



New connection on: : 22-10-2020 : 22:52:31 - Last disconnection on: : 22-10-2020 : 22:52:25

V 4.0.0.44803(LP,U,linux) (Rev:43856 2017-04-27 09:03:29 +0200#(D201820)) (RPM D201820)

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[EPODOC: SS 34] QoS and management and ("5G" or LTE)

Results in EPODOC 96

[SS 35] ..li



1/96 © EPODOC / EPO

PN - [WO2020200264](#) A1 20201008

PR - US201962827910P 20190402; US202016828090 20200324

AP - [WO2020CN82904](#) 20200402

DT - **

CT - [CN] ISR (A1)

[XP051592561](#) A[X];

[XP051592459](#) A[X];

[XP051598021](#) A[X];

[CN108632917](#) A 20181009 [A] (CHINA ACADEMY TELECOMMUNICATIONS TECHNOLOGY)

[A] 1-15

* the whole document *;

[WO2018026169](#) A1 20180208 [A] (SAMSUNG ELECTRONICS CO LTD [KR])

[A] 1-15

* the whole document *

CTNP - [CN] ISR (A1)

[X] - QUALCOMM INCORPORATED et al., "Update of error handling for Mapped EPS bearer contexts IE", 3GPP TSG CT WG1 Meeting#115, C1-191699, (20190301), doi:20200615105421X, XP051592561

[X] 1-15

* section 6.3.2.3 *

[X] - QUALCOMM INCORPORATED et al., "Update of error handling for Mapped EPS bearer contexts IE", 3GPP TSG CT WG1 Meeting#115, C1-191544, (20190301), doi:20200615105519X, XP051592459

[X] 1-15

* section 6.3.2.3 *

[X] - QUALCOMM INCORPORATED, "Update of error handling for Mapped EPS bearer contexts IE", 3GPP TSG CT WG1 Meeting#115, C1-191105, (20190301), doi:20200615105606X, XP051598021

[X] 1-15

* section 6.3.2.3 *

CI - H04W28/0268 (US)

- H04W76/10 (US)

PA - MEDIATEK INC [CN]

TI - INTERWORKING BETWEEN EVOLVED PACKET SYSTEM (EPS) SESSION **MANAGEMENT** (ESM) AND **5G** SESSION **MANAGEMENT** (5GSM)

AB - A method can include receiving a "create new evolved packet system (EPS) bearer" operation code in a mapped EPS bearer contexts information element (IE) in a first protocol data unit (PDU) session modification command message for creating a mapped EPS bearer context at a user equipment (UE) in a wireless communication system, and when there is neither a quality of service (**QoS**) flow descriptions IE in the first PDU session modification command message indicating a **QoS** flow description corresponding to an EPS bearer identity (EBI) in the mapped EPS bearer context, nor an existing **QoS** flow description at the UE

corresponding to the EBI included in the mapped EPS bearer context, sending a PDU session modification request message including a mapped EPS bearer contexts IE to delete the mapped EPS bearer context.

2/96 © EPODOC / EPO

- PN - [WO2020204522](#) A1 20201008
- PR - KR20190037367 20190329; KR20190057731 20190516
- AP - [WO2020KR04311](#) 20200330
- DT - *
- PA - SAMSUNG ELECTRONICS CO LTD [KR]
- TI - **QOS MANAGEMENT METHOD AND DEVICE USING NAS PROTOCOL**
- AB - Disclosed are: a communication technique for merging, with IoT technology, a **5G** communication system for supporting a data transmission rate higher than that of a 4G system; and a system therefor. The present disclosure can be applied to intelligent services (for example, smart home, smart building, smart city, smart car or connected car, healthcare, digital education, retail, security, and safety-related services, and the like) on the basis of **5G** communication technology and IoT-related technology. Disclosed is a method for managing the quality of service (**QoS**) of a session by using an NAS protocol in a next-generation **5G** communication environment.

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- PN - [US2020322834](#) A1 20201008
- PR - US202016828090 20200324; US201962827910P 20190402
- AP - [US202016828090](#) 20200324
- DT - *
- CI - H04W28/0268 (US)
H04W76/10 (US)
- PA - MEDIATEK INC [TW]
- TI - INTERWORKING BETWEEN EVOLVED PACKET SYSTEM (EPS) SESSION **MANAGEMENT** (ESM) AND **5G** SESSION **MANAGEMENT** (5GSM)
- AB - A method can include receiving a “create new evolved packet system (EPS) bearer” operation code in a mapped EPS bearer contexts information element (TB) in a first protocol data unit (PDU) session modification command message for creating a mapped EPS bearer context at a user equipment (UE) in a wireless communication system, and when there is neither a quality of service (**QoS**) flow descriptions IE in the first PDU session modification command message indicating a **QoS** flow description corresponding to an EPS bearer identity (EBI) in the mapped EPS bearer context, nor an existing **QoS** flow description at the UE corresponding to the EBI included in the mapped EPS bearer context, sending a PDU session modification request message including a mapped EPS bearer contexts IE to delete the mapped EPS bearer context.

4/96 © EPODOC / EPO

- PN - [US2020322851](#) A1 20201008
- PR - CN201711140614 20171116; WO2018CN102685 20180828
- AP - [US201816758017](#) 20180828
- DT - **
- CCI - [H04W36/0022](#)
- CI - H04W8/12 (KR)
H04W36/0016 (US)
H04W36/0022 (EP, KR, US)
H04W36/0044 (US)
H04W36/02 (KR)
H04W36/14 (KR)
H04W36/30 (KR)
- PA - CHINA ACADEMY TELECOMMUNICATIONS TECHNOLOGY [CN]
- TI - METHOD FOR DETERMINING DATA FORWARDING TUNNEL, ACCESS AND MOBILITY **MANAGEMENT**



101 RECEIVE DATA FORWARDING INFORMATION OF TARGET USER EQUIPMENT (UE) FORWARDED BY A MOBILITY MANAGEMENT ENTITY (MME), AND ACQUIRING A QUALITY OF SERVICE (QOS) FLOW CONFIGURED FOR EACH BEARER OF TARGET UE BY A 5G CORE NETWORK AND A MAPPING RELATIONSHIP BETWEEN THE BEARER AND THE QOS FLOW

102 TRANSMIT THE DATA FORWARDING INFORMATION, THE CONFIGURED QOS FLOW, AND THE MAPPING RELATIONSHIP BETWEEN THE BEARER AND THE QOS FLOW TO A TARGET 5G BASE STATION

103 RECEIVE THE FORWARDING TUNNEL INFORMATION OF THE 5G BASE STATION CONFIGURED FOR THE TARGET UE BY THE TARGET 5G BASE STATION, ACCORDING TO THE DATA FORWARDING INFORMATION, THE CONFIGURED QOS FLOW, AND THE MAPPING RELATIONSHIP BETWEEN THE BEARER AND QOS FLOW

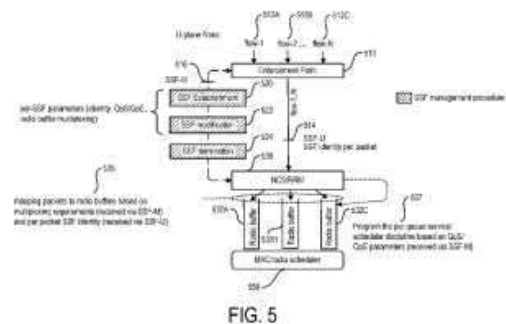
FUNCTION ENTITY, AND BASE STATION

- AB - A method for determining a data forwarding tunnel, an AMF entity, and a base station (BS) are provided. The method includes: receiving data forwarding information of target UE forwarded by MME, and acquiring a **QoS** flow configured by a **5G** core network for each bearer of the target UE, and mapping relationship between a bearer and a **QoS** flow, where the data forwarding information includes a list of bearers allocated by EPS to the target UE and an indication of a determination by a 4G BS as to whether each bearer of the target UE has data to forward; transmitting the data forwarding information, the configured **QoS** flow, and the mapping relationship to a target **5G** BS; and receiving forwarding tunnel information of a **5G** BS configured for the target UE by the target **5G** BS according to the data forwarding information, the configured **QoS** flow, and the mapping relationship.

5/96 © EPDOC / EPO

- PN - [US2020304417](#) A1 20200924
 PR - WO2016US26978 20160411
 AP - [US201616087887](#) 20160411
 DT - **
 CCI - [H04L67/141](#) ; [H04W76/11](#) ; [H04W76/12](#) ; [H04W76/15](#)
 CCA - [H04W72/1236](#) ; [H04W72/1263](#)
 CI - [H04L29/08](#) (EP)
 - [H04L47/14](#) (EP, US)
 - [H04L47/6215](#) (US)
 - [H04L47/805](#) (US)
 - [H04L67/141](#) (EP, US)
 - [H04W76/11](#) (EP, US)
 - [H04W76/12](#) (EP)
 - [H04W76/15](#) (EP)
 CA - [H04W72/1236](#) (EP)
 - [H04W72/1263](#) (EP)
 PA - NOKIA TECHNOLOGIES OY [FI]
 TI - **QOS/QOE ENFORCEMENT DRIVEN SUB-SERVICE FLOW MANAGEMENT IN 5G SYSTEM**

- AB - Methods and apparatus, including computer program products, are provided for **QoE/QoS management**. In some example embodiments, there may be provided a method. The method may include detecting, by an enforcement point, an initiation of a session of an application; determining, by the enforcement point, whether a new subservice flow needs to be established to enable, for the initiated session, a quality of service differentiation and/or a quality of experience differentiation; sending, by the enforcement point, an indication to a radio to enable the radio to establish a radio buffer to handle the new subservice flow, when the new subservice flow needs to be established; sending, by the enforcement point, parameter information to the radio to enable the radio to configure at least one service parameter of the radio buffer; and



- H04W28/02 (EP)
- H04W36/0011 (CN, US)
- H04W36/0022 (EP)
- H04W36/0044 (EP)
- H04W36/0083 (CN)
- H04W36/30 (CN, US)

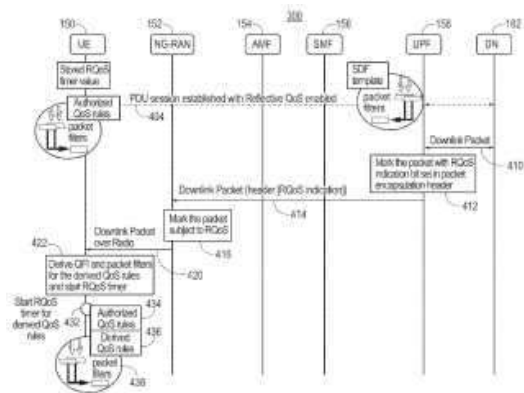
CA - H04W36/14 (EP)
PA - SAMSUNG ELECTRONICS CO LTD [KR]
TI - METHOD FOR SUPPORTING HANDOVER AND CORRESPONDING APPARATUS
AB - The present invention provides a method of a base station for supporting an inter-system handover from an evolved packet system (EPS) system to a 5th generation (5G) system. The method comprises receiving, from an access and mobility **management** function (AMF), a handover request message including E-UTRAN radio access bearer (E-RAB) information and quality of service (**Qos**) flow information, identifying whether a protocol data unit (PDU) session is accepted or not, determining whether a data forwarding for at least one **Qos** flow associated with the PDU session is accepted or not based on the E-RAB information and the **Qos** flow information in case that the PDU session is accepted and transmitting, to the AMF, a handover request acknowledgement message including information on the at least one **Qos** flow based on the determination. The method solves the data forwarding problem during the movement of a UE between an LTE system and a 5G system, so that the loss of data is avoided and the continuity of services is ensured.

8/96 © EPODOC / EPO

PN - [PL3443713T](#) T3 20200713
PR - EP20160718130 20160411; WO2016US26978 20160411
AP - [PL20160718130T](#) 20160411
DT - I
CCI - [H04L67/141](#) ; [H04W76/11](#) ; [H04W76/12](#) ; [H04W76/15](#)
CCA - [H04W72/1236](#) ; [H04W72/1263](#)
CI - H04L29/08 (EP)
- H04L47/14 (EP, US)
- H04L47/6215 (US)
- H04L47/805 (US)
- H04L67/141 (EP, US)
- H04W76/11 (EP, US)
- H04W76/12 (EP)
- H04W76/15 (EP)
CA - H04W72/1236 (EP)
- H04W72/1263 (EP)
PA - NOKIA TECHNOLOGIES OY [FI]
TI - **QOS/QOE ENFORCEMENT DRIVEN SUB-SERVICE FLOW MANAGEMENT IN 5G SYSTEM**

9/96 © EPODOC / EPO

PN - [CN111373717](#) A 20200703
PR - US201762572291P 20171013; WO2018EP77699 20181011
AP - [CN20188066514](#) 20181011
DT - I
CCI - [H04L67/14](#)
CI - H04L47/24 (KR, US)
- H04L65/1069 (US)
- H04L67/14 (EP, KR, US)
- H04L67/322 (KR)
- H04W8/24 (KR, US)
- H04W28/0268 (US)
- H04W28/24 (KR, US)
- H04W76/10 (EP, KR)
PA - NOKIA TECHNOLOGIES OY
TI - METHOD FOR **QOS** CAPABILITY NEGOTIATION BETWEEN USER EQUIPMENT AND A SESSION **MANAGEMENT** FUNCTION IN A **5G** SYSTEM
AB - In some example embodiments, there may be provided a method that includes forming, by user



equipment, a session establishment message including an indication of at least one session **management** capability supported by the user equipment; sending, by the user equipment, the session establishment message including the indication towards a session **management** function; and receiving, by the user equipment and from the session **management** function, a response indicative of whether the session **management** function and/or a corresponding network supports the at least one session **management** capability to enable the user equipment to operate in accordance with the at least one session **management** capability. Related systems, methods, and articles of manufacture are also described.

10/96 © EPODOC / EPO

PN - [WO2020103834](#) A1 20200528

PR - CN201811378042 20181119

AP - [WO2019CN119510](#) 20191119

DT - *, Rep

CT - *[CN] ISR (A1)*
[XP051503394](#) A[X];
[CN108293072](#) A 20180717 [A] (SIEMENS AG)
[A] 1-53
** entire document **
[XP051539414](#) A[A]

CTNP - *[CN] ISR (A1)*
[X] - HUAWEI et al., "QoS Negotiation between 3GPP and TSN Networks K1#3.1", SA WG2 Meeting #129 S2-1811021, (20181019), doi:20200108164234, XP051503394
[X] 1-53
** section 6.X **
[A] - NOKIA et al., "TSN-QoS Framework", SA WG2 Meeting #129 S2-1810436, (20181009), doi: 20200108164417A, XP051539414
[A] 1-53
** entire document **

CI - H04W28/24 (EP, CN)

PA - HUAWEI TECH CO LTD [CN]

TI - TIME SENSITIVE NETWORKING COMMUNICATION METHOD AND APPARATUS THEREOF

AB - Embodiments of the present application provide a time sensitive networking communication method and an apparatus thereof. The method comprises: a policy control network element receives forwarding policy information of a TSN stream, the forwarding policy information of the TSN stream being used for triggering the policy control network element to manage a **QoS** stream corresponding to the TSN stream; determine a user terminal corresponding to the TSN stream and determine the **QoS** stream corresponding to the TSN stream over the **QoS** stream corresponding to the user terminal; create or update the **QoS** policy of the **QoS** stream corresponding to the TSN stream according to the forwarding policy information of the TSN stream; and send the **QoS** policy of the **QoS** stream corresponding to the TSN stream to a session **management** network element, wherein the forwarding policy information of the TSN stream comprises stream information of the TSN stream and an identifier of a port for transmitting the TSN stream. According to the embodiments of the present application, end-to-end deterministic transmission of a **QoS** stream under a **5G** system is implemented.

11/96 © EPODOC / EPO

PN - [WO2020103824](#) A1 20200528

PR - US201862769021P 20181119; US201916686868 20191118

AP - [WO2019CN119453](#) 20191119

DT - **

CT - /CN/ ISR (A1)
US2018198867 A1 20180712 [X] (DAO NGOC DUNG [CA], et al)
[X] 1, 4-7, 10-18
* description, paragraphs [0172]-[0179], [0186], [0236]-[0240], [0362]-[0367], [0408]-[0410], figures 12, 13, 16, 40, 62, 69 *;
US2018198867 A1 20180712 [Y] (DAO NGOC DUNG [CA], et al)
[Y] 2, 3, 8, 9
* description, paragraphs [0172]-[0179], [0186], [0236]-[0240], [0362]-[0367], [0408]-[0410], figures 12, 13, 16, 40, 62, 69 *;
CN108353310 A 20180731 [Y] (LG ELECTRONICS INC)
[Y] 2, 3, 8, 9
* description, paragraphs [0078], [0293]-[0295] *;
CN108702723 A 20181023 [A] (LG ELECTRONICS INC)
[A] 1-18
* the whole document *;
CN108260162 A 20180706 [A] (UNIV CHONGQING POSTS & TELECOM)
[A] 1-18
* the whole document *

CCI - H04W36/0044 ; H04W76/20

CCA - H04W36/0022 ; H04W76/10 ; H04W76/11 ; H04W80/10

CI - H04W28/0268 (EP, US)
- H04W36/0022 (US)
- H04W36/0044 (EP, US)
- H04W56/001 (US)
- H04W76/10 (US)
- H04W76/20 (EP)
- H04W76/30 (US)
- H04W80/10 (US)
- H04W88/023 (US)

CA - H04W36/0022 (EP)
- H04W76/10 (EP)
- H04W76/11 (EP)
- H04W80/10 (EP)

PA - MEDIATEK INC [CN]

TI - INSUFFICIENT RESOURCES IN THE UE DURING PDU SESSION ESTABLISHMENT PROCEDURE

AB - A method of handling insufficient resources in a user equipment (UE) during a PDU session establishment procedure is proposed. During a PDU session establishment procedure, UE sends a PDU SESSION ESTABLISHMENT REQUEST message to the network. UE then receives a PDU SESSION ESTABLISHMENT ACCEPT message from the network, the ACCEPT message carries various PDU session parameters including authorized **QoS** rules and **QoS** flows. If UE decides to reject the addition of the new authorized **QoS** flow description or the new authorized **QoS** rule due to lack of resources, UE may initiate a PDU session release procedure with **5G** session **management** (5GSM) cause IE #26 "insufficient resources". In an alternative embodiment, UE may synchronize with the network by sending a PDU session modification request message to delete certain **QoS** rules/flow descriptions with 5GSM cause IE #26 "insufficient resources".

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PN - CN111200846 A 20200526

PR - CN201811378042 20181119

AP - CN201811378042 20181119

DT - I

CI - H04W28/24 (EP, CN)

PA - HUAWEI TECH CO LTD

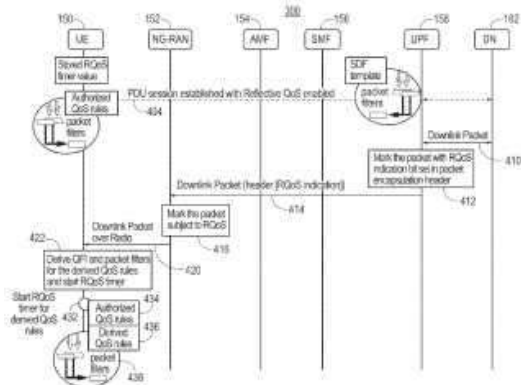
TI - Time delay sensitive network communication method and device

AB - The embodiment of the invention provides a time delay sensitive network communication method and device, and the method can comprise the steps: enabling a strategy control network element to receive the forwarding strategy information of a TSN flow, wherein the forwarding strategy information of the TSN flow

is used for triggering the strategy control network element to manage a **QoS** flow corresponding to the TSN flow; determining a user terminal corresponding to the TSN flow, and determining a **QoS** flow corresponding to the TSN flow in **QoS** flows corresponding to the user terminal; creating or updating a **QoS** strategy of the **QoS** flow corresponding to the TSN flow according to the forwarding strategy information of the TSN flow; sending the **QoS** strategy of the **QoS** flow corresponding to the TSNflow to a session **management** network element, wherein the forwarding strategy information of the TSN flow comprises flow information of the TSN flow and a port identifier for transmitting the TSN flow. By adopting the embodiment of the invention, the end-to-end deterministic transmission of the **QoS** flow under the **5G** system can be realized.

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- PN - [CA3078656](#) A1 20190418
- PR - US201762572291P 20171013; WO2018EP77699 20181011
- AP - [CA20183078656](#) 20181011
- DT - I
- CCI - [H04L67/14](#)
- CI - H04L47/24 (KR, US)
H04L65/1069 (US)
H04L67/14 (EP, KR, US)
H04L67/322 (KR)
H04W8/24 (KR, US)
H04W28/0268 (US)
H04W28/24 (KR, US)
H04W76/10 (EP, KR)
- PA - NOKIA TECHNOLOGIES OY [FI]
- TI - METHOD FOR **QOS** CAPABILITY NEGOTIATION BETWEEN A USER EQUIPMENT AND A SESSION **MANAGEMENT** FUNCTION IN A **5G** SYSTEM
- AB - In some example embodiments, there may be provided a method that includes forming, by a user equipment, a session establishment message including an indication of at least one session **management** capability supported by the user equipment; sending, by the user equipment, the session establishment message including the indication towards a session **management** function; and receiving, by the user equipment and from the session **management** function, a response indicative of whether the session **management** function and/or a corresponding network supports the at least one session **management** capability to enable the user equipment to operate in accordance with the at least one session **management** capability. Related systems, methods, and articles of manufacture are also described.



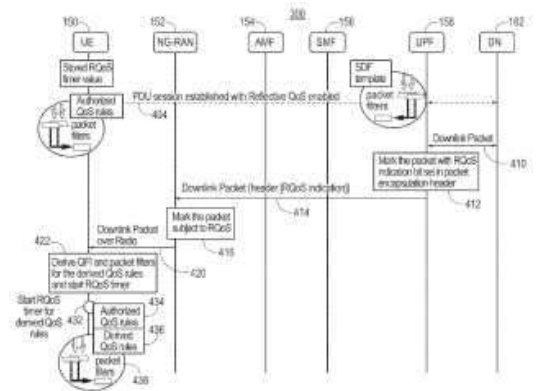
14/96 © EPODOC / EPO

- PN - [US2020162958](#) A1 20200521
- PR - US201916686868 20191118; US201862769021P 20181119
- AP - [US201916686868](#) 20191118
- DT - **
- CCI - [H04W36/0044](#) ; [H04W76/20](#)
- CCA - [H04W36/0022](#) ; [H04W76/10](#) ; [H04W76/11](#) ; [H04W80/10](#)
- CI - H04W28/0268 (EP, US)
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H04W36/0044 (EP, US)
H04W56/001 (US)

- H04W76/10 (US)
- H04W76/20 (EP)
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- H04W80/10 (US)
- H04W88/023 (US)
- CA
 - H04W36/0022 (EP)
 - H04W76/10 (EP)
 - H04W76/11 (EP)
 - H04W80/10 (EP)
- PA
 - MEDIATEK INC [TW]
- TI
 - Insufficient Resources in the UE during PDU Session Establishment Procedure
- AB
 - A method of handling insufficient resources in a user equipment (UE) during a PDU session establishment procedure is proposed. During a PDU session establishment procedure, UE sends a PDU SESSION ESTABLISHMENT REQUEST message to the network. UE then receives a PDU SESSION ESTABLISHMENT ACCEPT message from the network, the ACCEPT message carries various PDU session parameters including authorized **QoS** rules and **QoS** flows. If UE decides to reject the addition of the new authorized **QoS** flow description or the new authorized **QoS** rule due to lack of resources, UE may initiate a PDU session release procedure with **5G** session **management** (5GSM) cause IE #26 "insufficient resources". In an alternative embodiment, UE may synchronize with the network by sending a PDU session modification request message to delete certain **QoS** rules/flow descriptions with 5GSM cause IE #26 "insufficient resources".

