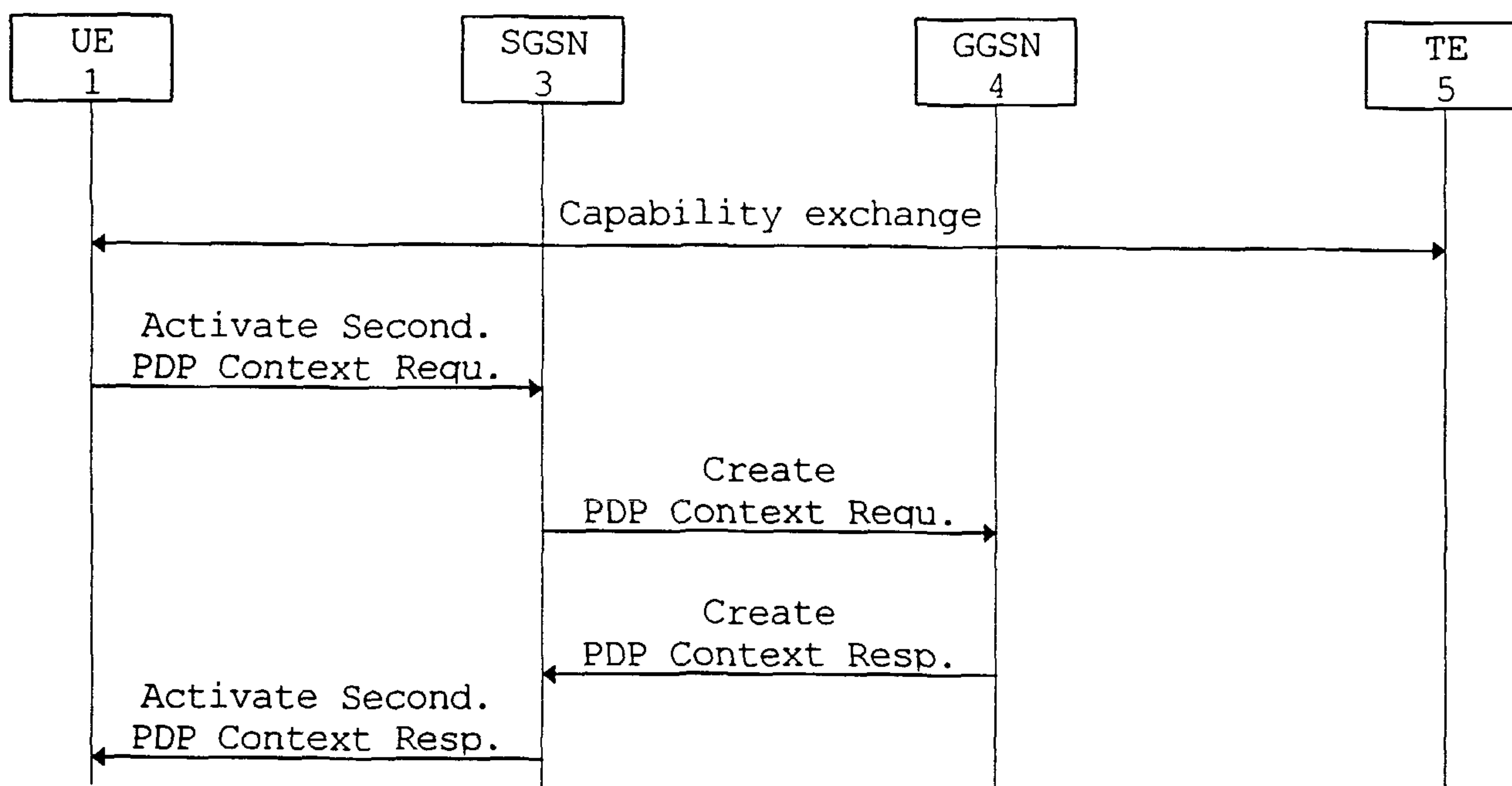




(86) Date de dépôt PCT/PCT Filing Date: 2000/03/16  
 (87) Date publication PCT/PCT Publication Date: 2001/09/20  
 (85) Entrée phase nationale/National Entry: 2002/08/05  
 (86) N° demande PCT/PCT Application No.: EP 2000/002360  
 (87) N° publication PCT/PCT Publication No.: 2001/069950

(51) Cl.Int.<sup>7</sup>/Int.Cl.<sup>7</sup> H04Q 7/22, H04L 29/06  
 (71) Demandeur/Applicant:  
NOKIA CORPORATION, FI  
 (72) Inventeurs/Inventors:  
HURTTA, TUIJA, FI;  
SUOKNUUTI, MARKO, FI  
 (74) Agent: OGILVY RENAULT

(54) Titre : PROCEDE ET SYSTEME D'ACTIVATION D'UN CONTEXTE D'ABONNE A DES DONNEES EN PAQUETS  
POUR LE TRANSFERT DE DONNEES EN PAQUETS  
 (54) Title: METHOD AND SYSTEM FOR ACTIVATING A PACKET DATA SUBSCRIBER CONTEXT FOR PACKET  
DATA



(57) Abrégé/Abstract:

The present invention relates to a method and system for activating a context in a first network so as to transfer a call and/or a transaction via said first network and a second network. Initially, an application protocol such as H.323, H.248 or SIP is set up using a signaling or default context within the first network. Based on a message of the application protocol transmitted from the second network, a capability information is determined and used to activate the context. Thereby, the capabilities can be agreed in advance and the context can be activated e.g. as a secondary context for both mobile-originated and mobile-terminated calls and/or transactions. Accordingly, a reservation protocol is no longer required to signal the capability requirements to the second network, and signaling load can be decreased.

