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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte KYUNG JOO SUH, TAE SUN YEOUM, JOON HO PARK,
JIN WON SEO, SANG HO LEE, JAE HO JUNG

Appeal 2017-010164
Application 13/059,134
Technology Center 2400

Before THU A. DANG, JASON J. CHUNG, and MATTHEW J. McNEILL,
Administrative Patent Judges.

DANG, *Administrative Patent Judge.*

DECISION ON APPEAL

I. STATEMENT OF THE CASE

Appellants¹ appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 15–18, 21–24, 27–30, and 33–36, which are all of the pending claims. Claims 1–14, 19, 20, 25, 26, 31, 32, 37, and 38 were canceled previously. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ The real party in interest in this appeal is the assignee, Samsung Electronics Co. Ltd. App. Br. 2.

A. INVENTION

According to Appellants, the invention relates to “a mobile communication system,” and in particular, to “a method for managing mobility of a mobile terminal with Non-Access Stratum (NAS) protocols.” Spec. ¶ 1.

B. REPRESENTATIVE CLAIM

Claim 15 is exemplary:

15. A method for processing a message in a wireless communication, the method comprising:

generating, at a first entity, a message comprising protocol discriminator information and security header type information; and

transmitting the message to a second entity,

wherein the protocol discriminator information uses bits coded as 0010 to indicate an evolved session management (ESM) message and uses bits coded as 0111 to indicate an evolved packet system (EPS) mobility management (EMM) message,

wherein the security header type information uses bits coded as 0000 to indicate that the message is not security protected, uses bits coded as 0001 to indicate an integrity protected message, uses bits coded as 0010 to indicate an integrity protected and ciphered message, and uses bits coded as 1100 to indicate a service request message, and

wherein bits 1 to 4 of a first octet of the message contain the protocol discriminator information and bits 5 to 8 of the first octet of the message contain the security header type information.

C. REJECTION²

Claims 15–18, 21–24, 27–30, and 33–36 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Somasundaram et al. (US 2015/0189512 A1; pub. July 2, 2015, hereinafter “Somasundaram”) and 3GPP TS 24.301 (3rd Generation Partnership Project Organization, *Technical Specification Group Core Network and Terminals; Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3 (Release 8)*, (V0.4.0 2008); hereafter “TS 24.301”).

II. ISSUES

The principal issue before us is whether the Examiner erred in finding that the combination of Somasundaram and TS 24.301 teaches or suggests a method comprising the steps of “generating . . . a message comprising protocol discriminator information” and “security header type information;” and “transmitting the message to a second entity,” wherein the protocol discriminator information and security header type information use particular bits to indicate particular messages, or whether the particular message is security protected or ciphered. Claim 15.

III. FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

² In the Answer, the Examiner indicates that the 35 U.S.C. § 112 rejection of claims 15–18, 21–24, 27–30, and 33–36 has been withdrawn. Ans. 2.

Somasundaram

1. Somasundaram teaches the processing of the non-access stratus (NAS) layer (layer 3) in long term evolution (LTE) wireless transmit/receive units (WTRUs), which allows the NAS protocol layer to route L3 layer messages to the correct NAS entity, and to encode new NAS message types and information elements. Somasundaram, Abstract. Figure 1, showing a LTE L3 layer, is reproduced below:

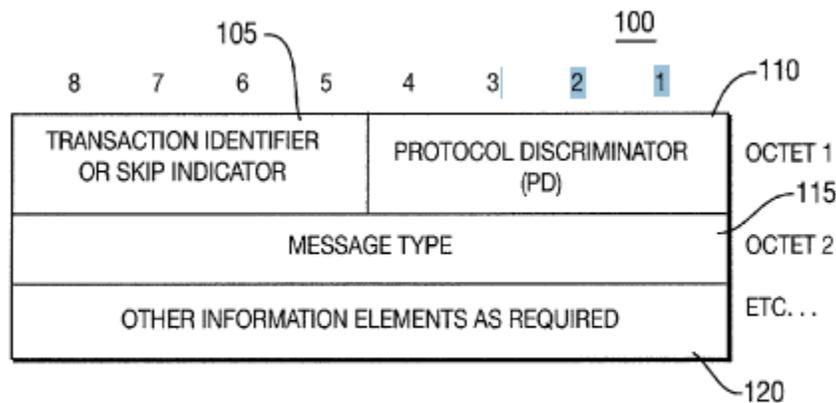


FIG. 1
PRIOR ART

Figure 1 shows an LTE L3 header 100 comprising a protocol discriminator (PD) field 110 and transaction identifier field 105 in the first octet, wherein the combination of the bits in the L3 PD field 110 indicates that the L3 message that follows the LTE LE header 100 is an upper layer LTE L3 message such as EMM or ESM. *Id.* at ¶ 28.