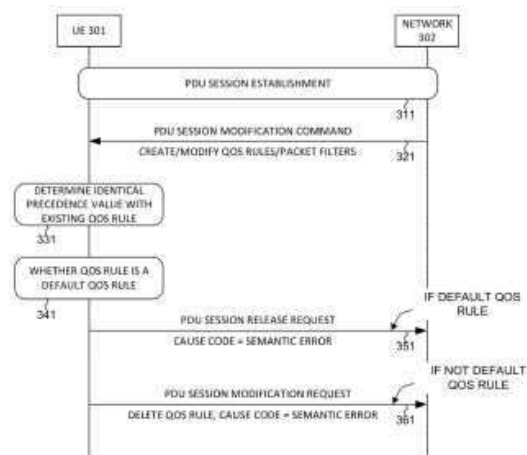
15/96 © EPODOC / EPO

- PN
 - [AU2018350102](#) A1 20200507
- PR
 - US201762572291P 20171013; WO2018EP77699 20181011
- AP
 - [AU20180350102](#) 20181011
- DT
 - I
- CCI
 - [H04L67/14](#)
- CI
 - H04L47/24 (KR, US)
 - H04L65/1069 (US)
 - H04L67/14 (EP, KR, US)
 - H04L67/322 (KR)
 - H04W8/24 (KR, US)
 - H04W28/0268 (US)
 - H04W28/24 (KR, US)
 - H04W76/10 (EP, KR)
- PA
 - NOKIA TECHNOLOGIES OY
- TI
 - Method for **QoS** capability negotiation between a user equipment and a session **management** function in a **5G** system
- AB
 - In some example embodiments, there may be provided a method that includes forming, by a user equipment, a session establishment message including an indication of at least one session **management** capability supported by the user equipment; sending, by the user equipment, the session establishment message including the indication towards a session **management** function; and receiving, by the user equipment and from the session **management** function, a response indicative of whether the session **management** function and/or a corresponding network supports the at least one session **management** capability to enable the user equipment to operate in accordance with the at least one session **management** capability. Related systems, methods, and articles of manufacture are also described.



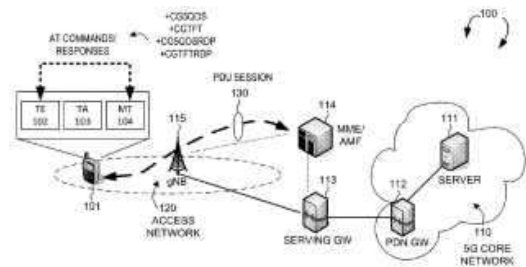
16/96 © EPODOC / EPO

- PN - [TW202007217](#) A 20200201
- PR - US201862693208P 20180702; US201916458523 20190701
- AP - [TW20190123243](#) 20190702
- DT - I
- CCI - [H04W28/24](#)
- CCA - [H04L43/08](#)
- CI - H04L41/00 (EP)
H04L67/14 (US)
H04W28/24 (EP, US)
- CA - H04L43/08 (EP)
H04W84/042 (US)
- PA - MEDIATEK INC [TW]
- TI - Methods and user equipments for enhanced handling on **QoS** operations
- AB - A method of enhanced error handling for **5G QoS** operations is proposed. A PDU session defines the association between the UE and the data network that provides a PDU connectivity service. Each PDU session is identified by a PDU session ID, and may include multiple **QoS** flows and **QoS** rules. Within a PDU session, there should be one and only one default **QoS** rule. The default **QoS** rule indication (DQR) and the **QoS** flow identifier (QFI) of a signaled **QoS** rule should not be changed. Two new **5G** session management (5GSM) causes are defined: a semantic error in the **QoS** operation (cause value #83) and a syntactic error (cause value #84) in the **QoS** operation. The UE should check the **QoS** rule provided in a PDU session modification command message for different types of **QoS** rule errors.



17/96 © EPODOC / EPO

- PN - [CN111095981](#) A 20200501
- PR - US201862655137P 20180409; US201862670629P 20180511; US201916371442 20190401; WO2019CN81665 20190408
- AP - [CN20198004387](#) 20190408
- DT - I
- CCI - [H04W76/22](#)
- CCA - [H04W28/0268](#)
- CI - H04W28/0268 (US)
H04W28/0273 (US)
H04W48/18 (US)
H04W76/20 (US)
H04W76/22 (EP)
H04W80/10 (US)
- CA - H04W28/0268 (EP)
- PA - MEDIATEK INC
- TI - AT COMMANDS FOR **5G QoS MANAGEMENT**
- AB - A method of defining ATTENTION (AT) commands for **5G QoS management** is proposed. AT commands for modifying PDU sessions, creating and



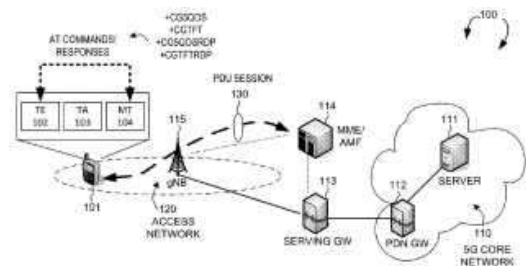
modifying **QoS** flows and **QoS** rules, and for querying **QoS** flow and **QoS** rule parameters are defined for **5G** networks. Specifically, the AT command can be a set command for triggering a PDU session modification procedure and thereby creating and modifying **QoS** flows and **QoS** rules. For example, AT command+C5GQOS is introduced for creating and modifying **QoS** flows, AT command+C5GQOSRDP is introduced for retrieving **QoS** flow parameters, AT command+CGTFT can be reused for creating and modifying **QoS** rules, and AT command+CGTFTTRDP can be reused for retrieving **QoS** rule parameters.

18/96 © EPODOC / EPO

- PN - [WO2020198571](#) A2 20201001
- PR - US201962825616P 20190328
- AP - [WO2020US25169](#) 20200327
- DT - *, Rep
- CCI - [H04W24/02](#)
- CCA - [H04W24/08](#)
- CI - H04W24/02 (EP)
- CA - H04W24/08 (EP)
- PA - APPLE INC [US]
- TI - PHYSICAL LAYER CELL IDENTIFIER (PCI) CONFIGURATION AND AUTOMATIC NEIGHBOR RELATIONS (ANR) FOR **5G** NETWORKS
- AB - Techniques discussed herein can facilitate one or more of improvements to Automatic Neighbor Relation(s) (ANR(s)) for cell(s) of a Radio Access Network (RAN), configuration of Physical-layer Cell Identifier(s) for cell(s) of the RAN, and/or end-to-end performance assurance for the RAN based on **5G QoS** Identifier (5QI) targets and/or requirements. Various embodiments can employ one or more of the techniques discussed herein, for example, at a component or service of a Fifth Generation (**5G**) Core Network (5GC), a Third Generation Partnership Project (3GPP) **Management** System, or a node of a Radio Access Network (RAN).

19/96 © EPODOC / EPO

- PN - [CN111034253](#) A 20200417
- PR - US201862655137P 20180409; US201862670629P 20180511; US201916371416 20190401; WO2019CN81666 20190408
- AP - [CN20198003837](#) 20190408
- DT - I
- CCI - [H04W76/22](#)
- CCA - [H04W28/0268](#)
- CI - H04W28/0268 (US)
H04W28/0273 (US)
H04W48/18 (US)
H04W76/20 (US)
H04W76/22 (EP)
H04W80/10 (US)
- CA - H04W28/0268 (EP)
- PA - MEDIATEK INC
- TI - AT commands for **5G** session **management**
- AB - A method of defining attention (AT) commands for **5G** session **management** operations is proposed. In one example, the AT command can be a set command for configuring a PDU session establishment procedure. Additional **5G** parameters



including a PDU session ID, the single-network slice selection assistance information (S-NSSAI), the service and session continuity (SSC) mode, access type, and the reflective QoS (RQ) indication are defined for AT command +CGDCONT to configure the PDU session. In another example, the AT command can be a reading command for querying the PDU session and QoS flow parameters. Additional 5G parameters including PDU session ID (PSI), QoS flow ID (QFI), S-NASSI, SSC mode, access type, and RQ timer are defined for the AT command +CGCONTRDP or +CGSCONTRDP.

20/96 © EPODOC / EPO

- PN - [WO2020069036](#) A1 20200402
- PR - US201862736756P 20180926
- AP - [WO2019US53025](#) 20190925
- DT - *, Rep
- CT - *[KR]* ISR (A1)
[US2018192390](#) A1 20180705 [Y] (LI XU [CA], et al)
 [Y] 1-20
 * See paragraphs [0100]-[0102], [0108], [0124], [0178], [0227], [0251], [0269], [0272], [0376], [0378], [0393]; and figures 3B, 10, 31. *;
[US2018139107](#) A1 20180517 [A] (SENARATH NIMAL GAMINI [CA], et al)
 [A] 1-20
 * See paragraphs [0063]-[0100]; and figures 3-10. *;
[US2018241635](#) A1 20180823 [A] (RAO JAYA [CA], et al)
 [A] 1-20
 * See paragraphs [0079]-[0218]; and figures 2-16. *;
[KR20170088425](#) A 20170801 [A] (HUAWEI TECH CO LTD [CN])
 [A] 1-20
 * See paragraphs [0059]-[0117]; and figures 3-7. *
- CTNP - *[KR]* ISR (A1)
 [Y] - SAMI KEKKI et al., "MEC in 5G networks", ETSI White Paper No. 28, (20180600), URL: <https://www.etsi.org/media-library/white-papers>, (20200104)
 [Y] 1-20
 * See pages 11, 14. *
- CCI - [H04L41/0806](#) ; [H04L41/5003](#) ; [H04L67/10](#) ; [H04L67/12](#) ; [H04L67/34](#) ; [H04W4/02](#) ; [H04W4/70](#) ; [H04W24/02](#)
- CCA - [H04W4/027](#) ; [H04W88/18](#)
- CI - H04L41/0806 (EP)
 H04L41/5003 (EP)
 H04L67/10 (EP)
 H04L67/12 (EP)
 H04L67/34 (EP)
 H04W4/02 (EP)
 H04W4/70 (EP)
 H04W24/02 (EP)
- CA - H04W4/027 (EP)
 H04W88/18 (EP)
- PA - INTEL CORP [US]
- TI - EDGE COMPUTING DEPLOYMENT SCENARIOS
- AB - Technology is disclosed for a Third Generation

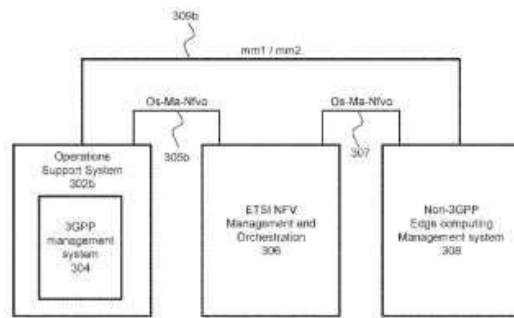


FIG. 3b

Partnership Project (3GPP) **management** system operable for peer-to-peer (P2P) edge computing in a fifth generation (5G) computing network. The 3GPP **management** system can be configured to: identify a user plane function (UPF) based on quality of service (QoS) requirements. The 3GPP **management** system can be configured to request, from an edge computing **management** system, deployment of an application server (AS). The 3GPP **management** system can be configured to request a network functions virtualization (NFV) orchestrator (NFVO) to connect the UPF and the AS based on the QoS requirements.

21/96 © EPODOC / EPO

PN - [CN110913473](#) A 20200324
PR - CN20181188316 20180918
AP - [CN20181188316](#) 20180918
DT - I
CT - // STSE (A)
[CN105874829](#) A 20160817 [A] (HUAWEI TECH CO LTD)
[A] 1-78
* 全文 *;
[US2018199160](#) A1 20180712 [A] (EDGE STEPHEN WILLIAM [US])
[A] 1-78
* 全文 *
CTNP - // STSE (A)
[X] - 3GPP, "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Study on Enhancement to the 5G Core Location Services", 《3GPP TR 23.731 V0.6.0》
[X] 1-78
* 第6.2.3.1节、第6.4.2.1节、第6.4.2.3节、第6.4.3.2.1节、第6.14.3.1节 *
CI - H04W64/00 (EP)
- H04W64/003 (CN)
- H04W64/006 (CN)
PA - TELECOMMUNICATIONS TECH RESEARCH INSTITUTE CO LTD
TI - Selection method and device, **management** function entity, access network node, GMLC and NRF
AB - The invention provides a selection method and a device, a **management** function entity, an access network node, a GMLC and an NRF, and the selection method of the positioning **management** function entity comprises the steps: receiving a positioning request message transmitted by a gateway mobile location center GMLC; wherein the positioning request message comprises an identifier of a target terminal and a positioning service quality QoS demand; acquiring information of a wireless access network where the target terminal is located; and selecting a target LLMF entity according to the information of the wireless access network where the target terminal is located, the positioning QoS demand and pre-stored related information of a local positioning **management** function LLMF entity. According to the method, it can be guaranteed that under the local positioning network architecture, the

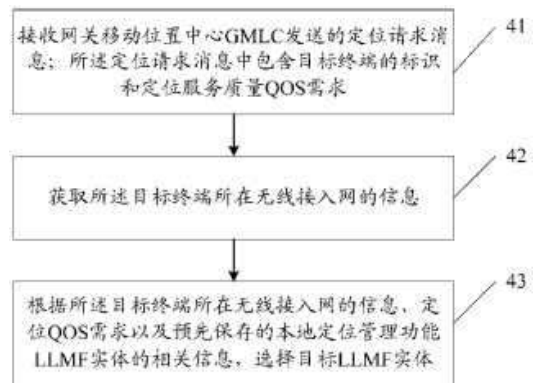


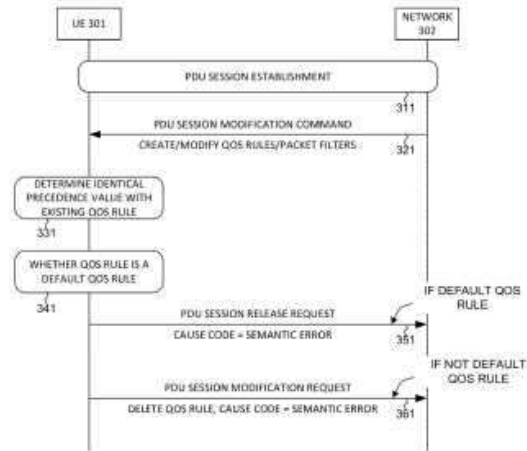
图 4

- 41 Receive a location request message sent by a gateway mobile location center (GMLC), wherein the location request message includes the identifier of a target terminal and a location quality of service (QoS) demand
42 Acquire information of a wireless access network where the target terminal is located
43 Select a target local location management function (LLMF) entity according to the information of the wireless access network where the target terminal is located, the location QoS demand and pre-stored information related to an LLMF entity

local positioning **management** function entity can better serve the core network, concise and efficient positioning service can be better carried out, the positioning requirements for high precision and low time delay of the **5G** positioning network architecture are met, and therefore higher commercial value is created for the society.

22/96 © EPODOC / EPO

PN - [CN110876283](#) A 20200310
 PR - US201862693208P 20180702; US201916458523 20190701; WO2019CN94339 20190702
 AP - [CN20198002126](#) 20190702
 DT - I
 CCI - [H04W28/24](#)
 CCA - [H04L43/08](#)
 CI - H04L41/00 (EP)
 - H04L67/14 (US)
 - H04W28/24 (EP, US)
 CA - H04L43/08 (EP)
 - H04W84/042 (US)
 PA - MEDIATEK INC
 TI - ENHANCED HANDLING ON **5G QoS** OPERATIONS
 AB - A method of enhanced error handling for **5G QoS** operations is proposed. A PDU session defines the association between the UE and the data network that provides a PDU connectivity service. Each PDU session is identified by a PDU session ID, and may include multiple **QoS** flows and **QoS** rules. Within a PDU session, there should be one and only one default **QoS** rule. The default **QoS** rule indication (DQR) and the **QoS** flow identifier (QFI) of a signaled **QoS** rule should not be changed. Two new **5G** session **management** (5GSM) causes are defined: a semantic error in the **QoS** operation (cause value #83) and a syntactic error (cause value #84) in the **QoS** operation. The UE should check the **QoS** rule provided in a PDU session modification command message for different types of **QoS** rule errors.



23/96 © EPODOC / EPO

PN - [WO2020160177](#) A1 20200806
 PR - US201962798303P 20190129
 AP - [WO2020US15719](#) 20200129
 DT - *, Rep
 CT - *[EP] ISR (A1)*
[XP051408598](#) A[Y];
[XP051408597](#) A[Y];
[WO2018231813](#) A1 20181220 [A] (INTEL IP CORP [US])
[A] 1-20
** paragraph [0019] - paragraph [0036] **
** paragraphs [0111], [0143], [0144] **
** figure 2 *;*
[XP051399447](#) A[A];
[XP051408452](#) A[A]
 CTNP - *[EP] ISR (A1)*

[Y] - INTEL, "Supporting Fast Return to 5GS after EPS fallback - TS 23.502", vol. SA WG2, no. Montreal, Canada; 20180226 - 20180302, (20180220), 3GPP DRAFT; S2-182066_R15_CR23502_SUPPORTING_FAST_RETURN_AFTER_EPS_FALLBACK V2, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS, URL: <http://www.3gpp.org/ftp/tsg%5Fsa/WG2%5FArch/TS23502%5F126%5FMontreal/Docs/>, (20180220), XP051408598

[Y] 1-20

** the whole document **

[Y] - INTEL ET AL, "Supporting Fast Return to 5GS after EPS fallback - TS 23.501", vol. SA WG2, no. Montreal, Canada; 20180226 - 20180302, (20180220), 3GPP DRAFT; S2-182065_R15_CR23501_SUPPORTING_FAST_RETURN_AFTER_EPS_FALLBACK V1, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS, URL: <http://www.3gpp.org/ftp/tsg%5Fsa/WG2%5FArch/TS23501%5F126%5FMontreal/Docs/>, (20180220), XP051408597

[Y] 1-20

** the whole document **

[A] - HUAWEI ET AL, "Support EPS fallback for voice in NR", vol. RAN WG2, no. Athens, Greece; 20180226 - 20180303, (20180215), 3GPP DRAFT; R2-1802288 SUPPORT EPS FALLBACK FOR VOICE IN NR, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE, URL: <http://www.3gpp.org/ftp/tsg%5Fran/WG2%5FRel2/TS23501%5F101/Docs/>, (20180215), XP051399447

[A] 1-20

** the whole document **

[A] - OPPO, "Returning back to NG-RAN in case of RAT/EPS fallback", vol. SA WG2, no. Montreal, Canada; 20180226 - 20180302, (20180220), 3GPP DRAFT; S2-181884 RETURNING BACK TO NG-RAN IN CASE OF EPS FALLBACK -23.501, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS, URL: <http://www.3gpp.org/ftp/tsg%5Fsa/WG2%5FArch/TS23501%5F126%5FMontreal/Docs/>, (20180220), XP051408452

[A] 1-20

** the whole document **

- CCI - [H04W36/0022](#)
- CCA - [H04W36/14](#)
- CI - H04W36/0022 (EP)
- CA - H04W36/14 (EP)
- PA - APPLE INC [US]
- TI - FAST RETURN TO 5G SYSTEMS (5GS) AFTER HANDOVER TO EVOLVED PACKET SYSTEM (EPS) DUE TO EPS FALLBACK FROM 5GS
- AB - Some embodiments of this disclosure include apparatuses and methods for managing a fast return of a user equipment (UE) to 5G systems (5GS) after handover to Evolved Packet System (EPS) due to EPS fallback from 5GS. The method can include at least generating a handover request including an indication indicating a handover reason of no presence of quality of service (QoS) flow for a voice signal to the UE; receiving a handover command generated by an access and mobility management function (AMF) to transfer the UE from the 5GS to the EPS based on the handover request; transmitting the handover command to the UE for the UE to establish a connection with the EPS; and after the flow of the voice signal has terminated, reestablishing a connection with the UE to reconnect the UE to the 5GS, wherein the connection with the BS is re-established based on a target ID of the BS.

24/96 © EPODOC / EPO

- PN - [WO2020165857](#) A1 20200820
- PR - US201962805727P 20190214
- AP - [WO20201851264](#) 20200214
- DT - *, Rep
- CT - [EP] ISR (A1)
[WO2017082779](#) A1 20170518 [A] (ERICSSON TELEFON AB L M (PUBL) [SE])
[A] 1-16
** page 3, line 30 - page 4, line 17; figures 2C, 7 **
** page 12, line 31 - page 14, line 6 **
** page 15, line 7 - page 16, line 3 **
** page 17, line 28 - page 19, line 17 **
** page 26, line 11 - line 30 **

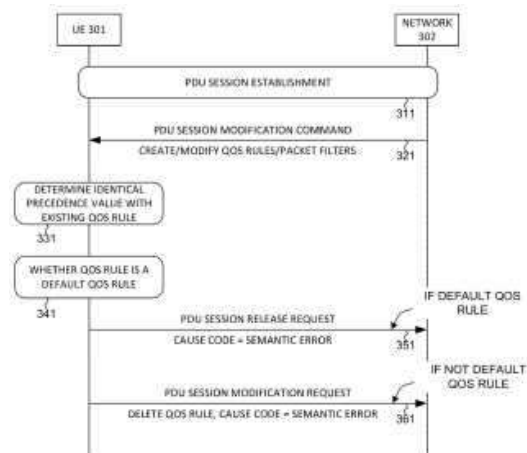
- [XP051539414](#) A[A]
- CTNP - [EP] ISR (A1)
[A] - NOKIA ET AL, "TSN - QoS Framework", vol. SA WG2, no. Dongguan, China; 20181015 - 20181019, (20181009), 3GPP DRAFT; S2-1810436-TSN-QOSFRAMEWORK-V4, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE, URL: <http://www.3gpp.org/ftp/tsg%5Fsa/WG2%5FArch/TSGS2%5F129%5FDongguan/Docs/S2%2D1810436%2Ezip>, (20181009), XP051539414
[A] 1-16
* the whole document *
- CCI - [H04W28/02](#)
- CI - H04L47/2416 (EP)
- H04W28/02 (EP)
- H04W28/0268 (EP)
- PA - TELEFONAKTIEBOLAGET LM ERICSSON (PUBL) [SE]
- TI - **5G SYSTEM SUPPORT FOR VIRTUAL TSN BRIDGE MANAGEMENT, QOS MAPPING AND TSN QBV SCHEDULING**
- AB - Systems and method are disclosed herein that relate to support for virtual Time-Sensitive Networking (TSN) bridge **management**, Quality of Service (**QoS**) mapping, and TSN related scheduling in a cellular communications system. In some embodiments, a method performed by one or more network nodes of a cellular communications system operating as a virtual TSN bridge of a TSN network comprises providing, to a controller associated with the TSN network, parameters that relate to capabilities of the virtual TSN bridge. The parameters that relate to the capabilities of the virtual TSN bridge comprise a first parameter that defines a clock accuracy of an entity in the cellular communications system that operates gating control for the virtual TSN bridge and a second parameter that informs the controller associated with the TSN network that the virtual TSN bridge or a particular egress port of the virtual TSN bridge is restricted to exclusive gating.

25/96 © EPODOC / EPO

- PN - [WO2020007279](#) A1 20200109
- PR - US201862693208P 20180702; US201916458523 20190701
- AP - [WO2019CN94339](#) 20190702
- DT - **
- CT - [CN] ISR (A1)
[XP051466128](#) A[PX];
[XP051425345](#) A[A];
[CN106332187](#) A 20170111 [A] (HUAWEI TECH CO LTD)
[A] 1-22
* the whole document *;
[US2012196566](#) A1 20120802 [A] (LEE JI-CHEOL [KR], et al)
[A] 1-22
* the whole document *

- CTNP - [CN] ISR (A1)
[PX] - MEDIATEK INC. et al., "Exception handling in QoS operation", 3GPP TSG-CT WGI Meeting #111bis Sophia-Antipolis (France, (20180713), XP051466128
[PX] 1-22
*, Sections 6.3.2.4 *
[A] - HUAWEI et al., "Encoding of Match all Packet filter", 3GPP TSG-CT WGI Meeting #110 Kunming(P.R of China, (20180420), XP051425345
[A] 1-22
*, Sections 6.2.5.1.1, 9.8.4.7 *

- CCI - [H04W28/24](#)
- CCA - [H04L43/08](#)
- CI - H04L41/00 (EP)
- H04L67/14 (US)
- H04W28/24 (EP, US)
- CA - H04L43/08 (EP)



PA - H04W84/042 (US)

TI - MEDiatek INC [CN]

TI - ENHANCED HANDLING ON 5G QoS OPERATIONS

AB - A method of enhanced error handling for 5G QoS operations is proposed. A PDU session defines the association between the UE and the data network that provides a PDU connectivity service. Each PDU session is identified by a PDU session ID, and may include multiple QoS flows and QoS rules. Within a PDU session, there should be one and only one default QoS rule. The default QoS rule indication (DQR) and the QoS flow identifier (QFI) of a signaled QoS rule should not be changed. Two new 5G session management (5GSM) causes are defined: a semantic error in the QoS operation (cause value #83) and a syntactic error (cause value #84) in the QoS operation. The UE should check the QoS rule provided in a PDU session modification command message for different types of QoS rule errors.

