

vMTAS Network Impact Report from 1.10 to 1.14.0

MTAS

NETWORK IMPACT REPORT

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1 Introduction

This Network Impact Report (NIR) describes how vMTAS 1.14.0, with new and enhanced features and corrections, affects vMTAS 1.10. The NIR also describes the impact on the overall network, including all affected products and functions.

This document covers the following new and enhanced features:

New Features

- MTAS Awareness after AS Recovery
- MMTel AS Telephone Service Suspension
- MTAS User-level Control of Supplementary Service Codes
- Rounding mechanism for reporting Used Service Units to Online Charging
- Identify where Privacy-Related Processing is in action and log the event
- Identify where privacy data is logged and assign a tag if missing
- Hardened Etc Overlay Introduction
- Unique Prompt Prefix
- VMware Instantiation and Termination Workflow
- Forking Interworking Function (F-IWF)
- vMTAS, Tool for Faster and Easier Handling of Subscriber and Software Trace
- Announcement according to Reason header
- Communication Event Logging
- vMTAS Workflow enhancement when used with Ericsson Orchestrator

Enhanced Features

- Support of External MRFC node failover in MMTel AS (drop 2)
- Identity Presentation Enhancement for Enterprise Customers
- Improved Early Dialog Handling in CDIV
- MTAS Improvements for Network Announcement
- Improvements of Signaling Latency at Interaction with OCS
- External storage of last call details for call return service



- Enhancement of Hotline Service
- VoLTE for Unified Communication Non-UC Routing Numbers
- Interaction between CAT and MobileCommunicationWaiting
- Support of IMRN in National Format for SDS
- Network-based Handling of Non-authorized International Calls
- vMTAS, Improved Serviceability Success Rate During In-service Scaling
- Adding Date to Call Return Announcement for Calls Older Than Two Days
- Communication-barring Enhancements
- Mid-call Renegotiation Request Retry
- Call Type Validation for the Destination Number Provisioned for Abbreviated Dialing
- Network Announcement Triggered by Specific SIP Header
- Support of Originating Identity Presentation Restriction Service for Priority Calls in MMTel AS
- Ro Announcement for errors without Announcement AVP
- Graceful locking from vMRF
- Increased number of Rating Centers in Number Analysis
- EM-driven instantiation
- EM-driven scaling
- Time-based auto-scale
- Improved Number Table Handling
- Realignment of TCO: Health check output
- Support for ANSI network (CAP)
- vMTAS improved resilience to network disturbances

For more information on the changed features, see Section 5 on page 49.

1.1 Terms of Phasing Out Features

The following terms are used when phasing out and removing features from the product:

**Deprecated**

A feature that is deprecated means that the feature is still there and usable, but is now substituted by another feature, and is subject to be made obsolete or be deleted after one year. During the time from deprecation to making a feature obsolete or deleted, all use of the deprecated feature needs to be migrated to the new feature.

Obsolete

Making a feature obsolete means, that the feature or parts of it might be still part of the product (for technical reasons) but are not supported anymore. Use of these features is not possible.

Deleted

Deletion means that the feature is deleted as such, it is not visible and there is no way to use it any more, from the current Release and onwards.





2 General Impact

This section describes the general impact owing to the introduction of vMTAS 1.14.0.

2.1 Backward Compatibility

vMTAS 1.14.0 is backward compatible and unless stated otherwise, legacy behavior is preserved.

2.1.1 Interoperable Network Elements

The interoperable Network Elements for vMTAS 1.14.0 are described in Table 1.

Table 1 Supported Versions of Network Elements

Network Element	Earliest Supported Versions
MRS	14A
CSCF	14A
HSS	14A
OSS-RC	<p>O16A:</p> <p>Upgrade for OSS-RC is only needed when new parameters and counters are introduced in MTAS and are to be used.</p> <p>Up to O18B:</p> <p>The vMTAS 1.14 is backward compatible except synchronizing Number Normalization, Number Analysis and Carrier Select configuration. The same function level exists, but the method for synchronizing the configuration is changed. Respective Table EditAction and CommitAction commands need to be executed before and after the configuration change.</p>
EMA	7.0 CP2



Network Element	Earliest Supported Versions
SBG	15B
vENM	<p>vMTAS Lifecycle Management requires 17.15(-3.6.8) version of VNF-LCM; therefore use the 18A release of ENM.</p> <p>Up to ENM 19.1:</p> <p>The vMTAS 1.14 is backward compatible except synchronizing Number Normalization, Number Analysis and Carrier Select configuration. The same function level exists, but the method for synchronizing the configuration is changed. Respective Table EditAction and CommitAction commands need to be executed before and after the configuration change.</p>

2.2 Capacity and Performance

2.2.1 Subscriber Capacity

The subscriber capacity is not affected by the introduction of vMTAS 1.14.0.

The number of half call establishments and releases per second determines the need of processing resources. Processing capacity is the limiting factor for the MMTel, SCC, Conf, NW, and SIP Trunking AS.

2.2.2 Network Performance and Traffic Capacity

Between release 1.10 and 1.11.0, vMTAS capacity degradation is 5% to 7% for reference capacity, and 1% to 5% for engineered capacity.

Between vMTAS release 1.11.0 and 1.12.0, there is approximately a 1–7% capacity degradation.

Between release 1.12.0 and 1.13.0, the following degradations are applicable, according to our measurements:

AS	HW Concept	PLs	vCPUs	RefCap Delta (in % Baseline Release Capacity)
MMTel AS	GEP5	2	4	-25.0
MMTel AS	GEP5	2	8	-16.9
MMTel AS	GEP5	2	16	-10.7
MMTel AS	GEP5	10	16	-10.8
MMTel AS	GEP7	10	24	-5.8



AS	HW Concept	PLs	vCPUs	RefCap Delta (in % Baseline Release Capacity)
MMTel AS	GEP7	22	24	-5.7
SCC AS	GEP5	2	16	-13.4
SCC AS	GEP7	10	24	-9.8

Between vMTAS release 1.13.0 and 1.14.0, there is approximately a 5–7% capacity improvement.

This leads to the overall capacity change between release 1.10 and 1.14.0 being the sum of the above changes.

2.2.3 License Handling

It is mandatory to use Network License Server (NeLS) product with vMTAS 1.14.0.

For more information, refer to [MTAS Licenses](#).





3 Licenses

This section lists the new and changed license codes added in vMTAS 1.14.0. For a list of (v)MTAS licenses, refer to [MTAS Licenses](#).

3.1 New Licenses

The new licenses are shown in Table 2.

Table 2 New Licenses

Name	Identity	Version
Forking Interworking Function	vMtasForkingIwf	CXC 401 2293
Multi-Persona	vMtasMultiPersona	CXC 401 2309

3.2 Changed Licenses

The changed licenses are shown in Table 3.

Table 3 Changed Licenses

Name	Description of Changes
-	-

3.3 Deprecated Licenses

The deprecated licenses are shown in Table 4.

Table 4 Deprecated Licenses

Name	Description of Changes
-	-

3.4 Deleted Licenses

The deleted licenses are shown in Table 5.

Table 5 Deleted Licenses

Name	Description of Changes
-	-





4 Interfaces

This section describes interface changes between the existing and new revisions of the product.

4.1 Inter-Node Interfaces

The changes to the inter-node interfaces are described in Table 6.

The description of impact is as follows:

- **No Impact** - New version can be installed without affecting other nodes.
- **Minor Impact** – There are changes, but with extra configuration the previous behavior can be kept.
- **Major Impact** – The change has made an interface backward incompatible.
- **New Interface** – The interface did not exist in the previous revision.
- **Obsolete** – The interface no longer exists.

Table 6 Changed Inter-Node Interfaces

Interface	Protocol	Impact	Description of Changes
CAI3G	CAI3G	No Impact	Updated <terminal-selector> in User Common Data. The maximum length of this element changed to allow 300 characters.
CAP	CAP	No Impact	When mtasFunctionAdministrativeState is in SHUTTINGDOWN state, instead of responding CONTINUE for IDP, SCC AS unbinds SCF SSN and notifies the peer node with SCCPM (Signaling Connection Control Part Management) to state that the affected SSN is Prohibited. Therefore, the peer node would not send IDP.
ICS	SIP	No impact	Retry of relayed mid-dialog renegotiation request on receiving 500 error response with retry-after header. This enhancement can be controlled with the mtasMmtMidCallRenegotiationRetryAfterSupport CM attribute.
ISC	SIP	Minor Impact	Because of an earlier fault, session level bandwidth was not always the sum of the media level bandwidth information in the SDP message, when an announcement is to be started by MTAS based on an Add request reply from MRFP. This fault is now corrected, so session level bandwidth is always the sum of the media level ones. Refer to HU78050.
ISC	SIP	Minor Impact	The SCC AS now handles the initialSelectionURL parameter in the top Route header for INVITE or REGISTER messages and applies SRVCC registration procedure for registered SC UE including SIP MESSAGE to ATCF
ISC	SIP	No Impact	A new originating MMTel AS service “Communication Setup Announcement” is introduced. When CM mtasCallSetupAnnAdministrativeState = 1 and subscriber is provisioned with CSA operator rules, CSA evaluates service rules and plays the announcement to the served user on outgoing INVITE before continuing call establishment.
ISC	SIP	Minor Impact	When OCS initiates call termination, then the SCN service includes configurable reason header (mtasChargingProfileReleaseReason) to indicate the reason of call release.



Table 6 Changed Inter-Node Interfaces

Interface	Protocol	Impact	Description of Changes
ISC	SIP	No Impact	A new CM parameter <code>mtasIdPresCnipAddIdParam</code> is introduced. If this is set to TRUE, it enables MMTel AS to support adding the <code>id</code> parameter to the Event header after calling-name for SIP queries over the Calling Name Server (CNS) interface.
ISC	SIP	No Impact	The parsing of the Call-ID header has changed. Until this release MTAS produced a CA and dropped the call if the Call-ID in any SIP message contained certain string literals, for example, "M:". Now this behavior is corrected. See TR HW98411.
ISC, Ma	SIP	No Impact	When a reliable provisional response is received after the final response, MTAS will send PRACK for it and handle the subsequent PRACK ACCEPT accordingly. See HW92831.
ISC, Ma	SIP	Minor Impact	Owing to TR HW72712, MTAS needs to support overlapping reliable provisional response transaction. MTAS now stops and saves new reliable provision responses before finishing the transaction of the previous reliable provisional response, then handles the saved message after previous transaction is finished.
ISC, Ma	SIP	Minor Impact	When the AS generic SIP port is used for MMTel AS and SCC AS, a new SIP header <code>P-Ericsson.Invocation-History</code> is added into the outgoing initial SIP INVITE request. The new SIP header includes the started AS name, session case, and registration state, which are from the corresponding incoming initial SIP request.
Mr	SIP	No Impact	When MMTel AS identifies an External MRFC node as non-working because of no response to a request, then it is possible to avoid selecting this node for new requests during a configurable recovery period.
OAM MIP	TCP	Major Impact	New firewall rules have been introduced. Some of these rules are responsible to protect SCs against flood attack with limiting the maximum number of TCP sessions toward the OAM MIP. If this limit is exceeding from an IP then that IP will be banned. In normal usage this limit won't be exceed but if a scripted machine to machine communication is in place then it is possible to activate this protection mechanism. In this case it is highly recommended to revise the communication and if it is possible reduce the number of used sessions. If this is not possible then the firewall rules need to be changed accordingly. For this, please refer to the MTAS Security Guide. See HW42027.
Rf	Diameter	Minor Impact	Introduction of an optional Communication Setup Announcement service, in which Supplementary-Service-Information AVP indicating the use of the CSA service is added in ACR messages when announcement is played.
Ro	Diameter	No Impact	Configurable rounding method for reporting Used Service Units (duration in seconds). The rounding method is only applicable for the used units reported in the terminate charging control request message.
Ro	Diameter	Minor Impact	Introduction of an optional Communication Setup Announcement service, in which the Supplementary-Service-Information AVP indicating the use of the CSA service is added in CCR messages when the announcement is played.
Ro/Rf	Diameter	Minor Impact	When asynchronous Ro behavior is enabled (<code>mtasChargingProfileOrigCcaUpdateEvaluation</code> , <code>mtasChargingProfileTermCcaUpdateEvaluation</code>), Offline Charging depends on the answer coming from OCS. If a positive CCA-U is received after the call has been established, Offline Charging sends a delayed ACR Start message.
Sh	Diameter	Minor Impact	User part introduced for Supplementary-Service-Codes in Service Data XML, New <code><active></code> element in user part of Supplementary-Service-Codes.
Ut	XCAP	No Impact	Updated <code><terminal-selector></code> in User Common Data. The maximum length of this element changed to allow 300 characters.
ISC	SIP	Major Impact	When MTAS sends in-dialog SIP message to the node which is in the blacklist, then this message will not be sent out and additionally this specific session will be terminated by MTAS
ISC	SIP	Minor Impact	New CM parameters <code>mtasUCRoutingSuppressServiceNumbers</code> and <code>vtasUCRoutingSuppressServiceNumbers</code> . When above parameter is 1, UC Routing service will suppress routing the call towards UC system when Business UC user dials a non UC (service number like OSN/NSN/TollFree/ShortCode) number.



