 5/00</a>
Parking meters	<a href="#">G07F 17/24</a>
Advertising or display means on roads	<a href="#">G09F 19/22</a>
Circuits arrangements for electric light sources in general	<a href="#">H05B 47/00</a>

## 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	<a href="#">A61H 3/061</a> , <a href="#">G09B 21/00</a>
Counting means; controlling and registering access of persons to restricted areas or devices	<a href="#">G07C 9/00</a>
The pass performing a presence indicating function	<a href="#">G07C 9/28</a>

## 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	<a href="#">G08G 1/07</a> - <a href="#">G08G 1/14</a> )
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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	<a href="#">G07B 15/00</a>
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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	<a href="#">G06N 20/00</a>
Registering or indicating the working of vehicles	<a href="#">G07C 5/00</a> :
Communicating information to a remotely located station	<a href="#">G07C 5/008</a>
Locating users or terminals	<a href="#">H04W 64/00</a>
With additional information processing	<a href="#">H04W 64/006</a>

**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	<a href="#">G08G 1/015</a>
Photographing over speeding vehicles	<a href="#">G08G 1/054</a>

### Informative references

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

Gantries or semi-gantries	<a href="#">E01F 9/696</a>
Image acquisition, target detection	<a href="#">G06V 10/255</a>
Toll systems	<a href="#">G07B 15/00</a>
Individual entry or exit registers	<a href="#">G07C 9/00</a>

## 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	<a href="#">E01F 9/50</a>
Pads or other sensitive devices responsive to passage of vehicles	<a href="#">E01F 11/00</a>
Piezoelectric devices; electrostrictive devices; magnetostrictive devices	<a href="#">H10N 30/00</a>
Sensors	<a href="#">H10N 30/30</a>

## 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	<a href="#">G01S 7/4813:</a>
Imaging using radar	<a href="#">G01S 13/89</a>

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

**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	<a href="#">G01V 3/00:</a>
Operating with magnetic or electric fields produced or modified by objects or geological structures or by detecting devices	<a href="#">G01V 3/08</a>
Using induction coils	<a href="#">G01V 3/10</a>
Antennas in association with traffic control	<a href="#">H01Q 1/3225</a>

**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	<a href="#">G01W 1/00</a>
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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	<a href="#">B60K 31/0058</a>
Including a device to audibly, visibly or otherwise signal the existence of unusual or unintended speed	<a href="#">B60K 31/18</a>
Speed measuring in general	<a href="#">G01P</a>
Velocity or direction measurement instrument designed for traffic control	<a href="#">G01S 13/92</a>
Cameras for overspeed	<a href="#">H04N 23/60</a>

**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	<a href="#">E01C 1/04</a>
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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	<a href="#">B60R 16/02</a>
Railroad crossing signals	<a href="#">B61L</a>
Reflectors	<a href="#">E01F</a> , <a href="#">G08B</a>
Road surface markings	<a href="#">E01F 9/50</a> , <a href="#">E01F 9/576</a> , <a href="#">E01F 9/594</a>
Specially adapted for audible or vibrational signalling, e.g. rumble strips across a lane, or for enforcing reduced speed, e.g. speed	<a href="#">E01F 9/529</a>
Arrangements for executing specific programmes	<a href="#">G06F 9/44</a>
Information retrieval	<a href="#">G06F 16/00</a>
Systems or methods specially adapted for administrative, commercial, financial, managerial or supervisory purposes, not involving significant data processing	<a href="#">G06Q 90/00</a>
Traffic signs	<a href="#">G09F 7/00</a> , <a href="#">G09F 9/00</a> , <a href="#">G09F 11/00</a>
Indicating arrangements for variable information by selection or combination of individual elements	<a href="#">G09F 9/00</a>
Radio transmission systems, i.e. using radiation field	<a href="#">H04B 7/00</a>
Adapted for handsfree use in a vehicle	<a href="#">H04M 1/6075</a>
By interfacing with the vehicle audio system	<a href="#">H04M 1/6083</a>

