

Prepared (also subject responsible if other) Aditya Tiwari		No.		
Approved	Checked	Date 25-01-2020	Rev Ver1.0	Reference

MOP of SCTP Retransmission Alarm for Nokia Site

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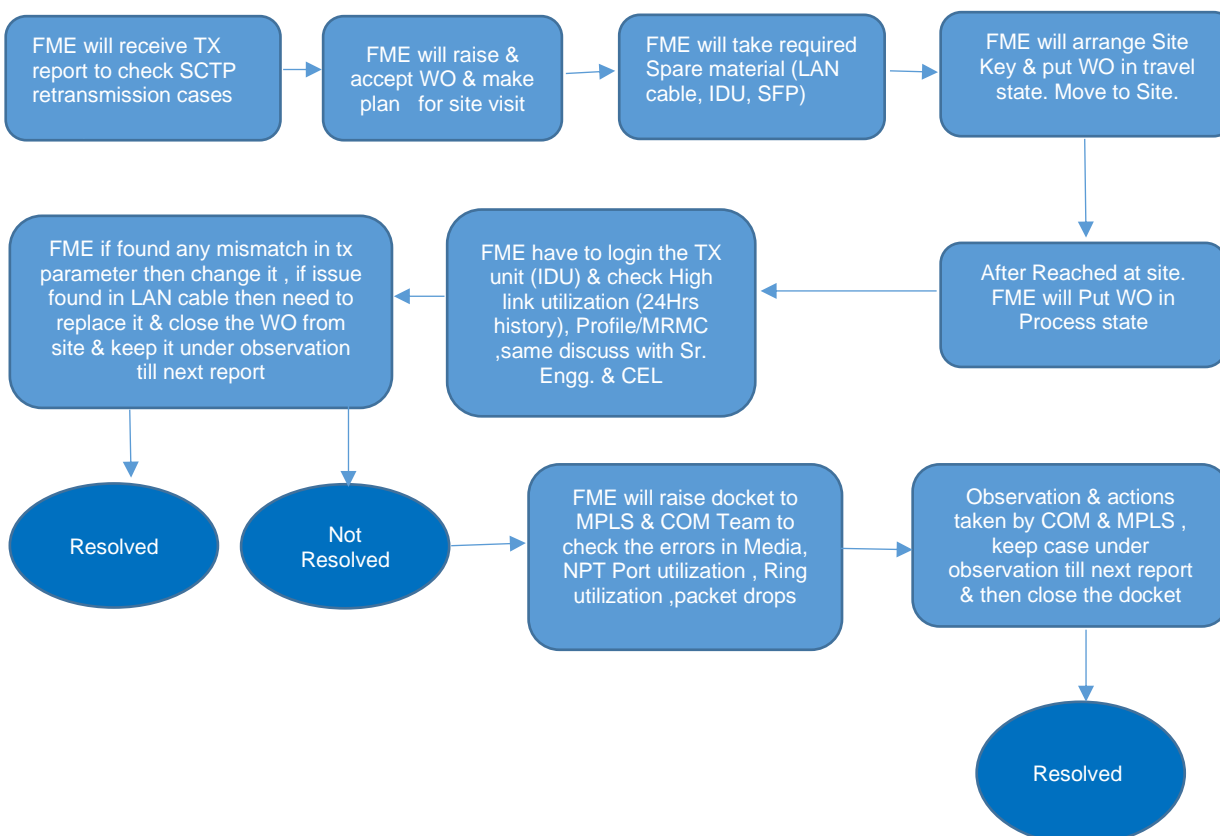
Activity Description

This activity is for E2E troubleshooting and alarm clearance of SCTP Retransmission from site .

Attached is the details to be followed. As this need to be followed as guideline.

Alarm Name	SCTP Re-TRANSMISSION RATIO (LTE_1472A)
Alarm Description	The SCTP sender splits user messages to DATA chunks and sends them to the receiver. The SCTP receiver uses the SACK chunk to acknowledge incoming data. The reliability in SCTP is achieved by the retransmission of DATA chunks which were not acknowledged. SCTP is a reliable transport protocol operating on top of a connectionless packet network such as IP, more retransmission means congestion in the media .
Possible Causes	<ol style="list-style-type: none"> 1. High Link Utilization 2. High Port Utilization 3. High Ring Utilization 4. MPLS BB Link congestion

Flow Chart



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Activity Details

SCTP Retransmission Information & Checking for corrective action

1. FME receive work order in WFM of VSWR alarm as a corrective work order
2. FME accept WO as received/WO acceptance time should be below then 45 Min
3. FME check the alarm with help of report share by TX team and discuss with ZTM and senior engineer about resolution...
4. If possible FME visit site on same day
5. ZTM will suggest to take required actions

Site Movement & Spare Arrangement

1. FME arrange key of site from respective Infra partner.
2. FME take required materials to resolve the alarm (As per Remote Login Observation & ZTM suggestion)
3. Now FME move to site and put WO in Travel state

