BT-CNE

Service Operations Runbook

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Document Properties

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1. Introduction

1.1 Business Overview

BT Group plc (trading as BT and formerly British Telecom) is a British multinational telecommunication holding company headquartered in London, United Kingdom. It has operations in around 180 countries and is the largest provider of fixed-line, broadband and mobile services in the UK, and provides IT services.

Ericsson Expert Analytics (EEA) is a multi-vendor, real-time customer-centric analytics product for mobile operators who want to capitalize on their network data. Unlike other Telecom Analytics systems, EEA measures the perceived customer experience of individual services for all customers, all the time, in real-time across the radio access and mobile core networks with high accuracy.

Current EEA Version used → v18.7

Two Environment → "**Primary** (Production): Our control" and "**Secondary** (DR/Test bed): E//Project team"

The EEA further consists of 2 platforms which are as below: -

AESR*: Above Extended Session Record → BT Environment → End Users (Agents)*

BESR: *Below Extended Session Record → EE Environment → End Users (Agents)*

Ericsson has sold his EEA product to EE (Everything Everywhere) and EE has further to BT (British Telecom) in sharing. Since EEA product is used by both the organization which in merger called **as CNE (Common Network Element)** and because the BT has a greater brand value, so it's commonly known as **BTCNE**.

Note*: Both BT & EE are two different organization competing in the market.

BT Data Center	EE Data Centers
Reigate	Beckton, Crydon,Leeds,Luton,Mansfield,Westbrom
EEA Platform has total of 329 servers	
62% Server	38% Servers
AESR	BESR

Our servers are hosted at the below mentioned Data Centre locations:

Location/Site Name	Location/ Site Code
Beckton	**Bkt**
Croydon	**Cro**
Leeds	**Lds**
Luton	**Ltn**
Mansfield	**Mfd**

Wolverhampton	Wvn
Warwick Place	Xwp
BT Reigate	Re
As of now we have 329 servers	
Application Server	**185**
Database Server	**18**
Extreme Switches	**12**
Flow Balancer	**24**
RAN Adapter Server	**12**
Probes Servers	**78**

Platform	Layers	Functions
EEA	Collection Layer	EEA collects info from Customer network
	Correlation Layer	EEA makes its own records ESR(data) EDCR (detailed call record)
	Aggregation Layer	Mapr/Hadoop ----> Load into DB (HBASE) --> Impala Query Server
	Presentation Layer	Customer Agent or End Users

1.2 Purpose

The basic purpose for the this document is to make a brief understating of the **"How the Service Desk & L1 team" together has to responds to any issue reported in CNE network or by EEA agent to provide quick resolution or end-to-end Managed Service support as per agreed SLA.** This document includes a fault resolution flow, a support matrix, BCP Escalation matrix, Ticket Management, Alarm Monitoring and Troubleshooting Guide.

1.3 Scope of Service

Ericsson is providing extended support for the CNE Managed Services are many different Levels. But the Level 1 (**L1**) support for the CNE System, comprises of :-

- ✓ 24*7 Service Desk Support, enabled through phone/email, to serve as the first point of contact to the EE TOC and EEA Agents
- ✓ IT Operations Managed Services

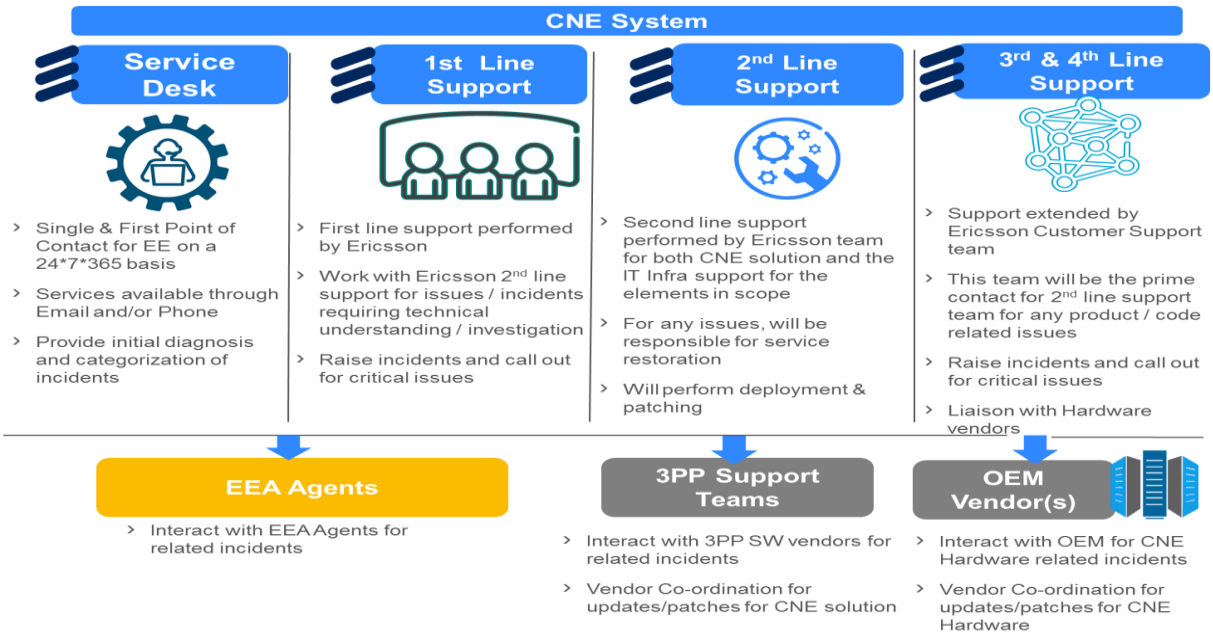
Activity	Team Responsible				Remarks
	Noida	Kolkata	Bangalore	Client/HPE	
Performance Monitoring	Y	N	N	N	L1 Resources
Troubleshooting – L 1	Y	N	N	N	L1 Resources
Troubleshooting – L 2	N	Y	N	N	L2-Resource-Irfan, Subhau, Debojyoti
Installation and Maintenance	N	N	N	Y	Handled by BT Team.
Hardware Management	N	N	N	Y	Handled by HPE Team.

Script Management/Deployment	N	Y	N	N	
Applications and Subsystems	N	N	N	Y	Handled by BT Team.
Change Management	N	Y	N	Y	L2 – Debojyoti

1.4 Definition of Terms

Term	Definition
BCM	Business Continuity Management
CAB	Change Advisory Board
CI	Configuration Item
CSF	Critical Success Factor
EE	Everything Everywhere Limited
FCR	First Call Resolution
FTF	First Time Fix
INM	Incident Management
ISD	International Service Desk
KE	Known Error
KPI	Key Performance Indicator
MTBF	Mean Time Between Failures
MTTR	Mean Time to Repair
OLA	Operational Level Agreement
RFC	Request for Change
SLA	Service Level Agreement
CNE	Customer Network Experience
EEA	Ericsson Enhances Analytics (aka CNE)

2. Project Organization (Flow Chart)



3. Work Level Agreement (WLA)

It defines the interdependent relationships in support of a service-level agreement (SLA).
The agreement describes the responsibilities of each internal support group toward other support groups, including the process and timeframe for delivery of their services

We in L1 team are now working as single functional unit (For both Service Desk & L1 team)

3.1 Service Desk Team:

a) Provide a 24 X 7 point of contact, which will be the central point for logging and escalation of Incidents and service requests.

b) Ensure appropriate categorisation and prioritisation of all Incidents and service

c) Escalate to and liaise with third party vendors and the various service groups/ teams on the services they provide to EE ensuring all Incidents and service requests are tracked to completion.

d) Provide clear and concise communication to users and appropriate stakeholders ensuring they are kept informed of any Incidents, changes or agreed outages, or the progress thereof.

e) Support the change management process to ensure there is no conflict between planned works and live Incidents.

f) Support the problem management process by cross-referencing Incidents and service requests with problem records and the known Incident database.

3.2 L1 Operation Team:

L1 Operations team shall provide 1st level support services relating to the CNE System based on prescribed processes and instructions, as per **standard operating procedures (SOPs**), as follows: -

a) Monitoring & Event Management.
b) L1 Application Operations.
c) L1 Incident Resolution.

Monitoring & Event Management: -

a) Proactive monitoring 24*7 for the CNE System to ensure that services are performed within the agreed Service Levels.

