Access to a Wireless Local Area Network

Abstract: A method and a mobile station (1) are introduced for providing access to a wireless local area network. As wireless local area networks (3,4,5) cannot be accessed by a mobile station (1) moving with high speed, the establishment of a connection to the wireless local area network (3,4,5) is subject to a motion value (mv). The motion value (mv) is provided by the mobile station (1) itself or by a services unit (21) of the transport mechanism (2) the mobile station (1) is traveling with.
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ACCESS TO A WIRELESS LOCAL AREA NETWORK

TECHNICAL FIELD

The present invention relates to methods of providing access to a wireless local area network, a method of providing information to a mobile station, corresponding computer program elements, a mobile station, and an access serving unit.

BACKGROUND OF THE INVENTION

GSM (Global System for Mobile Communications) SMS (Short Message Service) text messaging has become an appreciated means to exchange short text messages over GSM between mobile communication devices. SMS is a store and forward mechanism similar to electronic mail. However, as it uses a control channel for data transmission, it is limited to 160 byte messages. The ability to offer electronic mail to mobile users without the volume restriction that is imposed on SMS would be appreciated by users.

Electronic mail services are already offered to mobile users in connection with so called 2.5 generation wireless communication mechanisms such as GPRS (General Packet Radio Service) or CDMA (Code Division Multiple Access). GPRS is a means by which underlying mobile network for example GSM channels can be used by multiple users to carry IP (Internet Protocol) traffic. However, capacity is limited by the fact that such IP traffic is carried over GSM connections. GPRS typically offers a total of 170 kbit/s per GSM cell which is shared amongst all the users. As the numbers of users increases, the amount of bandwidth available to each user is reduced and access time increases.

Wireless local area network (WLAN) is a Ethernet-like network technology that allows clients a high bandwidth for data communication over a limited range. Standardized in the US under the title IEEE 802.11, current deployed wireless local area network 802.11b offers 11 Mbit/s over a range of 100 m.
However, wireless local area networks only work with stationary or near stationary devices. At device speeds above 30 km/hr communication becomes impossible. Doppler effect might cause a poor signal to noise ratio.

Each wireless local area network has a limited scope and a user must connect and authenticate each time he enters a new wireless local area network. This access procedure involves at least the following steps:

1) Frequency discovery,
2) Password key exchange,
3) IP address allocation.

This access procedure might take up to a minute or more to be executed. This is not a problem for a user who can be expected being stationary for a relative long time, for example a user who is sitting in a coffee shop. However, a user who is stationary only for a very limited time, for example a user sitting in a car at a traffic light, the duration of the access procedure is prohibitive.

For the reasons above, using wireless local area networks in addition to GSM or GPRS systems would allow operators to offer third generation services without having to deploy expensive equipment and without having to deal with licensing issues. However, wireless local area networks cannot be accessed by traveling or fast moving users due to physical limitations. Mobile users have to make use of a break representing a stationary or near stationary state of the mobile station to establish a connection and communicate.

Therefore, it is desired to improve the way of accessing a wireless local area network and to limit the time needed for accessing a wireless local area network.

A first group of prior art deals with wireless local area networks in which access points of different wireless local area networks are linked in some way.
EP 0 851 633 A2 assumes that a backbone takes the form of one or more central servers that communicate with access points through a hardwired connection. Each access point includes a transceiver for communicating with mobile stations. Each mobile station establishes a communication link with an access point by scanning an ISM band to find an available access point. Once a reliable link is established, the mobile station interacts with other mobile stations, a server, or both. In case the mobile station senses that the communication with the current access point is unacceptably weak, the mobile station initiates a hand-over that breakdowns the communication with the communication link with the current access point and establishes a communication link with another access point. Such a hand-over is communicated to the first access point. The first access point then transmits a hand-over preparation message to the subsequent access point across the backbone that causes the subsequent access point to begin to receive and buffer messages destined for the mobile station that is about to switch from the first to the subsequent access point.

In US 6,061,563, a mobile station requires the first access point to cancel the actual connection when the station moves from an area covered by the first access point to an area covered by another access point. The mobile station requires the other access point to be connected thereto. Then, the other access point registers the mobile station on a connection station list in its storage. The mobile station transmits connection information about the first access point to the second access point to inform the second access point that the station moved from the area covered by the first access point.

