(54) Title: INSTALLATION MODULE

(57) Abstract: The invention relates to an installation module (1) for fitting in a vehicle. The installation module comprises a housing (2) defining a space (6) which is open in at least one direction, a body (22) which is pivotable into and out of the housing and comprises a front side (32), at least one insert element (24) which comprises means adapted to accommodating and releasably fastening a portable communication unit to the insert element, and means for accommodating and releasably fastening the insert element to the front side. The body houses a storage space (50) which is accessible when the body is in an extended state and which is concealed when the body is in a retracted state. The invention also relates to a vehicle with at least one installation module according to the invention.
Technical field of the invention

The present invention relates to an installation module for fitting in a vehicle. The invention also relates to a vehicle comprising at least one such installation module.

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Background to the invention

Many people use mobile telephones both privately and in their work. In order to be able conveniently to communicate via a mobile telephone when the user is in a vehicle, the mobile telephone is placed in a holder which is intended for the particular model of telephone in such a way that the mobile telephone is readily visible to the driver and does not risk becoming detached from the holder. Holders are usually separate and retrofitted on a dashboard in front of the driver. Dashboards also have a multiplicity of built-in installation modules for holding a mobile telephone. For example, US-6056175-A describes an installation device for fitting a mobile telephone releasably in a vehicle whereby the installation device comprises an open housing and a carrier portion which is pivotable into and out of the housing about a vertical spindle. The carrier portion itself has on it a mounting plate which is adapted to a mobile telephone and which is supported for pivoting about a horizontal spindle. However, when the carrier portion with the mounting plate is pivoted into the housing, the mobile telephone cannot be used, which means that the mobile telephone and the carrier portion inevitably protrude from the dashboard when the mobile telephone is to be used and at the same time be supported. This affects the driver's freedom of movement if the mobile telephone has to be used in the vehicle, and entails extra movements for pivoting the carrier portion and the mobile telephone out to the extended state if the mobile telephone has previously been in the retracted state.

EP-807552-A1 also describes a device for holding a mobile telephone in a vehicle. The device comprises a pivotable holder specially adapted to a particular model of mobile telephone. The holder has a retracted state in which the mobile telephone can lie on one side with a front side exhibiting a display screen facing the driver, and an extended state in which the mobile telephone can be removed from the holder. In both
the retracted and extended states the mobile telephone can be connected to a power
source or a control unit for the remote control via the mobile telephone of various
functions external to the mobile telephone. A disadvantage of that device is that the
holder is only intended for a certain mobile telephone and is therefore not suitable
being installed as part of a dashboard, since the intervals at which mobile telephone
users may be expected to change their model of telephone will be shorter than the
service life of the vehicle. Another disadvantage is that the mobile telephone lies
horizontal, which means that characters appearing on the display screen are viewed at
an angle of 90 degrees. This affects readability and makes handling more difficult.

It has also become quite usual to install in utility vehicles such as buses, trucks and
tractor units an embedded telematics unit for enabling wireless transmission and
reception from and to the vehicle of, for example, data specific to the driver, the
journey and/or the vehicle. The information technology unit is often connected to an
internal network of a vehicle and to a handheld computer with pressure-sensitive
screen. In this context the handheld computer may be used for inputting driver-
specific data and for displaying, for example, relevant information concerning the
vehicle or the journey. There are adapters which can be fitted to the outside of the
dashboard to hold releasably a particularly model of handheld computer. This means
that the adapter and the handheld computer may mask, for example, indicators and
controls on the dashboard. Moreover, utility vehicles are often used by various
persons who may sometimes have different models of handheld computer, which
means that time is taken to remove the old adapter or attach a further adapter to the
dashboard. Just as in the case of mobile telephones, new models frequently arise. For
example, handheld computers with built-in systems for radio communication are
currently in production which were not available commercially only a few years ago.
Moreover, handheld computers in trucks have proved attractive to thieves. A handheld
computer in an adapter is readily visible and easy to remove from the adapter, which
means that the handheld computer is also easy to steal if someone breaks into the
utility vehicle.
Summary of the invention

One object of the present invention is to provide a device which can be incorporated in a vehicle and easily be adapted to holding different models of portable communication units such as mobile telephones and handheld computers.

