UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MARC PÉGLION

Appeal 2007-2939
Application 10/327,962
Technology Center 2600

Decided: January 31, 2008

Before: KENNETH W. HAIRSTON, ROBERT E. NAPPI, and KARL D. EASTHOM , *Administrative Patent Judges*.

EASTHOM, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Appellant appeals under 35 U.S.C. § 134 (2002) from a final rejection of claims 1 and 3 to 7. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

We *affirm*.

According to Appellant, the invention comprises a method for controlling roaming in a mobile system. The method comprises allowing or denying a subscriber's roaming in the mobile system on the basis of the subscriber's roaming data. At least two subscription types are definable for the subscriber. The subscriber's roaming in each network of the mobile system that the subscriber attempts to attach to is allowed or denied separately on the basis of the subscriber's roaming right data, and on the basis of data on the subscription types defined for the subscriber and on subscription types for which roaming is allowed in said mobile system. (Abstract, Claim 1).

The representative claim under appeal reads as follows:

> 1. A method of controlling roaming in a mobile system comprising at least two networks, which can offer a roaming subscriber attached to the system a circuit-switched and/or a packet-switched connection, the method comprising:
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> allowing or denying a subscriber's roaming in the mobile system, when the subscriber attempts to attach to the mobile system, on the basis of the subscriber's roaming right data, which data indicates if the subscriber is entitled to roam that particular mobile system, wherein
>
> at least two subscription types are definable for the subscriber, and the subscriber's roaming in each network of the mobile system that the subscriber attempts to attach to is allowed or denied separately on the basis of the subscriber's roaming right data, which data indicates if the subscriber is entitled to roam a particular type of network in that particular mobile system, and on the basis of data on the subscription types defined for the subscriber and on subscription types for which roaming is allowed in said mobile system.[1]

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[1] The portion in the preamble: "which can offer a roaming subscriber attached to the system a circuit-switched and/or a packet-switched
(Footnote continued on next page)

The References

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Comer	US 5,610,973	Mar. 11, 1997
Kingdon	US 2002/0132623	Sep. 19, 2002

Appealed Rejections

The Examiner rejected claims 1 and 3 to 7 under 35 U.S.C. § 103(a) (2004) based on the collective teachings of Comer and Kingdon.

Appellant contends that the Examiner failed to present a prima facie case of obviousness because the combination of Comer and Kingdon does not teach all of the claim limitations (Br. 12). Appellant has not separately argued the rejected claims; thus we group claims 1 and 3 to 7 together.[2] We take claim 1 as representative of the claims on appeal. See 37 C.F.R. 41.37(c)(1)(vii).

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connection" was not relied upon by Appellant to distinguish his claim and is not required to understand the claim body. We determine that the preamble portion recited does not limit the claim. *See Intirtool, Ltd. v. Texar Corp*., 369 F.3d 1289, 1294-96, (Fed. Cir. 2004) (holding that the preamble of a patent claim was not a limitation of the claim because (i) the body of the claim described a "structurally complete invention" without the preamble, and (ii) statements in prosecution history referring to function of invention did not constitute "clear reliance" on the preamble needed to make the preamble a limitation).

[2] Appellant does not argue claims 3-7 separately from claim 1 notwithstanding that Appellant provides separate headings and claim recitations for claims 3-7 (Br. 12-14). 37 C.F.R. § 41.37(c)(1)(vii) ("A statement which merely points out what a claim recites will not be considered an argument for separate patentability of the claim.")

We *affirm*.

ISSUE

The issue is whether the Examiner erred in his finding that the collective teachings of Comer and Kingdom render obvious the claim limitations of "at least two subscription types" and of [whether the subscriber's roaming is] "allowed or denied separately on the basis of the subscriber's roaming right data … and on the basis of data on the subscription types defined for the subscriber and on subscription types for which roaming is allowed in said mobile system."

