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| Prepared (also subject responsible if other) Abhisek De | | No. | | |
| Approved | Checked | Date 21-01-2020 | Rev Ver1.0 | Reference |

MOP of High BER of Ethernet Port (198097684) for ZTE Site

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Activity Description

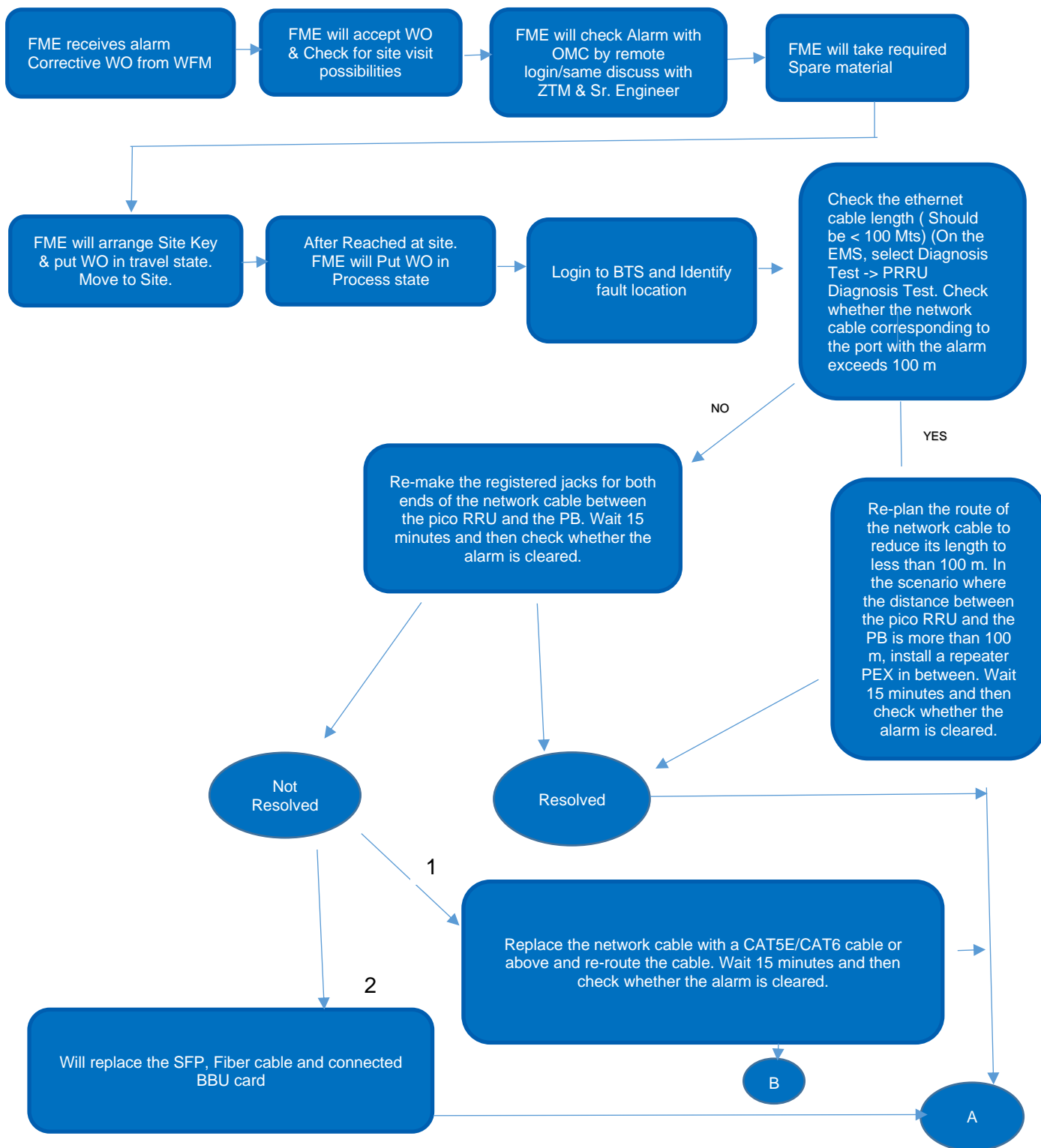
This activity is for E2E troubleshooting and alarm clearance of High BER of ethernet port(198097684).

