

vMTAS Network Impact Report from 1.10 to 1.12.0

MTAS

NETWORK IMPACT REPORT

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1 Introduction

This Network Impact Report (NIR) describes how vMTAS 1.12.0, 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
- Identity Presentation Service is extended with Originating Identity Presentation Restriction for Priority Call
- PM Measurements for maximum CPU Load and Memory utilization
- UE status reporting for combined Wi-Fi Calling and VoLTE deployments
- vMTAS, Scaling Workflows for VMware

Enhanced Features

- Support of External MRFC node failover in MMTel AS (drop 2)
- 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



- UC Routing Service is extended to suppress routing of calls to UC system, when Business UC user dials non UC (service numbers like NSN/OSN/TollFree/ShortCode) numbers.
- Interaction between CAT and Mobile Communication Waiting
- Session-ID support for the MMTel AS DEN service
- Rule-based Communication Setup Announcement Service
- MTAS Improvements for Network Announcement service, Drop 2
- Optimizing ICS over Mg
- Configurable MTU size
- Always send 200 OK for PRACK, AS IW Service
- vMTAS Workflow package supports NFVO triggered Instantiate/Terminate Workflows for OpenStack NFVI
- Script for on-site generation of vMTAS VNF Package

For more information on the changed features, see Section 5 on page 29.



2 General Impact

This section describes the general impact owing to the introduction of vMTAS 1.12.0.

2.1 Backward Compatibility

vMTAS 1.12.0 is backward compatible and unless stated otherwise, legacy behavior is preserved.

2.1.1 Interoperable Network Elements

The interoperable Network Elements for vMTAS 1.12.0 are described in Table 1.

Table 1 Supported Versions of Network Elements

Network Element	Earliest Supported Versions
MRS	14A
CSCF	14A
HSS	14A FD1 is needed for ST AS
OSS-RC	O16A Upgrade for OSS-RC is only needed when new parameters and counters are introduced in MTAS and are to be used.
vEDA	7.0 CP2
SBG	15B
vENM	vMTAS Lifecycle Management requires 17.15(-3.6.8) version of VNF-LCM; therefore use the 18A release of vENM.

2.1.2 Open Backward Compatibility Issues

2.1.2.1 SSH Key-based Authentication Does Not Work (HX22688)

In the current vMTAS version, it is not possible to use key-based SSH authentication. The only possible way for SSH authentication is a pre-set password.

If the customer has, or is planning to have, any script that needs an authentication on the node, then this issue could cause trouble. They will not be able to use their script, and in case of a new script, they will not be able to use the secure method



for authentication: the password has to be stored in the script, which is less secure than a private–public key pair.

2.2 Capacity and Performance

2.2.1 Subscriber Capacity

The subscriber capacity is not affected by the introduction of vMTAS 1.12.0.

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

The in-service network performance and traffic capacity has been degraded by 1–7% with the introduction of vMTAS 1.12.0.

2.2.3 License Handling

It is mandatory to use Network License Server (NeLS) product with vMTAS 1.12.0.

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



3 Licenses

This section lists the new and changed license codes added in vMTAS 1.12.0. For a list of (v)MTAS licenses, refer to [MTAS Licenses](#).

3.1 New Licenses

There are no new licenses in vMTAS 1.12.0.

3.2 Changed Licenses

There are no changed licenses in vMTAS 1.12.0.

3.3 Deleted Licenses

There are no deleted licenses in vMTAS 1.12.0.





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 2.

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 2 Inter-Node Interfaces

Interface	Protocol	Impact	Description of Change Compared to vMTAS 1.10
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 <code>mtasFunctionAdministrativeState</code> 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.
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 <code>initialSelectionURL</code> 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 <code>CM mtasCallSetupAnnAdministrativeState = 1</code> 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 (<code>mtasChargingProfileReleaseReason</code>) to indicate the reason of call release.