Table 6 Changed Inter-Node Interfaces

Interface	Protocol	Impact	Description of Changes
CEL	SIP	No Impact	New “Communication Event Logging (CEL)” I/F is introduced where communication event is reported through PUBLISH message for a successful or unsuccessful call attempts. A PUBLISH Request is sent with “call-event-info” XML to event server whose address is configured in <code>mtasCelEventServerName</code> .
MP	H248	No Impact	MTAS supports new service change method: graceful reason: 908. After the arrival of the service change, new connections will not be allowed, but the established connections are not affected. New CM has been introduced to represent this state, called <code>mtasMrfpNodeOperState</code> .
Rf	DIAMETER	No impact	New Supplementary-Service-Identity AVP value added – UNSUCCESSFUL_MP_CS_SELECTION. This AVP will be populated by Multi-Persona service in Originating Call with Multi-Persona on CS Access use case, when MPCN from incoming INVITE could not be recognized by the service, what leads to unsuccessful call setup.
ISC	SIP	No impact	The following new cases of SIP MESSAGE usage are added: MESSAGE received outside an existing dialog carrying application specific information on an established SIP Control Channel (e.g. MCMP) MESSAGE is sent as an acknowledgement of reception and processing of the request from the previous paragraph on an established SIP Control Channel (e.g. MCMP) MESSAGE is sent as a result of an application specific condition on an established SIP Control Channel (e.g. MCMP). MTAS is rejecting not expected MESSAGE events with 606 Not Acceptable and Warning string “Not Acceptable Here
SIPCC	SIP	New interface	New control channel interface between MMTel AS and the VoLTE UE used for persona selection when being attached to CS.
ISC	SIP	Minor impact	One-time SUBSCRIBE message includes P-Charging-Vector header if the REGISTER or the initial INVITE contains it. See HX29660.
CAP, MAP	M3-IETF	Minor impact	Default retransmit behavior in M3-IETF is changed. Applications that use zero values (default values) of retransmit buffer and retransmit timer in M3-IETF configuration should be prepared to new M3-IETF behavior. The new behavior is that there will be no data retransmit between M3-IETF and SCTP layers in congestion situation. The reason is to prevent a retransmit loop of the same message causing high CPU load. To have a more stable retransmit handling the parameters should have other values than zero.
ISC	SIP	No impact	When multiple AS roles are invoked that is controlled by IFC configuration: One ISC triggering can invoke the co-located roles in MTAS for SIP signaling on AS generic SIP port. The order of invoked AS roles is specified in the Route header “as=” parameter in the initial SIP request from S-CSCF to MTAS. The invoked AS name is added to P-Ericsson.Invocation-History header of related SIP requests and responses for trouble shooting.
CAP	CAP	No impact	Previously ITU standard and Global Title was hardcoded for the CAP interface. Now support for configuration of standard (ITU or ANSI) used on the CAP signaling network is added. Configuration can be done with the <code>mtasCsiCapSccpStandard</code> CM attribute.
COM	CLI, NETCONF	Major Impact	The vMTAS 1.14 is backward compatible except synchronizing Number Normalization, Number Analysis and Carrier Select configuration. The same function level exists, but the method for synchronizing the configuration is changed. Respective Table EditAction and CommitAction commands need to be executed before and after the configuration change.



4.2 Operation and Maintenance

This section describes changes to attributes, alarms, triggers, and performance measurement counters.

4.2.1 Provisioning

This section describes new, changed, deprecated, obsolete and deleted provisioning attributes.

4.2.1.1 New Provisioning Attributes

The new provisioning attributes are listed in Table 7.

Table 7 New Provisioning Attributes

Interface	Protocol	Description of Changes
CAI3G	CAI3G	The operator has the option to provision Communication Barring service of MMTel AS and control to return SIP error response and Reason header including a Q.850 or SIP cause code + reason text to the caller using subscription data when the call is barred.
CAI3G	CAI3G	New general-purpose “subscriber-state” for the served user in the operator’s common data, so that rule-based services in MMTel AS can evaluate the condition based on the provisioned state value. New provisioning of Communication Setup Announcement as rule-based service in MMTel AS. New “subscriber-state” condition in barring rules for served user so that OCB service in MMTel AS can evaluate the condition based on the provisioned “subscriber-state” value in common data and bars the outgoing calls for the served user. New “subscriber-state” condition in barring rules for the served user, so that ICB service in MMTel AS can evaluate the condition based on the provisioned “subscriber-state” value in common data and bars the incoming calls for the served user.
CAI3G	CAI3G	User part introduced for Supplementary-Service-Codes. New <active> element in user part of Supplementary-Service-Codes.
CAI3G	CAI3G	Operator will have the option to provision user with Whitelist Conditional Hotline New elements in <hotline-operator-configuration> are (example): <whitelist-condition> <activated>true</mc:activated> <hotline-number>tel:+1234500000</mc:hotline-number> </whitelist-condition>
Ut	XCAP	User part introduced for Supplementary-Service-Codes. New <active> element in user part of Supplementary-Service-Codes.
Ut	XCAP	The user has the option to provision Communication Barring service of MMTel AS and control to return SIP error response and Reason header including a Q.850 or SIP cause code + reason text to the caller using subscription data when the call is barred.
Ut	XCAP	New “subscriber-state” condition in barring rules for the served user, so that OCB service in MMTel AS can evaluate the condition based on the provisioned “subscriber-state” value in common data and bars the outgoing calls for the served user. New “subscriber-state” condition in barring rules for the served user, so that ICB service in MMTel AS can evaluate the condition based on the provisioned “subscriber-state” value in common data and bars the incoming calls for the served user.
CAI3G	CAI3G	New service element “communication-event-logging” is added in MTAS for CAI3G information model



4.2.1.2 Changed Provisioning Attributes

The changed provisioning attributes are listed in Table 8.

Table 8 Changed Provisioning Attributes

Interface	Protocol	Impact	Description of Changes
CAI3G	CAI3G	No Impact	Application constraint check between element <code>ad-hoc-temporary-presentation-not-restricted</code> and <code>restriction</code> has been removed (HW96647). Originating Identity Restriction Failure: Element restriction cannot be present when value <code>ad-hoc-temporary-presentation-not-restricted</code> is set.

4.2.1.3 Deprecated Provisioning Attributes

The deprecated provisioning attributes are listed in Table 9.

Table 9 Deprecated Provisioning Attributes

Interface	Protocol	Description of Changes
-	-	-

4.2.1.4 Obsolete Provisioning Attributes

The obsolete provisioning attributes are listed in Table 10.

Table 10 Obsolete Provisioning Attributes

Interface	Protocol	Description of Changes
-	-	-

4.2.1.5 Deleted Provisioning Attributes

The deleted provisioning attributes are listed in Table 11.

Table 11 Deleted Provisioning Attributes

Interface	Protocol	Description of Changes
-	-	-

4.2.2 Configuration

This section describes new, changed, deprecated, obsolete, and deleted configuration attributes.

For more information on attributes and parameters, refer to vMTAS Master Parameter Value List.



4.2.2.1 New Configuration Attributes

The new configuration attributes are listed in Table 12.

Table 12 New Configuration Attributes

Attribute Name	Description
CarSelCarrierTableSyncState	Added and supported
carSelDialedStringAnalysisTableSyncState	Added and supported
genericThresholdAlarmEnable	Added and supported
interval_timeout	Added and supported
mtasAbDialCallTypeValidation	Now supported
mtasCDivActivationState	Added and supported
mtasCDivAddServedUserToHIHeader	Added and supported
mtasCDivChangeTime	Added and supported
mtasCDivView	Added and supported
MtasCel	Now supported
mtasCelAdministrativeState	Now supported
mtasCelEventServerName	Now supported
mtasCelReportingFilterList	Now supported
mtasCelReportingHeaderFilter	Now supported
mtasChargingProfileDefaultImsiReporting	Added, but not supported
mtasChargingProfileEnhancedReportRoFailureOverRf	Added, but not supported
mtasChargingProfileOrigCcaUpdateEvaluation	Added and supported
mtasChargingProfileReleaseReason	Added and supported
mtasChargingProfileReportAccessChange	Added, but not supported
mtasChargingProfileReportServedPersona	Added, but not supported
MtasChargingProfileRoReject	Added, but not supported
mtasChargingProfileRoReject	Added, but not supported
mtasChargingProfileRoRejectAnn	Added and supported
mtasChargingProfileRoRejectDefaultAnnRemoteUser	Added, but not supported
mtasChargingProfileRoRejectDefaultAnnServedUser	Now supported
mtasChargingProfileRoRejectGa	Added, but not supported
mtasChargingProfileRoundingUSU	Added and supported
mtasChargingProfileTermCcaUpdateEvaluation	Added and supported
MtasComCcmMccDestinationMapping	Added and supported
mtasComCcmMccDestinationMappingMappedValue	Added and supported
MtasComCcmMccMnc	Added and supported
mtasComCcmMccMncHome	Added and supported
mtasConfLastMovedParticipantRemovalEnabled	Added and supported



Attribute Name	Description
mtasCrStorageLastIncomingCall	Added and supported
MtasCsa	Added and supported
mtasCsaAdministrativeState	Added and supported
mtasCsDsaAllowSpecialchars	Added and supported
MtasCsiCap	Added and supported
mtasCsiCapCdEs	Added and supported
mtasCsiCapCdGti	Added and supported
mtasCsiCapCdNai	Added and supported
mtasCsiCapCdNp	Added and supported
mtasCsiCapCdTt	Added and supported
mtasCsiCapCgEs	Added and supported
mtasCsiCapCgGti	Added and supported
mtasCsiCapCgNai	Added and supported
mtasCsiCapCgNp	Added and supported
mtasCsiCapCgTt	Added and supported
mtasCsiCapSccpStandard	Added and supported
mtasCsiRelayScfAddress	Added, but not supported
mtasCsiRelayScfSubsystemNumber	Added, but not supported
mtasCwVersion	Added, but not supported
mtasDenVersion	Added and supported
mtasFcdPemInterworking	Added and supported
MtasFoIw	Added, but not supported
mtasFoIwAdministrativeState	Now supported
mtasFoIwInvocationHeaderHandling	Now supported
mtasFoIwInvocationHeaderName	Now supported
mtasFoIwInvocationHeaderValue	Now supported
mtasFoIwMode	Now supported
mtasFunctionMmtAsName	Added and supported
mtasFunctionNwFoIwAsName	Added and supported
mtasFunctionNwPrIwAsName	Added and supported
mtasFunctionScalingTerminateWaitTime	Added and supported
mtasFunctionSccAsName	Added and supported
mtasGaAnnSessionProgressReason	Added and supported
mtasIcbActivationState	Added and supported
mtasIcbChangeTime	Added and supported
mtasIcbView	Added and supported
mtasIdPresCnipAddIdParam	Now supported
mtasIdPresOipDisplayNameFiltering	Added, but not supported



Attribute Name	Description
mtasLiUtAdministrativeState	Added, but not supported
mtasMmtDomesticRoaming	Added, but not supported
mtasMmtMidCallRenegotiationRetryAfterSupport	Added and supported
mtasMmtNpliOriginatingCSLocationInformation	Added and supported
mtasMmtSipccIdentification	Now supported
mtasMmtVersion	Added, but not supported
mtasMrfpNodeOperState	Now supported
mtasMultiPersonaAdministrativeState	Now supported
mtasMultiPersonaCapableFeatureTag	Added, but not supported
mtasMultiPersonaEnhancement	Now supported
mtasMultiPersonaInviteDelay	Now supported
mtasMultiPersonaMpcnMaxLifetime	Added and supported
MtasMultiPersonaMpcnRange	Added and supported
mtasMultiPersonaMpcnRangeFirst	Added and supported
mtasMultiPersonaMpcnRangeLast	Added and supported
mtasMultiPersonaOrigPolicyRejectionAnnName	Added, but not supported
mtasNaAnnCause	Added and supported
mtasNaAnnCauseAnnName	Added and supported
mtasNaAnnCauseRejectCode	Added and supported
mtasNaAnnCauseRejectReason	Added and supported
MtasNaAnnCauseT	Added and supported
mtasNaAnnCauseTAnnName	Added and supported
mtasNaAnnCauseTRejectCode	Added and supported
mtasNaAnnCauseTRejectReason	Added and supported
mtasNaAnnRejectCode	Added and supported
mtasNaAnnRejectReason	Added and supported
MtasNaRaSipHeader	Added and supported
mtasNaRaSipHeaderGaAnnId	Added and supported
mtasNaRaSipHeaderName	Added and supported
mtasNaRaSipHeaderRejectCode	Added and supported
mtasNaRaSipHeaderRejectReason	Added and supported
mtasNaRaSipHeaderValue	Added and supported
mtasNwFoIwAsName	Added, but not supported
mtasNwPrIwAsName	Added, but not supported
mtasOcbActivationState	Added and supported
mtasOcbChangeTime	Added and supported
mtasOcbRejectCode	Added and supported
mtasOcbRejectReason	Added and supported



Attribute Name	Description
mtasOcbView	Added and supported
MtasScaling	Added and supported
mtasScalingScaleIn	Added and supported
mtasScalingScaleOut	Added and supported
mtasScalingTimeBasedScalingEnabled	Added and supported
mtasSdsConditionalServiceKeys	Added, but not supported
mtasSdsConditionalTermCall	Added, but not supported
mtasSdsImrnNai	Added and supported
mtasShIfServiceInformationServiceInd	Added and supported
mtasShIfStoreDeviceInformation	Added, but not supported
mtasSrvccAlertAckFallbackTime	Added and supported
mtasSrvccPreconditionTime	Added and supported
mtasSscFreezeModeComSyntAct	Added and supported
mtasSscFreezeModeComSyntDeact	Added and supported
mtasSscFreezeModeComSyntExempt	Added and supported
mtasSscMinLenOfNdNum	Added and supported
MtasSscMultiPersona	Added, but not supported
mtasSscMultiPersonaEnforceSscSubscribe	Added, but not supported
mtasSscMultiPersonaNegInvAnnPersonaSel	Added, but not supported
mtasSscMultiPersonaSyntInvPersonaSel	Added, but not supported
mtasSubsDataSccInitialSelectionAwareness	Added and supported
mtasTaSipDomain	Added and supported
mtasXdmsUtHeader	Added, but not supported
numAnaLocalCallTableSyncState	Added and supported
numberNormalisationTableSyncState	Added and supported
shutdown_timeout	Added and supported
vtasCDivActivationState	Added and supported
vtasCDivAddServedUserToHIHeader	Added and supported
vtasCDivChangeTime	Added and supported
vtasCDivView	Added and supported
VtasCel	Now supported
vtasCelAdministrativeState	Now supported
vtasCelDropBack	Now supported
vtasCelEventServerName	Now supported
vtasCelReportingFilterList	Now supported
vtasCelReportingHeaderFilter	Now supported
vtasConfLastMovedParticipantRemovalEnabled	Added and supported
vtasCrStorageLastIncomingCall	Added and supported