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

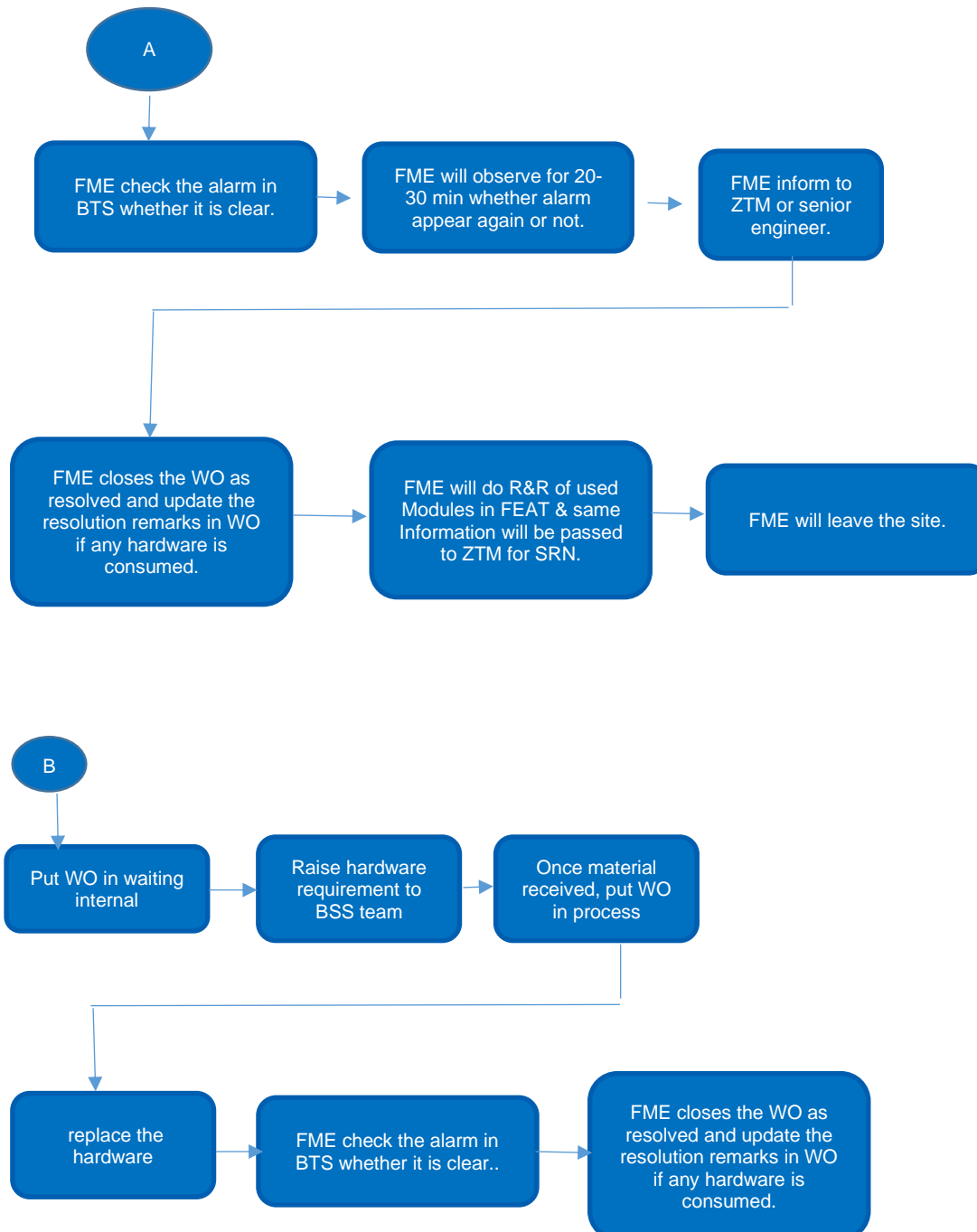
| | |
|--|---|
| Alarm Name | High BER of ethernet port(198097684) |
| Alarm Description | Bit error rate exceeded threshold IN PICO RRU (Q-Cell). |
| Possible Causes – arrange in logical order | 1. The length of the network cable exceeds 100 m. 2. The registered jacks of the network cable are not well crimped. 3. The rate of the network cable does not match that of the electrical port. |