26/96 © EPODOC / EPO

PN - [US2020008106](#) A1 20200102

PR - US201916458523 20190701; US201862693208P 20180702

AP - [US201916458523](#) 20190701

DT - *, Rep

CCI - [H04W28/24](#)

CCA - [H04L43/08](#)

CI - H04L41/00 (EP)

CI - H04L67/14 (US)

CI - H04W28/24 (EP, US)

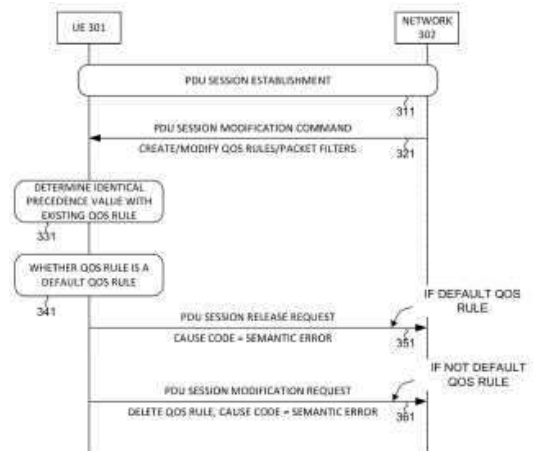
CA - H04L43/08 (EP)

CA - H04W84/042 (US)

PA - MEDiatek INC [TW]

TI - Enhanced Handling on 5G QoS Operations

AB - A method of enhanced error handling for 5G QoS operations is proposed. A PDU session defines the association between the UE and the data network that provides a PDU connectivity service. Each PDU session is identified by a PDU session ID, and may include multiple QoS flows and QoS rules. Within a PDU session, there should be one and only one default QoS rule. The default QoS rule indication (DQR) and the QoS flow identifier (QFI) of a signaled QoS rule should not be changed. Two new 5G session management (5GSM) causes are defined: a semantic error in the QoS operation (cause value #83) and a syntactic error (cause value #84) in the QoS operation. The UE should check the QoS rule provided in a PDU session modification command message for different types of QoS rule errors.



27/96 © EPODOC / EPO

PN - [WO2019242708](#) A1 20191226

PR - CN201810657293 20180622

AP - [WO2019CN92180](#) 20190621

DT - *, Rep

CT - [CN] ISR (A1)
[CN107734562](#) A 20180223 [XA] (HUAWEI TECH CO LTD)
[X] 12-14, 26-28, 30
* description, paragraphs [0154]-[0164] *
* description, paragraphs [0154]-[0164] *
[A] 1-11, 15-25, 29;
[CN101730311](#) A 20100609 [A] (HUAWEI TECH CO LTD)
[A] 1-30
* entire document *;
[CN105379351](#) A 20160302 [A] (QUALCOMM INC)
[A] 1-30
* entire document *;
[US2014128075](#) A1 20140508 [A] (DA SILVA ICARO L J [SE],
et al)
[A] 1-30
* entire document *

CI - H04L5/00 (EP)
- H04L5/0053 (CN)
- H04W28/18 (EP, CN)
- H04W28/24 (EP, CN)
- H04W76/15 (EP, CN)

PA - HUAWEI TECH CO LTD [CN]

TI - SIGNAL TRANSMISSION METHOD, NETWORK DEVICE,
AND SYSTEM

AB - Disclosed in the present application is a signal transmission method, wherein the method may comprise: a core network issuing two sets of **QoS** parameters to an access network device, and the access network device selecting one set of **QoS** parameters from among the two sets of **QoS** parameters and indicating to the core network that said set of **QoS** parameters is selected. The air interface rate required by said set of **QoS** parameters may be supported by a RAN. Thus, **QoS** parameters applied to a related UE, a related bearer, a related PDU session or a related **QoS** flow may be effectively determined without needing to upgrade the single board capabilities of an LTE base station. Moreover, the core network may configure a corresponding **QoS management** policy, such as a rate adjustment policy, on the basis of **QoS** parameters selected by a RAN side, thus facilitating data transmission between a UE and the core network.



28/96 © EPODOC / EPO

PN - [CN110635880](#) A 20191231

PR - CN201810657293 20180622

AP - [CN201810657293](#) 20180622

DT - I

CI - H04L5/00 (EP)
- H04L5/0053 (CN)
- H04W28/18 (EP, CN)
- H04W28/24 (EP, CN)



FIG. 4

PN - [US2019327642](#) A1 20191024

PNFP - US10779195 B2 20200915

PR - CN20171008434 20170105; WO2018CN71511 20180105

AP - [US201916458174](#) 20190630

DT - **

CT - || STSE (B2)

[US2014204771](#) A1 20140724 [] (GAO SHIWEI [CA], et al);

[US2015373584](#) A1 20151224 [] (HONG SUNG-PYO [KR]);

[US2016156485](#) A1 20160602 [] (ZHANG TAO [CN], et al);

[US2016192244](#) A1 20160630 [] (WORRALL CHANDRIKA K [GB], et al) ;

[US2016262194](#) A1 20160908 [] (ZHANG JIAN [CN], et al);

[US2016316351](#) A1 20161027 [] (KODAYPAK RAJENDRA PRASAD [US], et al);

[US2017055313](#) A1 20170223 [] (SHARMA NEHA [IN], et al);

[US2017303286](#) A1 20171019 [] (SANG AIMIN JUSTIN [US], et al);

[US2019166647](#) A1 20190530 [] (VELEV GENADI [DE], et al);

[US2019191348](#) A1 20190620 [] (FUTAKI HISASHI [JP], et al)

CCI - [H04W28/0268](#) ; [H04W28/0812](#) ; [H04W76/11](#) ; [H04W76/12](#) ; [H04W76/15](#)

CI - H04W28/0236 (US)

- H04W28/0263 (CN, US)

- H04W28/0268 (EP)

- H04W28/08 (US)

- H04W28/0812 (EP)

- H04W28/10 (CN)

- H04W28/24 (EP, CN)

- H04W76/11 (EP, CN)

- H04W76/12 (EP)

- H04W76/15 (EP)

PA - (A1 B2)

HUAWEI TECH CO LTD [CN]

TI - (A1)

INFORMATION TRANSMISSION METHOD AND APPARATUS

- (B2)

Information transmission method and apparatus

AB - (A1 B2)

This application discloses an information transmission method in a communication system. According to the method, a master base station sends a request message to a secondary base station for requesting to transfer one or more flows from the master base station to the secondary base station for transmission to a terminal device. The request message carries one or both of identification information of each flow, and information of a data radio bearer (DRB) associated with each flow. The master base station receives a response message from the secondary base station, indicating whether each of the one or more flows is admitted or rejected by the secondary base station. Based on the identification information of the flows, DRBs are mapped to the flows. **QoS management** of information transmission is more refined, and



requirements of **5G** communication systems for **QoS management** of information transmission in a dual connectivity scenario can be met.

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PN - [WO2019196821](#) A1 20191017

PR - US201862655137P 20180409; US201916366106 20190327

AP - [WO2019CN81866](#) 20190409

DT - **

CT - *[CN] ISR (A1)*
[CN107690161](#) A 20180213 [A] (CHINA ACADEMY TELECOMMUNICATIONS TECHNOLOGY)
 [A] 1-15
 * the whole document *;
[CN107018542](#) A 20170804 [A] (ZTE CORP)
 [A] 1-15
 * the whole document *;
[US2016119773](#) A1 20160428 [A] (XU RICHARD H [US], et al)
 [A] 1-15
 * the whole document *

CTNP - *[CN] ISR (A1)*
 [A] - "3rd Generation Partnership Project. Technical Specification Group Core Network and Terminals; Non-Access-Stratum (NAS) protocol for 5G System (5GS); Stage 3 (Release 15", 3GPP TS 24.501, (20171231)
 [A] 1-15
 *, Sections 6.2.5, 8.3 *

CCI - [H04W36/0022](#) ; [H04W36/14](#)

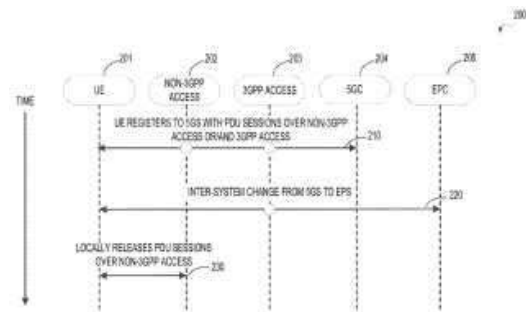
CI - H04L47/2441 (US)
 - H04L47/2491 (US)
 - H04L47/6295 (US)
 - H04L67/141 (US)
 - H04L67/143 (US)
 - H04L69/22 (US)
 - H04W24/02 (US)
 - H04W28/0268 (US)
 - H04W28/24 (US)
 - H04W36/0011 (US)
 - H04W36/0022 (EP)
 - H04W36/0033 (US)
 - H04W36/14 (EP, US)
 - H04W60/06 (US)
 - H04W76/38 (US)

CA - H04W84/042 (US)
 - H04W88/02 (US)

PA - MEDIATEK INC [CN]

TI - QUALITY OF SERVICE RULE **MANAGEMENT** IN **5G**

AB - A method of managing default **QoS** rules for PDU session is proposed. A PDU session defines the association between the UE and the data network that provides a PDU connectivity service. Each PDU session is identified by a PDU session ID, and may include multiple **QoS** flows and **QoS** rules. There can be more than one **QoS** rule associated with the same **QoS** flow. A default **QoS** rule is required to be



sent to the UE for every PDU session establishment and it is associated with a **QoS** flow. Within a PDU session, there should be one and only one default **QoS** rule. In one novel aspect, UE behavior and error handling for proper **QoS** rule **management** is defined for PDU session establishment and modification procedures to enforce the one and only one default **QoS** rule policy.

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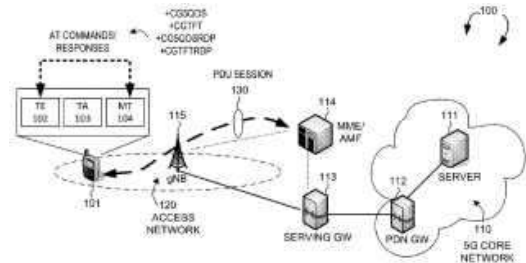
PN - [WO2019196762](#) A1 20191017

PR - US201862655137P 20180409; US201862670629P 20180511; US201916371416 20190401

AP - [WO2019CN81666](#) 20190408

DT - **

CT - [CN] ISR (A1)
[WO2018063462](#) A1 20180405 [A] (INTEL IP CORP [US])
 [A] 1-20
 * description, page 5, line 27 to page 21, line 32, figures 1-5, and claims 1-16 *;
[CN107690161](#) A 20180213 [A] (CHINA ACADEMY TELECOMMUNICATIONS TECHNOLOGY)
 [A] 1-20
 * the whole document *;
[CN105580340](#) A 20160511 [A] (QUALCOMM INC)
 [A] 1-20
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[CN107548095](#) A 20180105 [A] (CHINA ACADEMY TELECOMMUNICATIONS TECHNOLOGY)
 [A] 1-20
 * the whole document *;
[WO2017200562](#) A1 20171123 [A] (INTEL CORP [US])
 [A] 1-20
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[WO2018062949](#) A1 20180405 [A] (SAMSUNG ELECTRONICS CO LTD [KR])
 [A] 1-20
 * the whole document *;
[US2018035277](#) A1 20180201 [A] (PARK GIWON [KR], et al)
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 * the whole document *



CCI - [H04W76/22](#)

CCA - [H04W28/0268](#)

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 H04W28/0273 (US)
 H04W48/18 (US)
 H04W76/20 (US)
 H04W76/22 (EP)
 H04W80/10 (US)

CA - H04W28/0268 (EP)

PA - MEDIATEK INC [CN]

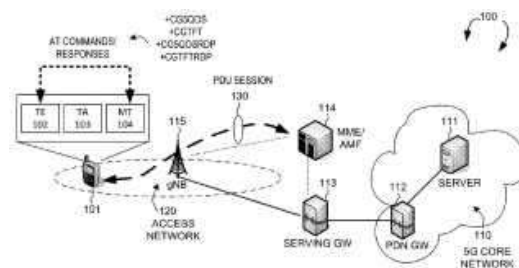
TI - AT COMMANDS FOR **5G** SESSION **MANAGEMENT**

AB - A method of defining Attention (AT) commands for **5G** session **management** operations is proposed. In one example, the AT command can be a set command for configuring a PDU session establishment procedure. Additional **5G** parameters including PDU session ID, Single-Network Slice

Selection Assistance Information (S-NSSAI), Service and Session Continuity (SSC) mode, access type, and Reflective QoS (RQ) indication are defined for AT command +CGDCONT to configure the PDU session. In another example, the AT command can be a read command for querying PDU session and QoS flow parameters. Additional 5G parameters including PDU session ID (PSI), QoS flow ID (QFI), S-NSSAI, SSC mode, access type, and RQ timer are defined for AT command +CGCONTRDP or +CGSCONTRDP.

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- PN - [WO2019196761](#) A1 20191017
- PR - US201862655137P 20180409; US201862670629P 20180511; US201916371442 20190401
- AP - [WO2019CN81665](#) 20190408
- DT - **
- CT - [CN] ISR (A1)
[XP051347006](#) A[A];
[XP051398974](#) A[A];
[WO2017018689](#) A1 20170202 [A] (LG ELECTRONICS INC [KR])
[A] 1-21
* the whole document *;
[US2015181459](#) A1 20150625 [A] (ZHU JING [US])
[A] 1-21
* the whole document *;
[CN107734563](#) A 20180223 [A] (CHINA ACADEMY TELECOMMUNICATIONS TECHNOLOGY)
[A] 1-21
* the whole document *;
[CN107690161](#) A 20180213 [A] (CHINA ACADEMY TELECOMMUNICATIONS TECHNOLOGY)
[A] 1-21
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- CTNP - [CN] ISR (A1)
[A] - INTEL, "UE requested PDU Session Modification", SA WG2 Meeting#123 S2-177050, (20171027), XP051347006
[A] 1-21
* , section 4.3.3.2 *
[A] - SAMSUNG, "On default DRB, default QoS flow and profile", 3GPP TSG-RAN WG2 #101 R2-1801866, (20180302), XP051398974
[A] 1-21
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- CCA - [H04W28/0268](#)
- CI - H04W28/0268 (US)
H04W28/0273 (US)
H04W48/18 (US)
H04W76/20 (US)
H04W76/22 (EP)
H04W80/10 (US)
- CA - H04W28/0268 (EP)
- PA - MEDIATEK INC [CN]
- TI - AT COMMANDS FOR 5G QOS MANAGEMENT



AB - A method of defining Attention (AT) commands for **5G QoS management** is proposed. AT commands for modifying PDU sessions, creating and modifying **QoS** flows and **QoS** rules, and for querying **QoS** flow and **QoS** rule parameters are defined for **5G** networks. Specifically, the AT command can be a set command for triggering a PDU session modification procedure and thereby creating and modifying **QoS** flows and **QoS** rules. For example, AT command +C5GQOS is introduced for creating and modifying **QoS** flows, AT command +C5GQOSRDP is introduced for retrieving **QoS** flow parameters, AT command +CGTFT can be reused for creating and modifying **QoS** rules, and AT command +CGTFTTRDP can be reused for retrieving **QoS** rule parameters.

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PN - [WO2019196820](#) A1 20191017

PR - US201862655137P 20180409; US201916366125 20190327

AP - [WO2019CN81864](#) 20190409

DT - **

CT - [CN] ISR (A1)

[XP051623677](#) A[X];

[CN107580371](#) A 20180112 [A] (ZTE CORP)

[A] 1-15

* the whole document *;

[CN107690161](#) A 20180213 [A] (CHINA ACADEMY TELECOMMUNICATIONS TECHNOLOGY)

[A] 1-15

* the whole document *;

[WO2018059689](#) A1 20180405 [A] (ERICSSON TELEFON AB L M [SE])

[A] 1-15

* the whole document *;

[XP051325377](#) A[A];

[XP051360084](#) A[A]

CTNP - [CN] ISR (A1)

[X] - "Technical Specification Group Core Network and Terminals; 5G System - Phase 1; CT WG1 Aspects (Release 15", 3GPP TR 24.890, (20180331), XP051623677 [X] 1-15

* , Sections 9.5.6, 12.4 *

[A] - SAMSUNG, "Update on PDU session handling for AS and NAS QoS", SA WG2 Meeting #122 BIS- S2-175526, (20170825), pages 1 - 11, XP051325377

[A] 1-15

* , the whole document *

[A] - SAMSUNG, "TS 23.501: PDU session reachability management", SA WG2 Meeting #S2-123, (20171027), pages 2 - 177432, XP051360084

[A] 1-15

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CI - H04L47/2441 (US)

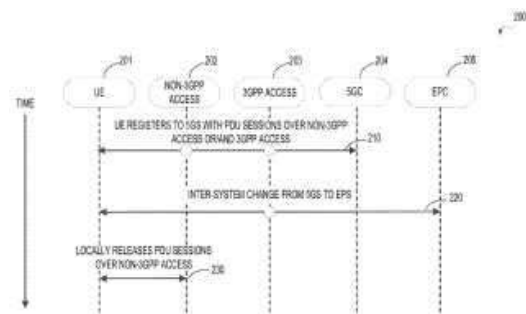
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- H04L47/6295 (US)

- H04L67/141 (US)

- H04L67/143 (US)

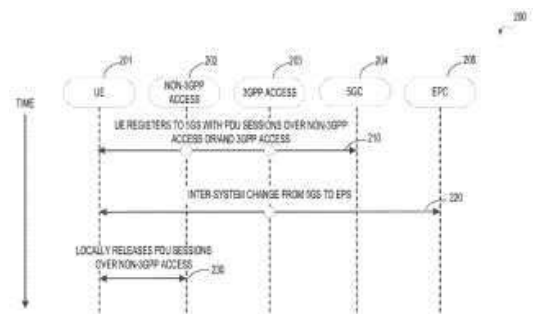
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- H04W24/02 (US)
- H04W28/0268 (US)
- H04W28/24 (US)
- H04W36/0011 (US)
- H04W36/0022 (EP)
- H04W36/0033 (US)
- H04W36/14 (EP, US)
- H04W60/06 (US)
- H04W76/38 (US)
CA - H04W84/042 (US)
- H04W88/02 (US)
PA - MEDIATEK INC [CN]
TI - QUALITY OF SERVICE RULE **MANAGEMENT** IN 5G
AB - A method of managing default **QoS** rules for PDU session is proposed. A PDU session defines the association between the UE and the data network that provides a PDU connectivity service. Each PDU session is identified by a PDU session ID, and may include multiple **QoS** flows and **QoS** rules. There can be more than one **QoS** rule associated with the same **QoS** flow. A default **QoS** rule is required to be sent to the UE for every PDU session establishment and it is associated with a **QoS** flow. Within a PDU session, there should be one and only one default **QoS** rule. In one novel aspect, UE behavior and error handling for proper **QoS** rule **management** is defined for PDU session establishment and modification procedures to enforce the one and only one default **QoS** rule policy.

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PN - [US2019312821](#) A1 20191010
PR - US201916366125 20190327; US201862655137P 20180409
AP - [US201916366125](#) 20190327
DT - **
CCI - [H04W36/0022](#) ; [H04W36/14](#)
CI - H04L47/2441 (US)
- H04L47/2491 (US)
- H04L47/6295 (US)
- H04L67/141 (US)
- H04L67/143 (US)
- H04L69/22 (US)
- H04W24/02 (US)
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- H04W36/0011 (US)
- H04W36/0022 (EP)
- H04W36/0033 (US)
- H04W36/14 (EP, US)
- H04W60/06 (US)
- H04W76/38 (US)
CA - H04W84/042 (US)
- H04W88/02 (US)
PA - MEDIATEK INC [TW]
TI - Quality of Service Rule **Management** in 5G



AB - A method of managing default **QoS** rules for PDU session is proposed. A PDU session defines the association between the UE and the data network that provides a PDU connectivity service. Each PDU session is identified by a PDU session ID, and may include multiple **QoS** flows and **QoS** rules. There can be more than one **QoS** rule associated with the same **QoS** flow. A default **QoS** rule is required to be sent to the UE for every PDU session establishment and it is associated with a **QoS** flow. Within a PDU session, there should be one and only one default **QoS** rule. In one novel aspect, UE behavior and error handling for proper **QoS** rule **management** is defined for PDU session establishment and modification procedures to enforce the one and only one default **QoS** rule policy.

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PN - [US2019313276](#) A1 20191010

PR - US201916371416 20190401; US201862655137P 20180409; US201862670629P 20180511

AP - [US201916371416](#) 20190401

DT - **

CCI - [H04W76/22](#)

CCA - [H04W28/0268](#)

CI - H04W28/0268 (US)

- H04W28/0273 (US)

- H04W48/18 (US)

- H04W76/20 (US)

- H04W76/22 (EP)

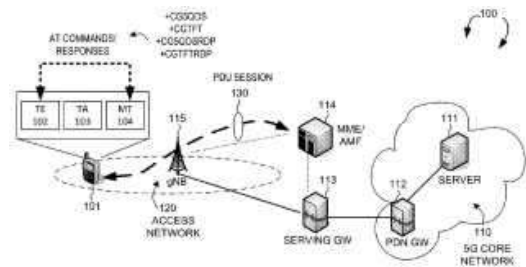
- H04W80/10 (US)

CA - H04W28/0268 (EP)

PA - MEDIATEK INC [TW]

TI - AT Commands for **5G** Session **Management**

AB - A method of defining Attention (AT) commands for **5G** session **management** operations is proposed. In one example, the AT command can be a set command for configuring a PDU session establishment procedure. Additional **5G** parameters including PDU session ID, Single-Network Slice Selection Assistance Information (S-NSSAI), Service and Session Continuity (SSC) mode, access type, and Reflective **QoS** (RQ) indication are defined for AT command +CGDCONT to configure the PDU session. In another example, the AT command can be a read command for querying PDU session and **QoS** flow parameters. Additional **5G** parameters including PDU session ID (PSI), **QoS** flow ID (QFI), S-NASSI, SSC mode, access type, and RQ timer are defined for AT command +CGCONTRDP or +CGSCONTRDP.



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CA - H04W28/0268 (EP)
PA - MEDIATEK INC [TW]
TI - AT Commands for **5G QoS Management**
AB - A method of defining ATtention (AT) commands for **5G QoS management** is proposed. AT commands for modifying PDU sessions, creating and modifying **QoS** flows and **QoS** rules, and for querying **QoS** flow and **QoS** rule parameters are defined for **5G** networks. Specifically, the AT command can be a set command for triggering a PDU session modification procedure and thereby creating and modifying **QoS** flows and **QoS** rules. For example, AT command +C5GQOS is introduced for creating and modifying **QoS** flows, AT command +C5GQOSRDP is introduced for retrieving **QoS** flow parameters, AT command +CGTFT can be reused for creating and modifying **QoS** rules, and AT command +CGTFTTRDP can be reused for retrieving **QoS** rule parameters.

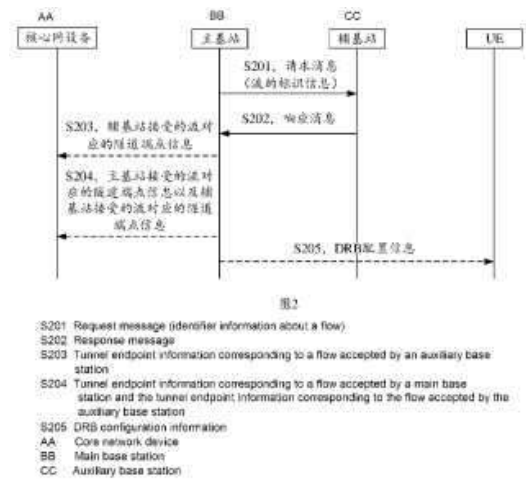
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PN - [CN110248382](#) A 20190917
PNFP - CN110248382B B 20200908
PR - CN201910450443 20170105; CN20171008434 20170105
AP - [CN201910450443](#) 20170105
DT - I
CT - || STSE (A)
[CN103875275](#) A 20140618 [A] (HUAWEI TECH CO LTD)
[A] 1-43
* 全文 *;
[CN104519529](#) A 20150415 [A] (ALCATEL LUCENT SHANGHAI BELL, et al)
[A] 1-43
* 全文 *;
[CN104918329](#) A 20150916 [YX] (CHINA MOBILE COMM CORP)
[Y] 1-39
* 参见说明书第[0090]-[131]、[0173]-[0178]段，图4、5、10 *
[X] 1-43;
[WO2015192578](#) A1 20151223 [A] (ZTE CORP [CN])
[A] 1-43
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CTNP - || STSE (A)
[Y] - Samsung, "Two levels for "QOS flow mobility", R2-1700028", 《3GPP TSG-RAN WG2 Meeting #96bis》
[Y] 1-39
* 第1、3-5节，图3、4，表1 *

CCI - [H04W28/0268](#) ; [H04W28/0812](#) ; [H04W76/11](#) ;
[H04W76/12](#) ; [H04W76/15](#)

CI - H04W28/0236 (US)
- H04W28/0263 (CN, US)
- H04W28/0268 (EP)
- H04W28/08 (US)
- H04W28/0812 (EP)
- H04W28/10 (CN)
- H04W28/24 (EP, CN)
- H04W76/11 (EP, CN)



- H04W76/12 (EP)
- H04W76/15 (EP)

PA - (A)
HUAWEI TECH CO LTD

TI - (A)
Information transmission method and device

AB - (A)
The invention discloses an information transmission method and device. The method comprises the steps that a main base station sends a request message to an auxiliary base station, and the request message comprises identification information of a flow; or, the request message comprises the identification information of the flow and the mapping relation between the flow and the data radio bearer (DRB); and the main base station receives a response message responding to the request message from the auxiliary base station. The invention provides an information transmission method and device. The DRB mapped by the flow is determined among the main base station, the auxiliary base station, the core network equipment and the user equipment according to the identification information of the flow, so that the **QoS management** of information transmission is finer, and the requirement of a **5G** communication system on the **QoS management** of information transmission in a dual-connection scene can be met.