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



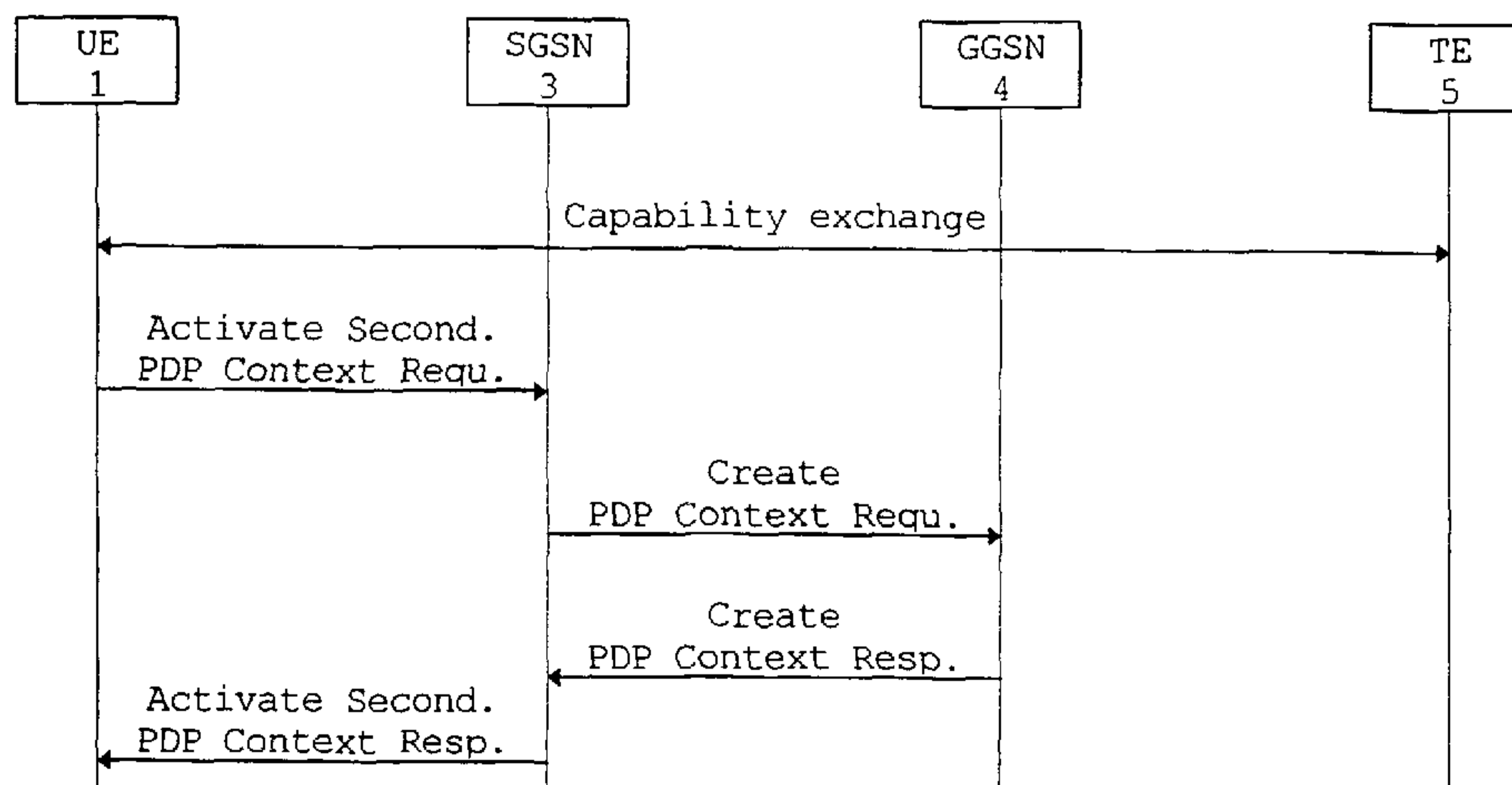
(43) International Publication Date  
20 September 2001 (20.09.2001)

PCT

(10) International Publication Number  
WO 01/69950 A1

- (51) International Patent Classification<sup>7</sup>: H04Q 7/22, H04L 29/06
- (21) International Application Number: PCT/EP00/02360
- (22) International Filing Date: 16 March 2000 (16.03.2000)
- (25) Filing Language: English
- (26) Publication Language: English
- (71) Applicant (for all designated States except US): NOKIA NETWORKS OY [FI/FI]; Keilalahdentie 4, FIN-02150 Espoo (FI).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): HURTTA, Tuija [FI/FI]; Kiskottajankuja 4 D 49, FIN-02660 Espoo (FI). SUOKNUUTI, Marko [FI/FI]; Skantakatu 1 B 36, FIN-00180 Helsinki (FI).
- (74) Agents: LESON, Thomas, Johannes, Alois et al.; Tiedtke-Bühling-Kinne et al, Bavariaring 4, D-80336 Munich (DE).
- (81) Designated States (national): AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
- Published:**  
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD AND SYSTEM FOR ACTIVATING A PACKET DATA SUBSCRIBER CONTEXT FOR PACKET DATA



(57) Abstract: The present invention relates to a method and system for activating a context in a first network so as to transfer a call and/or a transaction via said first network and a second network. Initially, an application protocol such as H.323, H.248 or SIP is set up using a signaling or default context within the first network. Based on a message of the application protocol transmitted from the second network, a capability information is determined and used to activate the context. Thereby, the capabilities can be agreed in advance and the context can be activated e.g. as a secondary context for both mobile-originated and mobile-terminated calls and/or transactions. Accordingly, a reservation protocol is no longer required to signal the capability requirements to the second network, and signaling load can be decreased.



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METHOD AND SYSTEM FOR ACTIVATING A PACKET DATA SUBSCRIBER CONTEXT FOR PACKET DATA

FIELD OF THE INVENTION

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The present invention relates to a method and system for activating a context in a first network so as to transfer a call via said first network and a second network. In particular, the first network may be a cellular or mobile network such as the UMTS (Universal Mobile Telecommunications System) or a GPRS (General Packet Radio Services) network.

10

BACKGROUND OF THE INVENTION

15

In contrast to circuit-switched networks, traditional IP-networks employ a connectionless packet-switching paradigm which uses neither call admission control nor per-call state within the network. Each packet is simply routed to its destination hop-by-hop according to the globally unique IP destination address contained within the IP header. Individual data flows do not receive a dedicated bandwidth, and the available bandwidth is shared among all traffic. When the aggregate packet flow sent to an intermediate node output port is greater than the output link rate, packets must be queued in the output buffer which causes delay. Furthermore, in periods of congestion, the output buffer may overflow and packets will be lost.

20

25

Although traditional packet-switched data networks such as X.25 and IP/Internet can achieve high bandwidths utilisation, they cannot simultaneously offer sufficient QoS (Quality of Service) support for real-time traffic such as voice. This is unlike newer packet-switched technologies such as ATM and Frame Relay which are able to offer both

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high utilisation and real-time QoS support simultaneously in an environment containing both real-time and non-real-time traffic. These dual goals of QoS support and efficiency can also be provided in an IP network if a reservation protocol such as RSVP (ReSerVation setup Protocol) is used, although firm QoS guarantees can only be offered provided each intermediate router supports RSVP. Before the network can offer a bandwidth guarantee, or reservation, to a specific data flow, admission control must ensure that the guarantee can be met i.e. sufficient resources exist in the network. Otherwise, the network will not pledge the guarantee to the user.