Table 2 Inter-Node Interfaces

Interface	Protocol	Impact	Description of Change Compared to vMTAS 1.10
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 P-Ericsson.Invocation-History 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.
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 (mtasChargingProfileOrigCcaUpdateEvaluation, mtasChargingProfileTermCcaUpdateEvaluation), 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 <active> element in user part of Supplementary-Service-Codes.
Ut	XCAP	No Impact	Updated <terminal-selector> in User Common Data. The maximum length of this element changed to allow 300 characters.
ISC	SIP	Major Impact	TR HW88671. When MTAS sends an in-dialog SIP message to the node which is in the blacklist, then this message is not sent out. Also, this specific session is terminated by MTAS
ISC	SIP	Minor Impact	New CM parameters mtasUCRoutingSuppressServiceNumbers and vtasUCRoutingSuppressServiceNumbers. When the parameter is 1, UC Routing service suppresses routing the call towards UC system when Business UC user dials a non UC (service number like OSN/NSN/TollFree/ShortCode) number.
Ro	Diameter	Minor impact	The collected digits from prompt and collect procedure is sent to OCS are Service-Specific-Info AVP for Ro version RELEASE_7_3GPP(1).
Sh	Diameter	No impact	If MTAS receives PNR(DeletedIdentities) for a registered user, user is deregistered from the node, and PNA(DIAMETER_SUCCESS) is responded. See HW30997.



Table 2 Inter-Node Interfaces

Interface	Protocol	Impact	Description of Change Compared to vMTAS 1.10
Rf	Diameter	No Impact	<p>TR HW98093 impact The new CM mtaChargingProfileDefaultSubscriptionReportingBehavior is introduced to report default subscriber in SubscriptionId AVP and Device Information in offline charging (ACR), for multiMobile subscriber.</p> <p>Possible Values: DefaultIMPU, DefaultIMPU_IMSI, DefaultSubscription, DefaultSubscriptionAndDeviceInfo.</p> <p>DefaultIMPU (DISABLED)- Default IMPU reported at diversion, unsuccessful call establishments and when a fixed device is handling the call.</p> <p>DefaultIMPU_IMSI: IMSI of default subscription and Default IMPU are reported at diversion, unsuccessful call establishments, and when a fixed device is handling the call.</p> <p>DefaultSubscription: IMSI, MSISDN of default subscription and Default IMPU are reported at diversion, unsuccessful call establishments, and when a fixed device is handling the call.</p> <p>DefaultSubscriptionAndDeviceInfo IMSI, MSISDN of default subscription and Default IMPU are reported at diversion, unsuccessful call establishments, and when a fixed device is handling the call. Device IMPI and Device IMEI of registered device with default subscription are reported at diversion call.</p>
Ro	Diameter	No Impact	<p>TR HW98093 impact The new CM mtaChargingProfileDefaultSubscriptionReportingBehavior is introduced to report default subscriber in SubscriptionId AVP and Device Information in online charging (CCR), for multiMobile subscriber.</p> <p>Possible Values: DefaultIMPU, DefaultIMPU_IMSI, DefaultSubscription, DefaultSubscriptionAndDeviceInfo.</p> <p>DefaultIMPU (DISABLED)- Default IMPU is reported in the SubscriptionId AVP at diversion, unsuccessful call establishments, and when a fixed device is handling the call.</p> <p>DefaultIMPU_IMSI: IMSI of default subscription and Default IMPU are reported in the SubscriptionId AVP at diversion, unsuccessful call establishments, and when a fixed device is handling the call.</p> <p>DefaultSubscription: IMSI, MSISDN of default subscription and Default IMPU are reported in the SubscriptionId AVP at diversion, unsuccessful call establishments, and when a fixed device is handling the call.</p> <p>DefaultSubscriptionAndDeviceInfo IMSI, MSISDN of default subscription and Default IMPU are reported in SubscriptionId AVP at diversion, unsuccessful call establishments, and when a fixed device is handling the call. Device IMPI and Device IMEI of registered device with default subscription are reported in UserName AVP, Equipment-Info/Instance-ID AVP at diversion call.</p>
CAI3G	CAI3G	Minor Impact	The host header must have a value (domain, IPv4 or IPv6 address). If not, it is rejected with 400 Bad Request.
Ut	XCAP	Minor Impact	The host header must have a value (domain, IPv4 or IPv6 address). If not, it is rejected with 400 Bad Request.
Ut	CCMP	Minor Impact	The host header must have a value (domain, IPv4 or IPv6 address). If not, it is rejected with 400 Bad Request.

4.2 Operation and Maintenance

This section describes changes to attributes, alarms, events and notifications, triggers, and counters.

4.2.1 Provisioning

There are no deleted attributes.



4.2.1.1 New Provisioning Attributes

The new provisioning attributes are listed in Table 3.

Table 3 New Provisioning Attributes

Interface	Protocol	Impact	Description of Change Compared to vMTAS 1.10
CAI3G	CAI3G	No Impact	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	No Impact	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	No Impact	User part introduced for Supplementary-Service-Codes. New <active> element in user part of Supplementary-Service-Codes.
CAI3G	CAI3G	No Impact	The operator has 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	No Impact	User part introduced for Supplementary-Service-Codes. New <active> element in user part of Supplementary-Service-Codes.
Ut	XCAP	No Impact	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	No Impact	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.



