

MTAS Supplementary Service Codes Management Guide

MTAS

USER GUIDE

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1 Introduction

This document describes how to configure the Supplementary Service Codes (SSC) in the MTAS to enable users to access and control their Supplementary Services by using service code commands.

MTAS supports two kinds of Supplementary Service Code commands:

- System defined SSC commands
- Generic SSC commands

System-defined SSC commands represent SSC definitions having a system defined managed object class per supported Supplementary Service and SSC action. System defined SSC commands are available for a predefined set of Supplementary Services.

Generic SSC commands provide a flexible mechanism to customize definitions of SSC commands without the syntax restriction of system defined SSC commands. Generic SSC commands can be used for all Supplementary Services supported.

This document describes the behaviors of the system defined SSC commands.

For more information about the generic SSC commands, refer to *MTAS Generic Supplementary Service Codes Management Guide*.

1.1 Prerequisites

It is assumed that the user of this document is familiar with the O&M area, in general.

1.1.1 Licenses

To enable basic services in the MTAS, the MMTel AS Voice Base license must be installed.

For more information about the MMTel AS Voice Base license, refer to *MTAS Licenses*.

1.1.2 Documents

Before starting any procedure in this document, ensure that the following documents are available:

- *Ericsson Command-Line Interface User Guide*



- *Managed Object Model (MOM)*

1.1.3

Conditions

The following condition must apply:

- An Ericsson Command-Line Interface (ECLI) session in Exec mode is in progress.



2 Overview

The MTAS SSC service includes several functions that enable users to access and control their Supplementary Services. These functions are as follows:

- Activation
- Deactivation
- Disabling
- Erasure

It is coupled to the deactivation procedure and the decision whether the Erasure is to be performed during the deactivation depends on the node configuration. This specification does not support an independent Erasure request.

- Interrogation

The interrogation process, that according to ETSI 300 738 includes Data Check, Data Request, and Status Check, described in this specification includes Status Check (also called interrogation) and Data Check (called verification) only.

For more information about the Interrogation process, refer to [ETSI 300 738](#).

- Invocation
- Registration

Can be performed either independently or together with the Activation procedure. However, with this specification, the Registration is always performed as a part of the Activation procedure.

- Communication Completion Queue Interrogation
- Communication Completion Queue Revocation

The SSC service is executed at the originating MTAS of the served user only. For most of the Supplementary Service functions, the MTAS acts as a terminating User Agent, except for some Invocation and Disabling where the call continues to the destination specified with the service code command in the Request URI.

With the MTAS, the erasure function is provided as an option together with a service deactivation while the registration function is always performed together with service activation.

The operator adds or removes services from the service data of the user by Provision and Withdrawal.



The service code command is used by the user to request a specific process (function) to be applied to the Supplementary Service, such as; Registration, Erasure, Activation, Deactivation, Invocation, Disabling, and Interrogation.

If there is Invocation or Disabling, a service code command is issued during a call setup phase (when the call is initiated) while for the other Supplementary Service functions the service code command is issued outside a call while the terminal is idle.

Aggregated Activation/Deactivation

MTAS supports the following aggregated activation and deactivation operations on a group of CDIV services. The subscriber only dials a single SSC code to perform the activation or deactivation operation.

- Activate Communication Forwarding Conditional (CFCOND)
- Deactivate Communication Forwarding Conditional (CFCOND)
- Deactivate Communication Diversion All (CFCOND plus CFU)

Note: CFCOND refers to CFB, CFNR, and CFNRc.

2.1 Traffic View

The following steps are common for handling of Supplementary Service code commands in the MTAS:

- Service triggering

The execution of SSC is triggered by an event, in this case an incoming `INVITE` that contains a service code command.
- Service code command evaluation

Includes both validation of the service code command and validation of user rights to perform the requested operation.
- Service Provisioning data handling

Includes both reading and update of the subscriber service data in the Home Subscriber Server (HSS).
- Acknowledgment of the operation

After the operation is completed, SSC informs the user about the operation.
- Charging of the operation

After the operation is successfully completed, SSC informs the Charging Data Function (CDF) about the operation.



The execution of the function is triggered by an initial SIP `INVITE` request whose Request-URI, either in Tel URL or SIP URI format, includes a service code command.

The service code command includes a request to perform a specific operation in respect to the specified service, for example, activate Supplementary Service, deactivate Supplementary Service, interrogate Supplementary Service, or change the PIN.

The function verifies the received command to ensure that both syntax and the data specified in the command are correct according to the configured data. If the specified data is correct, the requested operation specified by the service code is performed and a positive acknowledgment is initiated to the user. This does not apply for some Invocation and Disabling functions where after the successful service code analyses the call continues to the final destination.

Otherwise, if the requested operation cannot be performed, a negative acknowledgment is sent to the user. By default, negative acknowledgment is also sent if validation of the command parameters fails. This can be changed by setting the attribute `mtasSscRejectInvalidServiceCodeCommand` in the *MtasSsc* MO to `false`. When set to `false`, the call continues, even after an unsuccessful service code validation.

The function informs the CDF when an activate Supplementary Service, deactivate Supplementary Service, interrogate Supplementary Service, or modify the PIN operation is successfully executed. Activate Supplementary Service, deactivate Supplementary Service, and modify the PIN operations are considered successful when any service data that needs to be changed has been updated in the HSS. Interrogate Supplementary Service operations are considered successful when an announcement has been connected to the served user.

A simplified traffic view for handling of Supplementary Service code commands in the MTAS for the commands issued outside a call is shown in Figure 1.

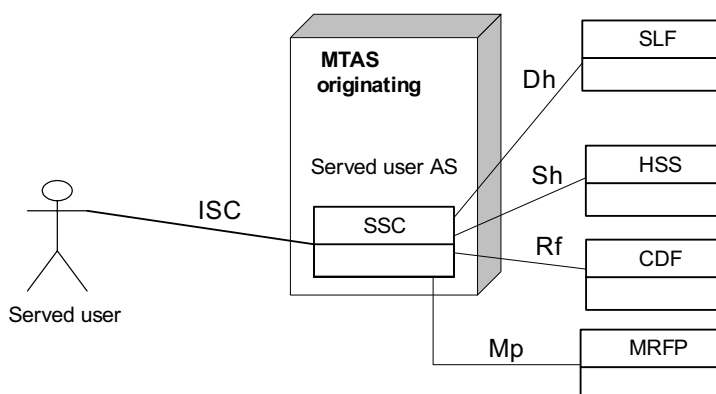


Figure 1 Traffic View for Handling of Supplementary Service Code

2.2 Data Management View

Data management performed by the operator for the SSC service is performed in the following two levels:

- Node level configuration
- Provision Subscriber Service data

Node level configuration is performed by the operator who customizes the SSC function by using managed object attributes specified for the function. For example, this includes configuration of service code command syntax and parameters, administrative state of the function, and voice announcement codes.

Provisioning of subscriber service data is performed by the operator through a Business Support System using the CAI3G protocol and it allows the operator to manage service subscription rules for a subscriber. This, for example, includes definition of whether the service is granted to the subscriber or the initial PIN if necessary.

A simplified view of the interfaces and protocols in relation to the configuration and provisioning of the SSC is shown in Figure 2.

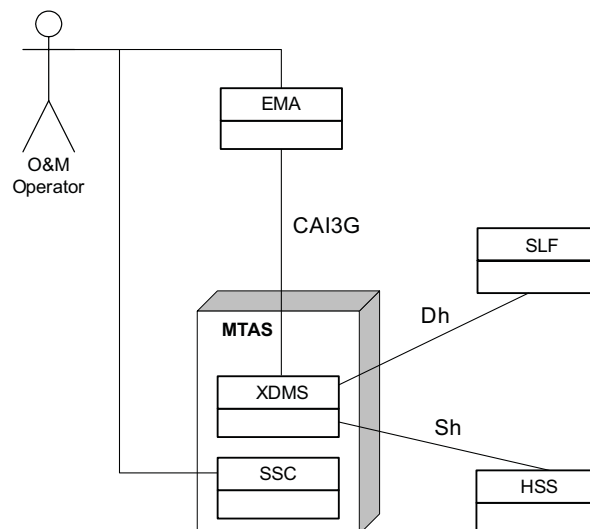


Figure 2 Data Management View for Handling of Supplementary Service Codes

2.3 Subfunctions

The subfunctions included in the SSC service are described in this section.



2.3.1 Reception and Analysis of Service Code Command

This subfunction is responsible for reception and analysis of the service code command. The subfunction is started when an initial SIP `INVITE` request is received and `mtasSscAdministrativeState` is set to 1 (Unlocked). Its first task is to check whether the `INVITE` request contains a service code command.

2.3.2 Read Subscriber Service Data

This subfunction is called whenever the subscriber service data is to be read from the HSS.

2.3.3 PIN Validation

This subfunction is used whenever a supplied PIN is to be validated against the stored data in the HSS. The validation goes through the following steps to validate the user-provided PIN:

1. Provisioned PIN, the number of consecutive SSC commands with faulty PIN and the time for first fault is stored in subscriber data in HSS (pin-failures record). PIN is locked when the fault count (pin-failures cnt) is greater than the configured maximum (`mtasSscMaxTimesFaultyPin`).
 - The PIN failure record (pin-failures) is cleared if the release lock time (`mtasSscReleasePinLockHour`) has occurred since last PIN validation. This unlocks the PIN if it was locked.
 - If PIN is still locked, a PM counter is stepped and PIN validation fails with `PIN locked` reason and announcement.
2. The entered PIN is validated against the PIN stored in the HSS. If the value stored in the HSS is found to be MD5 hashed, then the supplied PIN is MD5 hashed before it is compared to the stored value. If the comparison fails, it will result in a negative acknowledgment with `Wrong PIN` sent to the user and the PIN failure counter is incremented, otherwise the validation continues with the next step.
3. The PIN is compared with the default PIN of the MTAS. This means that if the PIN entered by the user is the same as the MTAS-stored Default PIN, the command is not PIN modification, and the use of Default PIN is not allowed, then the PIN failure counter is incremented and a negative acknowledgment with `Default PIN not allowed` is sent back to the user. Otherwise the PIN failure counter is cleared and the PIN Validation returns with `SUCCESS`.

2.3.4 Update Subscriber Service Data

After successful analysis of the service code command, this subfunction is started to perform update of subscriber service data in the HSS according to the received information in the service code command. For example, changing



of service status from deactivated to activated, or the other way round. The service Data in the HSS can be updated also after a PIN Validation (if it was not done by one of the Supplementary Services) as the count of consecutive failed PIN attempts, and the date or time of the first failed PIN attempt is also stored in the HSS.

Before an update of service data is executed, the version of the service data is checked. If the version is not supported by the MTAS software, the HSS update is rejected and as a consequence the SSC modification is rejected.

