

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2024/076238

International filing date (day/month/year)
19.09.2024

Priority date (day/month/year)
02.10.2023

International Patent Classification (IPC) or both national classification and IPC
INV. H04W48/18 ADD. H04W60/06

Applicant
NOKIA TECHNOLOGIES OY

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office
P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk - Pays Bas
Tel. +31 70 340 - 2040

Date of completion of
this opinion

see form
PCT/ISA/210

Authorized Officer

Isopescu, Ciprian

Telephone No. -0



Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:
- ☒ the international application in the language in which it was filed.
 - ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).
2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:
- a. ☐ forming part of the international application as filed.
 - b. ☐ furnished subsequent to the international filing date for the purposes of international search (Rule 13ter.1(a)),
 - ☐ accompanied by a statement to the effect that the sequence listing does not go beyond the disclosure in the international application as filed.
4. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, this opinion has been established to the extent that a meaningful opinion could be formed without a WIPO Standard ST.26 compliant sequence listing.
5. Additional comments:

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement
- | | | |
|-------------------------------|-------------|-------------|
| Novelty (N) | Yes: Claims | |
| | No: Claims | <u>1-20</u> |
| Inventive step (IS) | Yes: Claims | |
| | No: Claims | <u>1-20</u> |
| Industrial applicability (IA) | Yes: Claims | <u>1-20</u> |
| | No: Claims | |
2. Citations and explanations
- see separate sheet**

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

1 docs

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

2 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1, 19 and 20 is not new in the sense of Article 33(2) PCT.

2.1 Document D1 discloses, according to all the features of claim 1,

a method, comprising:

transmitting, by a user equipment (UE), a first message to a network node, the first message including a request for access to a first network according to a non-access stratum (NAS) protocol (see for example section 5.5.1.2.5, *"initial registration request"*);

receiving, by the UE, a second message from the network node, the second message including an indication of no network slice being available to service access to the first network requested by the UE (see for example section 5.5.1.2.5, *"the initial registration request is rejected due to the absence of allowed S-NSSAI(s), the network shall set the 5GMM cause value to #62 'No network slices available'"*);

disabling, by the UE, a capability to access networks using the NAS protocol based upon the receiving the second message (see for example section 5.5.1.2.5, *"The UE shall set the 5GS update status to 5U3 ROAMING NOT ALLOWED (and shall store it according to subclause 5.1.3.2.2) and shall delete any 5G-GUTI, last visited registered TAI, TAI list and ngKSI. The UE shall consider the USIM as invalid for 5GS services until switching off or the UICC containing the USIM is removed or the UE shall consider the entry of the 'list of subscriber data' with the SNPN identity of the current SNPN as invalid until the UE is switched off or the entry is updated. The UE shall delete the list of equivalent PLMNs (if any) and enter the state 5GMM-DEREGISTERED", "the UE shall disable the N1 mode capability"*);

storing, by the UE, an identity of the first network (see for example section

- 5.5.1.2.5, *"The UE shall set the 5GS update status to 5U3 ROAMING NOT ALLOWED (and shall store it...)"*; and
after storing, exploiting the stored identity of the first network, by the UE, during a network selection process (see for example section 5.5.1.2.5, *"The UE shall set the 5GS update status to 5U3 ROAMING NOT ALLOWED (and shall store it according to subclause 5.1.3.2.2) and shall delete any 5G-GUTI, last visited registered TAI, TAI list and ngKSI. The UE shall consider the USIM as invalid for 5GS services until switching off or the UICC containing the USIM is removed or the UE shall consider the entry of the "list of subscriber data" with the SNPN identity of the current SNPN as invalid until the UE is switched off or the entry is updated. The UE shall delete the list of equivalent PLMNs (if any) and enter the state 5GMM-DEREGISTERED"*).
- 2.2 Since the subject-matter of claims 19 and 20 corresponds substantially to that of claim 1, document D1 discloses also all the features of claims 19 and 20.
- 2.3 Therefore, claims 1, 19 and 20 do not meet the requirements of Article 33(2) PCT for lack of novelty.
- 3 Dependent claims 2-18 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty (Article 33(2) PCT) and/or inventive step (Article 33(3) PCT), for the following reasons:
- The additional features of claims 2-7 are disclosed by document D1 (see the features already identified when objection claim 1).
- The additional features of claims 8-10, 14-17 relating to details of the stored identity are disclosed by document D1 (see for example section 5.5.1.2.5, *"USIM is removed or the UE shall consider the entry of the "list of subscriber data" with the SNPN identity of the current SNPN as invalid until the UE is switched off or the entry is updated", "counter for "SIM/USIM considered invalid"*).
- The additional features of claims 11-13, relating to signalling for registration availability dur to other network slice subscription are disclosed by document D1 (see for example section 5.5.1.2.5, *"If the UE has an allowed NSSAI or configured NSSAI that contains S-NSSAIs which are included neither in the rejected NSSAI for the current PLMN or SNPN nor in the rejected NSSAI for the*

current registration area, the UE may stay in the current serving cell, apply the normal cell reselection process and start an initial registration with a requested NSSAI that includes any S-NSSAI from the allowed NSSAI or the configured NSSAI that is neither in the rejected NSSAI for the PLMN or SNPN nor in the rejected NSSAI for the current registration area").

