Recommendation T/SF 2 (T/CAC 02) (Puerto de la Cruz 1974,
revised in Stockholm 1976 and 1977, in Brussels 1980, in Innsbruck 1981, in Madrid 1991 and in Amsterdam 1991)

SUBSCRIBER CONTROL PROCEDURES FOR SUPPLEMENTARY SERVICES IN MODERN TELECOMMUNICATIONS SYSTEM

Recommendation proposed by the Coordination Group "CAC/BUS"

Text of the Recommendation adopted by the "Commercial Action Committee" (CAC):

"The European Conference of Postal and Telecommunications Administrations,

considering

— Recommendation T/SF 1 E (T/CAC 01 E),

— the user use of the telephone/terminal,

— that the introduction of electronic or semi-electronic telephone exchanges will enable a certain number of new supplementary services to be offered to subscribers,

— that access to these supplementary services will be provided by push-button telephone sets equipped with 12 or 16 push-buttons, according to CCITT Recommendations E.161 and Q.23, and to operate some supplementary services may need the use of a register recall push-button followed by switching orders (SO). This push-button is separate from the 12 or 16 push-buttons and marked with the symbol R,

— that subscribers will be able to control these supplementary services by dialling specific combinations of ★, #, R and digits,

— that non-uniform use of the ★ and # symbols in different countries could give rise to problems in case of intercommunication between two national systems and lead to difficulties for subscribers who travel or move abroad,

— that a simple procedure structure based on considerations which take account of human factors, will encourage customers to greater use of supplementary services, with a minimum of mistakes, and will prevent difficulties for network operators when preparing operating/commercial documentations for subscribers,

— that with respect to new supplementary services, the functions to be implemented by subscribers using push-button telephone sets will be as follows:
- to register a service with/without activation
- to activate a service
- to deactivate a service
- to erase a service
- to interrogate a service in the exchange for:
  — a status check
  — a data check
  — a data request
- to invoke a service, e.g. to set up a call by abbreviated dialling
- to change a registration of a service with/without activation,

recommends

— that, for all operations of the telephone network, a standard subscriber control procedure format should be applied,

— that the subscriber control procedures should contain the following information fields: prefix, service code, separators, supplementary information, suffix. Further supplementary information can follow after one another divided by separators.
The procedure can be illustrated in this way:
P SC ★ SI (★ SI) #

Note. In some cases, the network operators may also be Administrations.

Legend
P Prefix
   The following prefixes are used:
   ★   Registration and activation
   #   Erasure and deactivation
   ★# Interrogation
SC Service code
★ Separators
SI Supplementary information, e.g. the forwarded-to number
(★SI) Further supplementary information
Suffix, the # should always be used as the procedure suffix;

— that, if a 0 is used as the last supplementary information, it means registration without activation or deactivation without erasure,

— that the digits which follow the above procedure prefixes, beginning with the numbers 0 and 2-9, should be reserved for allocation by CEPT for service codes (SC) for supplementary services in modern telecommunication system,

— that the service codes should consist of two, and in exceptional cases, three digits,

— that the service codes used for the services in PSTN-, ISDN- and PLMN-networks should be those shown in Annex 1 to this Recommendation,

— that, for invocation of abbreviated dialling, one of the following procedures should be used:

★★ as a procedure prefix (prefix method)
the procedure suffix # only (suffix method)

— that, in the use of a switching order (SO), only the supplementary information field should be used.

The procedure can be illustrated in this way:
(R) SO

Legend
(R) Register recall, should only be used if there is a technical need for it in the exchange
SO Switching order;

— that the allocation of the switching orders (SO) in shown in Annex 2 to this Recommendation,

— that the protocol for subscriber control procedures is stimulus in the sense that it does not require any knowledge about the controlled supplementary services by the subscriber's terminal,

— that, for the control of supplementary services in exchanges in the ISDN-network, it is possible to use stimulus protocol or to use functional protocol according to CCITT Recommendation Q.932 and I.452. Functional protocol is outside the scope of this Recommendation.

DEFINITIONS

— REGISTRATION

The programming by the subscriber of information to enable subsequent operation of a service. This programming action involves input of specific supplementary information. For certain services the registration procedure may cause activation whilst for others the service may already be in the action phase.