According to EP 0 589 552 A2, the mobile station communicates an instruction to the first access point to relay a request to the second access point that the second access point accepts a hand-over of the mobile station from the first access point. In response, the second access points transmits its operating parameters to the mobile station through the first access point, and the mobile station adjusts its own parameters in response so as to establish communication with the second access point.

WO 02/09458 A2 provides a gateway server to a plurality of wireless local area networks for reassigning an IP address to the mobile station after it reconnects to a wireless local area network.
after a disconnection, thus providing seamless roaming for the mobile station from wireless local area network to wireless local area network.

According to WO 02/058324 A2, a routing map is maintained in a central wireless access communication system. The routing map maintains a listing of the location of mobile stations operable to communicate with transceivers positioned within areas covered by different access points. The locations are updated as needed.

In EP 1 271 852 A2, access points of wireless local area networks have logical identities assigned thereto, the logical identities defining channels for use by mobile stations. This allows roaming in a transparent manner.

According to another group of prior art, there are improvements shown on establishing a connection from a mobile station to a wireless local area network. US 6,345,043 B1 demonstrates an access scheme that shortens time intervals of beacon transmissions when a mobile station is powered on. In addition, the traditional authentication phase is eliminated. Instead, a period of time on each channel is reserved. Accordingly, the mobile station can use this period to exchange control frames with the access point without competing with other stations to access wireless medium.

A third group of prior art deals with operating mobile stations that are connected to a wireless local area network in moving environments.


According to “3G and WLAN Data Communication Success in Japan”, issued by Ryo Kimura on the Internet http://www.3g.co.uk/PR/May2002/3449.htm on May 27, 2002, accessed on February 14, 2003, seamless data communication between different wireless communication
technologies in a moving car were tested. Data communication continued seamlessly when switching between a 3G cell phone system and a wireless local area network. However, there is no information provided on the speed the moving car was traveling with.

**SUMMARY OF THE INVENTION**

According to one aspect of the present invention, there is provided a method of providing access to a wireless local area network. There is provided a motion value representing a motion state of a mobile station that is to be connected to a wireless local area network. A connection is established between the mobile station and the wireless local area network subject to the motion value.

According to another aspect of the present invention, there is provided a method of providing access to a wireless local area network. A mobile station that is to be connected to a wireless local area network provides access to a motion value representing a motion state of the mobile station. The mobile station accesses the local area network subject to the motion value.

The motion value can be delivered by the mobile station itself provided that the mobile station is capable of detecting its own motion by appropriate means like a sensor. In a preferred alternative, the motion value will be delivered from outside the mobile station such that the mobile station is providing the motion value by receiving the motion value from an outside unit and making it available to the respective function on the mobile station for establishing the connection subject to the motion value.

By monitoring a motion value, the mobile station is aware of a stationary or near stationary state of the mobile station that allows access to a wireless local area network in case the actual location of the mobile station is covered by a wireless local area network. Thus, access may only be initiated and offered to the user when chances to establish access are not limited by the physical constraint of motion. The proposed method enables autonomic procedures to establish a connection to the wireless local area network once a break in speed or a nearly motionless state
is detected. In another embodiment, the mobile user is asked for approval before the connection is established.

With regard to the invention, the term „wireless local area network“ is not limited to the sort of technology that is standardized under IEEE 802.11, however, it preferably includes the technology as specified in this standard. Wireless local area network in general refers to a network providing wireless capabilities for data communication within a limited range of several meters up to a few kilometers subject to the technology of the respective network.

A mobile station is preferably a device that provides at least limited computing capability. It is typically a device that a mobile user can carry with him including but not limited to a laptop computer, a PDA (personal digital assistant), a mobile phone or another mobile computing unit.

In a preferred embodiment, the wireless local area network is accessed when the motion value is below a threshold value. Such simple comparison enables a quick and easy evaluation of the motion value in case the motion value is some integer or floating point value. However, the motion value can also be presented to the mobile station in a form that makes an evaluation easier, such as values representing a content like „OK for access“ and „not OK for access“. Such values might be already prepared by the unit which delivers the motion value.

Preferably, the motion value is a velocity value. Such value representing the linear velocity of the mobile station is suitable for evaluating whether any access to a wireless local area network under current motion conditions is possible or not. In case the motion value is a velocity value and the velocity value is compared with a threshold, the threshold is preferably set in a first embodiment to 30 km/h and in a second embodiment to 5 km/h.