Ericsson will monitor the following on each server via Zabbix Tool

- ✓ No of concurrent users
- ✓ CPU Load
- ✓ Memory Utilisation
- ✓ Free Disk Space
- ✓ System Uptime
- ✓ System utilisation

L1 Application Operations via Putty:

a) Application start & stop.

b) Running batch jobs.

c) Monitor Interfaces to check all interfaces are up and running.

d) Run end of day jobs.

e) Checking log files.

f) Dashboard reporting activities.

L1 Incident resolution activities including:

a) **Incident identification**: Incidents must be known about, before work can start of fixing them.

b) **Incident logging**: Incidents must be logged with the date and time stamp that they were generated.

c) **Incident categorization**: The main objective is to understand what type of incident has occurred.

d) **Incident prioritization**: It's usually determined by assessing its impact i.e. **(P2, P3, P4 & P5)**

e) **Initial diagnosis**: where possible, the Incident shall be resolved while the EEA Agent is on the phone or web/self-help interface.

f) **Incident escalation**: where not possible to resolve then the Supplier will progress the Incident to L2.

g) **Investigation and diagnosis**: all actions taken by support groups is recorded in the Incident record.

h) **Resolution and recovery:** the resolution will be fully tested and documented in the Incident record, before Service Desk for closure.

i) **Incident closure**: Need to monitor the incident for next 24 hours of resolution, before closing it.

4. Service Overview

4.1 Service Level with BT & Ericsson

Service level with Ericsson is broadly equivalent to **EE Gold service level**.

The Solution availability shall be **99.50%** per month. Maintenance windows as per EE change policy

Parameter	Platinum	Gold	Silver	Bronze
Availability	99.80%	**99.50%**	99.00%	97.00%
Service Hours	Mon – Sun	Mon – Sun,	Mon – Sun,	Mon – Fri,
	00:00 – 24:00	00:00 – 24:00	07:00 – 22:00	08:00 – 18:00
Change Window	4 hours per month.	Mon – Sun	Mon – Sun	Mon – Fri

	Additional by arrangement	22:30 – 07:00 or in / outside Service Hours by arrangement	22:30 – 07:00 or in / outside Service Hours by arrangement	18:00 – 08:00, + Sa + Su or by arrangement
Recovery Time Objective (RTO)	2 hours	4 hours	5 days	1 month
Recovery Point Objective (RPO)	30 minutes	120 minutes	72 hours	5 days

4.2 Service Level Agreement (SLA)

A service-level agreement is a commitment between a service provider and a client. Aspects of the service – quality, availability, responsibilities – are agreed between the service provider and the service user.

Note: For SMT remedy P2 is the highest priority we are using for any issue having the Business Impact.

Priority	Response Time	Service Restoration Time	Permanent Fix	Final Written Statement
P2 - Critical/High	15 Minutes	2 Hours	5 Support Days	5 Business Days after Service Permanent Restoration
P3 – Major/Medium	30 Minutes	4 Hours	10 Support Days	
P4 - Minor/Low	60 Minutes	8 Hours	20 Support Days	
P5 - NSA	240 Minutes	3 Business Days	30 Support Days	

SLA Calculations are based on

Response Time = (Ticket Set to Assigned Time) - (Ticket Creation Time)
Resolution Time = (Ticket Set to Resolved Time) - (Ticket Set to Assigned Time)
Closure Time = (Ticket Set to Closed Time) - (Ticket Set to Resolved Time)

5. Incident Management

The Objective of the incident management process is to restore a normal service operation as quickly as possible and to minimize the impact on business operations, thus ensuring that the best possible levels of service quality and availability are maintained

Type of Fault	Fault Symptoms	SMT Priority	E///Priority	Business Impact
Complete Outage.	Complete loss of application service	P2	P1/Critical	No Access to -Complete EEA affected.
Major Latency issue on All modules greater than 240 seconds.	Latency issue/ Complete Slowness on all modules/interfaces/DB/System		P2/High	Major delay in customer queries
Multiple Interface (IP) failure.	Interface to two or more EEA internal interfaces causing major loss of data			Unable to deliver information to multiple reports/systems
Multiple loss of NEMS feeds	NEMS Feeds not arriving/being sent for multiple instances			Lack of data in CNE reports, Major delay in customer queries
Reporting Complete Loss	NO reports or users can generate up to date info			Loss of data in CNE reports, Major delay in customer queries
Latency issue on multiple modules upto 240 Seconds	Latency issue/ major Slowdown in EEA	P3	P3/Medium	Delay in customer queries for multiple reports/areas
Major system fault	HDD reached 95%, CPU usage high 95%, memory usage high 95%			limited affect, possible slow down for queries
Major HW fault	Major loss of HW redundancy, major component failure			Slow down or delays in reports/systems
Loss of monitoring	Zabbix down and not monitoring			zero monitoring from Zabbix
Individual user issue.	User unable to access / profile Issue. Application not launching for user.	P4	P4/Low	Individual user unable to progress single query
Single Interface failure.	Interface to one or partial loss of feed or interface			Minor report loss or lack of data
Single functionality issue.	One report failure			Minor report loss or lack of data
Minor HW Fault	Probes HW failure, Minor loss of redundancy			limited affect
Medium system fault	HDD upto 90%, CPU usage high 90%, memory usage high 90%			limited affect
NSA	Technical query, end user query, access request, Data re-concilation request	P5	P5/TBC NSA	Not Affecting service/Work Around Available.

6. Change Management

The objectives of Change Management include:

- ✓ To minimise service disruption and unavailability during Change implementation.
- ✓ To ensure all Changes are assessed, approved, implemented and reviewed in a controlled manner.

  L1 team Role: Providing the Pre & post HC if required or any additional supporting logs as per the Change requirements

7. Ticket Management

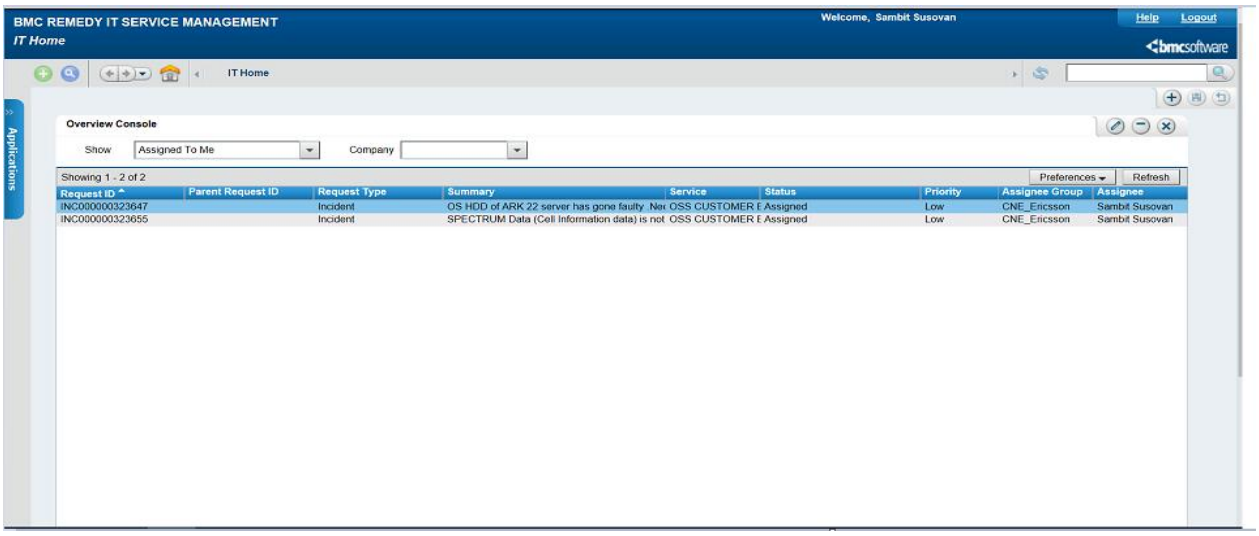
7.1 Ticket Priority Matrix

Priority Matrix Calculation		Impact			
		Extensive	**Significant**	**Moderate**	**Minor**
Urgency	Critical	Critical	Critical	High	High
	High	Critical	High	High	Medium
	Medium	High	Medium	Medium	Medium
	Low	Low	Low	Low	Low

7.2 Ticket Creation Process

- ✓ SMT or BMC remedy tool is used for creating Ticket or Incident ID for any issue reported in the CNE.
- ✓ It's completely handled by **(Service Desk + L1 team).**

