

vMTAS Network Impact Report from 1.11.0 to 1.12.0

MTAS

NETWORK IMPACT REPORT

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Contents

1	Introduction	1
2	General Impact	3
2.1	Backward Compatibility	3
2.2	Capacity and Performance	4
3	Licenses	5
3.1	New Licenses	5
3.2	Changed Licenses	5
3.3	Deleted Licenses	5
4	Interfaces	7
4.1	Inter-Node Interfaces	7
4.2	Operation and Maintenance	8
4.3	Impacts to Continuous Delivery Machinery	14
4.4	Summary of Impacts per Feature	16
4.5	Other Interface Impacts	18
5	Impact on MTAS Features	21
5.1	Support of External MRFC Node Failover in MMTel AS (Drop 2)	21
5.2	VMware Instantiation and Termination Workflow	21
5.3	New PM Job Names	21
5.4	Session-ID support for the MMTel AS DEN service	22
5.5	Wi-Fi Calling: UE status reporting for combined Wi-Fi Calling and VoLTE deployments – vMTAS	22
5.6	Rule-based Communication Setup Announcement Service	22
5.7	MTAS Improvements for Network Announcement service Drop-2	23
5.8	Always Send 200 OK for PRACK	23
5.9	Optimizing ICS over Mg	23
5.10	vMTAS NFVO-Triggered Instantiate/Terminate Workflows for OpenStack NFVI	24
5.11	On-site Generation of VNF Package	24
5.12	Configurable MTU size	24
5.13	VoLTE for Unified Communication Non-UC Routing Numbers	25



5.14	Interaction between CAT and Mobile Communication Waiting	25
5.15	MTAS, Suppressing of Online Charging based on B-Number	26
5.16	Scaling Workflows for VMware	26



1 Introduction

This Network Impact Report (NIR) describes how vMTAS 1.12.0, with new and enhanced features and corrections, affects vMTAS 1.11.0. 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

- 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)
- 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 21.





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
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.
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.
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 <code>mtasUCRoutingSuppressServiceNumbers</code> and <code>vtasUCRoutingSuppressServiceNumbers</code> . 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
Rf	Diameter	No Impact	<p>TR HW98093 impact The new CM <code>mtasChargingProfileDefaultSubscriptionReportingBehavior</code> is introduced to report default subscriber in <code>SubscriptionId</code> AVP and Device Information in offline charging (ACR), for multiMobile subscriber.</p> <p>Possible Values: <code>DefaultIMPU</code>, <code>DefaultIMPU_IMSI</code>, <code>DefaultSubscription</code>, <code>DefaultSubscriptionAndDeviceInfo</code>.</p> <p><code>DefaultIMPU (DISABLED)</code>- Default IMPU reported at diversion, unsuccessful call establishments and when a fixed device is handling the call.</p> <p><code>DefaultIMPU_IMSI</code>: 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><code>DefaultSubscription</code>: 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><code>DefaultSubscriptionAndDeviceInfo</code> 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 <code>mtasChargingProfileDefaultSubscriptionReportingBehavior</code> is introduced to report default subscriber in <code>SubscriptionId</code> AVP and Device Information in online charging (CCR), for multiMobile subscriber.</p> <p>Possible Values: <code>DefaultIMPU</code>, <code>DefaultIMPU_IMSI</code>, <code>DefaultSubscription</code>, <code>DefaultSubscriptionAndDeviceInfo</code>.</p> <p><code>DefaultIMPU (DISABLED)</code>- Default IMPU is reported in the <code>SubscriptionId</code> AVP at diversion, unsuccessful call establishments, and when a fixed device is handling the call.</p> <p><code>DefaultIMPU_IMSI</code>: IMSI of default subscription and Default IMPU are reported in the <code>SubscriptionId</code> AVP at diversion, unsuccessful call establishments, and when a fixed device is handling the call.</p> <p><code>DefaultSubscription</code>: IMSI, MSISDN of default subscription and Default IMPU are reported in the <code>SubscriptionId</code> AVP at diversion, unsuccessful call establishments, and when a fixed device is handling the call.</p> <p><code>DefaultSubscriptionAndDeviceInfo</code> IMSI, MSISDN of default subscription and Default IMPU are reported in <code>SubscriptionId</code> 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 <code>UserName</code> AVP, <code>Equipment-Info/Instance-ID</code> 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
CAI3G	CAI3G	No Impact	The operator has the option to provision user with Whitelist Conditional Hotline New elements in <hotline-operator-configuration> are (example): <pre><whitelist-condition> <activated>true</mc:activated> <hotline-number>tel:+1234500000</mc:hotline-number> </whitelist-condition></pre>
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 1.11.0
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
mtasFsfServiceFormatSuppressedServices	Attributes shall support new service value as Csa.
mtasFsfServiceFormatSuppressedServices	New usable formats: Cx, Csa
mtasFunctionFqdn	Pattern string updated to accept empty values.
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.
mtasSccAsName	The default value for this attribute is corrected to scc, when coming from MTAS 1.9.
mtasSipOcDefIncrStep	The recommended value is changed from 12 to 2. The default value is not changed.
PM_COLLECTOR_FLUSH_PERIOD	The vDicos variable has changed value from 1 to 5 because of correction of HW92379.
vtasFsfServiceFormatSuppressedServices	Attributes shall support new service value as Csa.
vtasFsfServiceFormatSuppressedServices	New usable formats: Cx, Csa
vtasMmtSuppressEarlyMediaHeader	Cardinality changed to 0–1 and pattern string updated to accept empty values.