Attribute Name	Description
VtasCsa	Added and supported
vtasCsaAdministrativeState	Added and supported
vtasCsaDropBack	Added, but not supported
vtasCwVersion	Added, but not supported
vtasFcdPemInterworking	Added, but not supported
vtasGaAnnSessionProgressReason	Added and supported
vtasIcbActivationState	Added and supported
vtasIcbChangeTime	Added and supported
vtasIcbView	Added and supported
vtasIdPresCnipAddIdParam	Added, but not supported
vtasIdPresOipDisplayNameFiltering	Added, but not supported
vtasMmtDomesticRoaming	Added, but not supported
vtasMmtMidCallRenegotiationRetryAfterSupport	Added and supported
vtasMmtSipccIdentification	Now supported
vtasMmtVersion	Added, but not supported
vtasMultiPersonaAdministrativeState	Now supported
vtasMultiPersonaCapableFeatureTag	Added, but not supported
vtasMultiPersonaEnhancement	Now supported
vtasMultiPersonaInviteDelay	Now supported
vtasMultiPersonaMpcnMaxLifetime	Added and supported
VtasMultiPersonaMpcnRange	Added and supported
vtasMultiPersonaMpcnRange	Now supported
vtasMultiPersonaMpcnRangeFirst	Added and supported
vtasMultiPersonaMpcnRangeLast	Added and supported
vtasMultiPersonaOrigPolicyRejectionAnnName	Added, but not supported
VtasNaAnnCause	Added and supported
vtasNaAnnCauseAnnName	Added and supported
vtasNaAnnCauseRejectCode	Added and supported
vtasNaAnnCauseRejectReason	Added and supported
VtasNaAnnCauseT	Added and supported
vtasNaAnnCauseTAnnName	Added and supported
vtasNaAnnCauseTRejectCode	Added and supported
vtasNaAnnCauseTRejectReason	Added and supported
vtasNaAnnRejectCode	Added and supported
vtasNaAnnRejectReason	Added and supported
VtasNaRaSipHeader	Added and supported
vtasNaRaSipHeaderGaAnnId	Added and supported
vtasNaRaSipHeaderName	Added and supported



Attribute Name	Description
vtasNaRaSipHeaderRejectCode	Added and supported
vtasNaRaSipHeaderRejectReason	Added and supported
vtasNaRaSipHeaderValue	Added and supported
vtasOcbActivationState	Added and supported
vtasOcbChangeTime	Added and supported
vtasOcbRejectCode	Added and supported
vtasOcbRejectReason	Added and supported
vtasOcbView	Added and supported
vtasSscFreezeModeComSyntAct	Added and supported
vtasSscFreezeModeComSyntDeact	Added and supported
vtasSscFreezeModeComSyntExempt	Added and supported
vtasSscMinLenOfNdNum	Added and supported
VtasSscMultiPersona	Added, but not supported
vtasSscMultiPersonaEnforceSscSubscribe	Added, but not supported
vtasSscMultiPersonaNegInvAnnPersonaSel	Added, but not supported
vtasSscMultiPersonaSyntInvPersonaSel	Added, but not supported
vtasSubsDataSccInitialSelectionAwareness	Added and supported
watchdog_timeout	Added and supported

4.2.2.2

Changed Configuration Attributes

The changed configuration attributes are shown in Table 13.

Table 13 Changed Configuration Attributes

DN mmasMemoryMonitoringId=1,mmasMonitoringId=1 "enabled"	"enabled" is set to false. For more information, see section Deleted Alarms.
mtasCbVersion	ENUM 3 = VERSION_3. When it is set to 3 (VERSION_3), Outgoing Communication Barring service reports 141 (INTERNATIONAL_TOLL_RESTRICTION) in charging event when call is barred because of International or International-exHC condition in barring rules.
mtasCDivBlackList	The attribute can only be modified if the new attribute mtasCDivView is set to 1=STANDBY (the default value is 0=ACTIVE). Changes take effect after activation (see the new action mtasCDivActivateStandby and the new attribute mtasCDivChangeTime). This is a non-backward compatible change.
mtasCrLastCallInfoType	New enum value 3: INDEPENDENT_OF_INTERROGATION_TIME_RELATIVE_FULL_DATE
mtasCsiMapSccpStandard	Corrected the dependency statement to "Can be set to ANSI (0) if mtasCsiMapCdGti and mtasCsiMapCgGti are NO_GT (0), GT_TT (2) or GT_TT_NP_ES (3) and if mtasCsiMapCdTt and mtasCsiMapCgTt is less than 255". See HX37396.
mtasFsfServiceFormatSuppressedServices	New usable formats: Cr, Csa



mtasFsfServiceFormatSuppressedServices	New usable formats: Cr, Csa
mtasIcbBlackList	<p>The attribute can only be modified if the new attribute mtasIcbView is set to 1=STANDBY (the default value is 0=ACTIVE). Changes take effect after activation (see the new action mtasIcbActivateStandby and the new attribute mtasIcbChangeTime).</p> <p>This is a non-backward compatible change.</p>
mtasIcbWhiteListDomainIncl	<p>The attribute can only be modified if the new attribute mtasIcbView is set to 1=STANDBY (the default value is 0=ACTIVE). Changes take effect after activation (see the new action mtasIcbActivateStandby and the new attribute mtasIcbChangeTime).</p> <p>This is a non-backward compatible change.</p>
mtasIcbWhiteListNumExcl	<p>The attribute can only be modified if the new attribute mtasIcbView is set to 1=STANDBY (the default value is 0=ACTIVE). Changes take effect after activation (see the new action mtasIcbActivateStandby and the new attribute mtasIcbChangeTime).</p> <p>This is a non-backward compatible change.</p>
mtasIcbWhiteListNumIncl	<p>The attribute can only be modified if the new attribute mtasIcbView is set to 1=STANDBY (the default value is 0=ACTIVE). Changes take effect after activation (see the new action mtasIcbActivateStandby and the new attribute mtasIcbChangeTime).</p> <p>This is a non-backward compatible change.</p>
mtasImrnRangeFirst	Can be in national format.
mtasImrnRangeLast	Can be in national format.
mtasMmtAsName	Supported. It is configurable now. The attribute default value is changed from "MMTelAS" to "mmt".
mtasMmtSuppressEarlyMediaHeader	Cardinality changed to 0-1 and pattern string updated to accept empty values.
mtasMrControllerMrfcNodeRecoveryTimer	<p>Range changed from 10–7200 to 0–7200. 0 means that the timer is not started, and the MrfcNode is not put to blacklist at all. See HX52510.</p> <p>Value 0 is not yet supported.</p>
mtasMrfcNodeOperationalState	Now MTAS marks the non-responding nodes (mtasMrfcNodeOperationalState attribute) with the value MARKED_NOT_RESPONDING. After the configured time (specified in mtasMrControllerMrfcNodeRecoveryTimer) expires, MTAS marks that MRFC node as working again (MARKED_OK).
mtasMultiPersonaMpcnRangeFirst	Added and supported
mtasMultiPersonaMpcnRangeLast	Added and supported
mtasMultiPersonaOrigPolicyRejectionAnnName	Added, but not supported
MtasNaAnnCause	Changed Description to indicate, that the configuration is for the originating side.
mtasNaAnnCause	Added and supported
mtasNaAnnCauseAnnName	Added and supported. Changed Description to indicate, that the configuration is for the originating side.
mtasNaAnnCauseRejectCode	Added and supported. Changed Description to indicate, that the configuration is for the originating side.
mtasNaAnnCauseRejectReason	Changed Description to indicate, that the configuration is for the originating side.



mtasNaAnnCauseRejectReason	Added and supported
MtasNaAnnCauseT	Added and supported
mtasNaAnnCauseTAnnName	Added and supported
mtasNaAnnCauseTRejectCode	Added and supported
mtasNaAnnCauseTRejectReason	Added and supported
mtasNaAnnRejectCode	Added and supported
mtasNaAnnRejectReason	Added and supported
MtasNaRaSipHeader	Added and supported
mtasNaRaSipHeaderGaAnnId	Added and supported
mtasNaRaSipHeaderName	Added and supported
mtasNaRaSipHeaderRejectCode	Added and supported
mtasNaRaSipHeaderRejectReason	Added and supported
mtasNaRaSipHeaderValue	Added and supported
mtasNwFoIwAsName	Added, but not supported
mtasNwPrIwAsName	Added, but not supported
mtasOcbActivationState	Added and supported
mtasOcbBlackList	<p>The attribute can only be modified if the new attribute mtasOcbView is set to 1=STANDBY (the default value is 0=ACTIVE). Changes take effect after activation (see the new action mtasOcbActivateStandby and the new attribute mtasOcbChangeTime).</p> <p>This is a non-backward compatible change.</p>
mtasOcbChangeTime	Added and supported
mtasOcbRejectCode	Added and supported
mtasOcbRejectReason	Added and supported
mtasOcbView	Added and supported
mtasOcbWhiteListDomainIncl	<p>The attribute can only be modified if the new attribute mtasOcbView is set to 1=STANDBY (the default value is 0=ACTIVE). Changes take effect after activation (see the new action mtasOcbActivateStandby and the new attribute mtasOcbChangeTime).</p> <p>This is a non-backward compatible change.</p>
mtasOcbWhiteListNumExcl	<p>The attribute can only be modified if the new attribute mtasOcbView is set to 1=STANDBY (the default value is 0=ACTIVE). Changes take effect after activation (see the new action mtasOcbActivateStandby and the new attribute mtasOcbChangeTime).</p> <p>This is a non-backward compatible change.</p>
mtasOcbWhiteListNumIncl	<p>The attribute can only be modified if the new attribute mtasOcbView is set to 1=STANDBY (the default value is 0=ACTIVE). Changes take effect after activation (see the new action mtasOcbActivateStandby and the new attribute mtasOcbChangeTime).</p> <p>This is a non-backward compatible change.</p>
MtasScaling	Added and supported
mtasScalingScaleIn	Added and supported
mtasScalingScaleOut	Added and supported



mtasScalingTimeBasedScalingEnabled	Added and supported
mtasSccAsName	Supported. It is configurable now. The attribute default value is changed from "SCCAS" to "scc".
mtasSdsConditionalServiceKeys	Added, but not supported
mtasSdsConditionalTermCall	Added, but not supported
mtasSdsImrnNai	Added and supported
MtasSdsServedHplmn	9xx range is allowed in MCC part of the key.
MtasSdsVplmn	9xx range is allowed in MCC part of the key.
mtasSdsWhiteListVplmnList	9xx range is allowed in MCC part of the value.
mtasShIfServiceInformationServiceInd	Added and supported
mtasShIfStoreDeviceInformation	Added, but not supported
mtasSipOcDefDecrStep	The recommended value is changed from 8 to 1. The default value is not changed.
mtasSipOcDefIncrStep	The recommended value is changed from 12 to 2. The default value is not changed.
mtasSrvccAlertAckFallbackTime	Added and supported
mtasSrvccPreconditionTime	Added and supported
mtasSscFreezeModeComSyntAct	Added and supported
mtasSscFreezeModeComSyntDeact	Added and supported
mtasSscFreezeModeComSyntExempt	Added and supported
mtasSscMinLenOfNdNum	Added and supported
MtasSscMultiPersona	Added, but not supported
mtasSscMultiPersonaEnforceSscSubscribe	Added, but not supported
mtasSscMultiPersonaNegInvAnnPersonaSel	Added, but not supported
mtasSscMultiPersonaSyntInvPersonaSel	Added, but not supported
mtasStodCallPullPolicyRoaming	There is a new possible enum value: 3=SAME_NETWORK.
mtasSubsDataSccInitialSelectionAwareness	Added and supported
mtasTaSipDomain	Added and supported
mtasXdmsUtHeader	Added, but not supported
numAnaLocalCallTableSyncState	Added and supported
numberNormalisationTableSyncState	Added and supported
PM_COLLECTOR_FLUSH_PERIOD	This vDicos variable has changed value from default to 1 owing to correction of TR HW65892.
shutdown_timeout	Added and supported
vDicosLogRecordSize	Based on MTASNC-4430 the vDicos variable defined with the value of 0 to avoid extra spaces from MTASApplogs.
vtasCbVersion	ENUM 3 = VERSION_3. When it is set to 3 (VERSION_3), Outgoing Communication Barring service reports 141 (INTERNATIONAL_TOLL_RESTRICTION) in charging event when call is barred because of International or International-exHC condition in barring rules.
vtasCDivActivationState	Added and supported



vtasCDivAddServedUserToHIHeader	Added and supported
vtasCDivBlackList	<p>The attribute can only be modified if the new attribute vtasCDivView is set to 1=STANDBY (the default value is 0=ACTIVE). Changes take effect after activation (see the new action vtasCDivActivateStandby and the new attribute vtasCDivChangeTime).</p> <p>This is a non-backward compatible change.</p>
vtasCDivChangeTime	Added and supported
vtasCDivView	Added and supported
VtasCel	Now supported
vtasCelAdministrativeState	Now supported
vtasCelDropBack	Now supported
vtasCelEventServerName	Now supported
vtasCelReportingFilterList	Now supported
vtasCelReportingHeaderFilter	Now supported
vtasConfLastMovedParticipantRemovalEnabled	Added and supported
vtasCrLastCallInfoType	New enum value 3: INDEPENDENT_OF_INTERROGATION_TIME_RELATIVE_FULL_DATE
vtasCrStorageLastIncomingCall	Added and supported
VtasCsa	Added and supported
vtasCsaAdministrativeState	Added and supported
vtasCsaDropBack	Added, but not supported
vtasCwVersion	Added, but not supported
vtasFcdPemInterworking	Added, but not supported
vtasFsfServiceFormatSuppressedServices	New usable formats: Cr, Csa
vtasFsfServiceFormatSuppressedServices	New usable formats: Cr, Csa
vtasGaAnnSessionProgressReason	Added and supported
vtasIcbActivationState	Added and supported
vtasIcbBlackList	<p>The attribute can only be modified if the new attribute mtasIcbView is set to 1=STANDBY (the default value is 0=ACTIVE). Changes take effect after activation (see the new action mtasIcbActivateStandby and the new attribute mtasIcbChangeTime).</p> <p>This is a non-backward compatible change.</p>
vtasIcbChangeTime	Added and supported
vtasIcbView	Added and supported
vtasIcbWhiteListDomainIncl	<p>The attribute can only be modified if the new attribute mtasIcbView is set to 1=STANDBY (the default value is 0=ACTIVE). Changes take effect after activation (see the new action mtasIcbActivateStandby and the new attribute mtasIcbChangeTime).</p> <p>This is a non-backward compatible change.</p>