The end-to-end QoS available to users of a packet-switched network will be determined by two components. First, the amount of distortion introduced by the network in terms of packet delay, delay variation and packet loss. Second, the degree to which this network-induced distortion can be removed, or compensated for, at the receiving terminal, a process commonly referred to as terminal conditioning. Terminal conditioning may incorporate such processes as the removal of jitter (delay variation among packets) to reconstruct the original timing relationship between packets at the receiver. In addition, it may allow the receiver to recover lost packets in cases where the sender employs some kind of robust encoding schemes that introduce redundancy among data packets transmitted.

As already mentioned above, one of the approaches that in principle might be used to guarantee, or at least maximise, the network layer QoS received by real-time traffic such as voice in multimedia packet-switched environment concerns reserving resources (bandwidths, buffer space) in the intermediate routers/switches for specific data flows and is a method used by both ATM (Asynchronous Transfer Mode)

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and IP/RSVP. The RSVP can be used by receiver and nodes to request end-to-end reservations in accordance with the IETF (Internet Engineering Task Force) integrated services models. RSVP is specified in the specification RFC 2205. In particular, RSVP is not a routing protocol, but is merely used to reserve resources along the existing route set up by whichever underlying routing protocol is in place. A communication session is identified by a combination of destination address, transport layer protocol type and destination port number. It is important to note that each RSVP operation only applies to packets of a particular session and as such every RSVP message must include details of the session to which it applies. RSVP messages can be transported "raw" within IP datagrams using protocol number 46 although hosts with this raw I/O capability may first encapsulate the RSVP messages within a UDP header.

In mobile networks such as UMTS or GPRS networks, sufficient end-to-end QoS for a call must be set up. To achieve this, a PDP (Packet Data Protocol) context with sufficient QoS is activated to transfer the voice traffic. Thus, the QoS requirements of a call must be known by both endpoints. By knowing the QoS requirements, the endpoints can set up the sufficient QoS with mechanisms depending on the environment of the endpoints. In combined networks where the mobile network is connected to an IP network, the RSVP has been proposed to signal the QoS requirements between the networks. However, the RSVP causes unnecessary signaling to transfer the QoS requirements. Moreover, it is questionable whether the RSVP is scaleable enough to be used on a per-call basis.

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SUMMARY OF THE INVENTION

It is therefor an object of the invention to provide a method and system for activating a context, by means of which a capability exchange can be performed in an efficient way.

This object is achieved by a method for activating a context in a first network so as to transfer a call and/or transaction via said first network and a second network, said method comprising the steps of:

setting up a connection according to an application protocol using a signaling or default context within said first network;

determining a capability information based on a message of said application protocol transmitted from said second network to said first network; and

activating said context based on said received capability information.

Furthermore, the above object is achieved by a system for activating a context in first network so as to transfer a call and/or transaction via said first network and a second network, comprising:

setup means for setting up a connection according to an application protocol using a signaling or default context within said first network;

determination means for determining a capability information based on a message of said application protocol transmitted from said second network to said first network; and

activation means for activating said context based on said determined capability information.

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Additionally, the above object is achieved by a terminal device for activating a context in a first network so as to transfer a call and/or transaction via said first network and a second network, said terminal device comprising:

5 determination means for determining a capability information based on a message of an application protocol transmitted from said second network via said first network to said terminal device, wherein a signaling or default context is used within said first network; and

10 activation means for activating said context using said determined capability information.

Accordingly, there is no need to use the RSVP between the first network and the second network to signal the

15 capability information to the respective other connection end. A suitable end-to-end capability for the call and/or transaction can be agreed in advance based on the application protocol message(s) transmitted by using the signaling or default context. Then, the actual context

20 required for transferring a call is activated according to the agreed capability information. Thereby, the additional signaling required for the RSVP can be saved so as to decrease signaling load. Moreover, the proposed solution according to the present invention is transparent for the

25 core network, since the application protocol messages can be transparently transferred to the first network.

Preferably, the activation is performed by transmitting a context activation request message including parameters

30 based on which the capability information is determined to the first network. The protocol setup step is preferably performed at the calling end, such that the called end is directly notified of requested connection.

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The call is preferably a voice call. Thus, the network layer capability (e.g. QoS profile) required by the real-time voice traffic can be provided in an efficient manner even via different networks. However, the present invention  
5 is applicable to any call and/or transaction (e.g. service message, download program, or the like) which may be transferred based on a context activation.

Furthermore, the first network may be a mobile network, and  
10 the context may be a secondary PDP context. Such a secondary PDP context is applicable both for mobile-originated and mobile-terminated calls, such that the context activation may always be performed by the connection endpoint connected to the mobile network  
15 regardless of the origination of the call and/or transaction. The mobile network may be a UMTS network, while the second network may be an IP network.

Preferably, the application protocol may be the H.323 or  
20 H.248 protocol, or the SIP. Since these protocols are widely applicable in any IP based network, a universal solution for the capability exchange between different networks can be provided.

25 The capability information may be a QoS requirement. Thus, a desired QoS can be assured in the first as well as in the second network without requiring any additional RSVP signaling for reserving resources along the existing route setup within the first and the second networks. The QoS  
30 requirement may define a kind of codec (e.g. in H.323, H.248 or SIP environments) or a maximum bitrate, a guaranteed bitrate and/or a transfer delay (e.g. in the Activate (Secondary) PDP Context Request message of the GPRS core network).

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Furthermore, an IETF Diffserv service may be used in intermediate networks to provide a capability according to said capability information. Based on this service,  
5 intermediate network routers can be informed of the required capability (e.g. QoS requirements) of the transferred call and/or transaction by using a signaling protocol so as to reserve required resources.

10 The determination means of the terminal device may be arranged to determine the capability information based on a capability agreed in a setup negotiation with a called endpoint connected to the second network, the setup negotiation being initialized by a setup means of the  
15 terminal device.

On the other hand, the determination means of the terminal device may be arranged to determine the capability information based on a protocol message received from a  
20 calling endpoint connected to the second network. Thus, due to the fact that a secondary context can be activated from the calling endpoint as well as from the called endpoint, the proposed transfer of the capability information can be performed regardless of the direction of the call transfer.  
25

#### BRIEF DESCRIPTION OF THE DRAWINGS

In the following, the present invention will be described  
30 in greater detail on the basis of a preferred embodiment with reference to the accompanying drawings, in which:

Fig. 1 shows a basic block diagram of a UMTS network connected to an IP network, where the preferred embodiment  
35 of the present invention can be implemented,

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Fig. 2 shows a basic block diagram of a user equipment according to the preferred embodiment of the present invention,

5

Fig. 3 shows a signaling diagram indicating a PDP activation signaling for a mobile-originated call according to the preferred embodiment of the present invention, and

10 Fig. 4 shows a signaling diagram indicating a PDP activation for a mobile-terminated call according to the preferred embodiment of the present invention.

