

# PT SMG

Permanent

Document

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**Digital cellular telecommunications system (Phase 2+);  
Project scheduling and open issues:  
CAMEL  
(GSM 10.78 version 1.6.0)**

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## 1 Scope

The purpose of this document is to describe the schedules of the Customize Applications for Mobile network Enhanced Logic (CAMEL) standardization process for its second phase. The scope of the work on CAMEL phase 2 is to enhance the capabilities offered with CAMEL phase 1 (Release '96). This document is also meant to describe open issues that are under discussion and the relevant technical decisions which are taken during the specification process. A comprehensive project plan forms the integral part of this document.

CAMEL "phase 2" will be based on the release '96 versions of GSM 02.78, 03.78 and 09.78

This document is a 'living document' and permanently updated by PT SMG. Proposals for change shall be forwarded to PT SMG, where the latest version can be obtained any time. The CAMEL specification rapporteurs should make sure that this document can always reflect the latest status of work.

### 1.1 References

- [1] GSM 02.78: "Digital cellular telecommunication system; Stage 1 Service Description of CAMEL phase 1".
- [2] GSM 03.78: "Digital cellular telecommunication system; Stage 2 Service Description of CAMEL"
- [3] GSM 09.78: "Digital cellular telecommunication system; Stage 3 CAMEL Application Part (CAP)".

### 1.2 CAMEL Release '96

The list of specifications and change requests that were approved at SMG#21/ SMG#22 and specify the CAMEL '96 workitem is contained in ANNEX D.

## 2 General Considerations for CAMEL phase 2:

### 2.1 Decisions at SMG

#### 2.1.1 SMG#21(See Tdoc SMG 237/97):

1. It is agreed to aim at a CAMEL Phase 2 package in Release 1997. All necessary activities should be started immediately.
2. SMG1 is asked to agree on a sufficiently attractive set of features in the meeting 10-15.-3.97.
3. SMG1 and 3 should elaborate a project plan. Tdoc SMG 186/97 should be considered.
4. SMG#22 will review the feature package and project plan of CAMEL Phase 2.
5. The CAMEL Application Part for CAMEL Phase 2 will be produced by SMG3. SPS will be invited to participate in the SMG3 work.
6. During the NA/SMG/SPS meeting of 7 March, the best way of co-operation with SPS3 should be discussed and agreed.

#### 2.1.2 SMG#22

1. The CAMEL workplan as contained in 10.78 version 0.2.0 was agreed.
2. A draft subcontract for a delta specification to be created by TC SPS was agreed as a basis for forthcoming negotiations and is contained in Tdoc 496/97. The subcontract was subsequently signed by the TC chairman of SPS and SMG.

#### 2.1.3 SMG#23

1. All GSM specifications of Release 97 shall be written in a way that R97 workitems are explicitly shown. A pure R96 version shall be maintained as well.

**2.1.4 SMG#24**

1. The documentation for CAMEL is agreed as follows: CAMEL phase 2 (Release 97) is documented in 02.78 v. 5.x.y, explicitly showing stage 1 phase 2 enhancements. CAMEL phase 2 stage 2 and 3 will be documented in separate specifications 03.78v6.x.y and 09.78 v. 6.x.y. The MAP protocol v.4 (Release 97) is described in GSM 09.02 v. 6.x.y.

**2.2 Co-operation with ETSI TC-STC SPS3:**

Close working contact with SPS3 should be maintained by inviting SPS3 experts to SMG3 WPC meetings which deal with CAMEL. SMG3 WPC decisions should be specifically conveyed to SPS3 by liaison statements. Joint meetings are planned to review ongoing work in both groups, SPS3 and SMG3WPC.

The co-operation with SPS3 (especially CTM group) should assure compatibility of CAMEL phase 2 with IN CS-1 and CS-2.

Subcontracting for CAMEL phase 2: See also section 2.1.2.

**2.3 Support tools for specification work**

ETSI FTP Server (docboc.etsi.fr or docbox.etsi.org):  
 SMG3 WPC meeting reports, most input and all output documents in ../SMG/SMG3\_p/wpc/ .  
 SMG1 meeting reports in ../SMG/SMG1/

Email distribution list: SMG3\_WPC\_CAMEL (Subscription for contributors from SMG1, SMG3 and SPS3)

**3 Requirements on CAMEL phase 2:**

Responsible body: SMG STC SMG1. The list of high level requirements is contained in ANNEX A.1 and has emerged from the following meetings:

- SMG1 meeting, 04 - 08.11.96, Bournemouth
- Joint SMG1 - SMG3 WPC meeting, 04.03.97, Sophia Antipolis. The decisions in detail can be found in the meeting report Tdoc SMG3 97C152.
- SMG1 meeting, 10 - 15.03.97, Madrid, (Agreed by SMG1 without change)
- SMG1 ad hoc on CAMEL, 22-23.04, Tampere: The following feature was tentatively accepted as part of CAMEL phase2 subject to approval by SMG1 and SMG3 or SMG#22: SS invocation notification.
- SMG#22 endorsed the Annex A1 including "SS invocation notification".

The features not considered for CAMEL phase 2 in Release '97 are moved to the Annex A.2 (Issues for later phases of CAMEL)

**3.1 Charging Requirements**

Responsible Body: MoU SERG, CAGE2+

	Contact person		
	Ms. Sophie FREY, SFR		
	Mr. Michael CLAYTON, GSM MoU		

**4 Deliverables on CAMEL phase 2**

**4.1 CAMEL ph2 service definition (stage 1), GSM 02.78**

Responsible body: SMG STC SMG1

	Title: GSM 02.78 5.3.0 CAMEL phase 1 and 2 , stage 1	presented for information at	CR approved at
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<i>Working Version Draft GSM 02.78v5.3.0</i>	Rapporteur/Company Mr. Stefan Kleier, MMO	SMG#22	SMG#23
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The list of outstanding issues is contained in ANNEX B.1  
The list of important decisions is contained in ANNEX B.2

#### 4.2 CAMEL ph2 service descriptions (stage 2), GSM 03.78 / GSM 03.18

Responsible body: SMG3 WPC

CR No. <b>03.78 A008</b>	Title: CAMEL stage 2	presented for information at SMG#	CR approved at SMG#
Final Version A008R8	Rapporteur/Company Mr. Noel CRESPI, FT	target: SMG#23 presented: SMG#24	target: SMG#24 target (rev1): SMG#25 presented: SMG#25

GSM No. <b>03.18A014</b>	Title: Introduction of CAMEL phase 2 into BCH Rapporteur/Company Mr. PARK, Vodafone	-	CR approved at SMG#  target: SMG#24 target (rev1): SMG#25 presented: SMG#25
Final Version A014R3			