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Flow Chart



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Activity Summary

| | |
|----|--|
| 1 | Corrective WO of alarm is received on WFM portal |
| 2 | FME will Accept the WO |
| 3 | Put WO in travel |
| 4 | After reaching site - put WO in process |
| 5 | Login the BTS & Check alarm status and fault location |
| 6 | Will troubleshoot alarm as per MOP |
| 7 | FME will check in BTS (Alarm cleared or not) |
| 8 | If cleared, then Put WO in closed state |
| 9 | If not cleared, then check either hardware faulty |
| 10 | Put Work order in Waiting internal if any HW Req at site |
| 11 | Raise Req of Hardware to BSS Team |
| 12 | Once Material received again put WO in Travel mode |
| 13 | After reaching site - put WO in process |
| 14 | Replace the hardware |
| 15 | Check from BTS Login that alarm cleared or not after hardware replaced |
| 16 | Once Alarm Cleared |
| 17 | FME will close the WO as resolved |

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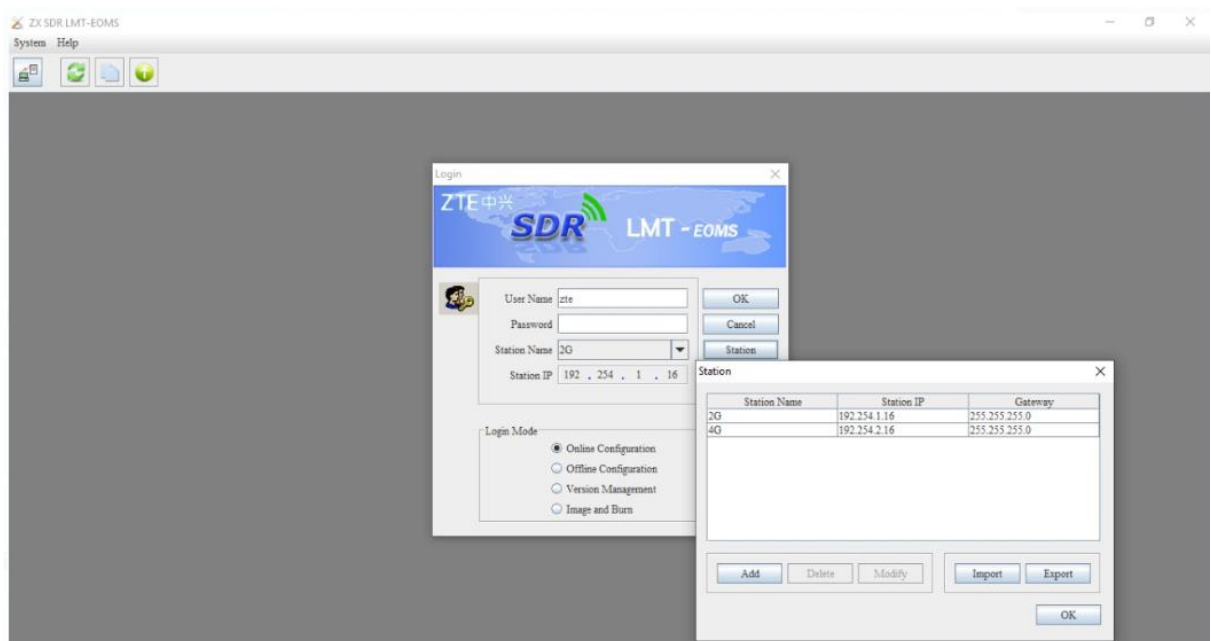
Activity Details

Pre requisites:

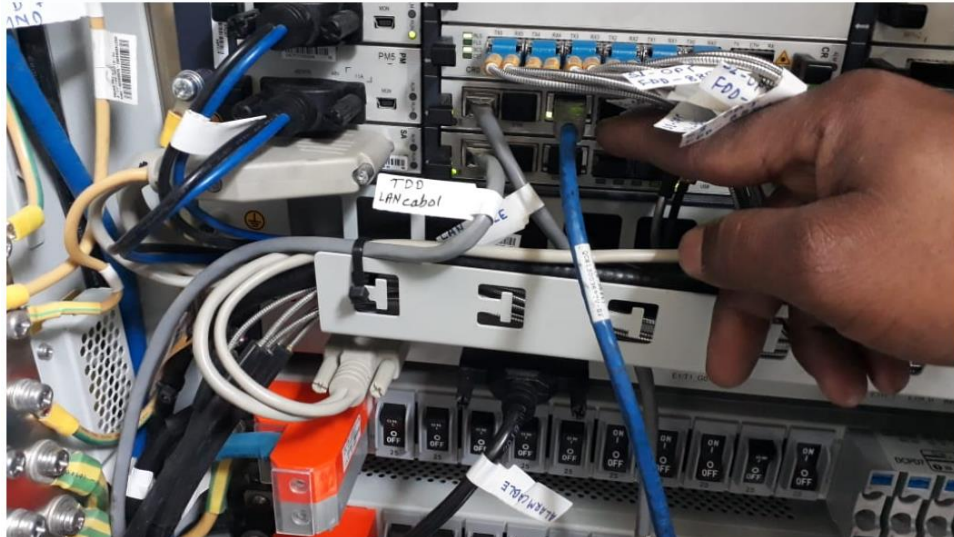
- 1) SVD WO for High BER of ethernet port(198097684).
- 2) Alarm on OneFM/Netnumen/WFM.

Case : High BER of ethernet port(198097684) alarm on 1 cell

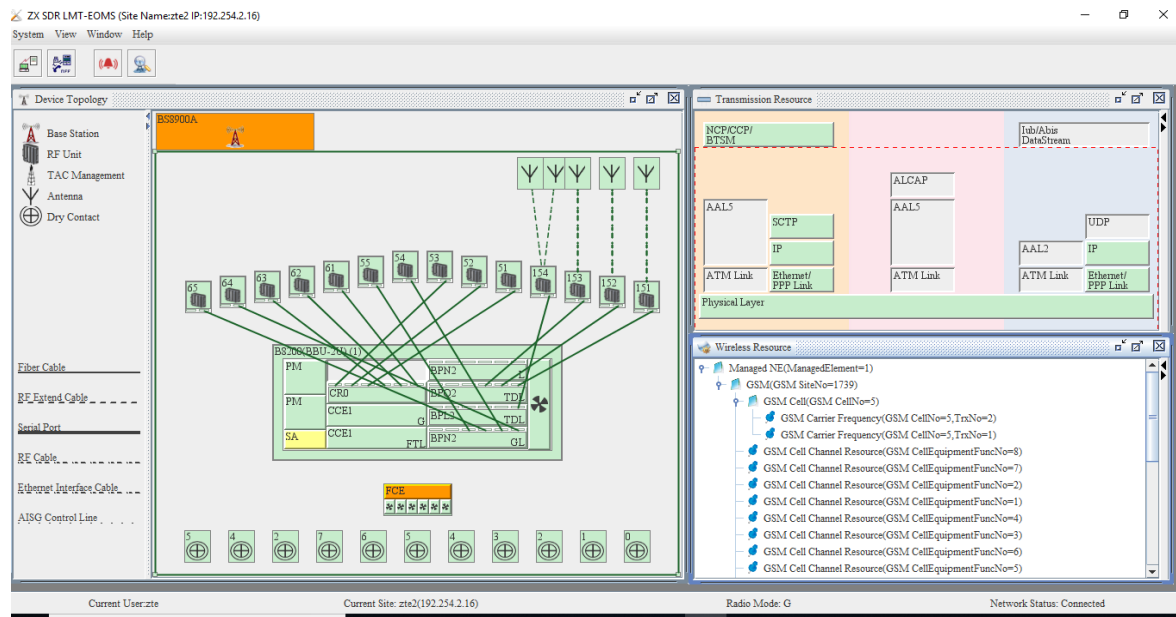
A) Login in 2G BBU/ enodeb as per RAN MOP via ZX SDR LMT OEMS connect using LAN cable



