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(54) Title: PREVENTING/MITIGATING PACKET LOSS IN IAB SYSTEMS

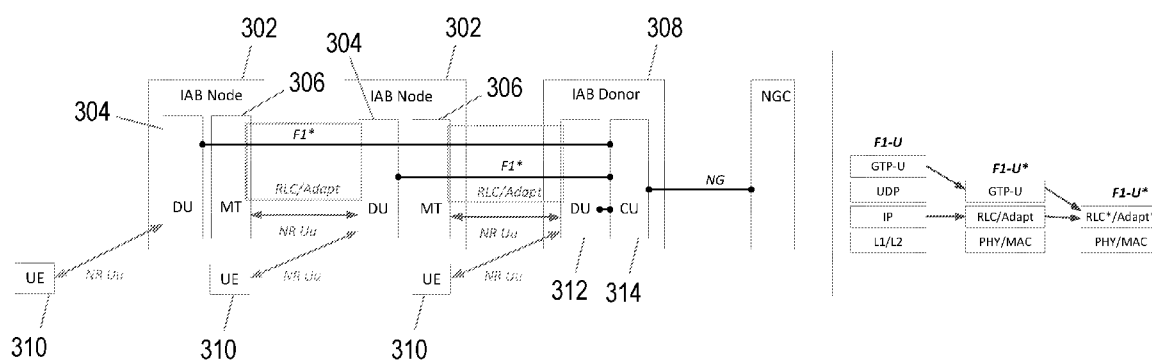


Fig. 3

(57) Abstract: A method is performed by a wireless device for transmitting PDCP packets over a multi-hop path to a receiver, in accordance with particular embodiments. The method begins with receiving PDCP signalling indicating that at least one transmitted PDCP 5 packet has not been received. For example, the PDCP signalling may comprise a PDCP status PDU, or may comprise PDCP data recovery or PDCP re-establishment RRC signalling. In response to receiving the PDCP signalling indicating that at least one transmitted PDCP packet has not been received, the wireless device retransmits the at least one transmitted PDCP packet that has not been received, even if said 0 transmitted PDCP packet has been acknowledged by a lower protocol layer. A method is also performed by a network node in accordance with particular embodiments. The method begins with determining whether a wireless device is connecting to the network via an IAB node. If it is determined that the wireless device is not connecting to the network via an IAB node, the network node configures the wireless device with a first 5 PDCP SDU discard timer, and, if it is determined that the wireless device is connecting to the network via an IAB node, the network node configures the wireless device with a second PDCP SDU discard timer that is longer than the first PDCP SDU discard timer.

Published:

- *with international search report (Art. 21(3))*
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INTERNATIONAL SEARCH REPORT

International application No
PCT/SE2019/050592

A. CLASSIFICATION OF SUBJECT MATTER
INV. H04L1/18
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EP0-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 2 086 272 A1 (LG ELECTRONICS INC [KR]) 5 August 2009 (2009-08-05) abstract figures 4, 6 paragraphs [0018] - [0024], [0076] - [0081] -----	1-3,9
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A	EP 2 469 750 A1 (ALCATEL LUCENT [FR]) 27 June 2012 (2012-06-27) abstract figure 2 paragraphs [0020] - [0034] ----- -/--	4-8, 18-27



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

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"E" earlier application or patent but published on or after the international filing date

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"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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Date of the actual completion of the international search

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 3 301 842 A1 (PANASONIC IP CORP AMERICA [US]) 4 April 2018 (2018-04-04) abstract figures 16, 21 paragraphs [0161], [0172] - [0175] -----	4-8, 18-27
A	EP 2 916 572 A1 (HUAWEI TECH CO LTD [CN]) 9 September 2015 (2015-09-09) abstract figure 5 paragraphs [0100] - [0121] -----	10-17,28
A	EP 2 830 352 A1 (PANASONIC IP CORP AMERICA [US]) 28 January 2015 (2015-01-28) abstract figure 24 paragraphs [0171] - [0183] -----	10-17,28

INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE2019/050592

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of Item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☒ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/SE2019/050592

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FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-3, 9

retransmission of acknowledged PDCP packet

2. claims: 4-8, 18-27

indication of successfully delivered PDCP PDUs by RLC to PDCP

3. claims: 10-17, 28

configuration of PDCP SDU discard timer depending on whether a wireless device is connecting to the network via an IAB node