The list of outstanding issues is contained in ANNEX B.3  
The list of important decisions is contained in ANNEX B.4

#### 4.3 CAMEL ph2 service descriptions (stage 3), GSM 09.78, GSM 09.02

##### 4.3.1 Responsible body SMG3 WPC

CR No. <b>09.78 A014</b>	Title: CAMEL Application Part (CAP) stage 3	-	CR approved at SMG#
Final Version A014r5	Rapporteur/Company Mr. Paul MARTLEW, Ericsson	-	target: SMG#24 target (rev1): SMG#25 presented: SMG#25

The list of outstanding issues is contained in ANNEX B.3 and 5  
The list of important decisions is contained in ANNEX B.4 and 6

CR No. <b>09.02 A111</b>	Title: Mobile Application Part (MAP), stage 3	-	CR approved at SMG#
Final Version - A111r4	Rapporteur/Company Ms. Paul MARTLEW, Ericsson	-	target: SMG#24 target (rev1): SMG#25 presented: SMG#25

The list of outstanding issues is contained in ANNEX B.7  
The list of important decisions is contained in ANNEX B.8

Other CRs to be drafted:

CR No.	Title: Introduction of CAMEL phase 2	-	CR approved at SMG# target (rev1): SMG#25
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<b>03.08A010</b>	Rapporteur/Company		presented: SMG#25
Final Version - A010r3	Mr. BAILEY, Vodafone for Cell ID in PSI, Ms. LANTELME (Alcatel) if other changes are needed.		
<b>03.02</b>	Update of GSM Architecture description No rapporteur yet.	-	-

### 4.3.2 Responsible body SPS3

To be identified for CAMEL phase 2. CAMEL phase 1 documents:

DRAFT DEN/SPS-03052-1 V.0.8.0 (1997-09-22)

DRAFT DEN/SPS-03052-2 V.0.9.0 (1997-09-22)

## 5 Project Plan for CAMEL phase 2

### 5.1 Scope of SMG meetings on CAMEL phase 2

	Date	Meeting	Scope	[expected] Input	[expected]Output
1	10-14.02.97	SMG#21	Approve Release '96		CAMEL ph1 approved as release '96 Framework for CAMEL ph2
2	04.03.97	Joint SMG1-SMG3 WPC	Assessment of specification efforts for list of requirements	List of CAMEL phase 2 requirements	Reduced set of CAMEL phase 2 requirements.
3	03-06.03.97	SMG3 WPC	Work on basic stage 2 issues Projectplan		[ ] Projectplan and preliminary scope of CAMEL ph 2 agreed in SMG3 WPC.
4	10-14.03.97	SMG1	Agree Requirements Agree Work plan	[Consolidated list of requirements after joint SMG1 -3] GSM 10.78 for project planning/tracking	[Stable list of requirements for CAMEL ph 2, workplan agreed, Framework for stage 1]: Scope of CAMEL ph2 frozen, 10.78v0.0.0 accepted, Stage 1 started, rapporteur nominated.
5	28.03.97	Joint SPS-SMG3WPC	Present and discuss CAMEL ph 2 requirements	[1.Consolidated list of requirements for CAMEL ph2]:1	[Comments on technical realization of requirements ] 1. LS to SPS2 on SSN
6	22.04.97	Not confirmed: Joint SMG1, SMG3 - MoU CAGE2+	If the joint meeting with CAGE2+ takes place, SMG3 issues can be discussed as well.	cancelled	-
	22-23.04.97	SMG1 ad hoc on CAMEL	Work on stage 1 description	[1.Consolidated list of requirements for CAMEL ph2 2. First Output of MoU CAGE2+ on Charging Requirements 3. Framework for stage 1] 1. Available, 2. Not available, 3. available	[First draft of stage 1 service description] 1. First draft version 02.xx V0.0.x.
7	28.04.-02.05.97-	SMG3 WPC	Work on stage 2 issues	[1.First draft of stage 1 service description] 1. available	[1. Comments on stage 1 first draft 2. Framework for stage 2] 1. Comments made, see annex 2. Not started. See annex.
20	28-30.04.97	SPS3 ad hoc CTM	Consider SMG Charging Requirements, CTM	[1. CAGE2+ Charging Requirements 1st output]1. Not available	
8	09-13.06.97	SMG#22	Final Agreement on workplan.	[Provide PT 10.78] Tdoc 380/97	PT 10.78 v.0.2.0 endorsed includ. Timeplan and feature list.
9	10-11.06.97	Joint SMG1-SMG3WPC	Full mandate for clarification of aspects for shared interest, finalisation stage 1	[1. Draft of stage 1 2. Final Output from CAGE2+] 1. Available, 2. Only unofficial information available/outstanding,-	[Stable draft of stage 1]: Stage 1 draft not fully stable; some refinement still needed in SMG1