vtasIcbWhiteListNumExcl	The attribute can only be modified if the new attribute mtasIcbView is set to 1=STANDBY (the default value is 0=ACTIVE). Changes take effect after activation (see the new action mtasIcbActivateStandby and the new attribute mtasIcbChangeTime). This is a non-backward compatible change.
vtasIcbWhiteListNumIncl	The attribute can only be modified if the new attribute mtasIcbView is set to 1=STANDBY (the default value is 0=ACTIVE). Changes take effect after activation (see the new action mtasIcbActivateStandby and the new attribute mtasIcbChangeTime). This is a non-backward compatible change.
vtasIdPresCnipAddIdParam	Added, but not supported
vtasIdPresOipDisplayNameFiltering	Added, but not supported
vtasMmtDomesticRoaming	Added, but not supported
vtasMmtMidCallRenegotiationRetryAfterSupport	Added and supported
vtasMmtSipccIdentification	Now supported
vtasMmtSuppressEarlyMediaHeader	Cardinality changed to 0-1 and pattern string updated to accept empty values.
vtasMmtVersion	Added, but not supported
vtasMultiPersonaAdministrativeState	Now supported
vtasMultiPersonaCapableFeatureTag	Added, but not supported
vtasMultiPersonaEnhancement	Now supported
vtasMultiPersonaInviteDelay	Now supported
vtasMultiPersonaMpcnMaxLifetime	Added and supported
VtasMultiPersonaMpcnRange	Added and supported
vtasMultiPersonaMpcnRange	Now supported
vtasMultiPersonaMpcnRangeFirst	Added and supported
vtasMultiPersonaMpcnRangeLast	Added and supported
vtasMultiPersonaOrigPolicyRejectionAnnName	Added, but not supported
VtasNaAnnCause	Added and supported. Changed Description to indicate, that the configuration is for the originating side.
vtasNaAnnCauseAnnName	Added and supported. Changed Description to indicate, that the configuration is for the originating side.
vtasNaAnnCauseRejectCode	Added and supported. Changed Description to indicate, that the configuration is for the originating side.
vtasNaAnnCauseRejectReason	Added and supported. Changed Description to indicate, that the configuration is for the originating side.
VtasNaAnnCauseT	Added and supported
vtasNaAnnCauseTAnnName	Added and supported
vtasNaAnnCauseTRejectCode	Added and supported
vtasNaAnnCauseTRejectReason	Added and supported
vtasNaAnnRejectCode	Added and supported
vtasNaAnnRejectReason	Added and supported
VtasNaRaSipHeader	Added and supported



vtasNaRaSipHeaderGaAnnId	Added and supported
vtasNaRaSipHeaderName	Added and supported
vtasNaRaSipHeaderRejectCode	Added and supported
vtasNaRaSipHeaderRejectReason	Added and supported
vtasNaRaSipHeaderValue	Added and supported
vtasOcbActivationState	Added and supported
vtasOcbBlackList	<p>The attribute can only be modified if the new attribute vtasOcbView is set to 1=STANDBY (the default value is 0=ACTIVE). Changes take effect after activation (see the new action vtasOcbActivateStandby and the new attribute vtasOcbChangeTime).</p> <p>This is a non-backward compatible change.</p>
vtasOcbChangeTime	Added and supported
vtasOcbRejectCode	Added and supported
vtasOcbRejectReason	Added and supported
vtasOcbView	Added and supported
vtasOcbWhiteListDomainIncl	<p>The attribute can only be modified if the new attribute vtasOcbView is set to 1=STANDBY (the default value is 0=ACTIVE). Changes take effect after activation (see the new action vtasOcbActivateStandby and the new attribute vtasOcbChangeTime).</p> <p>This is a non-backward compatible change.</p>
vtasOcbWhiteListNumExcl	<p>The attribute can only be modified if the new attribute vtasOcbView is set to 1=STANDBY (the default value is 0=ACTIVE). Changes take effect after activation (see the new action vtasOcbActivateStandby and the new attribute vtasOcbChangeTime).</p> <p>This is a non-backward compatible change.</p>
vtasOcbWhiteListNumIncl	<p>The attribute can only be modified if the new attribute vtasOcbView is set to 1=STANDBY (the default value is 0=ACTIVE). Changes take effect after activation (see the new action vtasOcbActivateStandby and the new attribute vtasOcbChangeTime).</p> <p>This is a non-backward compatible change.</p>
vtasSscFreezeModeComSyntAct	Added and supported
vtasSscFreezeModeComSyntDeact	Added and supported
vtasSscFreezeModeComSyntExempt	Added and supported
vtasSscMinLenOfNdNum	Added and supported
VtasSscMultiPersona	Added, but not supported
vtasSscMultiPersonaEnforceSscSubscribe	Added, but not supported
vtasSscMultiPersonaNegInvAnnPersonaSel	Added, but not supported
vtasSscMultiPersonaSyntInvPersonaSel	Added, but not supported
vtasSubsDataSccInitialSelectionAwareness	Added and supported
watchdog_timeout	Added and supported



4.2.2.3 Deprecated Configuration Attributes

The deprecated configuration attributes are listed in Table 14.

Table 14 Deprecated Configuration Attributes

Attribute Name	Description of Changes
MtasChargingProfileRoReject	Was never supported
mtasChargingProfileRoRejectGa	Was never supported
mtasFunctionMmtAsName	Upgrade from previous release – mtasMmtAsName value is copied to mtasFunctionMmtAsName. See HX31452.
mtasFunctionSccAsName	Upgrade from previous release – mtasSccAsName value is copied to mtasFunctionSccAsName. See HX31452.
mtasGaAnnCauseValue	Use mtasGaAnnSessionProgressReason instead.
mtasMmtAsName	Replaced with mtasFunctionMmtAsName
mtasMrfpNodeOperationalState	The CM is deprecated with mtasMrfpNodeOperState
mtasMultiPersonaImrnLifetime	Deprecated because IMRN acronym was changed for MPCN for readability and new CMs were introduced
mtasMultiPersonaImrnRange	Deprecated because IMRN acronym was changed for MPCN for readability and new CMs were introduced
mtasMultiPersonaImrnRangeFirst	Deprecated because IMRN acronym was changed for MPCN for readability and new CMs were introduced
mtasMultiPersonaImrnRangeLast	Deprecated because IMRN acronym was changed for MPCN for readability and new CMs were introduced
mtasNwAsName	The CM is deprecated with mtasNwPrIwAsName. During upgrade, the value of mtasNwAsName is migrated automatically to mtasNwPrIwAsName.
mtasNwFoIwAsName	Replaced with mtasFunctionNwFoIwAsName
mtasSccAsName	Replaced with mtasFunctionSccAsName
SC114 and SC115	Deprecated
vtasGaAnnCauseValue	Use vtasGaAnnSessionProgressReason instead.
vtasMultiPersonaImrnLifetime	Deprecated because IMRN acronym was changed for MPCN for readability and new CMs were introduced
VtasMultiPersonaImrnRange	Deprecated
vtasMultiPersonaImrnRange	Deprecated because IMRN acronym was changed for MPCN for readability and new CMs were introduced
vtasMultiPersonaImrnRangeFirst	Deprecated because IMRN acronym was changed for MPCN for readability and new CMs were introduced
vtasMultiPersonaImrnRangeLast	Deprecated because IMRN acronym was changed for MPCN for readability and new CMs were introduced

4.2.2.4 Obsolete Configuration Attributes

The configuration MOCs and attributes made obsolete are shown in Table 15.



Table 15 Obsolete Configuration Attributes

Attribute Name	Description of Changes
mtasMrfpNodeOperationalState	Not supported, obsolete, mtasMrfpNodeOperState has taken over the role of this CM
carSelDialedStringAnalysisTableSynchronization	CMCO – Carrier Select – made obsolete and replaced by carSelDialedStringAnalysisTableSyncState
carSelCarrierTableSynchronization	CMCO – Carrier Select – made obsolete and replaced by CarSelCarrierTableSyncState
numAnaLocalCallTableSynchronization	CMCO – Number Analysis – made obsolete and replaced by numAnaLocalCallTableSyncState
numberNormalisationTableSync	CMCO Number Normalization – made obsolete and replaced by numberNormalisationTableSyncState

4.2.2.5

Deleted Configuration Attributes

The deleted configuration attributes are shown in Table 16.

Table 16 Deleted Configuration Attributes

Attribute Name	Description
DN "fmAlarmTypeId=Memory,fmAlarmModelId=MMAS,fmId=1"	This is deleted. For more information, see section Deleted Alarms.

4.2.3

Fault Management

This section describes changed, new, and removed alarms.

4.2.3.1

New Alarms

The new alarms are shown in Table 17.

Table 17 New Alarms

Alarm Name	Description
Forking Interworking Function License Absent	The alarm is raised when mtasFoIwAdministrativeState is unlocked and Forking Interworking Function license is absent, expired or invalid, and snoozed when a valid license is installed.
MultiPersona Service License Absent	The alarm is raised when mtasMultiPersonaAdministrativeState is unlocked and MultiPersona Service license is absent, expired or invalid, and snoozed when a valid license is installed.
MTAS Time Based Scaling	This alarm will be raised at a specific time configured on the VNF, and is used for triggering the time based scaling feature.
SRM Alarm System Resources High Usage	This threshold-based alarm is raised when one or more system resources are above the configured limits and genericThresholdAlarmEnable is set to 1.
SRM Alarm System Resources Low Usage	This threshold-based alarm is raised when one or more system resources are below the configured limits and genericThresholdAlarmEnable is set to 1.



4.2.3.2 Changed Alarms

The changed alarms are shown in Table 18.

Table 18 Changed Alarms

Alarm Name	Description of Changes
-	-

4.2.3.3 Deleted Alarms

The deleted alarms are shown in Table 19.

Table 19 Deleted Alarms

Alarm Name	Description
MMAS, Heap Memory Load Limit Exceeded	<p>The alarm was raised by the Multimedia Application Server (MMAS) as part of overload protection when the heap memory load exceeds a configured threshold value.</p> <p>The reason to delete the alarm is because the behavior of standard Java raise the alarm, when the memory is allocated, and cease the alarm, when the garbage collection is executed. This result was a flaky alarm, without traffic impact. See HW61234.</p>

4.2.4 IFC Triggers

The new IFC triggers are listed in Table 20.

Table 20 New IFC Triggers

Reason	IFC
To trigger Forking Interworking Function on NW AS	The Forking IWF service can be invoked by 2 levels: iFC and CM parameters within MTAS. On iFC level, the top most route header must have an "as" parameter with a value set to the configured CM attribute mtasNwFoIwASName, if the generic port functionality is used. When the iFC has no condition in the rule (always adds "as" to trigger the FoIwf AS) then additional condition can be used in MTAS with the mtasFoIwMode CM attribute to trigger FoIw functionality.
The device will send a SIP MESSAGE with its own IMPU as destination. This MESSAGE should reach the MMTel AS	Trigger the MMTel AS on either the generic SIP port or on the originating port (mtasSipTrafficOriginatingIpPort) when Method="MESSAGE" AND SessionCase="ORIGINATING_REGISTERED" AND Header="Content-Type" Content="application/vnd.call-id-info+xml"

The changed IFC triggers are listed in Table 21



Table 21 Changed IFC Triggers

Reason	IFC
Multiple AS roles invocation on one ISC triggering	<p>For multiple AS invocation in co-location MTAS on AS generic SIP port, the IFC triggers must contain the AS roles.</p> <p>Example for originating MTAS:</p> <p>Trigger2ApplicationServers: xxx: sip:<mtas.operator.net>; as="scc,foiwf,mmt,prwif"</p> <p>The order of AS roles is specified in the Route Header "as="</p>

4.2.5 Performance Measurement

This section lists new and changed, deprecated, obsolete, and deleted Performance Measurement (PM) counters.

For more information on counter description, refer to [MTAS Performance Measurements](#).

4.2.5.1 New PM Counters

The new PM counters are listed in Table 22.

Table 22 New PM Counters

Counter Name	Description
MtasCBOCBBarredType	Added and supported
MtasCBOCBNotBarredType	Added and supported
MtasCelNOkE	Now Supported
MtasCelNOkI	Now Supported
MtasCelOk	Now Supported
MtasCsa	Added but not supported
MtasCsaNOkE	Now supported
MtasCsaNOkI	Now supported
MtasCsaOk	Now supported
MtasFoIwNOkE	Now supported
MtasFoIwNOkI	Now supported
MtasFoIwOk	Now supported
MtasHotlineWhitelistNOkE	Added but not supported
MtasHotlineWhitelistNOkI	Added but not supported
MtasHotlineWhitelistOk	Added but not supported
MtasMmtInitOrigPlmnSessNOkNet	Added, but not supported
MtasMmtInitOrigPlmnSessNOkService	Added, but not supported
MtasMmtInitOrigPlmnSessNOkSupportNode	Added, but not supported
MtasMmtInitOrigPlmnSessNOkUser	Added, but not supported



Counter Name	Description
MtasMmtInitOrigPlmnUnregSessNokNet	Added, but not supported
MtasMmtInitOrigPlmnUnregSessNokService	Added, but not supported
MtasMmtInitOrigPlmnUnregSessNokSupportNode	Added, but not supported
MtasMmtInitOrigPlmnUnregSessNokUser	Added, but not supported
MtasMmtInitTermPlmnSessNokNet	Added, but not supported
MtasMmtInitTermPlmnSessNokService	Added, but not supported
MtasMmtInitTermPlmnSessNokSupportNode	Added, but not supported
MtasMmtInitTermPlmnSessNokUser	Added, but not supported
MtasMmtInitTermPlmnUnregSessNokNet	Added, but not supported
MtasMmtInitTermPlmnUnregSessNokService	Added, but not supported
MtasMmtInitTermPlmnUnregSessNokSupportNode	Added, but not supported
MtasMmtInitTermPlmnUnregSessNokUser	Added, but not supported
MtasMmtOrigPlmnNetworkSuccessSessionEstablish	Added, but not supported
MtasMmtOrigPlmnUnregNetworkSuccessSessionEstablish	Added, but not supported
MtasMmtTermOrigPlmnSessNok	Added, but not supported
MtasMmtTermOrigPlmnSessNokECause	Added, but not supported
MtasMmtTermOrigPlmnSessNokServiceCause	Added, but not supported
MtasMmtTermOrigPlmnSessOk	Added, but not supported
MtasMmtTermOrigPlmnUnregSessNok	Added, but not supported
MtasMmtTermOrigPlmnUnregSessNokECause	Added, but not supported
MtasMmtTermOrigPlmnUnregSessNokServiceCause	Added, but not supported
MtasMmtTermOrigPlmnUnregSessOk	Added, but not supported
MtasMmtTermPlmnNetworkSuccessSessionEstablish	Added, but not supported
MtasMmtTermPlmnUnregNetworkSuccessSessionEstablish	Added, but not supported
MtasMmtTermTermPlmnSessNok	Added, but not supported
MtasMmtTermTermPlmnSessNokECause	Added, but not supported
MtasMmtTermTermPlmnSessNokServiceCause	Added, but not supported
MtasMmtTermTermPlmnSessOk	Added, but not supported
MtasMmtTermTermPlmnUnregSessNok	Added, but not supported
MtasMmtTermTermPlmnUnregSessNokECause	Added, but not supported
MtasMmtTermTermPlmnUnregSessNokServiceCause	Added, but not supported
MtasMmtTermTermPlmnUnregSessOk	Added, but not supported
MtasMultiPersonaOrigSelAttempts	Now supported
MtasMultiPersonaOrigSelectionsNokE	Now supported
MtasMultiPersonaOrigSelectionsNokI	Now supported
MtasMultiPersonaOrigSelectionsOk	Now supported