2.3.5 Acknowledgment of Operation to the User

When the procedure identified by the service code command is completed successfully, if the node is configured to play the announcement from the MRFP and the received SDP indicates audio, the MTAS initiates a positive announcement from the MRFP to the user. Following that, the MTAS responds to the `INVITE` request with 200 OK and the appropriate performance counter is updated. This does not apply for the procedures that are initiated by Supplementary Service code commands at a call setup phase, for example, Invocation and Disabling of OIR.

However, if the procedure specified by the service code command cannot be completed successfully, the MTAS initiates a negative announcement to the user. In this case MTAS ends the procedure by sending a 4xx/5xx final response to the `INVITE` request. Appropriate performance counter is updated too.

If the service code command corresponds to an interrogation procedure, the MTAS selects the appropriate announcements to convey the requested information to the user (for example, status of the Supplementary Service). Both positive and negative announcements and the interrogation status information are provided in a form of a recorded voice message from the MRFP. Fixed voice announcements are supported only and a separate announcement code is configured for each of them.

2.3.6 Generate Charging Message

This subfunction is called when an activation, deactivation, interrogation, or modify of PIN request is successful. This subfunction is also called when an invocation that does not result in a new communication (for example MCID) is successful. This subfunction is not called for an invocation that could result in a new communication, for example, Abbreviated Dialing. A charging message, containing the identity of the Supplementary Service and the type of action requested, is generated and sent to the Charging Server. The Request-URI (containing the service code command) as received in the `INVITE` request is included in the charging message, however any PIN information within the URI is replaced by zeros.

A request to activate a service that is already activated, or to deactivate a service that is already deactivated, is treated as successful request. Discrete



types of action are included in the charging messages generated in these cases, to allow different charging to be applied if necessary.

If an aggregated SSC command (for example, CFCND) is started successfully, all identities of the Supplementary Services within this aggregated SSC command and their respective type of actions requested, are generated and sent to the online/offline Charging Server.

2.3.7 Continue with Call Setup

This subfunction is involved when processing service code commands initiated during a call setup phase, and in the case where the command reception and analyses subfunction discovers that the “telephone-subscriber”/“userinfo” part of the received URI does not contain any Supplementary Service code command and therefore the processing of the MTAS originating call continues.

Normally, the commands issued during a call setup phase are used to start or disable (suppress) a certain service on a per call basis. The handling of these commands in the MTAS slightly differs compared to the one initiated outside a call.

After the successful service code command analysis, the MTAS will temporarily invoke/disable the requested Supplementary Service for that particular call and then proceed with the processing of the MTAS originating call to the destination specified with the received command (Request URI). In this case, no acknowledgment is sent to the user.

2.4 Interaction with Other Services

This section describes the SSC interaction with other services.

2.4.1 Abbreviated Dialing

The SSC service configures the Abbreviated Dialing service.

For more information about the Abbreviated Dialing service, refer to *MTAS Abbreviated Dialing Management Guide*.

2.4.2 Call Return

The Call Return service saves information about the last incoming call and provides the end user with the possibility to obtain or erase this information using an SSC.

For more information about the Call Return service, refer to *MTAS Call Return Management Guide*.



2.4.3 Communication Barring

The SSC service configures the following Communication Barring (CB) services:

- ACR
- OCB
- DBL
- DNDCB
- MCR

For more information about the CB services, refer to *MTAS Barring and Dial Plan Services Management Guide*.

2.4.4 Communication Completion

The SSC service configures the CC service.

For more information about the CC service, refer to *MTAS Communication Completion Management Guide*.

2.4.5 Communication Diversion

The SSC service configures the following Communication Diversion (CDIV) services:

- CDIVAll
- CFB
- CFBNRVM
- CFBVM
- CFCOND
- CFNL
- CFNLVM
- CFNR
- CFNRc
- CFNRVM
- CFU
- CFUVM



- DNDCF
- DNDCFVM

For more information about the CDIV services, refer to *MTAS Communication Diversion Management Guide*.

2.4.6 Communication Waiting

The SSC service configures the CW service.

For more information about the CW service, refer to *MTAS Communication Waiting Management Guide*.

2.4.7 Explicit Communication Transfer

The SSC service is used for checking the state of outstanding transferred sessions and for the termination of the outstanding transferred sessions.

For more information about the ECT service, refer to *MTAS Explicit Communication Transfer Management Guide*.

2.4.8 Hotline

The Hotline service is an automatic signaling service to a predefined hotline number. The SSC service configures the Hotline service.

For more information about the Hotline service, refer to *MTAS Hotline Service Management Guide*.

2.4.9 Identity Presentation

The SSC service configures the following Identity Presentation services:

- CNIP
 - Activation
 - Deactivation
 - Interrogation
- MSN
- InvocationOIP
 - Activation
 - Deactivation



- Interrogation
- OIR
 - Activation (if not already active) or update of the default behavior of the OIR service (Restricted or Not-restricted), or both, when the user provisioned with the OIR temporary mode.
 - Per call invocation or disabling of Identity Presentation when the user is provisioned with OIR in non-permanent mode (temporary, ad-hoc-temporary-presentation-restricted, or ad-hoc-temporary-presentation-not-restricted modes).
 - Interrogation
- TIP
 - Activation
 - Deactivation
 - Interrogation
- TIR
 - Activation or update of the default behavior of the TIR service (Restricted or Not-restricted), or both, when the user provisioned with the TIR temporary mode.
 - Interrogation
- OCNIP

Originating Calling Name Identity Presentation (OCNIP) is not started if there is redirection to voicemail.

For more information about the Identity Presentation services, refer to *MTAS Identity Presentation Management Guide* and *MTAS Calling Name Identity Presentation Management Guide*.

2.4.10 Malicious Communication Identification

The SSC service configures the MCID service.

For more information about the MCID service, refer to *MTAS Malicious Communication Identification Management Guide*.

2.4.11 Session Transfer to Own Device

The SSC service configures STOD service, Call Pull.



For more information about STOD service, refer to *MTAS Session Transfer to Own Device Management Guide*.

2.4.12 Cell Announcement

The SSC service configures the Cell Announcement service for MTAS.

For more information, refer to *MTAS Cell Announcement Management Guide*.

2.4.13 PriorityService Call

The SSC service configures PriorityService Call for MTAS.

For more information, refer to *MTAS Priority Services Management Guide*.

2.4.14 Number Translation

If there is an overlap between configured system service commands and configured Number Translation rules, the default behavior to send negative acknowledgment to user if validation of SSC command fails has to be disabled. This is done by setting the attribute `mtasSscRejectInvalidServiceCodeCommand` in the *MtasSsc* MO to `false`, in which case the call continues and Number Translation is started.

For more information, refer to *MTAS Number Translation Management Guide*.





3 SSC Configuration

The SSC service of the MTAS is controlled by the *MtasSsc* Managed Object (MO) and its children, each Supplementary Service corresponds to one separate MO. The MO structure of the SSC service is shown in Figure 3.

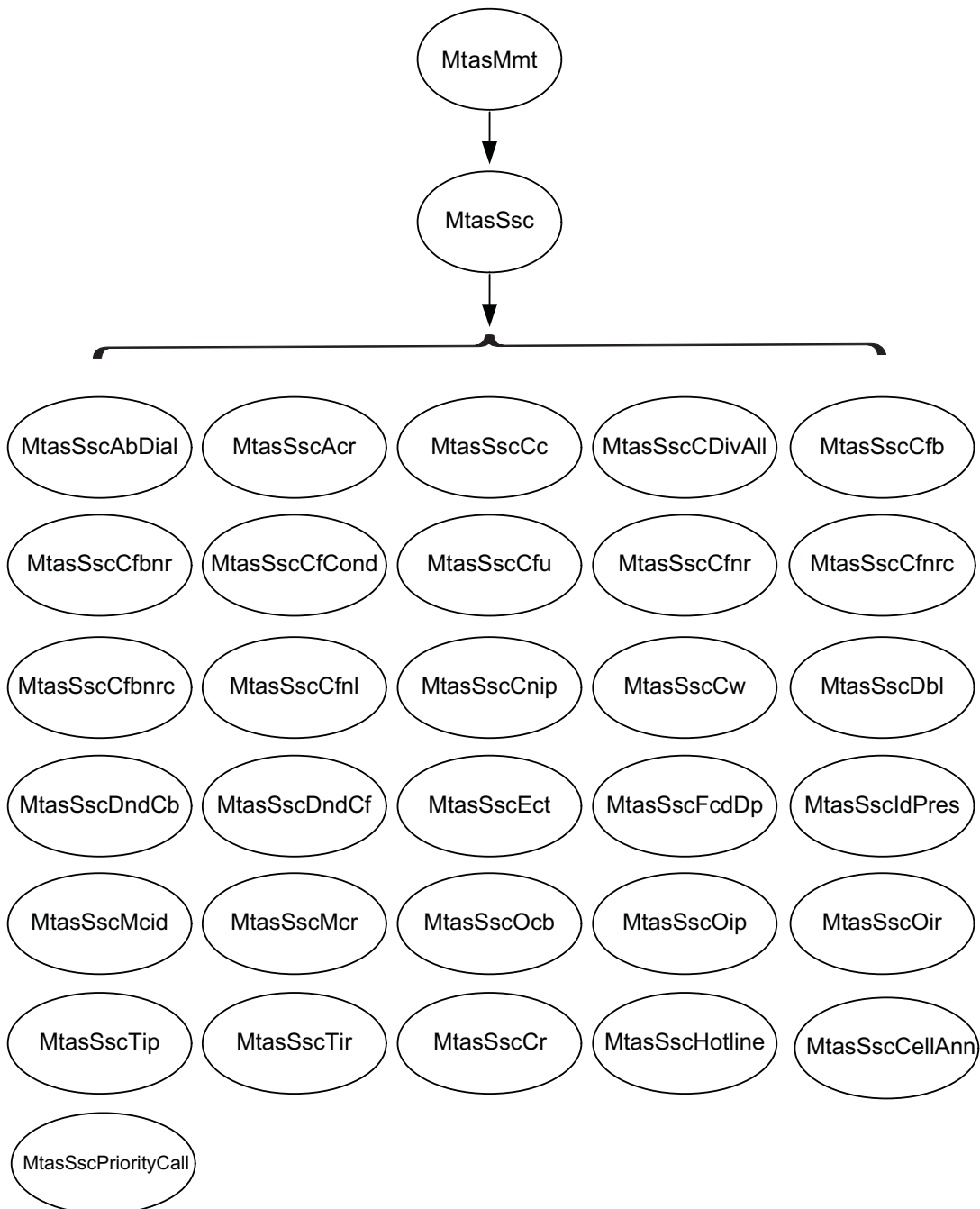


Figure 3 SSC MO Structure

Only attributes that concern supported Supplementary Services must be configured.

For information on Configurable MOs and attributes related to the SSC services, refer to *Managed Object Model (MOM)*.