— ACTIVATION

An action taken by either the subscriber of the system to enable a process to run as and when required by the service concerned. The time during which the process is activated is defined as the active phase. During activation, the service will be either "quiescent" or "operative" according to whether or not the system is actually using the service, e.g. to divert a call, to apply call-waiting indication or to establish an alarm call.

— DEACTIVATION

An action taken by either the subscriber of the system to terminate the process started at the activation.

— ERASURE

The deleting by the subscriber or the system of information stored against a particular service by (a) previous registration(s).

— INTERROGATION

The interrogation procedure allows the subscriber, on request, to receive output from the exchange giving information concerning the service data stored relating to his line.

— STATUS CHECK

The interrogation function "Status Check" enables the subscriber to request confirmation of the present status of the desired service. The system returns a standard tone, an announcement (e.g. "the service is activated" or "the service is deactivated") or an other indication.

— DATA CHECK

The interrogation function "Data Check" compares the data input by the subscriber during an interrogation procedure with the information stored in the system. The system returns a standard tone, an announcement (e.g. "Check is positive" or "Check is negative") or an other indication.

— DATA REQUEST

The interrogation function "Data Request" enables the subscriber to obtain conformation of this input data. The system returns an appropriate announcement (e.g. "the time of the alarm call is 06:30") or an other indication.

— INVOCATION

An action either e.g. by the user pressing a specific button or by keying the supplementary code, or automatically by the network or terminal as a result of a particular condition, e.g. a diversion supplementary service registered by the called subscriber.

ABBREVIATIONS

— PSTN   Public Switched Telephone Network
— ISDN   Integrated Service Digital Network
— PLMN   Public Land Mobile Network
— SC   Service Code
— SO   Switching Order
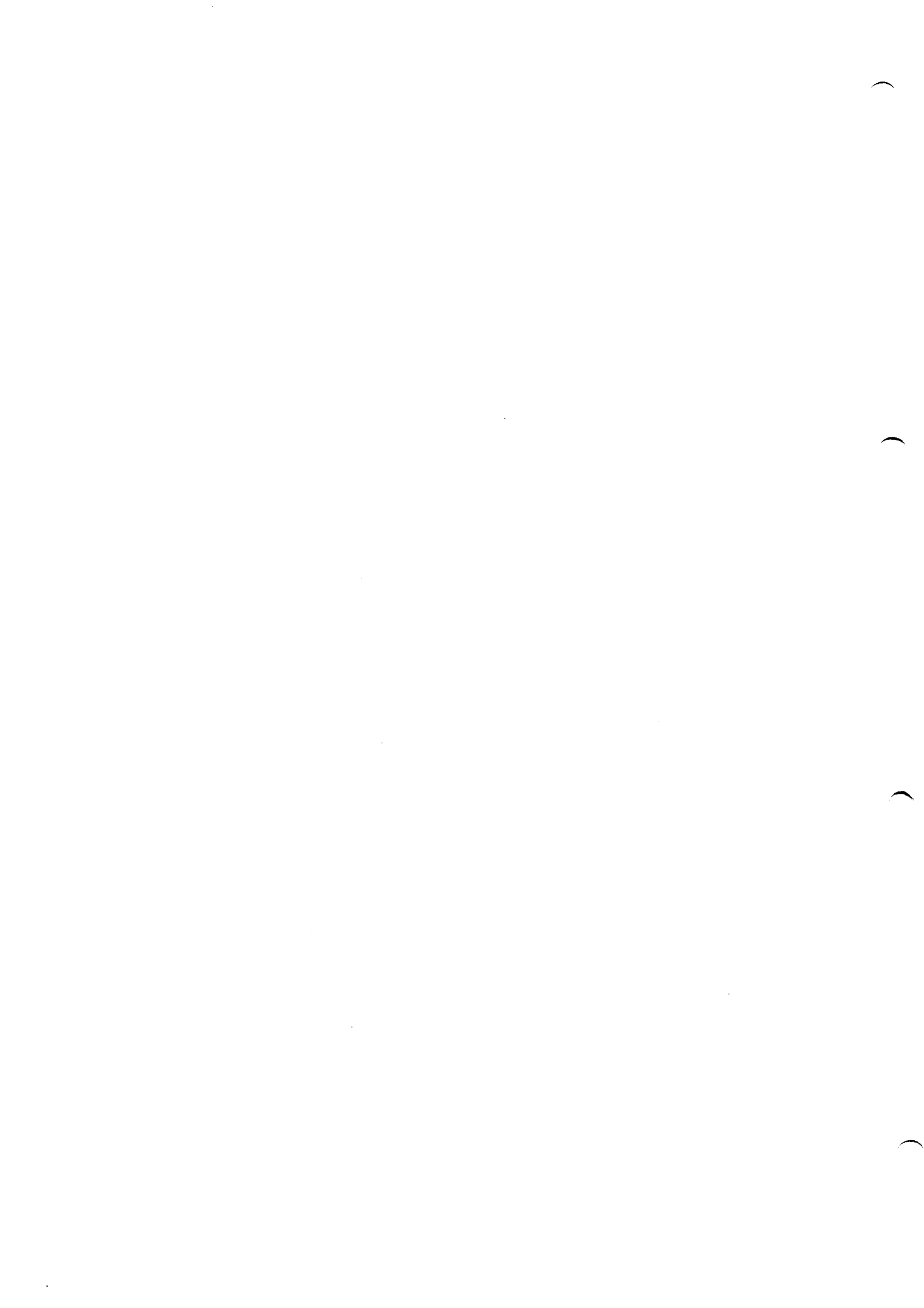— SI   Supplementary information

