3GPP TSG CN Plenary Meeting #13 **NP-010499**
Beijing, China, 19th –21st September 2001

Source: **TSG CN WG 1**

Title: **CR to Rel-5 on Work Item TEI5 towards 24.008**

Agenda item: **9.13**

Document for: **APPROVAL**

Introduction:

This document contains **1** CR on **Rel-5 to** Work Item **"TEI5"**, that have been agreed by **TSG CN WG1**, and are forwarded to TSG CN Plenary meeting #13 for approval.

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Version-Current	Workitem
24.008	452	1	N1-011303	Rel-5	Modification of session management between MS and network	F	5.0.0	TEI5

3GPP TSG-CN1 Meeting #19
Helsinki, Finland - 27 - 31 August 2001

Tdoc N1-011303
Revision of N1-011213

CR-Form-v3

CHANGE REQUEST

⌘ **24.008** **CR** **452** ⌘ rev **1** ⌘ Current version: **5.0.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE **X** Radio Access Network ☐ Core Network **X**

Title:	⌘	Modification of session management between MS and network
Source:	⌘	Fujitsu
Work item code:	⌘	TEI5
Date:	⌘	30/Aug/2001
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change: ⌘

There are three points.

In the clauses 6.1.3.3.4 and 6.1.3.4.3 (abnormal cases), the collision of MS initiated PDP Context Modification Procedures and Network initiated DEACTIVE PDP Context Request Procedures is not considered.

In the clause 6.1.3.3.4 b) collision of MS and Network initiated PDP Context Modification Procedures, it indicates that the MS shall terminate internally the MS initiated PDP context modification procedure, enter the state PDP-Active and proceed with the network initiated PDP context modification procedure by sending a MODIFY PDP CONTEXT ACCEPT message. But, in the figure 6.1/3GPP TS 24.008, there is not above route.

In the clause 6.1.3.4.3 b) collision of MS and network initiated PDP context deactivation requests, it indicates that if the MS and the network initiated PDP context deactivation requests collide, the MS and the network shall each reply with the messages DEACTIVATE PDP CONTEXT ACCEPT. But, in the figure 6.2/3GPP TS 24.008, there is not above route.

Summary of change: ⌘

In the clauses 6.1.3.3.4 and 6.1.3.4.3, as an abnormal case, the collision of MS initiated PDP Context Modification Procedures and Network initiated DEACTIVE PDP Context Request Procedures is added.

In the Figure 6.1/3GPP TS 24.008 the arrowhead is added from the PDP-MODIFY-PENDING state to the DI(DEACTIV. PDP CONTX. REQ) message.

In the Figure 6.1/3GPP TS 24.008 the arrowhead is added from the PDP-MODIFY-PENDING state to the DI(MOD. PDP CONTX. REQ) message.

In the Figure 6.2/3GPP TS 24.008 the arrowhead is added from the PDP-INACTIVATE-PENDING state to the DI(DEACTIV, PDP CONTX, REQ) message.

Consequences if not approved:	⌘	If handling of collision of network initiated deactivation procedure and mobile initiated modification procedure is not specified, the action taken by both entity could be different depending on their implementation, which causes inconsistent status between the mobile station and the network (e.g. both network and mobile station re-transmit the messages). Regarding the correction of the figure, inconsistency between the text part and the figure causes confusion to the readers, which might results in the different implementation.

Clauses affected:	⌘	6.1.2.1.5	6.1.2.2.5	6.1.3.3.4	6.1.3.4.3
Other specs Affected:	⌘			⌘	
Other comments:	⌘				

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

6.1.2 Session management states

In this section, the SM states are described for one SM entity (see TS24.007 [20]). Each SM entity is associated with one PDP context. Section 6.1.2.1 describes the SM states in the MS and section 6.1.2.2 describes the SM states on the network side.

6.1.2.1 Session management states in the MS

In this section, the possible states of an SM entity in the mobile station are described. As illustrated in figure 6.1/3GPP TS 24.008 there arefive SM states in the MS.

6.1.2.1.1 PDP-INACTIVE

This state indicates that no PDP context exists.

6.1.2.1.2 PDP-ACTIVE-PENDING

This state exists when PDP context activation was requested by the MS.