If the network contains terminals that do not obey section 19.1.6 of [RFC 3261](#) and put numbers in sip: URIs without appending the `user=phone` parameter, user identities in the network must not match any pattern used for SSCs. Typically, this means user identities must not start with a star '*' or a hash '#'.

3.1 SSC Attributes Configuration

This section describes how to configure the SSC attributes.

3.1.1 Modify SSC Attributes

Note: All attributes are created with default values, thus it is not necessary to create the attributes if they are not previously deleted.

To create an attribute:

1. Navigate to the desired MO.
2. Select the instance of the MO which is to be modified.
3. In the **Table Editor** window, modify the attributes as required.

To add an entry to a variable, right-click on the attribute name and select **Add Another Value** from the pop-up menu. This results in another row in the **Table Editor**, labeled with the variable name.

To delete an entry for a variable, right-click on the attribute name and select **Delete** from the pop-up menu. This results in the selected row being removed from the **Table Editor** window.

To modify an attribute, select the contents of the field to be changed and type the new value into the field.

4. Click **Submit**.

3.2 Announcement Configuration

The SSC service plays announcements to the users to acknowledge the operations that have been requested by service code commands. An option allowing the SSC service to send the phone number in the variable part of the announcement in National Number format is available when announcing Communication Diversion (CDIV) targets. SSC announces the phone number of the last call in denormalized format when the following attributes are set to 1 (TRUE):

The `vtasSscCallingPartyDenorm` attribute in the *VtasCr* MO.

The `mtasSscCallingPartyDenorm` attribute in the *MtasCr* MO.



If the attributes are set to 0 (False), SSC announces the phone number of the last call without modifying it.

For information on announcement handling and SSC announcement attributes, refer to *MTAS Announcement Management Guide*.

3.2.1 **Announcement Configuration for OCB**

For the OCB BP operations SSC service offers two kinds of announcements:

1. Standard announcements (mtasSscOcbPosIntAnnAct, mtasSscOcbPosDeactAnn, mtasSscOcbPosIntAnnAct, mtasSscOcbPosIntAnnDeact).
For more information, refer to *MTAS Announcement Management Guide*.
2. Detailed announcements.
The configuration activities are listed in Table 1.



Table 1 *OCB Configuration Activities*

Activity	Attribute
<p>The attribute enables the detailed announcements on the successful activation, deactivation, and interrogation of the OCB PB with the SSC command.</p> <p>When the attribute is set to 1 the MMTel AS provides the served user with the detailed announcement, specific for each BP.</p> <p>The entry <code>mtasSscOcbBpGroup</code> defines the primary key of <code>MtasSscOcbBpGroup</code> and presented as a string created from the combination of the OCB Barring Programs (<code>MtasOcbMultipleBp</code> or <code>MtasOcbSingleBp</code> keys) with separators.</p> <p>The attribute <code>mtasSscOcbBpGroupAnnAct</code> defines the code of the detailed announcement that is played at activation of the OCB Barring Program using SSC. The announcement from the <code>mtasSscOcbPosActAnn</code> is played if attribute is not configured.</p> <p>The attribute <code>mtasSscOcbBpGroupAnnDeact</code> defines the code of the detailed announcement that is played at deactivation of the OCB Barring Program using SSC. The announcement from the <code>mtasSscOcbPosDeactAnn</code> is played if attribute is not configured.</p> <p>The attribute <code>mtasSscOcbBpGroupAnnInt</code> defines the code of the announcement that is played at interrogation of the OCB Barring Program using SSC. The announcement from the <code>mtasSscOcbPosIntAnnAct</code> is played if attribute is not configured.</p> <p>When the attribute is set to 0 the MMTel AS provides the served user with the standard announcement (<code>mtasSscOcbPosIntAnnAct</code>, <code>mtasSscOcbPosDeactAnn</code>, <code>mtasSscOcbPosIntAnnAct</code>, <code>mtasSscOcbPosIntAnnDeact</code>) for all operations on OCB.</p>	<p><code>mtasSscOcbDetailedAnn</code></p>



3.3 More Configuration Activities

More configuration activities are listed in Table 2. The attributes defined can have an impact on all Supplementary Services.

Note: Not all SSC configuration activities are listed in Table 2.

Table 2 More Configuration Activities

Activity	Attribute
Defining the exact length of a PIN, that is, the number of characters that a PIN consists of. The range is 4–6 characters. ⁽¹⁾	mtasSscLengthOfPin
Defining the maximum length of the New Destination (ND) number, that is, the maximum number of characters that the ND consists of. The range is 1–32 characters.	mtasSscMaxLenOfNdNum
Defining if the announcements for Supplementary Service activation, deactivation, and PIN modification are to be played from the MRFP. It is possible to set the attribute to 0 (Announcements not played from the MRFP) or 1 (Announcements played from the MRFP). ⁽²⁾	mtasSscMrfpAnnouncements
Defining whether service data stored during the activation of a service (for example, New Destination number for CFU) is to be erased during the deactivation. It is possible to set the attribute to 0 (retain data) or 1 (erase data).	mtasSscEraseWithDeact
<p>Defining whether the command syntaxes for CFU, CFB, CFNR, and DNDCF are separate from the command syntaxes for CFUVM, CFBVM, CFBNRVM, CFNRVM, and DNDCFVM. It is possible to set the attribute to 0 (separate) or 1 (integrated).</p> <p>The SSC commands for CDIV-VM create, modify, delete, or interrogate a diversion rule in the diversion rule set of the end user, separate from the rule created for CDIV (mtasSscCfVmIntegrated set to 2).</p>	mtasSscCfVmIntegrated



Table 2 More Configuration Activities

Activity	Attribute
<p>The attribute defines the method by which the DBL is updated by an SSC.</p> <p>When the attribute is set to 0 (Direct), the MTAS performs updates of the MMTel document of the user on the HSS as a result of commands set in the following attributes: <code>mtasSscDblComSyntInv</code>, <code>mtasSscDblComSyntDeact</code>, <code>mtasSscMcrComSyntInv</code>, and <code>mtasSscMcrComSyntDeact</code>, and plays the appropriate associated announcements.</p> <p>When the attribute is set to 1 (Indirect), the MTAS sends information about the selected recent call to an external server to update the user's MMTel document on the HSS as a result of commands set in the following attributes: <code>mtasSscDblComSyntInv</code> and <code>mtasSscMcrComSyntInv</code>, and plays any announcements associated with these commands based on the response from the external server.</p> <p>When the attribute is set to 1 (Indirect), the MTAS does not receive commands set in the attributes <code>mtasSscDblComSyntDeact</code>, <code>mtasSscDblComSyntInt</code>, <code>mtasSscMcrComSyntDeact</code>, and <code>mtasSscMcrComSyntInt</code>, but processes them as normal, and play the appropriate associated announcements.</p>	<code>mtasSscDblUpdateMethod</code>
Defines if the SSC service is to play announcements on early media or on established sessions.	<code>mtasSscPlayEarlyMedia</code>
Defines if an invalid service code command results in the call being rejected or continued.	<code>mtasSscRejectInvalidServiceCodeCommand</code>
Defines if an unsuccessful service activation, when announcement is played on established session, results in negative announcement and positive acknowledgment to user or negative acknowledgment but no announcement to user.	<code>mtasSscRejectFailedServiceCodeCommand</code>

(1) If the operator wants to change the length of PIN in a system in operation, then all subscribers with a PIN must have the transparent data updated with a new PIN that corresponds to the new length.

(2) The announcements for Supplementary Service interrogation are always played from the MRFP.

For more information about the SSC attributes, refer to *Managed Object Model (MOM)*.

3.4 SSC Codes Administrative State Configuration

The SSC service is enabled by setting the `mtasSscAdministrativeState` attribute in the `MtasSsc` MO to 1 (Unlocked). If the `mtasSscAdministrativeState` is set to 0 (Locked), no SSC service is provided by the MTAS.

3.5 Wholesale for SSC Configuration

The SSC service supports Wholesale. SSC is configurable on Virtual Telephony Provider level.

Wholesale for SSC is activated when the following attributes are set to 1 (Unlocked):

- The `vtasSscAdministrativeState` attribute in the `VtasSsc` MO
- The `mtasSscAdministrativeState` attribute in the `MtasSsc` MO

For more information about the Wholesale service, refer to *MTAS Wholesale Support Management Guide*.

3.6 Communication Forwarding SSC Attributes Configuration

With the CM attribute `mtasSscCfVmIntegrated`, the operator can configure whether the SSC commands for CDIV-VM overlap the SSC commands for CDIV or not.

If the SSC commands for CDIV-VM overlap (`mtasSscCfVmIntegrated` is set to 1) the SSC commands for CDIV, the SSC commands for CDIV-VM (create, delete, modify, and interrogate) follow the same diversion rule in the diversion rule set of the end users as the corresponding SSC commands for CDIV.

If the SSC commands for CDIV-VM are NOT configured to overlap the SSC commands for CDIV, the operator is able to configure which one of the following behaviors to be followed:

- The SSC commands for CDIV-VM creates/modifies the same diversion rule in the diversion rule set of the end user as the corresponding SSC commands for CDIV (`mtasSscCfVmIntegrated` set to 0).

However, the deletion and interrogation is executed according to the activation status of corresponding service variant.

- The SSC commands for CDIV-VM creates/modifies/deletes/interrogates a diversion rule in the diversion rule set of the end user separate from the rule created for CDIV (`mtasSscCfVmIntegrated` set to 2).



If both variants are activated through the SSC, the order of the variants in the rule is selectable by the operator with the CM attribute `mtasSscCfVmSeparateRuleOrder`.

The SSCs support activation, deactivation, and interrogation of the possible types of Communication Forwarding, as follows:

- Communication Forwarding Unconditional (CFU)
- Communication Forwarding on Busy (CFB)
- Communication Forwarding on No Reply (CFNR)
- Communication Forwarding on Not Reachable (CFNRc)
- Communication Forwarding on Not Logged in (CFNL)
- Communication Forwarding on Not Logged in Voicemail (CFNLVM)
- Communication Forwarding Do Not Disturb (DNDCF)

The initial activation of each of these types of Communication Forwarding usually contains a New Destination parameter. However, for each of these types of Communication Forwarding, the SSCs support the following two forms of short command:

- Communication Forwarding to Voicemail
- Reactivation of previously entered Communication Forwarding

Note: The SSC commands Activate, Deactivate, and Interrogate are not supported for CFNRcVM.

These short forms of command do not contain a New Destination parameter.

For voicemail, the address to forward is defined either per user, or by setting the attribute `mtasVoiceMailRetrievalServerAddress`. The activation command syntaxes are provided in the attributes `mtasSscCfuComSyntActVm`, `mtasSscCfbComSyntActVm`, `mtasSscCfbnrComSyntActVm`, `mtasSscCfncComSyntActVm`, and `mtasSscDndCfComSyntActVm`.