The additional features of claim 18, relating to a network node comprising AMF is disclosed by document D1 ((see for example section 5.5.1.2.5, "the AMF shall send a REGISTRATION REJECT message to the UE").

Therefore, claims 2-18 are not allowable, Article 33(1) PCT.

- 4 For the sake of completeness, it is pointed out that the features of claims 1-20 are disclosed or at least obviously derivable also from documents D2 (see for example sections "Reason for change", e.g. *"was agreed that when the initial registration is rejected with cause value #62 (No network slices available), the following paragraph is added in subclause 5.5.1.2.5 Initial registration not accepted by the network: "If the UE has neither allowed NSSAI for the current PLMN or SNPN nor configured NSSAI for the current PLMN and has a default configured NSSAI containing one or more S-NSSAIs that are not included in any of the rejected NSSAI for the PLMN or SNPN, the rejected NSSAI for the current registration area, and the rejected NSSAI for the failed or revoked NSSAA, the UE may stay in the current serving cell, apply the normal cell reselection process, and start an initial registration with a requested NSSAI with that default configured NSSAI. Otherwise, the UE may perform a PLMN selection or SNPN selection according to 3GPP TS 23.122 [5] and additionally, the UE may disable the N1 mode capability for the current PLMN or SNPN if each S-NSSAI in the default configured NSSAI was rejected with cause "S-NSSAI not available in the current PLMN or SNPN" or "S-NSSAI is not available due to the failed or revoked network slice-specific authentication and authorization" as described in subclause 4.9."*, section 5.5.1.3.5, "If the UE has neither allowed NSSAI for the current PLMN or SNPN nor configured NSSAI for the current PLMN and has a default configured NSSAI containing one or more S-NSSAIs that are not included in any of the rejected NSSAI for the PLMN or SNPN, the rejected NSSAI for the current registration area, and the rejected NSSAI for the failed or revoked NSSAA, the UE may stay in the current serving cell, apply the normal cell reselection process, and start a registration procedure for mobility and periodic registration update with a requested NSSAI with that

default configured NSSAI. Otherwise, the UE may perform a PLMN selection or SNPN selection according to 3GPP TS 23.122 [5] and additionally, the UE may disable the N1 mode capability for the current PLMN or SNPN if each S-NSSAI in the default configured NSSAI was rejected with cause "S-NSSAI not available in the current PLMN or SNPN") and/or D3 (see for example sections "Reason for change", "If the UE has any available S-NSSAIs upon reception of Registration Reject with cause #62, the UE stays in the current serving cell and applies normal cell reselection and starts an initial registration with a requested NSSAI among available S-NSSAIs. If not, the UE performs a PLMN selection", "The default configured NSSAI is added for requested NSSAI among available S-NSSAI upon reception of registration reject with cause #62", section 5.5.1.2.5).

Re Item VII

Certain defects in the international application

If the Applicant opts to enter the examination phase under PCT II or a national / regional phase, the following requirements must be also met:

- 5 It is not a present apparent which part of the application could serve as a basis for a new, allowable claim.

Should the Applicant nevertheless regard some particular matter as novel and/or inventive, an independent claim including such matter should be filed. The applicant should also indicate in the letter of reply the difference of the subject-matter of the new claim vis-à-vis the state of the art and the significance thereof.
- 6 Any new independent claims should be in the two-part form in accordance with Rule 6.3(b) PCT, with those features known in combination from the relevant prior art being placed in the preamble (Rule 6.3(b)(i) PCT) and with the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).

If, however, the applicant is of the opinion that the two-part form would be inappropriate, then reasons therefore should be provided in the letter of reply. In addition, the applicant should ensure that it is clear from the description which features of the subject-matter of the independent claims are known from the prior art (cf. the PCT Guidelines 5.08).

- 7 The features of the claims should be provided with reference signs placed in parentheses (Rule 6.2(b) PCT). Moreover, the abbreviations should not be placed between parentheses, in order to avoid any doubts as to their limiting character (PCT Guidelines 5.11), e.g., if mistaken for reference signs (e.g. formulations such as "user equipment, UE,", etc. would be acceptable).
- 8 In view of Rule 5.1(a)(ii) PCT, at least the above cited document D1 should be identified in the description and the relevant background art disclosed therein should be briefly discussed in the description.
- 9 The opening part of the description should be modified to bring it into agreement with any amended independent claims, Rule 5.1(a)(iii) PCT.
- 10 The expression "incorporated herein by reference" (see paragraphs [0035], [0038]) should be removed from the description (see PCT-Guidelines, 4.26).
- 11 In order to facilitate the examination of the conformity of the amended application with the requirements of Article 34(2)(b) PCT, the applicant is requested to clearly identify the amendments carried out, no matter whether they concern amendments by addition, replacement or deletion, and to indicate the passages of the application as filed on which these amendments are based (see also Rule 66.8(a) PCT).

Re Item VIII

Certain observations on the international application

- 12 The application does not meet the requirements of Article 6 PCT for the following reasons:

The vague and imprecise statement ("spirit") in the description, paragraph [00106], implies that the subject-matter for which protection is sought may be different to that defined by the claims, thereby resulting in lack of clarity (Article 6 PCT) when used to interpret them.