TS 24.301

2. TS 24.301 teaches a Technical Specification produced by the 3rd Generation Partnership Project (3GPP), which specifies the procedures used by the protocols for mobility management and session management between User Equipment (UE) and Mobility Management Entity (MME) in the Evolved Packet System (EPS), wherein the protocols belong to the non-

access stratum (NAS). 24.301, 12–13 (“Foreword,” “Scope”). The EPS Mobility Management (EMM) protocol provides control of security for the NAS protocol, and the EPS Session management (ESM) protocol provides procedures for the handling of EPS bearer contexts. *Id.* Figures 9.1.1 and 9.1.2, showing general message organization, are reproduced below:

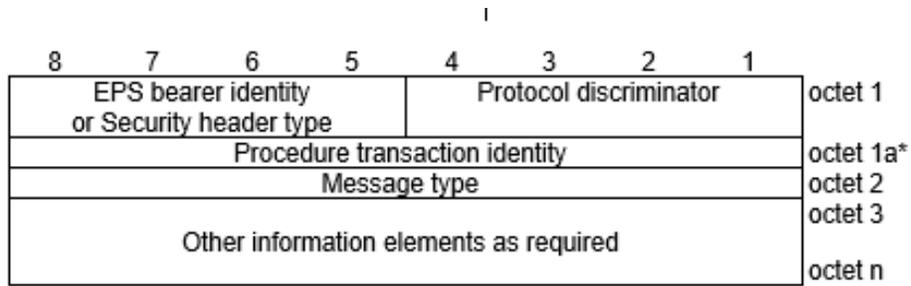


Figure 9.1.1: General message organization example for a not security protected NAS message

Figure 9.1.1 shows a general organization for a not security protected NAS message. *Id.* at 111.

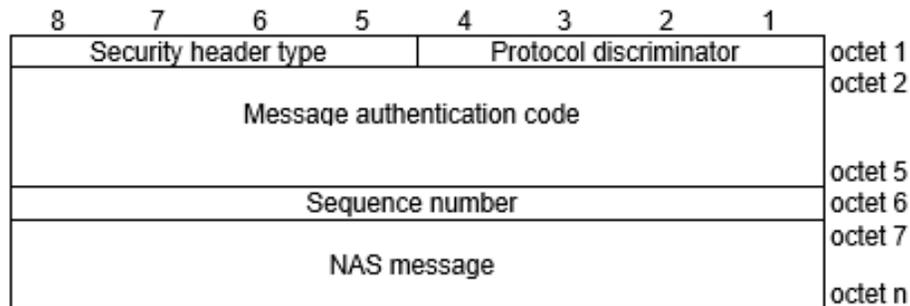


Figure 9.1.2: General message organization example for a security protected NAS message

Figure 9.1.2 shows a general message organization for a security protected NAS message. *Id.* at 111. As shown in Figures 9.1.1 and 9.1.2, bits 1 to 4 of the first octet of an NAS message contain the Protocol Discriminator, while bits 5 to 8 of the first octet of the message contain the security header type, or, for a not security protected message, an EPS bearer identity. The Protocol Discriminator (PD) and its use are defined in 3GPP TS 24.007. *Id.* at 111.

Table 9.3.1, showing a security header type, is reproduced below:

Table 9.3.1: Security header type

Security header type (octet 1)				
8	7	6	5	
0	0	0	0	No security protection
0	0	0	1	Security protected NAS message
1	1	0	0	Security header for the SERVICE REQUEST message
1	1	0	1	These values are not used in this version of the protocol. To If received they shall be interpreted as '1100'. (NOTE)
1	1	1	1	
All other values are reserved.				
NOTE: When bits 7 and 8 are set to '11', bits 5 and 6 can be used for future extensions of the SERVICE REQUEST message.				