6.1.2.1.3 PDP-INACTIVE-PENDING

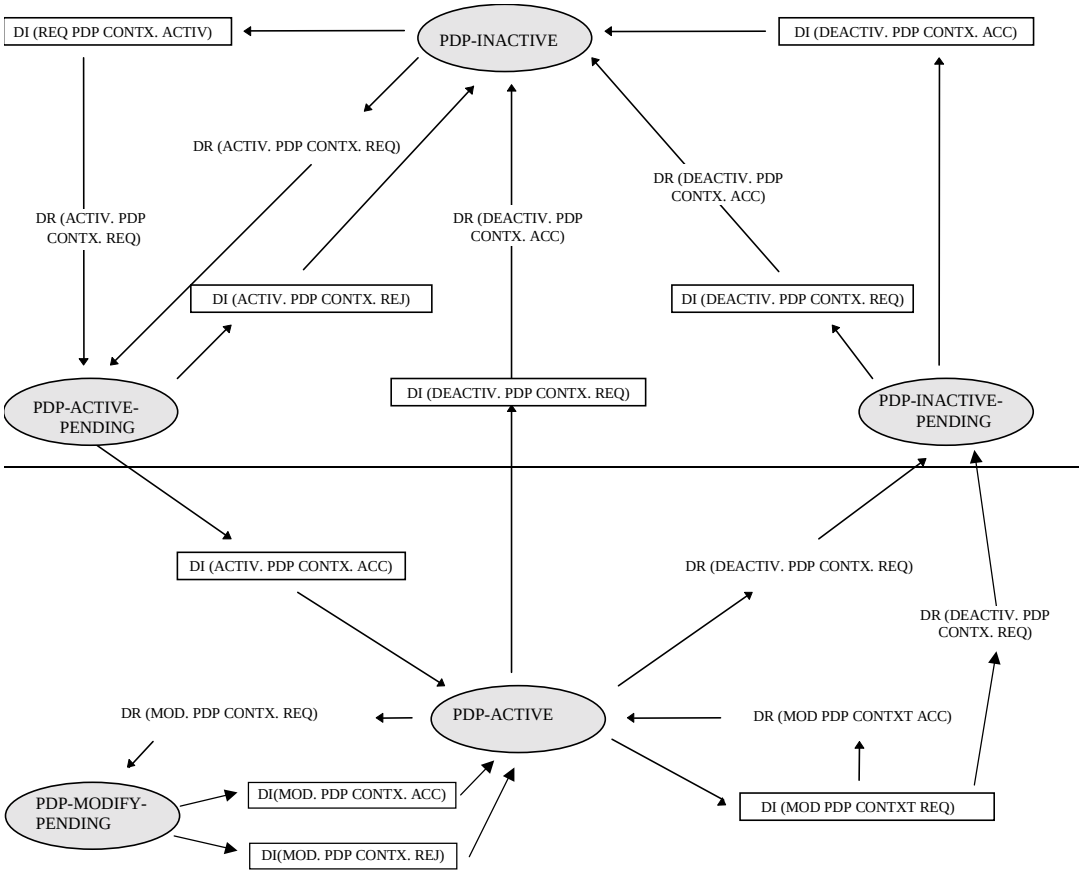
This state exists when deactivation of the PDP contexts was requested by the MS.