Including a wireless interface	<a href="#">H04M 1/6091</a>
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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	<a href="#">H04B 1/082</a>
Broadcasting communication	<a href="#">H04H</a>
Digital broadcasting	<a href="#">H04H 20/00</a> - <a href="#">H04H 60/98</a>
Broadcasting communication, signal waveform	<a href="#">H04H 20/65</a>

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

Traffic lights; devices intended for fixed installation; pillar shaped lights; lights arranged on top of each other	<a href="#">F21S 8/00</a>
Optical elements other than lenses	<a href="#">G02B 5/00</a>
With means for preventing ghost images	<a href="#">G02B 27/0018</a>
Audible signalling systems	<a href="#">G08B 3/00</a>
Audible signalling systems; Audible personal calling systems	<a href="#">G08B 3/00</a>
Signalling systems according to more than one of groups	<a href="#">G08B 7/00</a>
Signalling systems according to more than one of groups, personal calling systems.	<a href="#">G08B 7/00</a>
Combination of elements; lights composed of LED's. No lightning, more arrangement	<a href="#">G09F 9/33</a>
Lights composed of LEDs	<a href="#">G09F 9/33</a>
Illuminated signs / luminous advertising	<a href="#">G09F 13/00</a>
Miscellaneous advertising or display means not provided for elsewhere	<a href="#">G09F 19/00</a>
Using special optical effects	<a href="#">G09F 19/12</a>
Combined visual and audible advertising or displaying	<a href="#">G09F 27/00</a>
Combined visual and audible advertising or displaying, e.g. for public address	<a href="#">G09F 27/00</a>
Electroluminescent light sources.	<a href="#">H05B 33/00</a>
LEDs	<a href="#">H05B 33/00</a>
Electric light sources using a combination of different types of light generation.	<a href="#">H05B 35/00</a>
Detecting lamp failure, circuits for controlling signals. lightning	<a href="#">H05B 47/20</a> , <a href="#">H05B 47/29</a>
Photovoltaic modules	<a href="#">H10F 19/00</a>
Inorganic semiconductor devices sensitive to electromagnetic or corpuscular radiation	<a href="#">H10F 30/00</a> , <a href="#">H10F 39/00</a>

## 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	<a href="#">G09F 13/00</a>
Advertising or display means on roads, walls, or similar surfaces, e.g. illuminated	<a href="#">G09F 19/22</a>

## 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	<a href="#">G01W 1/02</a>
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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	<a href="#">G08G 1/0968</a>
Controlling speed by externally generated signals	<a href="#">B60K 31/0058</a>
For measuring distance travelled or combinations of speed and distance	<a href="#">G01C</a>
Engine indicators	<a href="#">G01L</a>
Devices for measuring speed or acceleration	<a href="#">G01P</a>
Registering or indicating the working of vehicles	<a href="#">G07C 5/00</a>

## 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	<a href="#">B60K 37/00</a>
Navigation; Navigational instruments not provided for in preceding groups	<a href="#">G01C 21/00</a>
Navigation or navigational instruments specially adapted for navigation in a road network	<a href="#">G01C 21/26</a>
With correlation of data from several navigational instruments	<a href="#">G01C 21/28</a>
Map- or contour-matching	<a href="#">G01C 21/30</a>
Structuring or formatting of map data	<a href="#">G01C 21/32</a>
Route searching; Route guidance	<a href="#">G01C 21/34</a>
Input/output arrangements for on-board computers	<a href="#">G01C 21/36</a>
Measuring distance traversed on the ground by a vehicle	<a href="#">G01C 22/00</a>
Measuring linear or angular speed or acceleration	<a href="#">G01P</a>
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	<a href="#">G01S 1/00</a>
GPS NAVSTAR	<a href="#">G01S 5/145</a>
Control of position, course, altitude or attitude of vehicles	<a href="#">G05D 1/00</a>
Digital computing for optimisation of routes	<a href="#">G06Q 10/047</a>
Optimisation	<a href="#">G06Q 10/047</a>
Locate: mobile terminal for navigation through cellular network	<a href="#">H04Q</a>

## 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	<a href="#">G01C 21/36</a>
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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	<a href="#">G01C 21/36</a>
I/O arrangements for general purpose computers	<a href="#">G06F 3/00</a>