41/96 © EPODOC / EPO

PN - [CN110169117](#) A 20190823

PR - CN20171008434 20170105; WO2018CN71511 20180105

AP - [CN20188005878](#) 20180105

DT - I

CT - // STSE (A)
[WO2013155709](#) A1 20131024 [Y] (HUAWEI TECH CO LTD [CN], et al)
[Y] 1-46,57-59
* 说明书第10页第10行至第26页第3行 *;
[CN103875275](#) A 20140618 [Y] (HUAWEI TECH CO LTD) [Y] 10-11,13, 33-34, 36
* 第72-267段 *;
[US2014204771](#) A1 20140724 [A] (GAO SHIWEI [CA], et al) [A] 1-46,57-59
* 全文 *;
[US2015043492](#) A1 20150212 [A] (BAEK SEUNG-KWON [KR], et al) [A] 1-46,57-59
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[CA2920995](#) A1 20150219 [A] (SAMSUNG ELECTRONICS CO LTD [KR]) [A] 1-46,57-59
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[CN104796948](#) A 20150722 [Y] (POTEVIO INFORMATION TECHNOLOGY CO LTD) [Y] 1-46,57-59
* 说明书第39-71段 *;
[CN104797000](#) A 20150722 [A] (POTEVIO INFORMATION TECHNOLOGY CO LTD)

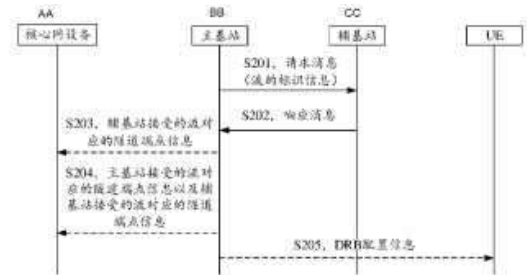


图2

S201 Request message (identifier information about a flow)
S202 Response message
S203 Tunnel endpoint information corresponding to a flow accepted by an auxiliary base station
S204 Tunnel endpoint information corresponding to a flow accepted by a main base station and the tunnel endpoint information corresponding to the flow accepted by the auxiliary base station
S205 DRB configuration information
AA Core network device
BB Main base station
CC Auxiliary base station
UE User equipment

[A] 1-46,57-59

* 全文 *;

[CN104918329 A](#) 20150916 [A] (CHINA MOBILE COMM CORP)

[A] 1-46,57-59

* 全文 *

- CCI - [H04W28/0268](#) ; [H04W28/0812](#) ; [H04W76/11](#) ;
[H04W76/12](#) ; [H04W76/15](#)
- CI - H04W28/0236 (US)
- H04W28/0263 (CN, US)
- H04W28/0268 (EP)
- H04W28/08 (US)
- H04W28/0812 (EP)
- H04W28/10 (CN)
- H04W28/24 (EP, CN)
- H04W76/11 (EP, CN)
- H04W76/12 (EP)
- H04W76/15 (EP)
- PA - HUAWEI TECH CO LTD
- TI - INFORMATION TRANSMISSION METHOD AND APPARATUS
- AB - Disclosed are an information transmission method and apparatus. The method comprises: a main base station sending a request message to an auxiliary base station, wherein the request message comprises identifier information about a flow, or the request message comprises the identifier information about a flow and a mapping relationship between the flow and a data radio bearer (DRB); and the main base station receiving, from the auxiliary base station, a response message in response to the request message. According to the information transmission method and apparatus provided in the present application, a main base station, an auxiliary base station, a core network device and a user equipment determine a DRB mapped by a flow according identifier information about the flow, so that **Qos management** of information transmission becomes more refined, and thus the requirement of a **5G** communication system on **QoS management** of information transmission in a dual connectivity scenario can be satisfied.

42/96 © EPODOC / EPO

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PR - EP20180190636 20180824

AP - [WO2019EP72548](#) 20190823

DT - *, Rep

CT - |EP| ISR (A1)
[XP015127538 A](#)[Y];
[US2017041231 A1](#) 20170209 [Y] (SEED DALE N [US], et al)
[Y] 1-20

* paragraph [0102] - paragraph [0103] *

* paragraph [0127] *;

[WO2016170559 A1](#) 20161027 [A] (NEC CORP [JP])

[A] 1-20

* the whole document *;

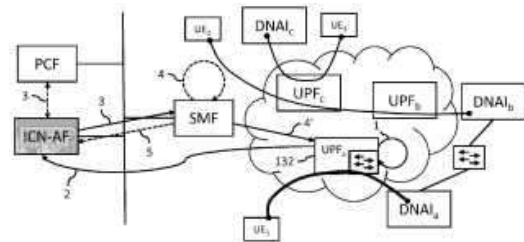


Fig. 5A

[WO2018225039](#) A1 20181213 [AP] (ERICSSON TELEFON AB L M [SE])
 [AP] 1-20
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 [Y] - RAVINDRAN HUAWEI P SUTHAR CISCO D TROSSEN INTERDIGITAL INC G WHITE CABLELABS R, "Enabling ICN in 3GPP's 5G NextGen Core Architecture; draft-ravi-icnrg-5gc-icn-02.txt", ENABLING ICN IN 3GPP'S 5G NEXTGEN CORE ARCHITECTURE; DRAFT-RAVI-ICNRG-5GC-ICN-02.TXT; INTERNET-DRAFT: ICNRG, INTERNET ENGINEERING TASK FORCE, IETF; STANDARDWORKINGDRAFT, INTERNET SOCIETY (ISOC) 4, RUE DES FALAISES CH- 1205 GENEVA, SWITZERLAND, (20180702), no. 2, pages 1 - 26, XP015127538
 [Y] 1-20
 * figure 2 *
 * page 5 *
 * page 10 - page 13 *
- CCI - [H04L47/11](#) ; [H04L47/12](#) ; [H04L67/322](#) ; [H04L67/327](#)
- CCA - [H04W28/0289](#)
- CI - H04L47/11 (EP)
 - H04L47/12 (EP)
 - H04L67/322 (EP)
 - H04L67/327 (EP)
- CA - H04W28/0289 (EP)
- PA - KONINKLIJKE KPN NV [NL] ; TNO [NL]
- TI - INFORMATION-CENTRIC NETWORKING OVER 5G OR LATER NETWORKS
- AB - In a communication network, a network function may be provided for controlling Information Centric Networking (ICN) protocol-based traffic flow between a set of user equipment (UE). This network function may be an ICN application function (ICN-AF), and may obtain ICN layer information from an ICN router which is indicative of a congestion state of a current PDU session of user equipment. If the congestion state indicates congestion, the ICN-AF may initiate establishment of a new PDU session for the user equipment (UE1) or initiate upgrade of a quality of service (QoS) characteristic of the current PDU session, for example using the session **management** function (SMF) and via the SMF's session **management** of PDU sessions.

PN - [CN109803329](#) A 20190524

PR - CN201711140614 20171116

AP - [CN201711140614](#) 20171116

DT - I

CT - // STSE (A)
[CN101374349](#) A 20090225 [A] (LUCENT TECHNOLOGIES INC [US])
 [A] 1-28
 * 全文 *;
[CN101784033](#) A 20100721 [Y] (HUAWEI TECH CO LTD)
 [Y] 1-28
 * 全文 *;
[CN102948215](#) A 20130227 [A] (QUALCOMM INC)
 [A] 1-28
 * 全文 *;
[CN104812096](#) A 20150729 [A] (QUALCOMM INC)
 [A] 1-28
 * 全文 *;
[US2015358886](#) A1 20151210 [A] (QIN ZHONGBIN [CN])
 [A] 1-28
 * 全文 *;
[WO2017000694](#) A1 20170105 [A] (ZTE CORP [CN])
 [A] 1-28
 * 全文 *;
[CN107113670](#) A 20170829 [A] (LG ELECTRONICS INC)
 [A] 1-28
 * 全文 *

CTNP - // STSE (A)
 [A] - Samsung, "Data forwarding for Inter-system handover from 5GS to EPS", 《3GPP TSG-RAN WG3 Meeting #97bis》
 [A] 1-28
 * 全文 *
 [Y] - Samsung, "Data forwarding for Inter-system handover from EPS to 5GS", 《3GPP TSG-RAN WG3 Meeting #97bis》
 [Y] 1-28
 * 第1-4页 *
 [A] - CATT, "Discussion on inter system data forwarding", 《3GPP TSG-RAN WG3#97bis》
 [A] 1-28
 * 第1-4页 *
 [A] - Nokia, Alcatel-Lucent, "TS 23.502 call flow for EPC -> 5GC interworking", 《SA WG2 Meeting #120》
 [A] 1-28
 * 全文 *

CCI - [H04W36/0022](#)

CI - H04W8/12 (KR)
 - H04W36/0016 (US)
 - H04W36/0022 (EP, KR, US)
 - H04W36/0044 (US)
 - H04W36/02 (KR)
 - H04W36/14 (KR)
 - H04W36/30 (KR)

PA - CHINA ACADEMY TELECOMMUNICATIONS TECHNOLOGY

TI - Data forwarding tunnel determination method, access and mobility management equipment and



base station

AB - The invention provides a data forwarding tunnel determination method, access and mobility **management** equipment and a base station. The method comprises the following steps of: receiving data forwarding information of target UE forwarded by an MME, and acquiring a **QoS** flow configured for each bearer of the target UE by a **5G** core network and a mapping relation between the bearer and the **QoS** flow; wherein the data forwarding information comprises a bearing list distributed to the target UE by the EPS, and an indication of whether data forwarding exists in each bearing corresponding to the targetUE determined by the 4G base station; sending the data forwarding information, the configured **QoS** flow and the mapping relation between the bearer and the **QoS** flow to a target **5G** base station; and receiving the forwarding tunnel information of the **5G** base station configured by the target **5G** base station for the target UE according to the data forwarding information, the configured **QoS** flow and the mapping relationship between the bearer and the **QoS** flow. According to the scheme provided by the embodiment of the invention, the tunnel allocation of the data forwarding of switching from the EPS to the **5G** system is realized under the conditions that the existing EPS system is not influenced and the signaling consumption is not increased, and the completion of the data forwarding is ensured.

44/96 © EPODOC / EPO

PN - [EP3687203](#) A1 20200729

PR - CN201711140614 20171116; WO2018CN102685 20180828

AP - [EP20180878212](#) 20180828

DT - *; Rep

CCI - [H04W36/0022](#)

CI - H04W8/12 (KR)
 - H04W36/0016 (US)
 - H04W36/0022 (EP, KR, US)
 - H04W36/0044 (US)
 - H04W36/02 (KR)
 - H04W36/14 (KR)
 - H04W36/30 (KR)

PA - CHINA ACADEMY TELECOMMUNICATIONS TECHNOLOGY [CN]

TI - DATA FORWARDING TUNNEL DETERMINATION METHOD, ACCESS, MOBILITY **MANAGEMENT** DEVICE AND BASE STATION

AB - A method for determining a data forwarding tunnel, an AMF entity, and a base station (BS) are provided. The method includes: receiving data forwarding information of target UE forwarded by MME, and acquiring a **QoS** flow configured by a **5G** core network for each bearer of the target UE, and mapping relationship between a bearer and a **QoS** flow, where the data forwarding information includes a list of bearers allocated by EPS to the target UE and an indication of a determination by a 4G BS as to whether each bearer of the target UE has data to forward; transmitting the data forwarding information, the configured **QoS** flow, and the mapping relationship to a target **5G** BS; and receiving forwarding tunnel information of a **5G** BS configured for the target UE by the target **5G** BS according to the data forwarding information, the configured **QoS** flow, and the mapping relationship.

45/96 © EPODOC / EPO

PN - [US2019124555](#) A1 20190425

PR - WO2016US25922 20160404

AP - [US201616091502](#) 20160404

DT - **

CCI - [H04L47/20](#) ; [H04L47/2425](#) ; [H04L47/2475](#) ; [H04W28/12](#) ; [H04W28/24](#)

CI - H04L47/20 (EP, US)
H04L47/2425 (EP, US)
H04L47/2475 (EP, US)
H04W28/0236 (US)
H04W28/0268 (US)
H04W28/12 (EP, US)
H04W28/24 (EP, US)

PA - NOKIA TECHNOLOGIES OY [FI]

TI - CONTEXT AWARE **QoS/QoE** POLICY PROVISIONING AND ADAPTATION IN **5G** SYSTEMS

AB - Methods and apparatus, including computer program products, are provided for QoE/**QoS** **management**. In some example embodiments, there is provided a method. The method may include detecting, by an enforcement point, an initiation of a session for an application; requesting, by the enforcement point, a first level quality of experience policy for the detected session; receiving, from a policy server, the first level quality of experience policy for the detected session; deriving, based on the first level quality of experience policy, a second level quality of experience target and/or a quality of service target for the detected session; enforcing, by the enforcement point, the second level quality of experience target and/or the quality of service target on the detected session. Related apparatus, systems, methods, and articles are also described.

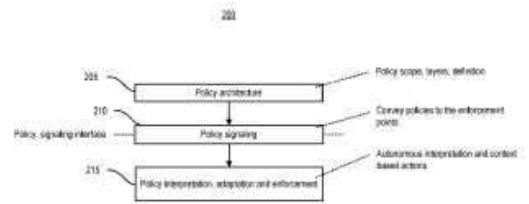


FIG. 2

46/96 © EPODOC / EPO

PN - [CN109565703](#) A 20190402

PR - IN201641026242 20160801; WO2017KR08293 20170801

AP - [CN20178048392](#) 20170801

DT - I

CCI - [H04W28/0263](#) ; [H04W76/11](#) ; [H04W76/12](#)

CI - H04W28/0263 (EP, KR, US)
H04W28/0268 (KR, US)
H04W28/06 (KR, US)
H04W76/11 (EP, US)
H04W76/12 (EP, US)
H04W76/15 (US)

PA - SAMSUNG ELECTRONICS CO LTD

TI - METHOD AND APPARATUS FOR MANAGING DATA COMMUNICATION IN WIRELESS COMMUNICATION NETWORK

AB - The present disclosure relates to a communication method and system for converging a 5th-Generation (**5G**) communication system for supporting higher data rates beyond a 4th-Generation (4G) system with a technology for Internet of Things (IoT). The present disclosure may be applied to intelligent services based on the **5G** communication technology and the IoT-related technology, such as smart home, smart building, smart city, smart car, connected car, health care, digital education, smart retail, security and safety services. Embodiments herein disclose a UE for managing a data communication in a wireless communication

network. The UE includes a DRB **management** unit configured to determine a DRB for transmitting a packet based on **QoS** flow identifier and a PDU session associated with the packet and mapping of the **QoS** flow identifiers to the DRBs for each established PDU session. The DRB **management** unit performs one of mapping the packet to an established non-default DRB if the list of one or more **QoS** flow identifiers associated with the DRB includes the **QoS** flow identifier of the packet and the DRB is associated with the PDU session of the packet, and mapping the packet to a default DRB associated with the PDU session of the packet if none of the established non-default DRBs is associated with the PDU session and the **QoS** flow identifier of the packet.

47/96 © EPODOC / EPO

PN - [US2019082417](#) A1 20190314

PR - US201815771740 20180315; US201762502122P 20170505; WO2018EP56504 20180315

AP - [US201815771740](#) 20180315

DT - **

CCI - [H04W68/00](#) ; [H04W68/02](#)

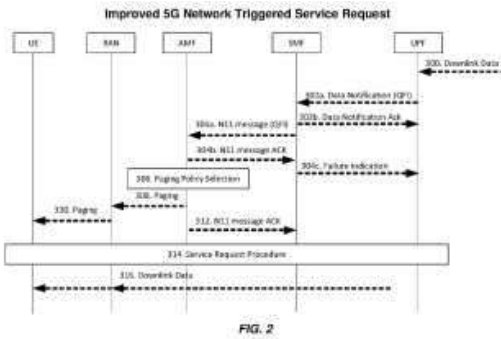
CI - [H04W8/08](#) (US)
- [H04W28/0268](#) (US)
- [H04W68/00](#) (EP)
- [H04W68/02](#) (EP, US)
- [H04W76/27](#) (US)
- [H04W88/08](#) (EP, US)
- [H04W88/12](#) (EP, US)
- [H04W88/14](#) (EP, US)

CA - [H04B7/0413](#) (US)

PA - ERICSSON TELEFON AB L M [SE]

TI - PAGING POLICY DIFFERENTIATION IN 5G SYSTEM

AB - According to one aspect of the present disclosure, a method of paging policy differentiation in a 5G telecommunications network is provided. A User Plane Function (UPF) receives downlink data for a target User Equipment (UE), and provides a data notification to a Session Management Function (SMF), the data notification comprising a Quality of Service (QoS) indicator, which the SMF uses to determine QoS Information (QoSI) that is sent to an Access Management Function (AMF). The AMF determines whether a paging policy selection should be performed by the AMF or by a Radio Access Node (RAN) that serves the target UE: if by the AMF, the AMF selects a paging policy based on the QoSI and sends a paging message to the RAN, which pages the UE; if by the RAN, the AMF provides paging policy information to the RAN, which selects a paging policy and pages the UE accordingly.



PN - [KR20190018947](#) A 20190226

PR - KR20170103737 20170816

AP - [KR20170103737](#) 20170816

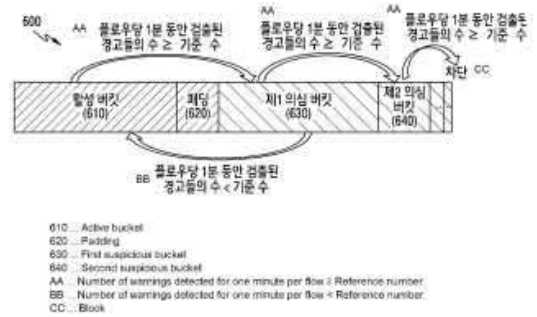
DT - I

CI - H04L29/06 (EP)

PA - SAMSUNG ELECTRONICS CO LTD [KR]; KOREA ADVANCED INST SCI & TECH [KR]

TI - APPARATUS AND METHOD FOR HANDLING A NETWORK ATTACK IN A SOFTWARE DEFINED NETWORK

AB - The present disclosure relates to a 5th generation (5G) or pre-5G communication system for supporting a higher data transmission rate than a 4th generation (4G) communication system such as long term evolution (LTE). According to the present disclosure, provided are an apparatus and a method for processing a network attack in a software defined network (SDN). According to various embodiments of the present disclosure, the method for processing a network attack in an SDN, comprises the processes of: detecting a first candidate of a network attack in a flow during a first time period; changing the quality of service (QoS) for the flow into a second QoS from a first QoS in response to the detection of the first candidate; detecting a second candidate of the network attack in the flow of the second QoS during a second time period next to the first time period; and blocking the flow in response to the detection of the second candidate. The apparatus and the method according to various embodiments of the present disclosure, a network attack is gradually blocked in stages, thereby reducing the possibility of miscalculation for the network attack, and reducing recovery costs for a network failure. Accordingly, efficient network **management** can be performed.



49/96 © EPODOC / EPO

PN - [CN109451534](#) A 20190308

PR - CN201811541304 20181217

AP - [CN201811541304](#) 20181217

DT - I

CI - H04W28/0289 (CN)
H04W28/06 (CN)
H04W28/24 (CN)

PA - UNIV SOUTHEAST

TI - QoS (Quality of Service) flow dynamic control methods and device in session **management** of 5G system

AB - The invention discloses QoS (Quality of Service) flow dynamic control methods and device in session **management** of a 5G system. A method is realized through new increase of the following four functionmodules in a session **management** function (SMF). The four function modules comprise a judgment module which is used for judging network resource state types and change condition, to-be-transmitted business types, and characteristic demand similarity among different types of business; a self-learning and computing module which is used for adaptively optimizing a QFI (QoS Flow Identifier) parameter configuration policy according to a reinforcement learning method and providing a QFI computing result; an interaction communication module which is used for carrying out information interaction with an external network function module, realizing QoS parameter configuration and the like; and a decision-making module which is used for processing information received by the interaction communicationmodule, determining required QoS parameters and the like. According to the methods and the device provided by the

invention, dynamic control over **QoS** flow granularity can be realized, when a network environment is changed, routing forwarding is optimized, congestion/overload condition is mitigated or avoided, and high-efficiency transmission of data is ensured. Network topology structure information and excessive control signal cost are avoided.

50/96 © EPODOC / EPO

PN - [CN109429213](#) A 20190305

PNFP - CN109429213B B 20201020

PR - CN201710486223 20170623

AP - [CN201710486223](#) 20170623

DT - I

CT - // STSE (A)
[CN102355744](#) A 20120215 [A] (CHINA ACADEMY OF TELECOMM TECH)
 [A] 1-22
 * 全文 *;
[US2016037416](#) A1 20160204 [A] (MOISANEN MATTI TAPANI [FI], et al)
 [A] 1-22
 * 全文 *;
[CN106162705](#) A 20161123 [A] (CHINA ACADEMY TELECOMMUNICATIONS TECHNOLOGY)
 [A] 1-22
 * 全文 *

CI - H04W8/14 (CN)
 - H04W8/205 (CN)
 - H04W28/24 (CN)

PA - (A)
 CHINA ACADEMY TELECOMMUNICATIONS TECHNOLOGY

TI - (A)
 Information processing method and apparatus, device and computer readable storage medium

AB - (A)
 The invention provides an information processing method and apparatus, a device and a computer readable storage medium, and relates to the technical field of communication for saving signaling resources. The information processing method provided by the invention comprises the following steps: when user equipment UE in an idle state moves from a **5G** network to an **LTE** (long term evolution) network, receiving a context request of an MME (Mobility **Management** Entity) in a process when the UE initiates TAU (tracking area update) ; storing a corresponding relationship between a session **management** function entity and a DNN (data network name) of a PDU (Protocol Data Unit) session of the UE in subscription data of the UE; or, requesting the session **management** function entity to perform EPS **QoS** (Quality of Service) mapping according to the context of the PDU session, and returning an EPS (Evolved Packet System) **QoS** parameter generated by the EPS **QoS** mapping; and sending the context of the UE to the MME. By adoption of the information processing method provided by the invention, the signaling resources can be saved.