1. SMT Home Page

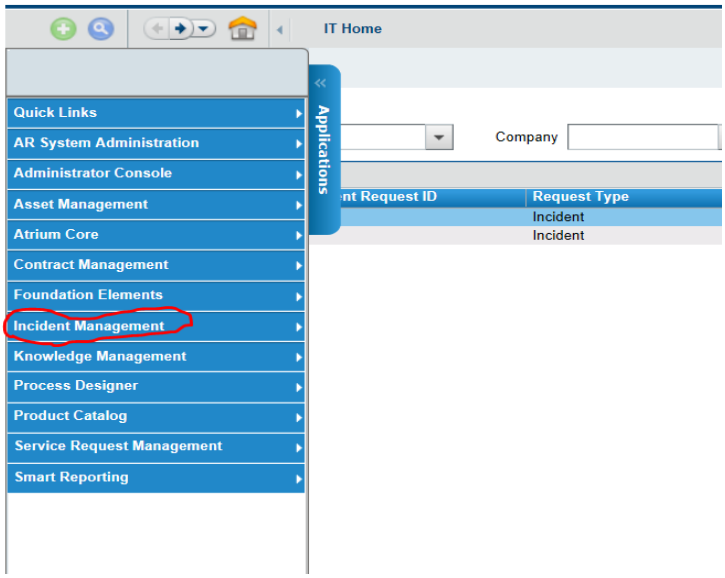


2. Steps to Create a New SMT Ticket

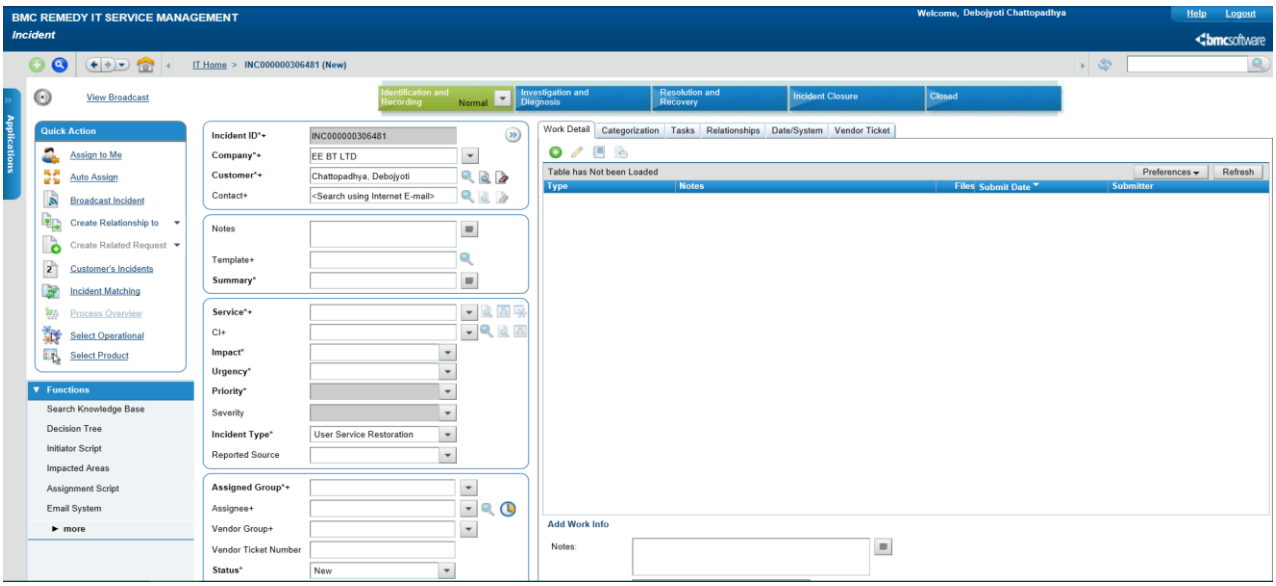
2.1 Mandatory Fields need to be addressed during raising a SMT ticket

- ✓ Incident ID*+
- ✓ Company*+
- ✓ Customer*+
- ✓ Summary*+
- ✓ Notes
- ✓ Service*+
- ✓ CI+
- ✓ **Impact***
- ✓ **Urgency***
- ✓ Incident Type*
- ✓ Reported Source
- ✓ **Assigned Group*+**
- ✓ Assignee+
- ✓ Status*
- ✓ Status Reason
- ✓ **Resolution**
- ❖ GOTO Categorization Tab
  - ➢ Tier1+
  - ➢ Tier2

2.2 Incident Management -> New incident Creation

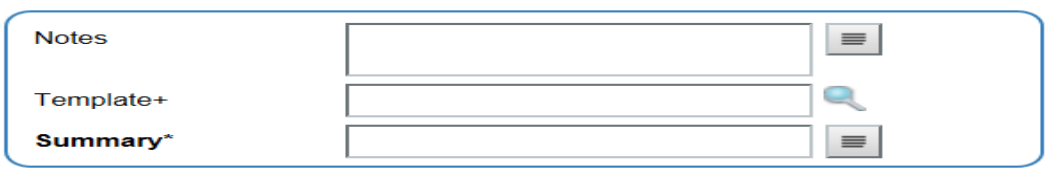


2.3 Overview of the Incident Creation tab

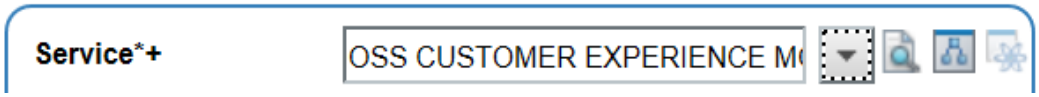


2.4 Details that needs to be feed during the process of raising the SMT Ticket

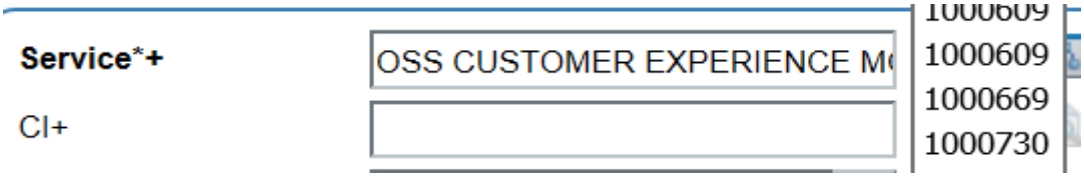
Step 1 : Incident Slogan to be placed in Notes and Summary field.



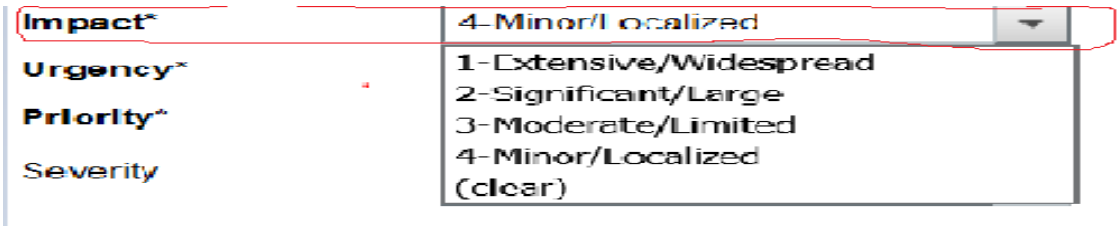
Step 2 : OSS Customer Experience Monitoring to be field in the mandatory field Services*+



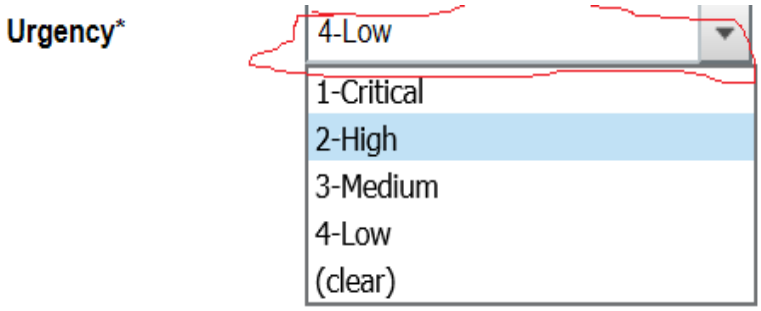
Step 3 : For time being we can select any value in CI+ field, as conveyed by Market area team.



Step 4 : For Mandatory Field Impact*: As agreed with Market Area team we need to place all tickets in P4 bucket. The maximum highest priority we need to select is P3.