For reactivation, the address is retained in user data. The reactivation command syntaxes are provided in the attributes `mtasSscCfuComSyntAct`, `mtasSscCfncComSyntAct`, `mtasSscCfbComSyntAct`, and `mtasSscDndCfComSyntAct` along with the initial activation form of the commands. The reactivation form of the commands is only to be included in the activation syntax attributes if the attribute `mtasSscEraseWithDeact` is set to 0 (retain data).

Either the voicemail command, or the reactivation command can have the “obvious” short form of a command. For example, if Activate CFU is `*21*ND#`, then the obvious short form of the command is `*21#`. To support both patterns of



command syntax, the MTAS provides an attribute, `mtasSscCfVmIntegrated` to indicate which pattern is to be supported.

Setting the attribute `mtasSscCfVmIntegrated` to **1 (Integrated)** indicates that the obvious short form of each command is to be used for the voicemail command.

To set `mtasSscCfVmIntegrated` to **1 (Integrated)**, `mtasSscEraseWithDeact` must be set to **1 (erase data)**, and `mtasSscCfuComSyntDeactVm`, `mtasSscCfbComSyntDeactVm`, `mtasSscCfbnrComSyntDeactVm`, `mtasSscCfnrComSyntDeactVm`, `mtasSscDndCfComSyntDeactVm`, `mtasSscCfuComSyntIntVm`, `mtasSscCfbComSyntIntVm`, `mtasSscCfbnrComSyntIntVm`, `mtasSscCfnrComSyntIntVm`, and `mtasSscDndCfComSyntIntVm` must all be empty.

When `mtasSscCfVmIntegrated` is set to **1 (Integrated)** the following applies:

- The attributes `mtasSscCfuComSyntDeactVm`, `mtasSscCfbComSyntDeactVm`, `mtasSscCfbnrComSyntDeactVm`, `mtasSscCfnrComSyntDeactVm`, `mtasSscDndCfComSyntDeactVm`, `mtasSscCfuComSyntIntVm`, `mtasSscCfbComSyntIntVm`, `mtasSscCfbnrComSyntIntVm`, `mtasSscCfnrComSyntIntVm`, and `mtasSscDndCfComSyntIntVm` cannot be populated.
- Deactivate CFU (`mtasSscCfuComSyntDeact`), Deactivate CFB (`mtasSscCfbComSyntDeact`), Deactivate CFNR (`mtasSscCfnrComSyntDeact`), Deactivate CFNRc (`mtasSscCfnrcComSyntDeact`), and Deactivate DND CF (`mtasSscDndCfComSyntDeact`) SSC commands remove the corresponding rule regardless of whether the target is the voicemail address.
- The Interrogate CFU command plays the following:
 - The announcement defined by `mtasSscCfuPosIntAnnAct` if there is an active plain unconditional diversion rule containing a target other than the voicemail address.
 - The announcement defined by `mtasSscCfuPosIntAnnActVm` if there is an active plain unconditional diversion rule containing a target of the voicemail address.
 - The announcement defined by `mtasSscIntComplexActiv` if there is any other active unconditional diversion rule.
 - The announcement defined by `mtasSscCfuPosIntAnnDeact` if there are no active unconditional diversion rules.
- The Interrogate CFB command plays the following:
 - The announcement defined by `mtasSscCfbPosIntAnnAct` if there is an active plain busy diversion rule containing a target other than the voicemail address.



- The announcement defined by `mtasSscCfbPosIntAnnActVm` if there is an active plain busy diversion rule containing a target of the voicemail address.
- The announcement defined by `mtasSscIntComplexActiv` if there is any other active busy diversion rule.
- The announcement defined by `mtasSscCfbPosIntAnnDeact` if there are no active busy diversion rules.
- The Interrogate CFNR command plays the following:
 - The announcement defined by `mtasSscCfnrPosIntAnnAct` if there is an active plain no-answer diversion rule containing a target other than the voicemail address.
 - The announcement defined by `mtasSscCfnrPosIntAnnActVm` if there is an active plain no-answer diversion rule containing a target of the voicemail address.
 - The announcement defined by `mtasSscIntComplexActiv` if there is any other active no-answer diversion rule.
 - The announcement defined by `mtasSscCfnrPosIntAnnDeact` if there are no active no-answer diversion rules.
- The Interrogate CFNRc command plays the following:
 - The announcement defined by `mtasSscCfnrcPosIntAnnAct` if there is an active plain not-reachable diversion rule.
 - The announcement defined by `mtasSscIntComplexActiv` if there is any other active not-reachable diversion rule.
 - The announcement defined by `mtasSscCfnrcPosIntAnnDeact` if there are no active not-reachable diversion rules.
- The Interrogate CFNL command plays the following:
 - The announcement defined by `mtasSscCfnlPosIntAnnAct` if there is an active plain not-reachable diversion rule.
 - The announcement defined by `mtasSscIntComplexActiv` if there is any other active not-reachable diversion rule.
 - The announcement defined by `mtasSscCfnlPosIntAnnDeact` if there are no active not-reachable diversion rules.
- The Interrogate CFNLVM command plays the following:
 - The announcement defined by `mtasSscCfnlPosIntAnnActVm` if there is an active plain not-reachable diversion rule.



- The announcement defined by `mtasSscIntComplexActiv` if there is any other active not-reachable diversion rule.
- The announcement defined by `mtasSscCfnlPosIntAnnDeactVm` if there are no active not-reachable diversion rules.
- The Interrogate DND CF command plays the following:
 - The announcement defined by `mtasSscDndCfPosIntAnnAct` if there is an active plain no-answer diversion rule containing a target other than the voicemail address.
 - The announcement defined by `mtasSscDndCfPosIntAnnActVm` if there is an active plain no-answer diversion rule containing a target of the voicemail address.
 - The announcement defined by `mtasSscIntComplexActiv` if there is any other active no-answer diversion rule.
 - The announcement defined by `mtasSscDndCfPosIntAnnDeact` if there are no active no-answer diversion rules.

When `mtasSscCfVmIntegrated` is set to 0 (Separate) or 2 (Separate with separate rule), the following applies:

- The Deactivate CFU (`mtasSscCfuComSyntDeact`), Deactivate CFB (`mtasSscCfbComSyntDeact`), Deactivate CFNR (`mtasCfnrSscComSyntDeact`), Deactivate CFNRc (`mtasSscCfnrcComSyntDeact`), and Deactivate DND CF (`mtasSscDndCfComSyntDeact`) SSC commands remove the corresponding rule only if the target is not the voicemail address.
- The Deactivate CFU VM (`mtasSscCfuComSyntDeactVm`), Deactivate CFB VM (`mtasSscCfbComSyntDeactVm`), Deactivate CFB NR VM (`mtasSscCfbnrComSyntDeactVm`), Deactivate CF NR VM (`mtasSscCfnrComSyntDeactVm`), and Deactivate DND CF VM (`mtasSscDndCfComSyntDeactVm`) SSC commands remove the corresponding rule only if the target is the voicemail address.
- The Interrogate CFU command plays the following:
 - The announcement defined by `mtasSscCfuPosIntAnnAct` if there is an active plain unconditional diversion rule containing a target other than the voicemail address.
 - The announcement defined by `mtasSscIntComplexActiv` if there is any other active unconditional diversion rule containing a target other than the voicemail address.
 - The announcement defined by `mtasSscCfuPosIntAnnDeact` if there are no active unconditional diversion rules containing a target other than the voicemail address.



- The Interrogate CFUVM command plays the following:
 - The announcement defined by `mtasSscCfuPosIntAnnActVm` if there is an active plain unconditional diversion rule containing a target of the voicemail address.
 - The announcement defined by `mtasSscIntComplexActiv` if there is any other active unconditional diversion rule containing a target of the voicemail address.
 - The announcement defined by `mtasSscCfuPosIntAnnDeactVm` if there are no active unconditional diversion rules containing a target of the voicemail address.
- The Interrogate CFB command plays the following:
 - The announcement defined by `mtasSscCfbPosIntAnnAct` if there is an active plain busy diversion rule containing a target other than the voicemail address.
 - The announcement defined by `mtasSscIntComplexActiv` if there is any other active busy diversion rule containing a target other than the voicemail address.
 - The announcement defined by `mtasSscCfbPosIntAnnDeact` if there are no active busy diversion rules containing a target other than the voicemail address.
- The Interrogate CFBVM command plays the following:
 - The announcement defined by `mtasSscCfbPosIntAnnActVm` if there is an active plain busy diversion rule containing a target of the voicemail address.
 - The announcement defined by `mtasSscIntComplexActiv` if there is any other active busy diversion rule containing a target of the voicemail address.
 - The announcement defined by `mtasSscCfbPosIntAnnDeactVm` if there are no active busy diversion rules containing a target of the voicemail address.
- The Interrogate CFBNRVM command plays the following:
 - The announcement defined by `mtasSscCfbnrPosIntAnnActVm` if there is active busy, no answer, not logged in, and not reachable diversion rules containing a target of the voicemail address.
 - The announcement defined by `mtasSscCfbnrPosIntAnnDeactVm` if there is no active busy, no answer, not logged in, and not reachable diversion rules containing a target of the voicemail address.
- The Interrogate CFNR command plays the following:



- The announcement defined by `mtasSscCfnrPosIntAnnAct` if there is an active plain no answer diversion rule containing a target other than the voicemail address.
 - The announcement defined by `mtasSscIntComplexActiv` if there is any other active no answer diversion rule containing a target other than the voicemail address.
 - The announcement defined by `mtasSscCfnrPosIntAnnDeact` if there are no active no answer diversion rules containing a target other than the voicemail address.
- The Interrogate CFNRVM command plays the following:
 - The announcement defined by `mtasSscCfnrPosIntAnnActVm` if there is an active plain no answer diversion rule containing a target of the voicemail address.
 - The announcement defined by `mtasSscIntComplexActiv` if there is any other active no answer diversion rule containing a target of the voicemail address.
 - The announcement defined by `mtasSscCfnrPosIntAnnDeactVm` if there are no active no answer diversion rules containing a target of the voicemail address.
- The Interrogate CFNRc command plays the following:
 - The announcement defined by `mtasSscCfnrcPosIntAnnAct` if there is an active plain not reachable diversion rule.
 - The announcement defined by `mtasSscIntComplexActiv` if there is any other active not reachable diversion rule.
 - The announcement defined by `mtasSscCfnrcPosIntAnnDeact` if there are no active not reachable diversion rules.
- The Interrogate CFNL command plays the following:
 - The announcement defined by `mtasSscCfnlrcPosIntAnnAct` if there is an active plain not reachable diversion rule.
 - The announcement defined by `mtasSscIntComplexActiv` if there is any other active not reachable diversion rule.
 - The announcement defined by `mtasSscCfnlrcPosIntAnnDeact` if there are no active not reachable diversion rules.
- The Interrogate CFNLVM command plays the following:
 - The announcement defined by `mtasSscCfnlrcPosIntAnnActVm` if there is an active plain not reachable diversion rule.