6.1.2.1.4 PDP-ACTIVE

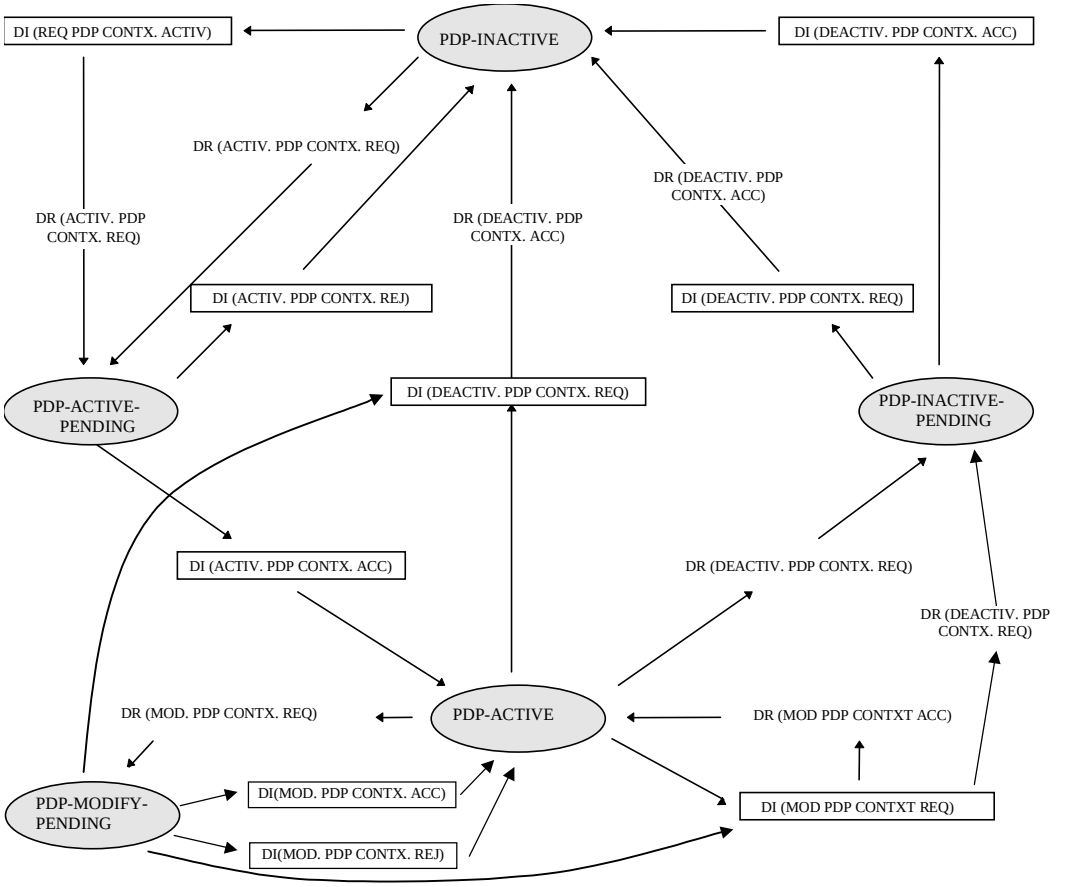
This state indicates that the PDP context is active.

6.1.2.1.5 PDP-MODIFY_PENDING

This state exists when modification of the PDP context was requested by the MS.



DR: GMMSM-DATA-REQUEST (Message), i.e. message sent by an MS
DI: GMMSM-DATA-INDICATION (Message), i.e. message received by an MS



DR: GMMSM-DATA-REQUEST (Message), i.e. message sent by an MS
DI: GMMSM-DATA-INDICATION (Message), i.e. message received by an MS

Figure 6.1/3GPP TS 24.008: Session management states in the MS (overview)

It shall be noted, that Figure 6.1/3GPP TS 24.008 applies to both the PDP context activation procedure and the secondary PDP context activation procedure, though the distinction in messages regarding the activation of PDP contexts is not shown here for simplicity.

6.1.2.2 Session management states on the network side

In this section, the possible states of an SM entity on the network side are described. As illustrated in figure 6.2/3GPP TS 24.008 there are five SM states on the network side.

6.1.2.2.1 PDP-INACTIVE

This state indicates that the PDP context is not active.

6.1.2.2.2 PDP-ACTIVE-PENDING

This state exists when the PDP context activation was initiated by the network.