				this may lead to extra requirements to be solved.	
	12-13.06.97	SMG 3 WPC	Review outstanding documents		[Framework for stage 2] Framework available, some principle solutions outstanding.
10	23-27.06.97	SMG1 (1.D CAMEL session)	Approval of stage 1	[Stable draft of stage 1]: Final output from CAGE2+, LS from SMG3 WPC	[SMG1 approved stage 1 of CAMEL ph 2]: CR to stage 1 approved
11	23-27.06.97	SMG3 WPC	Work on stage 2 issues, agree first draft	[1. Framework of stage 2 2. SMG1 approved stage 1, 3. Comments from SMG#22, 4. Comments from SMG1]1. Available, 2. Last but one version available, 4. None	[1. First draft of stage 2, 2. Framework for CAP, MAP]: 1. Available, Not available
19	08-09.07.97	Joint SPS - SMG3WPC meeting	Align technical solutions for charging, new DP Nrc	[1. CR to CAMEL ph1, LS from WPC on NotReachableDP, AC/ACR	LS to SMG3 WPC
12	19-21.08.97	SMG3 WPC ad hoc on CAMEL	Agree all technical solutions	[1. Draft stage 2, 2. First draft stage 3 CAP]	[Stable stage 2, draft stage 3]: Outstanding issues on stage 2. CAP not available
13	09.09.97	Joint SMG1-SMG3WPC	"option pruning" if needed	[Final stage 1, Stable stage 2]; Final stage 1; Comments from SPS3	Some areas of stage 1 need alignment with stage 2. LS to SMG1. Editorial changes to stage 1 CR.
14	08-12.09.97	SMG3 WPC	editorial finalisation of stage 2		[Final stage 2] Some outstanding issues stage 2. Working assumptions.
21	01.10.97	Joint SPS - SMG3WPC meeting	Align technical solutions	[LS from SMG3 WPC]	
15	13-17.10.97	SMG#23	Approval of stage 1 CR	CR 02.78 A013 is agreed.	GSM 02.78 v.5.2.0 comprising CAMEL phase 1 and phase 2
16	21-22.10.97	SMG3 WPC ad hoc on CAMEL	Work on stage 3, stage 2, send 09.78 to SPS3	GSM 02.78 v. 5.2.0	[CR CAP stable, MAP CR stable]: Both documents presented for the first time
22	03-07.11.97	SMG3 WPC	Finalize work on stage 2, stage 3; send 09.78 to SPS3	LS from SMG1 on outstanding items, draft GSM 02.78 v. 5.3.0	[Final stage 2] Still some outstanding issues, no review of stage 2, stage3 reviewed first time
17	01-02.12.97	SMG3 WPC (during SMG3)	Finalize CAP and MAP CRs	dto.	[Forward CR on CAP and MAP for SMG3 approval. CRs STC approved.] CR on stage 2 for information, no CAP or MAP CR.
18	15-19.12.97	SMG#24	Approve content of release '97	CR on stage 2 for information (CR 03.78A008r8)	
23	26-30.01.98	SMG WPC ad hoc on CAMEL	Resolve all outstanding items	latest drafts	
24	16-20.02.98	SMG3 WPC	Final review of all CAMEL phase 2 output	latest drafts	[CRs to 03.18, 03.78, 09.78, 09.02]: All CRs ready
25	24-26.02.98	SMG3	STC approval	CRs to 03.18, 03.78, 09.78, 09.02	SMG3 Approved.
26	16-21.03.97	SMG#25	TC approval of CRs, finalization of Workitem	CRs to 03.18, 03.78, 09.78, 09.02 presented.	[CAMEL phase 2 approved]
			Resolve interworking issues with CCBS		

## 5.2 Major Milestones for CAMEL phase 2 (within SMG)

	Planned Date	Milestone	Status	Completed Date
1	12.3.97	agreed scope for phase 2 in SMG1 and SMG3	Scope frozen at SMG1 ✓	(14.03.97).
2	17.4.97	first draft of stage 1 available	First draft of stage 1 available ✓	(23.04.97)
3	10.6..97	final charging requirements available from CAGE+	Final output available	(27.06.97)
4	27.6.97	stage 1 approved by SMG1	CR to Stage 1 CAMEL ph2 approved ✗	(17.10.97)
5	27.6.97	first draft of stage 2 available	First draft CR to stage 2 available ✓	(27.06.97)
6	11.8.97	first draft of stage 3 available	First draft CR to 09.78 ✗	(09.09.97)
7	21.8.97	technical solutions agreed within SMG3	See outstanding issues ✗	

8	01.10.97	stage 2 approved by SMG3	Approved ✖	(25/02/97)
9	28.11.97	stage 3 and MAP changes approved by SMG3	Approved ✖	(25/02/97)
10	15.12.97	approval of stage1, 2, 3 and MAP changes by TC	Presented for Approval ✖	(20/03/97)

For the most detailed representation of milestones refer to ANNEX C.





## ANNEX A.1 Overview of CAMEL phase 1 and phase 2 Features

	IN- CS1	CAMEL phase 1	CAMEL phase 2
Protocol Operations (see table A.1):	29	7 CAP 1 MAP	22 CAP 6 MAP
<b>Trigger Detection points:</b>		2	2
Subscriber information Trigger criteria		O-CSI, T-CSI One CSE per subscriber	+U-CSI, UG-CSI, SS-SCI +Trigger criteria MO (dialled number, basic service group, call forwarded) and MT (Basic service group)
Call related Detection Points		MO: 3 MT: 3	MO: 8 MT: 7 +Calling party abandon +no answer +not reachable +busy +routeSelectFailure
Call unrelated Detection Points		-	-
<b>Specialized Resources</b>		-	+ some Assist procedures: Access to SRFs on another entity (e.g. in HPLMN), Access to facilities on another SSP + support of Special Resource Function: Announcement insertion and in-band audio signal injection, optionally via another SSP, HPLMN controlled announcements
Fraud control		-	+ SS Invocation notification (MPTY, CT, CD): Control and monitoring of subscriber initiation.
Call unrelated CSE interaction		+ Any time interrogation + Reporting of Geographical data + Reporting of Subscriber state (idle, busy, Nreach)	+ Support of USSD communication between MS and gsmSCF. +Cell Id in geographical data: Gives VLR the option to return a stored cell ID in response to a request for location information.
Call related CSE interaction		+ Call Setup + Suppression of Announcements and tones for MT calls +Support of CalledPartyBCD number +Geographical data +Call reference number	+ Follow-on call + Support of alerting categories downloaded from SCF: SSF relays the alerting pattern from the CSE to the HLR
Charging Features			+ Support of online charging using AoC for Mobile originated calls. + Inclusion of free format information received from the CSE into CAMEL specific charging records. + Support of additional call related information sent to the gsmSCF + Application of charge limits by downloading of maximum call duration timers, tariff switch timers to MSC. Playing of tone 30s before call duration expiry. Provision of precise timestamps and timezone information.
Interworking with other GSM services		+ Support of CLIP for SPNP	+ Support for forwarded-to-numbers in SPNP or other short number format by CAMEL supporting VLRs.
CAMEL capability handling		-	+ VLR indication of supported CAMEL capability



Table A.1 Protocol Operations in CAMEL (ASEs)