15

#### DESCRIPTION OF THE PREFERRED EMBODIMENT

In the following, the preferred embodiment of the method and system according to the present invention will be described on the basis of a UMTS system connected to an IP  
20 network 6 as shown in Fig. 1.

According to Fig. 1, the UMTS network comprises a UTRAN (UMTS Radio Access Network) 2 connected to a GPRS-based core network, wherein a connection to the IP network 6 is  
25 established via an SGSN (Serving GPRS Support Node) 3 and a GGSN (Gateway GPRS Support Node) 4.

Furthermore, a user equipment (UE) 1 such as a mobile terminal or station is radio-connected to the UTRAN 2. The  
30 UTRAN 2 is a wireless access network which provides access to the GPRS-based core network of the UMTS network. The IP network 6 may be any IP-based network which can be connected to the UMTS network. Furthermore, a terminal equipment (TE) 5 is shown, which may be any voice or data  
35 terminal connected to the IP network 6.

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Thus, according to Fig. 1, a data or voice call or any kind of transaction, such as a service message or download program or the like, can be transferred between the UE 1 and the TE 5 via the UMTS network and the IP network 6.

The main objective of the GPRS core network is to offer a connection to standard data networks (using protocols such as TCP/IP, X.25, and CLNP (ConnectionLess Network Protocol)). The packet-oriented GPRS core network infrastructure introduces two support nodes, the GGSN 4 and the SGSN 3. The main functions of the GGSN 4 involve interaction with the external IP network 6. The GGSN 4 updates the location directory using routing information supplied by the SGSN 3 about a path of a concerned mobile terminal and routes the external data network protocol packet encapsulated over the GPRS backbone to the SGSN 3 currently serving the concerned mobile terminal (e.g. the UE 1). It also decapsulates and forwards external data network packets to the IP network 6 and handles the charging of data traffic. The main functions of the SGSN 3 are to detect new GPRS mobile terminals in its serving area, handle the process of registering the new mobile terminals along with the GPRS registers, send/receive data packets to/from the concerned mobile terminal and keep a record of the location of the mobile terminals inside its service area. The subscription information is stored in a GPRS register where the mapping between a mobile's identity and the PSPDN (Packet Switched Public Data Network) address (e.g. IP network address) is stored. The GPRS register acts as a data base from which the SGSN 3 can derive whether a new mobile terminal in its area is allowed to join the GPRS core network.

- 10 -

In the idle state, the UE 1 does not have a logical GPRS context activated or any PSPDN addresses allocated. In this state, the UE 1 can only receive multicast messages which can be received by any GPRS mobile terminal. Since the GPRS network infrastructure does not know the location of the UE 1, it is not possible to send any messages to the UE 1 from the external IP network 6.

When the UE 1 is switched on, the first procedure performed between the UE 1 and the GPRS core network is radio synchronisation. When the UE 1 wants to start using the GPRS service of the UMTS network, it initiates a context activation procedure to establish a context of the logical link between the UE 1 and the SGSN 3 using a dedicated control channel as a carrier.

In case a call is to be transferred between the TE 5 of the IP network 6 and the UE 1, a capability information has to be exchanged between the UE 1 and the TE 5, so as to assure the capability requirements on the transmission path via the UMTS network and the IP network 6.

According to the initially mentioned prior art, the known system was arranged to use the RSVP between the UE 1 or the GGSN 4 and the external TE 5 to signal the capability requirements, e.g. QoS requirement (i.e. UE $\leftrightarrow$ TE or GGSN $\leftrightarrow$ TE).

According to the preferred embodiment of the present invention, an application protocol is set up between the UE 1 and TE 5 before the activation of the PDP (Packet Data Protocol) context and the actual call transfer. In this case, the capabilities can be agreed in advance based on the protocol messages of the application protocol.

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An application protocol suitable for this purpose is e.g. the protocol according to the International Telecommunications Union (ITU) Recommendation H.323. This standard covers technical requirements for narrow band  
5 visual telephone (or audio graphics) services. H.323 covers the elements needed for a visual telephone call. Video codex and shared application standards are not required for audio telephone calls, but exist within the same standard framework. H.323 is an application protocol which specifies  
10 packet-based multimedia communication systems across networks which might not provide any QoS guarantees. The H.323 protocol is applicable to any IP based network, including the Internet and applies to audio-only terminals as well as those with video capabilities.

15

To establish a point-to-point call using H.323 two TCP connections are required. The first of these which must be set up is commonly known as the Q.931 channel. The calling endpoint initiates set up of this TCP connection to the  
20 called endpoint. Call setup messages are then exchanged as defined in H.225.0. If the called endpoint accepts the call, then the IP address and port for the additional H.245 channel that needs to be set up is conveyed to the calling endpoint using the Q.931 channel. The calling endpoint can  
25 then open a TCP connection to the indicated address and port to form the H.245 channel. Once, the H.245 channel has been set up, the Q.931 channel is no longer required in the case of a simple call and maybe closed by either one of the endpoints.

30

In view of the fact that the Q.931 messages include a number of message-specific information elements comprising a capability information, the required transfer of the capability information between the TE 5 and the UE 1 can be  
35 achieved by performing a H.323 setup.

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Alternatively, the Session Initiation Protocol (SIP) which is an IETF protocol for initiating calls in IP networks could be used for transferring the capability information.

5 The SIP is an application level protocol developed by the IETF's Multiparty Multimedia Session Control Working Group and is described in RFC 2453. SIP can be used to establish multimedia sessions or call such as internet telephony, multimedia conferencing and distance learning. SIP handles

10 the following cases of communication: User location, user capability, user availability, call setup and call handling.

The first step in the initiation of a call using SIP is to

15 locate a SIP server for the called endpoint. This can be achieved by sending a client request to the SIP-server which may be either a default local proxy SIP server or the SIP server for the called party. The SIP server for the called party can be located based on the SIP address if it

20 is a numeric IP address. Alternatively, the DNS (Domain Name Server) can be used to obtain a list of addresses that can be tried for SIP servers. Once a SIP server has been found, the calling endpoint can invite the called endpoint to join the communication session. The protocol message

25 exchanges for the indication process vary depending on whether the contacted server acts as a proxy server or a redirect server for that particular invitation.

Thus, the above suggested H.323 and SIP protocols provide a

30 possibility for exchanging the capability information (e.g. QoS-requirements) before actually performing call transfer. However, other suitable application protocols such as the H.248 terminal control protocol may be used for this

purpose.

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Fig. 2 shows a basic block diagram of the UE 1 according to the preferred embodiment of the present invention. It is to be noted that only those parts essential for the present invention are shown in Fig. 2.