6.1.2.2.3 PDP-INACTIVE-PENDING

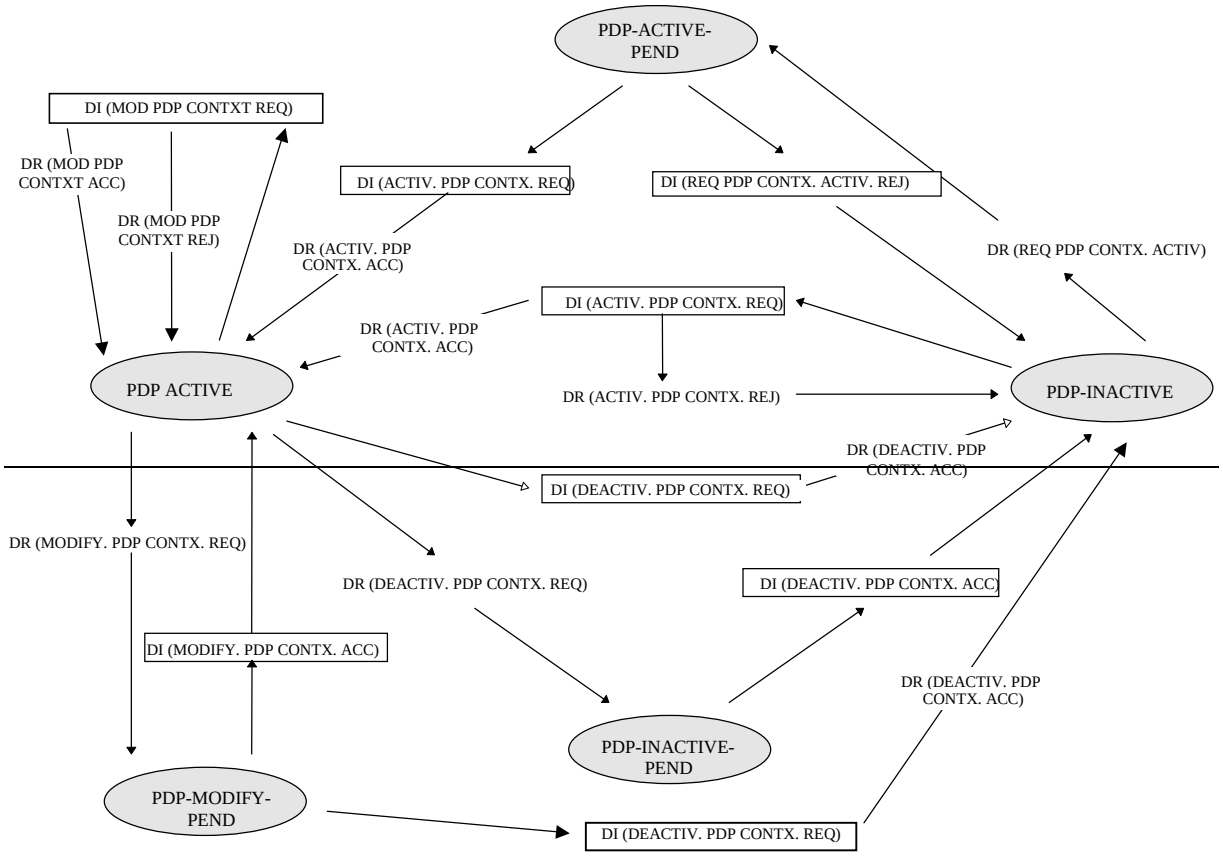
This state exists when deactivation of the PDP context was requested by the network.

