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Datasheet for the decision of 9 August 2011

Case Number: T 1391/09 - 3.5.03

Application Number: 03774425.7

Publication Number: 1586212

IPC: H04Q 7/38

Language of the proceedings: EN

Title of invention:
Method and system for management of roaming mobile subscriber

Applicant:
Giesecke & Devrient 3S AB

Opponent:
-

Headword:
Management of roaming/Giesecke & Devrient 3S AB

Relevant legal provisions:
EPC Art. 56

Keyword:
"Inventive step after amendment - yes"

Decisions cited:
-

Catchword:
-

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Case Number: T 1391/09 - 3.5.03

D E C I S I O N
of the Technical Board of Appeal 3.5.03
of 9 August 2011

Appellant: Giesecke & Devrient 3S AB
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 19 December 2008 refusing European patent application No. 03774425.7 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman: A. S. Clelland
Members: A. J. Madenach
M.-B. Tardo-Dino

Summary of Facts and Submissions

I. The present appeal is against the decision of the examining division to refuse application No. 3774425.7 on the ground that the subject-matter of independent claims 1 and 10 lacked novelty (Article 54 EPC). In an obiter dictum the features of dependent claims 2 and 5-9 were said to lack novelty and those of claims 3 and 4 not to involve an inventive step.

Reference was made to:

D1: WO 01/54435 A and
D2: US 2002/102955 A.

The following further document, cited in the International Search Report, is relevant to the present decision:

D3: US 6 397 064 B.

II. The appellant requested that the decision of the examining division be set aside and a patent be granted on the basis of claims according to a main request or an auxiliary request both filed on 16 April 2009. As an auxiliary measure, oral proceedings were requested.

III. The board summoned the appellant to oral proceedings. In the communication accompanying the summons, objections under Articles 123(2), 84, 54 and 56 EPC were raised in respect of the main and auxiliary requests.

IV. With letter of 22 June 2011, the appellant submitted claims according to a main, first and second auxiliary requests to replace all previous requests.

V. Oral proceedings took place on 9 August 2011. The appellant submitted an amended claim 1 according to the main request which was pursued as the sole request after withdrawal of the auxiliary requests. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of claim 1 filed during the oral proceedings and claims 2-8 of the main request as filed with the letter of 22 June 2011.

At the end of the oral proceedings, the chairman announced the decision of the board.

VI. Independent claim 1 according to the main request reads as follows:

"Method for the management of roaming of mobile subscribers roaming between a home network and foreign networks, in which method the roaming behavior is based on the contents of control files saved in the mobile equipment of the subscribers, the method comprising the following steps:
a) defining a list of networks into a control file of the mobile equipment of a subscriber to be used in a priority order in a roaming situation,
b) the subscriber roaming (1) from one network to another,
c) sending (2) information about the roaming to a roaming management application,

d) the roaming management application comparing (3) the current roaming setting in the control file for the subscriber and a desired roaming behavior for the location that the subscriber roamed into, and
e) as a result of the comparison, when necessary, the roaming management application adjusting (5) the roaming setting in the control file to be in accordance with said desired roaming behavior, characterized by
f) the mobile equipment periodically searching for a preferred network,
g) the roaming management application checking (6) if in step b) the roaming was made in accordance with the desired roaming behavior for the location that the subscriber roamed into; and
h) the roaming management application changing (7,8) a time controlled network search period for step f depending on the result of step g,
wherein the control files are stored in a Subscriber Identity module (SIM) of the mobile equipment in a 3G/GSM network."

Independent claim 8 is directed to a system for the management of roaming of mobile subscribers adapted to perform the steps of claim 1.

Reasons for the decision:

1. *Amendments (Article 123(2) EPC):*

The board is satisfied that the features of independent claims 1 and 8 are based on the method as claimed in claim 5 of the original application, the method being shown in Figure 2 and described at page 11, line 15 -

page 12, line 19 and page 10, lines 5 and 9-10 of the application as published.

Dependent claims 2-5 and 7 are respectively based on dependent claims 3, 4, 6, 7 and 9 as originally filed, and dependent claim 6 on page 12, lines 21-23 of the application as published.