Counter Name	Description
MtasMultiPersonaTermSelAttempts	Now supported
MtasMultiPersonaTermSelectionsNOkE	Now supported
MtasMultiPersonaTermSelectionsNOkI	Now supported
MtasMultiPersonaTermSelectionsOk	Now supported
MtasSccInitOrigCsPlmnSessAttempts	Added, but not supported
MtasSccInitOrigCsPlmnSessNOkNet	Added, but not supported
MtasSccInitOrigCsPlmnSessNOkUser	Added, but not supported
MtasSccInitOrigCsPlmnSessOk	Added, but not supported
MtasSccInitTermCsPlmnSessAttempts	Added, but not supported
MtasSccInitTermCsPlmnSessNOkNet	Added, but not supported
MtasSccInitTermCsPlmnSessNOkUser	Added, but not supported
MtasSccInitTermCsPlmnSessOk	Added, but not supported
MtasSccTermOrigCsPlmnSessCompletionAttempts	Added, but not supported
MtasSccTermOrigCsPlmnSessNOk	Added, but not supported
MtasSccTermOrigCsPlmnSessOk	Added, but not supported
MtasSccTermTermCsPlmnSessCompletionAttempts	Added, but not supported
MtasSccTermTermCsPlmnSessNOk	Added, but not supported
MtasSccTermTermCsPlmnSessOk	Added, but not supported
MtasSdsCapInitDPRelayAttempt	Added, but not supported
MtasSdsPlmnCapInitDPOrigPlmnNOkE	Added, but not supported
MtasSdsPlmnCapInitDPOrigPlmnNOkI	Added, but not supported
MtasSdsPlmnCapInitDPOrigPlmnOk	Added, but not supported
MtasSdsPlmnImrnNOkE	Added, but not supported
MtasSdsPlmnImrnNOkI	Added, but not supported
MtasSdsPlmnImrnOk	Added, but not supported
MtasSubsDataSccInviteInitialSelection	Added and supported. The number of INVITE messages with 'initialSelection' tag is received by SCC AS.
MtasSubsDataSccRegisterInitialSelection	Added and supported. The number of REGISTER messages with 'initialSelection' tag is received by SCC AS.

4.2.5.2

Changed PM Counters

The changed PM counters are listed in Table 23.

Table 23 Changed PM Counters

Counter Name	Description of Changes
mtasFuncSipRequestOverloadRej	Now supported
MtasMmtSip<Orig OrigUnreg Term TermUnreg>RequestIn	Now supported



Counter Name	Description of Changes
MtasMmtSip<Orig OrigUnreg Term TermUnreg>RequestOut	Now supported
MtasMmtSip<Orig OrigUnreg Term TermUnreg>ResponseIn	Now supported
MtasMmtSip<Orig OrigUnreg Term TermUnreg>ResponseOut	Now supported
MtasSccSip<Orig OrigUnreg Term TermUnreg>RequestIn	Now supported
MtasSccSip<Orig OrigUnreg Term TermUnreg>RequestOut	Now supported
MtasSccSip<Orig OrigUnreg Term TermUnreg>ResponseIn	Now supported
MtasSccSip<Orig OrigUnreg Term TermUnreg>ResponseOut	Now supported
MtasSubsReregOk	Fixed no increment in common scenario when mtasSubsDataInitRegHSSFetchDelay=3. See HW90791.

4.2.5.3 Deprecated PM Counters

The deprecated PM counters are listed in Table 24.

Table 24 Deprecated PM Counters

Counter Name	Description of Changes
-	-

4.2.5.4 Obsolete PM Counters

The obsolete PM counters are listed in Table 25.

Table 25 Obsolete PM Counters

Counter Name	Description of Changes
-	-

4.2.5.5 Deleted PM Counters

The deleted PM counters are shown in Table 26.

Table 26 Deleted PM Counters

Counter Name	Description of Changes
-	-



4.3 Impacts to Continuous Delivery Machinery

This section summarizes the impacts to the Continuous Delivery Machinery, which can need changes based on the listed items.

A summary of impacts is shown in Table 27.

The description of impact is as follows:

- **No Impact** – This change has a very low chance to have an impact on any CD Machinery or can be activated with additional configuration.
- **Minor Impact** – This change has a medium chance to have an impact on any CD Machinery.
- **Major Impact** – This change is having an impact on CD Machinery with high probability.

Table 27 Summary of Impacts to CD Machinery

Service	Impact	Description of Changes
Hardened etc overlay (HEO): introduction of new RPM	No impact	<p>With HEO rpm, the following can be enforced in the MTAS system:</p> <ul style="list-style-type: none"> • Inactivity Timer for Login Session • Inactivity timer for User Accounts • Strong Password Enforcement • Auditing – Full Personal Accountability • Legal Warning at Login (configured by customer)
Deployment	Major	<p>The impact is given as major because of change in HOT files delivered with the product, but vMTAS can be deployed with previous HOT files as well.</p> <p>The changes are as follows:</p> <ul style="list-style-type: none"> • Image names are inserted into HOT YAML files upon calling prepareHot.bash. Script now must be executed from a directory where there is exactly one IPXE and MTAS image present. • Bar network and eth4 are now configurable in case of routing profile 1, with disabled default configuration. (They are kept mandatory in profile 2). • Dependency to cinder volumes are added to SC-1 and SC-2 VMs in case of cinder-based setups. • Port security is now disabled by default on the port level- • Creation of neutron networks is now optional and configurable in prepareHot.bash



Table 27 Summary of Impacts to CD Machinery

Service	Impact	Description of Changes
Health Check	Minor Impact	Minor NBC changes on interface of Health Check triggering script: <ul style="list-style-type: none"> Type 'troubleshooting' renamed to 'full' Periodic scheduling options changed Period scheduling unit changed from second to hour XML format report changed because of schema changes. HTML report is unchanged.
Health Check	Minor Impact	'SoftwareVersions' check functionality is extended to verify if R-states of all MTAS components are the same.
SS7 trace	Minor impact	The ss7trace.log file has changed permission to prevent others than users with root privileges to read it. Also permissions for the ss7caf-collect-info script is changed to only allow users with root privileges to execute it. This means that if still root user executes it there is no impact. If a user is belonging to system-ts group is used, a password will be required to access the script. No other users are allowed to execute.

4.4 Summary of Impacts per Feature

All MTAS nodes in the network must be upgraded before taking new services in operation. This section summarizes the impact per feature when the feature is turned on. A summary of impacts per feature is shown in Table 28.

The description of impact is as follows:

- **No Impact** – This change has very low chance to have an impact or can be activated with additional configuration.
- **Minor Impact** – This change has medium chance to have an impact.
- **Major Impact** – This change has an impact with a high probability.

Table 28 Summary of Impacts per Feature

Feature	Service	Impact	Description of Changes
Support of IMRN in national format for SDS	CS Interworking/SDS	No impact	New option in the SDS function to return the destinationRoutingAddress/IMRN in CAP CONNECT in National format, without the country code, and with the NAI set to 3 (national). Configured by CM parameter mtasSdsImrnNai.



Call type validation for the destination number provisioned for abbreviated dialing	Abbreviated Dialing	No impact	If call type validation for the destination number provisioned for abbreviated dialing is needed on the CAI3G interface, the CM parameter <code>mtasAbDialCallTypeValidation</code> must be activated.
Adding date to call return announcement for calls older than two days	Call Return	No Impact	Call Return service is enhanced to provide a new option for <code>mtasCrLastCallInfoType</code> to present relative day and date. This feature enhancement is controlled with the following CM attribute: <code>mtasCrLastCallInfoType</code> enum value 3.
Call type validation for the destination number provisioned for abbreviated dialing	CDiv, Abbreviated Dialing	No impact	If call type validation for the destination number provisioned for abbreviated dialing is needed on the Ut interface, the CM parameter <code>mtasAbDialCallTypeValidation</code> must be activated
Communication barring enhancements	ICB	No Impact	ICB service of MMTel AS will support domestic roaming and can bar the calls on detecting network level roaming after the country level roaming is detected. This feature can be configured with the following CM attributes: <code>mtasComCcmMccDestinationMapping</code> , <code>mtasComCcmMccDestinationMappingMappedValue</code> , <code>mtasComCcmMccMnc</code> , <code>mtasComCcmMccMncHome</code>
Network announcement triggered by specific SIP header	Network Announcement Service	No Impact	This feature is to enable MTAS to recognize a customer specific SIP header in initial INVITE, reject the call setup and play an announcement to the user. This feature is controlled with the following CM attributes: <code>mtasNaRaSipHeaderName</code> , <code>mtasNaRaSipHeaderValue</code> , <code>mtasNaRaSipHeaderGaAnnId</code> , <code>mtasNaRaRejectCode</code> , <code>mtasNaRaRejectReason</code> , <code>mtasGaAnnSessionProgressReason</code> , <code>vtasNaRaSipHeaderName</code> , <code>vtasNaRaSipHeaderValue</code> , <code>vtasNaRaSipHeaderGaAnnId</code> , <code>vtasNaRaRejectCode</code> , <code>vtasNaRaRejectReason</code> , <code>vtasGaAnnSessionProgressReason</code> .



Communication barring enhancements	OCB	No Impact	OCB service of MMTel AS will support domestic roaming and can bar the calls on detecting network level roaming after the country level roaming is detected. This feature can be configured with the following CM attributes: mtasComCcmMccDestinationMapping, mtasComCcmMccDestinationMappingMappedValue, mtasComCcmMccMnc, mtasComCcmMccMncHome
Communication barring enhancements	OCB	No Impact	OCB service of MMTel AS will allow calls to additional destination country when international and international-exHC conditions are applied. This feature can be configured with the following CM attributes: mtasComCcmMccDestinationMapping, mtasComCcmMccDestinationMappingMappedValue, mtasComCcmMccMnc, mtasComCcmMccMncHome
Network based handling of non-authorized international calls	Outgoing Communication Barring	No Impact	<p>Outgoing Communication Barring service enhanced to report new CB counters are introduced to measure number of failed calls because of barring and number of successful calls (not barred) with key as call type. The following counters are supported now: MtasCBOCBBarredType, MtasCBOCBNotBarredType.</p> <p>If the parameter is set and already existing user document settings are generating reject messages, the parameter mtasXdmsUtValidation can be set to (1) and selective validation is supported. In this case MMTel AS validates the received Ut request together with the user document but for CDIV and/or Abbreviated Dialing services and the validation constraints are applied only on the received request. If CDIV and/or Abbreviated Dialing services are not part of the Ut request, then the validation of those services in the user document is skipped.</p>



Announcement according to Reason header	Network Announcement	No impact	Instances of the new CMs parameters will not exist after the upgrade and accordingly the new function will be disabled by default. In terminating case an announcement can be played based on combination of SIP error status code + Q.850/SIP cause code and SIP error response can be configurable, the same way as it works for originating. This is controlled by a new MOC MtasNaAnnCauseT, or for Wholesale VtasNaAnnCauseT, and its attributes.
Communication Barring Service is enhanced to report SSID 141 for International or International-exHC condition in barring rules.	Communication Barring	No Impact	When mtasCbVersion is set to 3 (VERSION_3), Outgoing Communication Barring service reports SSID value 141 (INTERNATIONAL_TO_LL_RESTRICTION) in charging event when call is barred because of International or International-exHC condition in barring rules.
Communication Barring Service is enhanced to report SSID 141 for International or International-exHC condition in barring rules.	Communication Barring	No Impact	When mtasCbVersion is set to 3 (VERSION_3), Outgoing Communication Barring service reports SSID value 141 (INTERNATIONAL_TO_LL_RESTRICTION) in charging event when call is barred because of International or International-exHC condition in barring rules.



Ro Announcement for errors without Announcement AVP	Online Charging	No Impact	<p>MTAS can play Ro reject announcement in case any CCA-I or CCA-U message contains command or service level error code or Experimental-Result-Code AVP, even when the CCA does not contain Announcement-Instructions AVP, if CCFH action is set to TERMINATE and it is configured through CM parameters.</p> <p>Generic announcement will be played, if the result code entry in mtasChargingProfileRoRejectAnn matches the error result code (3xxx/4xxx/5xxx) returned in the CCA message by the OCS, or if that is not true, when mtasChargingProfileRoRejectDefaultAnnRemoteUser and/or mtasChargingProfileRoRejectDefaultAnnServedUser is configured. The generic announcement to be played is configurable through the CM parameters.</p> <p>The above CM parameters are configurable per charging profile. There can be multiple instances (0–32) of mtasChargingProfileRoRejectAnn, but only a single instance of the latter two parameters.</p>
Multi-Persona on CS	MultiPersonaService	Minor Impact	Multi persona selection when VoLTE UE attached to CS. See section Impact on MTAS Features.
Time-based auto-scale	VNF-LCM	No Impact	Time-based auto-scaling feature triggered by a preconfigured time-based alarm
EM-driven instantiation	VNF-LCM	No Impact	VNFs instantiated on VNF-LCM are now visible on EO (Ericsson Orchestrator)
EM-driven scale	VNF-LCM	No Impact	VNFs scaled on VNF-LCM are now updated on EO (Ericsson Orchestrator)



Identity Presentation Enhancement for Enterprise Customers	CNS	No Impact	If mtasIdPresCnipAddIdParam is set to TRUE MMTel AS shall support adding the "id" parameter to the Event header after calling-name for SIP queries over the Calling Name Server (CNS) interface.
MTAS Improvements for Network Announcement	Network Announcement	No Impact	Network Announcement Service of originating MMTel AS is extended to play an announcement to the caller based on received SIP error status code and Q.850/SIP cause code from the network.
External Storage of last call details for call return service	Call Return Service	No Impact	If CM attribute mtasCrStorageLastIncomingCall is set to value= "1", and CM attribute mtasShIfServiceInformationServiceInd is not set to an empty string, The call return service reads and updates Call Return last incoming call data in HSS over Sh interface where the value of mtasShIfServiceInformationServiceInd is used as Service Indication to point out a new transparent document in HSS.
Improved Early Dialog Handling in CDIV	CDIV	No Impact	CDIV is handling cornerstone message flow cases in a more robust way than before.
Improvements of signaling latency at interaction with OCS	Online Charging	Minor Impact	Online Charging is extended to handle CCA-U asynchronously during call establishment phase.
Improvements of signalling latency at interaction with OCS	Offline Charging	Minor Impact	Offline Charging is prepared to send out delayed ACR Start if a positive CCA-U arrived after the call establishment. When negative CCA-U arrives after call establishment, then ACR Event is generated by Offline Charging.
MMTel AS Telephone Service Suspension	Incoming communication Barring	Minor Impact	Incoming Communication Barring service enhanced to support barring of incoming calls based on barring rules with new "subscriber-state" condition element.