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

**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	<a href="#">H05B 47/20</a> , <a href="#">H05B 47/29</a>
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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	<a href="#">G08G 1/20</a>
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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)	<a href="#">E01F 9/60</a>
Position-fixing by co-ordinating two or more direction or position line determinations; Position-fixing by co-ordinating two or more distance determinations	<a href="#">G01S 5/00</a>
Digital computing for optimisation of routes	<a href="#">G06Q 10/047</a>
Location of subscribers	<a href="#">H04W 64/00</a>

**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)	<a href="#">G07B 15/02</a>
Communicating information to a remotely located station	<a href="#">G07C 5/008</a>
Adapted for proprietary or special purpose networking environments	<a href="#">H04L 67/12</a>
Ad-hoc network	<a href="#">H04W 84/18</a>

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

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

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

## 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

##### 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	<a href="#">B60K 28/00</a>
Responsive to incapacity of driver	<a href="#">B60K 28/06</a>
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	<a href="#">B60K 31/00</a>



Adaptative cruise control (ACC), including means for detecting potential obstacles in vehicle path, speed control (distance)	<a href="#">B60K 31/0008</a>
Responsive to externally generated signalling	<a href="#">B60K 31/0058</a>
Responsive to vehicle path curvature, speed control.	<a href="#">B60K 31/0066</a>
Responsive to vehicle steering angle	<a href="#">B60K 31/0075</a>
Arrangements or adaptations of optical signalling or lighting devices.	<a href="#">B60Q 1/00</a>
Use of optical means for parking	<a href="#">B60Q 1/48</a>
Indicating risk of collision between vehicles (active). Signalling inside and outside the vehicle.	<a href="#">B60Q 1/525</a>
Optical viewing arrangements, mirrors	<a href="#">B60R 1/00</a>
Transmission of signals measuring vehicle parameters and indicating critical, abnormal or dangerous conditions	<a href="#">B60R 16/0232</a>
Electric or fluid circuits specially adapted for vehicles /for occupant comfort	<a href="#">B60R 16/037</a>
Arrangements or fittings on vehicles for protecting or preventing injuries to occupants or pedestrians in case of accidents or other traffic risks	<a href="#">B60R 21/00</a>
Brake-action initiating means	<a href="#">B60T 7/00</a>
For automatic initiation; for initiation not subject to will of driver or passenger	<a href="#">B60T 7/12</a>
Arrangements for adjusting wheel-braking force to meet varying vehicular or ground-surface conditions	<a href="#">B60T 8/00</a>
Parking aids	<a href="#">B60T 2201/10</a>
Road vehicle drive control systems for predicting or avoiding probable or impending collision otherwise than by control of a particular sub-unit	<a href="#">B60W 30/08</a>
Travel path/likelihood collision	<a href="#">B60W 30/08</a>
Action on the steering wheel; steering control; changing direction of vehicle	<a href="#">B62D 1/28</a>
Automatic changing of lane, e.g. for passing another vehicle]	<a href="#">B62D 15/0255</a>
Combined with automatic distance control, i.e. electronic to bar]	<a href="#">B62D 15/026</a>
Automatic obstacle avoidance by steering]	<a href="#">B62D 15/0265</a>
Steering not otherwise provided for / parking aids	<a href="#">B62D 15/027</a>
Measuring arrangements characterised by the use of optical means	<a href="#">G01B 11/00</a>
Measuring distances in light of sight (use of electric radiation detectors)	<a href="#">G01C 3/08</a>
Transmission between mobile stations, e.g. anti-collision systems	<a href="#">G01S 5/0072</a>
Radars for anti-collision;	<a href="#">G01S 13/93</a>
For land vehicles.	<a href="#">G01S 13/931</a>
Systems using the reflection or reradiating of acoustic waves, e.g. sonar systems	<a href="#">G01S 15/00</a>
Systems using the reflection or reradiation of electromagnetic waves other than radio waves, e.g. lidar systems	<a href="#">G01S 17/00</a>
Position-fixing by co-ordinating two or more direction or position line determinations; Position-fixing by co-ordinating two or more distance determinations	<a href="#">G01S 2205/00</a>
Transmission of position information to remote stations	<a href="#">G01S 2205/001</a>