2. *Clarity (Article 84 EPC):*

2.1 The term "**desired** roaming behavior"(board's emphasis) used in claim 1 has no specific meaning in the art.

2.2 The board understands the term "desired roaming behavior" simply to mean a further roaming behaviour. This was not contested by the appellant.

3. *Claim 1, Inventive step (Article 56 EPC):*

3.1 The present invention relates to roaming management in general and in particular to a concept named "dynamic hybrid roaming management" (page 7, lines 14-15) and attempts to overcome problems of the prior art static roaming management (page 4, lines 18-21), "statistical roaming management" (page 4, line 30 - page 5, line 18) and "dynamic roaming management" (page 5, line 20 - page 6, line 9). This is essentially achieved by comparing the current roaming behaviour with a "desired" one and when necessary updating the current roaming behaviour, and by checking if the roaming was made in accordance with the "desired" behaviour and adjusting the network search frequency depending on the outcome of the check. The phone should then switch to

the preferred network the next time a network search is done (page 7, line 23 - page 8, line 5).

3.2 The examining division considered D1 as the closest prior art document. The board agrees.

This document relates to a method of dynamically maintaining a roaming database or a roaming list in a mobile device (see abstract).

More specifically, D1 describes a method for the management of roaming of mobile subscribers (page 1, lines 5-9) roaming between a home network and foreign networks (see *e.g.* page 3, lines 22-24; carriers other than the home carrier are considered to correspond to foreign carriers in the sense of the claim). The principles developed in D1 also apply to roaming in 3G/GSM networks (page 1, lines 22-24). This implies that the roaming behaviour, which is based on the contents of roaming control files saved in the mobile equipment of the subscribers (page 1, lines 12-15) is stored in the SIM since this is standard under GSM, as is acknowledged in the present application (page 4, line 30 - page 5, line 18).

As furthermore acknowledged in the present application, it is part of the GSM standard that the phone periodically searches for the home network as well as higher preference non-home networks after a defined time period, another file on the SIM controlling how often the phone searches for such a network (page 2, line 13 - page 3, line 12 of the present application).

According to D1, roaming is managed by a roaming management application in a roaming server (*e.g.* the location based IRDB manager 100 of Figure 1 of D1), the roaming management application storing information about which network is preferred in roaming situations (see *e.g.* page 8, lines 3-16).

The known method thus comprises the following steps:
a) defining a priority list of networks into said roaming control file of the mobile equipment of a subscriber to be used in a priority order in a roaming situation (page 1, lines 12-15; page 3, lines 14-18),
b) the subscriber roaming from one network to another (see abstract),
c) sending information about the roaming to the roaming management application (page 14, lines 12-15; page 16, lines 7-19).

Furthermore, according to the known method

d) the roaming management application compares the current roaming setting in the control file for the subscriber and a "desired" roaming behaviour for the location that the subscriber roamed into (page 9, lines 14-28; page 14, lines 22-24; page 17, lines 12-21; page 19, lines 3-8),
e) as a result of the comparison, when necessary the roaming management application adjusts the roaming behaviour in the control file to be in accordance with said desired roaming behaviour (*ibidem*),
f) the mobile equipment re-scans for networks after having received and stored the "desired" roaming behaviour (page 20, lines 24-29) which the board

understands to correspond to performing a periodic search for a preferred network.

With respect to step g, *i.e.* the roaming management application checking if the roaming was made in accordance with the desired roaming behaviour for the location the subscriber roamed into, the board notes that the invention of D1 implies checking if roaming was made in accordance with the desired roaming setting. If this were not the case a re-scan at the mobile device's earliest convenience and registration with a different carrier from an update list of preferred carriers ("desired" roaming behaviour) (page 20, lines 24-29) would not take place.

3.3 According to the decision of the examining division the subject-matter of original claim 2, which essentially corresponds to the feature

"h) the roaming management application changing a time controlled network search period for step f depending on the result of step g"

is disclosed on page 20, lines 24-26 of D1.

This passage, however, only discloses that the mobile device will re-scan at its earliest convenience after having received and stored its new roaming database. No change of a search period is mentioned or suggested.

