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**Datasheet for the decision  
of 7 October 2016**

**Case Number:** T 2580/12 - 3.5.03

**Application Number:** 10165651.0

**Publication Number:** 2262326

**IPC:** H04W52/02, H04W76/02,  
H04W48/20, H04W84/12

**Language of the proceedings:** EN

**Title of invention:**

Method and apparatus for connecting portable terminal to WLAN

**Applicant:**

Samsung Electronics Co., Ltd.

**Headword:**

WLAN connection procedure/SAMSUNG

**Relevant legal provisions:**

EPC Art. 56, 123(2)

**Keyword:**

Main request - added subject-matter (yes)  
Auxiliary request - inventive step (no)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern**  
**Boards of Appeal**  
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Case Number: T 2580/12 - 3.5.03

**D E C I S I O N**  
**of Technical Board of Appeal 3.5.03**  
**of 7 October 2016**

**Appellant:** Samsung Electronics Co., Ltd.  
(Applicant) 129, Samsung-ro  
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**Representative:** Birchenough, Lewis  
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**Decision under appeal:** **Decision of the Examining Division of the  
European Patent Office posted on 22 May 2012  
refusing European patent application  
No. 10165651.0 pursuant to Article 97(2) EPC.**

**Composition of the Board:**

**Chairman** F. van der Voort  
**Members:** K. Schenkel  
S. Fernández de Córdoba

## Summary of Facts and Submissions

- I. This appeal is against the decision of the examining division refusing European patent application No. 10165651.0, with publication number EP 2 262 326 A.
- II. The refusal was based on Article 123(2) EPC (added subject-matter).

In additional remarks that were not part of the reasons for the decision, reference was made, *inter alia*, to the following prior-art documents:

D2: US 2005/0232200 A; and

D3: JEN-JEE CHEN ET AL: "A Seamless Handoff Mechanism for DHCP-Based IEEE 802.11 WLANs", IEEE COMMUNICATIONS LETTERS, vol. 11, no. 8, 1 August 2007, pages 665-667, ISSN: 1089-7798.

- III. In the statement of grounds of appeal, the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of claims of a main request or, in the alternative, on the basis of claims of an auxiliary request, both requests filed with the statement of grounds of appeal. Oral proceedings were conditionally requested.
- IV. In a communication annexed to a summons to oral proceedings, the board, without prejudice to its final decision, raised objections under Article 123(2) EPC (added subject-matter) and under Article 52(1) EPC in combination with Article 56 EPC (lack of inventive step) in respect of claims 1 of the main and the auxiliary requests.

V. Oral proceedings were held on 7 October 2016.

The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of a set of claims of a main request or, in the alternative, on the basis of a set of claims of an auxiliary request, both sets of claims as filed with the statement of grounds of appeal.

At the end of the oral proceedings, after due deliberation, the chairman announced the board's decision.

VI. Claim 1 of the main request reads as follows:

"A method for connecting a portable terminal to a Wireless Local Area Network, WLAN, when the portable terminal is not already connected to the WLAN, the method comprising:

when a WLAN connection event occurs (601), performing (605) a WLAN connection procedure, wherein a WLAN module (502) remains in an awake state (603) during the WLAN connection procedure; and

when the WLAN connection procedure is complete, operating (609) the WLAN module (502) according to a Power Save Mechanism, PSM."

VII. Claim 1 of the auxiliary request reads as follows:

"A method for connecting a portable terminal to a Wireless Local Area Network, WLAN, the method comprising:

when a WLAN connection event occurs (601), performing (605) a WLAN connection procedure, wherein the WLAN connection procedure comprises authentication, association, and one or both of: Extensible

Authentication Protocol encapsulation over LAN protocol, EAPoL; and Dynamic Host Configuration Protocol, DHCP, wherein a WLAN module (502) remains in an awake state (603) during the WLAN connection procedure; and

when the WLAN connection procedure is complete, operating (609) the WLAN module (502) according to a Power Save Mechanism, PSM."

## **Reasons for the Decision**

### *1. Introductory remarks*

The present application concerns a method of connecting a portable terminal to a wireless local area network, WLAN. It is well-known that a portable terminal, also called a mobile node, is connected to a WLAN through an access point. A WLAN usually comprises multiple access points, each of which serves a certain area. When the mobile terminal connected to a WLAN moves from a first access point's area to a second access point's area, based on the signal strengths at the respective access points, a so-called handoff procedure is initiated, which includes disconnecting the mobile terminal from the first access point and connecting it to the second access point (cf. D3, page 665, section I. Introduction, second paragraph).

### *2. Main request - added subject-matter (Article 123(2) EPC)*

2.1 Claim 1 of the main request is directed to a method of connecting a portable terminal to a wireless local area network (WLAN) "when the portable terminal is not already connected to the WLAN".

Independent claim 1 as originally filed includes the feature that a WLAN connection procedure is performed "when a WLAN connection event occurs", but is silent as to the WLAN connection status prior to performing the WLAN connection procedure. Neither do the other claims as originally filed provide information about the prior WLAN connection status.

From the description as originally filed it follows that the WLAN connection event precedes the WLAN connection procedure (cf. paragraphs [0014], [0015], [0031], [0035] and [0037] and Fig. 6 of the application as published). However, there is no disclosure of the WLAN connection status prior to the WLAN connection procedure.

Hence, the application as originally filed does not provide a basis for a claim directed to a method for connecting a portable terminal to a WLAN when the portable terminal is not already connected to the WLAN.

