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Technical Specification

**Digital cellular telecommunications system (Phase 2+) (GSM);
Universal Mobile Telecommunications System (UMTS);
Location Services LCS Stage 3 SS (MO-LR)
(3GPP TS 24.030 version 3.2.0 Release 1999)**



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Foreword

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1 Scope

The present document gives the stage 3 description of the Location Service (LCS) operations for mobile station.

The group of location services operations is divided into two different classes:

- Network initiated location services operations (clause 4);
- Mobile initiated location services operations (clause 5).

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] GSM 01.04: "Digital cellular telecommunications system (Phase 2+); Abbreviations and acronyms"
- [2] GSM 03.71: "Digital cellular telecommunications system (Phase 2+); Location Services (LCS); (Functional description) - Stage 2"
- [3] 3GPP TS 23.171: "Functional stage 2 description of location services in UMTS"
- [4] 3GPP TS 24.080: "Mobile radio interface layer 3 supplementary services specification; Formats and coding"
- [5] 3G TS 23.032: "Universal Geographical Area Description (GAD)"

3 Definitions and abbreviations

Abbreviations used in the present document are listed in GSM 01.04, GSM 03.71 and 3G TS 23.171.

The following terms are used in the present document:

- **MS**, Mobile Station. The present document makes no distinction between MS and UE.

4 Network initiated location services operations

4.1 Location Notification

4.1.1 Normal operation

The network invokes a location notification procedure by sending a REGISTER message containing a LCS-LocationNotification invoke component to the MS. This may be sent either to request verification for MT-LR or to

notify about already authorized MT-LR.

In case of privacy verification the MS shall respond to the request by sending a RELEASE COMPLETE message containing the mobile subscriber's response in a return result component (figure 4.1).

If the timer expires in the network before any response from the MS (e.g. due to no response from the user), the network shall interpret this by applying the default treatment defined in GSM 03.71 for GSM and TS 23.171 for UMTS (i.e. disallow location if barred by subscription and allow location if allowed by subscription).

In the case of location notification no response is required from the MS, the MS shall terminate the dialogue by sending a RELEASE COMPLETE message containing a LocationNotification return result.

If the MS is unable to process the request received from the network, it shall return an error indication by sending a RELEASE COMPLETE message containing a return error component. Error values are specified in 3G TS 24.080

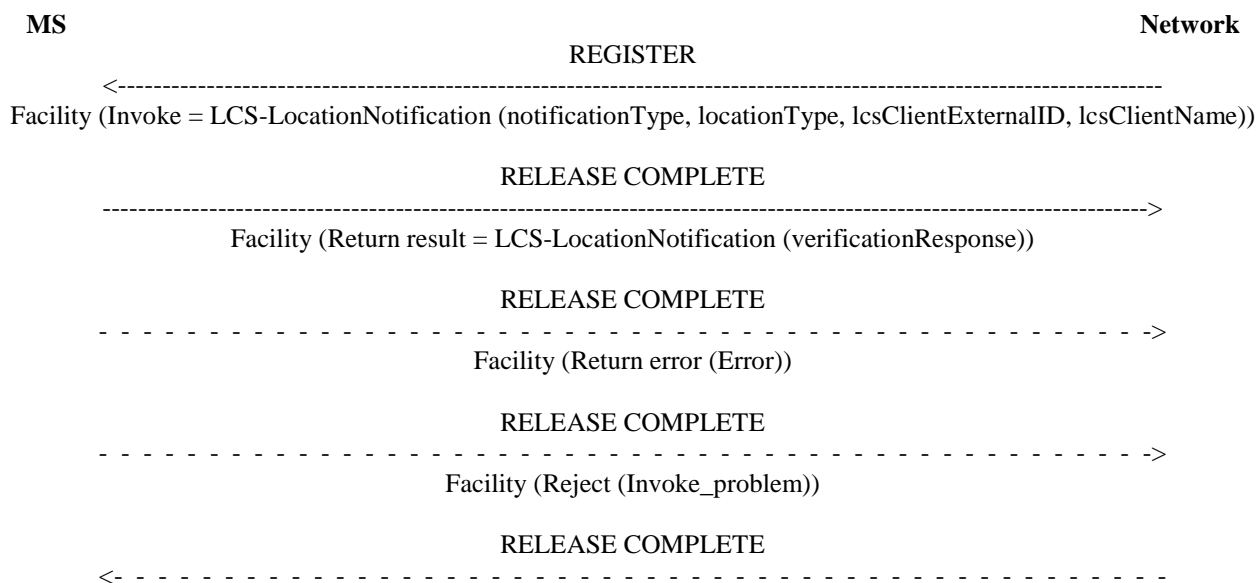


Figure 4.1: Location Notification

5 Mobile initiated location services operations

5.1 Mobile Originated Location Request (MO-LR)

5.1.1 Normal operation

The MS invokes a MO-LR by sending a REGISTER message to the network containing a LCS-MOLR invoke component. In UMTS, the gpsAssistanceData and deCIPHERINGKeys shall not be used as values of molr-Type parameter.