Interface	Protocol	Impact	Description of Change Compared to vMTAS 1.10
CAI3G	CAI3G	No Impact	New conditions in service Outgoing Communication Barring(OCB) <ul style="list-style-type: none"> • b-number-type • b-network-type • localness
CAI3G	CAI3G	No Impact	The following new conditions in Communication Setup Announcement(CSA) operator rules for served user so that Communication Setup Announcement(CSA) service in Originating MMTel AS can evaluate conditions and plays announcement for the served user. <ul style="list-style-type: none"> • rule-deactivated • Identity • Media • Validity • Valid-periods • Invalidity • Served-identity • In-sip-request

4.2.1.2 Changed Attributes

The changed provisioning attributes are listed in Table 4.

Table 4 Changed Provisioning Attributes

Interface	Protocol	Impact	Description of Change Compared to vMTAS 1.10
CAI3G	CAI3G	No Impact	Application constraint check between element ad-hoc-temporary-presentation-not-restricted and restriction has been removed (HW96647). Originating Identity Restriction Failure: Element restriction cannot be present when value ad-hoc-temporary-presentation-not-restricted is set.

4.2.2 Configuration

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

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

4.2.2.1 Changed Attributes

The changed attributes are shown in Table 5.



Table 5 Changed Attributes

Attribute Name	Description of Change
mtasCDivBlackList	<p>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).</p> <p>This is a non-backward compatible change.</p>
mtasFsfServiceFormatSuppressedServices	Attributes shall support new service value as Csa.
mtasFsfServiceFormatSuppressedServices	New usable formats: Cx, Csa
mtasFunctionFqdn	Pattern string updated to accept empty values.
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>
mtasMmtAsName	The default value for this attribute is corrected to mmt, when coming from MTAS 1.9.
mtasMmtSuppressEarlyMediaHeader	Cardinality changed to 0–1 and pattern string updated to accept empty values.
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).
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>



Attribute Name	Description of Change
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>
mtasSccAsName	The default value for this attribute is corrected to scc, when coming from MTAS 1.9.
MtasSdsServedHplmn	9xx range is allowed in MCC part of the key.
mtasSdsWhiteListVplmnList	9xx range is allowed in MCC part of the value.
MtasSdsVplmn	9xx range is allowed in MCC part of the key.
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.
PM_COLLECTOR_FLUSH_PERIOD	This vDicos variable has changed value from default to 1 owing to correction of TR HW65892.
PM_COLLECTOR_FLUSH_PERIOD	The vDicos variable has changed value from 1 to 5 because of correction of HW92379.
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>
vtasFsfServiceFormatSuppressedServices	Attributes shall support new service value as Csa.
vtasFsfServiceFormatSuppressedServices	New usable formats: Cr, Csa
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>
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>



Attribute Name	Description of Change
vtasIcbWhiteListNumExcl	The attribute can only be modified if the new attribute <code>mtasIcbView</code> is set to 1=STANDBY (the default value is 0=ACTIVE). Changes take effect after activation (see the new action <code>mtasIcbActivateStandby</code> and the new attribute <code>mtasIcbChangeTime</code>). This is a non-backward compatible change.
vtasIcbWhiteListNumIncl	The attribute can only be modified if the new attribute <code>mtasIcbView</code> is set to 1=STANDBY (the default value is 0=ACTIVE). Changes take effect after activation (see the new action <code>mtasIcbActivateStandby</code> and the new attribute <code>mtasIcbChangeTime</code>). This is a non-backward compatible change.
vtasMmtSuppressEarlyMediaHeader	Cardinality changed to 0–1 and pattern string updated to accept empty values.
vtasOcbBlackList	The attribute can only be modified if the new attribute <code>vtasOcbView</code> is set to 1=STANDBY (the default value is 0=ACTIVE). Changes take effect after activation (see the new action <code>vtasOcbActivateStandby</code> and the new attribute <code>vtasOcbChangeTime</code>). This is a non-backward compatible change.
vtasOcbWhiteListDomainIncl	The attribute can only be modified if the new attribute <code>vtasOcbView</code> is set to 1=STANDBY (the default value is 0=ACTIVE). Changes take effect after activation (see the new action <code>vtasOcbActivateStandby</code> and the new attribute <code>vtasOcbChangeTime</code>). This is a non-backward compatible change.
vtasOcbWhiteListNumExcl	The attribute can only be modified if the new attribute <code>vtasOcbView</code> is set to 1=STANDBY (the default value is 0=ACTIVE). Changes take effect after activation (see the new action <code>vtasOcbActivateStandby</code> and the new attribute <code>vtasOcbChangeTime</code>). This is a non-backward compatible change.
vtasOcbWhiteListNumIncl	The attribute can only be modified if the new attribute <code>vtasOcbView</code> is set to 1=STANDBY (the default value is 0=ACTIVE). Changes take effect after activation (see the new action <code>vtasOcbActivateStandby</code> and the new attribute <code>vtasOcbChangeTime</code>). This is a non-backward compatible change.