The motion value can be provided from a services unit of a transport mechanism the mobile station is traveling with. Such transport mechanism might be a car a mobile user is traveling with. The corresponding services unit might be a speedometer of the car or a driver information system gathering information of the car’s motion from the speedometer or from wheel rotation speeds, for example. Such values are typically available in a car and might be transferred to the mobile station by means of a suitable interface. The transport mechanism might also be a train,
again furnished with a services unit like an information system that presents the actual speed of
the train. Such service system could be equipped with a communication system such as
Bluetooth. The mobile station which might also be equipped with a Bluetooth receiver is thus
enabled to receive motion information of the transport mechanism which represents the motion
of the mobile station that is traveling with the transport mechanism.

A more indirect way to express a motion state of the transport mechanism and as a consequence
of the mobile station traveling with the transport mechanism – which is preferably not linked
with the transport mechanism but of course can be – is to indicate a motion via a time value.
This has to be interpreted such that the transport mechanism is likely to show the motion during
the time indicated or once the time is reached. Such motion value represented by a time value
might be considered as suitable means for trains or buses with a more or less fixed schedule of
arrivals and departures and thus fixed stops which can be used for accessing a wireless local area
network.

In another preferred embodiment of the invention, a look-up-table is provided that maps access
parameters to wireless local area networks. This helps improving access time to a wireless local
area network as e.g. the frequency band has no longer to be scanned in order to find the matching
frequency. The frequency and/or other access parameters like authentication parameters or
password parameters might already be stored in the look-up-table which is preferably part of the
mobile station and can be used for an access procedure straight from the table. Time needed for
the access/connection procedure is improved.

In addition to establishing a connection to a wireless local area network subject to the actual
motion of the mobile station, access function is preferably performed subject to the actual
location of the mobile station. When there is no wireless local area unit covering the area the
mobile station is currently disposed in, an access routine is redundant.

In another preferred embodiment, a location of the mobile station is detected. This might be
accomplished by a GPS (Global Positioning System) which might be part of the mobile station
or which might be part of the transport mechanism. When transport mechanism is a car, the
car's navigation system can provide such information.
When the transport mechanism is a train, the train can also provide such information. Alternatively, a software might be installed at the mobile station providing the location information subject to a route and a time entered by the user. Or the mobile station might connect to a timetable URL in order to get the routing table information that is necessary to determine the location of the transport mechanism at a certain time once destination and route are known. However, it is anticipated that GPS receivers will become a common part of mobile stations such that GPS or an equivalent location detection system being part of the mobile station might be suitable means for determining the actual location.

In another preferred embodiment of the invention, the wireless local area network to be connected to is derived from the look-up-table and subject to the location of the mobile station. Typically the look-up-table comprises information on the area that is covered by a wireless local area network. The coverage information might also be inherent in the network description itself. Whenever a connection might be established, the location of the mobile station is matched against the areas of wireless local area networks that are listed in the look-up-table. Preferably, only when the actual location matches with an area covered by a wireless local area network listed in the look-up-table, it is decided to establish a connection to this dedicated wireless local area network since it generally seems accessible from the actual location. In case there are more matches than one, some function might choose a dedicated wireless local area network out of several options for establishing a connection.

As soon as a wireless local area network is selected to be connected, e.g. according to one of the methods described above, the access parameters stored in the look-up-table are preferably used for establishing the connection. Having all the relevant data for network access available saves time in contrast to relying on scanning or trial and error steps in an access process.

Another preferred embodiment deals with the process of refreshing the look-up-table. Since today there is a vast amount of wireless local area networks accessible, and appearance and disappearance of wireless local area networks are a dynamic processes, it would be an impossible task to provide a look-up-table with all actually available wireless local area networks and their respective access parameters included. However, keeping a look-up-table up
to date with at least the information on actual location coverage and/or at least the information on wireless local area networks covering adjacent areas is appreciated. Therefore, the mobile station transmits a request to an access serving unit in order to receive such information. The request includes the actual location of the mobile station. Having received this information, the access serving unit can select the wireless local area networks in the neighborhood of the actual device location or covering the actual device location and transmit corresponding access data for such networks to the mobile station. The mobile station receives this information and refreshes the look-up-table accordingly.