2.2 The applicant's arguments put forward in writing and during the oral proceedings may be summarised as follows:

The application consistently referred to connecting to a WLAN, whereas a handoff typically referred to a process in which a portable terminal reconnects to a different access point of the same WLAN. Further, even if the process of reconnecting to a different access point were to be understood as a connection procedure, it would concern a connection to another access point, i.e. not to a WLAN as in present claim 1.

The term "connection", in the context of handoff, could

therefore not reasonably be regarded as a connection to a WLAN, since during handoff the portable terminal would have already previously been connected to the WLAN.

The application consistently used terms relating to the initial connection, such as "connection" and "association", rather than terms such as "handoff" and "reassociation" which do not relate to an initial connection. The skilled reader would, due to the absence of the specific terminology used for the processes occurring in the context of handoff, understand that the present application did not relate to handoff, but rather to an initial connection only.

2.3 The board does not find the appellant's arguments convincing for the following reasons.

A connection to a WLAN is established via an access point of the WLAN (cf. the present application, column 4, lines 34 to 37; if a WLAN connection event occurs, a connection to an access point of the WLAN is performed). Hence, connecting to a WLAN implies a connection to one of its access points.

The application as filed does indeed not use the specific terminology related to handoff procedures. However, neither does it explicitly refer to initial connections. The application as filed rather uses general terms and does not refer to any specific context of the WLAN connections, such as a handoff procedure or an initial connection.

The absence of a reference to a handoff procedure is not a clear and unambiguous disclosure to the effect



that the connection procedure is necessarily an initial connection procedure.

2.4 In view of the above, the board concludes that claim 1 of the main request does not comply with Article 123(2) EPC.

2.5 The main request is therefore not allowable.

3. *Auxiliary request - inventive step (Articles 52(1) and 56 EPC)*

3.1 Claim 1 of the auxiliary request does not refer to the connection status prior to the connection procedure to the WLAN and, hence, covers a connection procedure to a new access point of the WLAN during handoff.

3.2 D2 is considered as representing the closest prior art, since it relates to a handoff procedure in a WLAN in the context of a power-save mode.

More specifically, D2, using the language of claim 1, discloses a method for connecting a portable terminal to a WLAN in the context of a handoff procedure (paragraphs [0063], lines 1-5, and [0064], lines 1-10; a handoff procedure to a new access point includes connecting to it), the method comprising:

when a WLAN connection event occurs, performing a WLAN connection procedure (*ibidem*; the initiation of the connecting procedure implies an event triggering it), wherein the WLAN connection procedure comprises authentication, association (paragraph [0064], lines 4-10), wherein a WLAN module remains in an awake state during the WLAN connection procedure (*ibidem*); and

when the WLAN connection procedure is complete, operating the WLAN module according to a Power Save Mechanism, PSM (paragraph [0064], lines 8-10).

3.3 The method of claim 1 thus differs from the method disclosed in D2 in that the WLAN connection procedure further comprises one or both of Extensible Authentication Protocol encapsulation over LAN protocol (EAPoL) and Dynamic Host Configuration Protocol (DHCP).

3.4 A technical effect of using DHCP during the connection procedure is that network parameters, e.g. a new IP address, can be provided to the mobile terminal, which may be necessary when the portable terminal moves from one IP subnet to another (inter-subnet handoff).

Starting out from D2, the technical problem underlying the subject-matter of claim 1 may thus be seen in adapting the method of D2 to a handoff procedure which involves a change in IP subnet.

3.5 The skilled person, starting out from D2 and faced with the above-mentioned problem, would consider document D3, since it relates to inter-subnet handoff in a WLAN.

3.6 More specifically, D3 discloses that when a mobile node moves from one IP subnet to another, i.e. an inter-subnet handoff occurs, DHCP is needed (page 665, section I, right-hand column, lines 17 to 19). Further, D3 discloses that after DHCP the mobile terminal executes further steps after which the handoff procedure completes (page 667, section II, last four lines). From this, it follows that, in the method disclosed in D3, DHCP is part of the handoff procedure.

- 3.7 The skilled person faced with the above-mentioned technical problem would therefore apply the teaching of D3 to the method known from D2, by adding DHCP to the handoff procedure and by maintaining the portable terminal fully powered up until the handoff procedure, now including DHCP, is completed. He would thereby arrive, without exercising inventive skill, at a method which includes all the features of claim 1.
- 3.8 The appellant argued that D2 explicitly discloses that the power-save mode is entered after the association is completed (paragraph [0064], lines 4-10). If the skilled person were to combine D2 and D3, he would keep this order and, consequently, add the DHCP step after entering the power-save mode. The combination of D2 and D3 would therefore not lead to a method which includes all the features of claim 1.
- 3.9 The board does not accept this argument for the following reasons. The handoff procedure of D2 comprises the steps of scanning, synchronisation, authentication and association (paragraph [0064], lines 4-8). During these steps, the portable terminal is fully powered up until association is completed (paragraph [0064], lines 8-10). Since these four steps, association being the last of them (cf. Fig. 4), constitute the handoff procedure, D2 rather teaches that the power-save mode is entered after the handoff procedure, including the step of association, is completed. It cannot be concluded that this excludes a further step between association and power-save mode, in particular DHCP as a further step of the handoff procedure as taught by D3.
- 3.10 For the above reasons, the board concludes that the subject-matter of claim 1 of the auxiliary request does

not involve an inventive step (Articles 52(1) and 56 EPC).

3.11 The auxiliary request is therefore not allowable.

4. *Conclusion*

As there is no allowable request, it follows that the appeal is to be dismissed.

**Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chairman:



G. Rauh

F. van der Voort

Decision electronically authenticated