Alarm issue Identification & Rectification

1. When FME reached at site, he put WO in progress state.
2. FME will login to the TX Equipment & check Link utilization, Port utilization & verify counter Value

High Link Utilization:-

1. Link utilization must be under 90%

The screenshot displays the CERAGON MA5657 Utilization PM report web interface. A warning message at the top states: "The system is in software activation key violation state. A valid activation key cipher must be immediately installed. Please refer to the 'Activation Key Configuration' and 'Activation Key Overview' web pages." Below the warning, the interface shows a table titled "PM Table" with the following columns: #, Time interval index, Peak utilization (percent), Average utilization (percent), Seconds exceeding threshold, and Integrity. The table data is as follows:

#	Time interval index	Peak utilization (percent)	Average utilization (percent)	Seconds exceeding threshold	Integrity
1	Current (18:16:34)	94	30	0	✓
2	12-Feb-20	100	35	0	✓
3	11-Feb-20	100	36	0	✓
4	10-Feb-20	100	35	0	✓
5	09-Feb-20	99	35	0	✓
6	08-Feb-20	97	35	0	✓
7	07-Feb-20	100	36	0	✓
8	06-Feb-20	100	37	0	✓
9	05-Feb-20	100	37	0	✓
10	04-Feb-20	100	37	0	✓
11	03-Feb-20	100	37	0	✓
12	02-Feb-20	100	38	0	✓
13	01-Feb-20	100	38	0	✓
14	31-Jan-20	100	37	0	✓
15	30-Jan-20	100	35	0	✓
16	29-Jan-20	100	36	0	✓

The table is highlighted with a red box, indicating the high link utilization. The interface also shows a "Page Refresh Interval (Seconds)" set to "None" and a "Last Loaded" timestamp of "18:14:16".

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2. Link must be on Highest MPMC Profile 10 with adaptive mode.

The system is in software activation key violation state.
A valid activation key cipher must be immediately installed.
Please refer to the 'Activation Key Configuration' and 'Activation Key Overview' web pages.

Radio interface: Slot 4 (RMC-B)

▼ MPMC Symmetrical ETSI Scripts (Symmetrical ETSI Scripts)

Script ID	Channel Bandwidth (MHz)	Occupied Bandwidth (MHz)	Script Name	ACM Support	Supported QAM	Bit Rate (Mbps)
1003	56.000	53.000	mdN_A5656N_156_1003	Yes	4..2048	82.864 .. 503.904
1004	28.000	26.500	mdN_A2828N_157_1004	Yes	4..2048	40.978 .. 243.123
Parameters for script: 1004 Operational mode: Adaptive Maximum profile: 10, 2048 QAM, 243.123 Mbps Minimum profile: 0, 4 QAM, 40.978 Mbps						
1005	28.000	28.000	mdN_A2828N_135_1005	Yes	4..2048	43.389 .. 261.357
1006	56.000	55.700	mdN_A5656N_137_1006	Yes	4..2048	87.122 .. 529.505
1007	40.000	37.400	mdN_A4040N_123_1007	Yes	4..2048	58.224 .. 349.341
1008	7.000	6.500	mdN_A0707N_132_1008	Yes	4..2048	9.547 .. 55.151
1009	14.000	13.300	mdN_A1414N_119_1009	Yes	4..2048	20.386 .. 116.462
1023	3.500	3.267	mdN_A3535N_123_1023	Yes	4..256	4.582 .. 20.344
1203	56.000	53.000	mdN_A5656X_112_1203	Yes	4..2048	81.178 .. 481.815
1204	28.000	26.500	mdN_A2828X_120_1204	Yes	4..2048	39.978 .. 243.091
1205	28.000	28.000	mdN_A2828X_121_1205	Yes	4..2048	42.365 .. 257.391
1206	56.000	55.700	mdN_A5656X_110_1206	Yes	4..2048	85.317 .. 506.204
1207	40.000	37.400	mdN_A4040X_116_1207	Yes	4..2048	58.224 .. 349.341

Page Refresh Interval (Seconds) None | Last Loaded: 17:56:03 | Refresh

3. If link on Profile 10 and then also high utilize then take up with planning team to upgrade link.

High Port Utilization:-

1 eNodeB Physical Interface port must be selected on highest Capacity.

The system is in software activation key violation state.
A valid activation key cipher must be immediately installed.
Please refer to the 'Activation Key Configuration' and 'Activation Key Overview' web pages.