51/96 © EPODOC / EPO

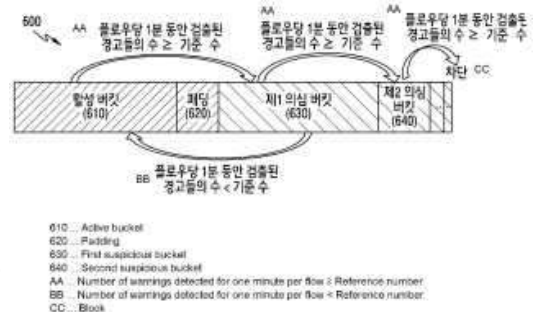
PN - [WO2019035634](#) A1 20190221

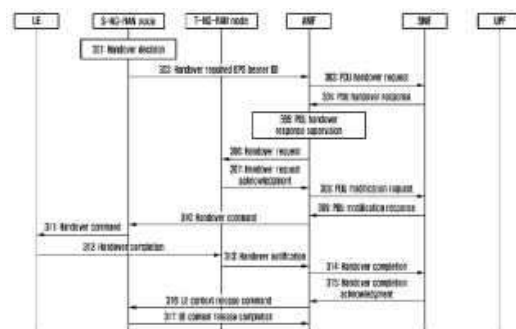
PR - KR20170103737 20170816

AP - [WO2018KR09327](#) 20180814

DT - *, Rep

CT - [KR] ISR (A1)
 KR101741357B B1 20170530 [XY] (EWAH UNIV - IND COLLABORATION FOUND [KR])
 [X] 1, 4, 6,9
 * See paragraphs [00361, [0040]-[0041], [0043]; and figure 4. *
 [Y] 2-3, 5, 7-8, 10-5;
[JP2017511072](#) A 20170413 [Y] (LEVEL 3 COMMUNICATIONS LLC.)
 [Y] 2, 5, 7, 10-15
 * See paragraphs [0024], [0029]-[0030], [0041], [0047]





[A] - 3GPP, "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Procedures for the 5G System; Stage 2 (Release 15)", 3GPP TS 23.502 V0.5.0, (20170714), URL: <https://portal.3gpp.org/desktopmodules/Specifications/SpecificationDetails.aspx?specificationId=3145>, XP055571044

[A] 1-15

* See section 4.11.1.2.2; and figure 4.11.1.2.2-1. *

[A] - NTT DOCOMO, "23.502: handover from EPS to 5GS procedure using Nx interface", S2-174564 , SA WG2 Meeting #122, Cabo, Mexico, (20170620) , URL: http://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_122_Cabo/Docs, XP051309618

[A] 1-15

* See sections 4.11.1.2.2-4.11.1.2.3. *

[A] - CHINA TELECOM, "Update 5GS to EPS handover procedure", S2-175362 , SA WG2 Meeting #122-BIS, Sophia Antipolis, France, (20170809), URL: http://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_122BIS_Sophia_Antipolis/Docs , XP051312233

[A] 1-15

* See section 2. *

[A] - HUAWEI, "Update of 4G to 5G interworking handover with Nx interface", S2-175158 , SA WG2 Meeting #122, San Jose del Cabo, Mexico, (20170703), URL: http://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_122_Cabo/Docs, XP051310147

[A] 1-15

* See section 2. *

CCI - [H04W28/02](#) ; [H04W36/0044](#)

CCA - [H04W36/14](#) ; [H04W36/30](#)

CI - H04W28/02 (EP)
- H04W36/0044 (EP)

CA - H04W36/14 (EP)
- H04W36/30 (EP)

PA - SAMSUNG ELECTRONICS CO LTD [KR]; BEIJING SAMSUNG TELECOMMUNICATIONS TECH RESEARCH CO LTD [CN]

TI - METHOD FOR SUPPORTING HANDOVER AND CORRESPONDING APPARATUS.

AB - The present disclosure relates to a communication method and system for converging a 5th-Generation (5G) communication system for supporting higher data rates beyond a 4th-Generation (4G) system with a technology for Internet of Things (IoT). The present disclosure may be applied to intelligent services based on the 5G communication technology and the IoT-related technology, such as smart home, smart building, smart city, smart car, connected car, health care, digital education, smart retail, security and safety services. The present invention provides a method of a base station for supporting an inter-system handover from an evolved packet system (EPS) system to a 5th generation (5G) system. The method comprises receiving, from an access and mobility management function (AMF), a handover request message including E-UTRAN radio access bearer (E-RAB) information and quality of service (Qos) flow information, identifying whether a protocol data unit (PDU) session is accepted or not, determining whether a data forwarding for at least one Qos flow associated with the PDU session is accepted or not based on the E-RAB information and the Qos flow information in case that the

PDU session is accepted and transmitting, to the AMF, a handover request acknowledgement message including information on the at least one **Qos** flow based on the determination. The method solves the data forwarding problem during the movement of a UE between an LTE system and a **5G** system, so that the loss of data is avoided and the continuity of services is ensured.

53/96 © EPODOC / EPO

PN - [CN109155764](#) A 20190104
 PR - US201662318568P 20160405; WO2016IB52055 20160411; WO2016IB52079 20160412
 AP - [CN20168085924](#) 20160412
 DT - I
 CCI - [H04L47/24](#) ; [H04L47/80](#)
 CCA - [H04L67/322](#) ; [H04W28/0289](#)
 CI - H04L47/24 (EP)
 - H04L47/80 (EP)
 CA - H04L67/322 (EP)
 - H04W28/0289 (EP)
 PA - NOKIA TECHNOLOGIES OY
 TI - METHOD AND APPARATUS FOR END-TO-END **QOS/QOE MANAGEMENT** IN **5G** SYSTEMS
 AB - Various methods are provided for providing dynamic and adaptive **QoS** and QoE **management** of U-Plane traffic while implementing user and application specific differentiation and maximizing system resource utilization by, for example, providing utilizing a system comprised of a policy server and one or more enforcement points. In one example system, the policy server may be a logical entity configured for storing a plurality of **QoS/QoE** policies, each of the plurality of policies identifying at least one of a user, service vertical, application, or context, and associated QoE targets. The policy server may be further configured to provide one or more of the plurality of **QoS/QoE** policies to the one or more enforcement points. In some embodiments, the **QoS/QoE** policies may be configured to provide QoE targets, for example, at a high abstraction level and/or at an application session level.

54/96 © EPODOC / EPO

PN - [CN108886703](#) A 20181123
 PR - WO2016US25922 20160404
 AP - [CN20168084344](#) 20160404
 DT - I
 CCI - [H04L47/20](#) ; [H04L47/2425](#) ; [H04L47/2475](#) ; [H04W28/12](#) ; [H04W28/24](#)
 CI - H04L47/20 (EP, US)
 - H04L47/2425 (EP, US)
 - H04L47/2475 (EP, US)
 - H04W28/0236 (US)
 - H04W28/0268 (US)
 - H04W28/12 (EP, US)
 - H04W28/24 (EP, US)
 PA - NOKIA TECHNOLOGIES OY
 TI - CONTEXT AWARE **QOS/QOE** POLICY PROVISIONING AND ADAPTATION IN **5G** SYSTEMS
 AB - Methods and apparatus, including computer program products, are provided for QoE/**QoS management**. In some example embodiments, there is provided a method. The method may include detecting, by an enforcement point, an initiation of a session for an application; requesting, by the enforcement point, a first level quality of experience policy for the detected session; receiving, from a policy server, the first level quality of experience policy for the detected session; deriving, based on the first level quality of experience policy, a second level quality of experience target and/or a quality of service target for the detected session; enforcing, by the enforcement point, the second level quality of experience target and/or the quality of service target on the detected session. Related apparatus, systems, methods, and articles are also described.

55/96 © EPODOC / EPO

PN - [EP3652921](#) A1 20200520
PR - US201762572291P 20171013; WO2018EP77699 20181011
AP - [EP20180789345](#) 20181011
DT - I
CCI - [H04L67/14](#)
CI - H04L47/24 (KR, US)
- H04L65/1069 (US)
- H04L67/14 (EP, KR, US)
- H04L67/322 (KR)
- H04W8/24 (KR, US)
- H04W28/0268 (US)
- H04W28/24 (KR, US)
- H04W76/10 (EP, KR)
PA - NOKIA TECHNOLOGIES OY [FI]
TI - METHOD FOR **QoS** CAPABILITY NEGOTIATION BETWEEN A USER EQUIPMENT AND A SESSION **MANAGEMENT** FUNCTION IN A **5G** SYSTEM

56/96 © EPODOC / EPO

PN - [WO2019072952](#) A1 20190418
PR - US201762572291P 20171013
AP - [WO2018EP77699](#) 20181011
DT - **
CT - /EP/ ISR (A1)
[US2014233380](#) A1 20140821 [I] (KIM HYUNSOOK [KR], et al)
[I] 1-38
* page 3, paragraph 74 - page 5, paragraph 87 *
* page 9, paragraph 147 - page 9, paragraph 150 *
* page 11, paragraph 172 - page 11, paragraph 179 *
* figures 1, 12, 16 *;
[XP055407470](#) A[A];
[WO2015039096](#) A1 20150319 [A] (CONVIDA WIRELESS LLC [US])
[A] 1-38
* page 4, paragraph 20 - page 10, paragraph 41 *
* page 13, paragraph 49 - page 14, paragraph 51 *
* page 20, paragraph 66 - page 23, paragraph 86 *
* figures 1, 2, 4A *
CTNP - /EP/ ISR (A1)
[A] - JUNSEOK KIM ET AL, "3GPP SA2 architecture and functions for 5G mobile communication system", ICT EXPRESS, (20170301), vol. 3, no. 1, doi:[10.1016/j.icte.2017.03.007](#), ISSN 2405-9595, pages 1 - 8, XP055407470
[A] 1-38
* page 2, section "2.1 NextGen architecture overview" *
* page 4, section "PDU session" *
* page 5, section "Session and service continuity" *
* page 5, section "Reflective QoS" *
* figures 1, 3 *
CCI - [H04L67/14](#)
CI - H04L47/24 (KR, US)
- H04L65/1069 (US)
- H04L67/14 (EP, KR, US)
- H04L67/322 (KR)
- H04W8/24 (KR, US)
- H04W28/0268 (US)
- H04W28/24 (KR, US)
- H04W76/10 (EP, KR)

PA - NOKIA TECHNOLOGIES OY [FI]
 TI - METHOD FOR **QoS** CAPABILITY NEGOTIATION BETWEEN A USER EQUIPMENT AND A SESSION **MANAGEMENT** FUNCTION IN A **5G** SYSTEM
 AB - In some example embodiments, there may be provided a method that includes forming, by a user equipment, a session establishment message including an indication of at least one session **management** capability supported by the user equipment; sending, by the user equipment, the session establishment message including the indication towards a session **management** function; and receiving, by the user equipment and from the session **management** function, a response indicative of whether the session **management** function and/or a corresponding network supports the at least one session **management** capability to enable the user equipment to operate in accordance with the at least one session **management** capability. Related systems, methods, and articles of manufacture are also described.

57/96 © EPODOC / EPO

PN - [CN108282817](#) A 20180713
 PR - CN20171008434 20170105
 AP - [CN20171008434](#) 20170105
 DT - I
 CCI - [H04W28/0268](#) ; [H04W28/0812](#) ; [H04W76/11](#) ; [H04W76/12](#) ; [H04W76/15](#)
 CI - H04W28/0236 (US)
 - H04W28/0263 (CN, US)
 - H04W28/0268 (EP)
 - H04W28/08 (US)
 - H04W28/0812 (EP)
 - H04W28/10 (CN)
 - H04W28/24 (EP, CN)
 - H04W76/11 (EP, CN)
 - H04W76/12 (EP)
 - H04W76/15 (EP)
 PA - HUAWEI TECH CO LTD
 TI - Information transmission method and information transmission device
 AB - The invention discloses an information transmission method and an information transmission device. The information transmission method comprises steps that a main base station is used to transmit a request message to an auxiliary base station, and the request message comprises identification information of a flow; or the request message comprises the identification information of the flow and a mapping relation between the flow and a data radio bearer DRB; the main base station is used to receive a response message used for responding to the request message from the auxiliary base station. According to the information transmission method and the information transmission device provided by the invention, the DRB mapped by the flow is determined according to the identification information of the flow by the main base station, the auxiliary base station, core network equipment, and user equipment, and then the **QoS management** of the information transmission is more refined, and therefore requirements of a **5G** communication system in a dual connectivity scene on the information transmission are satisfied.

58/96 © EPODOC / EPO

PN - [EP3557902](#) A1 20191023
 PNFP - EP3557902 A4 20200115
 PR - CN20171008434 20170105; WO2018CN71511 20180105
 AP - [EP20180735987](#) 20180105
 DT - *; Rep
 CT - // STSE (A4)
[CA2920995](#) A1 20150219 [XA] (SAMSUNG ELECTRONICS CO LTD [KR])
 [X] 1,11,19-21
 * paragraphs [0202] - [0213]; figures 10,11 *
 [A] 2-10,12-18
 CCI - [H04W28/0268](#) ; [H04W28/0812](#) ; [H04W76/11](#) ; [H04W76/12](#) ; [H04W76/15](#)

CI - H04W28/0236 (US)
- H04W28/0263 (CN, US)
- H04W28/0268 (EP)
- H04W28/08 (US)
- H04W28/0812 (EP)
- H04W28/10 (CN)
- H04W28/24 (EP, CN)
- H04W76/11 (EP, CN)
- H04W76/12 (EP)
- H04W76/15 (EP)

PA - (A1 A4)
HUAWEI TECH CO LTD [CN]

TI - (A1 A4)
INFORMATION TRANSMISSION METHOD AND APPARATUS

AB - (A1)
This application discloses an information transmission method and apparatus. The method includes: sending, by a master base station, a request message to a secondary base station, where the request message includes identification information of a flow, or the request message includes identification information of a flow and a mapping relationship between the flow and a data radio bearer DRB; and receiving, by the master base station from the secondary base station, a response message in response to the request message. According to the information transmission method and apparatus provided in this application, a master base station, a secondary base station, a core network device, and user equipment determine, based on identification information of a flow, a DRB to which the flow is mapped, so that **QoS management** of information transmission is more refined, and a requirement of a **5G** communications system for **QoS management** of information transmission in a dual connectivity scenario can be met.

59/96 © EPODOC / EPO

PN - [WO2018127117](#) A1 20180712

PR - CN20171008434 20170105

AP - [WO2018CN71511](#) 20180105

DT - **

CT - [CN] ISR (A1)
[CN104918329](#) A 20150916 [X] (CHINA MOBILE COMM CORP)
[X] 1-46;
[CN104519529](#) A 20150415 [A] (ALCATEL LUCENT SHANGHAI BELL, et al)
[A] 1-46;
[CN103875275](#) A 20140618 [A] (HUAWEI TECH CO LTD)
[A] 1-46;
[WO2015192578](#) A1 20151223 [A] (ZTE CORP [CN])
[A] 1-46

CCI - [H04W28/0268](#) ; [H04W28/0812](#) ; [H04W76/11](#) ; [H04W76/12](#) ; [H04W76/15](#)

CI - H04W28/0236 (US)
- H04W28/0263 (CN, US)
- H04W28/0268 (EP)
- H04W28/08 (US)
- H04W28/0812 (EP)
- H04W28/10 (CN)
- H04W28/24 (EP, CN)
- H04W76/11 (EP, CN)
- H04W76/12 (EP)
- H04W76/15 (EP)

PA - HUAWEI TECH CO LTD [CN]

TI - INFORMATION TRANSMISSION METHOD AND APPARATUS

AB - Disclosed are an information transmission method and apparatus. The method comprises: a main base station sending a request message to an auxiliary base station, wherein the request message comprises identifier information about a flow, or the request message comprises the identifier information about a

flow and a mapping relationship between the flow and a data radio bearer (DRB); and the main base station receiving, from the auxiliary base station, a response message in response to the request message. According to the information transmission method and apparatus provided in the present application, a main base station, an auxiliary base station, a core network device and a user equipment determine a DRB mapped by a flow according identifier information about the flow, so that **Qos management** of information transmission becomes more refined, and thus the requirement of a **5G** communication system on **QoS management** of information transmission in a dual connectivity scenario can be satisfied.

60/96 © EPODOC / EPO

PN - [CN108260162](#) A 20180706
 PR - CN20181085707 20180129
 AP - [CN20181085707](#) 20180129
 DT - I
 CT - // STSE (A)
[CN106921996](#) A 20170704 [A] (CHINA ACADEMY TELECOMMUNICATIONS TECHNOLOGY)
 [A] 1-7
 * 全文 *;
[US2018014223](#) A1 20180111 [A] (CHENG CHING-WEN [TW], et al)
 [A] 1-7
 * 全文 *;
[CN107637123](#) A 20180126 [A] (BEIJING XIAOMI MOBILE SOFTWARE CO LTD)
 [A] 1-7
 * 全文 *
 CTNP - // STSE (A)
 [A] - 3rd Generation Partnership Project, "NR; NR and NG-RAN Overall Description", 《3GPP TS 38.300 V1.1.1》
 [A] 1-7
 * 全文 *
 [A] - 闫渊, "5G中CU-DU架构、设备实现及应用探讨", 《移动通信》
 [A] 1-7
 * 全文 *
 CI - H04W28/0268 (CN)
 - H04W28/24 (CN)
 PA - UNIV CHONGQING POSTS & TELECOM
 TI - SDAP layer function implementation method of **5G** system
 AB - The invention relates to an SDAP layer function implementation method of a **5G** system, and belongs to the technical field of communication. According to the method, in an SDAP layer, a multi-case mode is used for designing, a PDU session identifier is used for identifying an SDAP case number; each SDAP entity completes **management** on mapping between DRB corresponding to the independent PDU session identifiers and **QoS** stream identifiers; and a 5GSM module manages building and deleting work of the SDAP cases. According to the SDAP module designed by the method, the non-access layer of the **5G** terminal has clearer structure, and the code maintenance and upgrade of the SDAP layer in the **5G** are facilitated.

61/96 © EPODOC / EPO

PN - [WO2019214830](#) A1 20191114
 PR - WO2018EP62226 20180511
 AP - [WO2018EP62226](#) 20180511
 DT - *, Rep
 CT - /EP/ ISR (A1)
[WO2009022966](#) A1 20090219 [X] (ERICSSON TELEFON AB L M [SE])
 [X] 1-11,16
 * abstract *
 * paragraphs [0008], [0 15], [0 16], [0 21], [0 22], [0 27], [38 24], [0 26] *
 * claims 1-22 *
 * figure 3 *;
[EP2849064](#) A1 20150318 [X] (NTT DOCOMO INC [JP])
 [X] 12-15,17

** abstract **

** paragraphs [0016] , [0 17] , [0 24] , [0 27] , [0 39] , [0 58] **

CCI - [H04L41/142](#) ; [H04L41/5009](#) ; [H04L47/18](#)

CI - H04L41/142 (EP)
- H04L41/5009 (EP)
- H04L47/18 (EP)

PA - HUAWEI TECH CO LTD [CN] ; MARQUEZAN CLARISSA [DE]

TI - CONTROL PLANE ENTITY AND **MANAGEMENT** PLANE ENTITY FOR EXCHANING NETWORK SLICE INSTANCE DATA FOR ANALYTICS

AB - The present invention relates to End-to-End (E2E) Quality of Service (**QoS**) monitoring for strict E2E performance requirements in **5G** networks including Network Slices (NSs) and/or Network Sub Slices (NSSs). For improved monitoring, the present invention provides a a control plane entity for obtaining NS Instance (NSI) data for analytics from a **management** plane entity, and a **management** plane entity to provide NSI data to a control plane entity. The control plane entity is configured to request NSI topology information from the **management** plane entity, obtain at least one first set of Key Performance Indicators (KPIs) and/or at least one set of measurements, and generate the data for analytics based on the requested NSI topology information and the obtained first set of KPIs and/or set of measurements. The **management** plane entity is configured to collect or request a first set of measurements related to links connecting entities of a NSI from an Access Network (AN) to a termination point towards a Data Network (DN) as well as information about virtualized Network Functions (NFs) of a NSI, and/or collect a second set of measurements related to a User Plane Network Function (UPF) from the UPF and/or collect a third set of measurements related to an AN from the AN, and to expose the first, second and/or third set of measurements to the control plane entity.

62/96 © EPODOC / EPO

PN - [WO2018167254](#) A1 20180920

PR - US201762472163P 20170316

AP - [WO2018EP56625](#) 20180316

DT - *, Rep

CT - */EP/ ISR (A1)*
[XP051205561](#) A[XYI];
[XP051216431](#) A[Y];
[XP051230646](#) A[Y];
[XP051290362](#) A[AD];
[XP051247490](#) A[AP]

CTNP - */EP/ ISR (A1)*
[XYI] - HUAWEI ET AL, "Discussion on QoS marking for B-type QoS profile", vol. SA WG2, no. Spokane, US; 20170116 - 20170120, (20170110), 3GPP DRAFT; S2-170121_DISCUSSION ON QOS MARKING FOR B-TYPE QOS PROFILE, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ;, URL: http://www.3gpp.org/ftp/tsg_sa/WG2_Arch/TSGS2_118BIS_Spokane/Docs/, (20170110), XP051205561
[X] 1-3,6,8,9,11,12,16-20
** paragraph [002.]; figures 1.,2. **
[Y] 4,5,7,10,13
[I] 14,15
[Y] - LG ELECTRONICS, "23.502: UE or SMF requested QoS modification", vol. SA WG2, no. Spokane, WA, USA; 20170116 - 20170120, (20170116) , 3GPP DRAFT; S2-170242_23 502 UE OR SMF REQUESTED QOS MODIFICATION, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRAN, URL: http://www.3gpp.org/ftp/Meetings_3GPP_SYNC/SA2/Docs/ (20170116), XP051216431
[Y] 4,5,7,10
** figures 4.2.2.1-1 , 4.2.2.2-1 **
[Y] - "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Procedures for the 5G System; Stage 2; (Release 15)", 3GPP STANDARD; 3GPP TS 23.502, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE, (20170125), vol. SA WG2, no. V0.1.0, pages 1 - 46, XP051230646
[Y] 4,5,7,10,13
** pages 26-27; figure 4.3.2.2.1 **
[AD] - "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects;

System Architecture for the 5G System; Stage 2 (Release 15)", 3GPP STANDARD ; TECHNICAL SPECIFICATION ; 3GPP TS 23.501, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE, (20170306), vol. SA WG2, no. V0.3.1, pages 1 - 97, XP051290362

[AD] 1-20

* paragraphs [5.7.5.4.2] , [6.2]; figures 4.2.4-3, 4.2.4-5 *

[AP] - ERICSSON, "23.501: UPF and SMF Service Areas", vol. SA WG2, no. Busan, Korea; 20170327 - 20170331, (20170326), 3GPP DRAFT; S2-171750_SERVICE_AREAS, 3RD GENERATION PARTNERSHIP PROJECT (3GPP) , MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE, URL: http://www.3gpp.org/ftp/Meetings_3GPP_SYNC/SA2/Docs/, (20170326), XP051247490

[AP] 14,15

* pages 2,4,7; figure 1 *

CCI - [H04L47/2433](#) ; [H04L47/31](#) ; [H04W28/0268](#) ; [H04W36/0044](#)

CI - H04L47/2433 (EP)

- H04L47/31 (EP)

- H04W28/0268 (EP)

- H04W36/0044 (EP)

PA - ERICSSON TELEFON AB L M [SE]

TI - UNIQUE QOS MARKING RANGES FOR SMFS IN A 5G COMMUNICATIONS NETWORK

AB - The embodiments herein relate generally to a Session **Management** Function (SMF) and a method performed by the SMF. More particularly the embodiments herein relate to handling marking of data traffic in a Fifth Generation (5G) communications network.

63/96 © EPODOC / EPO

PN - [WO2018202351](#) A1 20181108

PR - US201762502122P 20170505

AP - [WO2018EP56504](#) 20180315

DT - *, Rep

CT - |EP| ISR (A1)

[XP051298172](#) A[XAI];

[XP051298170](#) A[A]

CTNP - |EP| ISR (A1)

[XAI] - "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Procedures for the 5G System; Stage 2 (Release 15)", 3GPP STANDARD ; TECHNICAL SPECIFICATION ; 3GPP TS 23.502, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE, (20170420), vol. SA WG2, no. V0.3.0, pages 1 - 116, XP051298172

[X] 15,17,47,49,51,53-55,57,59,61,62

* page 8, lines 2-3 *

* page 21, lines 3-4 *

* page 21, lines 11-13 *

* page 21, lines 19-24 *

* page 22, lines 36-37 *

* page 22, line 41 - page 23, line 18 *

* page 23, lines 23-24 *

* page 23, lines 42-43 *

* figures 4.2.3.4-1 *

[A] 1-13,18-38,63-68

[I] 14,16,39-46,48,50,52,56,58,60

[A] - "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; System Architecture for the 5G System; Stage 2 (Release 15)", 3GPP STANDARD ; TECHNICAL SPECIFICATION ; 3GPP TS 23.501, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE, (20170420), vol. SA WG2, no. V0.4.0, pages 1 - 123, XP051298170

[A] 1-68

* Par. 5.3.3 *

* Par. 5.6.2 *

* Par. 6.2.1 - 6.2.6.2.3 *

CCI - [H04W68/00](#) ; [H04W68/02](#)

CI - H04W8/08 (US)
 - H04W28/0268 (US)
 - H04W68/00 (EP)
 - H04W68/02 (EP, US)
 - H04W76/27 (US)
 - H04W88/08 (EP, US)
 - H04W88/12 (EP, US)
 - H04W88/14 (EP, US)

CA - H04B7/0413 (US)

PA - ERICSSON TELEFON AB L M [SE]

TI - PAGING POLICY DIFFERENTIATION IN 5G SYSTEM

AB - According to one aspect of the present disclosure, a method of paging policy differentiation in a 5G telecommunications network is provided. A User Plane Function (UPF) receives downlink data for a target User Equipment (UE), and provides a data notification to a Session Management Function (SMF), the data notification comprising a Quality of Service (QoS) indicator, which the SMF uses to determine QoS Information (QoSI) that is sent to an Access Management Function (AMF). The AMF determines whether a paging policy selection should be performed by the AMF or by a Radio Access Node (RAN) that serves the target UE: if by the AMF, the AMF selects a paging policy based on the QoSI and sends a paging message to the RAN, which pages the UE; if by the RAN, the AMF provides paging policy information to the RAN, which selects a paging policy and pages the UE accordingly.