6.1.2.2.4 PDP-ACTIVE

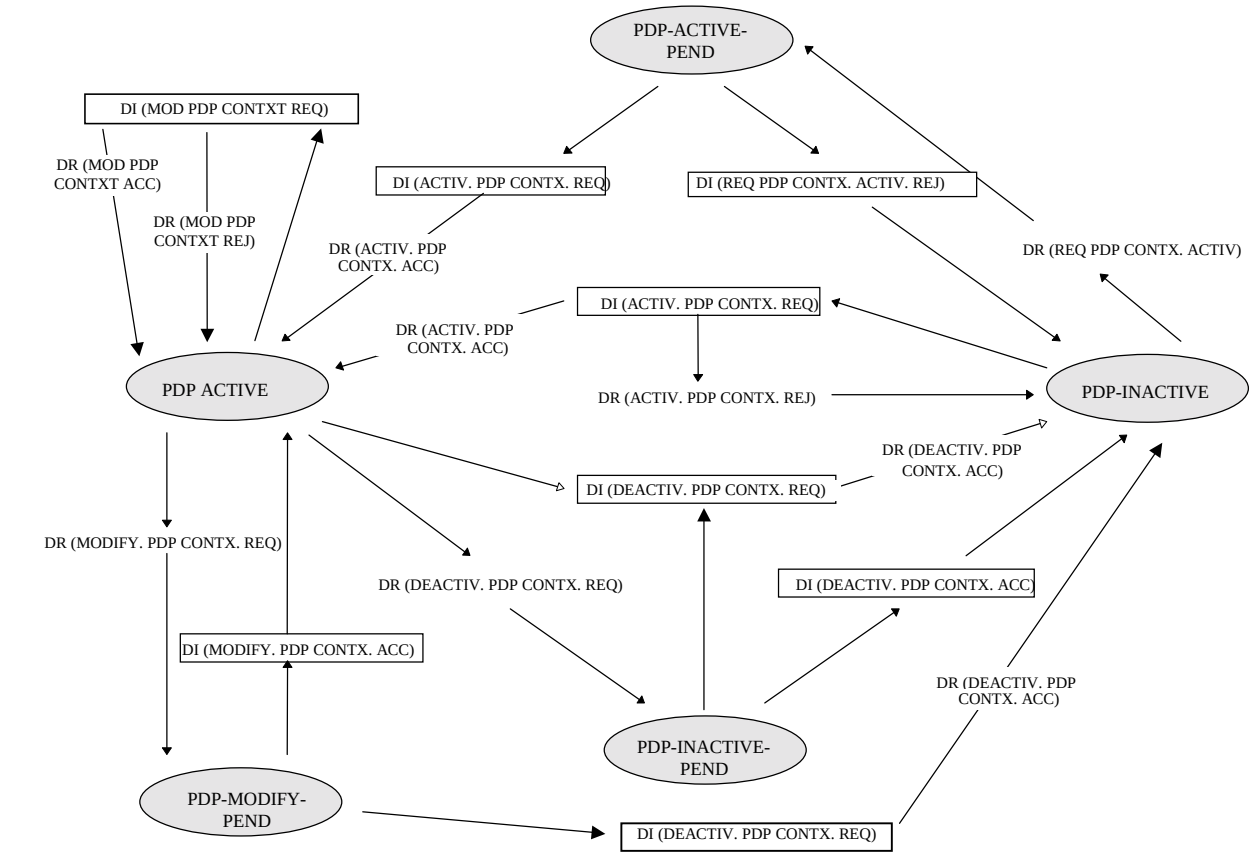
This state indicates that the PDP context is active.

6.1.2.2.5 PDP-MODIFY-PENDING

This state exists when modification of the PDP context was requested by the network.



DR: GMMSM-DATA-REQUEST (Message), i.e. message sent by network
DI: GMMSM-DATA-INDICATION (Message), i.e. message received by the network



DR: GMMSM-DATA-REQUEST (Message), i.e. message sent by network
DI: GMMSM-DATA-INDICATION (Message), i.e. message received by the network

Figure 6.2/3GPP TS 24.008: Session management states on the network side (overview)

It shall be noted, that Figure 6.2/3GPP TS 24.008 applies to both the PDP context activation procedure and the secondary PDP context activation procedure, though the distinction in messages regarding the activation of PDP contexts is not shown here for simplicity.

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6.1.3.3.4 Abnormal cases

a) Expiry of timers

On the network side:

On the first expiry of timer T3386, the network shall resend the MODIFY PDP CONTEXT REQUEST message reset and restart timer T3386. This retransmission is repeated four times, i.e. on the fifth expiry of timer T3386, the network may continue to use the previously negotiated QoS or it may initiate the PDP context deactivation procedure.

In the MS:

On the first expiry of timer T3381, the MS shall resend the MODIFY PDP CONTEXT REQUEST message reset and restart timer T3381. This retransmission is repeated four times, i.e. on the fifth expiry of timer T3381, the MS may continue to use the previously negotiated QoS or it may initiate the PDP context deactivation procedure.

b) Collision of MS and Network initiated PDP Context Modification Procedures

A collision of a MS and network initiated PDP context modification procedures is identified by the MS if a MODIFY PDP CONTEXT REQUEST message is received from the network after the MS has sent a MODIFY PDP CONTEXT REQUEST message itself, and both messages contain the same TI and the MS has not yet received a MODIFY PDP CONTEXT ACCEPT message from the network.

A collision is detected by the network in case a MODIFY PDP CONTEXT REQUEST message is received from the MS with the same TI as the MODIFY PDP CONTEXT REQUEST message sent to the MS.