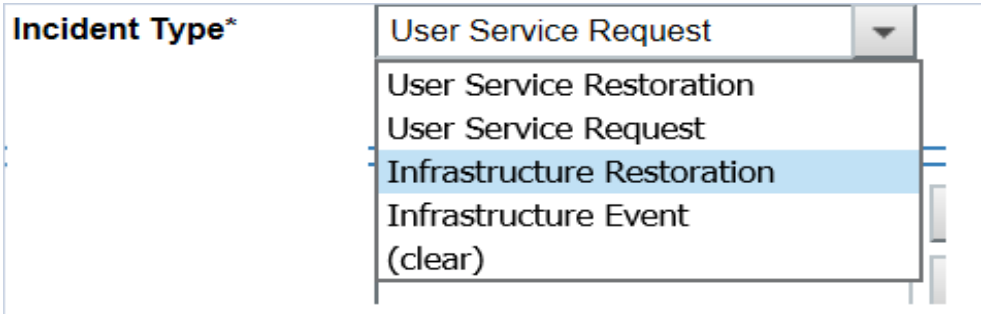


Step 5 : For Mandatory Field Urgency*: As agreed with Market Area team we need to place all tickets in P4 bucket. The maximum highest priority we need to select is P3.

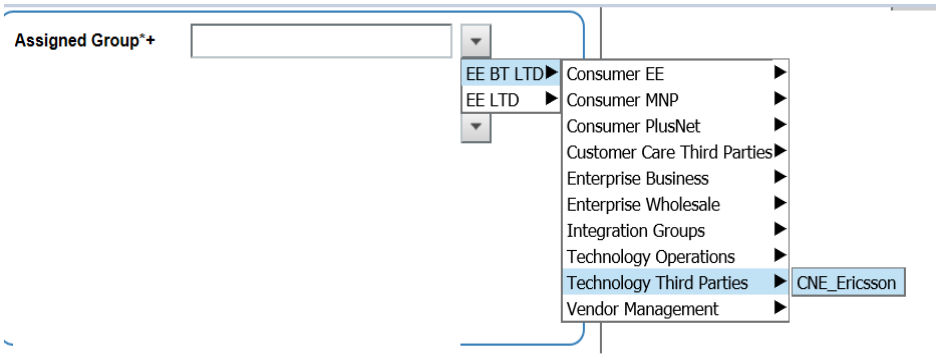


Step 6 : For Mandatory Field Incident Type*: We need to fill the field with two options

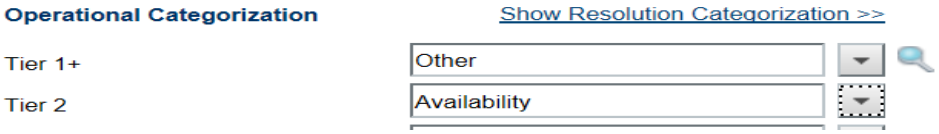
a) User Service Request
b) Infrastructural Event



Step 7 : For Mandatory Field Assigned Group*+ : We need to select CNE_Ericsson to assign the ticket to L1 & L2 Bin.

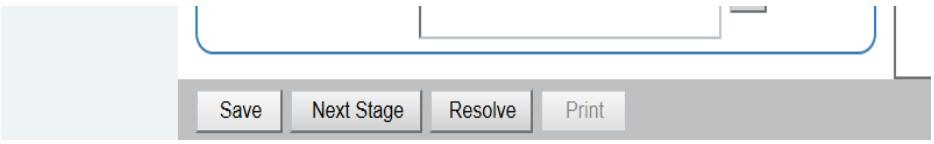


Step 8 : The next value that needs to be placed in Tier 1+ & Tier 2 field in Categorization tab is



Step 9 : The status field needs to be filled as assigned.

Step 10 : The ticket needs to be saved for further processing.



Step 11 : MSIT team needs to attach all the logs and Snapshots related to the incident in the Attachment tab under Work Details.

Step 12 : Post you save the incident you will receive the incident ID which needs to be circulated over email.

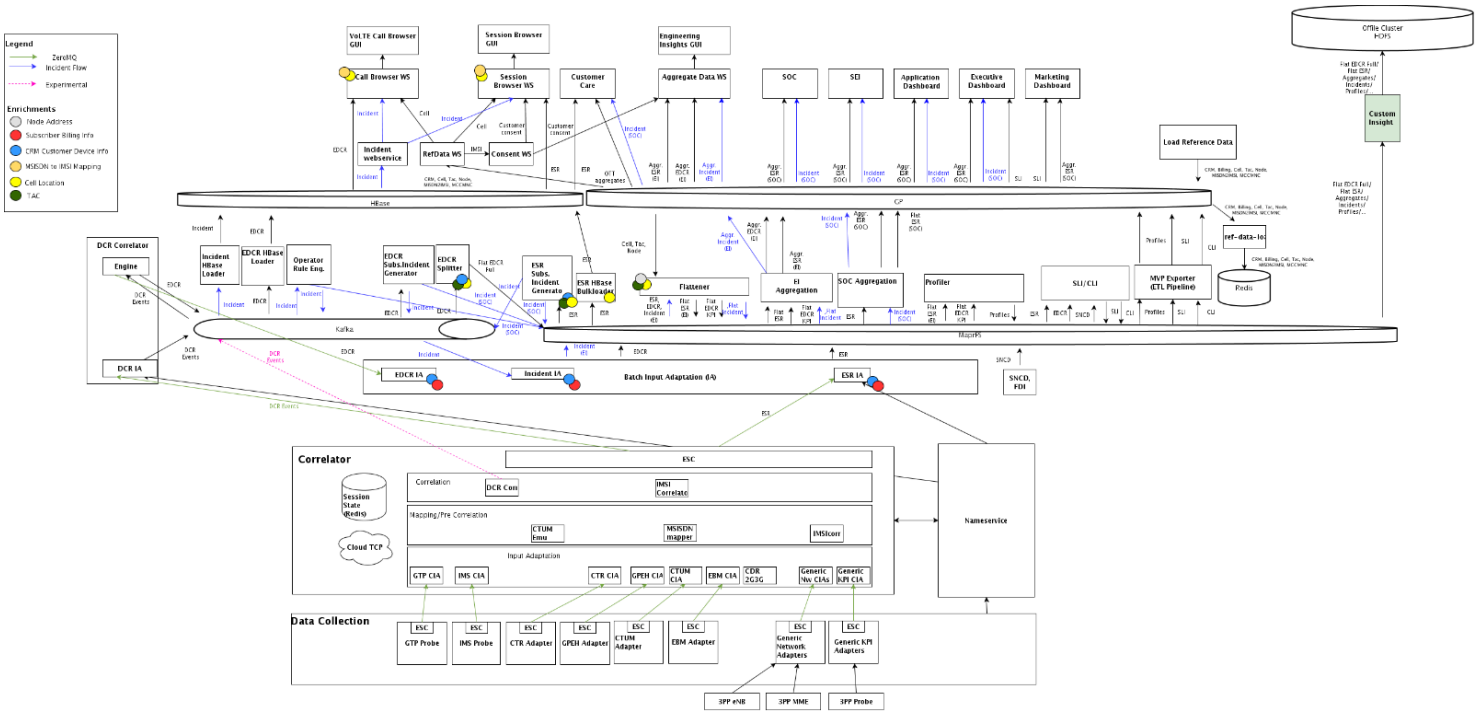
8. Access Level for Support Teams

	Service Desk • Location : India	1st Line Support Location: India	2nd Line Support Location: India	3rd & 4th Line Support: Hungary & New Jersey
Presentation Layer • IMSI, MSISDN, IMEI Un-encrypted • Access Control through EE LDAP	• No Access	• Need temporary access if required based on the issue	• Need temporary access if required based on the issue	• Need temporary access if required based on the issue
Database Layer IMSI, MSISDN, IMEI are encrypted in Database	• No Access	• EE to provide admin access for mutually agreed Standard Operating Procedures .	• Read access only for troubleshooting issues. • EE to provide write access in case of any incident requiring data correction/update.	• Need temporary access if required based on the issue
Ingestion Layer IMSI, MSISDN, IMEI are encrypted in during Ingestion	• No Access	• EE to provide admin access for mutually agreed Standard Operating Procedures .	• Read access only for troubleshooting issues. • EE to provide write access in case of any incident requiring data correction/update.	• Need temporary access if required based on the issue
Service Management Tools	• Remedy	• Remedy • Zabbix • NetCool	• Remedy • Zabbix • NetCool	• CSR Online (Ericsson)

Note: Temporary access procedure to be agreed during Service Transition.