A further object is to provide a device of the kind stated above which makes effective and functional use of an allotted space in a vehicle.

The invention relates to an installation module for fitting in a vehicle, which module comprises a housing defining a space which is open in at least one direction, a body which is pivotable into and out of the housing and has a front side, at least one insert element which comprises means adapted to accommodating and releasably fastening a portable communication unit to the insert element, and means for accommodating and releasably fastening the insert element to the front side, and said body houses a storage space which is accessible when the body is in an extended state and which is concealed when the body is in a retracted state. Hereby is achieved that an insert element for a certain model of communication unit can be replaced by another insert element for a different model without the body and the housing having to be changed. Moreover improved safety/security and functionality is achieved in that objects, such as a handheld computer, can easily be placed in the storage space when the body of the module is in the extended state and be concealed in the storage space when the body of the module is in the retracted state. Throughout the description and claims, portable communication unit denotes such units which can be held with one hand in normal use, such as a mobile telephone or a handheld computer.

The means adapted to accommodating and releasably fastening a portable communication unit to the insert element may be adapted to accommodating and releasably fastening a portable communication unit with a pressure-sensitive display screen to the insert element, and the installation module may comprise a holder adapted to accommodating and releasably holding an oblong pointer for the pressure-sensitive display screen. This makes it possible for a user, before fastening the
communication unit, to remove a pointer fastened to the communication unit and to keep the pointer safe and readily accessible beside the communication unit when the latter is placed in the insert element. The pointer can thus easily be used for contact with the pressure-sensitive display screen even when the communication unit has been introduced into the insert element.

The holder may have an oblong accommodating hole which extends in towards the body and is adapted to accommodating the pointer. Hereby is achieved that the holder need not occupy any space and will thus not mask anything else on the installation module or limit anyone’s freedom of movement adjacent to the installation module.

In one embodiment, the installation module comprises a cover arranged for movement relative to the body in order to be able to close an aperture to the storage space in both the retracted and extended states of the body. The cover prevents objects from unintentionally falling out of the storage space and into the space of the housing when it is in the closed state. Nor need there be any risk of objects falling out of the storage space when the body is in the retracted state.

The housing may comprise at least one first contact means and the cover may comprise at least one second contact means, in which case the first contact means and the second contact means are arranged to come into mutual contact when the body pivots to the retracted state if the cover is not covering the storage space, thus substantially preventing the cover from moving relative to the housing during a residual pivoting in to the retracted state. The result is that if the storage space is left open when the body is in the extended state, the cover is pushed in front of the aperture to the storage space as the body pivots into the housing.

The means for accommodating and releasably fastening the insert element to the front side may comprise at least a first snaplock means and at least one second hole adapted to the first snaplock means in such a way that the first snaplock means can snap into the second hole. The result is that quick locking of the insert element to the body can be effected in at least one direction of movement.
The first snaplock means may be an integrated part of the insert element, and the second hole may be situated in the body. Hereby easier manufacture of the body, e.g. by compression moulding is achieved.

The means for accommodating and releasably fastening the insert element to the front side may comprise a second snaplock means on the insert element and a third hole adapted to the second snaplock means. In that case, the second snaplock means is preferably directed in a direction substantially opposite to that of the first snaplock means. Hereby a more stable fixing of the insert element to the body is achieved.

The front side may comprise a recess adapted to the insert element. Hereby is achieved that the insert element need not protrude from the body and will therefore not mask anything else on the body or hinder anyone’s freedom of movement in the vicinity of the installation module.

The insert element may have a passage which is bounded at a first end and open at a second end and is adapted to accommodating the communication unit via the open end, and the housing may have an upper wall which covers the second end when the body is in the retracted state. Hereby is achieved that the communication unit cannot be removed from the installation module when the body is in the retracted state.

The installation module may comprise a lock for locking the body relative to the housing in the retracted state, and an unlocking button connected to the lock to make it possible to unlock the lock. The lock may also be adapted to only allowing unlocking if a signal that the vehicle’s ignition is switched on is given at the same time as the unlocking button is actuated. The result is protection against theft in that the communication unit cannot be removed when the body is in the retracted state and pivoting out to the extended state can only take place if the ignition is switched on and the unlocking button is actuated. Keeping the communication unit in the storage space when the body is in the retracted state and the ignition is switched off will make stealing the communication unit still more difficult.
The invention also relates to a vehicle comprising at least one installation module as above.