No.	ETSI Core INAP CS-1 operation	Direction	Applicability	
			CAMEL phase 1	CAMEL phase 2
1	initialDP	gsmSSF → gsmSCF	X	X
2	assistRequestInstructions	gsmSRF → gsmSCF		X
3	establishTemporaryConnection	gsmSCF → gsmSSF		X
4	disconnectForwardConnection	gsmSCF → gsmSSF		X
5	connectToResource	gsmSCF → gsmSSF		X
6	connect	gsmSCF → gsmSSF	X	X
7	releaseCall	gsmSCF → gsmSSF	X	X
8	eventReportBCSM	gsmSSF → gsmSCF	X	X
9	requestReportBCSMEvent	gsmSCF → gsmSSF	X	X
10	eventNotificationCharging			
11	requestNotificationChargingEvent			
12	collectInformation			
13	continue	gsmSCF → gsmSSF	X	X
14	initiateCallAttempt			
15	resetTimer	gsmSCF → gsmSSF		X
16	furnishChargingInformation	gsmSCF → gsmSSF		X
17	applyChargingReport	gsmSSF → gsmSCF		X
18	applyCharging	gsmSCF → gsmSSF		X
19	callGap			
20	serviceFilteringResponse			
21	activateServiceFiltering			
22	callInformationReport	gsmSSF → gsmSCF		X
23	callInformationRequest	gsmSCF → gsmSSF		X
24	sendChargingInformation	gsmSCF → gsmSSF		X
25	specializedResourceReport	gsmSRF → gsmSCF		X
26	playAnnouncement	gsmSCF → gsmSRF		X
27	promptAndCollectUserInformation	gsmSCF → gsmSRF		X
28	cancel	gsmSCF → gsmSRF		X
29	activityTest	gsmSCF → gsmSSF	X	X
	<b>GSM MAP operation</b>			
1	AnyTimeInterrogation	gsmSCF → HLR	X	
2	Unstructured SS Request	gsmSCF → HLR		X
3	Unstructured SS Notify	gsmSCF → HLR		X
4	Process Unstructured SS Data	HLR → gsmSCF		X
5	processUnstructuredSS-Request	HLR → gsmSCF		X
6	SSinvokationNotification	MSC → gsmSSF		X

## ANNEX A.2 List of proposals removed from the CAMEL phase 2 (possibly considered for later phases)

<u>CAMEL Feature</u>	<u>Justification/Service Examples</u>	<u>Priority (1=very important, 4=not important)</u>	<u>Discussion</u>
<b>Specialised Resources</b>			
<b>Charging Features</b>			
<b>New Call Related DPs</b>			
Notification to CSE of handover	Control of handover for non-radio reasons.	Summary: No interest -> 4	
CSE control of handover DP	Control of handover for non-radio reasons.	Summary: No interest -> 4	
Mid-Call DP for user invocation of supplementary services.	On-line charging of supplementary service invocation.	Summary: High interest -> 2. Further study is suggested.	
<b>Non-call related DPs</b>			
Notification to CSE on Attach/detach	Personal Number "Intelligent" call routing	Summary: High interest -> 2	
CSE control of network processing of Attach/detach		Summary: No interest -> 4	
Notification to CSE on Location Update	Monitoring of user location. Information services.	Summary: High interest -> 2	
CSE control of network processing of Location Update		Summary: No interest -> 4	
Notification to CSE on User initiated call independent supplementary service activities (registration, erasure, activation, deactivation and interrogation)	On-line charging of supplementary service operations. Control and monitoring of subscriber control of supplementary services.	Summary: Medium interest -> 3	It was commented that this information is known at the HLR. Insofar the HLR could directly notify the CSE. On the other hand the CSE/HLR interface is not subject for standardisation yet. SMG1 is of the opinion that this interface should be standardised.
CSE control of network processing of call independent supplementary service activities (registration, erasure, activation, deactivation and interrogation)	Management of interactions between GSM supplementary services and CAMEL services.	Summary: Medium interest -> 3	Same as above.
Downloading thresholds on number of call independent supplementary service operations by a user.	Alternative implementation of fraud control. May be more efficient than notifying the CSE on each event.	Summary: No interest -> 4	Siemens feels that there are some more suitable methods to offer the functionality requested in contrast to Vodafone, who recommends to use this feature for fraud control.
Notification to CSE on sending or receiving a Short Message	On-line charging of Short Messages	Summary: For further study	It was argued that some other methods for charging SMS are in place.
<b>Miscellaneous</b>			
CSE initiated calls	Information services. Wake-up calls	Summary: For further study, a better description of the	It has to be clarified for what network entity, at the home or visited network, the call triggered by the CSE shall be set-up. Further ideas were

	Provision of charging information to subscriber.	functionality needs to be provided.	presented within Tdoc 447, highlighting VoiceMail applications.
Per-call CSE suppression of GSM supplementary services (especially call forwarding)	Management of interactions between GSM supplementary services and CAMEL services. Executive or operator override of call forwarding and call barring.	Summary: For further study	Tdoc 477
Transmission of the IMEI to the CSE	Compilation of statistics on mobile station usage, probably useful also to run CSE/MS dialogues based on type of MS the subscriber is using.	Summary: Medium interest -> 3	
CS-2 call party handling	Allows the IN node to establish new call legs in a flexible manner, remove parties from a call, control the cross connects between various parties..	Summary: For further study	See Tdoc 447
Active Location information retrieval	Gives the gsmSCF and HLR the option of requesting the VMSC to page the subscriber to retrieve his/her location (e.g. cell ID) at that time, thereby ensuring that the information is accurate. This would be useful when the subscribers roaming to countries which have a long periodic update time set.	Summary: Medium interest -> 3	See Tdoc 447
Multiple SCF's	Download multiple SCF addresses, with a set of criteria for each one - e.g. contact gsmSCF1 first, then contact gsmSCF2 if called number = xxxx.	Summary: For further study, although it seems to be useful.	More studies are required in order to elaborate in a better manner the actual functional requirements. See Tdoc 447

## ANNEX B Lists of Outstanding Issues and technical decisions for CAMEL ph2

### B.1 List of outstanding issues for CAMEL, stage 1

Item	Status	Subject	[Solution]   [/ Due party/ due date]
9706-1	closed	Clarify interworking with AoC SS. HLR subscription for AoC (C/I) needed or excluded? See LS from SMG3 WPC (97C372 and 97C519).	Joint SMG1/3 meeting: See stage 2 decisions. The stage 1 should be aligned with the working assumption in stage 2. Due to a misunderstanding the wrong working assumption is currently stated in the stage 1.
9711-1	closed	SMG3 WPC requests alignment of terminology with call period instead of call segment to avoid confusion with IN terminology	CR forwarded by SMG1.