FINDINGS OF FACT (FF)

1. As background, Appellant relates his disclosed invention to prior art systems as follows:

> The GSM/GPRS mobile system usually comprises two data-bases including data on the mobile subscribers: a home location register HLR, which comprises data on all subscribers of the mobile system and the services subscribed by them, and a visitor location register VLR, which comprises data on mobile stations roaming the area of a given mobile switching centre [sic] MSC. Within this application, the concept of 'roaming' should be understood to mean the attachment of a mobile subscriber to an alien mobile system (*or a network of an alien mobile system)*, i.e. other than the subscriber's home mobile system, thus allowing the subscriber to use at least some of the services provided by said alien mobile system. *When a mobile subscriber moves to the area of alien mobile system and tries to attach thereto, the alien mobile system checks from the home location register of the subscriber's home system if the subscriber is entitled to roam said system.* If the mobile station supports both circuit-switched (e.g. GSM) and packet-switched GPRS functions, it will try to attach to both the GSM network and the GPRS network…In accordance with prior art, the home location register gives the same reply to the inquiries made by both network elements….

> The problem in the above arrangement is that there may be for instance an agreement between the operator maintaining the subscriber's home system and the operator maintaining the alien system that entitles the subscriber to the use of only one network (or some networks), e.g. a GSM network or a GPRS network, of the alien system, but not all networks. *In this case it should be possible to allow the subscriber to attach to the network(s) of the alien system allowed to the subscriber, and, on the other hand, to prevent the subscriber from attaching to the network(s) of the alien system not allowed to the subscriber. However, this is impossible in the prior art arrangement, which does not distinguish between the different networks comprised by a mobile system.*

(Spec. 1: 22 to Spec. 2:20) (emphasis supplied).

2. Comer discloses that most metropolitan areas have at least two cellular telephone companies operating parallel but separate systems:

> Increasingly, users of cellular mobile radiotelephones travel between cities having cellular systems operated by different operating companies. In addition, the FCC has established that each area wishing to establish a cellular telephone network may have up to two cellular system operators, and therefore parallel but separate systems are in place in most major metropolitan areas. While the mobile radiotelephones for use in these different systems are identical, the cellular systems are configured so that only cellular telephones which are identified as "home" units or subscribers within a given cellular system may communicate within a given operator's system.

(Col. 1, l. 59 to col. 2, l. 3).

3. Comer states that it is known that cellular mobile radiotelephone (CMR) users are restricted to use of their telephones within the area of their home service area. A CMR user attempting to use his or her phone outside his or her home area is said to be "roaming." (Col. 3, ll. 1-6). Comer also

states that "roamers…by definition are not subscribers in the CMR system, within a CMR system." (Col. 4, ll. 51-52).

4. Comer discloses that when a CMR user originates a call, a series of data messages, referred to as "Call Origination" messages, are transmitted to the system operator. The data includes validation and authentication data such as the Mobile Identification Number (MIN) (i.e., telephone number), the Station Class Mark (SCM) (i.e., functional characteristics of the MRU), and the Electronic Serial Number (ESN). During a Call Origination, the Mobile Telephone Switching Office (MTSO) checks the MTSO database to verify the Call Origination message. "If the *MIN is valid and 'home'*, the received ESN is compared to the MTSO's database ESN entry *to detect fraud*. *If these checks succeed, the call is allowed to proceed.*" (Col. 2, ll. 4-33).

5. Comer discloses that cellular mobile radiotelephone (CMR) users who roam out of the home network or system are apprised of different billing rates when they are out of their home network or system:

> Even though a subscriber is not always aware of having travelled beyond the range of the home service area, CMR systems are designed to detect this situation and so apprise the user, in the following manner. Each cellular system has been uniquely assigned a System IDentification (SID) number. Electrical signals corresponding to each cellular system's SID are continuously transmitted by that system over a control channel. The SID of the system from which a particular subscriber has agreed to acquire CMR services is programmed into a Numerical Assignment Module (NAM) or memory incorporated into the subscriber's mobile radiotelephone unit.
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> When a subscriber's mobile radiotelephone unit is "powered up" or first enters the area of coverage of a CMR system when already powered up, it *selects the strongest detectable* control channel and receives a system parameter overhead message in the form of an

> overhead message train (OMT). The OMT includes the 15-bit SID of the CMR system whose signal the mobile unit is receiving. The mobile unit then compares the transmitted SID to the SID programmed into its NAM to determine identicality. *If the unit determines lack of identicality, it is indicated that the unit is "roaming". In many cellular radiotelephone units, a "roam" indicator light is activated on the control panel associated with the unit. In this manner, a subscriber is made aware that his or her mobile radiotelephone unit has seized or entered a system other than the system on which he or she is an authorized subscriber.*
>
> *A roamer who desires to place an outgoing call typically must then access the CMR system in which he or she is roaming through procedures established by the CMR system operator. These procedures typically involve special codes, key sequences, and information solicitation from the subscriber so that the roamer is aware that he or she will be billed at the rates established for roaming services (instead of the usual "home" service rate*).