5

According to Fig. 2, the UE 1 comprises a transceiver (TRX) 15 arranged to transmit or receive signals via the wireless connection to/from the UTRAN 2. The TRX 15 is connected to a codec 14 arranged to perform a suitable coding or  
10 decoding of the signals transmitted to or received from the UMTS network.

Furthermore, a protocol signaling unit 11 is provided, which performs a setup signaling of an application protocol  
15 (e.g. H.323, H.248 or SIP), when a call is to be originated at the UE 1. Then, the exchange of the protocol messages between the UE 1 and the called TE 5 are supplied to a capability determination unit 12 arranged to determine an agreed capability based on the capability information  
20 received with the protocol message from the TE 5. The determined or agreed capability is then supplied to a context control unit 13 which maintains and generates the context information required for a context activation message transmitted to the SGSN 3 so as to establish the  
25 required capability in the GPRS core network of the UMTS network.

It is to be noted that the transfer of the initial setup messages of the application protocol is performed in the  
30 GPRS core network by using a signaling or default context. Furthermore, it should be noted that the functions of the blocks 11 to 13 shown in Fig. 2 may be achieved by corresponding control programs or routines used to control a processing means (e.g. CPU) arranged in the UE 1.

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In the following, the context activation signaling is described for a mobile-originated call and a mobile-terminated call based on Figs. 3 and 4, respectively.

5 Fig. 3 shows a signaling diagram for the case of a mobile-originated call, i.e. the UE1 is the calling endpoint. When the UE 1 wants to transfer a call to the external TE 5, it controls the protocol signaling unit 11 so as to initiate a setup signaling using an application protocol as the above  
10 mentioned H.323, H.248 or SIP protocols. The protocol messages exchanged during the setup procedure are transferred using the signaling or default PDP context within the UMTS network. Thus, the UE 1 is able to communicate with the called TE 5 on the required  
15 capabilities (e.g. kind of codecs etc.).

When the capability determination unit 12 has determined the agreed capability, this capability information is supplied to the context control unit 13 which is then  
20 controlled to initiate a secondary PDP context activation corresponding to the agreed capability. To achieve this, the context control unit 13 generates an Activate Secondary PDP Context Request message and performs control so as to transmit this message to the SGSN 3. Based on parameters  
25 (e.g. QoS requested, including QoS parameters like maximum bitrate, guaranteed bitrate, transfer delay etc.) included in this message, the agreed capability information, e.g. desired QoS profile, is determined by performing a mapping operation between the agreed capability information and the  
30 parameters. The SGSN 3 then validates the Activate Secondary PDP Context Request message and derives an address of the corresponding GGSN 4. Then, the SGSN 3 creates a Tunnel Identifier (TID) for the requested PDP context and transmits a Create PDP Context Request message  
35 to the GGSN 4. The GGSN 4 uses an Access Point Name included in the Create PDP Context Request Message to find

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the IP network 6 and creates a new entry in its PDP context table. The new entry allows the GGSN 4 to route corresponding data packets between the SGSN 3 and the external IP network 6. Furthermore, the GGSN 4 establishes  
5 the required capabilities (e.g. negotiated QoS) and returns a Create PDP Context Response message to the SGSN 3. In response thereto, the SGSN 3 returns an Activate PDP Context Response message to the UE 1 and is now able to route data packets between the GGSN 4 and the UE 1.

10

Thus, the capability requirements (e.g. QoS mechanisms) provided for the called party depend on the environment of the called party, e.g. the capabilities defined in the secondary PDP context activation. However, there is no  
15 longer need to use the RSVP between the UE 1 or the GGSN 4 and the TE 5 to signal the capability requirements (e.g. kind of codecs etc.) to the called party.

Fig. 4 shows a signaling diagram for the case of a mobile-  
20 terminated call, i.e. the TE 5 transfers a call to the UE 1. In this case, the TE 5 initially transmits a setup message of an application protocol such as the above mentioned H.323, H.248 or SIP to the UE 1, while the signaling or default context is used within the UMTS  
25 network to transparently transfer this message. The protocol setup message is then supplied to the protocol signaling unit 11 of the UE 1, which may directly generate a protocol setup response message so as to acknowledge the protocol setup. Based on the receipt protocol setup  
30 message, the capability determination unit 12 determines an agreed capability and supplies the determined capability to the context control unit 13. Then, the context control unit 13 performs control so as to transmit an Activate Secondary PDP Context Request message to the SGSN 3. Then, as  
35 described in connection with Fig. 3, the SGSN 3 issues a Create PDP Context Request message to the GGSN 4 based on

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the capability information included in the Activate  
Secondary PDP Context Request message received from the UE  
1. Having received the Create PDP Context Response message  
from the GGSN 4, the SGSN 3 transmits the Activate  
5 Secondary PDP Context Response message to the UE 1, to  
thereby establish the connection within the UMTS network.

As an alternative, the above mentioned application protocol  
setup response message may be transmitted after the  
10 secondary PDP context activation, as indicated by the  
broken arrows shown in Fig. 4.

Thus, also in the mobile-terminated call, the UE 1  
initiates the secondary PDP context activation. The UE 1  
15 has received the capabilities of the calling TE 5 and knows  
its own capabilities, such that the capability  
determination unit 12 is able to set the minimum capability  
requirements (e.g. QoS requirements) for the PDP context  
according to the agreed capabilities. Moreover, also in  
20 this case, the RSVP between the UE 1 or the GGSN 4 and the  
TE 5 is not required to be used to signal the capability  
requirements to the TE 5.

In case other intermediate networks are arranged between  
25 the UMTS network and the IP network 6, the IETF  
Differentiated Services (Diffserv) mechanism can be used to  
provide the required capability, e.g. QoS profile. Diffserv  
defines a service where an octet in the packet header is  
used to mark packets with a codepoint value. The marked  
30 packets indicate a class of service to be established by  
network routers routing the packets to the destination.

However, any suitable mechanism may be used to provide the  
required capability in the intermediate networks.

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In summary, a method and system is described for activating a context in a first network so as to transfer a call and/or a transaction via said first network and a second network. Initially, an application protocol such as H.323  
5 H.248 or SIP is set up using a signaling or default context within the first network. Based on a message of the application protocol transmitted from the second network, a capability information is determined and used to activate the context. Thereby, the capabilities can be agreed in  
10 advance and the context can be activated e.g. as a secondary context for both mobile-originated and mobile-terminated calls and/or transactions. Accordingly, a reservation protocol is no longer required to signal the capability requirements to the second network, and  
15 signaling load can be decreased.