ANNEX

Annex 1: Allocation of service codes for public network (PSTN, PLMN and ISDN).
Annex 2: Allocation of switching orders for public network (PSTN, PLMN and ISDN).

REFERENCE

CCITT Recommendation E.131 (1988) "Subscriber control procedures for supplementary telephone services".

Annex 1

ALLOCATION OF SERVICE CODES FOR PUBLIC NETWORK (PSTN, PLMN AND ISDN)

Legend:
SF	– Code allocated by WG SF		PROP	– Proposed allocation
BUS	– Code allocated by CAC–BUS		NAT	– For national use
USE	– In use by one or more network operators		P	– Partly
	Not allocated by SF			

Service Code	Status	Service Title	SF–Handbook Public Network Service(s)	T/CAC S 10.5 No.	T/CAC S 10.7 Annex
0	SPARE				
00	SPARE				
001 pre #	SF	General Deactivation of Supplementary Services	14.8	10.2	
001 pre *	SF	General Data or Status Check			
002	SF	General Cancellation of Diversion Services			
01	SF	Closed User Group (CUG)	3.3.1	5.1	6.1
02	SF	Prevent services to this number	4.1.3, 4.1.14		
03	SF	Password registration (GSM)			
04	PROP	Reserved for GSM			
05	PROP	Reserved for GSM			
06	BUS	Remote Controle of Supplementary Services (RC)		10.4	17
07	SPARE				
08	SPARE				
09	SPARE				
10	NAT	For national use			
11	NAT	For national use			
12	NAT	For national use			
13	NAT	For national use			
14	NAT	For national use			
15	NAT	For national use			
16	NAT	For national use			
17	NAT	For national use			
18	NAT	For national use			
19	NAT	For national use			
20	SF	Absent subscriber, Date, Time, Telephone Number	4.1.9., 4.1.10		

