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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/879,285	09/10/2010	Kim Brouard	LUTZ 201148US01	6660
48116	7590	11/02/2018	EXAMINER	
FAY SHARPE/NOKIA 1228 Euclid Avenue, 5th Floor The Halle Building Cleveland, OH 44115-1843			KIM, STEVEN S	
			ART UNIT	PAPER NUMBER
			3685	
			NOTIFICATION DATE	DELIVERY MODE
			11/02/2018	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* KIM BROUARD, THOMAS LEVY, and YIGANG CAI

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Appeal 2017-004115  
Application 12/879,285<sup>1</sup>  
Technology Center 3600

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Before MURRIEL E. CRAWFORD, MICHAEL C. ASTORINO, and  
ROBERT J. SILVERMAN, *Administrative Patent Judges*.

SILVERMAN, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

The Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's decision rejecting claims 1, 3, 5–14, and 24–30. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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<sup>1</sup> The Appellants identify “Alcatel-Lucent USA, Inc. of Murray Hill, New Jersey” and “Alcatel Lucent of Paris, France” as the real parties in interest. Appeal Br. 1.

### ILLUSTRATIVE CLAIM

1. A method for delivering dynamic policy rules for an end user of a communication service during a communication session, comprising:

receiving subscription information associated with an end user of a communication service from a subscription profile repository (SPR) at a Policy and Charging Rules Function (PCRF) of a Policy and Charging Control (PCC) architecture, wherein the PCRF determines an initial policy and initial rules for a communication session associated with the end user based at least in part on the subscription information;

providing the initial rules to a Policy and Charging Enforcement Function (PCEF) of the PCC architecture and applying the initial rules to the communication session via the PCEF, wherein the PCEF is associated with a gateway to an extended online charging system (EOCS);

sending a credit request for allocation of service units for the communication session to the EOCS from the PCEF;

receiving a credit answer with an allocation of service units for the communication session from the EOCS at the PCEF;

monitoring usage of the allocated service units at the PCEF after establishment of the communication session and at least periodically sending a report on usage of allocated service units to the EOCS from the PCEF;

receiving a change notification from the EOCS at the PCRF during the communication session after the EOCS determines a counter associated with usage of the allocated service units has changed based at least in part on the report from the PCEF and that a policy/rule change is needed in conjunction with the change to the counter, wherein the change notification triggers the policy/rule change at the PCRF;

determining new rules for the communication session at the PCRF based at least in part on the change notification; and

providing the new rules to the PCEF and applying the new rules to the communication session via the PCEF.

### CITED REFERENCES

The Examiner relies upon the following references:

Foottit et al.                      US 7,937,300 B2                      May 3, 2011  
(hereinafter “Foottit”)

Koskinen et al.                      WO 2007/020499 A1                      Feb. 22, 2007  
(hereinafter “Koskinen”)

3GPP TS 23.203 version 8.5.0 (2009-03), 3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Policy and Charging Control Architecture (Release 8) (hereinafter “3GPP203”)

### REJECTIONS

I.        Claims 3, 11–14, and 26–30 are rejected under 35 U.S.C. § 101 as ineligible subject matter.

II.        Claims 1, 3, 5–14, and 24–30 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

III.        Claims 1, 3, 5–14, and 24–30 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that the inventors regard as the invention.

IV.        Claims 1, 3, 5–14, and 24–30 are rejected under 35 U.S.C. § 103(a) as unpatentable over 3GPP203, Foottit, and Koskinen.

### FINDINGS OF FACT

The findings of fact relied upon, which are supported by a preponderance of the evidence, appear in the following Analysis.

## ANALYSIS

### *Subject-Matter Eligibility*

The subject matter eligible for patenting is limited, by statute, to the following categories: “process, machine, manufacture, [and] composition of matter.” 35 U.S.C. § 101.

Independent claim 3, and claims 11–14 and 26–30 depending therefrom, stand rejected as not belonging to any of these statutory categories. Independent claim 3 recites:

3. *A policy and charging control (PCC) architecture for dynamically managing policy rules for an end user of a communication service during a communication session, comprising:*

a Policy and Charging Rules Function (PCRF) configured to receive subscription information associated with an end user of a communication service from a subscription profile repository (SPR), wherein the PCRF is configured to determine initial rules for a communication session associated with the end user based at least in part on the subscription information; and

a Policy and Charging Enforcement Function (PCEF) associated with a gateway to an Extended Online Charging System (EOCS) and configured to i) receive the initial rules from the PCRF, ii) apply the initial rules to the communication session, iii) send a credit request for allocation of service units for the communication session to the EOCS, iv) receive a credit answer with an allocation of service units for the communication session from the EOCS, v) monitor usage of the allocated service units after establishment of the communication session, and vi) at least periodically send a report on usage of allocated service units to the EOCS;

wherein the PCRF is configured to receive a change notification from the EOCS during the communication session after the EOCS determines a counter associated with usage of the allocated service units has changed based at least in part on

the report from the PCEF and that a policy/rule change is needed in conjunction with the change to the counter, wherein the change notification triggers the policy/rule change at the PCRf;

wherein the PCRf is also configured to determine new rules for the communication session based at least in part on the change notification;

wherein the PCEF is configured to receive the new rules from the PCRf and apply the new rules to the communication session.

(Emphasis added).

According to the Final Office Action, rather than any of the statutory categories, claim 3 is “directed to software per se as the claims are directed to PCRf and PCEF.” Final Action 2. Citing *In re Nuijten*, 500 F.3d 1346 (Fed. Cir. 2007), the Examiner states: “[A]s ‘software’ is neither a category of invention nor a subset of one of the categories it does not represent patent eligible subject matter.” Final Action 3. The Examiner refers to a computer dictionary definition for “software” (“Computer programs; instructions that make hardware work”) and the IEEE dictionary definition for “architecture” (“The organizational structure of a system or a software item, identifying its components, their interfaces, and a concept of execution among them”). *Id.* at 2–3. The Examiner goes on to say that the Specification does not describe the PCRf and PCEF in terms of structural components or software components, but instead describes these in terms of functional blocks that a person of ordinary skill in the relevant art would regard as software. *Id.* at 3. The Final Office Action also says that the claim elements of “SPR,” “gateway,” “EOCS,” and “counter” “are all software/non-functional descriptive material.” *Id.* at 4.

The Appellants' position is that claim 3 is drawn to the "machine" category of § 101. *See* Appeal Br. 6–9, Reply Br. 2–4. In particular, the Appellants contend that the claimed "Policy and Charging Rules Function (PCRF)" and "Policy and Charging Enforcement Function (PCEF)" are "structural elements" and the "subscription profile repository (SPR)," "gateway," and "Extended Online Charging System (EOCS)" are "structural limitations." Appeal Br. 7.

The Federal Circuit addressed an issue similar to what is presented in this Appeal, in *Digitech Image Technologies, LLC v. Electronics for Imaging, Inc.*, 758 F.3d 1344 (Fed. Cir. 2014), regarding the claims in that case directed to a "device profile." *Digitech* explains:

For all categories except process claims, the eligible subject matter must exist in some physical or tangible form. To qualify as a machine under section 101, the claimed invention must be a "concrete thing, consisting of parts, or of certain devices and combination of devices." *Burr v. Duryee*, 68 U.S. 531, 570, 1 Wall. 531, 17 L. Ed. 650 (1863). To qualify as a manufacture, the invention must be a tangible article that is given a new form, quality, property, or combination through man-made or artificial means. *Diamond v. Chakrabarty*, 447 U.S. 303, 308, 100 S. Ct. 2204, 65 L. Ed.2d 144 (1980). Likewise, a composition of matter requires the combination of two or more substances and includes all composite articles. *Id.*

*Digitech*, 758 F.3d at 1348–49. *Digitech* determined that the claimed "device profile" is "a collection of information; specifically, a description of a device dependent transformation of spatial and color information." *Id.* at 1349. As such, the "device profile" "is not a tangible or physical thing and thus does not fall within any of the categories of eligible subject matter." *Id.* "Data in its ethereal, non-physical form is simply information that does not fall under any of the categories of eligible subject matter under section

101.” *Id.* at 1350. *See also In re Ferguson*, 558 F.3d 1359, 1365–66 (Fed. Cir. 2009) (claims for “[a] paradigm for marketing software” held non-statutory).

The Appellants’ description of the term “structural” does not resolve the issue before us, as conceptual arrangements, for example, may be said to possess structure. We are constrained, under *Digitech*, 758 F.3d at 1348, to ascertain whether claim 3’s recited “architecture” (including its various components) “exist[s] in some physical or tangible form.” Whether the “architecture” of claim 3 might be embodied in a tangible form is not sufficient to overcome the present rejection, because such tangible form is not manifest in the claim language. Instead, claim 3 is drawn in terms of the capacities of its various elements to perform certain operations.

In view of the foregoing, we are not persuaded of error in the rejection of independent claim 3. Therefore, because the Appellants present no separate argument for any of its dependent claims, we sustain the rejection of claims 3, 11–14, and 26–30 under 35 U.S.C. § 101.