In particular, when the request includes the motion value of the mobile station, the access serving unit can determine more precisely which wireless local area networks are likely to be met by the mobile station. In case the transport mechanism is a train, the mobile station might transmit route and stops together with the request. An access serving unit might then be able to select all the wireless local area networks that cover the locations where the train stops as these locations are the ones where a passenger of the train can access a wireless local area network due to the stationary state of the mobile station. The access serving unit might then transmit access parameters of all these preselected networks to the mobile station.

Such refreshing routines might be performed regularly all \( x \) seconds. The location detection unit might be triggered to detect the actual location every \( x \) seconds. A request including the actual location might subsequently be transmitted to the access serving unit. As soon as a response of the access serving unit is received by the mobile station, the mobile station updates the look-up-table with the transmitted data accordingly.

In paragraphs above, the addressee of such request is called access serving unit. The access serving unit can be a server containing information on a plurality of wireless local area networks and might be addressed via an URL. The operator of such a server can be an independent service provider.

Service provider can also be a service provider of a GSM or GPRS wireless network. This means that the mobile phone service provider maintains a service for an application like the one described above and transmits access parameters to mobile stations upon request. The service
provider then has to maintain the tables and lists on wireless local area network coverage and has to keep them up-to-date. Such lists are preferably stored on the access serving unit 7. Communication needed for refreshing the look-up-table of a mobile station is preferably performed on a GSM or GPRS or UMTS communication channel, using for example SMS or other data communication services.

Therefore, according to another aspect of the present invention, there is provided a method of providing information to a mobile station from an access serving unit. A request for wireless local area network parameters is received by the access serving unit from a mobile station. The request includes the actual location of the mobile station. In response to the request, the access serving unit transmits access parameters for wireless local area networks to the mobile station, including access parameters of a wireless local area network that does not cover the actual location of the mobile station but an adjacent area, subject to the location of the mobile station.

In a preferred embodiment of this aspect of the invention, the wireless local area networks whose access parameters are to be transmitted are determined subject to the actual location of the mobile station.

Due to current lack of a centralized wireless local area network data pool, it is preferred that request and corresponding response are transmitted via a wireless communication network of a technology different than the technology of the wireless local area networks.

According to another aspect of the present invention, there is provided an access serving unit, comprising a control unit that is designed to perform the steps of the method described above.

According to another aspect of the present invention, there is provided a mobile station. The mobile station comprises an interface for receiving a motion value representing a motion state of the mobile station, an interface to a wireless local area network, and an access control unit being designed for establishing a connection to the wireless local area network via the corresponding interface subject to the motion value.
The interface for receiving the motion value can be an interface for connecting to an external services unit of a transport mechanism the mobile station is traveling with, or can be an interface for connecting a mobile station inherent motion sensor.

Preferably, the mobile station comprises a look-up-table wherein access parameters are mapped to wireless local area networks.

Preferably, the mobile station comprises a location detector for determining the actual location of the mobile station.

Preferably, the access control unit of the mobile station is designed for determining a wireless local area network for establishing a connection to subject to an actual location of the mobile station and subject to the entries of the look-up-table, and in particular for establishing a connection to the wireless local area network by using access parameters stored in the look-up-table.

The mobile station comprises preferably a look-up-table update unit for refreshing the look-up-table by sending a request for wireless local area network parameters to an access serving unit and receiving wireless local area network parameters from the access serving unit.

According to other aspects of the present invention, there are provided computer program elements comprising computer readable program code. The code when executed by a digital processing unit performs one of the methods described above. There might be a computer program element provided for being loaded and executed on the mobile station. Another computer program element might be provided for being loaded and executed on the access serving unit.

It is to be understood that, in general where features are described herein with reference to a method embodying the invention, corresponding features may be provided in accordance with apparatus embodying the invention, and vice versa.
BRIEF DESCRIPTION OF THE DRAWINGS

The invention and its embodiments will be more fully appreciated by reference to the following detailed description of presently preferred but nonetheless illustrative embodiments in accordance with the present invention when taken in conjunction with the accompanying drawings.

The figures are illustrating:

FIG. 1 a first scenario showing a mobile station and a method of providing access to a wireless local area network in accordance with the present invention, and

FIG. 2 a second scenario showing a mobile station and a method of providing access to a wireless local area network in accordance with the present invention.

Different figures may contain identical references, representing elements with similar or uniform content.