The installation module may form part of a dashboard or part of a centre console between a driver’s seat and a passenger seat. This makes it easy for a driver and a passenger sitting beside the driver to see and use the communication unit in both the retracted and extended states. Moreover, objects in the storage space will be easy for at least one of them to reach.

In one embodiment of the vehicle, the vehicle is a truck or tractor unit and the installation module is fitted in a rear wall in a cab. Hereby is achieved that the communication unit can be reached and will be visible from, for example, a bunk situated adjacent to the rear wall.

Brief description of drawings

The objects, advantages, effects and characteristics of the present invention will be better understood from the following detailed description of embodiments of an installation module when the description is read together with the accompanying drawings, in which:

Fig. 1 is a perspective view of an installation module according to an embodiment of the invention,

Fig. 2 is a perspective view of a housing for the installation module according to the embodiment.

Fig. 3 is a perspective view of a body of the installation module, which body is pivotable relative to the housing,

Fig. 4 is a perspective view of the body viewed from a different position than in Fig. 3,

Fig. 5 is a perspective view of an example of an insert element for the installation module,

Fig. 6 is a perspective view of the installation module fitted in a dashboard,

Fig. 7 depicts a retracted first state of the body relative to the housing, and

Fig. 8 depicts an extended second state of the body relative to the housing.
Detailed description of embodiments

An embodiment of the invention is depicted in the diagrams and will hereinafter be described in detail. It should be understood, however, that the particular description and diagrams are not intended to limit the invention to the embodiments herein described. On the contrary, the scope of protection for the invention is intended to comprise all modifications and alternative versions which fall within the spirit and scope of protection of the invention as expressed in the claims, including their equivalents.

Fig. 1 depicts a perspective view of an installation module 1 as seen obliquely from above. The installation module is adapted to being fitted in a vehicle (not depicted). For example, the installation module may be a unit in a dashboard in front of the driver or in a centre console situated between a driver's seat and a passenger seat alongside the driver's seat in the longitudinal direction of the vehicle. The installation module 1 may of course also be situated elsewhere in the vehicle, e.g. in a roof panel or in a rear wall in a truck cab. An embodiment is described below in which the installation module 1 is adapted to being part of the dashboard, but the description also applies correspondingly in cases where the installation module 1 is intended to be fitted somewhere else in the vehicle.

The installation module 1 comprises a housing 2 (see also Fig. 2) made, for example, of plastic and taking the form of a substantially square or rectangular box with an aperture 4 so that the housing has five walls defining an open space 6. For the purposes of this embodiment, the five walls are referred to as an upper wall 8, a lower wall 10, a rear wall 12, a left wall 14 and a right wall 16. The housing is intended to be fitted in a corresponding recess with a square or rectangular cross-section formed by the surrounding portions of the dashboard and/or supporting elements such as fitting stays. For fastening the housing 2 to the surrounding portions of the dashboard, the housing 2 in this embodiment is provided on its outside adjacent to the aperture 4 with at least one integrated oblong hooking means 18 adapted to engaging with a
corresponding hooking means, rib or fitting stay on the surrounding portions of the dashboard so that the housing 2 is fastened in a manner dictated by the shape of the respective means when at least part of the dashboard is fully assembled. Other kinds of fastening means may conceivably be used instead of or in addition to the oblong hooking means 18, e.g. snap-in connecting means and screws. As may be seen in Fig. 2, the left wall 14 also comprises an integrated first contact means 20 in the form of a boss protruding towards the space 6.

The installation module 1 also comprises a body 22 pivotable relative to the housing 2, an insert element 24, a set of buttons 26 and a holder 28 for an oblong pointer for a pressure-sensitive display screen 30 of a communication unit. In this case the communication unit is either a handheld computer or a mobile telephone with pressure-sensitive screen but will in the description hereinafter be referred to solely as the handheld computer.