MMTel AS Telephone Service Suspension	Outgoing Communication Barring	Minor Impact	Outgoing Communication Barring service enhanced to support barring of outgoing calls based on barring rules with new "subscriber-state" condition element.
MMTel AS Telephone Service Suspension	Operator Controlled Transfer	No Impact	"Communication Setup Announcement" evaluates service rules and plays announcement to served user when redirection from OT if OCT is triggered for served user.
MMTel AS Telephone Service Suspension	Communication Setup Announcement	No Impact	New originating MMTel AS service "Communication Setup Announcement" evaluates service rules and plays the announcement to the served user on outgoing INVITE before continuing call establishment.
MTAS Improvements for Network Announcement	Network Announcement	No Impact	Based on configuration option, Network Announcement Service of originating MMTel AS returns a configurable SIP error response and Q.850/SIP cause code + reason text to the caller in the SIP error response.
MTAS Improvements for Network Announcement	Incoming communication Barring	Minor Impact	Incoming Communication Barring service supports the option to return the provisioned SIP error response and Reason header including a Q.850 or SIP cause code + reason text in the SIP error response to the caller when the call is barred.
MTAS Improvements for Network Announcement	Outgoing Communication Barring	Minor Impact	Outgoing Communication Barring service supports the option to return the provisioned SIP error response and Reason header including a Q.850 or SIP cause code + reason text in the SIP error response to the caller when the call is barred.
MTAS Improvements for Network Announcement	Outgoing Communication Barring	Minor Impact	Outgoing Communication Barring service support option to return the configured SIP error response and Reason header including a Q.850 or SIP cause code + reason text in the SIP error response to the caller when the call is barred.



MTAS user-level control of Supplementary Service Codes	Supplementary Service Codes	No Impact	The use of SSC commands can be disabled for a subscriber using a new “freeze mode”. The freeze mode can be activated/deactivated for SSC Service through system-defined SSC commands. When in “freeze mode”, the SSC Service does not execute any SSC commands apart from those configured as “deactivate freeze mode” or as “exempted SSC command”.
Rounding mechanism for reporting Used Service Units to Online Charging	Online Charging	No Impact	Used Service Unit rounding method is now configurable for final service units. Supported types are rounding down, rounding to nearest, rounding up. The default value is rounding down which corresponds to the legacy behavior.

4.5 Other Interface Impacts

All MTAS nodes in the network must be upgraded before taking new services in operation.

The changes to existing services are described in Table 29.

The description of impact is as follows:

- **No Impact** – New version can be installed without affecting other nodes.
- **Minor Impact** – There are changes, but with extra configuration the previous behavior can be kept.
- **Major Impact** – The change has made an interface backward incompatible.
- **New Interface** – The interface did not exist in the previous revision.
- **Obsolete** – The interface no longer exists.

Table 29 Other Interface Changes

Source of Change	Service	Impact	Description of Changes
HW16085	Northbound Call Control	Minor Impact	<p>When MTAS receives CANCEL from caller between IDP sent out and call setup, the NorthBound Call Control service updated to:</p> <ul style="list-style-type: none"> Send an empty CAP ACR to SCP. If the Callee accepts the call, then terminate it.



Source of Change	Service	Impact	Description of Changes
HW16085	Number Normalization Service	Minor Impact	After this TR fix, Number normalization rule is applied even if the dialed number mapped uri contains *, #, %
HW23353	Carrier Select Service	Minor Impact	<p>MMTEL AS now takes special characters in CSC (* or #) into account while identifying the CIC during dial string Analysis. Behavior is controlled by the <code>mtasCsDsaAllowSpecialchars</code> attribute.</p> <p>The default value of CM is to 'Ignore special characters' (0). In this case, MMTEL AS trims the special characters from the received URI before DSA. Matching CIC is derived without special characters. INVITE is sent out without special characters.</p> <p>When CM is set to 'Consider special characters' (1), MMTEL AS sends the received URI as it is for DSA. Here special characters are considered while doing CIC lookup. If no matching CIC is found, INVITE is sent out unchanged with special characters in R-URI.</p> <p>Special characters are removed from the INVITE request as the default behavior. For service interaction use cases that does not need special character trimming, it is recommended to set the CM value to 1 after upgrade.</p>
HW28026	PM Counters	Minor Impact	Because of an earlier fault, creation of the Threshold alarm for ACR buffering (<code>MtasChargingBufferedEventsCount</code>) failed, owing to a missing <code>fmAlarm</code> type. Now this fault is fixed, so the alarm can be created.
HW30668	CommWaiting and NetAnn services	Minor Impact	From now on, these two services use transparent Sdp handling towards MRF nodes.
HW33545	Communication Diversion Service	Minor Impact	<p><code>mtasCDivAddServedUserToHIHeader</code> CM parameter introduced instead of <code>mtasSystemConstantSC</code> = "94:1"</p> <p>This new CM parameter is for fault handling in CDIV.</p> <p>When MTAS receives INVITE with History-Info header without entry for the served user, it does not add an entry for the served user in the outgoing forwarding INVITE and this causes that the resulting Diversion header also does not contain the URI of the served user.</p> <p>If CM value is 0, CDIV does not add Served User, if diversion happened and Served User is not present.</p> <p>If CM value is 1, CDIV adds Served User entry to History-Info header if diversion happened and Served User entry is not present.</p>
HW55296	Test Announcement Service	Minor Impact	New PSI deployment mode added allowing subdomain routing from the originating MMTEL AS to the terminating MMTEL AS.
HW58947	SIP Overload Control	Minor Impact	The second part of oc-seq must be constructed by 1*5DIGIT according to the RFC7339, it was 1*6DIGIT in MTAS before.
HW63596	PM Counters	Minor Impact	Because of an earlier fault, <code>MtasSipPresencePollNok</code> PM counter was not incremented. Now this fault is fixed.
HW65268	ICB	Minor Impact	Because of an earlier fault, the Supplementary-Service-Information AVP is reported additionally in CCR-U with ICB service. CCR-U is reported during the 200 OK processing. Now this fault is fixed.
HW66734	Communication Distribution Service	Minor Impact	<p><code>mtasFcdPcmInterworking</code> CM parameter introduced instead of <code>mtasSystemConstantSC</code> = "111"</p> <p>This new CM parameter is for deciding if a P-Early-Media header with value 'supported' is needed for FCD to operate in transparent mode.</p> <p>If CM Value is 0, it works as before that a P-Early-Media header with value 'supported' is needed for FCD to operate in transparent mode.</p> <p>If CM value is 1, no P-Early-Media header is needed for FCD to operate in transparent mode.</p>



Source of Change	Service	Impact	Description of Changes
HW66995	SSC and DNM	Minor Impact	If there is an overlap between an SSC command and, for example, a Number Translation (DNM) code, a possibility to configure a minimum length for a New Destination (ND) for an SSC command has been introduced (mtasSscMinLenOfNdNum). Default minimum length is 1 but in case there is an overlap, a suitable value larger than 1 can be configured preventing a DNM code to be incorrectly identified as a valid SSC command. Attribute mtasSscRejectInvalidServiceCodeCommand must be set to FALSE to handle these overlap cases correctly.
HW71018	Northbound Call Control	Minor Impact	When MTAS receives CANCEL from caller between IDP sent out and call setup, the Northbound Call Control service updated to: <ul style="list-style-type: none"> • Send empty CAP ACR to SCP. • If the Callee accepts the call, then terminate it.
HW72695	Identity Presentation	Minor Impact	When called user has OIR Override and calling user has From header anonymized, PAI identity is copied into From. This case is valid when calling user is in 2G/3G network (non-IMS).
HW73212	Communication Distribution Service	Minor Impact	MtasFuncInitTermSessN0kI QoS PM counter stepped instead of MtasFuncInitTermSessN0kE. The use of wrong MSCC result code while terminating caused the wrong counter MtasFuncInitTermSessN0kI to be stepped. Now, the proper result code is fetched and being used while the termination is done, which fixed stepping the right counter, MtasFuncInitTermSessN0kE.
HW76654	SIP Upstream Overload Control	No Impact	Because of TR HW76654, the algorithm for calculating the SIP Upstream Overload Control oc value is changed on CBA track, since CBA platform (vDicos and CoreMW) has delay to collect the RUI value. To adapt the platform delay, two delays (5 s and 7 s by default) at application level is introduced which can avoid the traffic fluctuation. Beside the two application level delays, the recommended value for mtasSip0cDefIncrStep and mtasSip0cDefDecrStep are changed: For mtasSip0cDefIncrStep, it is changed from 12 to 2. For mtasSip0cDefDecrStep, it is changed from 8 to 1.
HW86070	Counters	Minor Impact	Because of an earlier coding fault, MtasMmtInitTermUnregSessN0kE was not stepped in every faulty case. Now that this fault was fixed, increased counter values can be seen.
HW82344	Ad-Hoc conference	Minor Impact	When a user is moved into the conference, ACR(start)/CCR(I) will contain User-Equipment-Info AVP.
HW76654	SIP Upstream Overload Control	No Impact	Because of TR HW76654, the algorithm for calculating the SIP Upstream Overload Control oc value is changed on CBA track, since CBA platform (vDicos and CoreMW) has delay to collect the RUI value. To adapt the platform delay, two delays (5s and 7s by default) at application level are introduced which can avoid the traffic fluctuation. Beside the two application level delays, the recommended value for mtasSip0cDefIncrStep and mtasSip0cDefDecrStep are changed. For mtasSip0cDefIncrStep, it is changed from 12 to 2. For mtasSip0cDefDecrStep, it is changed from 8 to 1.
HW75114	Scs As	No Impact	When mtasScsMobileBehaviour is enabled, MtasScsTermPsSuccAttempt counter is not incremented for PS access termination attempt for normal mobile subscribers. This issue has been corrected in this release.
HW83145	NW AS	No Impact	The counter MtasPriwOrigSuccess was incremented incorrectly twice for each successful session established. This is corrected in this release to be incremented only once.
HW50758	CDIV and Call Barring in ST AS	Minor impact	Until now, rules (CDIV and CB) and routes (SIP Trunking Control) in ST AS were not keeping the order during evaluation as were set in CAI3G Create/Set request. Now this fault has been corrected.



Source of Change	Service	Impact	Description of Changes
HX10219	Ad Hoc conference service	No Impact	Before, when the conference creator wanted to remove a non-existing participant from the conference (for example, the CP has already left), the last moved-in participant was kicked out. This behavior can be turned off from now. When this function is disabled and the specified CP is not in the conference, the REFER message is rejected. New CM attribute: mtasConfLastMovedParticipantRemovalEnabled is introduced to control this behavior.
HX13418	MMTel NPLI	No impact	There is a possibility to use VLR-number in LocationInformation from HSS as alternative to CGI to get current location MCC. Prerequisites - configure MMTel AS NPLI to use VLR/MSR number in addition to CGI when building np PANI, terminating case. (mtasMmtNpliCSLocationInformation=1) - VLR/MSR number to be added to PANI should also be applied for originating MMTel NPLI case. This behavior can be controlled with CM mtasMmtNpliOriginatingCSLocationInformation=1; =0 legacy behavior (only CGI considered for PANI; =1 consider also VLR number or MSR number, or both, if available (same behavior as for mtasMmtNpliCSLocationInformation)).
HX14241	DEN	No impact	The order of <remote> and <local> tag in XML NOTIFY body is now according to RFC 4235, Ch 4.4. The XML tag order can be configured by a new CM attribute mtasDenVersion. When set to 0 (INITIAL_VERSION), legacy behavior of the service is active. When set to 1 (VERSION_1), the <local> and <remote> tag is sent in correct order.
HX19883	O-SDS	Minor impact	When IMRN INVITE reaches O-SDS on the PSI port and the service decides to update the PANI header based on InitialDP's location information, the service will remove incoming network-provided PANI from all further SIP messages coming from the served user during session establishment.
TR HW19418	XDMS	No Impact	Separated XDMS application logs: The log events generated by different applications (CAI3G, Ut/XCAP, CAI3G for SIP Trunk, GenSSC, CCMP) are recorded into different log files. The original log file "catalina.log" only records other non-application related events. For more information, refer to MTAS Troubleshooting Guideline
TR HX29166	XDMS	No Impact	Introduced XDMS log files retention policy: For each log type (access log, application log, Catalina log, and so on.), XDMS keeps additional 10 old archived log files based on the age, older files are removed For more information, refer to MTAS Troubleshooting Guideline
HX35573	SRVCC	No Impact	When a new CM attribute (mtasSrvccPreconditionTime) is set to a value greater than 0, SRVCC pre-alerting access transfer INVITE will be delayed by SCC AS if there's an early dialog that does not have QoS parameters negotiated (if preconditions are required)
HW67604	Alarms	Minor Impact	Because of an earlier fault NeLS Alarms might not be cleared even if the related features are disabled in MTAS. Now this fault is fixed, so the alarms will be ceased in this case.
HX34278	SRVCC	No impact	The new mtasSrvccAlertAckFallbackTime timer is started on ACK and fallback can then happen until it expires. If the mtasSrvccAlertAckFallbackTime time > 0, then fallback can also happen after the legacy fallback timer expires and before the new one is started (on ACK).
HX25597	CDIV	Minor	CDIV in MTAS is now putting "privacy=history" into the History-Info header for 180/181/183/200OK SIP messages from UE_C if reveal-identity-to-caller=false. This is to prevent C-number to be exposed to A.
HX14490	Ad Hoc conference	Minor	Ad-Hoc conference service is now sending partial notification about CP joining into the conference, when conference created using uri list and answer confirmation is enabled. Until now, nothing was sent, because of a fault.
HX19590	PRIW	Minor	PRIW service is adding confirm-status attribute into the SDP of 183 session progress message sent from NWAS, requesting resource reservation confirmation from user.
HX34376	Online Charging	Minor Impact	When OCS orders call termination in CCA-U (response code is 4010 with Announcement-Instruction) after call establishment, then terminating MTAS rejects the SIP session with 480 Temporarily Unavailable.
HX34377	Online Charging	Minor Impact	When OCS orders call termination in CCA-I/CCA-U (response code is 4010 with Announcement-Instruction), then originating MTAS rejects the SIP session with 403 Forbidden.