It is pointed out that the context activation method and system described in the preferred embodiment can be applied to any network in which a context can be activated to  
20 establish a required capability. Moreover, any application protocol by means of which a capability exchange can be performed using protocol messages can be applied so as to agree the required capability before actually activating the context. The capability is not restricted to the QoS  
25 requirements, but any capability requirement which can be exchanged via protocol messages and which is required in the context activation can be agreed by the proposed solution. The above description of the preferred embodiment and the accompanying drawings are only intended to  
30 illustrate the present invention. The preferred embodiment of the invention may thus vary within the scope of the attached claims.

**Claims**

1. A method for activating a PDP context in a first  
5 network so as to transfer a call and/or a transaction via  
said first network and a second network (6), said method  
comprising the steps of:
- a) transmitting a set-up message according to an  
application protocol using a signaling or default context  
10 within said first network;
  - b) determining a capability information based on a  
message of said application protocol transmitted from said  
second network (6) to said first network; and
  - c) activating said PDP context based on said  
15 determined capability information.
2. A method according to claim 1, wherein said activation  
is performed by transmitting a context activation request  
message including a required information to said first  
20 network, said capability information being mapped to said  
required information.
3. A method according to claim 1 or 2, wherein said setup  
step is performed at the calling end.  
25
4. A method according to any one of the preceding claims,  
wherein said call is a voice call.
5. A method according to any one of the preceding claims,  
30 wherein said first network is a mobile network, and said  
context is a secondary PDP context.
6. A method according to claim 5, wherein said mobile  
network is a UMTS network.  
35

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7. A method according to any one of the preceding claims, wherein said second network is an IP network (6) or a UMTS network.

5 8. A method according to any one of the preceding claims, wherein said application protocol is the H.323 or H.248 protocol or the SIP.

9. A method according to any one of the preceding claims,  
10 wherein said capability information is a QoS requirement.

10. A method according to claim 9, wherein said QoS requirement defines a kind of codec, a maximum bitrate, a guaranteed bitrate and/or a transfer delay.

15

11. A method according to any one of the preceding claims, further comprising the step of using an IETF Diffserv service in intermediate networks to provide a capability according to said capability information.

20

12. A system for activating a PDP context in a first network so as to transfer a call and/or a transaction via said first network and a second network (6), comprising:

25 a) setup means (1, 7) for transmitting a set-up message according to an application protocol using a signaling or default context within said first network;

b) determination means (12) for determining a capability information based on a message of said application protocol transmitted from said second network  
30 (6) to said first network; and

c) activation means (13) for activating said PDP context based on said determined capability information.

13. A system according to claim 12, wherein said  
35 activating means (13) are arranged to transmit a context

activation request message including said determined capability information to said first network.

14. A System according to claim 12 or 13, wherein said  
5 setup means (1, 7) are arranged at the calling end of said a call and/or said transaction.

15. A system according to any one of claims 12 to 14,  
10 wherein said first network is a mobile network, and said context is a secondary PDP context.

16. A systems according to any one of claims 12 to 15,  
wherein said second network is an IP network (6) or a UMTS network.

15 17. A system according to any one of claims 12 to 16,  
wherein said application protocol is the H.323 or H.248 protocol or the SIP.

20 18. A system according to any one of claims 12 to 17,  
wherein said capability information is a QoS requirement.

19. A system according to any one of claims 12 to 18,  
25 wherein said system is arranged to use an IETF Diffserv service in intermediate networks to provide a capability according to said determined capability information.

20. A terminal device for activating a PDP context in a  
30 first network so as to transfer a call and/or a transaction via said first network and a second network (6), said terminal device (1) comprising:

35 a) determination means (12) for determining a capability information based on a message of an application protocol transmitted from said second network (6) via said first network to said terminal device (1), wherein a

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signaling or default context is used within said first network; and

b) activation means (13) for activating said PDP context using said determined capability information.

5

21. A terminal device according to claim 20, wherein said determination means (12) are arranged to determine said capability information based on a capability agreed in a setup negotiation with a called endpoint (7) connected to said second network (6), said setup negotiation being initialized by a setup means (11) of said terminal device (1).

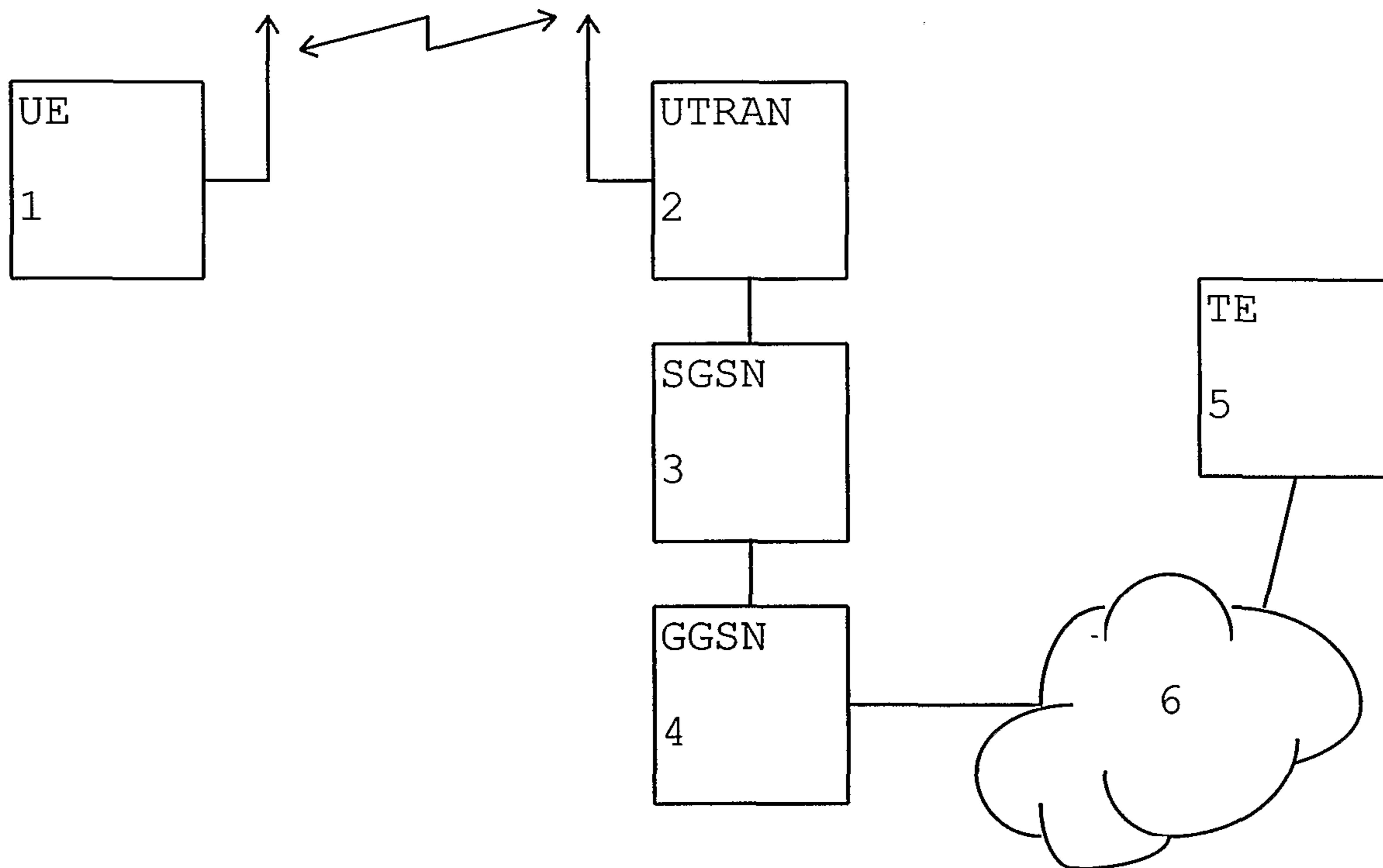
22. A terminal device according to claim 20, wherein said determination means (12) are arranged to determine said capability information based on a protocol message received from a calling endpoint (5) connected to said second network (6).