- The announcement defined by `mtasSscIntComplexActiv` if there is any other active not reachable diversion rule.
 - The announcement defined by `mtasSscCfnlcPosIntAnnDeactVm` if there are no active not reachable diversion rules.
- The Interrogate DNDCF command plays the following:
 - The announcement defined by `mtasSscDndCfPosIntAnnAct` if there is an active plain no answer diversion rule containing a target other than the voicemail address.
 - The announcement defined by `mtasSscIntComplexActiv` if there is any other active no answer diversion rule containing a target other than the voicemail address.
 - The announcement defined by `mtasSscDndCfPosIntAnnDeact` if there are no active no answer diversion rules containing a target other than the voicemail address.
- The Interrogate DNDCFVM command plays the following:
 - The announcement defined by `mtasSscDndCfPosIntAnnActVm` if there is an active plain no answer diversion rule containing a target of the voicemail address.
 - The announcement defined by `mtasSscIntComplexActiv` if there is any other active no answer diversion rule containing a target of the voicemail address.
 - The announcement defined by `mtasSscDndCfPosIntAnnDeactVm` if there are no active no answer diversion rules containing a target of the voicemail address.

3.7 Service Data Configuration

This section describes how to configure the service data.

3.7.1 Operator Subscription Level Service Configuration

The operator can activate or deactivate the SSC service subscription for the subscriber by setting the user data using the CAI3G protocol.

The following data must be provisioned for each Supplementary Service for a subscriber:

- Whether the service is granted to the subscriber
- If a PIN is required for the subscriber control procedures (activation, deactivation, or interrogation). The initial PIN must also be provisioned.



For more information about the CAI3G protocol, refer to *MTAS CAI3G Interface*.

3.7.2

Subscriber Subscription Level Service Configuration

No service data for the SSC service is configured in the subscriber part of the subscriber data.



4 Command Syntax Attributes Configuration

This section describes the configuration of command syntax attributes for Supplementary Services.

4.1 General Information about Supplementary Service Code Commands

The information for the control of a supplementary telephony service is sent by the user with a service code command. Various coding schemes have been defined for the expected or preferred format of a service code command. The MTAS implementation offers more flexibility to support various coding schemes. For examples of the CEPT (ETSI) code scheme (Europe), see Section 4.2.1 Service Code Values for CEPT (ETSI) on page 44.

Associated with every combination of SSC service type and service function (action) is a CM attribute as shown in Table 3. CFU is an example of a service type, interrogation is an example of a service function, and `mtasSscCfuComSyntInt` is an example of an attribute name.

Table 3 Service Function Mapping to CM Attributes

Service Type	Service Function	CM Attribute Name
Abbreviated Dialing	Invocation	<code>mtasSscAbDialComSyntInv</code>
ACR	Activation	<code>mtasSscAcrComSyntAct</code>
	Deactivation	<code>mtasSscAcrComSyntDeact</code>
	Interrogation	<code>mtasSscAcrComSyntInt</code>
Call Return	Invocation	<code>mtasSscCrComSyntInv</code>
	Invocation	<code>mtasSscCrEraComSyntInv</code>
CDIVAll	Deactivation	<code>mtasSscCDivAllComSyntDeact</code>
	Interrogation	<code>mtasSscCDivAllComSyntInt</code>
CellAnn	Interrogation	<code>mtasSscCellAnnComSyntInt</code>
CFB	Activation	<code>mtasSscCfbComSyntAct</code>
	Deactivation	<code>mtasSscCfbComSyntDeact</code>
	Interrogation	<code>mtasSscCfbComSyntInt</code>
CFBNRVM	Activation	<code>mtasSscCfbnrComSyntActVm</code>
	Deactivation	<code>mtasSscCfbnrComSyntDeactVm</code>
	Interrogation	<code>mtasSscCfbnrComSyntIntVm</code>

*Table 3 Service Function Mapping to CM Attributes*

Service Type	Service Function	CM Attribute Name
CFBVM	Activation	mtasSscCfbComSyntActVm
	Deactivation	mtasSscCfbComSyntDeactVm
	Interrogation	mtasSscCfbComSyntIntVm
CFCOND	Activation	mtasSscCfCondComSyntAct
	Deactivation	mtasSscCfCondComSyntDeact
CFNL	Activation	mtasSscCfnlComSyntAct
	Deactivation	mtasSscCfnlComSyntDeact
	Interrogation	mtasSscCfnlComSyntInt
CFNLVM	Activation	mtasSscCfnlComSyntActVm
	Deactivation	mtasSscCfnlComSyntDeactVm
	Interrogation	mtasSscCfnlComSyntIntVm
CFNR	Activation	mtasSscCfnrComSyntAct
	Deactivation	mtasSscCfnrComSyntDeact
	Interrogation	mtasSscCfnrComSyntInt
CFNRVM	Activation	mtasSscCfnrComSyntActVm
	Deactivation	mtasSscCfnrComSyntDeactVm
	Interrogation	mtasSscCfnrComSyntIntVm
CFNRc	Activation	mtasSscCfnrcComSyntAct
	Deactivation	mtasSscCfnrcComSyntDeact
	Interrogation	mtasSscCfnrcComSyntInt
CFU	Activation	mtasSscCfuComSyntAct
	Deactivation	mtasSscCfuComSyntDeact
	Interrogation	mtasSscCfuComSyntInt
CFUVM	Activation	mtasSscCfuComSyntActVm
	Deactivation	mtasSscCfuComSyntDeactVm
	Interrogation	mtasSscCfuComSyntIntVm
CNIP	Activation	mtasSscCnipComSyntAct
	Deactivation	mtasSscCnipComSyntDeact
	Interrogation	mtasSscCnipComSyntInt



Table 3 Service Function Mapping to CM Attributes

Service Type	Service Function	CM Attribute Name
Communication Completion	Queue Revocation	mtasSscCcComSyntRevokeCcbsQ
	Queue Interrogation	mtasSscCcComSyntIntCcbsQ
	Queue Revocation	mtasSscCcComSyntRevokeCcnrQ
	Queue Interrogation	mtasSscCcComSyntIntCcnrQ
CW	Activation	mtasSscCwComSyntAct
	Deactivation	mtasSscCwComSyntDeact
	Interrogation	mtasSscCwComSyntInt
Call by Call CW Deactivation	Invocation	mtasSscCwComSyntDis
DNDCB	Activation	mtasSscDndCbComSyntAct
	Deactivation	mtasSscDndCbComSyntDeact
	Interrogation	mtasSscDndCbComSyntInt
DNDCF	Activation	mtasSscDndCfComSyntAct
	Deactivation	mtasSscDndCfComSyntDeact
	Interrogation	mtasSscDndCfComSyntInt
DNDCFVM	Activation	mtasSscDndCfComSyntActVm
	Deactivation	mtasSscDndCfComSyntDeactVm
	Interrogation	mtasSscDndCfComSyntIntVm
OIR Dynamic Ad-hoc Presentation (per call, all modes except permanent)	Set to Not-restricted	mtasSscIdPresComSyntInv
	Set to Restricted	mtasSscIdPresComSyntDis
Dynamic Black List	Invocation	mtasSscDblComSyntInv
	Deactivation	mtasSscDblComSyntDeact
	Interrogation	mtasSscDblComSyntInt
ECT	Invocation	mtasSscEctComSyntInv
	Interrogation	mtasSscEctComSyntInt
Hotline	Activation	mtasSscHotlineComSyntAct
	Deactivation	mtasSscHotlineComSyntDeact
	Interrogation	mtasSscHotlineComSyntInt
Hotline Voicemail	Activation	mtasSscHotlineComSyntActVm
	Deactivation	mtasSscHotlineComSyntDeactVm
	Interrogation	mtasSscHotlineComSyntIntVm

*Table 3 Service Function Mapping to CM Attributes*

Service Type	Service Function	CM Attribute Name
MCID	Invocation	mtasSscMcidComSyntInv
MCR	Invocation	mtasSscMcrComSyntInv
	Deactivation	mtasSscMcrComSyntDeact
	Interrogation	mtasSscMcrComSyntInt
MSN	Invocation	Invocation
OCB	Activation	mtasSscOcbComSyntAct
	Deactivation	mtasSscOcbComSyntDeact
	Interrogation	mtasSscOcbComSyntInt
OIP	Activation	mtasSscOipComSyntAct
	Deactivation	mtasSscOipComSyntDeact
	Interrogation	mtasSscOipComSyntInt
OIR	Activate or set default behavior to Restricted (temporary mode only), or both	mtasSscOirComSyntAct
	Activate or set default behavior to Not-restricted (temporary mode only), or both	mtasSscOirComSyntDeact
	Interrogation	mtasSscOirComSyntInt
PIN Modification	Change	mtasSscComSyntModPin
PriorityService Call ⁽¹⁾	Invocation	mtasSscPriorityCallComSyntInv
STOD Call Pull	Invocation	mtasSscStodPullComSyntInv
TIP	Activation	mtasSscTipComSyntAct
	Deactivation	mtasSscTipComSyntDeact
	Interrogation	mtasSscTipComSyntInt



Table 3 Service Function Mapping to CM Attributes

Service Type	Service Function	CM Attribute Name
TIR	Activate or set default behavior to Restricted (temporary mode only), or both	mtasSscTirComSyntAct
	Activate or set default behavior to Not-restricted (temporary mode only), or both	mtasSscTirComSyntDeact
	Interrogation	mtasSscTirComSyntInt
VM	Invocation	mtasSscVmRetrieveCode

(1) Priority Call Service invocation using the SSC code is referred as GETS-FC (Government Emergency Telecommunication Service – Feature Code) in the North American Market.

Not all services and service functions require Supplementary Information (SI) block to be specified in the command syntax.