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Service Code	Status	Service Title	SF-Handbook Public Network Service(s)	T/CAC S 10.5 No.	T/CAC S 10.7 Annex
21	SF	Absent Subscriber, Immediate diversion to any number Call Forwarding Unconditional (CFU)	4.1.3.	9.1	10.1
210	SF	Selective Diversion	5.2.1		
211	SF	Selective Diversion up to 10 Numbers diverted	5.2.1		
212	SF	Selective Diversion all but 10 Numbers diverted	5.2.1		
22	SF	Absent Subscriber, Immediate diversion to a fixed number Call Forwarding Unconditional (CFU)		9.9	10.5
23	SF	Absent Subscriber, Operator Call Forwarding Unconditional (CFU)	4.1.1, 4.1.4		
24	USE	Absent Subscriber, Announcement Call Forwarding Unconditional (CFU)	4.1.5-4.1.8		
25	USE	Absent Subscriber, One of a Group Call Forwarding Unconditional (CFU)	4.1.2		
26	SF	Do Not Disturb, Announcement	5.1.4, 5.1.9		
27	USE	Do Not Disturb, Operator or Number	5.1.1-5.1.3		
28	SF	Do Not Disturb, Selective to an announcement	5.1.5		
29	USE	Absent Subscriber, Dictated Announcement Call Forwarding Unconditional (CFU)	4.1.11, 4.1.12		
30	BUS	Calling Line Identification Presentation (CLIP)		14.1	5.1
31	SF	Calling Line Identification Restriction (CLIR)		14.2	5.2
32	USE	Digital Connectivity PLMN: Data-MS			
33	SF	Outgoing Call Barring, Subscriber Controlled	3.1.2	5.3	6.2
330	USE	General deactivation of Outgoing Call Barring (GSM)			
331	USE	Outgoing Call Barring, Subscriber Controlled GSM: Withim own home country			
332	USE	Outgoing Call Barring, Subscriber Controlled GSM: To own home country			
34	SF	Outgoing Call Barring, Subscriber Selected	3.1.3		
35	SF	Incoming Call Barring, Subscriber Controlled GSM: All calls	3.2.2	5.2	
351	USE	Incoming Call Barring, Subscriber Controlled GSM: BAIC when roaming			
36	SF	User to User Signalling (UUS)		11.3	21

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Service Code	Status	Service Title	SF-Handbook Public Network Service(s)	T/CAC S 10.5 No.	T/CAC S 10.7 Annex
37	SF	Completion of Calls to Busy Subscriber (CCBS)	6.1.3, 6.1.4	6.2	7
38	SF	Queue Service	6.9.1	6.3	
39	SF	Malicious Call Identification (MCID)	14.2.3, 14.2.6	7.3	13
40	SF	Automatic Announcement, one call	7.2.1-7.2.5		
41	SF	Automatic Annoucement, series of calls	7.2.6		
42	SF	Call Specification, request before call			
43	SF	Call Waiting (CW)	6.4.2-6.4.5	6.1	2
44	SF	Call Forwarding Service, subscriber controled	7.11.2		
45	SF	Printed Charge/Duration Record, all calls	7.3.4, 7.3.5		
	USE	Private Meter Reading			
46	SF	Printed Charge/Duration Record one call	7.3.6-7.3.8		
461	SF	Advice of Charge, Information at Call Setup Time (AOC-S)		3.1	1.1
462	SF	Advice of Charge, Information during the Call (AOC-D), Cumulative		3.2	1.2
463	SF	Advice of Charge, Information during the Call (AOC-D), Incremental		3.2	1.2
464	SF	Advice of Charge, Information at the End of the Call (AOC-E)		3.3	1.3
47	SF	Line Hunting, Inhibit, Reduce	12.2.2, 12.2.3, 12.2.5, 12.2.6	12.2 P	12
48	SPARE				
49	USE	Line Hunting, Switch	12.2.7	12.2 P	
50	USE	Abbreviated Dialling, Packet selection CENTREX: Change in Private Numbering Plan	1.1.3	1.1 P 12.3	
51	SF	Abbreviated Dialling, Registration	1.1.2, 1.1.4	1.1 P	
52	SF	Last Number Repetition	6.2.1, 6.2.2	1.3	
53	SF	Fixed Destination Call	1.2.3	1.2	
54	SF	Repeat Stored Number	6.2.3		
55	SF	Alarm Call, Casual	2.1.3	4.1 P	
56	SF	Alarm CALL, Regular, number of days	2.1.4	4.1 P	
57	USE	Alarm Call, Regular, Programme	2.1.5, 2.1.6	4.1 P	
58	USE	Automatic Booked Call	2.2	4.2	
59	SPARE				