64/96 © EPODOC / EPO

PN - [WO2018145103](#) A1 20180809

PR - US201762455351P 20170206

AP - [WO2018US17089](#) 20180206

DT - *, Rep

CT - *[EP] ISR (A1)*
[XP051227659](#) A[X];
[XP051216252](#) A[X];
[XP051223463](#) A[X];
[XP051211162](#) A[X]

CTNP - *[EP] ISR (A1)*
 [X] - "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; System Architecture for the 5G System; Stage 2 (Release 15)", (20170125), 3GPP DRAFT; DRAFT-TS-23.501-010_RM, 3RD GENERATION PARTNERSHIP PROJECT (3GPP) , MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE, URL: http://www.3gpp.org/ftp/tsg_sa/WG2_Arch/Latest_SA2_Specs/Latest_draft_S2_Specs/, (20170125), XP051227659
[X] 1,2,8,11,12,18
** paragraph [4.2.3] **
** paragraph [05.7] **
 [X] - HUAWEI ET AL, "Discussion on Reflective QoS activation using C-plane and U-plane", vol. SA WG2, no. Spokane, Wa; 20170116 - 20170120, (20170116), 3GPP DRAFT; S2-170065 DISCUSSION ON REFLECTIVE QOS ACTIVATION MECHANISMS, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX, URL: http://www.3gpp.org/ftp/Meetings_3GPP_SYNC/SA2/Docs/, (20170116), XP051216252
[X] 1,6-8,11,16-18
** paragraph [02.1]; figure 2.1.1 **
** paragraph [02.2]; figure 2.2.2 **
 [X] - SAMSUNG, "Reducing reflective QoS processing load", vol. RAN WG2, no. Athens, Greece; 20170213 - 20170217, (20170204), 3GPP DRAFT; R2-1701284_NR_QOS_REFLECTIVE_V03, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE, URL: http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_97/Docs/, (20170204), XP051223463
[X] 1,2,8-12,18-20
** paragraphs [0001] , [0002] **
 [X] - QUALCOMM INCORPORATED, "Considerations for reflective QoS", vol. RAN WG2, no. Spokane, USA; 20170117 - 20170119, (20170117), 3GPP DRAFT; R2-1700590 REFLECTIVE QOS SUPPORT, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE, URL: http://www.3gpp.org/ftp/Meetings_3GPP_SYNC/RAN2/Docs/, (20170117),

XP051211162

[X] 1-5,8-15,18-20

* paragraphs [0001] , [0002] *

CCI - [H04L65/80](#) ; [H04W28/0205](#) ; [H04W28/0268](#)

CCA - [H04L47/14](#)

CI - H04L65/80 (EP)
- H04W28/0205 (EP)
- H04W28/0268 (EP)

CA - H04L47/14 (EP)

PA - IDAC HOLDINGS INC [US]

TI - METHODS FOR **QoS MANAGEMENT** FOR 5G NETWORKS

AB - A wireless transmit/receive unit (WTRU) may receive first user plane (UP) downlink (DL) data from a network. The first UP DL data may include an indication to initiate reflective quality of service (**QoS**) and a first **QoS** marking. The WTRU may transmit UP uplink (UL) data to the network using one or more **QoS** rules derived from the indication to initiate reflective **QoS** and the first **QoS** marking. Additionally, the WTRU may receive second UP DL data from the network. The second UP DL data may include an indication to deactivate reflective **QoS** and the **QoS** first marking. The WTRU may deactivate the one or more **QoS** rules based on the indication to deactivate reflective **QoS** and the second **QoS** marking. The WTRU may apply another **QoS** rule for upcoming transmissions of UP UL data.

65/96 © EPODOC / EPO

PN - [WO2018026169](#) A1 20180208

PR - IN201641026242 20160801

AP - [WO2017KR08293](#) 20170801

DT - *, Rep

CT - [KR] ISR (A1)
[XP051095274](#) A[YA];
[XP051095285](#) A[Y];
[XP051095714](#) A[A];
[US2015264738](#) A1 20150917 [A] (LEE EUNJONG [KR], et al)
[A] 1-15
* See paragraphs [0117], [0123]-[0125], [0234]-[0240];
and claims 1-6. *;
[WO2009063434](#) A1 20090522 [A] (NOKIA SIEMENS
NETWORKS OY [FI], et al)
[A] 1-15
* See paragraph [0038]; and claims 1-6. *

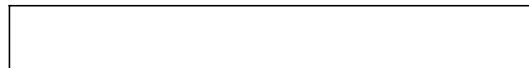
CTNP - [KR] ISR (A1)
[YA] - Qualcomm, "Principles for QoS", RAN', R2-164119, 3GPP TSG RAN WG2 Meeting #94, Nanjing, China, (20160514), URL: http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_94/Docs, XP051095274
[Y] 1, 9
* See sections 2, 3. *
[A] 2-8, 10-15
[Y] - INTERDIGITAL COMMUNICATIONS, "Radio Bearers and Per-Flow QoS for New Radio Access", R2-164089, 3GPP TSG RAN WG2 Meeting #94, Nanjing, China, (20160514), URL: http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_94/Docs, XP051095285
[Y] 1, 9
* See section 2. *
[A] - SAMSUNG, "NR user plane architecture for supporting multiple services", R2-163740, 3GPP TSG RAN WG2 Meeting #94, Nanjing, China, (20160513), URL: http://www.3gpp.org/ftp/tsg_ran/WG2_RL2/TSGR2_94/Docs, XP051095714
[A] 1-15

* See section 3. *

- CCI - [H04W28/0263](#) ; [H04W76/11](#) ; [H04W76/12](#)
- CI - H04W28/0263 (EP, KR, US)
- H04W28/0268 (KR, US)
- H04W28/06 (KR, US)
- H04W76/11 (EP, US)
- H04W76/12 (EP, US)
- H04W76/15 (US)
- PA - SAMSUNG ELECTRONICS CO LTD [KR]
- TI - METHOD AND APPARATUS FOR MANAGING DATA
COMMUNICATION IN WIRELESS COMMUNICATION
NETWORK
- AB - The present disclosure relates to a communication method and system for converging a 5th-Generation (5G) communication system for supporting higher data rates beyond a 4th-Generation (4G) system with a technology for Internet of Things (IoT). The present disclosure may be applied to intelligent services based on the 5G communication technology and the IoT-related technology, such as smart home, smart building, smart city, smart car, connected car, health care, digital education, smart retail, security and safety services. Embodiments herein disclose a UE for managing a data communication in a wireless communication network. The UE includes a DRB **management** unit configured to determine a DRB for transmitting a packet based on QoS flow identifier and a PDU session associated with the packet and mapping of the QoS flow identifiers to the DRBs for each established PDU session. The DRB **management** unit performs one of mapping the packet to an established non-default DRB if the list of one or more QoS flow identifiers associated with the DRB includes the QoS flow identifier of the packet and the DRB is associated with the PDU session of the packet, and mapping the packet to a default DRB associated with the PDU session of the packet if none of the established non-default DRBs is associated with the PDU session and the QoS flow identifier of the packet.

66/96 © EPODOC / EPO

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- PNFP - US10243860 B2 20190326
- PR - US201715478856 20170404; WO20161852079
20160412; US201662318568P 20160405
- AP - [US201715478856](#) 20170404
- DT - *, Rep
- CT - || R141 (A1)
[US2012327779](#) A1 00000000 [];
[US2015009826](#) A1 00000000 [];
[US2016057028](#) A1 00000000 [];
[US2013301415](#) A1 00000000 [];
[US2013086279](#) A1 00000000 [];
[US2018026896](#) A1 00000000 [];
[US2017325120](#) A1 00000000 [];
[US2017295105](#) A1 00000000 [];
[US2017244777](#) A1 00000000 [];



[US2016174120](#) A1 00000000 [];
[US2017244777](#) A1 00000000 []
- || STSE (A1)
[US9179007](#) B1 00000000 [X]
[X] 20-23, 25-29
* claim 20 | col. 6 | Fig. 1 | Fig. 1 | col. 7 lines 64 | col. 7 lines 64-66 | col. 7 lines 62-64 | abstract | col. 10 lines 27-30 | col. 11 lines 42-45 col. 15 lines 16-24 | col. 7 line 67 col. 8 line 1 | col. 9 lines 10-21 | claim 21 | claim 22 | Fig. 3 | claim 23 | claim 25 | col. 9 lines 18-19 | claim 26 | col. 9 lines 54-58 | claim 27 | col. 7 lines 57-59 | claim 28 | Fig. 5 | claim 29 | *;
[US9179007](#) B1 00000000 [Y]
[Y] 24
* claim 24 | Fig. 1 | col. 2 lines 34-36 *;
[US2016174120](#) A1 00000000 [Y]
[Y] 24
* Fig. 24 and 134th *;
[US2012327779](#) A1 00000000 [A];
[US2013301415](#) A1 00000000 [A];
[US2015009826](#) A1 00000000 [A];
[US2017244777](#) A1 00000000 [A];
[US2016057028](#) A1 00000000 [A];
[US2017325120](#) A1 00000000 [A];
[US2013086279](#) A1 00000000 [A];
[US2018026896](#) A1 00000000 [A];
[US2017295105](#) A1 00000000 [A]
- || STSE (B2)
[US2012327779](#) A1 00000000 [];
[US2013086279](#) A1 00000000 [];
[US2013301415](#) A1 00000000 [];
[US2015009826](#) A1 00000000 [];
[US2016057028](#) A1 00000000 [];
[US2016174120](#) A1 00000000 [];
[US2017244777](#) A1 00000000 [];
[US2017289047](#) A1 00000000 [];
[US2017295105](#) A1 00000000 [];
[US2017325120](#) A1 00000000 [];
[US2018026896](#) A1 00000000 []
CCI - [H04L41/0853](#) ; [H04L41/5009](#) ; [H04L41/5067](#)
CCA - [H04L41/0896](#) ; [H04W28/24](#)
CI - H04L41/0853 (EP)
- H04L41/5009 (EP)
- H04L41/5067 (EP)
CA - H04L41/0896 (EP)
- H04W28/24 (EP)
PA - (A1 B2)
NOKIA TECHNOLOGIES OY [FI]
TI - (A1)
METHOD AND APPARATUS FOR END-TO-END **QoS/QoE**
MANAGEMENT IN **5G** SYSTEMS
- (B2)
Method and apparatus for end-to-end **QoS/QoE**
management in **5G** systems
AB - (A1 B2)
Various methods are provided for providing dynamic and adaptive **QoS** and **QoE management** of U-Plane traffic while implementing user and application specific differentiation and maximizing system

resource utilization by, for example, providing utilizing a system comprised of a policy server and one or more enforcement points. In one example system, the policy server may be a logical entity configured for storing a plurality of **QoS**/QoE policies, each of the plurality of policies identifying at least one of a user, service vertical, application, or context, and associated QoE targets. The policy server may be further configured to provide one or more of the plurality of **QoS**/QoE policies to the one or more enforcement points. In some embodiments, the **QoS**/QoE policies may be configured to provide QoE targets, for example, at a high abstraction level and/or at an application session level.

67/96 © EPODOC / EPO	
PN	- CN107071816 A 20170818
PNFP	- CN107071816B B 20200911
PR	- CN201710118127 20170301
AP	- CN201710118127 20170301
DT	- I
CT	- STSE (A) CN103404196 A 20131120 [A] (HUAWEI TECH CO LTD) [A] 1-10 * 全文 *; CN103987088 A 20140813 [YX] (UNIV BEIJING POSTS & TELECOMM) [Y] 1-5、8-9 * 说明书第53-126段 * [X] 6-7、10; US2016338074 A1 20161117 [A] (CHOU CHIE-MING [TW], et al) [A] 1-10 * 全文 *; CN106358238 A 20170125 [Y] (UNIV CHONGQING POSTS & TELECOM) [Y] 1-5、8-9 * 说明书第42-48段 *
CI	- H04W24/08 (CN) - H04W24/10 (CN) - H04W72/0446 (CN) - H04W72/085 (CN)
PA	- (A) UNIV BEIJING POSTS & TELECOMM
TI	- (A) Heterogeneous fusion network-based traffic management method and system
AB	- (A) The present invention provides a heterogeneous fusion network-based traffic management method and system. The method comprises steps of A1, when a user terminal accesses a WiFi AP, acquiring current network state information and generating a measurement report; A2, calculating, based on the measurement report and information of each WiFi AP, remaining sub-carrier resource of each WiFi, and acquiring all available WiFi APs of the user terminal; A3, allocating, based on all available WiFi APs



and **QoS** demands, a to-be-transmitted data package sent by a core network to an **LTE** network and a WiFi network to transmit; and A4, sending an RCC connection establishing signal to the user terminal and establishing a connection, and sending the to-be-transmitted data package to the user terminal through the **LTE** network and the WiFi network. An authorized frequency and an unauthorized frequency are fully used to meet the **QoS** demands of users, and the authorized frequency and the unauthorized frequency are managed in a unified manner.

68/96 © EPODOC / EPO

PN - [JP2017060163](#) A 20170323

PR - KR20150132450 20150918; KR20160110303 20160829

AP - [JP20160180392](#) 20160915

DT - I

CCI - [H04L41/5054](#)

CI - H04L41/5054 (EP)
- H04L47/70 (US)
- H04W16/18 (US)

CA - H04L12/66 (US)
- H04W88/16 (US)

FI - H04L12/717; H04L12/903; H04W16/00

FT - 5K030/GA11; 5K030/H001; 5K030/H003; 5K030/JA11;
5K030/KA05; 5K030/LB02; 5K030/LB07; 5K030/LC01;
5K030/LC09; 5K030/MB04; 5K030/MC08; 5K030/MD07;
5K067/AA21; 5K067/BB04; 5K067/EE02; 5K067/EE04;
5K067/EE10; 5K067/EE16

PA - ELECTRONICS & TELECOMMUNICATIONS RES INST

TI - INTEGRATED NETWORK SYSTEM INDEPENDENT OF
ACCESS METHOD AND METHOD THEREOF

AB - PROBLEM TO BE SOLVED: To provide an integrated
network system that accommodates **5G**, Wi-Fi and
cable by All-IP platform fusion control technique and
has introduced a common signal system and a
mobility control system.SOLUTION: An integrated
network system manages and controls one or more
integrated gateways placed on an integrated cable
IP network. The integrated network system includes
an integrated control entity for providing the
integrated gateways with a path for a
transmission/reception IP flow so that each
integrated gateway performs **management** and
control by separating traffic for each subscriber or
each service, and communicates with the
homogeneous or two or more kinds of
heterogeneous access nodes connected with a
backhaul on an IP packet platform. The integrated
control entity performs at least one of control
functions including user authentication control,
connection control, terminal mobility control, and a
service call control, mobility control and **QoS** control
for an IP flow via the one or more integrated
gateways.SELECTED DRAWING: Figure 3A



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PN	- CN106454883 A 20170222	
PR	- CN201510486348 20150811	
AP	- CN201510486348 20150811	
DT	- I	
CT	- // STSE (A) CN101835235 A 00000000 [Y] [Y] 1-6 * 参见说明书第29-53段及附图2 *; CN102186208 A 00000000 [A] [A] 1-6 * 参见说明书全文 *; CN103781118 A 00000000 [Y] [Y] 1-6 * 参见说明书第57-104段及附图2 *; US8731602 B2 00000000 [A] [A] 1-6 * 参见说明书全文 *	
CTNP	- // STSE (A) [A] - 马文敏等, "《OFDMA毫微微小区网络中基于效用公平的功率控制策略》", 《电子与信息学报》 [A] 1-6 * 28287-2292 *	
CI	- H04W24/02 (CN)	
PA	- UNIV BEIJING CHEMICAL TECH	
TI	- Network selection method for heterogeneous femto network	
AB	- The embodiment of the invention relates to the fields of femto cells in LTE mobile communication, and provides a network selection method for optimizing the mobile management among a household base station, a macro base station and mobile users. Through the comparison of the net utility of mobile users, the method integrates energy utility functions under different network architectures to select a proper network for users, thereby avoiding the instability of network selection for the users in different regions and the high transmission cost. The method gives consideration to the demands of the users and the differences between levels, divides the users into the 'first-level users' and the 'second-level users' through employing a layering idea, and optimizes the distribution weight coefficients of the users. The method gives consideration to the QoS of time delay of the users, and employs a comprehensive capacity considering to the Shannon capacity and a heterogeneous double-layer network to replace a conventional system capacity. According to the invention, the method can effectively optimize the mobile management among the household base station, the macro base station and the mobile users, reduces the transmission time delay, and enlarges the bandwidth.	
70/96 © EPODOC / EPO		
PN	- CN105979603 A 20160928	
PNFP	- CN105979603B B 20190416	
PR	- CN201610471151 20160624	

AP - [CN201610471151](#) 20160624

DT - I

CT - // STSE (A)
[CN101228764](#) A 20080723 [A] (ZTE CORP [CN])
 [A] 1-6
 * 全文 *;
[CN101431811](#) A 20090513 [A] (UNIV XIDIAN [CN])
 [A] 1-6
 * 全文 *;
[CN101827027](#) A 20100908 [A] (CHINESE ACAD INST ACOUSTICS)
 [A] 1-6
 * 全文 *;
[CN104837205](#) A 20150812 [A] (UNIV CHANGAN)
 [A] 1-6
 * 全文 *

CTNP - // STSE (A)
 [A] - 陈婷, "WiMAX系统中基于跨层设计的QoS保证机制研究", 《中国博士学位论文全文数据库信息科技辑》
 [A] 1-6
 * 全文 *

CI - H04W72/1226 (CN)
 - H04W72/1284 (CN)

PA - (A)
 GUIZHOU YUPENG TECH CO LTD

TI - (A)
 Unmanned aerial vehicle uplink scheduling method for information flow **QoS** guarantee based on TD-LTE technology

AB - (A)
 The invention discloses an unmanned aerial vehicle uplink scheduling method for information flow **QoS** guarantee based on a TD-LTE technology. The method is cooperatively achieved by an information flow generation module, a classification mapping module, a scheduling module and a channel state detection module at an unmanned aerial vehicle communication terminal under the control of a plurality of signaling. The invention adopts a 4G communication network TD- **LTE**, and provides an unmanned aerial vehicle information flow classification mapping method and scheduling algorithm, which can provide differential transmission services for various kinds of information sent back to a control **management** center by an unmanned aerial vehicle during a flying process, and thus provides an effective link guarantee for reliable flying and high-quality information collection of the unmanned aerial vehicle.

71/96 © EPODOC / EPO

PN - [CN105657751](#) A 20160608

PNFP - CN105657751B B 20190111

PR - CN20161032343 20160119

AP - [CN20161032343](#) 20160119

DT - I

CT - // STSE (A)



[CN101998353](#) A 20110330 [Y] (ZTE CORP)
[Y] 1-3
* 说明书第[0002]段至第[0015]段、第[0098]段至第[0206]段及图1-12 *;
[CN103179618](#) A 20130626 [Y] (FUJIAN SUNNADA COMM CO LTD)
[Y] 1-3
* 说明书第[0002]段至第[0054]段及图1 *;
[US8724467](#) B2 20140513 [A] (LE FAUCHEUR FRANCOIS L [FR], et al)
[A] 1-8
* 全文 *;
[CN103906146](#) A 20140702 [A] (ZTE CORP)
[A] 1-8
* 全文 *;
[CN104661259](#) A 20150527 [A] (HUAWEI TECH CO LTD)
[A] 1-8
* 全文 *

- CI - H04W28/24 (CN)
- H04W28/26 (CN)
- H04W72/0493 (CN)
- H04W72/1242 (CN)
- H04W72/1257 (CN)
- H04W76/12 (CN)
- H04W80/06 (CN)
- PA - (A)
FIBERHOME TELECOMMUNICATION TECH CO LTD
- TI - (A)
LTE (Long Term Evolution) Femto access network system and method for improving real-time quality of service
- AB - (A)
The invention provides an **LTE** (Long Term Evolution) Femto access network system and a method for improving a real-time quality of service, and relates to the technical field of communications. The **LTE** Femto access network system comprises an **LTE** Femto, a mobile **management** entity, a public network router and an EPC (Evolved Packet Core) gateway, wherein the mobile **management** entity is respectively interacted with the **LTE** Femto and the EPC gateway; the **LTE** Femto and the EPC gateway both comprise a customer service **management** module, a GTP protocol module, a GTP bear **management** module, a DSCP (Differentiated Services Code Point) **management** module and a bandwidth **management** module; the DSCP **management** module is used for recording correspondingly born DSCP values according to a service type of a user, and providing the DSCP values for the GTP protocol module for use; and the bandwidth **management** module is used for performing reserved application and maintenance of bandwidths according to the service type established by the user. The **LTE** Femto access network system and the method for improving the real-time quality of service provided by the invention effectively improve user services of public network broadband on the **LTE** Femto, and improve the real-time **QoS** (Quality of Service).

72/96 © EPODOC / EPO

PN - [CN105578441](#) A 20160511
PNFP - CN105578441B B 20190101
PR - CN201410545787 20141015
AP - [CN201410545787](#) 20141015
DT - I
CT - || STSE (A)
[CN101500213](#) A 00000000 [A]
[A] 1-20
* 全文 *;
[CN101534497](#) A 00000000 [A]
[A] 1-20
* 全文 *;
[CN101765090](#) A 00000000 [A]
[A] 1-20
* 全文 *;
[CN102413448](#) A 00000000 [A]
[A] 1-20
* 全文 *;
[EP2452519](#) A1 00000000 [A]
[A] 1-20
* 全文 *

PA - (A)
CHINA MOBILE COMM CORP

TI - (A)
Network quality of service (**QoS**) parameter updating
method and apparatus thereof

AB - (A)
The invention discloses a network quality of service (**QoS**) parameter updating method. When a policy and charging rule function (PCRF) is introduced into a long term evolution (LTE) network, the PCRF notifies a mobility **management** entity (MME) of an indication of a decision to a **QoS** parameter. The MME acquires the indication of the decision of the PCRF to the **QoS** parameter. When detecting that a trigger condition of updating the **QoS** parameter is satisfied, the MME determines a mode of updating the **QoS** parameter according to the indication. The invention simultaneously also discloses a network **QoS** parameter updating apparatus.