Table 4 Supported SI Elements

Service Type	Service Function	Supported Supplementary Information									
		OPIN	PIN	ND	XND	RT	BP	NPIN	N(N)	ICN	CN
Abbreviated Dialing	Invocation								M (1)		
ACR	Activation		O								
	Deactivation		O								
	Interrogation		O								
Call Return	Invocation										
CCBS	Queue Interrogation		O								
	Queue Revocation		O								
CCNR	Queue Interrogation		O								
	Queue Revocation		O								



Table 4 Supported SI Elements

Service Type	Service Function	Supported Supplementary Information									
		OPIN	PIN	ND	XND	RT	BP	NPIN	N(N)	ICN	CN
CDIVAll	Deactivation		O								
	Interrogation		O								
CellAnn	Interrogation								O		
CFB	Activation		O	O (2)	O (3)						
	Deactivation		O								
	Interrogation		O	O (4)							
CFBNRVM	Activation		O			O (5)					
	Deactivation		O								
	Interrogation		O								
CFBVM	Activation		O								
	Deactivation		O								
	Interrogation		O								
CFCOND	Activation		O (6)	O (2)	O (3)						
	Deactivation		O								
CFNL	Activation		O	O (2)	O (3)						
	Deactivation		O								
	Interrogation		O	O (4)							



Table 4 Supported SI Elements

Service Type	Service Function	Supported Supplementary Information									
		OPIN	PIN	ND	XND	RT	BP	NPIN	N(N)	ICN	CN
CFNR	Activation		O	O (2)	O (3)	O (5)					
	Deactivation		O								
	Interrogation		O	O (4)							
CFNRc	Activation		O	O (2)	O (3)						
	Deactivation		O								
	Interrogation		O	O (4)							
CFNRVM	Activation		O			O (5)					
	Deactivation		O								
	Interrogation		O								
CNIP	Activation		O								
	Deactivation		O								
	Interrogation		O								
CFU	Activation		O (6)	O (2)	O (3)						
	Deactivation		O								
	Interrogation		O	O (4)							



Table 4 Supported SI Elements

Service Type	Service Function	Supported Supplementary Information									
		OPIN	PIN	ND	XND	RT	BP	NPIN	N(N)	ICN	CN
CFUVM	Activation		O (6)								
	Deactivation		O								
	Interrogation		O								
CW	Activation		O								
	Deactivation		O								
	Interrogation		O								
Call by Call CW Deactivation	Invocation			O					O		
DNDCB	Activation		O								
	Deactivation		O								
	Interrogation		O								
DNDCF	Activation		O (6)	O (2)							
	Deactivation		O								
	Interrogation		O	O (4)							
DNDCFVM	Activation		O (6)								
	Deactivation		O								
	Interrogation		O								



Table 4 Supported SI Elements

Service Type	Service Function	Supported Supplementary Information									
		OPIN	PIN	ND	XND	RT	BP	NPIN	N(N)	ICN	CN
Dynamic Ad-hoc Presentation (temporary mode only)	Invocation			M (7)							
	Disabling			M (7)							
Dynamic Black List	Invocation		O							O (8)	
	Deactivation		O								
	Interrogation		O								
ECT	Invocation		O								
	Interrogation		O								
Hotline	Invocation		O	M							O
	Deactivation		O								
	Interrogation		O								
Hotline Voicemail	Invocation		O								O
	Deactivation		O								
	Interrogation		O								
MCID (temporary mode)	Invocation		O							O (8)	
MCR	Invocation		O							O (8)	
	Deactivation		O								
	Interrogation		O								
MSN	Invocation			M					M		



Table 4 Supported SI Elements

Service Type	Service Function	Supported Supplementary Information									
		OPIN	PIN	ND	XND	RT	BP	NPIN	N(N)	ICN	CN
OCB	Activation		O				M (9)				
	Deactivation		O				O (10)				
	Interrogation		O								
OIP	Activation		O								
	Deactivation		O								
	Interrogation		O								
OIR (temporary mode only)	Activation		O								
	Deactivation		O								
	Interrogation		O								
PIN Modification	Change	M						M (11)	M (1)		
PriorityService Call	Invocation			O	O						
STOD Call Pull	Invocation										
TIP	Activation		O								
	Deactivation		O								
	Interrogation		O								



Table 4 Supported SI Elements

Service Type	Service Function	Supported Supplementary Information									
		OPIN	PIN	ND	XND	RT	BP	NPIN	N(N)	ICN	CN
TIR (temporary mode only)	Activation		O								
	Deactivation		O								
	Interrogation		O								
VM	Invocation										

- (1) One of the N or NN parameters is Mandatory to use.
- (2) Although this parameter is optional, the request fails if an ND does not exist (as part of a deactivated rule).
- (3) Either ND or XND can occur in the syntax. In case of XND, the embedded SSC code is expected to contain an Ad-hoc OIR service activation or deactivation code (syntax in *mtasSscldPresComSyntInv*) with an ND number in it.
- (4) This parameter is used for Service Data Check (also called Service Verification) only.
- (5) The Ringing Time (RT) is set on the user level for the communication-forwarding service.
- (6) This is an optional parameter.
- (7) Number for invocation or disabling of OIR on a per call basis.
- (8) The ICN parameter is optional. If it is not present in the SSC, a value of 1 is assumed.
- (9) Supported values for BP are 0–255 for subscribers with single Barring Program mode, and 0–49 for subscribers with a Barring Program mode of multiple.
- (10) Only supported for subscribers with multiple Barring Program mode.
- (11) NPIN value can appear more than once (up to two times) in the service code command.

The values of the SI fields are not configurable. The fields are represented in the string with fixed string names. The fixed string names created for all supported SI fields are listed in Table 5.

The supported characters for the SI elements values are digits only. The only exception is the XND service type, as it represents embedded SSC code and can contain “*” and “#” characters also.

Table 5 Supplementary Information String Names

Service Type	Supported Supplementary Information
BP	Barring Program (for Communication Barring services)
ICN	Incoming Communication Number (for Malicious Communication Identity (MCID), Dynamic Black List (DBL), and Malicious Communication Rejection MCR)
N	Number from 0 through 9
NN	Number from 00 through 99
ND	(New) Destination number
NPIN	New PIN (used when changing PIN)
PIN	Personal Identity Number

Table 5 *Supplementary Information String Names*

Service Type	Supported Supplementary Information
RT	Ringing Time (for CDIV on No Reply)
OPIN	Old PIN (used when changing PIN)
XND	eXtended New Destination number (represents an embedded SSC code which has an ND field in it)
CN	Called Number

Each command syntax attribute in the `MtasSsc` MO accepts an array of up to 10 command syntax strings. Each of these strings must be configured in accordance with the rules specified in Table 4.

The reason for defining more than one string for a specific attribute is to allow several command syntaxes to be used for the same service and service function. For example, CFU interrogation to include command syntax strings for both CFU status interrogation and CFU data check (verification). Another example could be to include command syntaxes for the control of the service from the users with push-button phones as well as from the users with rotary dial phones (do not have * and # buttons).

All values selected for an SSC must be unique. A request that violates this rule is rejected. For example, if *61 is configured to mean Call Forward No Reply (CFNR), then a request to configure *61 to mean Call Forward Busy (CFB) is rejected. Successive items of supplementary information must have a block separator between them.

Where multiple supplementary information fields can appear in a command, different combinations and orders of supplementary information fields must be distinguished, for example by using different block separators. For example, if activate CFNR has *61# to reactivate a deactivated rule, *61*ND# to activate to a new target, and *61*ND*RT# to activate to a new target and set the ring timer, then the value to reactivate a deactivated rule and set the ring timer cannot be *61*RT#, (because that is undistinguishable from *61*ND#, but could be *61**RT#.

For each command, all the syntaxes must either contain a PIN, or all syntaxes must not contain a PIN.

For example, the command `mtasSscOcbComSyntDeact` stands for the deactivation of the whole Outgoing Communication Barring (OCB) service, or of a barring program of the service.

OCB deactivation examples:

Deactivation of an OCB barring program without PIN

```
mtasSscOcbComSyntDeact = #33*BP#
```

Deactivation of the whole OCB service without PIN



```
mtasSscOcbComSyntDeact = #33#
```

If the deactivation is to be protected by a PIN, then both of the command syntaxes are given in the following format:

Deactivation of an OCB barring program with PIN

```
mtasSscOcbComSyntDeact = #33*BP*PIN#
```

Deactivation of the whole OCB service with PIN

```
mtasSscOcbComSyntDeact = #33*PIN#
```

The combination of the OCB deactivation command syntaxes in a manner that one syntax includes the PIN parameter, and the other one does not include the PIN parameter, is not allowed.

For example, the following configuration attempt is rejected by the MTAS:

Deactivation of an OCB barring program without PIN

```
mtasSscOcbComSyntDeact = #33*BP#
```

Deactivation of the whole OCB service with PIN

```
mtasSscOcbComSyntDeact = #33*PIN#
```

The MTAS merges the old and the new command syntax configurations. If there is an original configuration including one or more command syntaxes and the PIN protection, behavior of the command must be changed. The complete original configuration of the given command will be removed in the first step, and the new syntaxes can be defined only after that.

For example, the initial configuration includes the following OCB deactivation command syntaxes:

Deactivation of an OCB barring program without PIN

```
mtasSscOcbComSyntDeact = #33*BP#
```

Deactivation of the whole OCB service without PIN

```
mtasSscOcbComSyntDeact = #33#
```

If the operator wants to protect the OCB deactivation with PIN, then the initial configuration is removed in the first step by configuring an “empty” command syntax: `mtasSscOcbComSyntDeact`.

This “empty” configuration removes all the existing syntaxes of the OCB deactivation command.

The new syntaxes including the PIN can be configured after:



Deactivation of an OCB barring program with PIN

```
mtasSscOcbComSyntDeact = #33*BP*PIN#
```

Deactivation of the whole OCB service with PIN

```
mtasSscOcbComSyntDeact = #33*PIN#
```

4.2 Examples for Service Code Command Syntax Configuration

This section lists some examples of the service command syntax attributes. Each attribute is defined as a list of strings where each string represents one of the possible service code command syntaxes for that service function, for example, service activation. The string includes all necessary command parameters. The examples are based on the CEPT (ETSI) command code scheme.

4.2.1 Service Code Values for CEPT (ETSI)

The following CEPT (ETSI) service codes are selected to map to the following features as shown in Table 6.

Table 6 Feature Service Codes

Service Code Value	Feature
03	Service code for PIN modification
21	Service code for CFU
(1)	Service code for Abbreviated Dialing
30	Service code for OIP
31	Service code for OIR
34	Service code for OCB
43	Service code for CW
61	Service code for CFNR
(1)	Service Code for CFNL
63	Service Code for CFNRc
71	Service Code for CFCOND
73	Service Code for CDIVAll
76	Service code for TIP
77	Service code for TIR
78	Service code for MCID



Table 6 Feature Service Codes

79	Service code for blacklist
80	Service code for MCR
81	Service code for CFB
85	Service code for ACR
90	Service code for CNIP
(1)	Service code for DND
(1)	Service code for Call Return
(1)	Service code for Hotline
(1)	Service code for Hotline Voicemail
(1)	Service code for Cell announcement

(1) CEPT service code is not defined by ETSI.

4.2.2 Command Syntax Attribute Examples for CEPT Command Code Schemes

This section lists examples of the configuration of command syntax attributes for CEPT (ETSI) command code schemes.

For more information on which code is recommended for each service, refer to [Man-machine Interface \(MMI\) to Public Network based Supplementary Services](#).

The examples are prepared according to the ETSI coding scheme and the symbols or characters used in the attributes have the following meanings as shown in Table 7.

Table 7 Symbols and Characters Used in the CEPT (ETSI) Example Attributes

Character	Description
*	Service prefix for service activation (used before service code)
#	Service prefix for service deactivation
*#	Service prefix for service interrogation
*	Block separator (optional when used after the service code)
#	Command suffix

In the examples that follow, not all string combinations are necessarily supported within the same attribute. There might be some limitations and they are described in the relevant Customer Product Information (CPI).