9. EEA Architecture

9.1 EEA Architecture Diagram



9.2 EEA Architecture Overview

Ericsson Expert Analytics (EEA) is designed to gather metrics and events from the network and through complex event correlation it generates End-to-end Session Records (ESRs) for each subscriber and Enhanced Detailed Call Records (E-DCRs) for sessions, such as VoLTE calls, containing Key Performance Indicators (KPIs) from various sources

The EEA architecture consists of 2 platforms which are as below: -

AESR*: Above Extended Session Record*

BESR: ***Below Extended Session Record***

Extended Session Record: It the datapoints that is captured for an individual call or data session. It contains the encrypted call history including the actual payload traffic.

In BTCNE project EEA prepares the own ESR's from the captured data that BT shares with EEA.

ESR are prepared at Correlator Layer in EEA, hence whatever nodes are available in the platform above Correlator layer are called AESR and similarly whatever nodes are available in the platform below correlator layer are called BESR.

BESR has got two layers: -

- ✓ Data collection
- ✓ Data correlation

AESR has got two layers: -

- ✓ Processing layer
- ✓ Presentation layer

Also, EEA has its internal storage (HBase), the physical data is stored in Mapr/Hadoop Clusters servers. Impala is the query server which queries the data form HBase database.

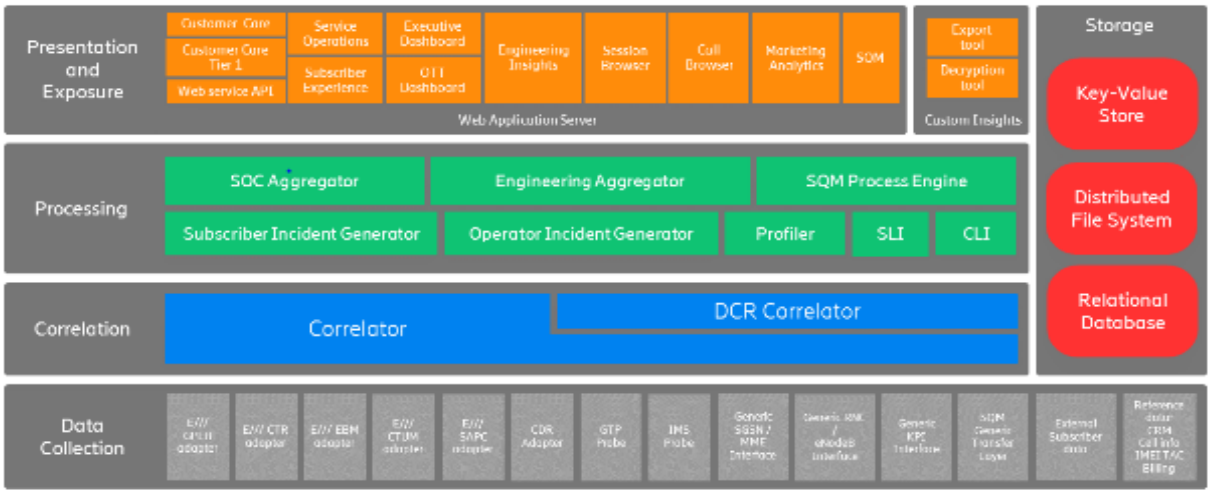


Figure 1 EEA Functional View

1. **Data Collection Layer:**
   The Collection Layer is the lowest layer of the EEA architecture and it is responsible for the integration into the network of the operator and for data collection from different sources.
   The Connection Layer consists of the following sources:
   - Adapters - Support collection of data from RNC, eNodeB, SGSN, MME nodes, CDR sources and 3PP probes.
   - Probes - Support collection of data from Gn, Gn-3GDT, Sv, S1-U, S11, S2b and Mw interfaces through an active or passive tap. S5 capture is also supported as an alternative to S1-U and S11 interfaces. Capture of roaming traffic is supported on Gp, S2a/S2b and S8 interfaces.
   - External Subscriber Data Sources - EEA supports collection of data relevant to user experience from non-network data sources, such as the user's device.
   - External Reference Data Sources - Various external data sources can be connected to EEA to provide reference data for QI calculation.

   EEA Probes: The EEA Probes are connected to optical splitters or intelligent taps on different interfaces in the network providing vendor independent data collection. Probes are used to monitor voice, data and signalling traffic; they apply Deep Packet Inspection (DPI) and Shallow Packet Inspection techniques to analyse traffic and extract required information. EEA Probes analyse protocol messages at application level and consolidate the information from multiple protocol message exchanges into single application-level event summarization events.

   We have two type of Probes:
   - GTP Probe
   - IMS Probe

2. **Correlation Layer:**
   This layer correlates data from different sources of the Connection Layer to provide consolidated information to the Processing Layer
   Event Stream Cache: Event Stream Cache (ESC) instances are used to transfer data between EEA components where data streaming is used.
   Correlator: The Correlator relates data from different sources to the same subscriber or call, calculates QIs, and generates multiple output streams.

3. **Processing Layer:**
   Components of this layer implement analytics logic by processing the data originating from Connection Layer, enabling visualization on GUIs of the Presentation and Exposure Layer.

4. **Storage Layer:**
   EEA components use several databases during the processing for different purposes.

5. **Presentation and Exposure Layer:**
   This is the top layer of EEA, it enables graphical representation through multiple GUIs, and provides additional means to further process the data.

9.3 Standard Server Naming Convention

Naming convention in our environment is as follow:

1) **Connectivity Type:** Below Layer (**BESR:: eea**) or Above Layer (**AESR:: rel14620**)

2) **Server Type :** Admin (adm), ARK (**ark**), Correlator (**cor**), Extreme switch (**xtr**), Flow balancer (**flb**), GTPC /GTPU Probe (**prb**), Hadoop Mgmt (**hms**), Huawei RAN Adapter (**adp**), Impala Server(**imp**), Ims Probe (**ims**), JBoss (**jbs**), Kafka (**kfk**)
3) Three Digit Server Sequence Number

4) Three-character Location/Site Code (Only applicable for BESR Servers)

Example: -

Below Layer	Above Layer
eea adm 002 bkt	rel14620 adm 001

10. KEDB Best Practice and Learning (Known Error Database)

A KEDB is a database that contains all known issues affecting your customers and system environment. It describes the conditions in which these issues occur, and how to resolve the issue in the short term via a workaround.

- Details in provider dimensions its showing as Everything Everywhere not EE/BT for specific CTN's
- CNE-EEA: Not producing Statistics - Fault 504 Gateway Timeout...Data not getting populated in EI
- EEA EI – Dashboard/Editor Query takes ages to query data
- EEA Engineering Insight Dashboard does not aggregate and/or provide statistics data
- EEA EI GUI is throwing an exception of “internal error” while fetching 4G KPI data. For single CTN
- Cell names appearing same in CC Tier 1 GUI.
- CC QI map - no calculated value in 5G cell.
- Latency observed for SOC daily aggregation.
- subscriber Experience Insights GUI does not provide Quality of Indicators information.

- Subscriber Insight Voice Exploration Map is having issue.
- There is no detection of Emergency service in EI.
- Data Throughput displayed in bps.
- NHC is getting 500 Internal error.
- Probes SNMP agent is not working properly.
- Correlator input adapters stuck in a loop.
- Probe can't start when subs trace enables.
- Missing a rope from EDCR 5 min table.
- Network issue observed while generating reports from EI dashboard “ESR datastore"
- Large number of subscribers are unable to fetch report from EEA GUI
- Issue: Map is not showing all Incidents in DE GUI using all the browsers.