Or traffic control, mobile tracking, guidance, surveillance or anti-collision	<a href="#">G01S 2205/002</a>
Head-up displays	<a href="#">G02B 27/01</a>
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	<a href="#">G05D 1/243</a>
Coordinated control of the position or course of two or more vehicles	<a href="#">G05D 1/69</a>
Coordinated control of the position or course of two or more vehicles for avoiding collisions between vehicles	<a href="#">G05D 1/693</a>
Image analysis, e.g. from bit-mapped to non bit-mapped Algorithms, mathematical calculations	<a href="#">G06T 7/00</a>
3D modeling	<a href="#">G06T 17/00</a>
Extraction of features or characteristics of the image / Detecting partial patterns or configurations, e.g. loops, strokes, intersections] Image recognition	<a href="#">G06V 10/44</a>
Recognizing scenes under surveillance. (surveillance equipment installed on the infrastructure, not portable)	<a href="#">G06V 20/52</a>
Methods or arrangements for reading or recognizing printed or written characters or for recognizing	<a href="#">G06V 20/54</a>
Recognition of scenes perceived from the perspective of a land vehicle (e.g.road recognition) (road lanes, markers, traffic signs; classifying obstacles)	<a href="#">G06V 20/56</a>
Recognition of pedestrian obstacles	<a href="#">G06V 40/103</a>
Registering or indicating the working of vehicles	<a href="#">G07C 5/00</a>
Recording in case of crash	<a href="#">G07C 5/08</a>
Burglar, theft, or intruder alarms / using television cameras	<a href="#">G08B 13/196</a>
Alarms responsive to a single specified undesired or abnormal operating condition and not elsewhere provided for 718 status alarms	<a href="#">G08B 21/00</a>
Alarms for ensuring the safety of persons	<a href="#">G08B 21/02</a>
Indicating a condition of sleep, e.g. anti-dozing alarms	<a href="#">G08B 21/06</a>
Simulators for teaching or training purposes/ for teaching control of vehicles or other craft	<a href="#">G09B 9/02</a>
Closed circuit television systems, i.e. systems in which the signal is not broadcast	<a href="#">H04N 7/18</a>
For receiving images from a plurality of remote sources	<a href="#">H04N 7/181</a>

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

stolen cars	<a href="#">B60R 2025/1016</a>
ACC	<a href="#">B60W 30/14</a>
Distance control	<a href="#">B60W 30/16</a>
Transmission of location from mobile stations to central station	<a href="#">G01S 5/0018</a>
Combination of GPS with other systems	<a href="#">G01S 19/45</a>
Transmission of position information	<a href="#">G01S 2205/001</a>
Coordinated control of the position or course of two or more vehicles	<a href="#">G05D 1/69</a>
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	<a href="#">G05D 1/695</a>
Coordinated control of the position or course of two or more vehicles using a lead vehicle, e.g. primary-secondary arrangements	<a href="#">G05D 1/6985</a>
Coordinated control of the position or course of two or more vehicles by centralised control off-board any of the vehicles	<a href="#">G05D 1/6987</a>
Organisation (systems or methods specially adapted for administrative, commercial, financial, managerial or supervisory purposes)	<a href="#">G06Q</a>

Cargo logistics / routing	<a href="#">G06Q 10/00</a>
Systems or methods specially adapted for administrative, commercial, financial, managerial or supervisory purposes, not involving significant data processing	<a href="#">G06Q 90/00</a>
Transmitting operation measurements to the central station	<a href="#">G07C 5/008</a>
Emergency signalling	<a href="#">G08B 25/016</a>
Simulators for teaching or training purposes	<a href="#">G09B 9/04</a>
Wireless LANs	<a href="#">H04L 12/28</a>
Communication control / in which the network application is adapted for the location of the user terminal	<a href="#">H04L 67/52</a>
Cordless telephones	<a href="#">H04M 1/725</a>
Telephonic communication system with fire, police, burglar or other alarm systems	<a href="#">H04M 11/04</a>
Services specially adapted for wireless communication networks making use of the location of users or terminals	<a href="#">H04W 4/02</a>
Mobile subscribers locations	<a href="#">H04W 64/00</a>

## 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	<a href="#">B63B 22/16</a>
Marking of navigational route	<a href="#">B63B 22/16</a> , <a href="#">B63B 51/00</a>

## 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	<a href="#">B63B 49/00</a>
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## G08G 5/00

### Traffic control systems for aircraft

#### Definition statement

*This place 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)

#### Relationships with other classification places

Details of data transmission are covered by subclasses [H04B](#), [H04W](#) or [H04L](#).