4.2.2.2 Deleted Attributes

There are no deleted attributes in vMTAS 1.12.0.

4.2.2.3 Deprecated Attributes

The deprecated attributes are listed in Table 6.

Table 6 Deprecated Attributes

Attribute Name	Description of Change
<code>mtasNwAsName</code>	Deprecated, replaced with <code>mtasNwPrIwAsName</code> .



Attribute Name	Description of Change
mtasChargingProfileDefaultImsiReporting	Deprecated; mtasChargingProfileDefaultSubscriptionReportingBehavior is used instead. Upgrade logic makes the configuration migration automatically.
mtasChargingProfileDefaultImsiReporting	<p>mtasChargingProfileDefaultImsiReporting is replaced with new CM mtasChargingProfileDefaultSubscriptionReportingBehavior with following value mapping.</p> <p>mtasChargingProfileDefaultImsiReporting:0 == mtasChargingProfileDefaultSubscriptionReportingBehavior:DefaultIMPU</p> <p>mtasChargingProfileDefaultImsiReporting:1 == mtasChargingProfileDefaultSubscriptionReportingBehavior:DefaultIMPU_IMSI</p>
System Constant SC:112 has been ended.	<p>SC:112 is replaced with new CM mtasChargingProfileDefaultSubscriptionReportingBehavior with following value mapping.</p> <p>SC-112:"0" == mtasChargingProfileDefaultSubscriptionReportingBehavior:DefaultIMPU</p> <p>SC-112:"1" == mtasChargingProfileDefaultSubscriptionReportingBehavior:DefaultIMPU_IMSI</p> <p>SC-112:"2" == mtasChargingProfileDefaultSubscriptionReportingBehavior:DefaultSubscription</p> <p>SC-112:"3" == mtasChargingProfileDefaultSubscriptionReportingBehavior:DefaultSubscriptionAndDeviceInfo</p>

4.2.2.4 Obsolete Attributes

There are no obsolete attributes in vMTAS 1.12.0.

4.2.2.5 New Attributes

The new attributes are listed in Table 7.

Table 7 New Attributes

Attribute Name	Description
mtasAbDialCallTypeValidation	Added but not supported
mtasAsIwPrackRejectToPrackAccept	Added but not supported
mtasAsIwPrackRejectToPrackAccept	Added and supported
mtasCatEarlyMediaInteractionTimer	Added and supported
mtasCDivActivationState	Added and supported
mtasCDivAddServedUserToHIHeader	Added and supported
mtasCDivChangeTime	Added and supported
mtasCDivView	Added and supported
mtasChargingProfileDefaultImsiReporting	Added but not supported
mtasChargingProfileDefaultSubscriptionReportingBehavior	Added but not supported
mtasChargingProfileOrigCcaUpdateEvaluation	Added and supported



Attribute Name	Description
mtasChargingProfileReleaseReason	Added and supported
mtasChargingProfileReportAccessChange	Now supported
mtasChargingProfileReportAccessChange	Added but not supported
mtasChargingProfileRoundingUSU	Added and supported
mtasChargingProfileTermCcaUpdateEvaluation	Added and supported
mtasCrStorageLastIncomingCall	Added and supported
MtasCsa	Added and supported
mtasCsaAdministrativeState	Added and supported
mtasDenSessionIdReported	Added but not supported
mtasDenSessionIdReported	Now supported
mtasFoIwInvocationHeaderName	Added but not supported
mtasFoIwInvocationHeaderValue	Added but not supported
mtasFoIwInvocationHeaderValueHandling	Added but not supported
mtasFoIwMode	Added but not supported
mtasMmtSipccIdentification	Added but not supported
MtasMultiPersona	Added but not supported
mtasMultiPersonaImrnLifetime	Added but not supported
MtasMultiPersonaImrnRange	Added but not supported
mtasMultiPersonaImrnRangeFirst	Added but not supported
mtasMultiPersonaImrnRangeLast	Added but not supported
mtasMultiPersonaInviteDelay	Added but not supported
mtasNaAnnTRejectCode	Now supported
mtasNaAnnTRejectReason	Now supported
mtasNaNmRejectCode	Now supported
mtasNaNmRejectReason	Now supported
mtasNpRnAndNetworkList	Now supported
mtasNwFoIwAsName	Added but not supported
mtasNwPrIwAsName	Added and supported
mtasUCRoutingSuppressServiceNumbers	Now supported
VtasCsa	Added and supported
vtasCsaAdministrativeState	Added and supported
vtasCsaDropBack	Added but not supported
vtasDenSessionIdReported	Added but not supported
vtasDenSessionIdReported	Now supported
vtasFcdPemInterworking	Added but not supported
vtasIcbActivationState	Added and supported
vtasIcbChangeTime	Added and supported
vtasIcbView	Added and supported