(Col. 3, ll. 17-52) (emphasis supplied).

Comer's system, and prior art systems described by Comer, employ the 15-bit SID number to determine if a subscriber is "home" or "roaming" (col. 12, ll. 18-24).

6. Comer describes a roaming detection system offering roaming services to a detected roamer. Comer states:

> At 192, the inquiry is made whether *the roamer has selected any of the services offered* or responded to a survey question … As a specific example, assuming that the roamer has elected *to receive roaming services* from the CMR system operator, the routines 200 create an order record which can then be sent to the system operator, *who can enable the MTSO to provide the selected service whenever the roamer* originates a call or a call is provided from an external source to be connected to the roamer.

(Col. 18, ll. 22-34)(emphasis supplied).

Comer discloses that "for subscribers…an automated survey may be conducted or the acceptance of particular special telephone services provided by the CMR system operator (e.g. voice messaging or call waiting) may be interactively solicited." (Col. 5, ll. 3-8).

We find that Comer's patented roaming detection system is employed as an added service to the prior art systems existing prior to Comer's patent which Comer describes and which we summarize above in FF 2-5. That is, Comer's system employs much of the data existing in the prior art systems (compare col. 6, ll. 1-24; col. 12, ll. 65 to col. 14, ll. 52; FF 2-5). For example, Comer also discloses tracking specific services for roamers or home subscribers using MIN, SCM and ESN data at col. 13, ll. 49 to col. 14, ll. 20.

7. Kingdon's mobile network 400, includes a "*home network*" 405 and a "*visited network*" 410 communicating accurate positioning and other subscriber data pertaining to a home subscriber in the visited network (par. 0030-32, 0037-38). To obtain positioning data required for accurate mobile positioning services, a requesting entity orders a positioning request, which initiates requests to the home network for data. The accurate positioning system provides additional revenues to system operators and an attractive feature to subscribers for emergency situations. (Abstract, Fig. 4, pars. 0004, 0037-38).

8. Kingdon discloses that multiple telephone systems, subsystems, or networks are connected together in one large network 200 so that calls and data can be transferred to and from the different networks, including e.g., a Public Switched Telephone Network (PSTN), an Integrated Service Digital

Network (ISDN), a Public Land Mobile Network (PLMN) (Fig. 2, par. 0026-27). A group of Mobile Services Switch Centers (MSCs) control data transfers and calls between systems or networks on the larger network 200 (par. 0026-29).

9. Kingdon discloses that a network is realized as a network of neighboring cells, the totality of cells providing a service area (SA). Data bases, including a Home Location Register (HLR), and a Visitor Location Register (VLR), are required to keep track of the area in which a mobile station (MS) (i.e. cell phone) currently resides to route calls properly. When an MS moves, or roams into a new operator's area, the VLR requests data from the HLR so that it has necessary data to route a call (par. 0027-30). Kingdon states:

> When a person subscribes with a particular network operator, the subscription is registered in the HLR 230 of that particular operator. The HLR 230 contains *subscriber information, e.g., supplementary services and authentication parameters, and information about the general location of the MS*, e.g., which MSC of all the MSCs 240 of the network 200 currently services the MS 290. This general location data is dynamic since, as the MS 290 moves within the various cells and service areas of the mobile network 200, it must be updated so that the subscriber using the roaming MS 290 may receive or place calls.

(par. 0029).