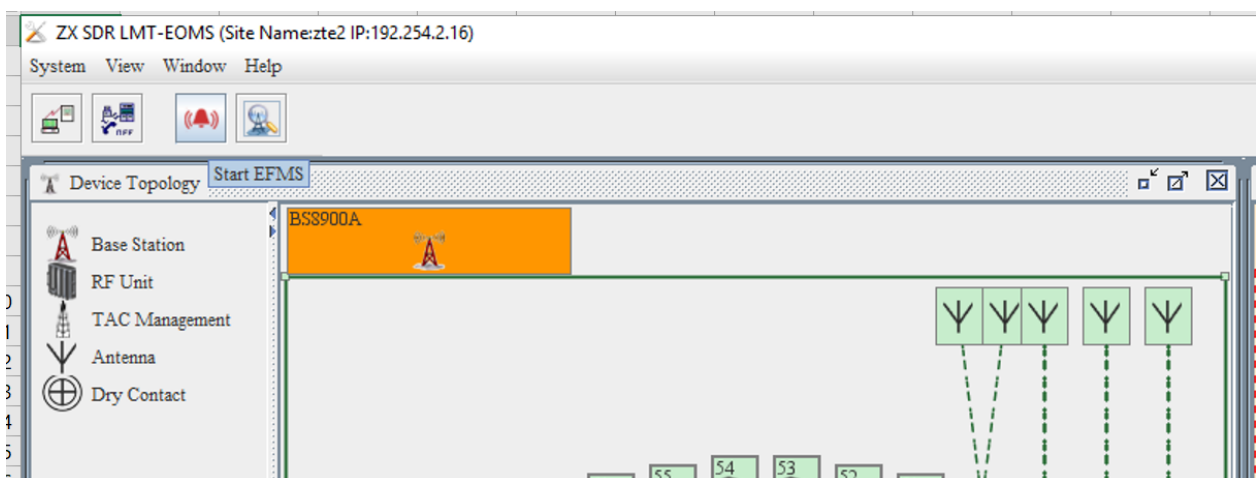
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a) Start EFMS to view alarm window



b) Double click on the alarm to check the alarm description or can check from netnumen.

| Alarm Monitoring Active Alarms: EKOL0000AVD2_AIR(6397) 33 | | | | | | |
|---|-------------------|--------|---------------------|----------------|--------------------------------------|------------|
| ZTE Active Alarms: EKOL0000AVD2_AIR(6397) | | | | | | |
| No. | Alarm Object Name | Com... | Raised Time | NE Agent | Alarm Code | Board Type |
| 1 | | | 2020-02-03 17:42:39 | MO SDR_OMMB_09 | High BER of ethernet port(198097684) | BOP1 |

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- c) Click on the solution tab to check the check the probable cause

| Detail | Handling Suggestions |
|------------------------|---|
| Location | Equipment Resource(MO SDR)=1,Rack(MO SDR)=90,Shelf(MO SDR)=1,Board(MO SDR)=1 |
| System Type | Platform Alarm(20420) |
| NE Type | ME(MO SDR) |
| Alarm Type | Communications Alarm |
| Specific Problem | 1. The length of the network cable exceeds 100 m. 2. The registered jacks of the network cable are not well crimped. 3. The rate of the network cable does not match that of the electrical port. |
| Remark | G BSCId: 4; ETH4: High uplink bit error rate; Board serial number: 219145858572; G siteId:65534,L eNBId:926397,TDL eNBId:819259; Topology: Optical board=(1,1,3), Optical board port=0, Cascade=3 |
| ADMC Alarm | No |
| Repeated Count | |
| Alarm Object Type | RU |
| Site ID(Office) | 6397 |
| Alarm Object ID | 90 |
| Alarm Object DN | SubNetwork=1018,MEID=6397,Equipment=1,Rack=90,SubRack=1,Slot=1,PlugInUnit=1 |
| Probable Cause | Link failure(517) |
| Alarm AID | 117 |
| Additional NE | |
| Additional Location | |
| Changed Time | |
| Additional Information | Site ID(Office) : 6397; Site Name(Office) : EKOL0000AVD2 AIR; Alarm Object Type : RU; Alarm |

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ZTE NE:EKOL0000AVD2_AIR(6397)

Detail
Handling Suggestions

Default Suggestions

Reason Detail:

1. The length of the network cable exceeds 100 m.
2. The registered jacks of the network cable are not well crimped.
3. The rate of the network cable does not match that of the electrical port.

Handling Suggestions:

1. Check whether the network cable between the pico RRU and the PB exceeds 100 m.
 - a. On the EMS, select Diagnosis Test -> PRRU Diagnosis Test. Check whether the network cable corresponding to the port with the alarm exceeds 100 m.
 - Yes -> Step 2.
 - No -> Step 3.

ZTE NE:EKOL0000AVD2_AIR(6397)

Detail
Handling Suggestions

Default Suggestions

more than 100 m, install a repeater 1 km between. wait 15 minutes and then check whether the alarm is cleared.