Attribute Name	Description
vtasIdPresCnipAddIdParam	Added but not supported
vtasMmtSipccIdentification	Added but not supported
VtasMultiPersona	Added but not supported
vtasMultiPersonaDropBack	Added but not supported
vtasMultiPersonaImrnLifetime	Added but not supported
VtasMultiPersonaImrnRange	Added but not supported
vtasMultiPersonaImrnRangeFirst	Added but not supported
vtasMultiPersonaImrnRangeLast	Added but not supported
vtasMultiPersonaInviteDelay	Added but not supported
VtasNaAnnCause	Added and supported
vtasNaAnnCauseAnnName	Added and supported
vtasNaAnnCauseRejectCode	Added and supported
vtasNaAnnCauseRejectReason	Added and supported
vtasNaAnnRejectCode	Added and supported
vtasNaAnnRejectReason	Added and supported
vtasNaAnnTRejectCode	Now supported
vtasNaAnnTRejectReason	Now supported
vtasNaNmRejectCode	Now supported
vtasNaNmRejectReason	Now supported
vtasNpRnAndNetworkList	Now 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
vtasSubsDataSccInitialSelectionAwareness	Added and supported
vtasUCRoutingSuppressServiceNumbers	Now supported

4.2.3 Fault Management

This section describes changed, new, and removed alarms.

4.2.3.1 Changed Alarms

There are no changed alarms in vMTAS 1.12.0.



4.2.3.2 New Alarms

There are no new alarms in vMTAS 1.12.0.

4.2.3.3 Deleted Alarms

There are no deleted alarms in vMTAS 1.12.0.

4.2.4 Events and Notifications

There are no changed, deleted, or new events and notifications.

4.2.5 IFC Triggers

There are no new IFC triggers in vMTAS 1.12.0.

4.2.6 Counters

This section lists changed and new counters.

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

There are no deleted, changed, deprecated, or obsolete counters.

4.2.6.1 Changed Counters

The changed counters are listed in Table 8.

Table 8 Changed Counters

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



Counter Name	Description of Change
MtasSccSip<Orig OrigUnreg Term TermUnreg>ResponseOut	Now supported
mtasFuncSipRequestOverloadRej	Now supported

4.2.6.2 Deprecated Counters

There are no changed alarms in vMTAS 1.12.0.

4.2.6.3 New Counters

The new counters are listed in Table 9.

Table 9 New Counters

Counter Name	Description
CPULoad.Steal.Maximum CPULoad.Total.Maximum CPULoad.TotalVirt.Maximum Disk.PercentUsed.Maximum Disk.Used.Maximum Mem.PercentUsed.Maximum Mem.Used.Maximum Swap.PercentUsed.Maximum Swap.Used.Maximum	For vMTAS, new counter under PM Group OSProcessingUnit (Introduced by new version of Platform component LDEWS for WP210)
CPULoad.Steal.Maximum CPULoad.Total.Maximum CPULoad.TotalVirt.Maximum	For vMTAS, new counter under PM Group OSProcessingLogicalUnit (Introduced by new version of Platform component LDEWS for WP210)
CPULoad.Steal.Maximum CPULoad.Total.Maximum CPULoad.TotalVirt.Maximum	For vMTAS, new counter under PM Group OSProcessingLogicalUnit (Introduced by new version of Platform component LDEWS for WP210)
MtasCsaOk	Now supported
MtasCsaNOkI	Now supported
MtasCsaNOkE	Now supported
MtasCsa	Added but not supported
MtasCsaOk	Added but not supported
MtasCsaNOkI	Added but not supported
MtasCsaNOkE	Added but not supported
MtasHotlineWhitelistOk	Now supported
MtasHotlineWhitelistNOkE	Now supported
MtasHotlineWhitelistNOkI	Now supported
MtasMultiPersona	Added but not supported