PRINCIPLES OF LAW

On appeal, Appellant bears the burden of showing that the Examiner erred. Appellant may sustain this burden by showing that, where the Examiner relies on a combination of disclosures, the Examiner failed to provide sufficient evidence to show that one having ordinary skill in the art

would have done what Appellant did. *United States v. Adams*, 383 U.S. 39, 47 (1966); *In re Kahn*, 441 F.3d 977, 987-88 (Fed. Cir. 2006); *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick, Co.*, 464 F.3d 1356, 1360-61 (Fed. Cir. 2006). Appellant may also show that the Examiner has failed to meet his initial burden of presenting a prima facie case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). If that initial burden is met, then the burden shifts to the Appellant to overcome the prima facie case with argument and/or evidence. *See Id*.

The Examiner's articulated reasoning in the rejection must possess a rational underpinning to support the legal conclusion of obviousness. *In re Kahn*, 441 F.3d at 988 (Fed. Cir. 2006).

> [W]hen a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result….
>
> For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Sakraida* and *Anderson's-Black Rock* are illustrative – a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

KSR Int'l Co. v. Teleflex Inc., 127 S. Ct. 1727, 1740 (2007).

ANALYSIS

Appellant argues that Comer and Kingdom do not disclose or suggest the claim 1 limitations:

> at least two subscription types are definable for the subscriber, and the subscriber's roaming in each network of the mobile system that the subscriber attempts to attach to is allowed or denied separately on the basis of the subscriber's roaming right data, which data indicates if the subscriber is entitled to roam a particular type of network in that particular mobile system, and on the basis of data on the subscription types defined for the subscriber and on subscription types for which roaming is allowed in said mobile system.

(Br. 12; Reply Br. 7).

To resolve the issues, we analyze claim 1. In summary, we determine that the claim requires at least two subscription types and three types of data: 1) roaming right data, 2) data on subscription types, and 3) data on subscription types for which roaming is allowed. The claim further requires allowing or denying a subscriber's roaming in each network of a system[3] that the subscriber attempts to roam on the basis of the three types of data.

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[3]We find that the terms "systems," "networks," "operators," "providers," and "services" are used interchangeably in the prior art (see FF 1-2, 5-8). For example, Appellant refers to attaching to alien systems or a network(s) of an alien system to describe a prior art roamer (FF 1). Appellant refers to GPRS as a "new service" having a "GPRS backbone network" (Spec.: par. 0002, FF 1). Appellant also refers to a GPRS "service type," and a GPRS "network" - using "services" and "networks" interchangeably (Spec.: par. 0015, ll. 5, 8-11; FF 1). Kingdon describes a "*home network*" and a "*visited network*" (FF 7) (*emphasis* supplied) and also describes a large system or network of smaller networks, or systems (FF 8). Comer refers to "two cellular system operators" providing "separate systems" on a "network." (FF 2). See also *Wiley Encyclopedia of Electrical Engineers and Electronics Engineering*, "Telecommunication Exchanges", p. 9, Larsson et al.(1999), *avail. at* http://mrw.interscience.wiley.com/emrw/9780471346081/eeee/article/W2043/current/pdf (Describing "[**r**]**oaming** [as] [w]hen subscribers move to another operator's *network* than their own, the *network*
(Footnote continued on next page)

Subscription Types

First, we address the claim requirement of two subscription types. We concur with the Examiner's determination that different fee arrangements, one for a home subscriber, and another for a roaming subscriber, constitute at least two subscription types meeting the claim (Ans. 7-8).

Comer states that prior art "cellular systems are configured so that only cellular telephones which are identified as 'home' units or *subscribers* within a given cellular system may communicate within a given operator's system." (FF 2) (emphasis supplied). Comer also states that in prior art systems:

> *a subscriber* is made aware that his or her mobile radiotelephone unit has seized or entered a system other than the system on which he or she is *an authorized subscriber*... [and] procedures involv[ing] special codes, key sequences, and information solicitation from the subscriber [are implemented] so that the roamer is aware that he or she will *billed at the rates established for roaming services (instead of the usual "home" service rate)*.

(FF 5)(emphasis supplied).