#### *Written Description*

The Examiner sets forth two distinct reasons for the rejections under 35 U.S.C. § 112, first paragraph — one reason that pertains to all claims in the Appeal (claims 1, 3, 5–14, and 24–30), and a second reason that pertains to dependent claim 29 only. We address these distinct issues separately, below.

First (with regard to all claims in the Appeal), the Examiner states that the Specification lacks the “*structural* architecture” of the PCRf of a PCC and the PCEf of a PCC; instead, the Examiner states that the Specification

describes the PCEF and PCRF “in *functional* blocks and their functions.” Final Action 5 (emphasis added). *See also* Answer 4–5.

The Appellants respond by asserting that, in regard to a written-description rejection, the issue is whether the Specification provides an adequate written description of the claimed subject matter, *not* whether the Specification discloses “structure,” in particular. Reply Br. 4–6.

Indeed, the Examiner’s position does not align with the objective of the written-description requirement of § 112, first paragraph — i.e., to show possession of the claimed subject matter as of the filing date. *See Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (*en banc*). Accordingly, we do not sustain this species of the Examiner’s rejection under 35 U.S.C. § 112, first paragraph.

The second strain of the present rejection applies only to dependent claim 29, regarding the asserted absence of written-description support for the following limitation thereof: “wherein the PCEF is configured to update the IP-CAN [internet protocol connectivity access network] session via the PCRF and a bearer binding and event reporting function (BBERF) based at least in part on the new rules.” *See* Final Action 5.

The Appellants contend that the Specification provides written-description support for this limitation at page 3 (lines 4–5), page 10 (lines 18–26), page 13 (lines 17–19), and Figure 2. *See* Reply Br. 6. *See also* Appeal Br. 12.

Notably, Figure 2 of the Specification shows the interface between the PCRF and PCEF, as well as the interface between the PCEF and BBERF, and the Specification, at page 13, lines 17–19, states: “The Policy and Charging Rules Function PCRF sends new request via Gx reference point to

PCEF/BBERF in order to update the Internet Protocol Connectivity Access Network IP-CAN session.” These portions of the Specification adequately disclose the identified limitation of claim 29, such that we are persuaded of error in the rejection of claim 29.

In view of the foregoing, we do not sustain the rejection of claims 1, 3, 5–14, and 24–30 under 35 U.S.C. § 112, first paragraph.

### *Indefiniteness*

According to the Examiner, the claims fail to comply with the definiteness requirement of 35 U.S.C. § 112, second paragraph, because the Appellants (in a submission that predates the Final Office Action) have taken divergent positions, concerning the meaning of the claimed “PCC architecture,” and its “PCRF” and “PCEF” components, recited in both independent claims 1 and 3. Specifically, the Examiner regards the Appellants as having asserted that these claim elements are both *identical to* and *different from* the corresponding features of a prior art reference (identified variously as TS 23.203 or 3GPP203):

Claims 1, 3, 5–14 and 24–30 are rejected as being indefinite in view of the applicant's suggestion [in a prior submission to the Office] that instant invention, e.g. PCC architecture, is that of PCC architecture as described in TS 23.203 (“3GPP203”) (see pages 10-11). Here, TS 23.203 defines standards of PCC architecture in term of functional blocks, e.g. PCRF, PCEF, etc., and their functions. The applicant also asserts in pages 12-17 that instant PCRF and PCEF functions are different than that of PCRF and PCEF described in TS 23.203. Here, the scope of the claim is unclear since the supposed PCRF functions in the claims are allegedly different than those PCRF functions described in TS 23.203 standard and/or PCEF functions in the

claims are allegedly different than those PCEF functions described in TS 23.203 standard.

Final Action 6. *See also* Answer 6.

The Appellants argue that the claimed PCC architecture is “related to TS 23.203,” but is not only different from that in TS 23.203, but even differs from the combined teachings of TS 23.203, Foottit, and Koskinen. *See* Appeal Br. 13.

“[T]he Office establishes a prima facie case of indefiniteness with a rejection explaining how the metes and bounds of a pending claim are not clear because the claim contains words or phrases whose meaning is unclear.” *Ex parte McAward*, 2017 WL 3669566, at \*2 (PTAB 2017) (precedential) (citations omitted). The Appellants’ characterizations of the recited “PCC architecture,” “PCRF,” and “PCEF,” do not rise to this level, as a claim term may be similar to a related feature in a reference, while also having differences that render the claim nonobvious over that reference.