In the case of such a collision, the network initiated PDP context modification shall take precedence over the MS initiated PDP context modification. The MS shall terminate internally the MS initiated PDP context modification procedure, enter the state PDP-Active and proceed with the network initiated PDP context modification procedure by sending a MODIFY PDP CONTEXT ACCEPT message. The network shall ignore the MODIFY PDP CONTEXT REQUEST message received in the state PDP-MODIFY-PENDING. The network shall proceed with the network initiated PDP context modification procedure as if no MODIFY PDP CONTEXT REQUEST message was received from the MS.

c) Collision of MS initiated PDP Context Modification Procedures and Network initiated Deactivate PDP Context Request Procedures

A collision of a MS initiated PDP context modification procedures and a network initiated PDP context deactivation procedures is identified by the MS if a DEACTIVATE PDP CONTEXT REQUEST message is received from the network after the MS has sent a MODIFY PDP CONTEXT REQUEST message, and the MS has not yet received a MODIFY PDP CONTEXT ACCEPT message from the network.

In the case of such a collision, the network initiated PDP context deactivation shall take precedence over the MS initiated PDP context modification. The MS shall terminate internally the MS initiated PDP context modification procedure, and proceed with the network initiated PDP context deactivation procedure by sending a DEACTIVATE PDP CONTEXT ACCEPT, enter the state PDP-INACTIVE. The network shall ignore the MODIFY PDP CONTEXT REQUEST message received in the state PDP-INACTIVE-PENDING. The network shall proceed with he network initiated PDP context deactivation procedure as if no MODIFY PDP CONTEXT REQUEST message was received from the MS.

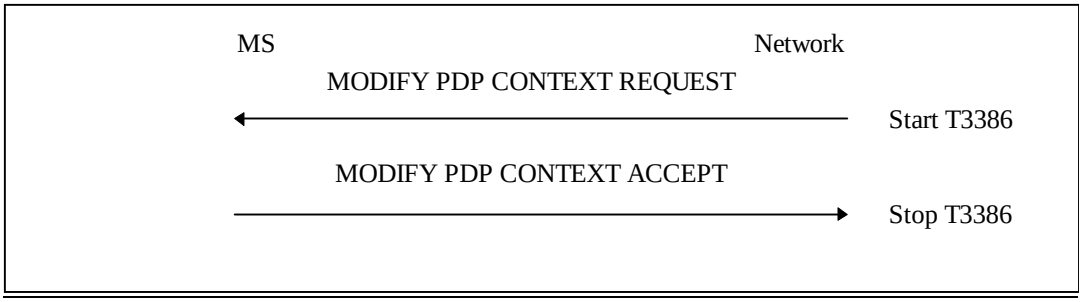

Figure 6.6/3GPP TS 24.008: Network initiated PDP context modification procedure

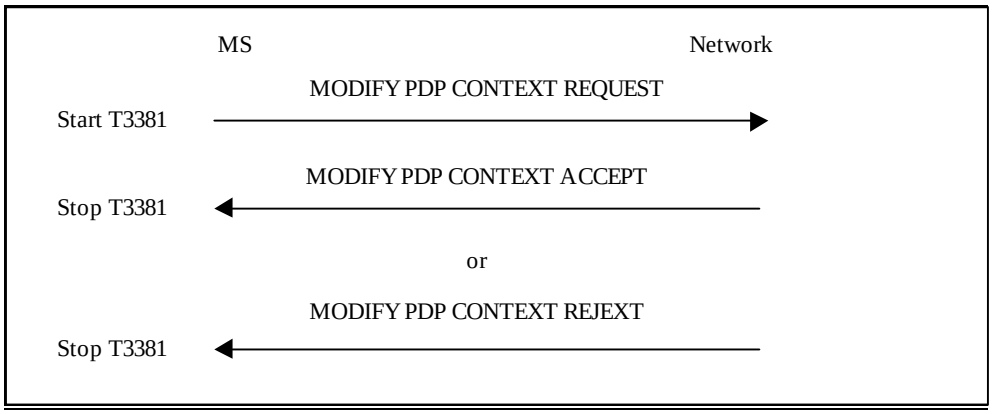

Figure 6.7/3GPP TS 24.008: MS initiated PDP context modification procedure

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6.1.3.4.3 Abnormal cases

The following abnormal cases can be identified:

a) Expiry of timers

In the mobile station:

On the first expiry of timer T3390, the MS shall resent the message DEACTIVATE PDP CONTEXT REQUEST and shall reset and restart the timer T3390. This retransmission is repeated four times, i.e. on the fifth expiry of timer T3390, the MS shall release all resources allocated and shall erase the PDP context related data.