Fig. 3 depicts the body 22, which is pivotable into the housing 2 so that a front side 32 of the body 22 will be substantially in line, or at least parallel, with the aperture 4 (see also Fig. 7). The body 22 is made, for example, of plastic and is also pivotable out from the space 6 so that at least part of the body 22 will be situated outside the housing 2, i.e. in front of the surrounding dashboard as seen from a driver’s position when the installation module 1 is fitted in the dashboard (see also Fig. 8). A pivot spindle 34 for the pivoting movement of the body 22 relative to the housing 2 is situated in a region adjacent to a forward corner of the body as seen from the driver’s position. In Figs. 1, 7 and 8 the pivot spindle 34 is situated at the forward right corner of the body so as to allow pivoting outwards anticlockwise. Both the pivot spindle 34 and the body 22 may pivot about, for example, a straight rod which is introduced into a hole 36 running through the body 22 and is supported in the housing 2 at both ends of the rod. The body 22 and the housing 2 may of course be manufactured in such a way that the pivot spindle 34 is situated at the forward left corner of the body instead of the forward right corner. Alongside the holder 28 and the buttons 26 on the front side 32 of the body there is in the front side 32 a recess 38 adapted to the insert element 34. The recess 38 is closed by the insert element 24 when the insert element 24 is introduced into the
recess 38. In this embodiment, the recess 38 is oblong and runs along the whole front side 32, parallel with the hole 36 for the pivot spindle 34. The recess 38 is provided with means 40 for accommodating and releasably fastening the insert element to the body along the recess 38. The means in this embodiment is an at least partly continuous groove and/or ribs for accommodating and guiding the insert element 24.

In addition to the front side 32 the body 22 has, a planar outer topside 42, a planar outer underside (not depicted), a planar second outer side 44, a planar third outer side 46 and a curved fourth outer side 48. The curvature of the fourth outer side 48 in the embodiment depicted takes the form of a circular arc of less than 90 degrees. Fig. 4 depicts a schematic perspective view of the body 22 as seen obliquely from above from a different direction than in Fig. 3. It shows within the body 22 a storage space 50 which has an aperture in the fourth outer side 48. The storage space 50 also has, opening into it, a second hole 52 which has a second opening in the surface of the recess (not depicted). The second hole defines a further means for accommodating and releasably fastening the insert element to the body. There may also be further holes between the storage space 50 and the recess 38, but they are not depicted. At least part of the curve of the fourth outer side 48 takes the form of two toothed racks running along respective curves. Each of these toothed racks 54 is adapted to being in engagement with its respective gearwheel (not depicted) which is rotatably fastened to the upper wall 8 and lower wall 10 respectively of the housing 2. The gearwheels are so-called friction wheels, i.e. they are provided with silicone to damp the oscillating movement of the body 22 when the latter is pivoting in and out. At the same time, the combination of the toothed racks 54 and the gearwheels means that the pivoting in and out is steady and does not feel jerky. The body 22 has in addition upper and lower guide grooves 56 situated outside and respectively above and below the storage space 50 to accommodate and guide a cover 58 (see Figs. 7 and 8) adapted to being able to close the storage space. Fig. 4 depicts only the lower guide groove 56.

Fig. 5 depicts the insert element 24, which is adapted to fitting into and being fastened in the recess 38. The insert element 24 has a planar front surface 60 which, when the insert element 24 is introduced correctly into the recess 38, is in substantially the same plane as the front side 32 of the body 22. The front surface 60 adjoins upwards a
planar top surface of a top plate 62 situated substantially perpendicular to the front surface 60 and to a passage 64 in the insert element 24 for accommodating the handheld computer. The passage 64 has its one end bounded by a stop surface 66 and is open at its other end. Outwards, in the same direction as a perpendicular to the front surface 60, the passage 64 is open but is partly closed by a protrusion 68 which extends at least partly along the passage and which forms part of the front surface 60. This means that the handheld computer with its display screen 30 facing in the same direction as the perpendicular to the front surface 60 will be pushed into the passage 64 via the open end until the handheld computer is stopped by the stop surface 66, while at the same time the protrusion 68 prevents the handheld computer from falling out of the passage 64. Further second guide means, such as guide ribs or grooves which are adapted to the handheld computer and which run along and in the passage may be used instead of, or in addition to, the protrusion 68 and the stop surface 66 for releasably holding the handheld computer in position. Adjacent to the open end of the passage 64 is a concave depression 70 in the surface of the insert element 24. The depression 70 makes it possible, for example, for a finger (not depicted) to come into contact with the rear side of the handheld computer. The handheld computer can thereby be gripped and easily pulled out of the passage 64 via the open end.