Details of onboard equipment are covered by groups [G02B 27/00](#), [H01Q 1/00](#), [G01C 23/00](#), [G06F 3/00](#) or [B64D 47/00](#).

Details of ground equipment are covered by groups [B64F 1/00](#) or [G01S 13/00](#).

Details of route searching are covered by group [G01C 21/00](#).

Details of drone applications are covered by groups [B64C 39/00](#) or [B64D 1/00](#).

Details of land aids are covered by groups [B64D 45/00](#) or [B60T 8/00](#).

Details of control of positioning of aircraft is covered by group [G05D 1/00](#).

## References

### Informative references

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

Handover processes for autonomous road vehicles	<a href="#">B60W 60/005</a>
Mechanical aspects of equipment for fitting in or to aircraft combined instruments indicating more than one navigational value	<a href="#">B64D</a>
Refuelling during flight	<a href="#">B64D 39/00</a>
Aircraft indicators	<a href="#">B64D 45/00</a>
Devices specially adapted for the protection against criminal attack, e.g. anti-hijacking systems	<a href="#">B64D 45/0015</a>
Ground installations (lighting, etc.)	<a href="#">B64F</a>

Visual or acoustic landing aids on the ground or on aircraft-carrier decks	<a href="#">B64F 1/18</a>
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	<a href="#">G01C 23/00</a>
Flight directors	<a href="#">G01C 23/005</a>
GPS	<a href="#">G01S 5/145</a>
Radar for traffic control	<a href="#">G01S 13/91</a>
Radar for anti-collision	<a href="#">G01S 13/93</a>
Radar for meteorological use mounted on aircraft	<a href="#">G01S 13/953</a>
Lidar systems between aircrafts	<a href="#">G01S 17/933</a>
Control of position, course, altitude or attitude of land, water, air or space vehicles, e.g. using automatic pilots	<a href="#">G05D 1/00</a>
Control of position or course in two dimensions	<a href="#">G05D 1/43</a>
Control of position or course in two dimensions for aircraft during their ground movement, e.g. taxiing	<a href="#">G05D 1/437</a>
Control of altitude or depth	<a href="#">G05D 1/48</a>
Control of attitude	<a href="#">G05D 1/49</a>
Arrangements for reacting to or preventing system or operator failure	<a href="#">G05D 1/80</a>
Handing over between on-board automatic and on-board manual control	<a href="#">G05D 1/81</a>
Optimisation of routes	<a href="#">G06Q 10/047</a>
Airborne radio transmission systems	<a href="#">H04B 7/185</a>
Radio transmission via aircrafts	<a href="#">H04B 7/185</a>
Real-time session management in data packet switching networks	<a href="#">H04L 65/1066</a>
Session management in data packet switching networks	<a href="#">H04L 67/14</a>
Airborne wireless networks	<a href="#">H04W 84/06</a>

## Special rules of classification

Each document classified in [G08G 5/00](#) should be classified according to the phase of flight described in the document: [G08G 5/51](#) for taxiing or rolling, [G08G 5/52](#) for take-off, [G08G 5/53](#) for cruising or [G08G 5/54](#) for landing.

Documents related to emergency landing should be concurrently classified in [G08G 5/34](#), [G08G 5/54](#) and [G08G 5/58](#) if aspects covered by these groups, related to emergency landing, are disclosed by the document.