4.2.2.1 Command Syntax for PIN Modification Configuration

This section lists examples of the configuration of command syntax attributes for PIN modification.

mtasSscComSyntModPin

Command syntax for PIN modification (New PIN required twice):

*03*OPIN*NPIN*NPIN#

4.2.2.2 Command Syntax for CFU Configuration

This section lists examples of the configuration of command syntax attributes for CFU.

mtasSscCfuComSyntAct

Command syntax for CFU activation (No PIN required. ND/XND optional):

*21*ND#

*21#

*21*XND#

The embedded SSC code represented by the XND SI field in the examples earlier is expected to contain a Dynamic Ad-hoc Presentation service activation/deactivation code (for which the syntax is defined in `mtasSscIdPresComSyntInv`) with an ND number in it.

If the ND/XND is omitted, this means that the communication is to be diverted to the ND from previous CFU activation. The ND from previous CFU activation is only saved, if the operator node level configuration of attribute `mtasSscEraseWithDeact` is set to retain the service data.

Note: This requires that `mtasSscEraseWithDeact` is set to 0.

Command syntax for CFU activation (PIN required. ND/XND optional):

*21*PIN*ND#

*21*PIN*XND#

*21*PIN#

mtasSscCfuComSyntDeact

Command syntax for CFU deactivation (PIN required):

#21*PIN#

#21PIN#

Command syntax for CFU deactivation (No PIN required):

#21#



mtasSscCfuComSyntInt

Command syntax for CFU status interrogation (PIN required):

*#21*PIN#
*#21PIN#

Command syntax for CFU status interrogation (No PIN required):

*#21#

Command syntax for CFU verification (Data check. PIN required):

*#21*PIN*ND#
*#21PIN*ND#

Command syntax for CFU verification (Data check. No PIN required. ND mandatory):

*#21*ND#
*#21ND#

4.2.2.3

Command Syntax for Abbreviated Dialing Configuration

This section shows how the ETSI coding scheme is supported for Abbreviated Dialing.

mtasSscAbDialComSyntInv

ETSI Rules:

N(N) (#)
or
** N(N)

Abbreviated Dialing Command Strings in the attribute:

N(N)
N(N) #
** N(N)

Examples are shown in Table 8:

Table 8 *Examples, Abbreviated Dialing*

2	To call short number 2
2#	To call short number 2
**2	To call short number 2
22	To call short number 22
22#	To call short number 22
**22	To call short number 22



4.2.2.4 Command Syntax for OIP Configuration

This section lists examples of the configuration of command syntax attributes for OIP.

mtasSscOipComSyntAct

Command syntax for OIP activation (No PIN required):

*30#

Command syntax for OIP activation (PIN required):

*30*PIN#

mtasSscOipComSyntDeact

Command syntax for OIP deactivation (No PIN required):

#30#

Command syntax for OIP deactivation (PIN required):

#30*PIN#

mtasSscOipComSyntInt

Command syntax for OIP interrogation (No PIN required):

*#30#

Command syntax for OIP interrogation (PIN required):

*#30*PIN#

4.2.2.5 Command Syntax for OIR in Temporary Mode Configuration

This section lists examples of the configuration of command syntax attributes for OIR.

mtasSscOirComSyntAct (in Temporary Mode)

Command syntax for OIR activation or setting default behavior to Restricted (No PIN required), or both:

*31#

Command syntax for OIR activation or setting default behavior to Restricted (PIN required), or both:

*31*PIN#

mtasSscOirComSyntDeact (in Temporary Mode)

Command syntax for OIR activation or setting default behavior to Not-restricted (No PIN required), or both:



#31#

Command syntax for OIR activation or setting default behavior to Not-restricted (No PIN required), or both:

#31*PIN#

mtasSscOirComSyntInt

Command syntax for OIR interrogation (No PIN required):

*#31#

Command syntax for OIR interrogation (PIN required):

*#31*PIN#

4.2.2.6

Command Syntax for OCB Configuration

This section lists examples of the configuration of command syntax attributes for OCB.

mtasSscOcbComSyntAct

Command syntax for OCB activation (BP required):

*34*BP#

*34*PIN*BP#

mtasSscOcbComSyntDeact

Command syntax for OCB deactivation:

#34#

#34*PIN#

#34*BP#

#34*PIN*BP#

mtasSscOcbComSyntInt

Command syntax for OCB status interrogation:

*#34#

*#34*PIN#

4.2.2.7

Command Syntax for CW Configuration

This section lists examples of the configuration of command syntax attributes for CW.

mtasSscCwComSyntAct

Command syntax for CW activation (No PIN required):

*43#



Command syntax for CW activation (PIN required):

*43*PIN#

mtasSscCwComSyntDeact

Command syntax for CW deactivation (No PIN required):

#43#

Command syntax for CW deactivation (PIN required):

#43*PIN#

mtasSscCwComSyntInt

Command Syntax for CW interrogation (No PIN required):

*#43#

Command Syntax for CW interrogation (PIN required):

*#43*PIN#

4.2.2.8

Command Syntax for CFNR Configuration

This section lists examples of the configuration of command syntax attributes for CFNR.

mtasSscCfnrComSyntAct

Command syntax (PIN not required, ND/XND optional, RT optional):

*61*ND#

*61*XND#

*61*ND*RT#

*61*XND*RT#

*61#

*61**RT#

Command syntax (PIN required, ND/XND optional, RT optional):

*61*PIN*ND#

*61*PIN*XND#

*61*PIN*ND*RT#

*61*PIN*XND*RT#

*61*PIN#

*61*PIN**RT#

The embedded SSC code represented by the XND SI field in the previous examples is expected to contain a Dynamic Ad-hoc Presentation service activation/deactivation code (for which the syntax is defined in `mtasSscIdPresComSyntInv`) with an ND number in it.



mtasSscCfnrComSyntDeact

Command syntax for CFNR deactivation (No PIN required):

#61#

Command syntax for CFNR deactivation (PIN required):

#61*PIN#

mtasSscCfnrComSyntInt

Command syntax for CFNR status interrogation (No PIN required):

*#61#

Command syntax for CFNR status interrogation (PIN required)

*#61*PIN#

Command syntax for CFNR verification (Data check. No PIN required):

*#61*ND#

Command syntax for CFNR verification (Data check. PIN required):

*#61*PIN*ND#

4.2.2.9

Command Syntax for CFNL Configuration

This section lists examples of the configuration of command syntax attributes for CFNL.

mtasSscCfnlComSyntAct

Command syntax (PIN not required, ND/XND optional):

*61*ND#

*61*XND#

*61#

Command syntax (PIN required, ND/XND optional):

*61*PIN*ND#

*61*PIN*XND#

*61*PIN#

The embedded SSC code represented by the XND SI field in the examples is expected to contain a Dynamic Ad-hoc Presentation service activation/deactivation code (for which the syntax is defined in mtasSscIdPresComSyntInv) with an ND number in it.

mtasSscCfnlComSyntDeact

Command syntax for CFNL deactivation (No PIN required):

#61#

Command syntax for CFNL deactivation (PIN required):



#61*PIN#

mtasSscCfnlComSyntInt

Command syntax for CFNL status interrogation (No PIN required):

*#61#

Command syntax for CFNL status interrogation (PIN required)

*#61*PIN#

Command syntax for CFNL verification (Data check. No PIN required):

*#61*ND#

Command syntax for CFNL verification (Data check. PIN required):

*#61*PIN*ND#

4.2.2.10

Command Syntax for CFNRc Configuration

This section lists examples of the configuration of command syntax attributes for CFNRc.

mtasSscCfnrcComSyntAct

Command syntax for CFNRc activation (No PIN required. ND/XND optional):

*63*ND#

*63#

*63*XND#

The embedded SSC code represented by the XND SI field in the previous examples is expected to contain a Dynamic Ad-hoc Presentation service activation/deactivation code (for which the syntax is defined in `mtasSscIdPresComSyntInv`) with an ND number in it.

If the ND/XND is omitted, this means that the communication is to be diverted to the ND from previous CFNRc activation. The ND from previous CFNRc activation is only saved, if the operator node level configuration of attribute `mtasSscEraseWithDeact` is set to retain the service data.

Note: This requires that `mtasSscEraseWithDeact` is set to 0.

Command syntax for CFNRc activation (PIN required. ND/XND optional):

*63*PIN*ND#

*63*PIN*XND#

*63*PIN#

mtasSscCfnrcComSyntDeact

Command syntax for CFNRc deactivation (PIN required):

#63*PIN#

#63PIN#



Command syntax for CFNRc deactivation (No PIN required):

#63#

mtasSscCfnrcComSyntInt

Command syntax for CFNRc status interrogation (PIN required):

*#63*PIN#

*#63PIN#

Command syntax for CFNRc status interrogation (No PIN required):

*#63#

Command syntax for CFNRc verification (Data check. PIN required):

*#63*PIN*ND#

*#63PIN*ND#

Command syntax for CFNRc verification (Data check. No PIN required. ND mandatory):

*#63*ND#

*#63ND#

4.2.2.11

Command Syntax for CFCOND Configuration

This section lists examples of the configuration of command syntax attributes for CFCOND.

mtasSscCfCondComSyntAct

Command syntax for CFCOND activation (No PIN required. ND/XND optional):

*71*ND#

*71#

*71*XND#

The embedded SSC code represented by the XND SI field in the previous examples is expected to contain a Dynamic Ad-hoc Presentation service activation/deactivation code (for which the syntax is defined in mtasSscIdPresComSyntInv) with a New Destination (ND) number in it.

If the ND/XND is omitted this means that the communication is to be diverted to the ND from previous CFCOND activation. The ND from previous CFCOND activation is only saved, if the operator node level configuration of attribute mtasSscEraseWithDeact is set to retain the service data.

Note: This requires that mtasSscEraseWithDeact is set to 0.