To fasten it to the wall/walls of the recess 38, the insert element 24 is provided with ribs and/or grooves corresponding to the grooves and ribs in the recess. This means that the insert will be pushed into the recess 38 along the longitudinal direction of the recess 38 from either of the two open short sides of the recess. A support plate 72 integrated in the insert element 24 extends away from the front surface 60 in the opposite direction to the perpendicular to the front surface 60. For reliable locking of the position of the insert element 24 relative to the body 22, the insert element 24 is also provided with an integrated first snaplock means 74 in the form of a wedge-shaped snap-in hook which extends from the support plate 72 substantially parallel with the front surface 60 towards the top plate 62. When the insert element 24 reaches the correct position relative to the recess 38, the first snap-in hook 74 springs into the second hole 52. A stop protrusion 76 on the snap-in hook then prevents the insert element 24 from moving in a first direction of movement. With advantage, the insert
element 24 is provided with at least a second snap-lock means in the form of a wedge-shaped snap-in hook (not depicted) which may for example extend from the top plate 62 towards the support plate 72. The second snap-in hook will thus be parallel, but advantageously not in line, with the first snap-in hook. In addition, the second snap-in hook will be directed in the opposite direction in order to be able to lock the insert element 24 in an opposite direction to the first direction of movement. This means that the insert element 24 can be introduced into whichever of the short sides of the recess 38 is desired and be locked firmly to the body 22. If the insert element 24, after locking, has to be replaced by another insert element for a different model of handheld computer or mobile telephone, the body 22 has to be pivoted out and a tool be inserted in, for example, the second hole 52 from the storage space 50 in order to poke the first snap-in hook out of the second hole 52. One direction of movement will thus be freed and the insert element 24 can be pushed out in that direction.

Although this is not depicted in any of the diagrams, the insert element 24 may comprise a connector adapted to being in contact with a corresponding connector on the handheld computer. The connector may for example be arranged to protrude from the stop surface 66. The connector of the insert element 24 will itself be connected to a power source so that a battery unit in the handheld computer can be charged and the handheld computer can be powered. In addition, the connector will be used for information exchange between the handheld computer and a control unit integrated in the vehicle. The handheld computer may for example be caused to present important information on its display screen 30 irrespective of whether the body 22 is in the retracted or an extended state.

Fig. 6 depicts the installation module 1 when fitted as part of a dashboard. It shows the body 22 in the retracted state and its front side 32 and the front surface 60 of the insert element 24 substantially in the same plane as outer panels 78 of the surrounding portions of the dashboard so that the handheld computer does not protrude from the main surface of the dashboard. Moreover, when the body is in the retracted state, the handheld computer cannot be removed from the installation module, since the upper wall 8 at least partly covers the depression 70 and closes the open end of the passage
64. Only when the body is in an extended state can the handheld computer be removed from the installation module 1. When using the handheld computer it is usual to use a substantially circularly cylindrical rod-shaped pointer for pressing on the display screen 30 of the handheld computer in order to press a virtual button presented on the handheld computer or to write characters on the display screen 30. It is usual for the handheld computer to be provided with an external accommodating passage or a circular hole for fastening the pointer to the handheld computer. However, since the handheld computer cannot be removed from the installation module 1 when the body is in its retracted state, the pointer cannot be kept in the handheld computer if it is desired to use the pointer when the body is in its retracted state. Therefore the pointer holder 28 integrated with or fitted in the body 22 is so designed that the pointer can be introduced into an accommodating hole 80 in the holder 28 so that, for example, only a small portion of the pointer protrudes from the accommodating hole 80. The holder 28 thus enables the pointer to be removed from the handheld computer before the handheld computer is pushed into the insert element 24, when the body 22 is in an extended state. Thereafter the pointer is pushed into the accommodating hole 80 so that the pointer can be reached quickly when needed. The simplest embodiment of the holder 28 is taken to be merely to arrange a circular blind hole which extends into the body 22 so that the holder 28 does not protrude from the front side. To reduce the risk of the pointer falling out unintentionally from the blind hole, the blind hole may be sloped slightly downwards relative to the horizontal, so that the force of gravity will tend to keep the pointer in the holder 28. The holder 28 may of course also be of a more sophisticated design without or in combination with a sloping blind hole, e.g. by the walls of the accommodating hole 80 being lined with friction-increasing material such as rubber and/or by making a certain part of the walls of the accommodating hole 80 somewhat flexible but defining a smaller diameter so as to provide locally a certain clamping effect on part of the pointer. A further conceivable embodiment is to equip the holder 28 with a so-called push-push mechanism by arranging in the vicinity of the bottom of the accommodating hole 80 a spring which is partly compressed when a pointer is pushed towards the bottom, so that spring locking elements engage when the spring has reached a predetermined state. When it is desired to remove the pointer from the holder 28, the spring is further compressed, by pushing the pointer down
further, so that the locking elements lose their grip on the spring and the spring pushes the pointer out.