On the network side:

On the first expiry of timer T3395, the network shall resent the message DEACTIVATE PDP CONTEXT REQUEST and shall reset and restart timer T3395. This retransmission is repeated four times, i.e. on the fifth expiry of timer T3395, the network shall erase the PDP context related data for that MS.

b) Collision of MS and network initiated PDP context deactivation requests

If the MS and the network initiated PDP context deactivation requests collide, the MS and the network shall each reply with the messages DEACTIVATE PDP CONTEXT ACCEPT and shall stop timer T3390 and T3395, respectively.

c) Collision of Network initiated Deactivate PDP Context Request Procedures and MS initiated PDP Context Modification Procedures

A collision of a network initiated PDP context deactivation procedures and a MS initiated PDP context modification procedures is identified by the network if a MODIFY PDP CONTEXT REQUEST message is received from the MS after the network has sent a DEACTIVATE PDP CONTEXT REQUEST message, and the network has not yet received a DEACTIVATE PDP CONTEXT ACCEPT message from the MS.

In the case of such a collision, the network initiated PDP context deactivation shall take precedence over the MS initiated PDP context modification. The network shall ignore the MODIFY PDP CONTEXT REQUEST message received in the state PDP-INACTIVE-PENDING. The network shall proceed with the network initiated PDP context deactivation procedure as if no MODIFY PDP CONTEXT REQUEST message was received from the MS. The MS shall terminate internally the MS initiated PDP context modification procedure, and proceed with the network initiated PDP context deactivation procedure by sending a DEACTIVATE PDP CONTEXT ACCEPT, enter the state PDP-INACTIVE.

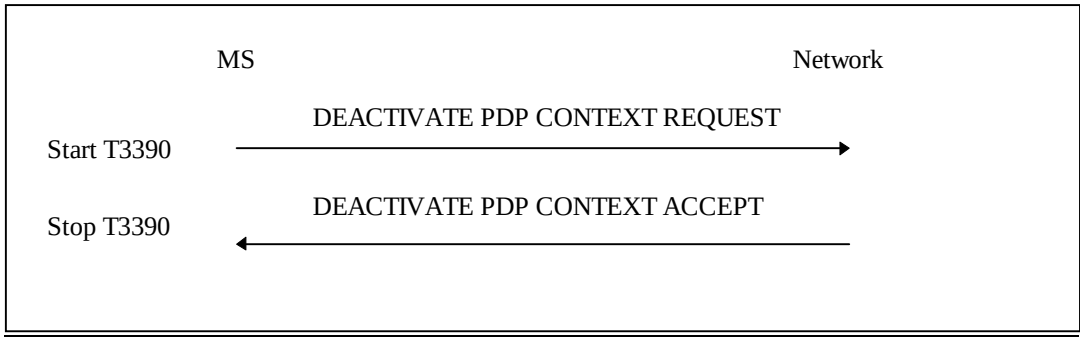

Figure 6.8/3GPP TS 24.008: MS initiated PDP context deactivation procedure

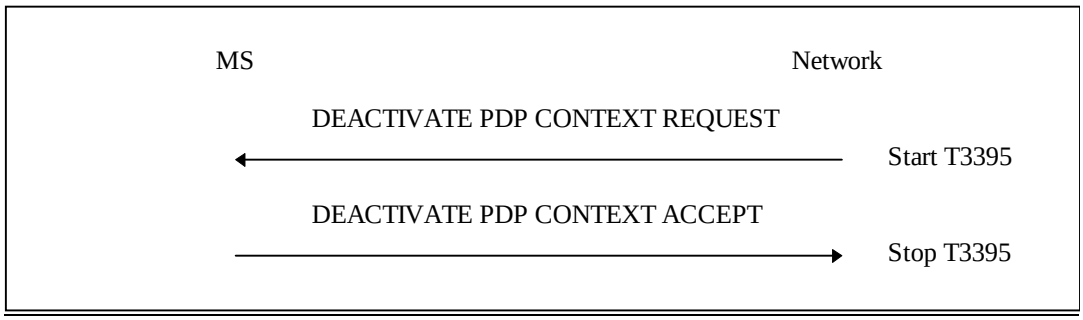

Figure 6.9/3GPP TS 24.008: Network initiated PDP context deactivation procedure