Counter Name	Description
MtasMultiPersonaCsOrigSelAttempts	Added but not supported
MtasMultiPersonaCsOrigSelectionsNOkE	Added but not supported
MtasMultiPersonaCsOrigSelectionsNOkI	Added but not supported
MtasMultiPersonaCsOrigSelectionsOk	Added but not supported
MtasMultiPersonaCsTermSelAttempts	Added but not supported
MtasMultiPersonaCsTermSelectionsNOkE	Added but not supported
MtasMultiPersonaCsTermSelectionsNOkI	Added but not supported
MtasMultiPersonaCsTermSelectionsOk	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.
MtasFoIwOk	Added but not supported
MtasFoIwNOkE	Added but not supported
MtasFoIwNOkI	Added but not supported

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 10.

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 10 Summary of Impacts

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 owing to 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
vMTAS Data Collection	Minor	<ul style="list-style-type: none"> • Old CMDData step has been renamed to IMMData. Reason is that the step collects only the IMM parameters, but not the MTAS ECIM CM parameters, that are store in DBS. • New data collection step CMDData introduced, that exports the MTAS ECIM CM tree under MtasFunction, except the MtasCommonCata subtree.
vMTAS Health Check	Minor	<ul style="list-style-type: none"> • New output XML and HTML report formats added in accordance to the common IMS Interwork Description. Legacy report formats also kept for keeping backward compatibility, they are planned to be removed in 1.13 release. • New script introduced to trigger Health Check in accordance to the common IMS Interwork Description. Legacy triggering mechanism (cdclsv tool) also kept and not planned to be removed in later release. • New step introduced (TcpPortUsage) to check whether enough ephemeral TCP ports are available in the system. • New step introduced (CMDData) to check the CM parameter changes during upgrade. The new step is only executed if upgrade FROM state is 1.12.0 or later release.
UC Routing	No Impact	Calls from Business UC user to non UC (Service numbers like NSN/OSN/TollFree/ShortCode) numbers are not routed to the UC system.
Communication Waiting, Customized Alerting Tone	No impact	General CAT extension allowing other services (like CW) to be triggered for playing announcement suppressing CAT announcement.



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 11.

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 11 Summary of Impacts per Feature

Feature	Service	Impact	Description of Changes
Session-ID support for the MMTel AS DEN service	Dialog Event Notifier Service	Minor Impact	MMTel AS includes the SIP Session-Id in the notifications of the Dialog Event Notifier Service.
Wi-Fi Calling: UE status reporting for combined Wi-Fi Calling and VoLTE deployments – vMTAS	TelUserLocationService	Minor Impact	When MMTel AS receives 3rd party Re-REGISTER with changed access type (LTE or Wi-Fi) in P-Access-Network-Info header, it should correlate the re-REGISTER to an ongoing session and generate a CCR Update/ACR Interim with the received network-provided PANI mapped to the ANI AVP.
Rule-based Communication Setup Announcement Service	Charging Service	No Impact	In Communication Setup Announcement service, Common-Policy-Rule-Identity AVP is populated with the identifier of the matched rule in Supplementary-Service-Information AVP indicating the usage of the CSA service in next CCR message when announcement is played.
Rule-based Communication Setup Announcement Service	CSA Service	No Impact	Communication Setup Announcement service is enhanced to support evaluation of CSA rules with new conditions as follows: <ul style="list-style-type: none"> • rule-deactivated • Identity • Media • Validity • Valid-periods • Invalidity • Invalidity • In-sip-request
MTAS Improvements for Network Announcement Drop-2	Outgoing Communication Barring	Minor Impact	Outgoing Communication Barring service is enhanced to support barring of outgoing calls based on barring rules with new “b-number-type”, “b-network-type” and “localness” condition elements.



