

coverage of that particular access point, or which stems from a computer of a first LAN while being destined for a computer of a second LAN. In addition, this guarantees the virtual star structure of the network.

With a view to data traffic security it is desirable that the filter unit be equipped to delete from the data traffic predetermined types of data, for example, data that could be classified as infringing the security or integrity of a network or a part thereof. This may be of particular importance with regard to data exchange in a WINDOWS-NT environment.

To further serve the controllability of the system, every computer in a wireless LAN is provided with a device for rejecting messages sent by other computers. This procedure effectively provides a star structure between the various access points and the computers communicating with said access points.

It is further desirable that each computer be provided with one or more additional keys for encoding and decoding the data traffic destined for a group of computers, or for all computers in the same virtual LAN. In addition to the point-to-point data message communication on an individual basis, the virtual LAN would then also provide the possibility of multipoint message communication and broadcast message communication.

Application of the invention is possible by using the standard IEEE 802.11 technology for wireless local area networks. By applying the invention, the respective wireless virtual local area networks are distinguished and separated from each other, without the risk of data traffic arriving at any other than the intended destination. The invention enables the computer users within the various local area networks to move about freely within the area served by the various access points.

BRIEF DESCRIPTION OF THE DRAWINGS

The FIGURE is a representative block diagram of a data communication network in accordance with the invention.

The invention will now be further elucidated with reference to a single drawing which schematically shows the data communication network according to the invention.

The data communication network shown is suitable for data exchange between computers, each of which is indicated by the term "station". The data communication network shown comprises, at least in the portion shown, two virtual local area networks indicated by VLAN 1 and VLAN 2. The virtual local area networks VLAN 1 and VLAN 2 are linked with the network via data traffic through the ether, taking place with the aid of an access point, indicated as such in the FIGURE. According to the invention, the data traffic between such an access point and the computers "station" is encoded by means of a key code which, in the case illustrated, is unique for each computer, whereby an individualized link is provided between each computer "station" and the respective access point. Another possibility is to apply such a unique key code only per LAN, so that all computers of that particular LAN are able to participate in the data traffic. The unique key is, for example, determined for each LAN or computer before-hand. Another possibility is to postpone the determination of the unique key until the moment that data traffic between one or more computers from a LAN and the network is imminent. Generation may then be effected by means of a public-key algorithm. Such public-key algorithms are known to the expert and require no further explanation.

The FIGURE shows further that the respective access points are interlinked by means of wired network links which are known as such, and called "wired backbone". To make effective use of the data communication network

without over-loading by excessive data traffic, each access point is provided with a filter unit for deleting any data destined for a computer of LAN VLAN 1 or VLAN 2 respectively, other than the one present in the respective area of coverage (Cell A or Cell B) of that particular access point. The filter unit is also equipped to delete data sent from a first LAN and destined for a computer of a second LAN. The result is a logical separation of the VLANs. Said filter unit can also delete specific types of data. Furthermore, every computer "station" is equipped with an element for rejecting data sent by another computer "station". In this manner the data network acquires a star structure.

Thanks to the virtual and wireless character of the local area networks applied in the network according to the invention, a computer station forming part of local area network VLAN 2, may be moved from the one area of coverage Cell A to an area of coverage Cell B, served by another access point, without losing the integrity of a local area network. Thus the advantage of the invention is that, despite the use of wireless computers "station" together with virtual local area networks, the advantages associated with said latter technique, namely improved controllability of the data traffic in the data communication network is realized without conceding anything to the mobility of the computers used in the network. Thanks to the filter units provided in the various access points forming part of the network, the speed of the data traffic in this network, and the logical separation of the LANs is guaranteed.

What is claimed is:

1. A data communication network suitable for the exchange of data between computers, which network comprises at least one substantially wireless LAN (Local Area Network) and access points distributed over an area covered by the network for linking the computers with the network, wherein the data traffic with the computers belonging to the wireless LAN is individualized by encoding data exchanged between a computer and its access point with a unique data key that defines the wireless LAN within the network, characterized in that the wireless LAN is virtual, and that every access point possesses a filter unit applied to unique keys associated with data traffic for excluding data destined for a computer belonging to a LAN other than computers that are a part of the virtual LAN accessible through the particular access point associated with the filter unit.

2. A data communication network according to claim 1, characterized in that the filter unit is equipped to delete from the data traffic predetermined types of data.

3. A data communication network according to claim 1, characterized in that every computer in a wireless LAN is provided with a device for rejecting messages sent by other computers.

4. A data communication network according to claim 1, characterized in that each computer is provided with one or more additional keys for encoding and decoding the data traffic destined from a group of computers, or for all computers in the same virtual LAN.

5. A data communication network according to claim 1, characterized in that every computer is provided with its own unique key for data communication with an access point.

6. A data communication network according to claim 1 or 2, characterized in that the data communication network is equipped to generate the unique key at a time when data traffic between one or more computers from a LAN and the network is established.

7. A data communication network according to claim 6, characterized in that the generation of the unique key occurs with a public key algorithm.