11. Project Stakeholders Contact Details

Customer Side		
BT/EE Operations team	**BT/EE Project Team**	**BT/EE CC**
Ops Head : Dave Rowland	Project head : Alan Chan	CC Head : Mark Gibney
Tim Elliot		
Ops Lead: Ricky Jenkins/ Stuart Kirby/Mark Holder		Ops Lead: Jaclyn Livingstone/ Stuart Kirby
Mark Holder : Hardware part		
Email (Contact No.)		
dave.rowland@bt.com	alan.chan@ee.co.uk (+44170707315000)	mark.gibney@bt.com
tim.ilott@bt.com		
ricky.jenkins@ee.co.uk (+447917876991) stuart.kirby@bt.com (+447415900010) mark.holder@bt.com (+447974146299)		jaclyn.livingstone@ee.co.uk (+44170707315000) stuart.kirby@bt.com (+447415900010)

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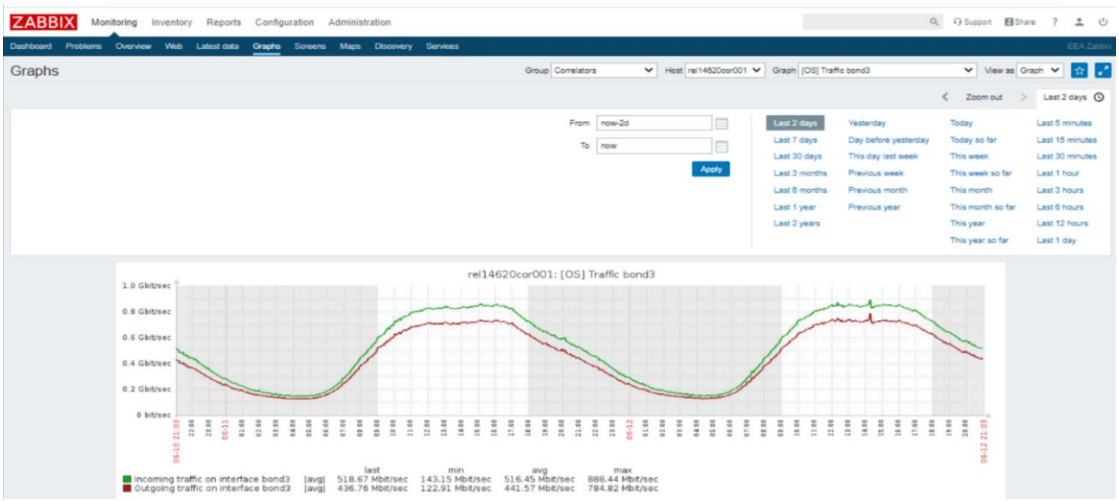
12. Tools used for Monitoring & Incident reporting.

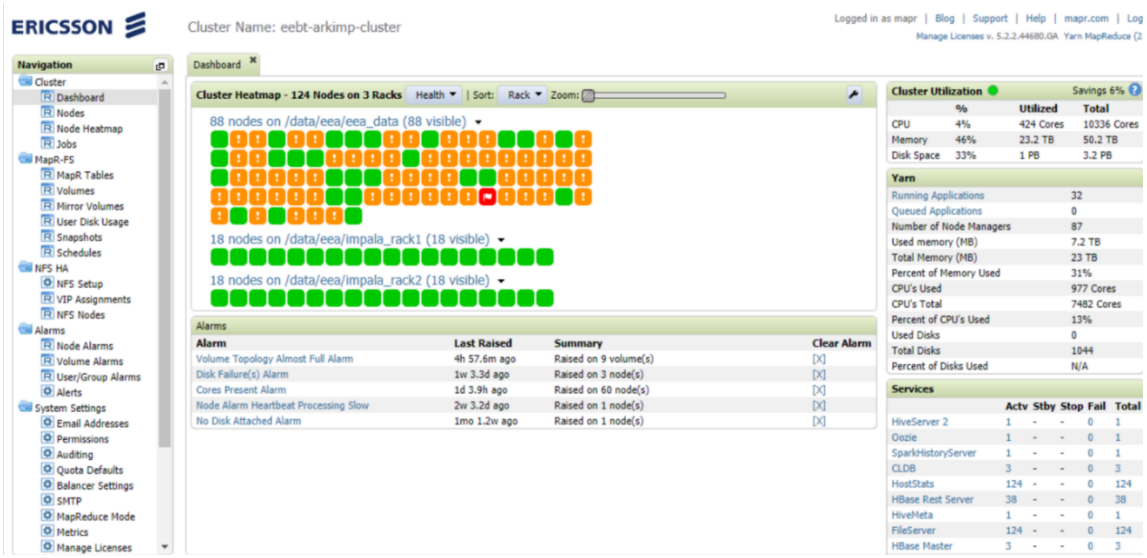
12.1 AESR Monitoring tools

- ✓ **Zabbix** (Currently live now)
- ✓ **Netcool** (It's planned in near future)
- ✓ **Mapr Dashboard**
- ✓ **Hadoop Dashboard**
- ✓ **EEA GUI's**

Zabbix: Zabbix is an open-source monitoring software tool for diverse IT components, including networks, servers, virtual machines and cloud services. Zabbix provides monitoring metrics, among others network utilization, CPU load and disk space consumption.
URL: https://10.45.90.190:444/zabbix/index.php

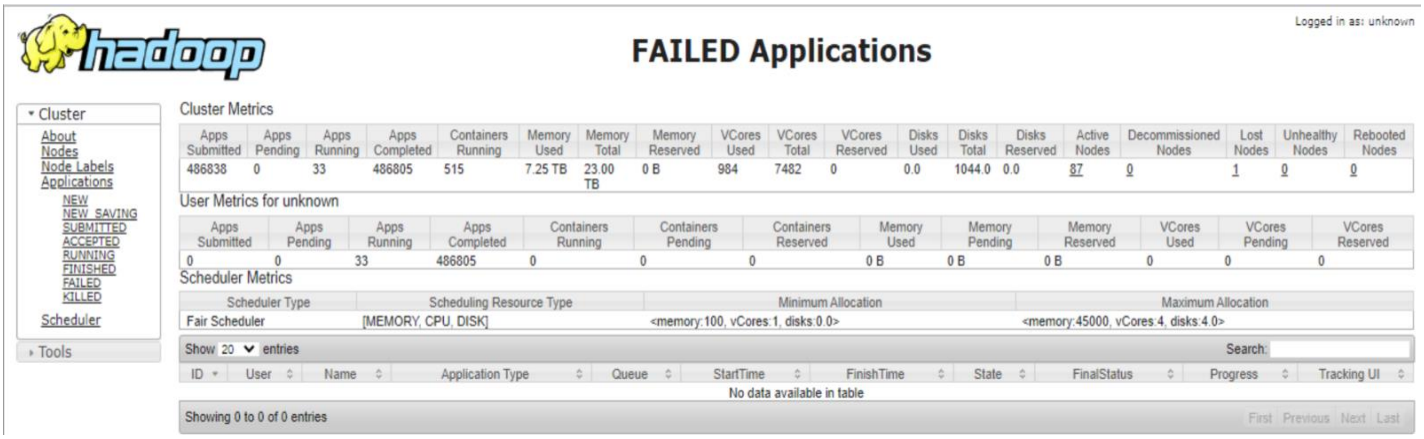


Mapr Dashboard: It is used to display information about CPU/Memory/Disk Utilization of overall cluster utilization along with other parameters.
URL: https://10.45.88.105:8443/



Hadoop Cluster: This tool is used to check and investigate failed services of the Hadoop clusters. If we encounter any failed service, we are immediately supposed to raise an Incident with MSSD Team for further action.

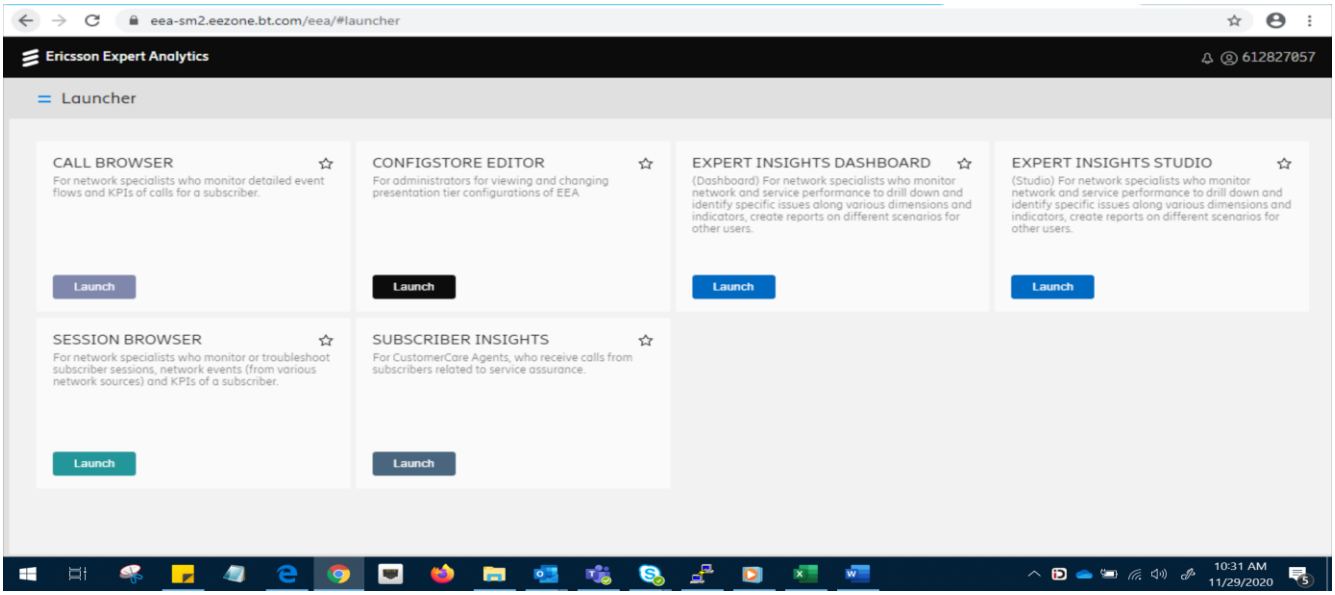
URL: http://10.45.88.104:8088/cluster



EEA GUI : Ericsson Expert Analytics is used to fetch all the desired details of end user of BT EE, using IMSI/TAC/CTN number. The following details can be fetched.