Source of Change	Service	Impact	Description of Changes
HX34278	SRVCC	Minor impact	Before this update there was no possibility of PS fallback after the call was answered if the SRVCC transfer was done in alerting state. Now, if <code>mtasSrvccAlertAckFallbackTime > 0</code> , a (second) fallback timer is started at reception of ACK for 200OK on INVITE if the transfer was started in alerting state. A PS fallback can then occur until this timer expires.
HX45973	Japanese Charging	Minor Impact	Until now, because of an earlier fault "MtasJc ICBS Data Not Found" alarm was not raised. Now the alarm can be raised again.
HX26776	Number Portability	No Impact	MTAS Number Portability Service will support replacement based on regular expressions in NAPTR response for ENUM query.
HX34278	SRVCC	No Impact	Added support for <code>mtasSrvccAlertAckFallbackTime</code> . The new <code>alertAckFallback</code> timer for SRVCC alerting is started on ACK and fallback can then happen until it expires. If the <code>alertAckFallback</code> time > 0 , then fallback can also happen after the legacy fallback timer expires and before the new one is started (on ACK).
HX35299	SRVCC	Minor Impact	Added a check if preconditions exist in media stream, if they are present then add the precondition tag to Require header in the provisional response to access transfer INVITE.
HX32907	Short Number Dialing	Minor	With this fix when a SND user creates an Ad-Hoc conference with uri list, the From header of the dialout INVITEs will be updated.
HX38859	MTAS Awareness after IS recovery	Minor Impact	The checking of the 'initialselection' tag in top most Route header was changed to case-insensitive for MTAS Awareness after IS recovery invocation





5 Impact on MTAS Features

This section describes the impact on vMTAS 1.14.0 features when the feature is turned on.

5.1 MTAS Awareness after AS Recovery

When S-CSCF indicates to an SCC AS that an AS change has occurred, the newly (by S-CSCF) selected AS then again downloads the stored registration information of the user from the S-CSCF (SUBSCRIBE/NOTIFY) and from the HSS (over the Sh interface), and if the registration is for an SC UE, sends a SIP MESSAGE to the ATCF to provide the correct ATU-STI information for SRVCC.

The “initialSelection” feature tag in the top Route header is used to inform the AS that it has been selected to serve this user, that is, if the SCC AS was selected the first time (failover), or if an SCC AS reselection occurs (fallback).

Impact

No impact on capacity, performance, and operation.

5.2 Improved Early Dialog Handling in CDIV

The CDIV service is extended to act as a B2BUA to be able to intercept UPDATE messages from caller and send UPDATE_ACCEPT messages to caller on more than one early dialogs on behalf of the callee. The CDIV service sends UPDATE_ACCEPT if the UPDATE arrives from the caller to the callee after the INVITE_REJECT is received from the callee, or if the UPDATE from the caller is sent out to the callee but the callee sends INVITE_REJECT before it receives the UPDATE (race condition).

The CDIV service is extended with early dialog termination functionality. All early dialogs that are not terminated by other services (except for the early dialog of initial INVITE) are terminated by CDIV service with SIP 199 message before forwarding the call. CDIV service terminates the early dialogs if 199 is supported in the initial INVITE message, and the configuration parameter `mtasMmt199Generation` is unlocked.

There are no new Configuration Attributes associated with this feature.

5.3 Rounding Mechanism for Reporting Used Service Units to Online Charging

The operator can configure the rounding method of the reported final Used Service Units (duration in seconds) over Ro interface at MMTel session



termination. The rounding method is only applicable for the used units reported in terminate charging control request message. The rounding method for reporting Used Service Units to Online Charging can be configured by the `mtasChargingProfileRoundingUSU` CM parameter. Supported types are rounding down, rounding to nearest, rounding up. The default value is rounding down which corresponds to the legacy behavior.

Impact

No impact on capacity, performance, network elements, or operation.

5.4 External Storage of Last Call Details for Call Return Service

The External storage of last call details for Call Return service offers the possibility to store Call Return Last call details in HSS.

This feature can be controlled using the following CM attributes: `mtasCrStorageLastIncomingCall`, `vtasCrStorageLastIncomingCall`, and `mtasShIfServiceInformationServiceInd`.

Impact

No impact.

5.5 MMTel AS Telephone Service Suspension

The Telephone Service Suspension feature in MMTel AS is realized by combination of CB (Communication Barring), Communication Setup Announcement (new MMTel service), and provisioning of new general-purpose subscriber-state element in common data and as service rule condition.

This feature can be controlled using the following CM attributes: `MtasCsa`, `mtasCsaAdministrativeState`, `VtasCsa`, and `vtasCsaAdministrativeState`.

Impact

No impact.

5.6 MTAS Improvements for Network Announcement

The announcement services of originating MMTel AS must be able to play an announcement to the caller, return the configured SIP error response and Reason header including a Q.850 or SIP cause code + reason text based on received SIP error status code and Q.850/SIP cause code from the network.



The Communication Barring service in MMTel AS must support provisioning of the SIP error response and Q.850/SIP cause code + reason text to be returned to the caller when a call is barred. It must also support the Outgoing Communication Barring service support option to return the configured SIP error response and Reason header including a Q.850 or SIP cause code + reason text in the SIP error response to the caller when the call is barred.

Impact

No impact.

5.7 Improvements of Signaling Latency at Interaction with OCS

MMTel AS forwards the 200 OK (initial INVITE) to the remote side after sending CCR-U, without waiting for the reception of the CCA-U from OCS.

The Communication Barring service in MMTel AS supports provisioning of the SIP error response and Q.850/SIP cause code + reason text to be returned to the caller when a call is barred. Also, the Outgoing Communication Barring service supports the option to return the configured SIP error response and Reason header, including a Q.850 or SIP cause code + reason text, in the SIP error response to the caller when the call is barred.

When OCS indicates call termination (including Announcement Instruction), then MMTel AS releases the call and includes the configurable Reason header indicating that the release has been triggered by OCS.

Impact

No impact.

5.8 MTAS User-Level Control of Supplementary Service Codes

To disable the use of SSC commands for a user, a new “freeze mode” for SSC Service is introduced. In this mode the user configuration is “frozen”, that is, the user cannot use SSC commands for self-provisioning.

The operator can configure a dedicated SSC command to enable/disable the SSC “freeze” mode, or any existing SSC command for service activation/deactivation can be configured to additionally enable/disable the “freeze” mode. In the freeze mode, the SSC Service does not execute any SSC commands apart from configured as “disable freeze mode” or commands configured as “exempted SSC command”. Bypassed SSC commands can be rejected by OCB Service, or handled in any other way chosen by the operator.



Impact

No impact.

5.9 Identify Where Privacy-Related Processing Is in Action and Log the Event

A log entry, related to QP, has been added to the console log and the application log. It has information about what was started when. For example:

```
"Query was started at 20180423T172837525."  
"Purge was started at 20180423T172837525."
```

Impact

No impact.

5.10 Identify Where Privacy Data Is Logged and Assign A Tag If Missing

In accordance with the new EU GDPR regulation, in all areas of the MTAS code associated with the logging private data, special tags are added for the correct processing this data.

Impact

No impact.

5.11 Enhancement of Hotline Service

New Whitelist conditional Hotline type introduced for Hotline Service No new CM parameters. The feature can be controlled with the existing Hotline Administrative state CM, and through provisioning.

Impact

No impact on capacity, performance, network elements, and operation.

5.12 VoLTE for Unified Communication Non-UC Routing Numbers

A list of specific numbers/addresses (service numbers like OSN/NSN/TollFree/ShortCode) in Business Line AS (BLAS) such that when a Business UC User dials one of these addresses, calls are not routed to the UC System.



CM parameters that control the behavior:

- `mtasUCRoutingSuppressServiceNumbers = 0` (DISABLED), Legacy behavior; 1 (ENABLED), WP behavior.
- `vtasUCRoutingSuppressServiceNumbers = 0` (DISABLED), Legacy behavior; 1 (ENABLED), WP behavior.

Impact

No impact on capacity, performance, network elements, and operation.

5.13 Support of External MRFC Node Failover in MMTel AS (Drop 2)

The drop 1 of the feature has been delivered into the previous release (4.10.0 and 1.10.0). In drop 1, MTAS tried to connect other MRFC Nodes, if the communication was not successful for the first candidate.

In this release, MTAS marks the non-responding nodes (`mtasMrfcNodeOperationalState` attribute) with the value `MARKED_NOT_RESPONDING`. After the configured time (specified in `mtasMrControllerMrfcNodeRecoveryTimer`) expires, MTAS marks that MRFC node as working again (`MARKED_OK`).

The duration of this timer can be controlled through the value of the `mtasMrControllerMrfcNodeRecoveryTimer` attribute.

Impact

No impact on capacity, performance, network elements, or operation.

5.14 Hardened Etc Overlay Introduction

Hardened Etc overlay is used for hardening of configuration files under the `etc` directory. Where configurations must be applied in a non-dynamic fashion to prevent damaged configurations files. With HEO RPM in place, MTAS enforces the following functionality.

- Inactivity Timer for Login Session (default enabled, value 600 seconds)
- Inactivity timer for User Accounts (default enabled, value 90 days, On each logon this program moves forward the account expiry by 90 days.)
- Strong Password Enforcement (default enabled)
- Auditing – Full Personal Accountability (default enabled)
- Legal warning at logon (configured by the customer)



For more information, refer to LDE Management Guide CPI section “etc-overlay”.

Impact

No impact on capacity, performance, network elements, and operation. MTAS becomes more secure and hardened from system security prospective.

5.15 Unique Prompt Prefix

With new LDEwS version integrated as part of baseline adaptation, vMTAS supports the configuration of a unique prompt id (using the attribute `networkManagedElementId`) that is displayed when logging on to the VNF instance.

New attribute to LDE configuration command is introduced to turn this feature ON

```
lde-config system add --unique-prompt on
```

Once enabled, log off and log on OR create a new shell to see the new prompt.

`networkManagedElementId` attribute value is set using below IMM configuration:

```
immcfg --attribute networkManagedElementId="<Node_name>"  
managedElementId=1
```

5.16 VMware Instantiation and Termination Workflow

It is now possible to deploy MTAS with a 2+2 configuration on a VMware based cloud using instantiation workflow scripts. It is possible to terminate graceful and forceful MTAS using the termination workflow scripts.

Impact

No impact on capacity, performance, network elements, or operation.

5.17 New PM Job Names

The following new PM job names have been added:

```
PmJob=NOOSSCONTROL_MtasSla_OSProcessingUnit  
PmJob=NOOSSCONTROL_MtasSla_OSProcessingLogicalUnit  
PmJob=NOOSSCONTROL_MtasSla_OsmDevice
```

Impact

No impact on capacity, performance, network elements, or operation.



5.18 Identity Presentation Enhancement for Enterprise Customers

With support of this feature MMTel AS shall support adding the "id" parameter to the Event header after calling-name for SIP queries over the Calling Name Server (CNS) interface.

Impact

No impact on capacity, performance, network elements, and operation.

5.19 Support of IMRN in national format for SDS

When CM parameter `mtasSdsImrnNai` is set to `National(1)`,

- T-SDS return IMRN in National format when responding in Connect message, regardless of received NAI of `calledPartyNumber` in IDP,
- O-SDS return IMRN in National format when responding in Connect message.

In both cases, the NAI of IMRN are set to `National(3)`. When CM parameter `mtasSdsImrnNai` is set to `Legacy(0)`, legacy behavior is applied.

Impact

No impact.

5.20 Scaling Workflows for VMware

It is now possible to execute the scaling workflows on a VMware based cloud.

Impact

No impact.

5.21 Forking Interworking Function (F-IWF)

The Forking Interworking function (F-IWF) is an interworking function provided by the Network Application Server (NW AS).

The F-IWF provides interworking between a caller device lacking support of multiple early dialogs and the IMS network.

It aggregates multiple early dialogues to a single dialogue, keeps track of the media state on multiple-dialog-side, and maps the authorized media towards the single dialog.



F-IWF can be configured to be executed on all traffic, or have a flexible invocation mechanism to trigger its execution based on the presence of a SIP header or an attribute in a SIP header in the initial INVITE.

This new feature can be configured with the following CM attributes: `mtasNwFoIwAsName`, `mtasFoIwAdministrativeState`, `mtasFoIwMode`, `mtasFoIwInvocationHeaderName`, `mtasFoIwInvocationHeaderValue`, `mtasFoIwInvocationHeaderHandling`.

The following PM counters are increased by this new feature: `MtasFoIwOk`, `MtasFoIwNOkE`, `MtasFoIwNOkI`.

Impact

No impact on capacity, performance, network elements, and operation.

5.22 Communication-barring Enhancements

MMTel AS takes it into consideration the additional destination country for mobile user, when international and international-exHC conditions are evaluated.

MMTel AS to bar the call based on configurations when mobile served user is calling from another carrier network in the home country.

This feature enhancement can be configured with the following CM attributes: `mtasComCcmMccDestinationMapping`, `mtasComCcmMccDestinationMappingMap`, `pedValue`, `mtasComCcmMccMnc`, and `mtasComCcmMccMncHome`.

Impact

No impact.

5.23 Mid-call Renegotiation Request Retry

MMTel AS can receive 500 error response with retry-after header for a relayed mid-dialog renegotiate request triggered by either re-INVITE or UPDATE. In such a scenario, MMTel AS retries the renegotiation request after the delay time indicated in the received retry-after header or `mtasMmtReInviteRetryAfterTimeMax`, whichever is less.

The function is controlled with CM `mtasMmtMidCallRenegotiationRetryAfterSupport`.

Impact

No impact on capacity, performance, network elements, and operation.



5.24 Network-based Handling of Non-Authorized International Calls

New CB counters are introduced to measure number of failed calls because of barring and number of successful calls (not barred) with key as call type.

The new PM counters are: MtasCB0CBBarredType, MtasCB0CBNotBarredType.