DETAILED DESCRIPTION OF THE DRAWINGS

According to a preferred embodiment of the invention, a mobile station tells its network operator unit / access serving unit the current location and at least the actual approximate velocity of the mobile station. The network operator unit tells the mobile station about the characteristics of the wireless local area networks at which the mobile station / the mobile user are likely to be at in the near future indexed by location. The mobile station / the mobile user - when stationary and in range of a wireless local area network - uses this information to avoid the steps of frequency discovery and IP address allocation and uses an operator defined secret to authenticate themselves.

The communication of this control information may take place over GSM or GPRS.
The location information is preferably obtained from a GPS receiver and the velocity from communication with some electronics of the transport mechanism. In case that the user is in a car, one can assume that this features could be an inherent part of the car’s services. When the user is using a public transport mechanism and sits for example on a train, then the transport mechanism can inform the users via other means, e.g. Bluetooth about its location and velocity.

The means by which the network operator unit determines where the user is likely to be may be as simple as passing parameters of all wireless local area networks in the vicinity of the mobile station to the mobile station. Or it may be more complex when information has to be extracted from maps and/or current traffic conditions. The mobile station may assist the operator unit for example by telling him its likely stopping points.

The operator unit may determine - or be told - that a user is on a train and then furnish the user with the entire set of characteristics of the wireless local area networks in the station at which the train will stop.

An operator unit may seek to reduce the transmission time further by caching information at the wireless local area network at which the user is likely to stop. For example, if the user states that he is going to stop at a given service station then any current e-mails may be accessed and be available for transmission upon arrival.

The transport mechanism may store user e-mails when out of the range of a wireless local area network and transmit them only when in range.

In a preferred embodiment, a mobile station comprises a GPS receiver, a GPRS and a IEEE 802.11 interface. Such mobile station 1 is shown as part of a communication system in FIG. 1. The mobile station 1 is embodied as a mobile cell phone comprising inter alia a display 11 an interface 12 comprising the IEEE 802.11 interface for accessing a WLAN, an interface 13 for receiving a motion value, a GPRS interface 14, a location detector 15 comprising the GPS receiver, an access control unit 16 being designed for establishing a connection to the WLAN via the corresponding interface 12, and a look-up-table 17.
The mobile station 1 is currently in a motion state represented by a motion value mv - which is actually a velocity value - since it is traveling with its user on a transport mechanism 2 which is actually a train. The transport mechanism 2 comprises a services unit 21 having an interface 22 to connect to the interface 13 of the mobile station 1. The services unit 21 determines a motion value mv which is the actual velocity of the transport mechanism. Interfaces 22 and 13 might for example be embodied as Bluetooth interfaces. The motion value mv is transmitted from the services unit 21 of the transport mechanism 2 to the mobile station 1.

In proximity to the route of the transport mechanism there are shown coverage areas of three different wireless local area networks 3, 4 and 5. The WLAN interface 12 of the mobile station 1 is enabled to theoretically establish a connection to all of the three WLANs 3, 4 and 5. The mobile station 1 would have to use different frequencies, different authentication parameters and different ID parameters since the WLANs 3, 4 and 5 might be operated under different service providers and under different physical conditions. However, at the current location L of the mobile station 1, there is no access to any one of the WLANs possible, since location L is not covered by any one of the WLANs 3, 4 or 5.

WLAN 5 however covers at least a future location L' of the mobile station 1 which is determined by the track of the transport mechanism 2. WLAN 5 is installed close to a train station 6 which is the next stop of the train.

The user of the mobile station 1 would like to check electronic mails in his account by accessing a WLAN as soon as possible. Since the time he and his mobile phone 1 will be stationary at the next train station 6 is not sufficient for time consuming frequency checks or authentication procedures, the mobile station provides the look-up-table 17 with access parameters of different WLANs stored. The mobile station autonomically requests access parameters of the closest WLANs from an access serving unit 7. Therefore, the actual location L is detected first by the location detector 15 of the mobile station 1, e.g. In combination with a GPS satellite system 8. The location L is attached to the request rq in order to help the access serving unit 7 to select the WLANs that are closest to the actual location L. This request is sent via the GPRS interface 14. The operator of the access serving unit might be the network operator of the GPRS network or a WLAN operator or another service provider.
The request rq might be sent on a regular basis in order to have the look-up-table 17 updated as often as needed. The update frequency might be subject to the motion value mv. The faster the mobile station 1 is going, the more often a request rq might be sent to the access serving unit 7.