73/96 © EPODOC / EPO

PN - [US2016127945](#) A1 20160505
PR - US201414533747 20141105
AP - [US201414533747](#) 20141105
DT - *, Rep
CT - || STSE (A1)
[US2016198364](#) A1 20160707 [A] (SCHWARZBAUER HANNES
JUERGEN [DE], et al);
[US2012079559](#) A1 20120329 [A] (REZNIK ALEXANDER
[US], et al);
[US2008162637](#) A1 20080703 [A] (ADAMCZYK MARIA [US],
et al);
[US2012258674](#) A1 20121011 [A] (LIVET CATHERINE [CA],
et al);
[US2015009826](#) A1 20150108 [A] (MA LIANGPING [US], et

al);
[US2017034757](#) A1 20170202 [A] (YANG MING [US], et al);
[US2004203792](#) A1 20041014 [A] (SHAHEEN KAMEL M [US], et al);
[US2014204901](#) A1 20140724 [A] (HEDMAN PETER [SE], et al);
[US2016381594](#) A1 20161229 [A] (TOMICI JOHN L [US], et al);
[US2016088510](#) A1 20160324 [A] (BERGGREN ANDERS [SE], et al);
[US2013150011](#) A1 20130613 [A] (TOFIGHBAKHS MOSTAFA [US], et al);
[US2015063166](#) A1 20150305 [A] (SIF MEHDI [US], et al);
[US2015063144](#) A1 20150305 [A] (KOZAT ULAS C [US]);
[US2013023274](#) A1 20130124 [A] (MEREDITH SHELDON [US], et al)

- || R141 (A1)
[US2014204901](#) A1 20140724 [] (HEDMAN PETER [SE], et al);
[US2015063144](#) A1 20150305 [] (KOZAT ULAS C [US]);
[US2008162637](#) A1 20080703 [] (ADAMCZYK MARIA [US], et al);
[US2016088510](#) A1 20160324 [] (BERGGREN ANDERS [SE], et al);
[US2017034757](#) A1 20170202 [] (YANG MING [US], et al);
[US2016198364](#) A1 20160707 [] (SCHWARZBAUER HANNS JUERGEN [DE], et al);
[US2004203792](#) A1 20041014 [] (SHAHEEN KAMEL M [US], et al);
[US2013150011](#) A1 20130613 [] (TOFIGHBAKHS MOSTAFA [US], et al);
[US2012258674](#) A1 20121011 [] (LIVET CATHERINE [CA], et al);
[US2015009826](#) A1 20150108 [] (MA LIANGPING [US], et al);
[US2012079559](#) A1 20120329 [] (REZNIK ALEXANDER [US], et al);
[US2016381594](#) A1 20161229 [] (TOMICI JOHN L [US], et al)

CTNP - || STSE (A1)
[A] - 3GPP TS 23.002 V13.0.0 (2014-09). 3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Network architecture (Release 13)
[A] - Medium. What is Network Orchestration (Year: 2017)

- || R141 (A1)
[] - 3GPP TS 23.002 V13.0.0 (2014-09). 3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Network architecture (Release 13)

CCI - [H04L45/306](#) ; [H04W28/0247](#) ; [H04W48/18](#)

CCA - [H04L45/64](#) ; [H04W28/08](#) ; [H04W28/16](#) ; [H04W60/00](#)

CI - H04L45/306 (EP)
- H04W28/0247 (EP, US)
- H04W48/18 (EP)

CA - H04L45/64 (EP)
- H04W28/08 (EP)
- H04W28/16 (EP, US)
- H04W60/00 (EP)

PA - AT & T I P I LP [US]

TI - Telecommunications Network Comprising User Equipment-Based **Management** And Control

AB - A telecommunications network may provide telecommunication functionality based, at least in part, on a communications device in communication with the network. The telecommunications network may comprise a routing infrastructure (control plane) that is decoupled from the switching infrastructure (data plane). The telecommunications network may enable common wireless **management** and control, such as mobility **management**, radio resource **management**, quality of service (QoS) , load balancing, etc., utilizing SDM control and an internet protocol, across many wireless technologies, e. g., LTE, Wi-Fi, any future **5G** access technologies. The telecommunications network may implement hierarchical control functions, such as mobility **management**, radio resource managements, in distributed controllers, and other functions, such as, authentication, charging, in a centralized controller(s). The simplified telecommunications network may utilize an IP protocol and SDN instead of a GPRS Tunneling Protocol (GTP).

74/96 © EPODOC / EPO

PN - [EP3443713](#) A1 20190220

PNFP - EP3443713 B1 20200226

PR - WO2016US26978 20160411

AP - [EP20160718130](#) 20160411

DT - I

CCI - [H04L67/141](#) ; [H04W76/11](#) ; [H04W76/12](#) ; [H04W76/15](#)

CCA - [H04W72/1236](#) ; [H04W72/1263](#)

CI - H04L29/08 (EP)
- H04L47/14 (EP, US)
- H04L47/6215 (US)
- H04L47/805 (US)
- H04L67/141 (EP, US)
- H04W76/11 (EP, US)
- H04W76/12 (EP)
- H04W76/15 (EP)

CA - H04W72/1236 (EP)
- H04W72/1263 (EP)

PA - (A1 B1)
NOKIA TECHNOLOGIES OY [FI]

TI - (A1 B1)
QOS/QOE ENFORCEMENT DRIVEN SUB-SERVICE FLOW MANAGEMENT IN 5G SYSTEM



75/96 © EPODOC / EPO

PN - [EP3440811](#) A1 20190213

PR - US201662318568P 20160405; WO2016IB52055 20160411; WO2016IB52079 20160412

AP - [EP20160718015](#) 20160412

DT - I

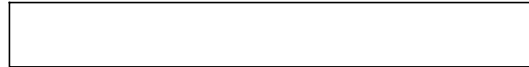
CCI - [H04L47/24](#) ; [H04L47/80](#)



CCA - [H04L67/322](#) ; [H04W28/0289](#)
 CI - H04L47/24 (EP)
 - H04L47/80 (EP)
 CA - H04L67/322 (EP)
 - H04W28/0289 (EP)
 PA - NOKIA TECHNOLOGIES OY [FI]
 TI - METHOD AND APPARATUS FOR END-TO-END **QOS/QOE**
MANAGEMENT IN 5G SYSTEMS

76/96 © EPODOC / EPO

PN - [WO2017180093](#) A1 20171019
 PR - WO2016US26978 20160411
 AP - [WO2016US26978](#) 20160411
 DT - *, Rep
 CT - */EP/ ISR (A1)*
[US2012047273](#) A1 20120223 [A] (AJERO DON PHILIP [US],
et al)
 [A] 1-30
 * abstract *
 * paragraph [0130] - paragraph [0137] *;
[US2007121542](#) A1 20070531 [A] (LOHR JOACHIM [DE], *et*
al)
 [A] 1-30
 * abstract *
 * paragraph [0024] - paragraph [0031] *;
[US6937566](#) B1 20050830 [A] (FORSLOEW JAN E [SE])
 [A] 1-30
 * abstract *;
[US2013003545](#) A1 20130103 [A] (LI GORDON YONG [US])
 [A] 1-30
 * abstract *
 * figure 6 *
 CCI - [H04L67/141](#) ; [H04W76/11](#) ; [H04W76/12](#) ; [H04W76/15](#)
 CCA - [H04W72/1236](#) ; [H04W72/1263](#)
 CI - H04L29/08 (EP)
 - H04L47/14 (EP, US)
 - H04L47/6215 (US)
 - H04L47/805 (US)
 - H04L67/141 (EP, US)
 - H04W76/11 (EP, US)
 - H04W76/12 (EP)
 - H04W76/15 (EP)
 CA - H04W72/1236 (EP)
 - H04W72/1263 (EP)
 PA - NOKIA TECHNOLOGIES OY [FI]; NOKIA USA INC [US]
 TI - **QOS/QOE** ENFORCEMENT DRIVEN SUB-SERVICE
 FLOW **MANAGEMENT IN 5G SYSTEM**
 AB - Methods and apparatus, including computer
 program products, are provided for QoE/**QoS**
management. In some example embodiments, there
 may be provided a method. The method may include
 detecting, by an enforcement point, an initiation of a
 session of an application; determining, by the
 enforcement point, whether a new subservice flow
 needs to be established to enable, for the initiated
 session, a quality of service differentiation and/or a



quality of experience differentiation; sending, by the enforcement point, an indication to a radio to enable the radio to establish a radio buffer to handle the new subservice flow, when the new subservice flow needs to be established; sending, by the enforcement point, parameter information to the radio to enable the radio to configure at least one service parameter of the radio buffer; and forwarding, by the enforcement point, user-plane data associated with the session to the radio including a subservice flow identifier. Related apparatus, systems, methods, and articles are also described.

77/96 © EPODOC / EPO

PN - [WO2017176248](#) A1 20171012

PR - WO2016US25922 20160404

AP - [WO2016US25922](#) 20160404

DT - *, Rep

CT - [EP] ISR (A1)
[US6463470](#) B1 20021008 [I] (MOHABAN SHAI [US], et al)
 [I] 1-7,10,11,13-20,23,24,26-29
 * abstract *
 * column 3, line 64 - column 10, line 23 *
 * column 13, line 24 - column 13, line 34 *
 * column 17, line 30 - column 24, line 61; figures 1-9;
 claims 1-7 *;
[WO2009051531](#) A1 20090423 [A] (ERICSSON TELEFON AB
 L M [SE], et al)
 [A] 1,14,27,28
 * abstract *
 * page 3, line 23 - page 3, line 24; figure 9 *;
[US2012195196](#) A1 20120802 [A] (GHAI RAJAT [US], et al)
 [A] 1-29
 * the whole document *;
[US2012314632](#) A1 20121213 [A] (MARTINEZ DE LA CRUZ
 PABLO [ES], et al)
 [A] 1-29
 * the whole document *;
[US2013279521](#) A1 20131024 [A] (PEREZ MARTINEZ
 ALFONSO DE JESUS [ES], et al)
 [A] 1-29
 * the whole document *

CCI - [H04L47/20](#) ; [H04L47/2425](#) ; [H04L47/2475](#) ; [H04W28/12](#) ;
[H04W28/24](#)

CI - H04L47/20 (EP, US)
 - H04L47/2425 (EP, US)
 - H04L47/2475 (EP, US)
 - H04W28/0236 (US)
 - H04W28/0268 (US)
 - H04W28/12 (EP, US)
 - H04W28/24 (EP, US)

PA - NOKIA TECHNOLOGIES OY [FI]; NOKIA USA INC [US]

TI - CONTEXT AWARE QoS/QoE POLICY PROVISIONING AND
 ADAPTATION IN 5G SYSTEMS

AB - Methods and apparatus, including computer
 program products, are provided for QoE/QoS
management. In some example embodiments, there



is provided a method. The method may include detecting, by an enforcement point, an initiation of a session for an application; requesting, by the enforcement point, a first level quality of experience policy for the detected session; receiving, from a policy server, the first level quality of experience policy for the detected session; deriving, based on the first level quality of experience policy, a second level quality of experience target and/or a quality of service target for the detected session; enforcing, by the enforcement point, the second level quality of experience target and/or the quality of service target on the detected session. Related apparatus, systems, methods, and articles are also described.

78/96 © EPODOC / EPO

PN - [WO2017176247](#) A1 20171012

PR - WO2016US25921 20160404

AP - [WO2016US25921](#) 20160404

DT - *, Rep

CT - */EP/ ISR (A1)*
[XP031720707](#) A[XI]

CTNP - */EP/ ISR (A1)*
[XI] - MOURAD ALIA ET AL, "An Adaptive Quality of Experience Framework for Home Network Services", COMMUNICATION THEORY, RELIABILITY, AND QUALITY OF SERVICE (CTRQ), 2010 THIRD INTERNATIONAL CONFERENCE ON, IEEE, PISCATAWAY, NJ, USA, (20100613) , ISBN 978-1-4244-7273-4, pages 226 - 232, XP031720707
[X] 1,2,9,10,17-20
** the whole document **
[I] 3-8,11-16

CCI - [H04L41/5025](#) ; [H04L47/2425](#) ; [H04L47/2441](#) ;
[H04L47/2475](#) ; [H04L47/803](#) ; [H04W4/00](#) ; [H04W28/10](#)

CI - H04L41/5025 (EP)
- H04L47/2425 (EP)
- H04L47/2441 (EP, US)
- H04L47/2475 (EP)
- H04L47/803 (EP)
- H04W4/00 (EP)
- H04W28/10 (EP, US)

PA - NOKIA TECHNOLOGIES OY [FI]; NOKIA USA INC [US]

TI - CONTEXT AWARE AND ADAPTIVE **QoS/QoE** TARGET DEFINITION IN **5G**

AB - Methods and apparatus, including computer program products, are provided for **QoS/QoE management**. In some example embodiments, there may be provided a method. The method may include receiving, at an adaptive quality controller, an indication of a classification of an application, when a session of the application is detected; receiving, in response to the received indication, a policy associated with the classification and context information regarding at least the application; determining, based on the received policy and the context information, a quality of experience target for the session; mapping, by the adaptive quality



controller, the quality of experience target to a quality of service parameter; and providing, by the adaptive quality controller, the quality of experience target to an application scheduler and/or the quality of service parameter to a packet scheduler. Related apparatus, systems, methods, and articles are also described.

79/96 © EPODOC / EPO

PN - [WO2017175039](#) A1 20171012

PR - US201662318568P 20160405; WO2016IB52055 20160411

AP - [WO2016IB52079](#) 20160412

DT - *, Rep

CT - /EP/ ISR (A1)
[US9179007](#) B1 20151103 [XYI] (YADAV CHITRESH KUMAR [IN], et al)
[X] 1,20,39,40
* page 2, line 12 - line 36; figures 1,2 *
* page 22, line 51 - line 56 *
* page 2, line 15 - line 24 *
* page 8, line 26 - line 39 *
* page 7, line 57 - page 8, line 1 *
* page 9 - page 10 *
* page 6, line 52 - line 64 *
* page 6, line 35 - line 51 *
* page 7, line 57 - line 58 *
[Y] 5-15,17,24-34,36
[I] 2-4,16,18,19,21-23,35,37,38;
[XP055328356](#) A[Y];
[US2013143542](#) A1 20130606 [Y] (KOVVALI SURYA KUMAR [US], et al)
[Y] 9,10,28,29
* paragraph [0021] *
* paragraph [0026] - paragraph [0030] *

CTNP - /EP/ ISR (A1)
[Y] - Anonymous, "Nokia Networks White Paper - Cell load and application- aware traffic management End-to-end Quality of Service differentiation", (20141231), pages 1 - 20, URL: <http://resources.alcatel-lucent.com/asset/200041>, (20161212), XP055328356
[Y] 5-15,17,24-34,36
* Section "Application-aware RAN"; page 9 - page 10 *
* page 15 - page 16 *
* page 14 *
* page 13 *

CCI - [H04L47/24](#) ; [H04L47/80](#)

CCA - [H04L67/322](#) ; [H04W28/0289](#)

CI - H04L47/24 (EP)
- H04L47/80 (EP)

CA - H04L67/322 (EP)
- H04W28/0289 (EP)

PA - NOKIA TECHNOLOGIES OY [FI]; NOKIA USA INC [US]

TI - METHOD AND APPARATUS FOR END-TO-END QOS/QOE MANAGEMENT IN 5G SYSTEMS

AB - Various methods are provided for providing dynamic and adaptive QoS and QoE management of U-Plane traffic while implementing user and application

specific differentiation and maximizing system resource utilization by, for example, providing utilizing a system comprised of a policy server and one or more enforcement points. In one example system, the policy server may be a logical entity configured for storing a plurality of **QoS/QoE** policies, each of the plurality of policies identifying at least one of a user, service vertical, application, or context, and associated QoE targets. The policy server may be further configured to provide one or more of the plurality of **QoS/QoE** policies to the one or more enforcement points. In some embodiments, the **QoS/QoE** policies may be configured to provide QoE targets, for example, at a high abstraction level and/or at an application session level.

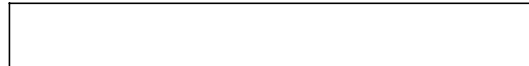
80/96 © EPODOC / EPO

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- PN - [CN104683323](#) A 20150603
- PR - CN201410335886 20140715
- AP - [CN201410335886](#) 20140715
- DT - I
- CT - // STSE (A)
[US2009088907](#) A1 00000000 [A]
[A] 1-6
* 全文 *;
[CN102255908](#) A 00000000 [A]
[A] 1-6
* 全文 *;
[CN103051055](#) A 00000000 [A]
[A] 1-6
* 全文 *;
[CN103812710](#) A 00000000 [A]
[A] 1-6
* 全文 *;
CN204119270U U 00000000 [R]
[R] 1-6
* 权利要求1-6 *
- CTNP - // STSE (A)
[A] - 王敏等, "《TD-LTE 系统在智能配电网通信中的应用研究》", 《北塔软件》
[A] 1-6
* 全文 *
[X] - 龚钢军等, "《面向智能电网的物联网架构与应用方案研究》", 《电力系统保护与控制》
[X] 1-6
* 第1.2节, 第2.1节, 第2.3节、附图2-3 *
- PA - GUANGZHOU ZHONGWANG ELECTRIC POWER ENGINEERING DESIGN CO LTD
- TI - Hybrid protocol-based intelligent power distribution network wireless communication system
- AB - The invention discloses a hybrid protocol-based intelligent power distribution network wireless communication system. The system comprises a terminal node, a power distribution network gateway and a wired network, wherein the terminal node is controlled by an intelligent power distribution network control center; the wired network is connected with a transformer substation; the terminal node is a far terminal unit (FTU) of a

power distribution substation; the wired network of the transformer substation communicates with the power distribution network gateway through a wired network or a wireless network; the power distribution network gateway communicates with the terminal node through wireless communication. Self **management**, self configuration and self optimization functions of the wireless communication system are realized, the wireless communication system supports switching functions among a plurality of wireless protocols, such as zigbee , 802.11, WCDMA (Wideband Code Division Multiple Access), TD-SCDMA (Time Division-Synchronization Code Division Multiple Access), TD-LTE (Time Division-Long Term Evolution) and FDD-LTE (Frequency Division Duplex-Long Term Evolution), supports a hierarchical **management** function on **QoS** (quality of service) of services, meets the requirements of remote signaling, remote measurement and remote control of a power distribution network, supports a data fusion function, and reduces redundancy and data transmission amount.

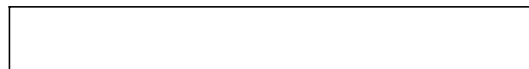
81/96 © EPODOC / EPO

PN - [KR20150007441](#) A 20150121
PR - KR20130081338 20130711
AP - [KR20130081338](#) 20130711
DT - I
CI - H04W72/04 (KR)
- H04W88/08 (KR)
PA - UNIV NAT CHONNAM IND FOUND [KR]
TI - METHOD FOR **MANAGEMENT** INTERFERENCE WITH CELL SELECTION USING CELL RANGE EXPANSION AND ABS IN HETEROGENEOUS NETWORK AND APPARATUS THEREOF
AB - The present invention relates to a method for managing interference with cell selection using cell range expansion and ABS in a heterogeneous network and an apparatus thereof. Especially, a cell selection method using cell range expansion based on SINR in a mobile network coexisting with a macro cell and a pico cell based on an **LTE** Advanced downward link and an interference managing method based on ABS in a time region are applied. Therefore, an off loading effect and a higher performance gain compared to an interference managing method used in an existing homogeneous network can be obtained. Finally, spectrum efficiency can be improved by improving SINR performance which shows the improvement of the **Qos** of terminals.



82/96 © EPODOC / EPO

PN - [CN204119270U](#) U 20150121
PR - CN201420390041U 20140715
AP - [CN201420390041U](#) 20140715
DT - I
PA - GUANGZHOU ZHONGWANG ELECTRIC POWER



ENGINEERING DESIGN CO LTD

- TI - Hybrid protocol-based wireless communication system of intelligent power distribution network
- AB - The utility model provides a hybrid protocol-based wireless communication system of an intelligent power distribution network, which comprises terminal nodes controlled by the control center of the intelligent power distribution network, a gateway of the power distribution network, and a wired network connected with a transformer station. The terminal nodes are in the form of the remote terminal units FTU of the power distribution network. The transformer station is in communication with the gateway of the power distribution network through a wired/wireless network. The gateway of the power distribution network is in communication with the terminal nodes in a wireless manner. According to the technical scheme of the utility model, the self-**management**, the self-configuration and the self-optimization of the wireless communication system are realized, and the system enables the conversion among various wireless communication protocols including ZigBee, 802.11, WCDMA, TD-SCDMA, TD-LTE and the like. Meanwhile, the classified **management** over the quality of service (QoS) is realized, and the requirements of the power distribution network in remote signaling, remote measuring and remote controlling are met. The system also has the data fusion function. Therefore, both the data redundancy and the data transmission amount are reduced.

83/96 © EPODOC / EPO

- PN - [CN104053183](#) A 20140917
- PNFP - CN104053183B B 20171124
- PR - CN201410188310 20140507
- AP - [CN201410188310](#) 20140507
- DT - I
- CT - || STSE (A)
[CN1852548](#) A 00000000 [Y]
[Y] 1-5
* 说明书第2页第7行-第3页第11行, 第4页第9行-第28行, 说明书附图2 *;
[CN1859764](#) A 00000000 [Y]
[Y] 1-5
* 说明书第2页第9行-第3页第25行 *;
[CN101541048](#) A 00000000 [A]
[A] 1-5
* 全文 *;
[CN101795472](#) A 00000000 [Y]
[Y] 5
* 说明书第[0042]-[0055]段 *;
[CN102223668](#) A 00000000 [Y]
[Y] 4
* 说明书第[0003]、[0004]、[0007]-[0030]段 *;
[US2012282930](#) A1 00000000 [A]
[A] 1-5
* 全文 *

PA - (A)



UNIV EAST CHINA NORMAL

TI - (A)
Network resource **management** method of LTE system

AB - (A)
The invention discloses a network resource **management** method of an LTE system. According to the method, congestion avoidance and an RAC algorithm in which ARP properties of users or services and **QoS** properties of the services are comprehensively taken into consideration are carried out, on one hand, different services are provided for request services, priorities of the users or the services with high priorities are taken into consideration and service experience satisfaction of the users or the services with low priorities is also taken into consideration, and on the other hand, the probability that the users or the services with low priorities are forcibly interrupted due to network congestion is reduced, and comprehensive satisfaction of the users is improved.

84/96 © EPODOC / EPO

PN - [PT2340678E](#) E 20131216

PR - WO2008SE51174 20081020

AP - [PT20080877589T](#) 20081020

DT - I

CCI - [H04W28/24](#) ; [H04W76/22](#)

CCA - [H04W72/0453](#) ; [H04W88/08](#) ; [H04W92/20](#)

CI - H04W28/24 (EP, US)
- H04W76/22 (EP)

CA - H04W72/0453 (EP, US)
- H04W88/08 (EP, US)
- H04W92/20 (EP, US)

PA - ERICSSON TELEFON AB L M [SE]

TI - **QOS MANAGEMENT IN LTE** FOR A SELF-BACKHAULING
BASE STATION

85/96 © EPODOC / EPO

PN - [WO2013150500](#) A2 20131010

PNFP - WO2013150500 A3 20140109

PR - US201261620721P 20120405

AP - [WO20131852747](#) 20130405

DT - **

CT - /EP/ ISR (A3)
[XP050580147](#) A[Y];
[XP050548508](#) A[Y];
[US2012023189](#) A1 00000000 [I] (GIARETTA GERARDO
[US] ET AL)
[I] 1-11
* paragraph [0045] - paragraph [0047] *
* paragraph [0053]; figure 5 *;
[XP055083483](#) A[A];
[US2010208698](#) A1 00000000 [I] (LU GUANG [CA] ET AL)
[I] 1,9
* paragraph [0035] - paragraph [0047]; figures 1-3 *;
[EP2445266](#) A1 00000000 [IP] (ALCATEL LUCENT [FR])

	[IP] 1-11 * paragraph [0017] - paragraph [0052] *
CTNP	- /EP/ ISR (A3) [Y] - "3rd Generation Partnership Project; Technical Specification Group Core Network and Terminals; Access to the 3GPP Evolved Packet Core (EPC) via non-3GPP access networks; Stage 3 (Release 11)", 3GPP STANDARD; 3GPP TS 24.302, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE, (20120313), vol. CT WG1, no. V11.2.0, pages 1 - 59, XP050580147 [Y] 1-11 * paragraph [6.8.2.2.4] * * Annex A.2;; figure A1 * [Y] - ALCATEL-LUCENT, "Solution for Identification of traffic based on EPS QoS", 3GPP DRAFT; S2-113192, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE, (20110705) , vol. SA WG2, no. Naantali; 20110711, XP050548508 [Y] 1-11 * page 1 * [A] - "Advanced EPC architecture for smart traffic steering", CELTIC, (20111101), URL: http://www.mevico.org/D21.pdf, (20131010), XP055083483 [A] 1-11 * paragraph [4.3.1] *
CCI	- H04W28/08 ; H04W48/18 ; H04W76/16
CCA	- H04W48/08 ; H04W88/06
CI	- H04W28/08 (EP, US) - H04W36/0022 (US) - H04W36/22 (US) - H04W48/18 (EP, US) - H04W76/16 (EP)
CA	- H04W48/08 (EP, US) - H04W88/06 (EP, US)
PA	- (A2 A3) ERICSSON TELEFON AB L M [SE]; QIANG ZU [CA]
TI	- (A2) QCI BASED OFFLOADING - (A3) LTE TO NON-3GPP NETWORK TRAFFIC OFFLOAD BASED ON QUALITY OF SERVICE CLASS INDICATOR
AB	- (A2) A QoS based selection of access network allows a UE to transmit different data traffic flows using different access technologies. The selection is done in accordance with information provided in the ANDSF. This allows a network operator to determine how different data traffic is routed, which can allow for better network utilization planning. - (A3) The application relates generally to access network selection by User Equipment. In a 3GPP network such as a LTE network, the Access Network Selection and Discovery Function ANDSF contains data management and control functionality necessary to provide access

network discovery and selection assistance data as per operators' policy. In 3GPP standardization today, ANDSF supports three types of Inter-System Routing Policies ISRPs in case of simultaneous multi-access connectivity: ForServiceBased, ForFlowBased, and NonSeamlessOffload. All three types of policies are either APN based or IP flow based. None of the ISRPs allow the UE to select an access technology or an access network or both for routing user plane traffic based the Quality of Service (**QoS**) classes, e.g. the Quality of Service Class Indicator QCI of **LTE**. As a result, scenarios in which a UE is handling data traffic requiring a high level of **QoS**, while also handling traffic for which best effort delivery suffices, cannot make use of multiple network connections in any sort of automated fashion. This problem is solved by the application, in that it proposes an ANDSF rule which can be configured in the UE with **QoS** classification parameters, e.g. QCI as a factor in making decisions about how data traffic is offloaded. One example of such rules could be "if QCI = 1, only 3GPP access", or "if QCI > 9, 3GPP or WLAN". When a PDN connection is setup in 3GPP access, the UE receives the QCI for each bearer within the PDN connection. With a set of ANDSF rules that dictate behaviour on a per QCI basis, the UE can decide to keep the voice bearer in 3GPP access because of a QCI value of 1; and it may open the WiFi interface and offload traffic for which there is no QCI (and thus no **QoS**).