Table 9.3.1 shows a security header type, wherein a message received with the security header type encoded as 0000 shall be treated as not security protected message. *Id.* at 112. On the other hand, as shown in Table 9.3.1, the security header type encoded as 0001 shall be treated as security protected message, and as 1100 shall be treated as service request message.

NAS security algorithms are used for ciphering and integrity protection. *Id.* at 123.

IV. ANALYSIS

We have reviewed the Examiner's rejection in light of Appellants' arguments presented in this appeal. Arguments which Appellants could have made, but did not make in the Brief are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2016). On the record before us, we are unpersuaded the Examiner has erred. We adopt as our own the findings and reasons set forth in the rejections from which the appeal is taken and in the Examiner's Answer, and provide the following for highlighting and emphasis.

Appellants contend that Somasundaram fails to teach or suggest “bits 1 to 4 of a first octet of the message contain the protocol discriminator information and bits 5 to 8 of the first octet of the message contain the security header type information,” wherein the protocol discriminator information is “coded as 0010 to indicate an evolved session management (ESM) message and uses bits coded as 0111 to indicate an evolved packet system (EPS) mobility management (EMM) message,” while the security header type information “uses bits coded as 0000 to indicate that the message is not security protected, uses bits coded as 0001 to indicate an integrity protected message, uses bits coded as 0010 to indicate an integrity protected and ciphered message, and uses bits coded as 1100 to indicate a service requires message.” App. Br. 9. Appellants then merely contend that the Examiner “provides no clear reasoning as to how TS 24.301 cures this deficiency.” *Id.*

We have considered all of Appellants’ arguments and evidence presented. Based on the record before us, we are unpersuaded that the Examiner erred in finding that claims would have been obvious over Somasundaram and TS 24.301.

As a preliminary matter of claim construction, we give the claims their broadest reasonable interpretation consistent with the Specification. *See In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997). Here, claim 15 is directed to a “method for processing a message” which comprises the step of “generating” a message comprising “protocol discriminator information” and “security header type information” and a step of “transmitting” the message, wherein certain bits for the message contain the protocol discriminator and security header type information, and wherein the protocol

discriminator information and security header type information use certain bits for certain indications. That is, claim 15 merely recites a method comprising steps of “generating” and “transmitting” a message “wherein” the generated message comprises particular information, i.e., “protocol discriminator information” that uses certain bits for certain indications and “security header type information” that uses certain other bits for other indications. We note that, in claim 15, the type of data comprised in the generated message is provided in a “wherein” clause.³ Given the broadest reasonable interpretation of the claim, claim 15 merely requires generating and transmitting a message which may include a type of data, such as “protocol discriminator information” and “security header type information.”

Here, by contending that the information provided in the message in the prior art differs from the claimed information, Appellants attempt to distinguish the claims strictly based on the content of the generated message — the type of data comprised in the generated message. The content of the message, however, does not change the functionality of the recited “generating” step. The recited functionality remains the same regardless of

³ See MANUAL OF PATENT EXAMINING PROCEDURE § 2111.04 (9th Ed., Rev. 08.2017, Jan. 2018)) regarding “wherein” clauses:

Claim scope is not limited by claim language that suggests or makes optional but does not require steps to be performed, or by claim language that does not limit a claim to a particular structure. However, examples of claim language, although not exhaustive, that may raise a question as to the limiting effect of the language in a claim are:

- (A) “adapted to” or “adapted for” clauses;
- (B) “wherein” clauses; and
- (C) “whereby” clauses.

what the data constitutes, or how the data may be named, wherein such data does not further limit the claimed invention either functionally or structurally. The informational content of the data, thus, represents non-functional descriptive material, which “does not lend patentability to an otherwise unpatentable computer-implemented product or process.”