Fig. 6 and Fig. 7 also illustrate that when the body is in the retracted state the storage space 50 is neither visible nor accessible from outside. This means that the storage space 50 can with advantage be used for storing objects which it is not desirable that they be visible if, for example, the driver leaves the vehicle for a while but does not wish to take with him valuable objects such as, for example, mobile telephone, handheld computer, passport, credit card and money. The installation module 1 is preferably provided with some kind of lock known within the field of technology for automatically locking the body 22 to the housing 2 when the body 22 is pivoted in to the retracted state. Such a lock may be an electronically controlled lock or a mechanically controlled lock which is opened by pressing a unlocking button 82 on the front side 32 of the body 22. For extra security the lock may be connected to another system integrated in the vehicle so that the lock can be arranged to open only if two or more conditions are fulfilled. In addition to the unlocking button 82 having to be actuated, a second condition may be that the ignition must be switched on. This prevents the possibility that thieves breaking in could achieve access to the storage space 50 without having access to the vehicle’s ignition key. As regards pivoting the body 22 out, this can be effected automatically by a spring device (not depicted) which tends to push the body out to the extended position. An example of this spring device is a preloaded coil spring at each end of the pivot spindle 34 whereby each coil spring has its one end pressing against the housing 2 and its other end pressing against the body 22 in a direction outwards from the space 6 of the housing. Other automatic devices for pivoting the body out may comprise a gearwheel which is driven by an electric motor and is in contact with one of the toothed racks, whereby the electric motor rotates the gearwheel for a certain time immediately after the lock has been unlocked.

As depicted in Figs. 7 and 8, the aperture to the storage space 50 in the fourth outer side 48 is closed by the cover 58 which is movable along at least part of the fourth outer side 48 to prevent objects in the storage space 50 from being unintentionally
ejected from the storage space 50 when the body 22 is in the retracted state. This might happen, for example, if the vehicle slides on a relatively sharply sloping running surface or on a bend. The cover 58 moves along the upper and lower guide grooves 56 on the body 22 and has a second contact means 84 in the form of a protruding portion directed away from the body 22 on a front edge situated nearest to the front side 32 of the body. When the body is in an extended state, manual movement of the cover 58 is facilitated by the protruding portion making it easier to apply manual force. The boss 20 on the left wall 14 is so adapted that when the body 22 pivots into the housing 2 the boss 20 comes into contact with the protruding portion 84 and prevents continued movement of the cover 58 relative to the housing 2 if the storage space 50 has for any reason not been closed by the cover 58 before the pivoting in of the body. The cover 58 will thus automatically close the storage space 50 when the body is in the retracted state even if someone forgets to close the storage space 50 before the pivoting in of the body commences.

Although the housing 2 described above is generally right-angled, it should be understood that the design of the housing may be of a multiplicity of different kinds within the scope of the invention. For example, the shape of the housing may be better adapted in pure shape terms to the third and fourth outer sides 46 and 48 of the body 22 so that part of the housing also exhibits a curved surface.