▼ Physical Interfaces

Interface location	Description	Operational Status	Admin status	Media type	Auto negotiation	Actual port speed	Actual port duplex
Ethernet: Slot 1, Port 1		Up	Up	RJ45	On	1000	Full Duplex
Ethernet: Slot 1, Port 2	3G BTS	Up	Up	RJ45	Off	1000	Full Duplex
Ethernet: Slot 2, Port 1		Up	Up	RJ45	On	1000	Full Duplex
Ethernet: Slot 2, Port 2		Up	Up	RJ45	On	1000	Full Duplex
Ethernet: Slot 2, Port 3		Up	Up	RJ45	On	1000	Full Duplex
Ethernet: Slot 2, Port 4	XPC odu 10.206.53.233	Up	Up	RJ45	On	1000	Full Duplex
Radio: Slot 4, Port 1		Up	Up	Radio	Off	1000	Full Duplex
Radio: Slot 5, Port 1		Up	Up	Radio	Off	1000	Full Duplex
Radio: Slot 6, Port 1		Down	Down	Radio	Off	1000	Full Duplex
TDM: Slot 3, Port 1		Up	Up	TDM	Off	1000	Full Duplex

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- Also Need to Check Fiber mux port utilization.
- To check Mux utilization, we raise TT to concern team (BTSOL/CEN) with proper details.
- If mux port utilization is high (<90%) then we take up with planning team for give extra port for traffic separation.

Port	Rx Error Pkts	Rx Pkts 64	Rx Pkts 65-127	Rx Pkts 128-255	Rx Pkts 256-511	Rx Pkts 512-1023	Rx Pkts > 1024	Rx Pause Pkts	Rx CRC Align Error Pkts	Rx Undersize Pkts	Rx Oversize Pkts	Rx Fragments	Rx Jitters P	Tx Utilization	Rx Utilization
13	0	48164	27279120	28523435	1208740	1287505	2418466	0	0	0	0	N/A	N/A	99	12
18	0	47625	28462468	27089108	1139207	1183145	2485555	0	0	0	0	N/A	N/A	99	13
73	0	50155	25555819	25845044	1107421	1187204	2228393	0	0	0	0	N/A	N/A	95	12
01	0	48909	28919850	25148934	1098484	1213796	2287869	0	0	0	0	N/A	N/A	96	11
3	0	50301	25519890	23748014	1105406	1243567	2331331	0	0	0	0	N/A	N/A	96	11
2	0	47095	25180129	22951036	1044593	1165342	2571862	0	0	0	0	N/A	N/A	93	11
0	0	46506	24971462	21205551	1035068	1257263	2103798	0	0	0	0	N/A	N/A	87	10
3	0	45626	24848696	21386746	959657	1189921	2168217	0	0	0	0	N/A	N/A	98	10
8	0	45581	25603695	21536323	1062489	1332063	2087758	0	0	0	0	N/A	N/A	91	10
6	0	44335	24872569	21130591	1027863	1187521	2198156	0	0	0	0	N/A	N/A	94	11
1	0	39511	24906871	20433047	1044145	1275514	2382556	0	0	0	0	N/A	N/A	92	11
8	0	40430	24141036	20136521	1032869	1153822	2506100	0	0	0	0	N/A	N/A	93	10
3	0	42490	24771491	19863792	1021137	1090679	1889778	0	0	0	0	N/A	N/A	97	11
1	0	40890	26088025	22701909	1077555	1205878	2684617	0	0	0	0	N/A	N/A	100	12
2	0	38906	25748516	21052840	1071240	1188956	2576996	0	0	0	0	N/A	N/A	100	12
7	0	39312	28343251	20906668	1052558	1174133	2098862	0	0	0	0	N/A	N/A	99	11
0	0	58071	24537637	20549602	1052966	1111253	2677091	0	0	0	0	N/A	N/A	95	12
4	0	50785	27229593	22105300	1143544	1270547	2770386	0	0	0	0	N/A	N/A	99	12
06	0	49268	27153694	23549225	1177215	1261855	2649679	0	0	0	0	N/A	N/A	100	13
17	0	55596	27964622	23689703	1207502	1328836	2327695	0	0	0	0	N/A	N/A	100	11
13	0	69632	27243638	24514954	1204068	1368949	2689355	0	0	0	0	N/A	N/A	100	12
44	0	56672	28126350	26349347	1193265	1319280	2390077	0	0	0	0	N/A	N/A	100	12
69	0	60390	27460237	26466993	1132976	1345508	2540236	0	0	0	0	N/A	N/A	100	13
51	0	81591	26286107	25317771	1148945	1248396	2055646	0	0	0	0	N/A	N/A	100	13
35	0	71318	28628371	24701904	1148960	1271957	3407266	0	0	0	0	N/A	N/A	98	13
7	0	55960	26407626	23884560	1118114	1226558	2629513	0	0	0	0	N/A	N/A	96	13
72	0	48773	26419803	24517854	1133084	1266504	3156099	0	0	0	0	N/A	N/A	97	13
56	0	84644	25495633	26149927	1103328	1244532	2732757	0	0	0	0	N/A	N/A	97	13
3	0	54466	22767029	23762733	1042254	1059055	2571312	0	0	0	0	N/A	N/A	94	12
9	0	50249	21194607	22142821	944172	1027182	2672757	0	0	0	0	N/A	N/A	96	11
6	0	92373	71377357	78577807	619263	1043161	7388826	0	0	0	0	N/A	N/A	94	11

High Ring Utilization:-

For ring Utilization we must raise TT to Fibre Team and checking basic Parameter like BSC Profile, Policer etc.