The receiving network entity shall initiate the handling of location request in the network. The network shall pass the result of the location procedure to the MS by sending a FACILITY message to the MS containing a LCS-MOLR return result component.

The network shall pass the result of the location procedure to the MS only if the location estimate is given in a format that the MS supports, as indicated by either the presence (and content) or the absence of the parameter supportedGADShapes, which may be sent by the MS in the LCS-MOLR operation.

The MS may terminate the dialogue by sending a RELEASE COMPLETE message in the case of single location request (see figure 5.1). The MS may also initiate another location request operation by sending a FACILITY message to the network containing a LCS-MOLR invoke component (see figure 5.2). After the last location request operation the MS shall terminate the dialogue by sending a RELEASE COMPLETE message.

If the network is unable to successfully fulfil the request received from the MS (e.g. to provide a location estimate or location assistance information), it shall clear the transaction by sending a RELEASE COMPLETE message containing a return error component. Error values are specified in 3G TS 24.080. The network shall pass the result of the location procedure to the MS only if the location estimate is given in a format that the MS supports, as indicated by either the presence (and content) or the absence of the parameter supportedGADShapes, which may be sent by the MS in the LCS-MOLR operation.

If the network has returned a result to the MS in a FACILITY message but, after some PLMN administered time period has elapsed, has not received either a new location request operation in a FACILITY message or a RELEASE COMPLETE message from the MS, the network may clear the transaction by sending a RELEASE COMPLETE message.