In a situation, the access serving unit 7 with its control unit 71 might deliver access parameters of WLANs 3, 4 and 5 to the mobile station 1 as a response rp upon the request rq. However, the mobile station might indicate in its request rq that the user is traveling on a given route and might add the train number tn to the request rq. Based on the actual location L and the train number tn, the access serving unit 7 might be able to select only WLAN 5 as exclusive WLAN that will cover future locations of the mobile station 1 on its route. Response rp thus contains only access parameters ap for WLAN 5.

Upon receipt of response rp, the look-up-table 7 is updated with access parameters of WLAN 5, while access parameters of other WLANs that might have been of interest on the past journey of mobile station 1 may be eliminated from the look-up-table 17.

According to FIG. 2, transport mechanism 2 approached now train station 6. As interface 13 of the mobile station 1 receives actual motion value mv from the services unit on a regular basis, the access control unit 16 detects that the mobile station 1 has now ended up in a stationary or near stationary state. This information makes the access control unit 16 try to establish a connection to WLAN 5. However, before any access mechanism is started, the mobile station 1 determines the actual location L’ via GPS and checks whether the location L’ matches with the coverage area of one of the WLANs stored on the look-up-table 17.

In this example, location L’ matches with the coverage area of WLAN 5 which is the only WLAN whose access parameters are currently stored in the look-up-table 17. In summary, subject to the actual motion value mv and subsequently subject to the actual location L’ a WLAN according to the look-up-table 17 is selected for establishing a connection. Here, access parameters ap of WLAN are read from the look-up-table 17 and used for establishing a connection to WLAN 5. In a very simplistic view, the access request to WLAN 5 is referenced
by ar, the acknowledgment of connection is referenced by ack. E-mail data is referenced by email.

Following processes described in pseudo-code are preferred to be executed when a mobile station is in motion and the user would like to establish a connection to a wireless local area network (in the following example WLAN) for accessing his e-mails:

**UPDATE-THE-LOOK-UP-TABLE**

**WHILE** (TRUE)

SLEEP-FOR-NSECONDS()

Location = GET-GPS()

Velocity = GET-VELOCITY()

Look-Up-Table = GET-LOOK-UP-TABLE-WLAN (Location, Velocity)

Note that the sleeping step could be determined by the velocity. The “Velocity = GET-VELOCITY()” term polls the car’s in-board computer to obtain the current velocity. The “Location = GET-GPS()” term polls a GPS receiver.

**CHECK-WLAN-CONNECTIVITY**

Location = GET-GPS()

IF IN-RANGE(Look-Up-Table, Location)

ControlInfo = Look-Up-Table.getControlAt(Location)

CONNECT-TO-WLAN(ControlInfo)

The above is only called when the transport mechanism is for example stationary.

**MAIN-LOOP**

**WHILE**(TRUE)

Velocity = GET-VELOCITY()

IF Velocity == 0

THEN IF CHECK-WLAN-CONNECTIVITY

GET-EMAILS
Instead of a loop it could also be preferred to have the car notify the computer each time the car was stationary.

The pseudo code is only for purposes of general understanding of this embodiment. This pseudo code might be embodied as computer program element on a mobile station. Such operating mode of the mobile station might be enabled by the user before going on a trip, for example.
CLAIMS

1. Method of providing access to a wireless local area network, comprising
   • providing a motion value (mv) representing a motion state of a mobile station (1),
   • establishing a connection between the mobile station (1) and the wireless local area network (3,4,5) subject to the motion value (mv).

2. Method of providing access to a wireless local area network, comprising steps performed by a mobile station:
   • providing a motion value (mv) representing a motion state of the mobile station (1),
   • establishing a connection to the wireless local area network (3,4,5) subject to the motion value (1).

3. Method according to claim 1 or claim 2, comprising
   establishing the connection when the motion value (mv) indicates a motion state that makes the wireless local area network (3,4,5) accessible for the mobile station (1).

4. Method according to any one of the preceding claims, comprising
   establishing the connection when the motion value (mv) is below a threshold value.

5. Method according to any one of the preceding claims,
   wherein the motion value (mv) is a velocity value.

6. Method according to any one of the preceding claims,
   wherein the motion value (mv) is provided from a services unit (21) of a transport mechanism (2) the mobile station (1) is traveling with.