### B.2 List of major decisions for CAMEL, stage 1

9704	Agreed	Conditions for contact with CSE/ Trigger criteria:	New chapter 5 included
9704	Agreed	Calling party abandon MO, MT:	New chapter 6.2 , 7.2 included
9704	Agreed	Unsuccessful call establishment MO, MT:	New chapter 6.3 , 7.3 included
9704	Agreed	In-band user interaction, Announcement and tones insertion, Voice prompting and information collection, Subscriber interaction USSD	New chapter 9 included
9704	Agreed	CSE controlled e-parameters, Support of additional charging info to the CSE,	New chapter 10 included
9704	Agreed	CSE control of call duration	New chapter 10.4 included.
9706	Agreed	Standalone notification with restriction to ECT, CD, MPTY.	
9709	Agreed	Interaction of CAMEL with barring services (See Tdoc 451)	Due to the complexity there should be no attempt to fulfill other service requirements on the interworking with SS barring. Rather, the gsmSCF must take care on service access restrictions.
9711	Agreed	Interworking with AoC: Subscription of the SS AoC is needed for CSE controlled e parameters	
9711	Agreed	Playing of tone prior to CSE forced release due to maximum call duration timer expiry	
9711	Agreed	Timer value in case of the DP of O/T_no_answer controlled by the CSE	

## B.3 List of outstanding issues for CAMEL, stage 2 and stage 3

Item	Status	Subject	[Solution]   [/ Due party/ due date]
9706-4	closed	Criteria based triggering: The impact on volume of subscriber data has to be assessed wrt the size of the number list.	The item was closed as no party raised concerns with the agreed concept.
9709-1	closed	SMG3 to investigate whether for conditional EDPs "no answer" and "not reachable" the EDPs trigger before the corresponding GSM conditional call forwarding service is invoked. If this can not be achieved, change to stage 1 necessary.	It was clarified that it can not be achieved to trigger the terminating DPs before the GSM conditional call forwardings are invoked. LS 98c065 written to SMG1.
9710-2	closed	<p>CR 09.78 A0: The following items need further study:</p> <ul style="list-style-type: none"> <li>- SSN needs further discussion.</li> <li>- Values (no of announcements, etc. ) are proposed. Those have to be checked and confirmed by SMG3 WPC.</li> <li>- The operation CallInformationRequest is provisionally included. It is not yet shown in the stage 2 but would be needed to send additional charging information.</li> <li>- SpecializedResourceReport: Delegates are asked to consider the use of this operation.</li> <li>- Module name for CS-2 data types to be confirmed.</li> <li>- It is a matter for stage 2 whether or not functional support of some parameters is mandatory. These are: ipRoutingAddress in CTRarg, correlationID and scfID in ETCarg,</li> <li>- It was suggested to partition the iPSSPCapabilities in a private and a standardized part. Delegates are asked to consider what needs to go in the standardized bit. There was concern with putting too much information into the parameter (such as language information) due to the length limitation.</li> <li>- PAarg: Start of announcement report was found to be a useful feature in case requests for announcements are queued and start only delayed. Should this be added ? A contribution is required in order to introduce that feature.</li> </ul> <p>Common data types:</p> <ul style="list-style-type: none"> <li>- AChBillingChargingCharacteristics: There is tentatively a parameter chargingStartEvent introduced determining when the charging starts. This proposal is accepted.</li> </ul>	next meeting/ all WPC.
9711-1	closed	Due to the acceptance of short codes as FTN it is most likely that the stage2 call forwarding description has to be adapted.	SMG3 WPB, see LS SMG1 tdoc 97-518
9711-2	closed	It was suggested that the bothwayThroughConnection indicator should be set to 'BothwayThroughConnectionRequired' by the CSE, to avoid the MSC on which the assisting SSF resides having to check whether the IAM it received came from another PLMN by performing number checks and send ANM if necessary.	There was concern at not being able to charge international announcements. On the other hand, as a result also announcements in the network cause ANM. There is a contribution on the issue in Tdoc SMG3 98C016.
9711-3	closed	Off-line enquiry with SPS3 will be performed in order to find out whether Annex A of 09.78 needs updating	Mr. MARTLEW/next meeting/ the annex was updated.
9711-4	closed	As a working assumption, a loop prevention mechanism is not based on provisions	SMG1 to study the issue. It was agreed that a mechanism is out of scope of



		made in CAMEL stage 2 or 3 descriptions. Further study needed.	CAMEL phase 2 and that the service logic is best suited to cater for loop prevention.
9711-5	closed	PSI returning cell ID	Editors of CR 09.02, 03.18 to incorporate changes as in document 97C540. Mr. Bailey or Ms. Lantelme to represent CR 03.08 .
9712-1	closed	The following documents need to be discussed: 650, 651, Review 03.78 from page 97 onwards	
9712-2	closed	The preliminary agreement on the tone before call duration timer expiry to be confirmed: 425 Hz, 200 - 500 ms on, 30 s before release.	A final agreement was found
9803-1	open	Interaction of CCBS with CAMEL phase 2 has to be resolved. Impact on basic call handling is expected. The CCBS CR to GSM 03.18 can not be incorporated until the issues are resolved.	Until SMG#26
9803-1	open	The specification of subscriber call records at the MSC and SSF for CAMEL phase 2 is outstanding. Final requirements from CAGE2+ need to be sent to SMG6	Until SMG#26

#### B.4 List of major technical decisions for CAMEL, stage 2 and stage 3

9703-1	working assumption (9705)	SRF Support in CAMEL Phase 2 :	Concept is focus on the SCF and initiating SSP with regard to the IN dialogue and the ISUP support needed. Completing both steps is realistic and desirable for CAMEL phase 2. First step: Route to SRF - ETC - DFC (This is mandatory for CAMEL phase 2 SSF in order to allow routing back to the SRF in the roaming case.) Second step: SRF Operations or Assist SSF Operations: - ARI, - PA, - PC, -CTR (CTR needed for both configurations, 'Assisting SSP' and 'Initiating SSF with SRF capabilities' (optional configuration) Not included: - option e): hand-off case , - charging operations to SRF/ Assist SSF
9703-2	agreed	Multiple SCFs	Multiple SCFs are not supported, even in the context of dedicated gsmSCF to fraud prevention
9706-1	agreed	Technical solution for USSD transfer to CSE	Support of USSD as described in 97C203, making use of the gsmSCF to HLR interface and a subset of the GSM standard USSD strings that are relayed to the HLR.
9706-2	agreed		SSF will transfer to "wait for instruction" state after expiry of call segment duration timer.
9706-3	agreed in principle	Charging operations	Compromise Proposal: Use ApplyCharging/ApplyChargingReport operations. Charging operations/call duration limits is now concluded. SDL in tdoc 97C480 are agreed.
9706-4	agreed	Triggering Criteria	Use explicit transfer of triggering criteria in the CSI as the only solution (Option 1 of 97C186) Coding for basic service criteria is agreed
9706b-1	agreed	Charging for SRF connections	SCF shall decide case by case whether charging for Initial announcement should be applied or not. Call duration supervision shall apply to chargeable connections to IP.
9706b-2	agreed	Technical solution for SS invocation notification to gsmSCF	See Tdoc 97C368. Technical solution challenged in 9709 but withdrawn 9710.
9706b-3	agreed	Interaction between CAMEL and CF	For CAMEL O-CSI subscribers the HLR will not convert the CF number at registration time but store the subscriber entered format. However, an HPLMN shall send only E.164 numbers to PLMNs not supporting CAMEL.
9707-1	agreed	Charging operations	SendChargingInformation operation is used to transport e-parameters.
9709-1	agreed	UCS-I	The USSD Camel Subscription Information is not standardised subscriber specific but left open to operators as it is internal to the HLR. Informative text is given in GSM 03.78.
9709-2	agreed	Interaction of gsmSCF controlled e-parameters and AoC SS.	Option 1: CSE parameters will overwrite and the ones stored in the MSC and disable the SS AoC procedure. However, there is also a timing issue at the beginning of the call. It should be stated that the e-parameters should be