Hence, the subject-matter of claim 1 differs from the teaching of D1 by this feature and is therefore new.

3.4 The problem to be solved by this feature can be considered to reside in an acceleration of the connection to a preferred network if roaming does not comply with the "desired" roaming behaviour and to avoid unnecessary scans if it does, for example to save battery power.

Saving battery power is a general concern in the art and is addressed in D3 (column 26, lines 37-48). D3 relates to a method by which a Preferred Identification List (PSL) and/or Intelligent Roaming Database (IRDB) stored in a mobile device and corresponding to the roaming setting in the control in the claimed invention is accessed in a roaming situation (see abstract and column 12, lines 41-56). This list may also be updated (see abstract and column 15, lines 38-49). Part of the list is the scan method and the scan time (column 26, from line 14 to the bottom of the column). D3 is silent about if and how the mobile device searches for a preferred network after an update.

According to D3, the chosen scan time, which corresponds to the time controlled network search period according to the claimed invention, may be based upon various factors including the battery power of the mobile station.

Although the scan time may be amended with every new update it otherwise remains fixed and will not be changed in dependence upon whether roaming was made in accordance with "desired" roaming behaviour for the location the subscriber has roamed into, as required by feature h of claim 1.

Since there is no other apparent reason to change the scan time, the teaching of D1 in combination with that of D3 does not lead to the claimed method.

Therefore, the subject-matter of claim 1 involves an inventive step in the light of the teaching of D1 and D3.

3.5 The examining division considered the teaching of D2 to be relevant to the subject-matter of the then claims 3 and 4, which elaborate step h further by stipulating a lowering or raising of the search period.

D2 relates to a method of registering with a preferred service provider in a multi-service provider environment (see abstract). Such a situation corresponds to the roaming scenario contemplated by the present invention. According to D2 and with reference to the process shown in Figure 4, after registering with a service provider a timer is activated which permits a low-duty cycle search to be performed if the phone is registered in a non-optimal service provider system (page 3, left column, lines 57-60). This means that a search is performed at a given time interval ("low-duty cycle") whenever the provider the phone is registered to is non-optimal, and no search is performed if the provider is optimal.

Hence, according to D2 the search period has either a fixed value or no search at all is performed. It is, thus, not changed depending on whether roaming was made in accordance with the "desired" roaming behaviour for the location the subscriber has roamed into, as required by feature h of claim 1.

Therefore, the teaching of D1 in combination with that of D2 does not lead to the claimed method.

It is furthermore noted that the teaching of D2 is not concerned with the problem addressed by the present invention so that the skilled person had no reason to consider this document. In particular, D2 does not consider the possibility of the list of preferred networks, i.e. the current roaming setting, being modified by an update after connection to an initially preferred network. In such a situation, under the scenario of Figure 4 of D2 the mobile device would remain locked with the initial network since the low-duty search cycle is abandoned after registration with the initially preferred network. Re-scanning and registering with a different network, which is a currently preferred network after updating the current roaming setting, is not foreseen. That is to say, D2 does not solve the problem of a faster connection to a currently preferred network during roaming.

For these reasons, the subject-matter of claim 1 also involves an inventive step in the light of the teaching of D1 in combination with that of D2.

3.6 The further documents cited in the International Search Report being of less relevance, the subject-matter of claim 1 fulfils the requirements of Article 56 EPC on the basis of the documents cited in this search report.

3.7 The above considerations also apply to independent system claim 8, which explicitly recites a feature corresponding to feature h of claim 1.

Hence, the subject-matter of claim 8 also fulfils the requirements of Article 56 EPC.

Claims 2-7 are dependent on claim 1 and therefore also fulfil the requirements of Article 56 EPC.

4. Since claims 1-8 of the sole request meet the requirements of the EPC, a patent can be granted on the basis of these claims.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance with the order to grant a patent on the basis of
   - claim 1 as filed during the oral proceedings
   - claims 2-8 as filed with the letter of 22 June 2011
   - Figures 1 and 2 as originally filed, and a description to be adapted.

The Registrar The Chairman

G. Rauh A. S. Clelland