

# ST AS Carrier Select Rn and Carrier Pre-Select Rn Management Guide

MTAS

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USER GUIDE

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# 1 Introduction

This document describes how to configure the SIP Trunking Application Server (ST AS) Carrier Select Rn (CSRn) and Carrier Pre-Select Rn (CPSRn) services in MTAS. It describes how to configure the Managed Objects (MOs) for the ST CSRn and CPSRn services, how these services are collocated with other services in the ST AS, and the interaction between them.

This document is intended for personnel configuring and fine-tuning the ST AS.

## 1.1 Prerequisites

It is assumed that the user of this document is familiar with the Operation and Maintenance (O&M) area, in general.

### 1.1.1 Licenses

No service license is required for the ST CSRn or CPSRn services.

### 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 ST CSRn service allows an end user in a Private Branch Exchange (PBX) to choose which carrier to select for a particular call. The main functions of the ST CSRn are as follows:

- Check if the user is allowed to use a carrier identified from a dialed Carrier Select Code (CSC) prefixed to the dialed number
- Take the appropriate action that includes the addition of the `rn` parameter.

The ST CPSRn service allows calls from each served user to be handled by a carrier other than the default carrier, depending on whether the call is local or remote.

The ST CSRn overrides the ST CPSRn. They are both originating services normally executed for the originating session case.

After the ST Communication Diversion (CDIV) on a terminating ST AS, when AS chaining is disabled, the ST AS continues to execute ST CSRn or CPSRn on behalf of the diverted PBX.

When AS chaining is enabled, the `INVITE` is routed back to the Serving Call Session Control Function (S-CSCF) after ST CDIV is executed. The S-CSCF can then initiate triggering of ST CSRn or ST CPSRn for the originating session case.

### 2.1 ST CSRn and CPSRn Subfunctions

This section describes the main subfunctions in the ST CSRn and ST CPSRn.

#### 2.1.1 ST Carrier Pre-Select Rn

The ST Carrier Pre-Select Rn subfunction provides the ST CPSRn service, which allows the operator to choose, for each end user, which carrier is to be used for all calls made to local and remote phone numbers.

#### 2.1.2 Check Local Rn

The Check Local Rn subfunction determines whether a call type is local or remote. It uses the Country Code (CC) and Area Code (AC) stored in the subscription data to determine if the Called Party Numbers are local or remote.

If a match is found for the CC and AC of the caller in the Called Party number, the call is considered local, otherwise, it is considered remote.



### 2.1.3 ST Carrier Select Rn

The ST Carrier Select Rn subfunction provides the ST CSRn service, which allows an end user to choose which carrier to be used for a particular call.

### 2.1.4 Destination Validation Rn

The Destination Validation Rn subfunction checks if calls to the destination address are not allowed to use Carrier Select.

### 2.1.5 Configure Service

Both ST CSRn and ST CPSRn services are enabled at node level. For more information, refer to *Managed Object Model (MOM)*.

## 2.2 Interaction with Other Services

This section describes how the ST CSRn and the ST CPSRn interact with other services.

### 2.2.1 ST CSRn and ST CPSRn

The ST CSRn service has precedence over the ST CPSRn service. That means, if a user provisioned with both ST CSRn and ST CPSRn starts call-by-call Carrier Select, then the call is routed using the ST CSRn service.

Both ST CSRn and ST CPSRn preserve the received `rn` parameter. This means that these services are bypassed, and the `rn` parameter is forwarded if received from the PBX. It is the same behavior in Multimedia Telephony (MMTel). The standard CS and CPS parameters (`cic`, `dai`, `npi`) are deleted by ST CSRn or ST CPSRn, if provisioned for the PBX.

### 2.2.2 ST Communication Diversion

If the target address of a diversion contains a phone number, the `INVITE` to the target is subject to the same ST CSRn or ST CPSRn logic as if the served user originated the call to the target.

After the ST CDIV, either terminating ST AS continues to trigger ST CSRn (or ST CPSRn) for the terminating session case, or the `INVITE` is routed back to the S-CSCF, in which case the originating ST AS is started from the S-CSCF, and triggers originating services (like ST CSRn or ST CPSRn) for the originating session case.

For more information, refer to *MTAS Communication Diversion Management Guide*.





### 2.2.3 ST Communication Barring

The original domain name in the incoming request is only overwritten with the domain name of the Carrier, after Originating Communication Barring service (OCB) interaction has been carried out.

It is possible to create OCB rules that bar or allow calls based on carrier selected by the caller. For more information, refer to *ST AS Communication Barring Service Management Guide*.





### 3 ST CSRn and ST CPSRn Configuration

The ST CSRn and ST CPSRn services are controlled by the *MtasStCsCpsRn* MO. An overview of the ST CSRn and ST CPSRn MO structure is shown in Figure 1.