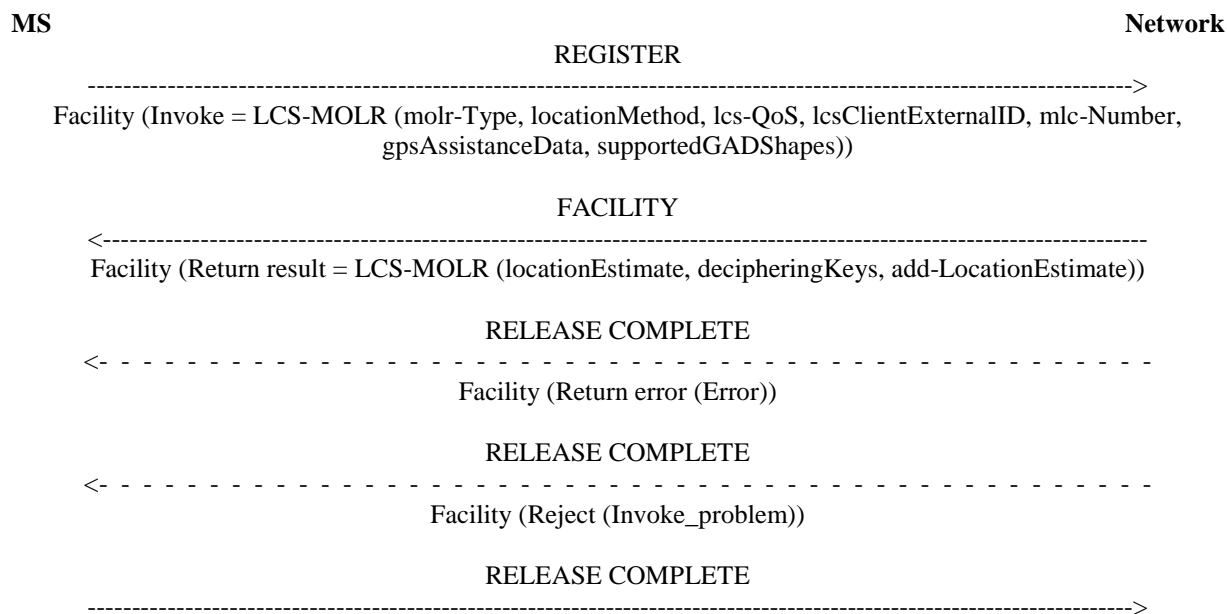


Figure 5.1: Single mobile originated location request

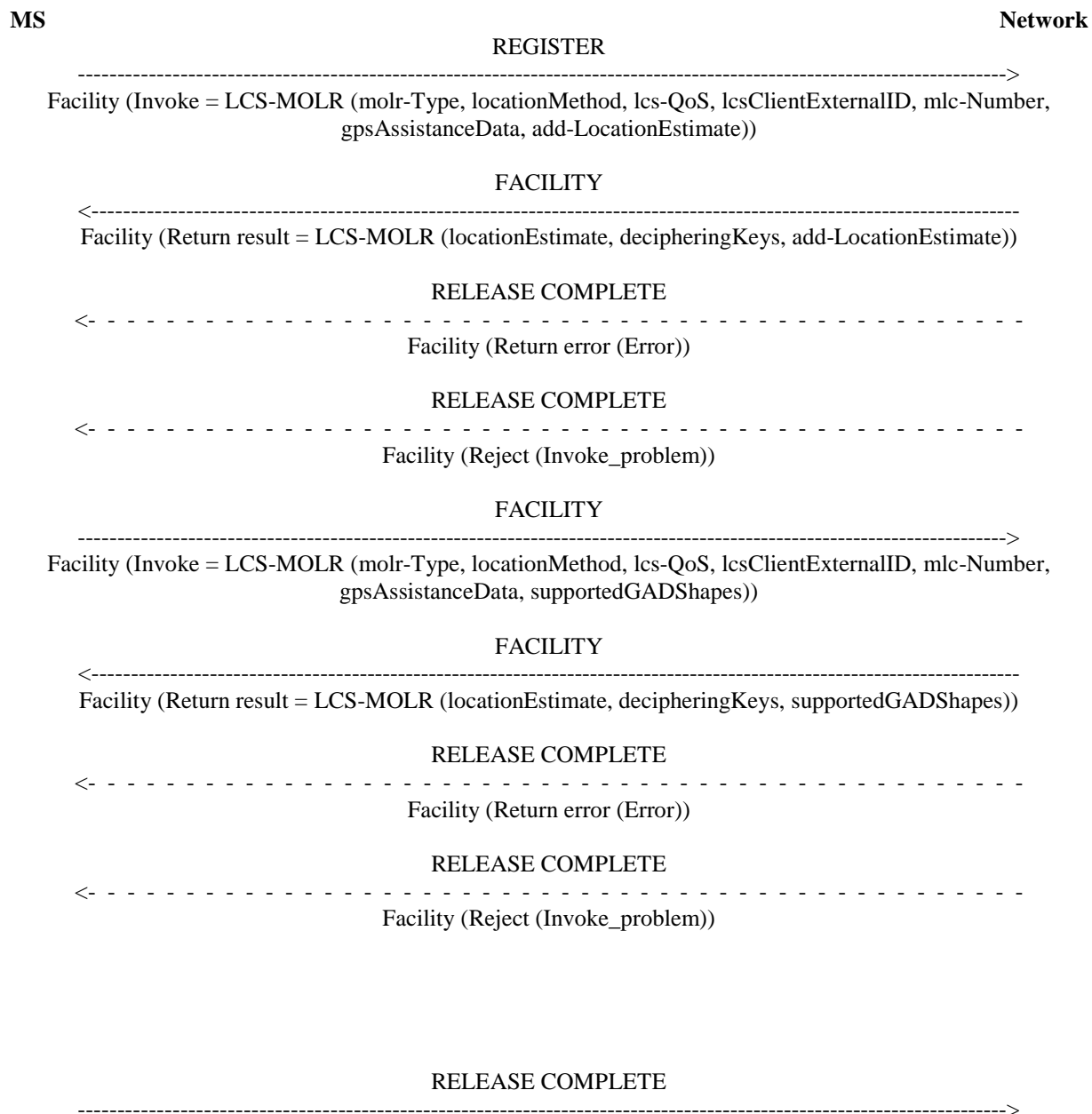


Figure 5.2: Multiple mobile originated location requests

Annex A (informative): Change History

Change history						
Meeting#	Spec	Version	CR	<Phase>	New Version	Subject/Comment
CN#07	24.030	-	-	R99	3.0.0	04.30 v7.1.0 - Transferred to 3GPP
CN#08	24.030	3.0.0	001r1	R99	3.1.0	Clarifications on GSM vs. UMTS specific parts
CN#08	24.030	3.0.0	002	R99	3.1.0	Correction of MO-LR procedure for LCS
CN#12	24.030	3.1.0	004	R99	3.2.0	Handle new parameters in LCS-MOLR

History

Document history		
V3.0.0	April 2000	Publication
V3.1.0	June 2000	Publication
V3.2.0	June 2001	Publication