Impact

No impact.

5.25 vMTAS, Improved Serviceability Success Rate during In-service Scaling

Serviceability success rate during in service scaling of vMTAS is improved significantly. vMTAS continues to serve those ongoing transactions during scaling by not terminating the application processes which are handling those transactions.

Serviceability success rate is improved but varies depending on the CPU load when the scaling is triggered and scenarios ongoing at that time. Overload rejections and other failures observed as the CPU load increases beyond 35–40% during scaling.

This feature enhancement can be controlled with the following CM attribute: mtasFunctionScalingTerminateWaitTime.

Impact

No impact on capacity, performance, network elements, and operation.

5.26 Network Announcement Triggered by Specific SIP Header

The purpose of this feature is to enable MTAS to recognize a customer-specific call barring scenario and play an announcement to the user. The recognition is done based on checking SIP headers in the incoming initial INVITE messages.

This feature is controlled with the following CM attributes:

- mtasNaRaSipHeaderName
- mtasNaRaSipHeaderValue
- mtasNaRaSipHeaderGaAnnId
- mtasNaRaRejectCode



- mtasNaRaRejectReason
- mtasGaAnnSessionProgressReason
- vtasNaRaSipHeaderName
- vtasNaRaSipHeaderValue
- vtasNaRaSipHeaderGaAnnId
- vtasNaRaRejectCode
- vtasNaRaRejectReason
- vtasGaAnnSessionProgressReason

Impact

No impact on capacity, performance, network elements, and operation.

5.27 vMTAS, Tool for Faster and Easier Handling of Subscriber and Software Trace

The MtasTrace tool makes it possible to manage subscriber or software trace in vMTAS system in a faster and more efficient way. The tool supports easy configuration, start and stop of trace session. Generated trace messages can be tailed to new files to avoid information loss because of log rotation. CPU load monitoring and automatic deactivation of the trace session protects against system overload.

Impact

No impact on capacity, performance, network elements, and operation.

5.28 Adding Date to Call Return Announcement for Calls Older Than Two Days

MTAS is now adding date in announcement for CR invocation, if the interrogation happens after 2 days of saving last incoming call.

This feature enhancement is controlled with the following CM attribute: mtasCrLastCallInfoType enum value 3.

Impact

No impact.



5.29 Call Type Validation for the Destination Number Provisioned for Abbreviated Dialing

If call type validation for the destination number provisioned for abbreviated dialing is needed on the Ut interface, the CM parameter `mtasAbDialCallTypeValidation` must be activated. If the parameter is set and already existing user document settings are generating reject messages, the parameter `mtasXdmsUtValidation` can be set to (1) and selective validation is supported. In this case, MMTel AS validates the received Ut request together with the user document, but for CDIV or Abbreviated Dialing, services and the validation constraints are applied only on the received request. If CDIV or Abbreviated Dialing, or both services are not part of the Ut request, then the validation of those services in the user document is skipped.

If call type validation for the destination number provisioned for abbreviated dialing is needed on the CAI3G interface, the CM parameter `mtasAbDialCallTypeValidation` must be activated.

Impact

No impact.

5.30 Support of Originating Identity Presentation Restriction Service for Priority Calls in MMTel AS

Existing privacy settings can be overridden for priority calls if the user is provisioned with override parameter and priority Originating Identity Presentation restriction. Operator will have possibility to configure via CAI3G Originating Identity Presentation Restriction for Priority Call.

A new `<priority-restriction>` element is introduced in the operator part of `<originating-identitypresentation-restriction>`.

Impact

No impact.

5.31 Interaction between CAT and MobileCommunicationWaiting

The CW service checks the provisional responses and if 180 Ringing with CWU is received it plays the CW announcement if no other announcement is playing.

CAT announcement may be suppressed if the value of `mtasCatEarlyMediaInteractionTimer` is bigger than zero and the following preconditions are met:

- `mtasMmtTransparentMode` is enabled



- `mtasCwOperateMode` is set to 4 (Mobile CW mode) or 5 (Mobile CW Alternate mode 1)

The CAT service starts the `mtasCatEarlyMediaInteractionTimer` timer on the first provisional response with the configured amount of time. When the timer expires the CAT service plays the announcement if no other announcements are being played.

The feature is controlled with the following configuration parameter:

- `mtasCatEarlyMediaInteractionTimer`: Sets the time-range from 0–3200 in millisecond resolution. Setting the parameter to 0 means that CAT is played on SIP 180 Ringing response (legacy behavior).

Impact

No impact.

5.32 Announcement According to Reason Header

Network Announcement service is enhanced. In terminating case an announcement can be played based on combination of SIP error status code + Q.850/SIP cause code and SIP error response can be configurable, the same way as it works for originating. This is controlled by a new MOC `MtasNaAnnCauseT`, or for Wholesale `VtasNaAnnCauseT`, and its attributes.

Impact

No impact.

5.33 Communication Event Logging

The new communication event logging function is a Rf based MMTel AS service, sending notifications about served user session communication to an external server.

Communication events will be sent to the external logging server whenever there is a communication attempt from/towards served user. The event includes information about type of session state event, time, calling party, called party, subscription information, and so on.

The feature is controlled by the new `mtasCel` MOC.

It is possible to provision this service both individually per subscriber and per groups of subscribers (Service Profile) and per MMTel context (Multi-Persona).



Impact

There is minor impact on capacity and performance when feature is enabled and provisioned.

5.34 vMTAS Workflow Enhancement When Used with Ericsson Orchestrator

The Ericsson Orchestrator (EO) is enhanced in a way that if an instance is successfully terminated in the VNF Life Cycle Manager (VNF-LCM), then it will be removed from the EO too.

Impact

No additional impact.

5.35 Ro Announcement for Errors Without Announcement AVP

MTAS plays Ro reject announcement in case any CCA message contains command or service level error code or Experimental-Result-Code AVP, even when the CCA does not contain an Announcement-Instructions AVP, if CCFH action is set to TERMINATE.

It can be configured and controlled through the following CM parameters:

The `mtasChargingProfileRoRejectAnn` CM parameter determines the announcement package to be played in case of a specific reject code. Announcement played to the served user, when the reject result code in the CCA-I on originating side, or in the CCA-U on both sides matches the result code configured in the CM parameter.

Example: `mtasChargingProfileRoRejectAnn = "4012|RoRejectAnnouncement"`. If the reject code in the CCA message is 4012, then the `RoRejectAnnouncement` keyed Generic announcement will be played to the served user.

The `mtasChargingProfileRoRejectDefaultAnnRemoteUser` CM parameter determines the announcement package to be played for call termination to the remote user when CCR-I rejected on the terminating side.

The `mtasChargingProfileRoRejectDefaultAnnServedUser` CM parameter determines the announcement package to be played for call termination to the served user, when CCR-I rejected on the originating side, or, when CCR-U rejected on both sides.

Example: `mtasChargingProfileRoRejectDefaultAnnServedUser = "DefaultRoRejectAnnouncement"`. If the reject code in the CCA message not matches the entries configured in `mtasChargingProfileRoRejectAnn`

or `mtasChargingProfileRoRejectAnn` is not configured, then the `DefaultRoRejectAnnouncement` keyed Generic announcement will be played to the served user.

If both `mtasChargingProfileRoRejectDefaultAnnServedUser` and `mtasChargingProfileRoRejectAnn` CM parameters are configured and the reject code in the CCA message matches an entry in `mtasChargingProfileRoRejectAnn`, then the latter takes precedence.

These CM parameters are configurable per charging profile. There can be multiple instances (0–32) of `mtasChargingProfileRoRejectAnn`, but only a single instance of `mtasChargingProfileRoRejectDefaultAnnRemoteUser` and `mtasChargingProfileRoRejectDefaultAnnServedUser` per charging profile.

Impact

By default, there is no impact. There can be additional strain on MRF resources, when the feature is enabled and configured by the CM parameters (announcement will be ordered from the MRF by MTAS for CCA messages containing error response), depending on the details of the configuration.

5.36 Graceful locking from vMRF

New service change method graceful reason 908 is supported, this triggers graceful shutdown. After receiving this service change new connections will not be allowed (no more add message allowed), but ongoing transactions will not be affected. After all connection has been gracefully subtracted, `operationalState` will be `linkDown` (previously disabled, this means SCTP link is down).

A new CM parameter is introduced to indicate this state. The CM parameter is called `mtasMrfpNodeOperState`. The following states are represented with this CM:

- `linkDown := 0` (SCTP link is down)
- `linkUp := 1` (SCTP link is up)
- `linkShuttingDown := 2` (SCTP link is up, but we do not allow new connections)

The state `linkShuttingDown` represents the new function, graceful locking.

Impact

No impact.



5.37 Multi-Persona on CS

The Multi-Persona service enables a mobile subscriber to use different personas (identities) at incoming and outgoing communication. Multi persona selection when originating VoLTE UE attached to CS. Multi persona indication when terminating VoLTE UE attached to CS . For more information refer to Multi-Persona Service in MTAS.

This feature can be controlled with the following CM attributes:.

- `mtasMmtSipccIdentification`
- `mtasMultiPersonaAdministrativeState`
- `mtasMultiPersonaEnhancement`
- `mtasMultiPersonaInviteDelay`
- `mtasMultiPersonaMpcnMaxLifetime`
- `mtasMultiPersonaMpcnRange`
- `mtasMultiPersonaMpcnRangeFirst`
- `mtasMultiPersonaMpcnRangeLast`

This feature requires a license to work: `MtasMultiPersona` or `vMtasMultiPersona`.

This feature uses the following counters for Performance Measurement:

- `MtasMultiPersonaOrigSelAttempts`
- `MtasMultiPersonaOrigSelectionsNOkE`
- `MtasMultiPersonaOrigSelectionsNOkI`
- `MtasMultiPersonaOrigSelectionsOk`
- `MtasMultiPersonaTermSelAttempts`
- `MtasMultiPersonaTermSelectionsNOkE`
- `MtasMultiPersonaTermSelectionsNOkI`
- `MtasMultiPersonaTermSelectionsOk`

This feature may raise the following new alarm: `MultiPersona Service License Absent`.

Impact

No impact on capacity, performance, network elements, and operation.



Minor impact. For backward compatibility with legacy behavior during upgrade the CM `mtasMultiPersonaAdministrativeState` is to be set to UNLOCKED.

5.38 Increased Number of Rating Centers in Number Analysis

The cardinality of CM attribute `NumAnaRatingCenter` is increased from the present 5000 to 7000.

Impact

No impact on capacity, performance, network elements, and operation.

5.39 Support for ANSI network (CAP)

Previously ITU standard and Global Title was hardcoded for the CAP interface.

Now support for configuration of standard (ITU or ANSI) used on the CAP signaling network is added. Configuration can be done with the `mtasCsiCapSccpStandard` CM attribute.

Support for configuration of Global Title is added. This feature can be configured with the following attributes:

- `mtasCsiCapCdGti`
- `mtasCsiCapCdNai`
- `mtasCsiCapCdNp`
- `mtasCsiCapCdTt`
- `mtasCsiCapCdEs`
- `mtasCsiCapCgGti`
- `mtasCsiCapCgNai`
- `mtasCsiCapCgNp`
- `mtasCsiCapCgTt`
- `mtasCsiCapCgEs`

Impact

No impact.



5.40 Removal of Multiple AS Invocation in Co-Location Scenarios

When multiple AS roles are co-located, MTAS supports to invoke these AS roles by one ISC triggering on generic SIP port. The invoked AS order is specified in the top Route header “as=”, as the following example:

```
Route:sip:mtas.operator.net; as="scc,foiwf,mmt,priwf"
```

Impact

No impact on capacity, performance, network elements and operation.

5.41 Time-Based Auto-Scale

The customer can now configure an auto scaling operation (by configuring a timestamp and a scaling type – in/out – with additional scaling information via ECLI). The scale-out and scale-in workflows can be triggered automatically based on alarms which will be raised at the specific time configured on the VNF. The ENM triggers a scale workflow on VNF-LCM based on the alarm from the VNF.

Newly introduced alarm: MTAS Time Based Scaling

Newly introduced MOC: MtasScaling MOC

Impact

Scaling is a deliberate operation with direct impact on the capacity of the VNF. No impact on network elements and operation.

5.42 EM-Driven Instantiation

After a successful instantiation operation, started from the VNF-LCM, has been finished successfully, a newly created virtual application belonging to the newly instantiated VNF is available in the EO (Ericsson Orchestrator) as well.

Impact

No impact on capacity, performance, network elements and operation.

5.43 EM-Driven Scaling

If an instance has been deployed from the EO (Ericsson Orchestrator), then after a successful scaling operation, started from the VNF-LCM, has been finished successfully, the newly updated stack-related information (number of virtual machines, IDs of VMs, and so on.) are available in the EO as well.



Impact

Scaling is a deliberate operation with direct impact on the capacity of the VNF. No impact on network elements and operation.

5.44 Support Hardware Watchdog for Intel 6300 ESB

vMTAS now supports the `lde-watchdogd` function that LDE provides as a CSM (CBA system model) component. `lde-watchdogd` provides a configurable watchdog daemon which periodically resets the watchdog timer by writing to `/dev/watchdog`.

The watchdog device can be real hardware, or emulated hardware, (for example, by a KVM hypervisor), or fully implemented in software as a kernel module.

In case of a hardware watchdog device, the LDE agent watchdog daemon relies that its driver (kernel module) is loaded. This is determined by checking for the existence of `/dev/watchdog`. If this file is not there when the LDE agent watchdog service is started, the service will attempt to load a software watchdog (softdog). This will result in `/dev/watchdog` appearing albeit backed by a software implemented “device”.

The watchdog configuration used by the LDE `watchdogd` component is set using the following parameters (provided in the CSM component configuration file `lde-agents-watchdogd.yaml`):

- `watchdog_timeout`: Time frame from the last received ping until the watchdog device triggers
- `interval_timeout`: Every `interval_timeout` a ping is sent to the watchdog device by the watchdog daemon
- `shutdown_timeout`: When the watchdog daemon is stopped, the time that watchdog device waits is set to `shutdown_timeout` value. It is used to ensure watchdog device triggers if a reboot hangs for any reason.

Impact

No impact on capacity, performance, network elements and operation.

5.45 vMTAS Improved Resilience to Network Disturbances

To make vMTAS more resilient to network disturbances, the time-out value has been increased from 1500 milliseconds to 5000 milliseconds on the internal network interface (TIPC).

Impact

No impact on capacity, performance, network elements and operation.