Command syntax for CFCOND activation (PIN required. ND/XND optional):

*71*PIN*ND#

*71*PIN*XND#

*71*PIN#



mtasSscCfCondComSyntDeact

Command syntax for CFCOND deactivation (PIN required):

#71*PIN#

#71PIN#

Command syntax for CFCOND deactivation (No PIN required):

#71#

4.2.2.12

Command Syntax for CDIVAll Configuration

This section lists examples of the configuration of command syntax attributes for CDIVAll.

mtasSscCDivAllComSyntInt

Command syntax for Interrogation of CDIVAll (No PIN required):

*#73#

Command syntax for Interrogation of CDIVAll (PIN required):

*#73*PIN#

mtasSscCDivAllComSyntDeact

Command syntax for CDIVAll deactivation (PIN required):

#73*PIN#

#73PIN#

Command syntax for CDIVAll deactivation (No PIN required):

#73#

4.2.2.13

Command Syntax for TIP Configuration

This section lists examples of the configuration of command syntax attributes for TIP.

mtasSscTipComSyntAct

Command syntax for TIP activation (No PIN required):

*76#

Command syntax for TIP activation (PIN required):

*76*PIN#

mtasSscTipComSyntDeact

Command syntax for TIP deactivation (No PIN required):

#76#

Command syntax for TIP deactivation (PIN required):



#76*PIN#

mtasSscTipComSyntInt

Command syntax for TIP interrogation (No PIN required):

*#76#

Command syntax for TIP interrogation (PIN required):

*#76*PIN#

4.2.2.14 Command Syntax for TIR in Temporary Mode Configuration

This section lists examples of the configuration of command syntax attributes for TIR.

mtasSscTirComSyntAct (in Temporary Mode)

Command syntax for TIR activation or setting default behavior to Restricted (No PIN required), or both:

*77#

Command syntax for TIR activation or setting default behavior to Restricted (PIN required), or both:

*77*PIN#

mtasSscTirComSyntDeact (in Temporary Mode)

Command syntax for TIR activation or setting default behavior to Not-restricted (No PIN required), or both:

#77#

Command syntax for TIR activation or setting default behavior to Not-restricted (PIN required), or both:

#77*PIN#

mtasSscTirComSyntInt

Command syntax for TIR interrogation (No PIN required):

*#77#

Command syntax for TIR interrogation (PIN required):

*#77*PIN#

4.2.2.15 Command Syntax for MSN Configuration

This section lists examples of the configuration of command syntax attributes for MSN.



mtasSscIdPresComSyntInvMsnSel

Command syntax for MSN invocation (No PIN required):

*11*N*ND#

4.2.2.16

Command Syntax for MCID Configuration

This section lists examples of the configuration of the command syntax attribute for MCID.

mtasSscMcidComSyntInv

Command syntax for invocation of MCID (No PIN required):

*78#

*78ICN#

Note: If the ICN is omitted, this means that the last incoming communication is to be marked as malicious.

Command syntax for invocation of MCID (PIN required):

*78*PIN#

*78*PIN*ICN#

4.2.2.17

Command Syntax for Dynamic Black List Configuration

This section lists examples of the configuration of command syntax attributes for Dynamic Black List.

mtasSscDbIComSyntInv

Command syntax for invocation of Dynamic Black List (No PIN required):

*79#

*79ICN#

Note: If the ICN is omitted, this means that the caller of the last incoming communication is to be added to the Dynamic Black List.

Command syntax for invocation of Dynamic Black List (PIN required):

*79*PIN#

*79*PIN*ICN#

mtasSscDbIComSyntDeact

Command syntax for deactivation of Dynamic Black List (No PIN required):

#79#

Command syntax for deactivation of Dynamic Black List (PIN required):

#79*PIN#



mtasSscDbIComSyntInt

Command syntax for interrogation of Dynamic Black List (No PIN required):

*#79#

Command syntax for interrogation of Dynamic Black List (PIN required):

*#79*PIN#

4.2.2.18

Command Syntax for MCR Configuration

This section lists examples of the configuration of command syntax attributes for MCR.

mtasSscMcrComSyntInv

Command syntax for invocation of MCR (No PIN required):

*80#

*80*ICN#

Configuration using the ICN keyword gives the possibility to specify which of the two previous incoming communications that is to be regarded as malicious, the *Latest* or the one before the latest, called *Previous*. “ICN” is replaced at user invocation by a digit to identify either the *Latest* (by using a “1” in the SSC command) or the *Previous* (by using a “2” in the SSC command).

Examples:

*80*1# to brand the latest communication as malicious.

*80*2# to brand the previous communication as malicious.

Command syntax for invocation of MCR (PIN required):

*80*PIN#

*80*PIN*ICN#

Where the parameter PIN is expected to be provided for the user and is checked against the Service data PIN value for the user.

Note: If ICN is omitted, the communication to be branded malicious defaults to the last incoming communication.

mtasSscMcrComSyntDeact

Command syntax for deactivation of MCR (No PIN required):

#80#

#80ICN#

Command syntax for deactivation of MCR (PIN required):

#80*PIN#

#80*PIN*ICN#

**mtasSscMcrComSyntInt**

Command syntax for interrogation of MCR (No PIN required):

*#80#
*#80ICN#

Command syntax for interrogation of MCR (PIN required):

*#80*PIN#
*#80*PIN*ICN#

4.2.2.19 Command Syntax for CFB Configuration

This section lists examples of the configuration of command syntax attributes for CFB.

mtasSscCfbComSyntAct

Command syntax for CFB activation (No PIN required. ND/XND optional):

*81*ND#
*81*XND#
*81#

The embedded SSC code represented by the XND SI field in the previous examples is expected to contain a Dynamic Ad-hoc Presentation service activation/deactivation code (for which the syntax is defined in `mtasSscIdPresComSyntInv`) with a New Destination (ND) number in it.

If the ND is not included, then the ND from the previous CFB activation is used in this case.

Command syntax for CFB activation (PIN required. ND/XND optional):

*81*PIN*ND#
*81*PIN*XND#
*81*PIN#

mtasSscCfbComSyntDeact

Command syntax for CFB deactivation (No PIN required):

#81#

Command syntax for CFB deactivation (PIN required):

#81*PIN#

mtasSscCfbComSyntInt

Command syntax for CFB status interrogation (No PIN required):

*#81#

Command syntax for CFB status interrogation (PIN required):

*#81*PIN#



Command syntax for CFB verification (Data check. No PIN required):

*#81*ND#

Command syntax for CFB verification (Data check. PIN required):

*#81*PIN*ND#

4.2.2.20

Command Syntax for ACR Configuration

This section lists examples of the configuration of command syntax attributes for ACR.

mtasSscAcrComSyntAct

Command syntax for ACR activation:

*85#

*85*PIN#

mtasSscAcrComSyntDeact

Command syntax for ACR deactivation:

#85#

#85*PIN#

mtasSscAcrComSyntInt

Command syntax for ACR status interrogation:

*#85#

*#85*PIN#

4.2.2.21

Command Syntax for CNIP Configuration

This section lists examples of the configuration of command syntax attributes for CNIP.

mtasSscCnipComSyntAct

Command syntax for CNIP activation (No PIN required):

*90#

Command syntax for CNIP activation (PIN required):

*90*PIN#

mtasSscCnipComSyntDeact

Command syntax for CNIP deactivation (No PIN required):

#90#

Command syntax for CNIP deactivation (PIN required):



#90*PIN#

mtasSscCnipComSyntInt

Command syntax for CNIP interrogation (No PIN required):

*#90#

Command syntax for CNIP interrogation (PIN required):

*#90*PIN#

4.2.2.22

Command Syntax for DNDCF Configuration

This section lists examples of the configuration of command syntax attributes for DNDCF.

mtasSscDndCfComSyntAct

Command syntax for DNDCF activation (No PIN required. ND optional):

*xx*ND#

*xx#

If the ND is omitted, this means that the communication is to be diverted to the ND from previous DNDCF activation. The ND from previous DNDCF activation is only saved, if the operator Node level configuration of attribute `mtasSscEraseWithDeact` is set to retain the service data.

Note: This requires that `mtasSscEraseWithDeact` is set to 0.

Command syntax for DNDCF activation (PIN required. ND optional):

*xx*PIN*ND#

*xx*PIN#

mtasSscDndCfComSyntDeact

Command syntax for DNDCF deactivation (PIN required):

#xx*PIN#

#xxPIN#

Command syntax for DNDCF deactivation (No PIN required):

#xx#

mtasSscDndCfComSyntInt

Command syntax for DNDCF status interrogation (PIN required):

*#xx*PIN#

*#xxPIN#

Command syntax for DNDCF status interrogation (No PIN required):

*#xx#



Command syntax for DNDCF verification (Data check. PIN required):

```
*#xx*PIN*ND#
*#xxPIN*ND#
```

Command syntax for DNDCF verification (Data check. No PIN required. ND mandatory):

```
*#xx*ND#
*#xxND#
```

4.2.2.23 Command Syntax for DNDCB Configuration

This section lists examples of the configuration of command syntax attributes for DNDCB.

mtasSscDndCbComSyntAct

Command syntax for DNDCB activation:

```
*xx#
*xx*PIN#
```

mtasSscDndCbComSyntDeact

Command syntax for DNDCB deactivation:

```
#xx#
#xx*PIN#
```

mtasSscDndCbComSyntInt

Command syntax for DNDCB status interrogation:

```
*#xx#
*#xx*PIN#
```

4.2.2.24 Dynamic Ad-Hoc Identity Presentation Configuration

This section lists examples of the configuration of command syntax attributes for Dynamic Ad-hoc Identity Presentation (applicable to all OIR modes, except permanent).

mtasSscIdPresComSyntInv

Command syntax for Setting OIR to Restricted on a per call basis (no PIN required):

ND specified inside the command:

```
*91*ND#
```



mtasSscldPresComSyntDis

Command syntax for Setting OIR to Not-restricted on a per call basis (no PIN required):

ND specified inside the command:
#91*ND#

4.2.2.25 Command Syntax for CC Configuration

This section lists examples of the configuration of command syntax attributes for CC.

mtasSscCcComSyntIntCcbsQ

*#37#

mtasSscCcComSyntRevokeCcbsQ

#37#

mtasSscCcComSyntIntCcnrQ

*#38#

mtasSscCcComSyntRevokeCcnrQ

#38#

4.2.2.26 Command Syntax for Call Return Configuration

This section lists examples of the configuration of command syntax attributes for Call Return.

mtasSscCrComSyntInv

*10#

mtasSscCrEraComSyntInv

*12#

4.2.2.27 Command Syntax for Hotline Configuration

This section lists examples of the configuration of command syntax attributes for Hotline.



mtasSscHotlineComSyntAct

*54*ND#

*54**CN*ND#

mtasSscHotlineComSyntDeact

#54#

mtasSscHotlineComSyntInt

*#54#

4.2.2.28 Command Syntax for Hotline Voicemail Configuration

This section lists examples of the configuration of command syntax attributes for Hotline Voicemail.

mtasSscHotlineComSyntActVm

*55#

*55**CN#

mtasSscHotlineComSyntDeactVm

#55#

mtasSscHotlineComSyntIntVm

*#55#

4.2.2.29 Command Syntax for STOD Call Pull Configuration

This section lists examples of the configuration of command syntax attributes for STOD Call Pull.

mtasSscStodPullComSyntInv

*11#

4.2.2.30 Command Syntax for CellAnn Configuration

This section lists examples of the configuration of command syntax attributes for CellAnn.



mtasSscCellAnnComSyntInt

*48#, *48N#

4.2.2.31

Command Syntax for PriorityService Call Configuration

This section lists examples of the configuration of command syntax attributes for PriorityService Call.

mtasSscPriorityCallComSyntInv

*272ND, *272XND



5 Performance Management

For information on measurements related to the SSC service, refer to *MTAS Performance Measurements*.





6 Fault Management

The SSC service has no alarms.