23. A terminal device according to any one of claims 20 to 22, wherein said terminal device is a mobile terminal (1), and said second network is an IP network (6).

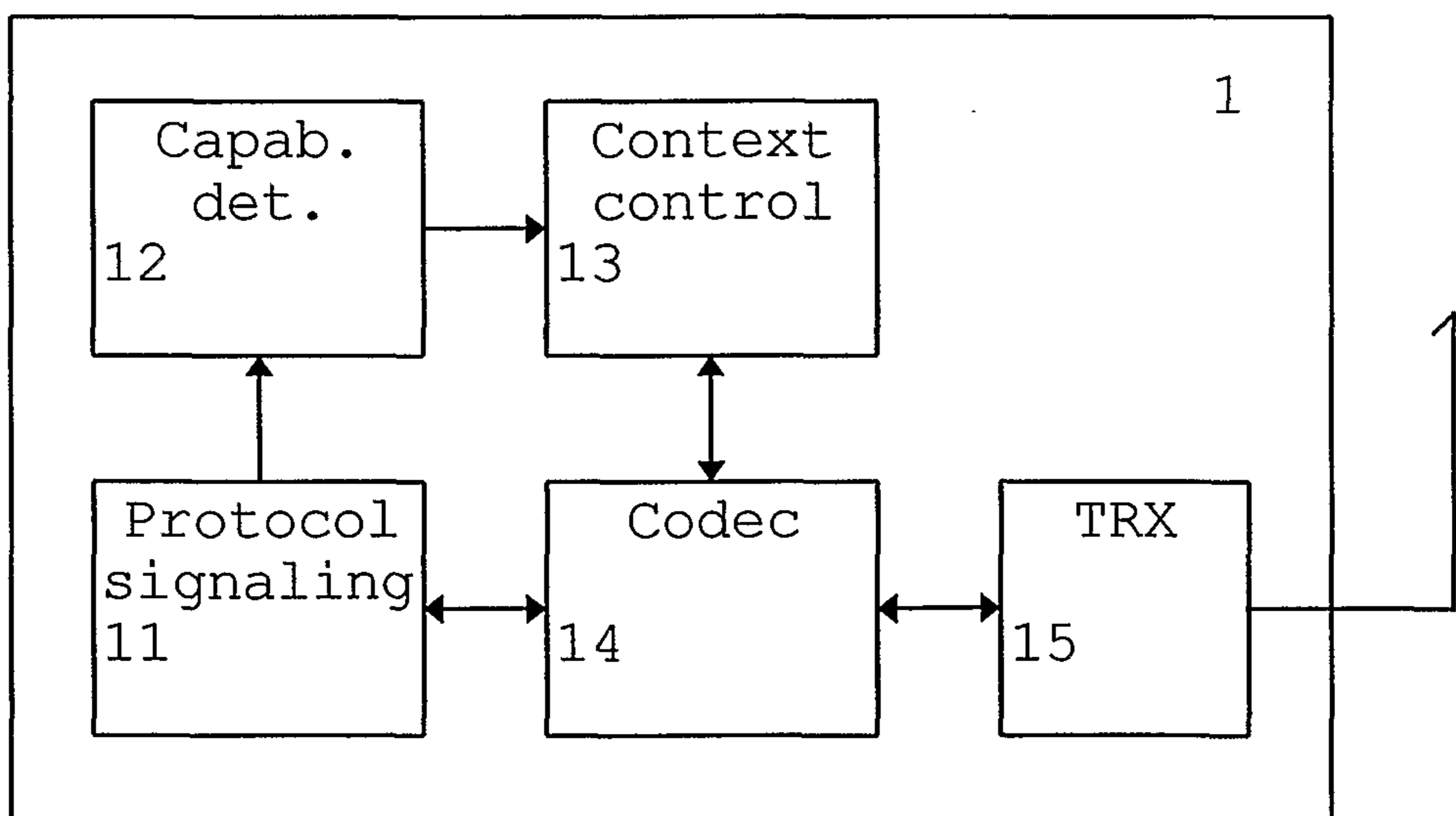
24. A terminal device according to any one of claims 20 to 23, wherein said application protocol is the H.323 or H.248 protocol or the SIP.