## 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 5/20

**Arrangements for acquiring, generating, sharing or displaying traffic information (arrangements for monitoring traffic [G08G 5/72](#))**

### References

#### Informative references

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

Arrangements or adaptations of instruments	<a href="#">B64D 43/00</a>
Arrangements or adaptations of instruments for indicating aircraft speed or stalling conditions	<a href="#">B64D 43/02</a>
Ground or aircraft-carrier-deck-installations	<a href="#">B64F</a>
Head-up displays	<a href="#">G02B 27/01</a>
Airborne radio transmission systems in general	<a href="#">H04B 7/185</a>
Airborne network topologies	<a href="#">H04W 84/06</a>

## G08G 5/50

**Navigation or guidance aids**

### 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:*

Arrangements for acquiring, generating, sharing or displaying traffic information	<a href="#">G08G 5/20</a>
Position-fixing by co-ordinating two or more direction or position line determinations; Position-fixing by co-ordinating two or more distance determinations	<a href="#">G01S 2205/00</a>
Transmission of position information to remote stations	<a href="#">G01S 2205/001</a>
Transmission of position information to remote stations for traffic control, mobile tracking, guidance, surveillance or anti-collision	<a href="#">G01S 2205/002</a>
Transmission of position information to remote stations for aircraft positioning relative to the ground	<a href="#">G01S 2205/003</a>
Transmission of position information to remote stations for aircraft positioning relative to other aircraft	<a href="#">G01S 2205/005</a>

**G08G 5/51****for control when on the ground, e.g. taxiing or rolling****Definition statement***This place covers:*

Arrangements, located in the aircraft or on the ground, for controlling aircraft when on the ground, i.e. on the airport grounds.

Applications when both aircraft and ground vehicles are involved on the ground.

**Relationships with other classification places**

Overall dispatching of a cab which is covered by [G08G 1/202](#).

**References****Informative references**

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

Ground or aircraft-carrier-deck-installations	<a href="#">B64F 1/00</a>
Arrangement of optical beacons	<a href="#">B64F 1/20</a>

**G08G 5/53****for cruising****Definition statement***This place covers:*

Cruising, excluding landing, taking-off and taxiing phases.

**G08G 5/54****for approach or landing****References****Informative references**

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

Alighting gear for aircraft/brakes/hooks	<a href="#">B64C 25/00</a>
Aircraft indicators specially adapted to indicate the position of a movable element of the aircraft, e.g. landing gear	<a href="#">B64D 45/0005</a>
Ground or aircraft-carrier-deck-installations	<a href="#">B64F 1/00</a>
Radar or analogous systems specially adapted for traffic control for landing purposes	<a href="#">G01S 13/913</a>
Program switching	<a href="#">G06F 9/48</a>



**G08G 5/56****for two or more aircraft****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Information and communication technology [ICT] specially adapted for resource management, e.g. scheduling or allocating time, human or machine resources	<a href="#">G06Q 10/06</a>
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**G08G 5/70****Arrangements for monitoring traffic-related situations or conditions****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	<a href="#">G01S 13/00</a>
Systems using reradiation of radio waves, e.g. secondary radar systems; Analogous systems	<a href="#">G01S 13/74</a>
Secondary surveillance radar [SSR] in general	<a href="#">G01S 13/781</a>
Image or video recognition or understanding of scenes	<a href="#">G06V 20/00</a>

**G08G 5/76****for monitoring atmospheric conditions****Definition statement***This place covers:*

Monitoring of vortices in air traffic-related situations or conditions.

**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	<a href="#">G01S 13/95</a>
Meteorology	<a href="#">G01W 1/00</a>

## G08G 5/80

### Anti-collision systems

#### Definition statement

*This place covers:*

Arrangements, located in the aircraft or on the ground, for warning the crew about a collision to be avoided with other aircraft or flying entities.

Anti-collision systems where manoeuvre 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:*

Landing aids fitted in or to aircraft; Safety measures fitted in or to aircraft to prevent collision with earth's surface	<a href="#">B64D 45/04</a>
Measuring height (altimeters for aircraft)	<a href="#">G01C 5/005</a>
Contour matching (correction of navigation data)	<a href="#">G01C 21/005</a>
Indicating value of two or more variables simultaneously	<a href="#">G01D 7/02</a>
Radar for anti-collision between aircraft	<a href="#">G01S 13/933</a>
Radars for terrain avoidance systems	<a href="#">G01S 13/935</a>
Control of attitude to ensure stability	<a href="#">G05D 1/495</a>
Obstacle avoidance by following the obstacle profile, e.g. a wall or undulated terrain	<a href="#">G05D 1/628</a>