			<p>sent before Answer, so that the CSE parameters arrive before the MSC steps in. option 2: Subscription to AoC SS and CAMEL based AoC are mutually exclusive.</p> <p>SMG1 decided in 9711 that option 1 in Tdoc SMG3 97c519 is chosen, with extra addition that the GSM AoC subscription is a precondition to send CAI received from the CSE towards the subscriber. The working assumption of SMG3 was changed as a result: CAI received from the gsmSCF shall be used to replace the CAI information which would be generated in the MSC by the GSM AoC SS. All other processing is in accordance with the GSM SS AoC. Only one type of e-parameters to be used. If the MSC based parameters are suppressed as soon as SCF base parameters are supplied. A health warning that the e-parameters from the SCI should be sent immediately when the call is triggered in order to operate without MSC intervention is to be included to GSM 03.78.</p>
9709-3	agreed	Support of 'Follow - on Call' feature	The support of the follow -on feature is agreed for MO and MT calls, provided that the additional functionality does not delay delivery of CAMEL phase 2. See tdoc 97C493. Certain restrictions in control of charging for user interaction of follow -on calls are accepted in 9712.
9709-4	agreed	Trigger Criteria	Trigger criteria will be supported in the terminating case. The only trigger criteria applicable is the Basic Service group. See Tdoc 494.
9710-1	agreed	CAMEL capability and protocol version handling	<p>On capability handling:</p> <ul style="list-style-type: none"> <li>- The HLR will explicitly indicate the supported CAMEL version per SCF to the VLR or GMSC.</li> <li>- Although not stated in the stage 1 description, the HLR can take the following action if it determines that the VLR or GMSC does not support CAMEL: ODB, network specific handling e.g. roaming restrictions, normal call handling.</li> <li>- The functional capability handling between the SCF and SSF is linked one to one with the protocol for CAMEL phase 1 and phase 2.</li> </ul>
9710-2	agreed	Non specified CAMEL phase 2 capabilities	If an element in a message corresponds to a function for which there is no clear requirement for mandatory support in the stage 1 description, the protocol support is mandatory but the response to the entity requesting the function shall return a user error.
9710-3	agreed	Expiry of call duration timer, sending of a tone	<p>Tdoc 97c527 was agreed. There is a parameter specifying the time before expiry of the call duration timer and subsequent call release when the tone (GSM 02.40 repertoire) to the calling party is to be sent.</p> <p>In 9712 it was agreed that the tone is specified as a mandatory event but the parameters are not sent via CAP but timer and tone characteristics administered in the MSC and triggered by the last AC message. This was decided due to major concerns of manufacturers.</p> <p>It is clarified that an announcement after release of the call cannot be played. (The stage 1 description is open to interpretation in this respect)</p>
9711-1	agreed	IPSSP capability	The parameter IPSSPCapabilities is optional in the initialDP message. The presence or absence of this parameter indicates whether or not an IP is attached and available. IPSSP Capability parameter consists of a standardised and an operator specific part with extension mechanism.
9711-2	agreed	SCF to SRF interface:	It is agreed that 03.78 will include a 'delta' type of specification for the behaviour of the SRF with regard to CS-1 Core INAP.
9711-3	agreed	Call records and free format charging information	<p>Follow -on calls result in distinct logical call records, each limited to 40 bytes of free-format information</p> <p>The last FCI for a connection configuration overwrites the information being sent before for that connection configuration, leaving the SCF being responsible in tracking what was sent before.</p> <p>Logical call records may be concatenated into a single physical call record.</p> <p>In 9712 this assumption was amended with the LegId introduced as a correlation of the logical call record instead of the connection configuration.</p>

			In 9801 it was further clarified that the FCI triggered call records are CAMEL specific and separate from the MSC call records. It was assumed that it was possible to link CAMEL call records to the MSC call record without requiring correlation.
9711-4	agreed	General USSD -CAMEL Subscription information	Informative text will describe the G-CSI which will allow the HLR to relay USSD for CAMEL subscribers to the CSE independent from subscriber specific U-CSI.
9711-5	agreed	Precise Timestamp	The initialDP will include the timestamp including the timezone. The coding is agreed in 9712 as a single IE with 4 digit year encoding.
9711-6	agreed	Cell ID	A PSI message requesting location information from VPLMN shall return the stored cell id (if available).
9712-1	agreed	Compatibility mechanism for CAMEL phase 2	The version of CAP used by the gsmSSF is linked to the supported CSI. The subscription information supported by the VLR and GMSC is negotiated with the HLR.
9712-2	agreed	Alerting patterns	The alerting pattern workitem is supported by CAMEL phase 2. The gsmSSF is required to relay alerting patterns from the CSE to the HLR.
9701-1	agreed	Calling party abandon: Charging	If the A party has abandoned the call, there is no way of charging that party by the SCF charging procedures. It therefore seems that the service requirement can not be satisfied. It is agreed that Abandon is specified as an EDP-N.
9701-2	agreed	ETC - both way through connection required	It is agreed that the initiating MSC shall require the ANM from an gsmIP and the assisting gsmSSF. If the ANM is not received, the process is timed out on protocol level. This shall be explicitly stated in the GSM 03.78 as a 'health warning' for operation of CS-1 IPs with CAMEL. The underlying assumption is that proper charging can only be achieved if ANM is received.
9701-3	Agreed	CAMEL capability information	The CAMEL capability information is not received during the location update, because this procedure was conceptually not yet used for the sort of information. A deviation from CAMEL phase 1 was found not justified, although there are advantages for the LU solution from a signalling and data processing efficiency point of view.
9701-2	agreed	Expiry of call duration timer, sending of a tone (2)	Tone characteristics: triple cycle 200ms on/off, 900 Hz, 30s before end of the call. It is agreed that the T-BCSM sends the tone to the terminating party while the O-BCSM sends the tone to the originating party. This decision should reflect into the text, i.e. Tone parameter is applicable for MO and MT case. The information element shall be absent if the call is not going to be released.
9701-2	agreed	Mapping of ISUP to CAP	It was agreed not to change the mapping of the generic number parameter as requested by SPS1. The SMG1 service requirements for the SCE being able to determine the line identity presented to a called party is fulfilled by the current mapping of CAMEL phase 1 and 2.
9701-2	agreed	Use of SSN for MAP in SCE	When an entity in a remote network needs to address an SCCP message to the MAP application in the SCF the SCCP address shall not include an SSN. Different global titles shall be used to address the MAP application and the CAP application in the gsm SCF. An SSN shall be derived from the MAP GT in the destination network; this SSN is not standardized.