Table 11 Summary of Impacts per Feature

Feature	Service	Impact	Description of Changes
MTAS Improvements for Network Announcement Drop-2	Network Announcement	No Impact	Based on configuration option, Network Announcement Service of terminating 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 Drop-2	Network Announcement	No Impact	Network Message function of Originating MTAS to support option to return the configured SIP error response and Reason header including a Q.850 or SIP cause code in the SIP error response based on Warning header string.
Always send 200 OK for PRACK	AS Interworking	No Impact	AS IW Service can convert the PRACK reject response (300-699) to 200 OK(PRACK), when the sent PRACK did not contain SDP.
Network Announcement service is extended to return configured SIP error response and Reason header	Network Announcement Service	Minor impact	Network Announcement service plays announcement if it is configured to trigger on INVITE reject with error code.
vMTAS NFVO triggered Instantiate/Terminate Workflows for OpenStack NFVI	Workflow Package	No Impact	On OpenStack NFVI, vMTAS VNF Package now supports Instantiate and Terminate workflows from NFVO nodes through the Or-Vnfm interface.
On-site generation of VNF Package	Workflow Package	Major impact	The vMTAS workflow package delivers a script to generate the VNF Package to be onboarded on NFVO or VNF-LCM nodes. Moreover, the generated VNF Package structure has been also changed compared to the previous releases.
VoLTE for unified communication non UC routing numbers.	UC Routing	No Impact	Calls from Business UC user to non UC (Service numbers like NSN/OSN/TollFree/ShortCode) numbers will not be routed to UC system.
Interaction between CAT and Mobile Communication Waiting	Communication Waiting, Customized Alerting Tone	No impact	General CAT extension allowing other services (like CW) to be triggered for playing announcement suppressing CAT announcement.
HW98093	Charging Service	No impact	Introduction of optional configuration-based behavior for MMTel AS to report ACR/CCR with Subscription-ID and Device Info with (default subscriber) or without IMSI/MSISDN/UserName/UserEquipment/InstanceID for diversion, unsuccessful call establishments, and when a fixed device is handling the call for multiMobile subscriber. A new CM Attribute <code>mtasChargingProfileDefaultSubscriptionReportingBehavior</code> is introduced to control this behavior.



4.5 Other Interface Impacts

4.5.1 User Services

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

The changes to existing user services are described in Table 12.

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 12 Changed Services

Interface	Service Name	Impact	Description of Change Compared to vMTAS 1.10
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 <code>mtasCrStorageLastIncomingCall</code> is set to value= "1", and CM attribute <code>mtasShIfServiceInformationServiceInd</code> 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 <code>mtasShIfServiceInformationServiceInd</code> 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.



Table 12 Changed Services

Interface	Service Name	Impact	Description of Change Compared to vMTAS 1.10
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.

All vMTAS nodes in the network must be upgraded before taking new services in operation. The changes to other user services are described in Table 13.

Table 13 Other Interface Changes

Source of Change	Service	Interface	Impact	Description of Changes
HW16085	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 an empty CAP ACR to SCP. If the Callee accepts the call, then terminate it.



Source of Change	Service	Interface	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 *, #, or %.
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 Counter s	-	Minor Impact	Because of an earlier fault, creation of the Threshold alarm for ACR buffering (<code>MtasChargingBufferedEventsCount</code>) failed, owing to a missing <code>finalAlarm</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 Counter s	-	Minor Impact	Because of an earlier fault, <code>MtasSipPresencePollN0k</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>mtasFcdPemInterworking</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	Interface	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 if 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 values 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	Owing to 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) contains the User-Equipment-Info AVP.
HW76654	SIP Upstream Overload Control		No Impact	Due to 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	Scc As		No Impact	When mtasSccMobileBehaviour is enabled, MtasSccTermPsSuccAttempt counter is not incremented for PS access termination attempt for normal mobile subscribers. This issue has been corrected in this release.



Source of Change	Service	Interface	Impact	Description of Changes
HW83145	NW AS		No Impact	The counter <code>MtasPrIwOrigSuccess</code> was incremented incorrectly twice for each successful session established. This is corrected in this release to be incremented only once.
HW52048	Adhoc Conference Service		Minor impact	<p>Ad-Hoc Conference service makes a second try to terminate the implicit subscription, if a NOTIFY message (for example, sipfrag 200OK) which terminates the implicit subscription is rejected in the network for some reason.</p> <p>The re-sent NOTIFY does not contain SIP body, but the following headers are set:</p> <ul style="list-style-type: none">Subscription-State: terminated; reason=noresourceEvent: refer;id=N



5 Impact on MTAS Features

This section describes the impact on vMTAS 1.12.0 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 also 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 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.

5.12 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.