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PN - [CN102625490](#) A 20120801

PNFP - CN102625490B B 20151202

PR - CN20111033736 20110131

AP - [CN20111033736](#) 20110131

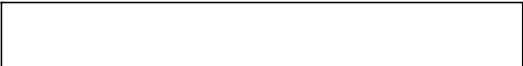
DT - I

CT - *// STSE (A)*
[CN101009631](#) A 00000000 [A]
[A] 1-29
** 全文 *;*
[US2007121542](#) A1 00000000 [A]
[A] 1-29
** 全文 *;*
[CN101048982](#) A 00000000 [A]
[A] 1-29
** 全文 *;*
[CN101420759](#) A 00000000 [X]
[X] 1-29
** 说明书第1页, 附图1-2 **

PA - (A)
CHINA ACADEMY OF TELECOMM TECH

TI - (A)
LTE-LAN system and GW equipment

AB - (A)
The invention discloses a long term evolution local area network (**LTE-LAN**) system and gateway (GW) equipment The system comprises: long term evolution local area network access points (**LTE-LAN**-



APs) , which provide **LTE-LAN** coverage for a terminal based on an **LTE** air interface technology, are connected to a node of a core network by a GW and enable an external network to be accessed by the GW after synchronization among different **LTE-LAN**-APs are completed; the terminal, which accesses the external network by channels established among the terminal, the **LTE-LAN**-APs and the GW and makes communication with a terminal inside the **LTE-LAN**; the GW, which interacts with the **LTE-LAN**-APs, the node of the core network and the external network, completes access to the external network by the terminal and communication with the terminal inside the **LTE-LAN**, and provides guarantees of quality of service (**QoS**) for data services of the terminals; the node of the core network, which provides **management** and control information for the GW. According to the invention, entirely new flattening network configuration is employed; the GW is helpful for rapid processing and forwarding of terminal data; and costs are reduced and efficiency is improved.

87/96 © EPODOC / EPO

PN - [CN102572959](#) A 20120711

PNFP - CN102572959B B 20151021

PR - CN20121007294 20120111

AP - [CN20121007294](#) 20120111

DT - I

CT - // STSE (A)
[CN101692648](#) A 00000000 [Y]
[Y] 1
* 权利要求1 *;
CN101389114B B 00000000 [Y]
[Y] 1
* 摘要 *;
[CN1848602](#) A 00000000 [A]
[A] 1-4
* 全文 *;
[US2011310941](#) A1 00000000 [A]
[A] 1-4
* 全文 *

CTNP - // STSE (A)
[Y] - 杜洁, "面向智能配电网的宽带无线通信技术的应用", 《2011年云南电力技术论坛论文集(入选部分)》, (20111115)
[Y] 1
* 摘要, 图1, 图5, 第3页第8段-第9页第1段 *

PA - (A)
CHINA SOUTHERN POWER GRID COMM BRANCH

TI - (A)
Distribution network access layer communication system construction method based on long term evolution (**LTE**) technique

AB - (A)
Provided is a distribution network access layer communication system construction method based on long term evolution (**LTE**) technique. The method is combined with requirements of a distribution



network and achieves safe, reliable and efficient transmission of data of distribution automation businesses, collection reading businesses, negative control businesses, bidirectional speech/video businesses and video monitoring businesses and the like based on the LTE technique. The method comprises optimizing LTE wireless resource scheduling algorithm, combining wireless resource dynamic adjustment with a resource forecast mechanism, scheduling **management** data, new transmission data and retransmission data, managing data including control information of a radio resource control (RRC) layer aiming at user experience (UE) , broadcast control channel (BCCH) control information, paging control channel (PCCH) control information and random access (RA) information; and maintaining RRC control information queues, BCCH control information queues, PCCH control information queues, RA information queues, new transmission data queues and retransmission data queues. Transmission of control information data is preferentially guaranteed, and business areas are separated from angle of resource distribution and strictly meet quality of service (QoS) parameters of businesses.

88/96	© EPODOC / EPO
PN	- WO2011134434 A1 20111103
PR	- CN201010160890 20100430
AP	- WO2011CN73572 20110429
DT	- **
CT	- [CN] ISR (A1) CN1859614 A 00000000 [A] (HUAWEI TECH CO LTD); CN1731771 A 00000000 [A] (ZTE CORP); CN101330650 A 00000000 [A] (ZTE CORP); US6647174 B2 00000000 [A] (INT BUSINESS MACHINES CORP); JP2003298633 A 00000000 [A] (FUJITSU LTD); CN101854663 A 00000000 [XP] (HUAWEI TECH CO LTD)
CCI	- H04W8/082 ; H04W28/16 ; H04W48/17
CCA	- H04W88/005 ; H04W88/18 ; H04W92/04 ; H04W92/045 ; H04W92/14
CI	- H04W8/082 (EP) - H04W28/16 (EP) - H04W48/17 (EP)
CA	- H04W88/005 (EP) - H04W88/18 (EP) - H04W92/04 (EP) - H04W92/045 (EP) - H04W92/14 (EP)
PA	- HUAWEI TECH CO LTD [CN] ; ZHAO YONGXIANG [CN]; WANG JINGYU [CN]; YONG WENYUAN [CN]; GU WEI [CN]
TI	- DATA TRANSMISSION DEVICE, METHOD AND COMMUNICATION SYSTEM
AB	- A data transmission device, method and communication system are provided by the present invention. The present invention relates to the communication field, and solves the problems of



higher operation and maintenance cost of wireless network and poor-Qos of wireless broadband business. The data transmission device provided by the invention is positioned on an IP metro-area network node or on an optical line terminal of a wireless access network. The device includes a first service bypass processing module and/or a second service bypass processing module, wherein, the first service bypass processing module is used for receiving uplink packet service data sent by a user equipment (UE), determining that the uplink packet service data needs to be shunted according to a preset service shunting policy, and shunting the uplink packet service data to a public data network (PDN) directly via a local preset Gi interface; The second service bypass processing module is used for receiving downlink packet service data sent by the PDN to the UE directly and sending the downlink packet service data to the UE. The embodiments of the invention can be used in wireless communication systems, such as 3G or LTE and the like.

TXT - I don't find much of routing. I believe it's more of a sort of central traffic **management**, since the packet data is forwarded directly to a PDN, in a wireless/ LTE/3G environment. I cannot figure out more from the abstract and drawings

89/96 © EPODOC / EPO

PN - [MX2011003870](#) A 20110503

PR - WO2008SE51174 20081020

AP - [MX20110003870](#) 20081020

DT - I

CCI - [H04W28/24](#) ; [H04W76/22](#)

CCA - [H04W72/0453](#) ; [H04W88/08](#) ; [H04W92/20](#)

CI - H04W28/24 (EP, US)
- H04W76/22 (EP)

CA - H04W72/0453 (EP, US)
- H04W88/08 (EP, US)
- H04W92/20 (EP, US)

PA - ERICSSON TELEFON AB L M [SE]

TI - **QOS MANAGEMENT FOR SELF-BACKHAULING IN LTE.**

AB - A method manages bearers over a first wireless link between a self-backhauled base station and a base station, where the self-backhauled base station serves one or more user equipments (UEs) via one or more second wireless links in a network. The method is implemented at the self-backhauled base station and includes identifying changes in numbers and/or characteristics of UE bearers multiplexed onto a backhaul bearer associated with the first wireless link. The method further includes dynamically reconfiguring resources allocated to the backhaul beare.



90/96 © EPODOC / EPO



PN - [CN102187730](#) A 20110914

PR - WO2008SE51174 20081020

AP - [CN200880131692](#) 20081020

DT - I

CT - // STSE (A)
[WO2008106797](#) A1 20080912 [X] (NORTEL NETWORKS LTD [CA], et al)
[X] 1-28
* 说明书第2页第16行-第10页第3行, 第12页第8行-第13页第29行, 第17页第22行-第21页第23行, 第24页第20行-第29页第21行, 第42页第8-21行、图1 *

CCI - [H04W28/24](#) ; [H04W76/22](#)

CCA - [H04W72/0453](#) ; [H04W88/08](#) ; [H04W92/20](#)

CI - H04W28/24 (EP, US)
H04W76/22 (EP)

CA - H04W72/0453 (EP, US)
H04W88/08 (EP, US)
H04W92/20 (EP, US)

PA - ERICSSON TELEFON AB L M

TI - **QoS management** for self-backhauling in LTE

AB - A method manages bearers over a first wireless link between a self-backhauled base station and a base station, where the self-backhauled base station serves one or more user equipments (UEs) via one or more second wireless links in a network. The method is implemented at the self-backhauled base station and includes identifying changes in numbers and/or characteristics of UE bearers multiplexed onto a backhaul bearer associated with the first wireless link. The method further includes dynamically reconfiguring resources allocated to the backhaul beare

91/96 © EPODOC / EPO

PN - [US2011194535](#) A1 20110811

PNFP - US8971263 B2 20150303

PR - WO2008SE51174 20081020

AP - [US200813124946](#) 20081020

DT - **

CT - // R141 (A1)
[US2011222428](#) A1 20110915 [] (CHARBIT IGILLES [GB], et al);
[US2006203778](#) A1 20060914 [] (HAN SEUNG-JAE [US], et al);
[US2009252088](#) A1 20091008 [] (RAO SUDARSHAN A [IN], et al);
[US2007110005](#) A1 20070517 [] (JIN SHAN [CN], et al);
[US2009219853](#) A1 20090903 [] (HART MICHAEL JOHN BEEMS [GB], et al);
[US2010002656](#) A1 20100107 [] (JI TINGFANG [US], et al);
[US8139526](#) B2 20120320 [] (ZHOU YUEFENG [GB], et al);
[US2009252132](#) A1 20091008 [] (SONG OSOK [US], et al);
[US2005007994](#) A1 20050113 [] (FUKUZAWA SHOJI [JP], et al);
[US2007086388](#) A1 20070419 [] (KANG HYUN-JEONG [KR], et al);
[US2008040507](#) A1 20080214 [] (HSU YUAN-YING [TW], et

al);
[US2008056172](#) A1 20080306 [] (NAKATSUGAWA KEIICHI [JP]);
[US2008062911](#) A1 20080313 [] (CHOI JIN-GHOO [KR], et al);
[US2008108326](#) A1 20080508 [] (PARK YOUNG-JUN [KR], et al);
[US2008165719](#) A1 20080710 [] (VISOTSKY EUGENE [US]);
[US2008232324](#) A1 20080925 [] (TAJIMA YOSHIHARU [JP], et al);
[US2010034148](#) A1 20100211 [] (ZHANG HANG [CA], et al);
[US2012163343](#) A1 20120628 [] (AHLUWALIA JAGDEEP SINGH [GB])
- || STSE (B2)
[US8139526](#) B2 20120320 [] (ZHOU YUEFENG [GB], et al);
[US2006203778](#) A1 20060914 [] (HAN SEUNG-JAE [US], et al);
[US2007110005](#) A1 20070517 [] (JIN SHAN [CN], et al);
[US2009219853](#) A1 20090903 [] (HART MICHAEL JOHN BEEMS [GB], et al);
[US2009252088](#) A1 20091008 [] (RAO SUDARSHAN A [IN], et al);
[US2009252132](#) A1 20091008 [] (SONG OSOK [US], et al);
[US2010002656](#) A1 20100107 [] (JI TINGFANG [US], et al);
[US2011222428](#) A1 20110915 [] (CHARBIT IGILLES [GB], et al)

- CCI - [H04W28/24](#) ; [H04W76/22](#)
- CCA - [H04W72/0453](#) ; [H04W88/08](#) ; [H04W92/20](#)
- CI - H04W28/24 (EP, US)
- H04W76/22 (EP)
- CA - H04W72/0453 (EP, US)
- H04W88/08 (EP, US)
- H04W92/20 (EP, US)
- PA - (A1)
ERICSSON TELEFON AB L M [SE]
- (B2)
JOHANSSON NIKLAS [SE]; MILDH GUNNAR [SE]; RACZ ANDRAS [HU]; ERICSSON TELEFON AB L M [SE]
- TI - (A1)
QoS Management for Self-Backhauling in LTE
- (B2)
QoS management for self-backhauling in LTE
- AB - (A1)
A method manages bearers over a first wireless link between a self-backhauled base station and a base station, where the self-backhauled base station serves one or more user equipments (UEs) via one or more second wireless links in a network. The method is implemented at the self-backhauled base station and includes identifying changes in numbers and/or characteristics of UE bearers multiplexed onto a backhaul bearer associated with the first wireless link. The method further includes dynamically reconfiguring resources allocated to the backhaul beare
- (B2)
A method manages bearers over a first wireless link between a self-backhauled base station and a base station, where the self-backhauled base station

serves one or more user equipments (UEs) via one or more second wireless links in a network. The method is implemented at the self-backhauled base station and includes identifying changes in numbers and/or characteristics of UE bearers multiplexed onto a backhaul bearer associated with the first wireless link. The method further includes dynamically reconfiguring resources allocated to the backhaul beare.

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PN - [CN101730205 A](#) 20100609

PR - CN200810225388 20081031

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DT - I

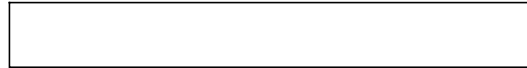
CCA - [Y02D30/70](#)

CA - Y02D30/70 (EP)

PA - DATANG MOBILE COMM EQUIP CO

TI - Method, system and device for updating paging DRX period of UE

AB - The invention provides a method for updating paging discontinuous reception DRX period of UE, which comprises the steps: a mobility **management** entity MME receives bearer quality of service **QoS** parameters of user equipment UE sent by the gateway of a packet data network PDN; the MME updates the paging DRX period of the UE according to the bearer **QoS** parameters; the MME sends the updated paging DRX period to the UE; and the UE receives and updates self-stored paging DRX period. The invention updates the paging DRX period of the UE by the MME according to the change of the bearer **QoS** parameters of the UE and sends the updated paging DRX period to the UE so as to realize the update of the paging DRX period of the UE in an LTE system.



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PN - [EP2340678 A1](#) 20110706

PNFP - EP2340678 B1 20130911

PR - WO2008SE51174 20081020

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DT - I

CCI - [H04W28/24](#) ; [H04W76/22](#)

CCA - [H04W72/0453](#) ; [H04W88/08](#) ; [H04W92/20](#)

CI - H04W28/24 (EP, US)
H04W76/22 (EP)

CA - H04W72/0453 (EP, US)
H04W88/08 (EP, US)
H04W92/20 (EP, US)

PA - (A1 B1)
ERICSSON TELEFON AB L M [SE]

TI - (A1 B1)
QOS MANAGEMENT IN LTE FOR A SELF-BACKHAULING BASE STATION



PN - [WO2010047626](#) A1 20100429

PR - WO2008SE51174 20081020

AP - [WO2008SE51174](#) 20081020

DT - *, Rep

CT - /EP/ ISR (A1)
[XP002540105](#) A(XOI);
[WO2008106797](#) A1 00000000 [XY] (NORTEL NETWORKS LTD [CA]; ZHANG HANG [CA]; ZHU PEIYING [CA]; FONG-MO-H)
[X] 1,5-7,10-15,18,20-23,25-26,28
* page 24, line 20 - page 29, line 21 *
* page 12, line 8 - page 13, line 29 *
* page 2, line 16 - page 10, line 3 *
* page 17, line 22 - page 21, line 23 *
* page 42, line 8 - line 21 *
[Y] 2-4,8-9,16-17,19,24,27,29-30;
[XP050110365](#) A(YA);
[US2008165719](#) A1 00000000 [XAI] (VISOTSKY EUGENE [US])
[X] 1,5,10-13,20-23
* paragraph [0002] - paragraph [0005] *
* paragraph [0020] - paragraph [0021] *
* paragraph [0054] - paragraph [0063] *
[A] 2-4,6-9,14-17,19,24-30
[I] 18;
[WO2007019672](#) A1 00000000 [XA] (NORTEL NETWORKS LTD [CA]; WANG GUO QIANG [CA])
[X] 1,5-7,10-15,18,20-23,25-26,28
* paragraph [0010] - paragraph [0018] *
* paragraph [0040] - paragraph [0047] *
* paragraph [0057] - paragraph [0068] *
* paragraph [0105] - paragraph [0125] *
[A] 2-4,8-9,16-17,19,24,27,29-30

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[XOI] - Christian Hoymann, András Rácz, Niklas Johansson, Johan Lundsjö, "A self-backhauling solution for LTE-Advanced", (20081013), Wireless World Research Forum 21st Meeting, 13th-15th October 2008, URL: http://www.wireless-world-research.org/fileadmin/sites/default/files/meetings/Past%20Meetings/2008/WWRF21/Presentations%20and%20Papers/WG4/papers/WWRF21-WG4-07_Hoymann.pdf, (20090716), XP002540105
[XO] 1,5-7,10-15,18,20-23,25-26,28
* page 2, paragraph IV - page 5, paragraph V *
[I] 2-4,8-9,16-17,19,24,27,29-30
[YA] - ERICSSON, "A discussion on some technology components for LTE-Advanced", 3GPP DRAFT; R1-082024 {LTE-ADVANCED TECHNOLOGY COMPONENTS}, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE, (20080430), vol. RAN WG1, no. Kansas City, USA; 20080505, XP050110365
[Y] 2-4,8-9,16-17,19,24,27,29-30
* paragraph [2.5.3] - paragraph [2.5.4]; figure 3 *
[A] 1,5-7,10-15,18,20-23,25-26,28

CCI - [H04W28/24](#) ; [H04W76/22](#)



CCA - [H04W72/0453](#) ; [H04W88/08](#) ; [H04W92/20](#)
CI - H04W28/24 (EP, US)
- H04W76/22 (EP)
CA - H04W72/0453 (EP, US)
- H04W88/08 (EP, US)
- H04W92/20 (EP, US)
PA - ERICSSON TELEFON AB L M [SE]; JOHANSSON NIKLAS [SE]
; MILDH GUNNAR [SE]; RACZ ANDRAS [HU]
TI - **QOS MANAGEMENT FOR SELF-BACKHAULING IN LTE**
AB - A method manages bearers over a first wireless link
between a self-backhauled base station and a base
station, where the self-backhauled base station
serves one or more user equipments (UEs) via one or
more second wireless links in a network. The
method is implemented at the self-backhauled base
station and includes identifying changes in numbers
and/or characteristics of UE bearers multiplexed
onto a backhaul bearer associated with the first
wireless link. The method further includes
dynamically reconfiguring resources allocated to the
backhaul beare

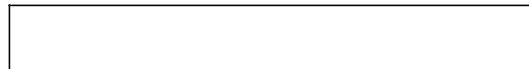
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PN - [WO2007144225](#) A1 20071221
PR - EP20060291009 20060616
AP - [WO2007EP53997](#) 20070424
DT - **
CT - *[EP] ISR (A1)*
[XP009074809](#) A[X];
[XP010862257](#) A[A];
[XP001131425](#) A[A];
[US2006092879](#) A1 00000000 [A] (JEONG SEONG-HO [KR]
ET AL)
[A] 1-10
* paragraph [0048] - paragraph [0114]; figures 1-10 *
CTNP - *[EP] ISR (A1)*
[X] - JIANG XIE, "Paging-aided connection setup for
real-time communication in mobile Internet", ICC
2003. 2003 IEEE INTERNATIONAL CONFERENCE ON
COMMUNICATIONS, US, (2003) , vol. 3, ISBN 0-7803-
7802-4, pages 1858 - 1862, XP009074809
[X] 1-10
* page 1858 - page 1861, column L *
[A] - NGUYEN HOANG MINH ; LI FENG ; XIE QUNYING,
"Integration of micro-mobility with QoS in IP/MPLS-
based radio access networks", 57TH IEEE
SEMIANNUAL VEHICULAR TECHNOLOGY CONFERENCE
(VTC2003) ., South Korea, (2003), vol. 57, no. 4, pages
2261 - 2265, XP010862257
[A] 1-10
* page 2262, column R - page 2264; figures 1-4; tables I-
VII *
[A] - RAMJEE R ET AL, "IP PAGING SERVICE FOR
MOBILE HOSTS", WIRELESS NETWORKS, ACM, NEW
YORK, NY, US, (200209), vol. 8, no. 5, ISSN 1022-0038,
pages 427 - 441, XP001131425
[A] 1-10
* page 427 - page 431, column L *

CCI - [H04L65/80](#) ; [H04W28/24](#)
CCA - [H04L65/1016](#) ; [H04W8/06](#)
CI - H04L65/80 (EP)
- H04W28/24 (EP)
CA - H04L65/1016 (EP)
- H04W8/06 (EP)
PA - ALCATEL LUCENT [FR]
TI - **MANAGEMENT OF THE QUALITY OF SERVICE (QoS) IN A WIRELESS NETWORK**
AB - A method of handling Quality-of-Service, **QoS**, requirements in a wireless network (1), in particular a WiMAX or 3GPP **LTE**/SAE network. The proposed method comprises sending **QoS** requirements (A) from a first element (8) of a wireless core network (4) to an element (6) of a wireless access network (3) involved in resource allocation to a user equipment (2) requiring a service with said **QoS** requirements. The proposed method further comprises: - sending a registration message (B) from the wireless access network element (6) to a second element (11) of the wireless core network (4) for registering the user equipment (2); - including in said registration message (B) at least one parameter indicating an identifier of an entity (7) in the wireless access network element (6) to which the **QoS** requirements (A) are to be sent.

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PN - [EP1868332](#) A1 20071219
PR - EP20060291009 20060616
AP - [EP20060291009](#) 20060616
DT - *; Rep
CT - // STSE (A1)
[US2006092879](#) A1 00000000 [X] (JEONG SEONG-HO [KR] ET AL)
[X] 1-10
* paragraph [0048] - paragraph [0114]; figures 1-10 *;
[XP009074809](#) A[A];
[XP010862257](#) A[A];
[XP001131425](#) A[A]
CTNP - // STSE (A1)
[A] - JIANG XIE, "Paging-aided connection setup for real-time communication in mobile Internet", ICC 2003. 2003 IEEE INTERNATIONAL CONFERENCE ON COMMUNICATIONS, US, (2003) , vol. 3, ISBN 0-7803-7802-4, pages 1858 - 1862, XP009074809
[A] 1-10
* page 1858 - page 1861, column L *
[A] - NGUYEN HOANG MINH ; LI FENG ; XIE QUNYING, "Integration of micro-mobility with QoS in IP/MPLS-based radio access networks", 57TH IEEE SEMIANNUAL VEHICULAR TECHNOLOGY CONFERENCE (VTC2003) ., South Korea, (2003), vol. 57, no. 4, pages 2261 - 2265, XP010862257
[A] 1-10
* page 2262, column R - page 2264; figures 1-4; tables I-VII *
[A] - RAMJEE R ET AL, "IP PAGING SERVICE FOR



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[A] 1-10

* page 427 - page 431, column L *

- CCI - [H04L65/80](#) ; [H04W28/24](#)
- CCA - [H04L65/1016](#) ; [H04W8/06](#)
- CI - H04L65/80 (EP)
- H04W28/24 (EP)
- CA - H04L65/1016 (EP)
- H04W8/06 (EP)
- PA - ALCATEL LUCENT [FR]
- TI - **Management** of the quality of service (**QoS**) in a wireless network
- AB - A method of handling Quality-of-Service, **QoS**, requirements in a wireless network (1), in particular a WiMAX or 3GPP **LTE**/SAE network. The proposed method comprises sending **QoS** requirements (A) from a first element (8) of a wireless core network (4) to an element (6) of a wireless access network (3) involved in resource allocation to a user equipment (2) requiring a service with said **QoS** requirements. The proposed method further comprises: - sending a registration message (B) from the wireless access network element (6) to a second element (11) of the wireless core network (4) for registering the user equipment (2); - including in said registration message (B) at least one parameter indicating an identifier of an entity (7) in the wireless access network element (6) to which the **QoS** requirements (A) are to be sent.