DRAFT

Service Code	Status	Service Title	SF-Handbook Public Network Service(s)	T/CAC S 10.5 No.	T/CAC S 10.7 Annex
60	SF	Override Diversion and Do Not Disturb Services			
61	SF	Diversion on No Reply, Operator or any Number Call Forwarding No Reply (CFNR)	4.1.13, 4.1.15, 4.1.16	9.3	10.3
62	SF	Diversion on No Reply, One of Group	4.1.14		
63	USE	Call Forwarding on No Reply PLMN: To operator			
64	USE	Diversion on No Reply, Dictated Announcement	4.1.23, 4.1.24		
65	SPARE				
66	BUS	Call Deflection		9.4	10.4
67	SF	Diversion on Busy, To any Number Call Forwarding Busy (CFB)	6.3.8	9.2	10.2
68	SF	Diversion on Busy, One of a Group	6.3.4, 6.3.6		
69	USE	Diversion on Busy Number of Sequence	6.3.5, 6.3.7		
70	SF	Predetermined Conference Call	11.2.2	13.7	
71	SF	Conference, Subscriber Number Registration Conference Call, Add-on	11.2.3-11.2.6	13.4	8.1
72	BUS	Meet-me Conference (MMC)		13.5	8.2
73	USE	Automatic Personal Call	6.8		
74	SF	Priority (PRI)	6.5	17.1	16
75	USE	Contact Sensing and Operations			
76	BUS	Connected Line Identification Presentation (COLP)		14.3	5.3
77	BUS	Connected Line Identification Restriction (COLR)		14.4	5.4
78	SF	Transfer Charge Services	7.4, 7.9	8.3	
79	BUS	Terminal Portability (TP)		18.6	19
80	USE	Diversion to Pager			
81	SF	Paging Call	10.3		
82	SF	Page Pick Up	10.2		
83	BUS	Reverse Charging		8.2	
84	SPARE				
85	SPARE				
86	SPARE				
87	USE	Emergency Alarm Service		18.1 P	
88	USE	Emergency Alarm Service		18.1 P	
89	BUS	Sub-Addressing (SUB)		2.3	18

D R A F T

Service Code	Status	Service Title	SF–Handbook Public Network Service(s)	T/CAC S 10.5 No.	T/CAC S 10.7 Annex
90	SF	Time Dependent Control	2.4.1		
91	SF	Distinctive Ringing	14.9.1		
92	SF	Call Return	6.10.1		
921	SF	Call Return activate/deactivate	6.10.1		
93	SF	Selective Incoming Barring	3.2.4	5.2 P	
931	SF	Selective Incoming Barring up to 10 Numbers Barred	3.2.4	5.2 P	
932	SF	Selective Incoming Barring up to 10 Numbers Allowed	3.2.4	5.2 P	
94	BUS	Call Hold (HOLD)		13.1	3
95	BUS	Three Party (3PTY)		13.2	20
96	BUS	Explicit Call Transfer (ECT)		13.3	4.1
97	BUS	Single Step Call Transfer (SCT)		13.3	4.2
98	SPARE				
99	SPARE				

Annex 2

Allocation of Switching Orders for public networks (PSTN, PLMN and ISDN)

Legend:

(R)   Register recall, shall only be used if there is a technically need for it in the network
SF   Allocated by SF
USE   In use by one or more network operators - Not allocated by SF
PROP Proposed allocation

Switching Order	Status	Function	Supplementary Service
(R) 0	SF SF	Terminate held call Reject incomming call	HOLD, 3PTY CW,
(R) 1	SF	Terminate and switch	CW, HOLD, 3PTY
(R) 2	SF	Hold and switch	CW, HOLD, 3PTY
(R) 3	SF	Establish threeparty connection	CW, 3PTY
(R) 4	SF USE	Transfer From threeparty connection, connect C and hold B	CW, 3PTY 3PTY
(R) 5	SF USE	Activate CCBS From threeparty connection, connect C and disconnect B	CCBS 3PTY
(R) 6	USE	From threeparty connection, connect B and hold C	3PTY
(R) 7	USE	From threeparty connection, connect B and disconnect C	3PTY
(R) 8	SF	Terminate actual call	HOLD, 3PTY
(R) 9	BUS	Accept	CFU-S