5.13 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
```



5.14 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.

5.15 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.

5.16 Session-ID support for the MMTel AS DEN service

The MMTel AS sends a notification messages about events occurring on other devices of the served user. With this feature the specific information reported per dialog will include the Session-ID.

Session ID reporting can be controlled with the following Configuration Attributes: `mtasDenSessionIdReported` (`vtasDenSessionIdReported`) CM attribute. If the attribute is TRUE, the session id reporting is included in the dialog information XML document.

Impact

Minor impact on capacity, performance, network elements, and operation.

5.17 Wi-Fi Calling: UE status reporting for combined Wi-Fi Calling and VoLTE deployments – vMTAS

MMTel AS generates charging output after correlating a received 3rd party Re-REGISTER to ongoing sessions.

The network provided PANI is mapped and used in the ANI AVP of the charging interfaces at session establishment, session release and at mid-call access changes between LTE and EPC-integrated Wi-Fi.

**Impact**

Minor impact on capacity, performance, network elements, and operation.

5.18 Rule-based Communication Setup Announcement Service

The Communication Setup Announcement service is an originating MMTel AS a rule-based service that based on specific conditions, plays an announcement to served user at call setup time. The announcement is only to be played in case the call setup is accepted by the originating MMTel AS. Charging shall be informed about service triggering. It shall be possible to provision the rule set both individually per subscriber and per groups of subscribers (Service Profile).

Impact

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

5.19 MTAS Improvements for Network Announcement service Drop-2

NM functionality of NA returns configured SIP error response and Reason header.

Terminating NA service returns configured SIP error response and Reason header.

The MMTel AS Outgoing Communication Barring feature shall be able to reject outgoing calls based on call analysis.

Impact

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

5.20 Always Send 200 OK for PRACK

AS IW Service can convert the PRACK reject response (300–699) to 200 OK(PRACK), when the sent PRACK did not contain SDP.

The feature is controlled with a new configuration parameter `mtasAsIwPrackRejectToPrackAccept`.

Possible values are 0=no conversion, 1=terminating AS (including transit), 2=originating AS, 3=originating AS + terminating AS (including transit). The default value is 0.

Impact

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



5.21 Optimizing ICS over Mg

SCC AS can also be deployed in solutions where the MSC is enhanced for optimized ICS over Mg without any previous CAMEL invocation. MSC S does not do registration in IMS on behalf of the UE. Only Mobile-originating speech calls from CS-attached ICS-subscribers in the Home network is supported. Optimized ICS over Mg is implemented in Ericsson MSC as the feature “I2-based ICS for Originating Calls”.

Impact

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

5.22 vMTAS NFVO-Triggered Instantiate/Terminate Workflows for OpenStack NFVI

On OpenStack NFVI, vMTAS VNF Package now supports Instantiate and Terminate workflows from NFVO nodes through the Or-Vnfm interface

Impact

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

5.23 On-site Generation of VNF Package

The VNF package needs to be generated by the delivered `vnfPackageCreator_mtas.py` from the vMTAS Workflow Package, the updated HOT and environment files. Manual generation of VNF Packages is no longer supported.

For more information about the structure of the generated VNF Package, refer to [MTAS VNF Life Cycle Management Guide, 131/1553-AVA 901 29/9](#).

Impact

Major Impact – The structure of the generated VNF Package differs from the package generated manually before.

5.24 Configurable MTU size

Support for configurable MTU is added, which enables an operator to choose another value instead of default (1500) bytes. MTU up to 2140 has been tested in vMTAS labs because of hardware/cloud infrastructure limitations. The customer can set higher values than this. But in that case, vMTAS behavior could be unexpected.



Impact

MTU=1500 (default): No impact.

MTU=1500 to 2140: vMTAS will utilize bigger MTU size with expected behavior.

MTU > 2140: unexpected behavior.

MTU = 9000: vMTAS cluster will be unstable (already TRd: HX18750).

5.25 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 above behavior:

— Legacy behavior: `mtasUCRoutingSuppressServiceNumbers` = 0 (DISABLED)

New behavior: `mtasUCRoutingSuppressServiceNumbers` = 1 (ENABLED)

— Legacy behavior: `vtasUCRoutingSuppressServiceNumbers` = 0 (DISABLED)

New behavior: `vtasUCRoutingSuppressServiceNumbers` = 1 (ENABLED)

Impact

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

5.26 Interaction between CAT and Mobile Communication Waiting

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.

The CAT announcement can 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 form 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 on capacity, performance, network elements, and operation.

5.27 MTAS, Suppressing of Online Charging based on B-Number

It is possible to suppress Ro if the B-Number is classified as toll-free.

Impact

- It is not possible to perform credit control on such calls
- It is not possible to get announcements initiated by OCS since there is no CCA[initial] and thus no announcement instruction.
- Account activation via Prompt And Collect is bypassed, since the function is triggered by AVPs in CCA[initial], which are not sent if the session is suppressed.

5.28 Scaling Workflows for VMware

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

Impact

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