Yes -> End.

No -> Step 3.

3. Re-make the registered jacks for both ends of the network cable between the pico RRU and the PB. Wait 15 minutes and then check whether the alarm is cleared.

Yes -> End.

No -> Step 4.

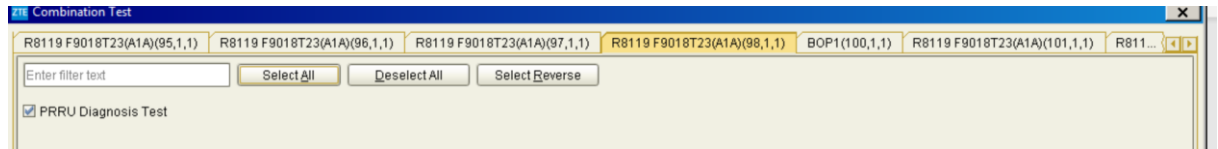
4. Replace the network cable with a CAT5E/CAT6 cable or above and re-route the cable. Wait 15 minutes and then check whether the alarm is cleared.

Yes -> End.

No -> Contact the customer service center.

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- d) On the EMS, select Diagnosis Test -> PRRU Diagnosis Test. Check whether the network cable corresponding to the port with the alarm exceeds 100 m.
Select all PICO RRU of BOP1(90,1,1)



Check the cable length:-

| EKOL0000AVD2_AIR[SubNetwork=1018,MEID=6397] | | Test Result-SubNetwork=1018,MEID=6397 | |
|---|-------------------------------|---------------------------------------|-------------|
| 1 Test Object | 2 Test Type | 3 Test Item | Test Result |
| R8119 F9018T23(A1A)... | PRRU Diagnosis Test(16778301) | Board Working Duration(110102) | 337533s |
| R8119 F9018T23(A1A)... | PRRU Diagnosis Test(16778301) | Cable Length(110318) | 5m |
| R8119 F9018T23(A1A)... | PRRU Diagnosis Test(16778301) | Channel Group 1 Rx Bandwidth(1... | 40000kHz |
| R8119 F9018T23(A1A)... | PRRU Diagnosis Test(16778301) | Channel Group 1 Rx End Frequen... | 2370000kHz |
| R8119 F9018T23(A1A)... | PRRU Diagnosis Test(16778301) | Channel Group 1 Rx Start Frequen... | 2320000kHz |
| R8119 F9018T23(A1A)... | PRRU Diagnosis Test(16778301) | Channel Group 1 TX Bandwidth(1... | 40000kHz |



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- e) Re-make the registered jacks for both ends of the network cable between the pico RRU and the PB
- f) Replace the network cable with a CAT5E/CAT6 cable or above and re-route the cable.
- g) Replace the SFP, Fiber cable and connected BBU card.
- h) Check in EFMS/OneFM/Netnumen whether alarm cleared or not.

| | | | | | | | |
|--------------------------|--|------------------|--|------------------|--|--|--|
| Management | | Statistic | | Alarm Monitoring | | Active Alarms: EKOL0000AVDI_AIR(6396) | |
| EMS Server(192.168.1.79) | | BSC04_DLF03_OMCR | | MO SDR_OMMB_09 | | ZTE | |
| | | | | | | Active Alarms: EKOL0000AVDI_AIR(6396) | |
| | | | | | | Severity: All | |
| | | | | | | ACK State: All | |
| | | | | | | Visibility: Visible | |
| | | | | | | Total: 1 Critical: 1 Major: 0 Minor: 0 | |
| | | | | | | No. Alarm Object Name Co. Raised Time NE Agent Alarm Code Board Type | |
| | | | | | | 1 EKOL0000AVDI_AIR 2020-02-10 02:01:18 MO SDR_OMMB_09 The license file will soon fall due(198097673) CCE1B | |

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Post Analysis

| Step No. | Step Name/Step Type | Command | Field | Mandatory (Y/N) | Expected Value |
|----------|---|---|-------|-----------------|----------------|
| 1 | FME will check at One FM/Netnumen after 30 minutes to check alarm | As per attached MOP in traffic check status step-- -Refer RAN MOP | RAN | Y | As per MOP |
| 2 | BSS Team will check after 24 hrs if alarm has reappeared | | | | |