## ANNEX D

## D.1 Workitem Change History of CAMEL phase 1 (Release '96)

SMG#	TDoc	SPEC	VERS	CR	RE V	PHA SE	CA T	SUBJECT	NEW_VERS
S20	579/96	02.78	5.0.0	A001		2+	C	Information elements between IPLMN/VPLMN and CSE	5.1.0
S20	579/96	02.78	5.0.0	A002	1	2+	D	Editorial changes	5.1.0
S20	579/96	02.78	5.0.0	A003		2+	C	Changing CLIR indication by the CSE	5.1.0
S20	579/96	02.78	5.0.0	A004	1	2+	C	CSE initiated call termination	5.1.0
S20	579/96	02.78	5.0.0	A005		2+	C	Interaction of CAMEL and Call Forwarding	5.1.0
S20	579/96	02.78	5.0.0	A006		2+	C	Subscriber Status	5.1.0
S20	579/96	02.78	5.0.0	A007		2+	D	Editorial change for inclusion of CAMEL charging information	5.1.0
S20	579/96	02.78	5.0.0	A008		2+	D	Ambiguity of the current stage 1	5.1.0
S20	579/96	02.78	5.0.0	A009		2+	D	Information provided about the served subscriber	5.1.0
s21	286/97	02.78	5.1.0	A010		2+	D	Clarification of CAMEL interaction with CLIP	5.1.1
s21	047/97	03.08	5.0.0	A005	1	2+	B	Modifications due to introduction of CAMEL ph1	5.1.0
s21	047/97	03.16	5.0.0	A005	1	2+	B	Modifications due to introduction of CAMEL ph1	5.1.0
s21	048/97	03.78	2.0.0	NEW		2+		CAMEL phase 1 (stage 2)	5.0.0
s21	047/97	09.02	5.4.0	A061	6	2+	B	Modification of MAP due to CAMEL ph 1	5.5.0
s21	049/97	09.78	2.0.0	NEW		2+		CAMEL Application Part phase1 (stage 3), Annex B only electronic format	5.0.0
s22	313/97	02.78	5.1.1	A011		2+	D	Camel Phase 1 on Time and Location	5.2.0
s22	303/97	02.78	5.1.1	A012		2+	C	Camel Phase 1 Called digits * and # to be transported to CSE	5.2.0
s22	377/97	03.78	5.0.0	A001	1	2+	C	CallingPartyNumber in Connect	5.1.0
s22	377/97	03.78	5.0.0	A002	1	2+	C	MSC Id for Call Reference Number	5.1.0
s22	377/97	03.78	5.0.0	A004	1	2+	C	Introduction of value 'not Provided from VLR' in subscriber state	5.1.0
s22	377/97	03.78	5.0.0	A005	1	2+	D	Setting of Location Number	5.1.0
s22	377/97	03.78	5.0.0	A006	1	2+	D	Clarification on handling of Connect and Continue operations	5.1.0
s22	303/97	03.78	5.0.0	A007		2+	C	Change to CAMEL phase 1 regarding * and # in Called Party Number	5.1.0
s22	376/97	09.02	5.5.0	A074		2+	F	Any Time Interrogation process description in HLR	5.6.0
s22	376/97	09.02	5.5.0	A075	1	2+	F	Alignment with CAMEL specs. 03.78 and 09.78	5.6.0
s22	376/97	09.02	5.5.0	A078		2+	F	New Maximum value for Age of Loc. Info	5.6.0
s22	374/97	09.78	5.0.0	A001	1	2+	C	CallingPartyNumber in Connect	5.1.0
s22	374/97	09.78	5.0.0	A002	1	2+	F	Description of Connect message	5.1.0
s22	374/97	09.78	5.0.0	A003		2+	C	MSC Id for Call Reference Number	5.1.0
s22	374/97	09.78	5.0.0	A004	1	2+	F	Coding of ISUP_ACM message	5.1.0
s22	374/97	09.78	5.0.0	A005		2+	F	Use of SSN for inter-plmn signalling	5.1.0
s22	374/97	09.78	5.0.0	A006		2+	F	Correction of references	5.1.0
s22	374/97	09.78	5.0.0	A007		2+	F	Range constants for address strings	5.1.0
s22	374/97	09.78	5.0.0	A008		2+	C	Mapping of CAP Generic Number to ISUP.	5.1.0
s22	374/97	09.78	5.0.0	A009	1	2+	F	Alignment of text in two sections	5.1.0
s22	374/97	09.78	5.0.0	A010		2+	D	SCCP addressing for CAP	5.1.0
s22	303/97	09.78	5.0.0	A011		2+	C	Change to CAMEL phase 1 regarding * and # in Called Party Number	5.1.0
s23	97-705	03.32	2.0.0	new		R96		Universal Geographical Area Description (GAD)	5.0.0
s23	97-688	03.78	5.1.0	A003	3	R96	F	Alignment with stage 3 specifications (09.78 and 09.02) and clarifications	5.2.0
s23	97-688	03.78	5.1.0	A010		R96	F	Alignment subscriber status in CAMEL with MAP	5.2.0
s23	97-688	09.02	5.6.0	A102		R96	F	SSN reservation for CAP	5.7.0
s23	97-688	09.78	5.1.0	A013	1	R96	D	Modifications resulting from comments by SPS3	5.2.0
s23	97-688	09.78	5.1.0	A015		R96	F	Called Party BCD number with initial DP operation	5.2.0
s23	97-688	09.78	5.1.0	A016		R96	D	Removal of the informative Annex B	5.2.0
s23	97-688	09.78	5.1.0	A018		R96	F	Alignment with stage 2	5.2.0
s23	97-686	12.05	4.3.0	A021		R96	B	incorporation of CAMEL	5.0.0
s24	97-977	02.78	5.3.0	A014		R97	B	changes are purely editorial and apply to both, CAMEL R96 and R97, and result from re-organisation of the previous text or editorial improvements.No technical changes to the CAMEL phase 1	5.4.0