Comer's reference to an *authorized subscriber* as having "'home service' rates", as being apprised of the different billing rates for roaming and home services, and as being able to accept roaming services constitutes sufficient evidence to support the Examiner's determination that home and roaming services meet the limitation of at least two definable subscription

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can page the *subscriber* and then set up a call to their new location.**")**(first *emphasis* original).

types.[4] A subscription is defined generally as "a sum of money given or pledged as a contribution, payment, investment etc"[5] and, more specifically, in the electronic service environment involved here, as "[a]n agreement to receive or be given access to electronic texts or services, especially over the Internet."[6]

Further, Appellant employs the term "roaming subscriber" in the preamble of claim 1. We accordingly determine that Comer's home subscriber, traveling in a foreign network also can become a "roaming subscriber," by tacitly agreeing to pay for and accept roaming services – thereby creating the second of "at least two subscription types…definable for the subscriber" as required by claim 1.[7]

Within the generic home and roaming subscription types described above, Comer and Kingdon each disclose specific subscription types.

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[4] Appellant also employs the term "subscription" to refer to different rates for different services; i.e., Appellant discloses "a prepaid subscription,… a flat rate subscription," etc. and states that: "[s]ubscription types are preferably service type specific." (Spec. 7: 4-14).

[5] Dictionary.com Unabridged (v 1.1), Random House, Inc., retrieved January 29, 2008, *avail. at* Dictionary.com website http://dictionary.reference.com/browse/subscription.

[6] The American Heritage Dictionary of the English Language, (4th ed., 2000), *avail. at* http://www.bartleby.com/61/3/S0850300.html.

[7] Further, similar to the common parlance of "selling magazine subscriptions," we determine that a "definable" roaming subscription type meeting the claim is one which is in existence as an inchoate subscription prior to being accepted by the home subscriber, or prior to being validated by the system. The subscription is with the roaming operator, as opposed to the home operator, i.e., our determination does not contradict "roamers…by definition are not subscribers in the CMR system, within a CMR system" (FF 3) – which we interpret to refer to the home CMR system.

Comer discloses that "particular special telephone services provided by the CMR system operator (e.g. voice messaging or call waiting) may be interactively solicited." (FF 6). Kingdon discloses an accurate positioning service for mobile subscribers (FF 7).[8]

Returning to the claim, we determine that different sets of subscription types meet the claim. That is, we interpret "at least two subscription types are *definable* for the subscriber" followed by "the subscription types *defined* for the subscriber" to refer to the same set of claim subscription types (i.e., defined or definable set). On the other hand, we interpret the phrase "subscription types for which roaming is allowed in said mobile system" to refer to either the definable set or another set of subscription types, since the phrase lacks standard claim drafting language (i.e., "said," "the") positively linking the two sets of subscription types together as the same set.

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[8] We interpret Comer's (call waiting, call forwarding) and Kingdon's (accurate location) services to be specific home subscription types implicitly or obviously available for roaming; i.e., as a roaming subscription. Kingdon's location service is specifically disclosed as used in roaming and home networks, and also as useful for emergency situations while providing extra revenue to system operators (FF 7, FF 9). Typically, in prior art cellular systems, various subscription type data are stored in a home location register (HLR) and verified in a visitor location register (VLR) prior to roaming being allowed (FF 7, 9), as admitted by Appellant (FF 1). (*See also* FF 6, Comer, col. 11, l. 65 to col. 12, ll. 33, col. 14, ll. 21-52 (customer information stored for billing purposes); Br. 11-12). Thus, in view of Kingdon's teaching, providing and keeping track of Comer's home subscriptions to render them available as roaming subscriptions on different networks would have been a predictable method of enhancing revenue while providing a desired service.

We determine that Comer's home and roaming subscriptions meet the claim subscription type limitations described above, or alternatively, Comer's call waiting and call forwarding subscription types (with or without Kingdon's accurate location services) meet the limitations. As another alternative, a combination of Comer's home and roaming subscription types with Comer's (with or without Kingdon's) specific subscription types meet the claim limitations. For example, Comer's home and roaming subscriptions meet "at least two subscription types [that] are definable" and "the subscription types defined," while Comer's call waiting and forwarding subscription types meet "subscription types for which roaming is allowed in said mobile system."

Data Types

Claim 1 requires at least three types of data: 1) the "subscriber's roaming right *data,"* 2) the "*data on* the subscription types defined for the subscriber," and 3) "*data*…*on* subscription types for which roaming is allowed." (*Hereinafter* "data type(s) 1, 2 and 3" or "three data types"). A determination involving the three data types requires an analysis of the claim terminology: "*roaming* in each network…is *allowed or denied* on the *basis* [of the three data].