7. Method according to any one of the preceding claims,
   wherein the motion value (mv) is represented by a time value that indicates that a certain motion is expected at the time given.
8. Method according to any one of the preceding claims, comprising
providing a look-up-table (17) that maps access parameters (ap) to wireless local area networks (3,4,5).

9. Method according to any one of the preceding claims, comprising
establishing a connection subject to an actual location (L,L') of the mobile station (1).

10. Method according to claim 8,
• wherein a location (L,L') of the mobile station (1) is detected, and
• wherein the wireless local area network (5) to be connected is derived from the look-up-table
(17) and subject to the location (L,L') of the mobile station (1).

11. Method according to claim 8, comprising
using access parameters (ap) stored in the look-up-table (17) for establishing the connection.

12. Method according to any one of the preceding claims, comprising
• determining a location (L,L') of the mobile station (1), and
• transmitting a request (rq) for wireless local area network parameters to an access serving
unit (7), the request (rq) including the location (L,L').

13. Method according to claim 12,
wherein the request (rq) includes the motion value (mv).

14. Method according to claim 12 or claim 13, comprising
receiving access parameters (ac) for one or more wireless local area networks (3,4,5) upon the
request (rq), the access parameters (ac) including access parameters (ac) of a wireless local area
network (3,4,5) that does not cover the actual location (L,L') of the mobile station (1) but an
adjacent area.

15. Computer program element comprising computer readable program code, executable by a
digital processing unit to perform a method according to any one of the preceding claims.
16. Mobile station, comprising
   • an interface (13) for receiving a motion value (mv) representing a motion state of the mobile station (1),
   • an interface (12) to a wireless local area network (3,4,5),
   • an access control unit (16) being designed for establishing a connection to the wireless local area network (3,4,5) via the corresponding interface (12) subject to the motion value (mv).

17. Mobile station according to claim 16,
wherein the interface (13) for receiving the motion value (mv) is an interface to connect to an external services unit (21) of a transport mechanism (2) the mobile station (1) is traveling with.

18. Mobile station according to claim 16,
wherein the interface (13) for receiving the motion value (mv) is an interface to connect to a motion sensor of the mobile station.

19. Mobile station according to any one of the claims 16 to 18, comprising
   a look-up-table (17) wherein access parameters (ap) are mapped to wireless local area networks (3,4,5).

20. Mobile station according to any one of the preceding claims 15 to 19, comprising
   a location detector (15) for determining the actual location (L,L’) of the mobile station (1).

21. Mobile station according to claim 19 in combination with claim 20,
   wherein the access control unit (16) is designed for determining a wireless local area network (3,4,5) for establishing a connection to subject to an actual location (L,L’) of the mobile station (1) and subject to the entries of the look-up-table (17).

22. Mobile station according to claim 19,
   wherein the access control unit (16) is designed for establishing a connection to the wireless local area network (3,4,5) by using access parameters (ac) stored in the look-up-table (17).
23. Mobile station according to claim 19, comprising
a look-up-table update unit (18) for refreshing the look-up-table (17) by sending a request (rq)
for wireless local area network parameters to an access serving unit (7) and updating the
look-up-table (17) upon receipt of wireless local area network parameters from the access
serving unit (7).

24. Method of providing information to a mobile station, comprising steps performed by an
access serving unit:
• receiving a request (rq) for wireless local area network parameters from a mobile station (1),
  the request (rq) including the actual location (L,L′) of the mobile station (1), and
• in response to the request (rq), transmitting access parameters (ap) of one or more wireless
  local area networks (3,4,5) to the mobile station (1), the access parameters (ac) including
  access parameters (ac) of a wireless local area network (3,4,5) that does not cover the actual
  location (L,L′) of the mobile station (1) but an adjacent area.

25. Method according to claim 24,
wherein local area networks (3,4,5) whose access parameters will be transmitted are selected
subject to the actual location (L,L′) of the mobile station (1).

26. Method according to claim 24 or claim 25,
wherein the request (rq) and the response (rp) are transmitted via a wireless communication
network of a different technology than the technology of the wireless local area networks the
request is directed to.

27. Computer program element comprising computer readable program code, executable by a
digital processing unit to perform a method according to any one of the claims 24 to 26.

28. Access serving unit, comprising
a control unit (71) that is designed to perform the steps of a method according to any one of the
claims 24 to 26.