The body may conceivably also be manufactured with geometry other than that depicted. For example, it might take the form of a right-angled figure with no curved surface or of an L-shaped element whereby the foot of the L constitutes the front side of the body. Nor need the recess be taken as extending along the whole front side 32, as it may be bounded, precisely like the passage 64 in the insert element 24, by a stop surface. Instead of being an integrated portion of the body 22 or a part fitted to the body, the holder 28 may be an integrated portion of the insert element.
Claims

1. An installation module (1) for fitting in a vehicle, which installation module comprises a housing (2) defining a space (6) which is open in at least one direction, a body (22) which is pivotable into and out of the housing (2) and comprises a front side (32), and at least one insert element (24) which comprises means adapted to accommodating and releasably fastening a portable communication unit to the insert element (24), characterised by means for accommodating and releasably fastening the insert element (24) to the front side (32) and that the body (22) houses a storage space (50) which is accessible when the body (22) is in an extended state and which is concealed when the body is in a retracted state.

2. An installation module (1) according to claim 1, characterised in that the means adapted to accommodating and releasably fastening a portable communication unit to the insert element (24) is adapted to accommodating and releasably fastening a portable communication unit with a pressure-sensitive display screen (30) to the insert element (24) and that the installation module (1) comprises a holder (28) adapted to accommodating and releasably holding an oblong pointer for the pressure-sensitive display screen (30).

3. An installation module (1) according to claim 2, characterised in that the holder (28) has an oblong accommodating hole (80) which extends in towards the body and which is adapted to accommodating the pointer.

4. An installation module (1) according to any one of the foregoing claims, characterised by a cover (58) which is arranged for movement relative to the body (22) in order to be able to close an aperture (4) for the storage space (50) in both the retracted and extended states of the body.

5. An installation module (1) according to claim 4, characterised in that the housing (2) comprises at least one first contact means (20) and the cover (58) comprises at least one second contact means (84), whereby the first contact means (20) and the second
contact means (84) are arranged to come into mutual contact during pivoting in of the body (22) to the retracted position if the cover (58) does not close the storage space (50), so that the cover (58) is substantially preventing from moving relative to the housing (2) during a residual pivoting in to the retracted state.

6. An installation module (1) according to any one of the foregoing patent claims, **characterised** in that the means for accommodating and releasably fastening the insert element (24) to the front side (32) comprises at least one first snaplock means (74) and at least one second hole (52) adapted to the first snaplock means (74) in such a way that the first snaplock means (74) can snap into the second hole (52).

7. An installation module (1) according to claim 6, **characterised** in that the first snaplock means (74) forms an integral part of the insert element (24), and the second hole (52) is situated in the body (22).

8. An installation module (1) according to claim 7, **characterised** in that the means for accommodating and releasably fastening the insert element (24) to the front side (32) comprises a second snaplock means on the insert element (24) and a third hole adapted to the second snaplock means, and that the second snaplock means is directed in a direction substantially opposite to that of the first snaplock means (74).

9. An installation module (1) according to any one of the foregoing claims, **characterised** in that the front side (32) comprises a recess (38) adapted to the insert element (24).

10. An installation module (1) according to claim 9, **characterised** in that the insert element (24) has a passage (64) which is bounded at a first end and open at a second end and which is adapted to accommodating the communication unit via the open end, and the housing (2) has an upper wall (8) which in the retracted state of the body covers the second end.
11. An installation module (1) according to any one of the foregoing claims, characterised by a lock for locking the body (22) relative to the housing (2) in the retracted state, and an unlocking button (82) connected to the lock in order to be able to unlock the lock, and that the lock is adapted to only allow unlocking if a signal that the vehicle's ignition is switched on is given at the same time as the unlocking button (82) is actuated.

12. A vehicle comprising at least one installation module (1) according to claim 1.

13. A vehicle according to claim 12, characterised in that the installation module (1) constitutes part of a dashboard.

14. A vehicle according to claim 12, characterised in that the installation module (1) constitutes part of a central console between a driver's seat and a passenger seat.

15. A vehicle according to claim 12, characterised in that the vehicle is a truck or tractor unit and the installation module (1) is fitted in a rear wall in a cab.
# INTERNATIONAL SEARCH REPORT

**International application No.**
PCT/SE 2004/000140

## A. CLASSIFICATION OF SUBJECT MATTER

**IPC7: B60R 11/02**
According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

**IPC7: B60R**
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE, DK, FI, NO classes as above

Electronic database consulted during the international search (name of database and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

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<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
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Date of the actual completion of the international search: 31 March 2004

Date of mailing of the international search report: 30-04-2004

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