Ex parte Nehls, 88 USPQ2d 1883, 1889 (BPAI 2008) (precedential) (“[T]he nature of the information being manipulated does not lend patentability to an otherwise unpatentable computer-implemented product or process.”). *See Ex parte Curry*, 84 USPQ2d 1272, 1274 (BPAI 2005) (informative) (Fed. Cir. Appeal No. 2006-1003), *aff’d*, (Rule 36) (June 12, 2006) (“wellness-related” data in databases and communicated on distributed network did not functionally change either the data storage system or the communication system used in the claimed method). *See also In re Ngai*, 367 F.3d 1336, 1339 (Fed. Cir. 2004); *Nehls*, 88 USPQ2d at 1887–90 (discussing non-functional descriptive material); *see also Ex parte Mathias*, 84 USPQ2d 1276, 1279 (BPAI 2005) (informative) (“[N]onfunctional descriptive material cannot lend patentability to an invention that would have otherwise been anticipated by the prior art.”), *aff’d*, 191 Fed. Appx. 959 (Fed. Cir. 2006) (Rule 36).

Nevertheless, even assuming *arguendo*, that the “wherein” clause and the content of the generated data were given patentable weight, we are unpersuaded that the Examiner errs in finding that the combination of Somasundaram and TS 24.301 *at least suggests* the contested limitation.

Somasundaram discloses the processing of an NAS message wherein bits 1 to 4 of a first octet of the message contain the protocol discriminator (PD) information, the PD information being coded to indicate an ESM

message or EMM message. FF 1. We find no error with the Examiner's reliance on Somasundaram to teach and suggest a message comprising protocol discriminator information using bits coded to indicate an ESM message and an EMM message, as recited in claim 15.

Further, in the same field of endeavor, TS 24.301 discloses that, in an NAS message, bits 1 to 4 of the first octet of the message contain the protocol discriminator information and bits 5 to 8 contain security header type information. FF 2. In particular, TS 24.301's security header type information (bits 5 to 8) uses "0000" to indicate not "security protected," uses "0001" to indicate "integrity protected," and uses "1100" to indicate "service request." *Id.* Although TS 24.301 does not specifically disclose using any bit coding to indicate integrity protect "and ciphered" message, TS 24.301 does disclose the need for ciphering as well as integrity protection. *Id.* We find no error with the Examiner's finding that one of ordinary skill in the art would have found it obvious to also indicate that the message is "ciphered" as well as integrity protected. Ans. 7-8. Accordingly, contrary to Appellants' contentions (App. Br. 9), we agree with the Examiner's finding that TS 24.301 at least suggests also indicating a "ciphered" message.

Although, in the Reply Brief, Appellants contend that "TS 24.301 fails to disclose that the second four bits (bits 5-8) of the first octet use bits coded as 0010 to indicate an integrity protected and ciphered message" (Reply Br. 5), this contention does not take into account what the collective teachings of the prior art would have suggested to one of ordinary skill in the art. *See In re Keller*, 642 F.2d 413, 425 (CCPA 1981). Here, as the Examiner concludes, a person of ordinary skill, upon reading TS 24.301,

would find it obvious to also indicate that the message is “ciphered” as well as integrity protected. Ans. 7–8.

The Supreme Court has stated clearly, application of familiar elements according to known methods is “likely to be obvious when it does no more than yield predictable results.” *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 416 (2007). Here, Appellants have presented no evidence that using bits coded to indicate ciphered as well as integrity protected message would have been “uniquely challenging or difficult for one of ordinary skill in the art.” *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007) (citing *KSR*, 550 U.S. at 418). Instead, we find such a modification would have been well within the ordinary level of skill of the art. *See KSR*, 550 U.S. at 417. In particular, we find that Appellants’ invention is simply a modification of familiar prior art teachings that would have realized a predictable result to the skilled artisan. The skilled artisan is “a person of ordinary creativity, not an automaton.” *Id.* at 421. *See also In re Rice*, 341 F.2d 309, 314 (CCPA 1965)).

Accordingly, we find no error with the Examiner’s obviousness rejection of claim 15, and claims 16–18, 21–24, 27–30, and 33–36, not separately argued thus falling therewith, over Somasundaram and TS 24.301.

V. CONCLUSION AND DECISION

We affirm the Examiner’s rejections of claims 15–18, 21–24, 27–30, and 33–36 under 35 U.S.C. § 103(a).

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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).

AFFIRMED