25. A terminal device according to any one claims 20 to 24, wherein said capability information is a QoS requirement.

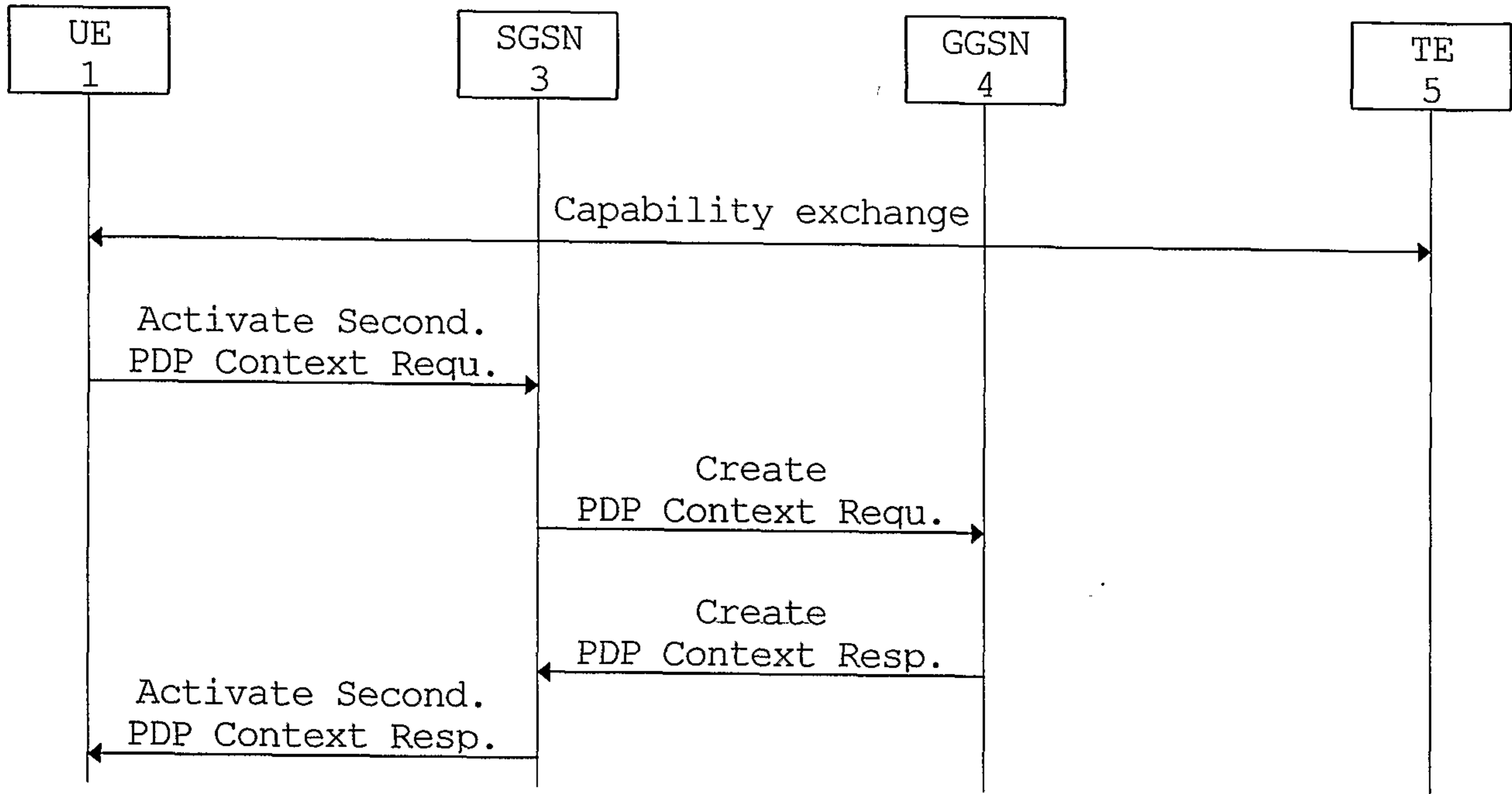
30



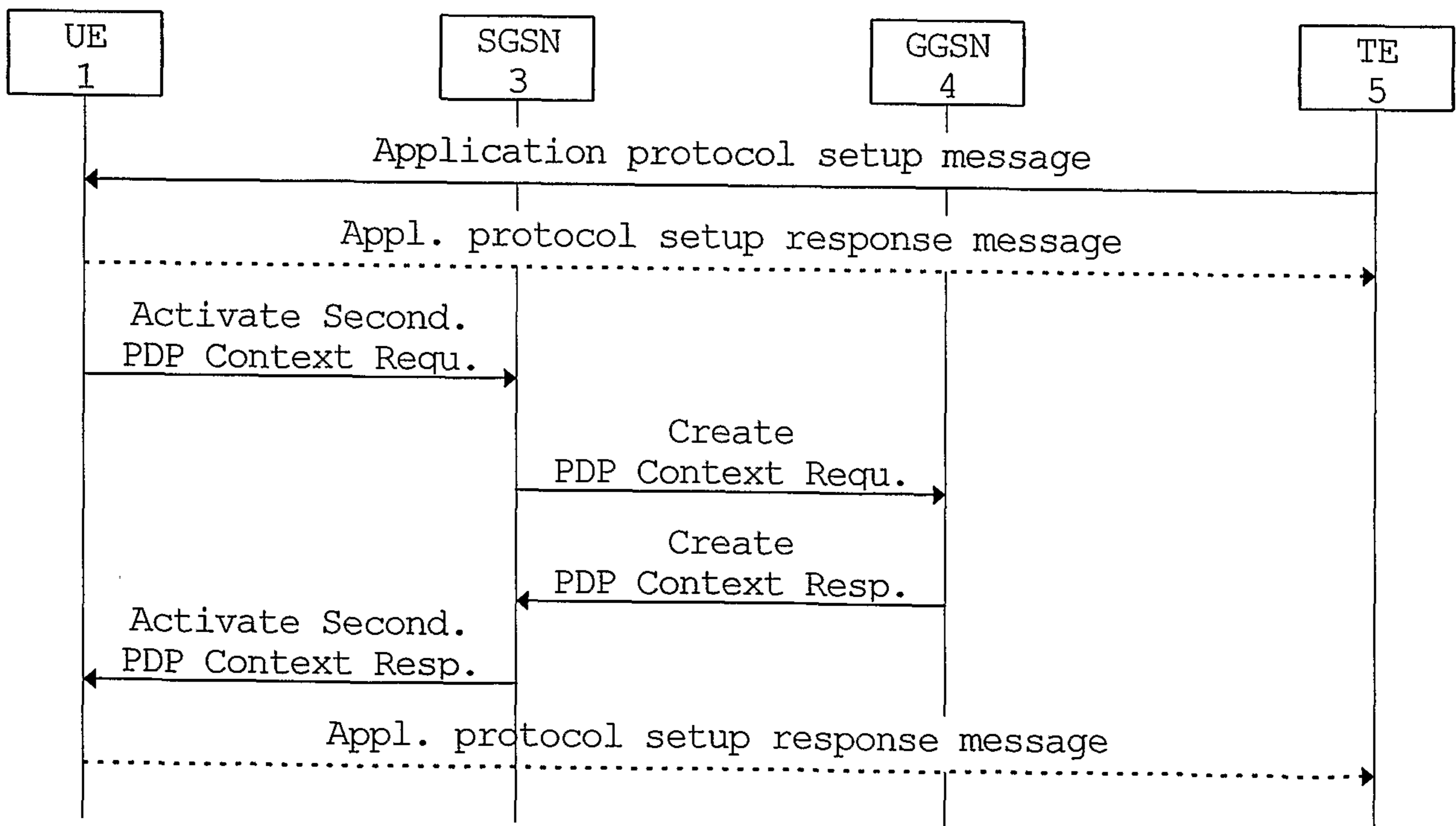
**Fig. 1**



**Fig. 2**



**Fig. 3**



**Fig. 4**