We turn first to the three data types. Data type 1 requires data regarding whether a subscriber is allowed to roam. As to data types 2 and 3, we interpret data respectively *on* subscription types (defined for the subscriber) and *on* subscription types for which roaming is allowed to be data *about* those types, or *concerning* those types. Hence, as to data types 2 and 3, claim 1 requires allowing or denying roaming on the basis of *data on*

or about the subscription types, as opposed to allowing or denying roaming on the basis of subscription types.

We concur with the Examiner's finding that Comer discloses at least three types of data meeting the claim including "special codes, key sequences, and information solicitation and information solicitation from the subscriber so that the roamer is aware that he or she will be billed at the rates established for roaming services (instead of the usual 'home' service rate)." (*Hereinafter* "rate validation procedures.") (FF 5, Ans. 3). We analyze Comer's system next to support our concurrence.

Prior to rate validation procedures for roaming, Comer's mobile system initiates other validation procedures, i.e., "Call Origination" procedures, for home subscribers (FF 4). Home subscriptions are verified and authenticated automatically as the mobile telephone transmits SCM (telephone functional characteristics), MIN (telephone number), and ESN (electronic serial number) data to a control switch (MTSO) (FF 4). "If the *MIN is valid and 'home'*, the received ESN is compared to the MTSO's database ESN entry *to detect fraud*. *If these checks succeed, the call is allowed to proceed.*" (FF 4).

Also prior to the rate validation procedures for roaming, cellular systems, each having a unique "System IDentification (SID) number," use the number to make a user aware that he or she is roaming (FF 5). That is, a 15-bit SID number is transmitted continuously from each provider. The SID of the system from which a particular subscriber has home services is stored in the memory of the subscriber's mobile telephone. When the mobile telephone enters a new area, it selects the strongest SID number on a control

channel and locks onto the corresponding system's data and control channel. If the two SID numbers do not match, then "it is indicated that the unit is 'roaming'." (If the SID numbers match, the subscriber is in the home network.) If the unit is "roaming," then the "subscriber is made aware that his or her mobile radiotelephone unit has seized or entered a system other than the system on which he or she is an authorized subscriber." Thereafter, "rate validation procedures" as described above are initiated to further ensure subscriber awareness of different billing rates. (FF 5).

Having described the data involved in Comer's "Call Origination" procedures, SID processes, and rate validation procedures, we next determine whether that data constitutes at least three of the claimed data types such that "*roaming* in each network…is *allowed or denied* on the *basis* [of the three data types].

Allowing or Denying Roaming on the Basis of the Three Data Types

As noted above, under one alternative, Comer's generic home and roaming subscriptions meet the "definable" subscription types of the claim, while Comer's and Kingdon's specific home subscription types, each of which is allowed to roam, meet "subscription types for which roaming is allowed."[9] Ultimately, roaming in each network is allowed only if Comer's

[9] Each specific subscription type (call waiting, call forwarding, and accurate location -see n. 8) is allowed to roam *according to Comer's home network system* meeting the claim limitation because the *system has no subscription specific constraints on roaming.* (This inability to disallow roaming on specific subscription types is a typical prior art situation as Appellant admits –see FF 1). However, a *subscriber* can override the system, and deny (or allow) the specific subscription that the system otherwise allows, on the
(Footnote continued on next page)

"Call Origination" data indicates the user's home subscription type is valid and authentic (FF 4). Therefore, roaming is allowed or denied initially on the basis of Comer's "Call Origination" data. Thereafter, roaming is allowed or denied on the basis of Comer's SID data, and the data involved in rate validation procedures, as further explained next.