- ✓ Cell location information
- ✓ CRM Customer Device Information
- ✓ IMEI-TAC
- ✓ Billing Data Feed
- ✓ Map Server
- ✓ Trouble Ticket Data Feed
- ✓ Country Operator Map

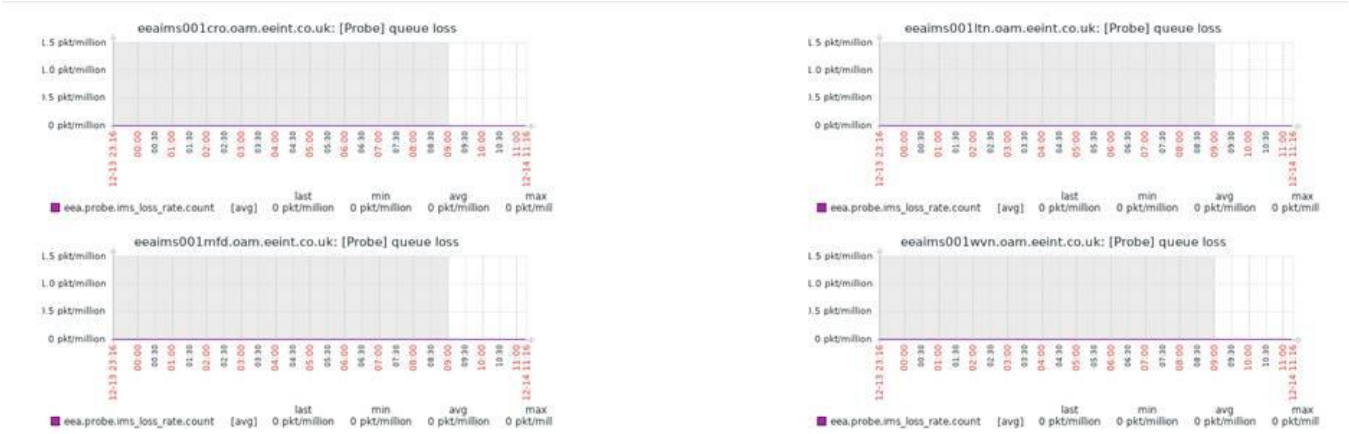
URL : https://eea-sm2.eezone.bt.com/



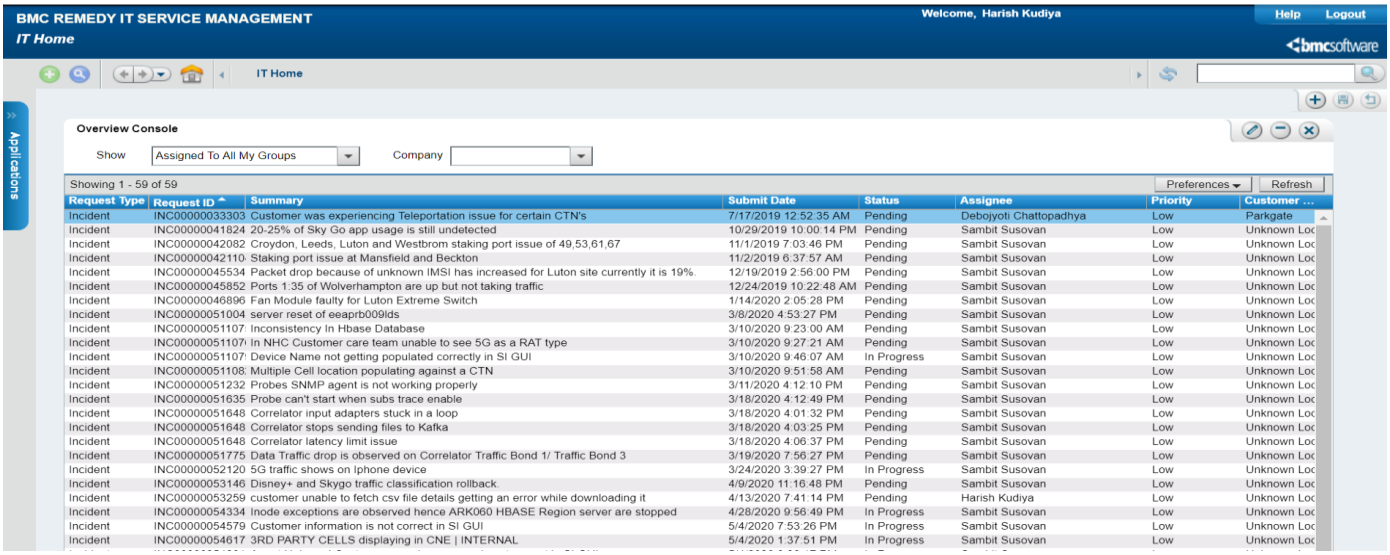
12.2 BESR Monitoring Tool

Zabbix: Zabbix is an open-source monitoring software tool for diverse IT components, including networks, servers, virtual machines and cloud services. Zabbix provides monitoring metrics, among others network utilization, CPU load and disk space consumption.

URL : https://10.244.55.190:444/zabbix



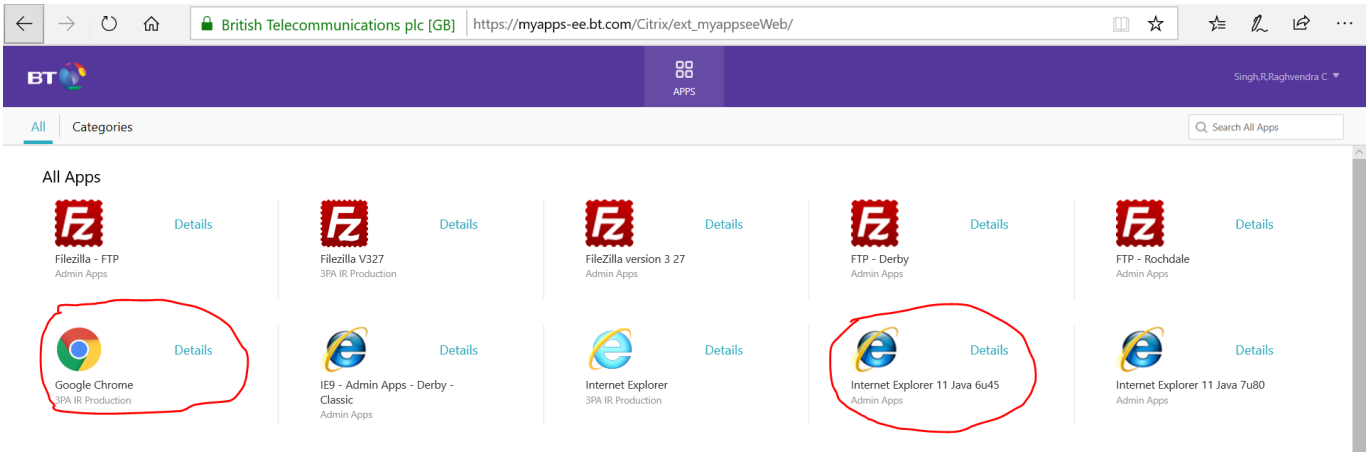
12.3 BMC Remedy Ticketing Tool: This is the ticket assignment tool we are using for incident reports.