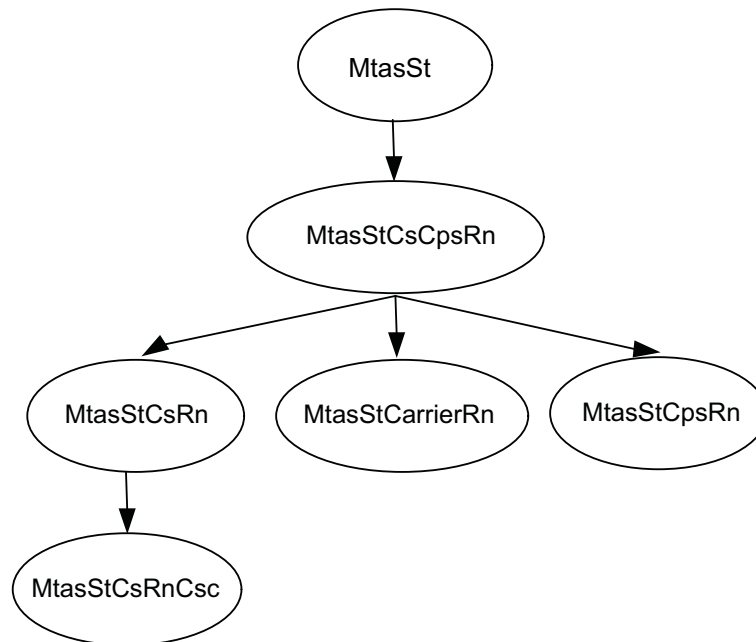


Figure 1 ST CSRn and ST CPSRn MO Structure

Configurable MOs and attributes related to the ST carrier selection services are defined in *Managed Object Model (MOM)*.

#### 3.1 ST Carrier Selection Reason Codes Configuration

The Q.850 Reason code value that arrives for a congestion situation in 4xx or 5xx is set by the *mtasStCsCpsRnReasonCodes* attribute in the *MtasStCsCpsRn* MO.

#### 3.2 ST CSRn Administrative State Configuration

The ST CSRn service is enabled by setting the *mtasStCsRnAdministrativeState* attribute in the *MtasStCsRn* MO to 1. If the *mtasStCsRnAdministrativeState* is set to 0 (Locked), no ST CSRn service is provided by the ST AS.



### 3.3 ST CSRn Carrier Access Code Configuration

The code to be dialed by the user to use an alternative carrier is set by the `mtasStCsRnCarrierAccessCode` attribute in the `mtasStCsRn` MO.

### 3.4 ST CSRn Carrier Select Code Configuration

The code to be dialed by the user pointing out the specific carrier is set by the `mtasStCsRnCsc` attributes in the `mtasStCsRn` MOs. The string consists of the Carrier Access Code (CAC) followed by the Carrier Identification Code (CIC) as received in the `Request-URI`.

### 3.5 ST CSRn Carrier Identity Configuration

Each carrier identity is set by the `mtasStCsRnCscCarrierId` attribute in the `mtasStCsRnCsc` MO. It is a key to an existing instance of `MtasStCarrierRn` MO.

### 3.6 ST CSRn Carrier Name Configuration

The alias name for each carrier is represented by the `mtasStCsRnCscCarrierName` attribute in the `mtasStCsRnCsc` MO.

### 3.7 ST Carrier Rn Configuration

The `CarrierId` in the `MtasStCarrierRn` MO is defined by its attribute `MtasStCarrierRn`.

### 3.8 ST Carrier Rn Domain Configuration

The domain associated with the carrier is set by the `MtasStCarrierRnDomain` attribute in the `MtasStCarrierRn` MO.

### 3.9 ST Carrier Rn Disallowed Destinations Configuration

The destination telephone numbers not allowed to be routed over a specific carrier are configured by the `mtasStCarrierRnDestDisallowed` attribute of the carrier `MtasStCarrierRn` MO. This attribute is a list specifying the leftmost part of global numbers, starting with a + sign followed by 0–31 digits.



## 3.10 ST CPSRn Administrative State Configuration

The ST CPSRn service is enabled by setting the `mtasStCpsRnAdministrativeState` attribute in the `MtasStCpsRn` MO to **1**. If the `mtasStCpsRnAdministrativeState` is set to **0** (Locked), no ST CPSRn service is provided by the ST AS.

## 3.11 ST CPSRn Test Number Local Configuration

The test numbers that a user can dial to test the local preselection are set by the `mtasStCpsRnTestNumLocal` attributes in the `MtasStCpsRn` MO. Each value in the local test number list must be different from each value in the `mtasStCpsRnTestNumRemote`.

## 3.12 ST CPSRn Test Number Remote Configuration

The test numbers that a user can dial to test the remote preselection are set by the `mtasStCpsRnTestNumRemote` attributes in the `MtasStCpsRn` MO. Each value in the remote test number list must be different from each value in the `mtasStCpsRnTestNumLocal`.

## 3.13 Service Data Configuration

This section describes how to configure the service data.

### 3.13.1 Operator Subscription Level Service Configuration

The operator part of the subscriber data is set through the Customer Administration Interface Third Generation (CAI3G) protocol. As a prerequisite for activating ST Carrier Select Rn or ST Carrier Pre-Select Rn, the Country Code and Area Code of the PBX must be set in the ST Common Data.

For more information, refer to *MTAS CAI3G Interface for ST AS*.

### 3.13.2 Subscriber Subscription Level Service Configuration

No service data for the ST CSRn, nor ST CPSRn services are configured in the subscriber part of the subscriber data.





## 4 Performance Management

For information on measurements related to the ST CSRn and ST CPSRn services, refer to *Managed Object Model (MOM)*.







## 5 Fault Management

There are no alarms related to the ST CSRn and ST CPSRn services.