That is, before a user attempts to roam, "Call Origination" data are generated (FF 4). We determine that such data are *data on* all home subscription types because the data are used to determine if the user has a valid and authentic home subscription (FF 4). Without the "Call Origination" data indicating a valid and authentic home subscription type, a subscriber cannot make either a home or roaming call (and thus also cannot receive Kingdon's and Comer's specific services). "*If these checks succeed, the call is allowed to proceed.*" (FF 4). Accordingly, we determine that validity and authentication data on a home subscription type also ultimately constitute data on a roaming subscription type, because with or without the data, a subscriber is respectively allowed or denied roaming rights. We

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basis of data on the subscription types (i.e. different billing rates for roaming or home subscriptions on the specific subscription (i.e., call waiting, call forwarding) as Comer teaches (FF 5, 7). Alternatively, we also determine that *valid subscription types* are allowed to roam; i.e., a valid subscription type constitutes one of the claimed two definable subscription types (valid and invalid (albeit inchoate)) which has been authenticated via the "Call Origination" procedures and is therefore a type for which roaming is allowed on the basis of the Call Origination data on that type. As a further alternative interpretation, roaming subscription types constitute subscription types for which roaming is allowed. In other words, a home subscriber (with an inchoate roaming subscription type – i.e., not yet accepted) cannot roam in a home network, by definition.

conclude that Comer's "Call Origination" procedures include data meeting data types 1 and 2; i.e., "*roaming* in each network…is *allowed or denied* on the *basis* of the subscriber's roaming right data …and on the basis of data on the subscription types defined for the subscriber."

After the "Call Origination" procedures, in order to make a call on the roaming network, Comer's subscriber must first receive SID data and then transmit SID data. Thus, the SID data is roaming right data - data type 1- because without it, one cannot roam. We also determine that SID data constitutes *data on* home and roaming subscription types - data type 2 - because the data not only indicates whether the subscriber has a home or roaming subscription (FF 6), it also implicitly indicates that the roaming and home systems are compatible.[10]

After a prospective roaming subscriber receives SID data, in order to roam, he or she *must* also initiate the system required rate validation data (in part to ensure awareness that special roaming rates apply as compared to home rates) (FF 5). The rate validation data, like the SID data, is data on home and roaming (i.e., cost comparison data, codes, etc.) required by Comer's system to allow roaming (FF 5), and therefore, constitutes data

[10] We infer that a mobile telephone cannot roam on each and every particular network unless the unit and network are compatible technically. To support the inference, we note that Comer describes the SID data as the "strongest *detectable*" by the telephone (FF 5) - implying its compatibility with the system. Further, Comer's SCM data comprises data on the telephone's characteristics, which are checked by the MTSO (switching operator) prior to a connection (FF 4).

types 1 and 2. On the other hand, to deny roaming (data type 1),[11] a prospective roaming subscriber declines the system's offer to transmit rate validation procedure data (FF 5, see also FF 6).

Turning to data type 3, the rate validation data also constitutes data type 3, because Comer's *subscriber* has the ability to allow or deny roaming (on a particular network) on the basis of cost comparison rate validation data on a subscription type that the *system* otherwise deems as one of the "subscription types for which roaming is allowed."[12] The Call Origination data also constitutes data type 3 because all roaming types of subscriptions (including call waiting, call forwarding, etc.) are allowed to roam initially

[11] We include data indicating a subscriber cannot roam in the category of "roaming right data."

[12] That is, Comer's or King's roaming subscriber respectively has either a generic home and roaming subscription (without special services) or one or more of the specific home and roaming subscriptions (with one or more of the special services). We determine that the limitation "subscription types for which roaming is allowed" does not require an inferential limitation that a subscriber must have more than one subscription type (meeting this data type 3). Rather, we interpret the plain meaning of the limitation as a requirement on the *system* to support one or more subscription types for which roaming is allowed. That is, Appellant's disclosed system keeps a list of subscription types, but all except one may be listed as denied – thus data exists on only *one type for which roaming is allowed* (for example, the system has data on a "prepaid" subscription type for which roaming is allowed (Spec. 7: 22 to 8: 6)). Therefore, Comer's call waiting or forwarding subscription types meet the claim as noted. On the other hand, even if data on more than one subscription type is required under the claim limitation, we determine that Call Origination or rate validation data on roaming types constitutes data on both roaming and home subscription types meeting the claim.

according to the system, but can be denied later on the basis of Call Origination data indicating the home subscription is no longer authentic and valid (which data is data on types of subscriptions – either roaming types, or roaming and home types). See also n. 9 above for other alternative interpretations meeting data type 3 of the claim.

Therefore, we determine that Comer and Kingdon singly or collectively teach that roaming, for a subscriber having at least two definable subscription types, is allowed or denied on basis of Comer's "Call Origination," SID, and rate validation procedure data which we determine meets the three data types claimed.