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
mtasNwAsName	Deprecated, replaced with mtasNwPrIwAsName.
mtasChargingProfileDefaultImsiReporting	Deprecated; mtasChargingProfileDefaultSubscriptionReportingBehavior is used instead. Upgrade logic makes the configuration migration automatically.



Attribute Name	Description of Change
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 and supported
mtasAsIwPrackRejectToPrackAccept	Added but not supported
mtasCatEarlyMediaInteractionTimer	Added and supported
mtasChargingProfileDefaultSubscriptionReportingBehavior	Added but not supported
mtasChargingProfileReportAccessChange	Added but not supported
mtasChargingProfileReportAccessChange	Now supported
mtasDenSessionIdReported	Now supported
mtasDenSessionIdReported	Added but not supported
MtasFoIw	Added but not supported
mtasFoIwAdministrativeState	Added but not supported
mtasFoIwInvocationHeaderName	Added but not supported
mtasFoIwInvocationHeaderValue	Added but not supported



Attribute Name	Description
mtasFoIwInvocationHeaderValueHandling	Added but not supported
mtasFoIwMode	Added but not supported
mtasIdPresCnipAddIdParam	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
vtasDenSessionIdReported	Now supported
vtasDenSessionIdReported	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
vtasNaAnnTRejectCode	Now supported
vtasNaAnnTRejectReason	Now supported
vtasNaNmRejectCode	Now supported
vtasNaNmRejectReason	Now supported
vtasNpRnAndNetworkList	Now 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
There are no changed counters.	

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)
MtasHotlineWhitelistOk	Now supported
MtasHotlineWhitelistNOkE	Now supported
MtasHotlineWhitelistNOkI	Now supported
MtasMultiPersona	Added but not supported
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
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
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.



Table 10 Summary of Impacts

Service	Impact	Description of Changes
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.



Table 11 Summary of Impacts per Feature

Feature	Service	Impact	Description of Changes
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.
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.



Table 11 Summary of Impacts per Feature

Feature	Service	Impact	Description of Changes
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
There are no changed services.			

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
There are no other interface changes.				
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	<p>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.</p> <p>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.</p>
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.
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.
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=noresource Event: 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 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.

5.2 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.

5.3 New PM Job Names

The following new PM job names have been added:

```
PmJob=N00SSCONTROL_MtasSla_OSProcessingUnit  
PmJob=N00SSCONTROL_MtasSla_OSProcessingLogicalUnit  
PmJob=N00SSCONTROL_MtasSla_OsmDevice
```



Impact

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

5.4 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.

5.5 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.

5.6 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.



5.7 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.

5.8 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.

5.9 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.



5.10 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.

5.11 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.

5.12 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).



5.13 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.

5.14 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 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 on capacity, performance, network elements, and operation.

5.15 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.

5.16 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.