# Counter Enhancements on TAC and LAC Levels

# Feature Summary and Revision History

## Summary Data

| | |
|---|---|
| Applicable Product(s) or Functional Area | MME |
| Applicable Platform(s) | • ASR 5500<br>• VPC-DI<br>• VPC-SI |
| Feature Default | Enabled - Always-on |
| Related Changes in This Release | Not applicable |
| Related Documentation | • *MME Administration Guide*<br>• *Statistics and Counters Reference* |

## Revision History

| Revision Details | Release |
|---|---|
| The counters that were introduced in release 21.17.9 are now supported in release 21.20.19. | 21.20.19 |
| New counters are added in the TAl schema | 21.17.9 |

# Feature Description

In StarOS 21.17 and later releases, counters on TAC and LAC level are enhanced to add them on TAI schema and LAC object. This is required to monitor basic KPI on TAL/LAC level. These counters calculates KPI pertaining to attach success ratio, quantity of attached idle or connect users, and Dedicated bearers success rate on TAC level.

# Monitoring and Troubleshooting

## Show Commands and Output

### show mme-service statistics tai

This section provides information on the show commands available to support this feature.

*Table 1: show mme-service statistics tai Output Descriptions*

| Field | Description |
|---|---|
| **ESM Statistics** | |
| **NW Initiated Dedicated Bearer Activations** | |
| Attempted | This sub-group displays the total number of attempted ESM network intiated dedicated bearer activations for each TAI. |
| Success | This sub-group displays the total number of successful ESM network intiated dedicated bearer activations for each TAI. |
| Failures | This sub-group displays the total number of failed ESM network intiated dedicated bearer activations for each TAI. |
| **Session Statistics** | |
| **Total Subscribers** | |
| Attached Calls | The total number of EPS Mobility Management call-line statistics on attached current calls for each TAI. |
| Connected Calls | The total number of EPS Mobility Management call-line statistics on connected current calls for each TAI. |
| Idle Calls | The total number of EPS Mobility Management call-line statistics for each TAI indicating idle current calls. |
| **EMM Control Messages** | |
| **Received** | |

| Field | Description |
|-------|-------------|
| Attach Complete | Displays total number of EMM Attach Complete message received from UE indicating increments for each Attach Complete message received from UE. |
| Attach Request | Displays total number of EMM Attach Requests received from UE indicating increments for each Attach Request message received from UE. |
| **PDN Connectivity Reject:** | |
| Other Reasons | Displays total number of ESM messages sent for each TAI by the MME. This indicates that the PDN connection has been rejected for a cause other than one of those listed in the output generated by the **show mme-service statistics esm-only** command. |

# Bulk Statistics

## TAI Schema

The following counters are available in the TAI schema.

| Bulk Statistics | Description |
|-----------------|-------------|
| tai-esm-msgtx-pdncon-rej-other-reasons | Shows the total number of ESM messages sent for each TAI by the MME. This indicates that the PDN connection is rejected for a cause other than one of those listed in the output generated by the **show mme-service statistics esm-only** command |
| tai-emm-msgrx-attach-req | Shows the total number of EMM Attach Requests received from UE. This is incremented for each Attach Request message received from UE. |
| tai-emm-msgrx-attach-complete | Shows the total number of EMM Attach Complete message received from UE. This is incremented for each Attach Complete message received from UE. |
| tai-emmcall-attach-currcall | Shows the total number of EPS Mobility Management call-line statistics on attached current calls for each TAI. |
| tai-emmcall-connect-currcall | Shows the total number of EPS Mobility Management call-line statistics on connected calls for each TAI. |
| tai-emmcall-idle-curcall | Show the total number of EPS Mobility Management call-line statistics on idle current calls for each TAI. |
| tai-dedi-brr-activation-nw-attempted | Shows the total number of ESM Network initiated dedicated bearer activations attempted for each TAI. |

| Bulk Statistics | Description |
|---|---|
| tai-dedi-brr-activation-nw-success | Shows the total number of successful ESM Network-initiated dedicated bearer activations for each TAI. |
| tai-dedi-brr-activation-nw-failures | Shows the total number of failed ESM Network-initiated dedicated bearer activations for each TAI. |