s24	97-915	03.18	5.2.0	A012		R96	F	Interaction between OR of late call forwarding & CAMEL	5.3.0
s24	97-913	03.78	5.2.0	A009	4	R96	D	Concentration of description of core call handling functions in 03.18, Changes to ease the documentation of new services	5.3.0
s24	97-915	03.78	5.2.0	A011		R96	F	Removal of CallingPartyNumber from Connect	5.3.0
s24	97-915	03.78	5.2.0	A013		R96	F	Removal of the CalledPartyNumber for MO calls from IDP	5.3.0
s24	97-915	03.78	5.2.0	A014	1	R96	F	Use of the CallReference Number & GMSC address in SRI	5.3.0
s24	97-1045	03.81	4.6.0	A004	3	2	F	Handling of number parameters related to the line identification services	4.7.0
s24	97-1045	03.81	5.0.0	A005	1	R96	A	Handling of number parameters related to the line identification services	5.1.0
s24	97-915	09.02	5.7.0	A112		R96	F	Correction due to GAD	5.8.0
s24	97-915	09.78	5.2.0	A019		R96	F	Removal of CallingPartyNumber from Connect	5.3.0
s24	97-915	09.78	5.2.0	A020		R96	F	Removal of the transparent mode monitoring	5.3.0
s24	97-915	09.78	5.2.0	A021		R96	F	Update the SCCP class requirements in 09.78	5.3.0
s24	97-915	09.78	5.2.0	A022		R96	F	Remove mapping of CalledPartyBCD number and order sequence in ASN.1	5.3.0

## D.2 Workitem Change History of CAMEL phase 2 (Release '97)

SMG#	TDoc	SPEC	VERS	CR	RE V	PHA SE	CA T	SUBJECT	NEW_VERS
s23	97-652	02.78	5.2.1	A013	4	R97	B	Camel Phase 2 and Camel Phase 1	5.3.0

Annex E Subcontracting AGREEMENT for CAMEL phase 2

# ETSI Subcontracting AGREEMENT

Subject Title: Co-operation on CAMEL phase 2

Issuing Technical Body(ies): TC SMG

Accepting Technical Body(ies): TC SPS

Context of the Subcontract: TC SPS is the technical body within ETSI that is responsible for the standardisation of the ETSI core INAP.  
TC SMG is responsible for the specification of the Global System for Mobile Telecommunications (GSM)

Terms of Reference of the subcontract:

1. TC SMG sub-contracts TC SPS for the production of a Delta Specification to CS-1 Core INAP for the CAMEL Application Protocol phase 2 (CAP). The Delta specification shall be based on the GSM 09.78 which specifies the CAMEL phase 2 Application Part and is produced by SMG. The Delta Specification shall be presented for SMG approval after SPS approval. Further, SPS will show the deviation of CAP Phase 2 behaviour from the ITU INAP CS-1 or CS-2 model -if any is identified- by means of SDL diagrams as part of the delta specification.
2. Maintenance of the Delta specification will be provided by changes worked out by SPS either directly or as a consequence of changes in GSM 09.78 . Changes to the delta specification must be approved in SPS (for consistency of INAP) and SMG (for consistency of GSM). These changes will be shown as Change Requests (CR) using the SMG CR procedure.

Expected outputs: 1. Delta Specification to CS-1 Core INAP for CAP phase 2.  
2. SDL diagrams for CAP Phase 2, if necessary.

Expected target date for start of the work: After SMG#23, 17/10/1997

Expected completion dates 11/97: Approval of Delta Specification by SPS  
12/97: Approval of Delta Specification by SMG

(TC approval):

Reference specifications and/or existing documents:

GSM 02.78 CAMEL phase 2 service description stage 1 \*)  
GSM 03.78 CAMEL phase 2 service description stage 2  
GSM 09.78 CAMEL phase 2 Application Part  
ETS 300 374-1 (1994) Intelligent Network Application Protocol (INAP);  
Part 1: Protocol specification  
ITU T Q.1228 (1997) ITU INAP CS-2  
\*) The correct document reference depends on the decision on version management.

Additional remarks (ie. supporting ETSI Member):

A dialogue on the progress of work shall be established between an SPS3 representative and the SMG Projectmanager for SMG3 WPC. The CAMEL phase 2 project plan as contained in GSM 10.78 may serve as a reference for co-ordination of work. In addition to that, SMG as well as SPS delegates are encouraged to attend each other's relevant meetings to align technical solutions as early as possible. Joint meetings of SPS3 WP4 and SMG3 WPC will continue to be organized from time to time for technical discussion of SPS and SMG output.

Signed by:

<p>Representative of Issuing Technical Body F. Hillebrand (Chairman TC SMG)</p>	<p>Representative of Accepting Technical Body D . Kaiser (Chairman TC SPS)</p>
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## History

<b>Document history</b>	
Note: Explicit changes in this document are not shown with revision marks	
08 March 1997	Version 0.0.0
24 March 1997	Version 0.1.0 : List of high level requirements frozen at SMG1 #1/97. Framework stage 1 elaborated, Rapporteur assigned, SMG1 ad hoc moved back by 1 week without impact on milestones, Joint meeting with MoU CAGE2+ planned
27 March 1997	Version 0.1.1 : Editorial corrections. Add and correct SPS3 meeting dates for CTM. Plan for one joint SPS3 SMG3 WPC adhoc.
09 April 1997	Version 0.1.2 : Include MS Project object
07 May 1997	Version 0.2.0: Update after SMG1 ad hoc and SMG3 WPC meeting
10 June 1997	Version 1.0.0: Update after SMG#22 endorsement of content and time plan for CAMEL phase 2
19 June 1997	Version 1.1.0: Update after joint SMG1/3 and SMG3 WPC ad hoc meeting
09 July 1997	Version 1.2.0: Update after SMG1 meeting and SMG3 WPC meeting 23 - 27.06.97 and the joint SMG3 WPC/ SPS3 meeting 09.07.97
10 September 1997	Version 1.3.0 Update after SMG3 WPC ad hoc on CAMEL Oulu, Joint SMG1-SMG3WPC meeting and WPC meeting in Paris
10 October	Version 1.3.2 Editorial update . Presented at SMG#23
22 October	Version 1.4.0 Update after SMG3 WPC ad hoc on CAMEL Grenoble.
02 December	Version 1.5.0 Update after SMG1, SMG3 WPC in Sophia Antipolis and Brentford
10 March	Version 1.6.0 Final update after SMG3 WPC Vienna and Sophia Antipolis. Recommended handling after finalization of CAMEL phase 2: Delete temporary information. Maintain Annex A.1 and Annex D
Rapporteur: Stefan Aprath, ETSI / PT12 (SMG). Email: stefan.aprath@etsi.fr      Ph:+33.4.92 94 4324      Fax:+33.4.93 65 28 17	