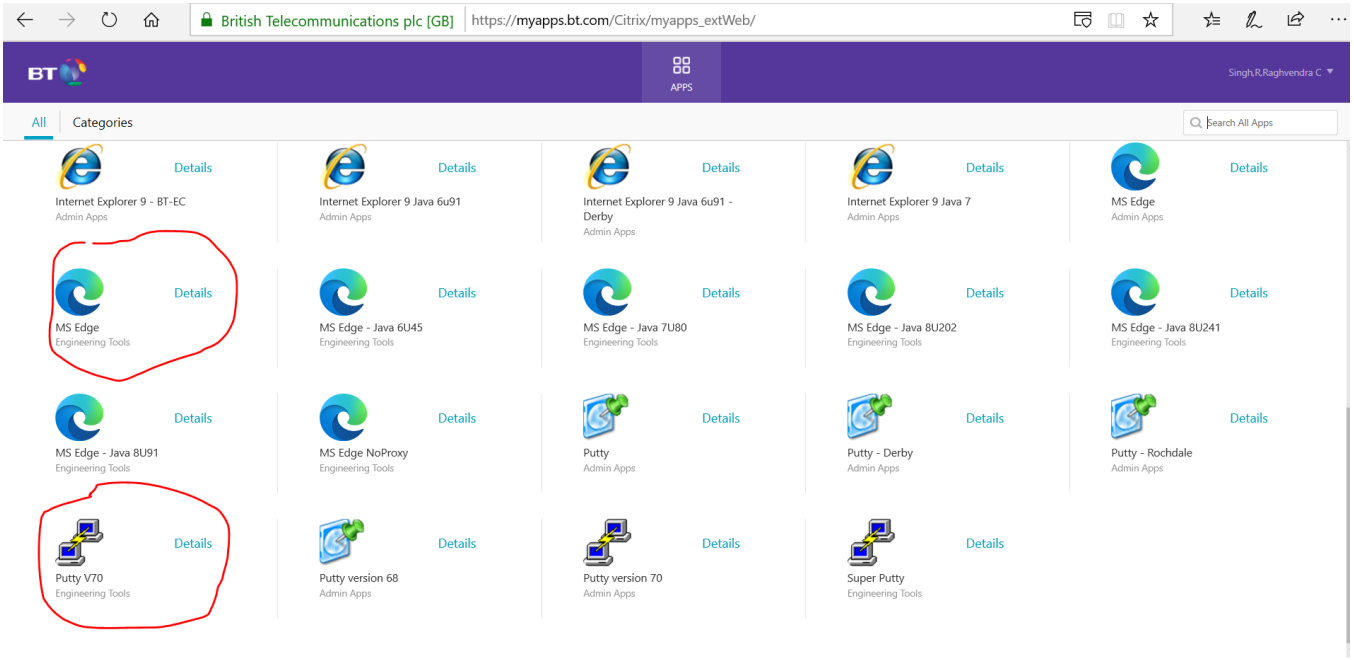
13. Console Access

AESR Login: - In order to access Above Layer (AESR) Servers, we login to the Citrix environment using UserID, Hard Token, Password. Once logged in, we can access the following servers:- ARK, Correlator, Impala, Hadoop Servers.

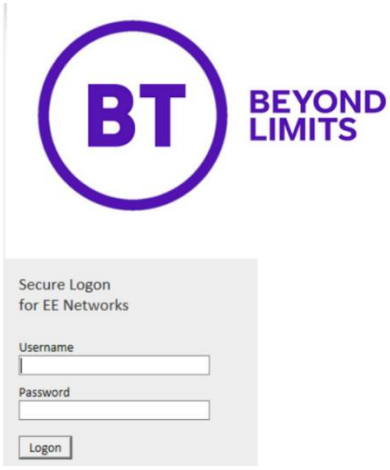
BT Citrix (Old) : https://myapps-ee.bt.com/Citrix/ext_myappseeWeb/



BT Citrix (New) : https://myapps.bt.com/Citrix/myapps_extWeb/



BESR Login: In order to access Below Layer (BESR) Servers, we login to Big IP Edge Tool using UserID, Password and OTP (on registered mail). Once logged in, we can access the following servers:- Probes Servers for all 6 locations along with Extreme Switches.



14.Monitoring AESR

Zabbix (Graphs)

1. Correlator001 Server – CPU/Mem/Bond1/Bond3
2. ARK044 Server – CPU/Mem/Disk/Bond0/Bond1
3. Impala Server – CPU/Mem/Bond1

Zabbix (Screens)

1. Correlator Server Health – CPU/Mem/Disk with threshold 70% / 80% / >85%critical
2. Interface Traffic between Probes ->Bond3 -> Correlators-->Bond1-->ARK
3. Latency rate - last value / time should b <10min
4. Latency check
5. ARK agg data flow 5min/1hr/1day
6. Jboss API call

AESR Trouble Shooting Guide: -

https://teams.microsoft.com/l/file/104F73B3-8658-43C9-881D-5EB04AE55BBE?tenantId=92e84ceb-fbfd-47ab-be52-080c6b87953f&fileType=docx&objectUrl=https%3A%2F%2Fericsson.sharepoint.com%2Fsites%2FBTCNE669%2FShared%20Documents%2FGeneral%2FTroubleshooting%20KB%2FAESR%20Guide-%20Monitoring%20%26%20TroubleShooting.docx&baseUrl=https%3A%2F%2Fericsson.sharepoint.com%2Fsites%2FBTCNE669&serviceName=teams&threadId=19:01a10db88df04dcf9225cf8ae5bfd151@thread.tacv2&groupId=c6917bbd-d595-4ad4-8b98-e235dc38f8a5

15.Monitoring BESR

Zabbix (Graphs)
1. Flow balancer port utilization - rx / tx
2. 6 Locations probes – CPU/Mem/Bond0/Bond3
3. GTP probe port utilization

Zabbix (Screens)
1. Probes Packet/Queue Loss
2. Unknown IMSI ratio
3. Extreme Switch Port Utilization_fb_GTP Probes
4. Extreme Data Flow
5. IMS probe queue loss

BESR Trouble Shooting Guide: -

https://teams.microsoft.com/l/file/27C00A68-B95F-475D-981C-C6DD2061CFA0?tenantId=92e84ceb-fbfd-47ab-be52-080c6b87953f&fileType=docx&objectUrl=https%3A%2F%2Fericsson.sharepoint.com%2Fsites%2FBTCNE669%2FShared%20Documents%2FGeneral%2FTroubleshooting%20KB%2FBESR%20Guide%20-%20Monitoring%20%26%20Troubleshooting.docx&baseUrl=https%3A%2F%2Fericsson.sharepoint.com%2Fsites%2FBTCNE669&serviceName=teams&threadId=19:01a10db88df04dcf9225cf8ae5bfd151@thread.tacv2&groupId=c6917bbd-d595-4ad4-8b98-e235dc38f8a5

16. BTCNE DL's (Distribution List)

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17. BCP Overview/Threats

- ✓ No specific runbook from client/customer side. (Prepared Internally)
- ✓ Main scripts are executed via single main server only (ark044)

S.No	Activities	Tools Used	BCP Plan
1	AESR Alarm Monitoring	Zabbix	Mapr dashboard, Hadoop Dashboard , Manual Monitoring via server login
2	Performing EEA Application/Server health check-up	Scripts placed on ARK044 server	Check with L2 team for placing of the scripts on some redundant ark server in case ark master server is down
3	BESR Alarm Monitoring	Zabbix	Manual Monitoring via server login
4	TT Creation	SMT Tool	Will prepare Excel Sheet with incident details and after the tools outage gets fixed will create TT.

Escalation Tier 1		Escalation Tier 2		Escalation Tier 3	
Team	**DL's (Tier 1)**	**Team**	**DL's (Tier 2)**	**Team**	**DL's (Tier 3)**
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S.No	Activities		BCP Plan
1	Hard Token locked/Password reset required	N/A	Refer BT hard token access & reset document.
2	Citrix Access	N/A	Email to TOC team & Duty Manager (+44 800 678 1657) and need to inform duty manager to raise the ticket for the tool outage.
3	SRA Access	N/A	Email to TOC team & Duty Manager (+44 800 678 1657) and need to inform duty manager to raise the ticket for the tool outage.

Team	DL's (Tier 1)	Team	DL's (Tier 2)	Team	DL's (Tier 3)
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18. Document Version History

Modified by (Name)	Date (dd/mm/yy)	Reason for Change