Accordingly, we do not sustain the rejection of claims 1, 3, 5–14, and 24–30 under 35 U.S.C. § 112, second paragraph.

### *Obviousness*

The Appellants contend that independent claim 1 stands rejected erroneously as obvious, because the cited prior art fails to teach the following limitations of claim 1:

receiving a change notification from the EOCS at the PCRF during the communication session after the EOCS determines a counter associated with usage of the allocated service units has changed based at least in part on the report from the PCEF and that a policy/rule change is needed in

conjunction with the change to the counter, wherein the change notification triggers the policy/rule change at the PCRf;

determining new rules for the communication session at the PCRf based at least in part on the change notification; and

providing the new rules to the PCEF and applying the new rules to the communication session via the PCEF.

*See* Appeal Br. 15–17.

The Examiner finds that Foottit (col. 4, ll. 32–46) discloses an OCS notifying the PCRf of a quota breach, thus triggering the PCRf to issue a new charging rule to the PCEF. *See* Final Action 8–10, Answer 7.

Referring to Figure 4, Foottit describes a sample call flow for such an embodiment, as follows:

At step **410**, the PCEF contacts the OCS with a Gy CCR when there is no remaining quota (as above). At step **420**, the OCS would conventionally respond with an indication that no further quota is available. At step **430**, the OCS would next notify the PCRf directly of a quota breach, using an appropriate interface. At step **440**, the PCRf would notify the PCEF via a Gx Re-Auth-Request (RAR) of the new charging rule. Finally, at step **450**, the PCEF acknowledges the receipt of a new charging rule from the PCRf via a Gx Re-Auth-Answer (RAA).

Foottit, col. 4, ll. 37–46.

The claimed “change notification” of claim 1 refers to the EOCS determination that “a *counter* associated with usage of the allocated service units *has changed*.” (Emphasis added). According to the Examiner, Foottit does not describe the claimed “counter”; instead, the rejection relies upon Koskinen (page 9, line 30–page 10, line 2 and page 19, lines 20–28) for this feature. Final Action 9. *See also* Answer 7–8.

The Appellants argue that Foottit, Koskinen, and their combination lack claim 1's recitations of a change notification from the EOCS indicating that a policy/rule change is needed, the PCRf determining new rules based on the change notification, and providing the new rules to the PCEF. Appeal Br. 16–17 (citing Foottit, col. 4, ll. 10–15). *See also* Reply Br. 11–12. According to the Appellants (*see* Appeal Br. 16–17), the identified prior art is deficient, because Foottit's OCS provides a quota breach notification to indicate the expiration of a subscriber's quota, whereas claim 1 recites a "*change notification* from the EOCS . . . after the EOCS determines a counter associated with usage of the allocated service units *has changed* based at least in part on the report from the PCEF *and that a policy/rule change is needed* in conjunction with the change to the counter" (emphasis added). Further, the Appellants contend that Koskinen does "not appear to apply to rule management or rule adjustments associated with changes to a user account balance." Appeal Br. 16–17.

The crux of the Appellants' argument is that Foottit's technique for invoking a new charging rule allegedly lacks the "counter" features, whereas Koskinen — although it satisfies the claimed "counter" — does not relate the "counter" to a need for a different charging policy/rule. Yet, as the Examiner explains (*see* Final Action 9–10, Answer 7–8), each alleged deficiency in Foottit (or Koskinen) is provided by the other reference. Hence, the Appellants' argument criticizes these references individually, but does not address their combined teachings. *See In re Keller*, 642 F.2d 413, 426 (CCPA 1981) ("[O]ne cannot show non-obviousness by attacking references individually where, as here, the rejections are based on combinations of references.") (citation omitted).

The Appellants' argument for independent claim 3 (*see* Appeal Br. 18–20) is essentially the same as that just discussed for claim 1. No separate argument is presented for any dependent claim. Accordingly, we sustain the rejection of claims 1, 3, 5–14, and 24–30 under 35 U.S.C. § 103(a).

#### DECISION

We AFFIRM the Examiner's decision rejecting claims 3, 11–14, and 26–30 under 35 U.S.C. § 101.

We REVERSE the Examiner's decision rejecting claims 1, 3, 5–14, and 24–30 under 35 U.S.C. § 112, first paragraph.

We REVERSE the Examiner's decision rejecting claims 1, 3, 5–14, and 24–30 under 35 U.S.C. § 112, second paragraph.

We AFFIRM the Examiner's decision rejecting claims 1, 3, 5–14, and 24–30 under 35 U.S.C. § 103(a).

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

AFFIRMED