Roaming in each network

The Examiner determined that the combination of Kingdon and Comer teaches the limitation of allowing or denying roaming in each particular network by checking data in the HLR/VLR registers in order to verify that a subscriber is entitled to roam that particular network and to provide security for each separate network (Ans. 4-5). Appellant asserts the Examiner erred because Kingdon does not teach "allowing or denying of a subscriber's roaming in a mobile system or on a certain network of that mobile system." (Reply Br. 8). We have already determined above that Comer teaches allowing or denying roaming on a roaming network. If the claim only requires one network, then Comer also teaches the limitation of

allowing or denying roaming on a particular type of network as explained below.[13]

That is, Comer discloses at least two "parallel but separate" networks in each city (FF 2, n. 3). Comer's subscriber, traveling outside of his or her home network to another metropolitan area having the two networks, and attempting to make a call, by definition, attempts to make a call on any available particular foreign network of the alien system. That is, a particular type of network meeting the claim is an alien network that is compatible with a particular subscriber's mobile unit - each alien network transmits SID data that is compared to a subscriber's SID number, and the subscriber's telephone selects the strongest *detectable* transmitted SID signal, implying the particular network is compatible with the subscriber's mobile unit (FF 5, n. 10 above). The subscriber is either allowed or denied on each particular network on the basis of the three types of claimed data as outlined above.

Even if the claim requires two networks, the combination of Comer with Kingdon meets the claim. Kingdon discloses that each "particular network operator" stores "*subscriber information, e.g., supplementary services and authentication parameters"* in a home register (HLR) (FF 9) and during roaming, the "*visited network*" in Kingdon's system checks the

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[13] It is not clear if the claim requires two networks. The body of the claim recites: "the subscriber's roaming in *each* network of the mobile system *that the subscriber attempts to attach* to is allowed or denied separately on the basis of the subscriber's roaming right data, which data indicates if the subscriber is entitled to roam *a particular type of network* in that particular mobile system," while the preamble recites "*mobile system comprising at least two networks."* We find no "clear reliance" by Appellant on this portion of the preamble. See n. 2 above.

"*home network*" HLR for subscriber data (FF 7). Kingdon also discloses two particular types of networks: synchronous and asynchronous (par. 0005), and also discloses multiple networks all connected together in one large system for information transfer (FF 9). Kingdon's and Comer's systems are employed to generate revenue for system operators by providing attractive mobile telephone services, and the FCC mandates at least two providers in each metropolitan area (See Comer col. 14, ll. 21-52, FF 2, 6-7).

We determine that the collective teachings of Comer with Kingdon render predictable the method of allowing or denying roaming in each particular type of network on the basis of data that indicates if the subscriber is entitled to roam a particular type of network (i.e., either synchronous types or asynchronous types whichever are compatible with the mobile telephone), where Comer teaches allowing or denying roaming on at least one particular network type (i.e., a compatible roaming network that is either synchronous or asynchronous), in order to provide at least two networks of the same type on one system - thereby creating competitively priced attractive calling services to subscribers, while ensuring that extra revenue is allotted correctly to each specific type of provider in a system either having multiple network providers in each metropolitan area, or having multiple metropolitan areas connected in a system, to which and within which a home subscriber travels and attempts to roam (see FF 2, 7, n. 8).

CONCLUSION

Appellant fails to meet the burden of asserting error in the Examiner's rejection. *See United States v. Adams*, 383 U.S. at 47; *In re Kahn*, 441 F.3d at 987-88; *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H.*

Patrick, Co., 464 F.3d at 1360-61. Based on the arguments made in the Brief and Reply Brief, we have no basis for questioning the unchallenged findings of the Examiner. Appellant has not sustained his burden on appeal of showing that the Examiner erred in rejecting the claims on appeal as being unpatentable under 35 U.S.C. § 103(a).

Accordingly, we sustain the Examiner's rejection of claim 1. Appellant has not separately argued claims 3-7. Therefore, we also sustain the Examiner's rejections of claims 3-7.

DECISION

The decision of the Examiner is *affirmed.*

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2006).

AFFIRMED

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