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Operation Process Reengineering of Mobile Network based on Incidents Management and Event Management

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ABSTRACT-

Analysis of performance monitoring process of Mobile communication network operation

I. Introduction

Mobile communication network operation process study, analysis, observation of performance criteria, investigation of performance factors, root cause analysis of process failures, resolution, and evaluation based on alarms and event management.

Context- As 5G and network application virtualisation adds new layers of technical and operational complexity to the network and the number of physical and virtual network elements grows significantly more operational automation capability is required to sustainably deliver the promised levels of efficiency, agility, and new service support to the customers.

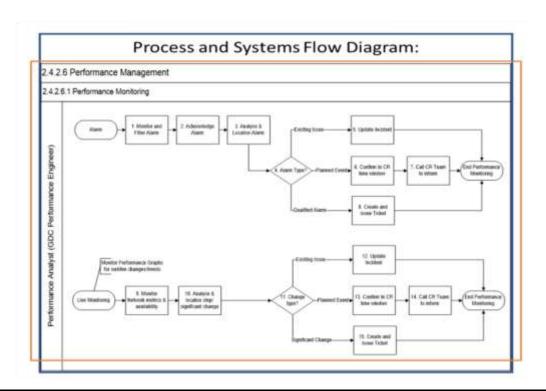
The Research focuses on:

- The optimisation and automation of operational tasks, aimed at increased consistency, efficiency, and accuracy, leading to improved network performance.
- Finding opportunities / use cases to reduce TCO of the network for the benefit of Telecom Operator (e.g., energy savings)
- The automation of E2E service practice provisioning, leading to improved network agility, shorter service deployment times and optimized resource usage.

The Research initial scope comprises of Three Use Case initiatives:

- UC04 Alarm Monitoring and Ticket Creation
- UC05 Auto Incident Creation for Environmental Alarms
- UC09 Auto incident creation for Performance Degradation

The research related to network monitoring and incident id creation, process flow of incident tracking, performance degradation and resolution with feedback.



II. Literature Review

- A) Project Charter
- i-Business Justification
- ii- Process Engineering
- iii-Purpose and scope
- iv-Domain Analysis
- B)-Out of Scope Documents
- C)-Assumption Documents
- D) Constraints Documents
- E) Stakeholders Analysis
- F) Meeting and Governance
- G) Change Management

III. Research Objectives

Research problem to address.

- i) Analysis on alarm monitoring process
- ii) Analysis on performance monitoring Process
- iii) Analysis on alarms monitoring resolution with feedback.
- iv) Analysis on Performance monitoring process and improvement

IV. Research Questions or Hypotheses

- >The Facility Domain accounts for 22% of all incidences created across all Domains. The fifteen environmental alarms targeted for auto incident creation in UC05 account for 99% of all alarm events within this Domain.
- >The 16 Radio alarms targets for auto incident creation in UC04 account for 97% of all alarm events within this Domain

>The Core Access Network Performance Domain accounts for 14% of all incidences created across all Domains. The 26 RAN alarms targeted for auto incident creation in UC09 account for 95% of all events within this Domain.

Questions: -

- a) How the domain accounts 22% of all incidents and 15 environmental alarms account for 99% of alarm events within this domain in UC-5?
- b) How the 16 radio alarm targets to 97% of all alarm events in UC-4 domain?
- c) How the 14 % of all incidents across all domains are accounted for 26 alarms in UC-09 domain?

V. Methodology

A. Research Approach:

Qualitative-Descriptive, Inquiry mode, Structured, Unstructured, Idea, Conceptual

Quantitative-Explanatory, Exploratory, Applied, Deductive, Empirical

B. Data Collection:

Interviews- Stake Holder needs to be approached for deductive research.

Experiments-Structured and Unstructured data needs to be ascertained through Records, Archives.

C. Data Analysis:

Spreadsheet, MS-XL, Power BI, Ms power point, Descriptive and Predictive Analytics.

D. Ethical Considerations:

All are confidential and sensitive to Organizational performance and perspective.

VI. Expected Outcomes

The current operating environment has an automation level of 9%. The level of automation after the implementation of the eleven Use Cases across domain, technology and service practice areas is depicted in the chart below. The automation level will be tracked as automation realisation is progressively achieved.

VII. Timeline of Research Completion

LAST UPDATED - WE 26/07/2023	2023						2024											
Time Line -Research	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Marci	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan
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Litreture Review																		
Research Design And Methodology																		
Data Collection	-		-		П						-		-					
	-																	
Data Analysis																		
Writing Research Papers																		
	_																	
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Results and Discussion	-	+	-				-											
	-				1													
Conclusuon and Recommendations																		
Finalization and Editing				1		_					_							
	-				-	-	-	1			-		1					
Submission and Defense Prepartion	+	+		1	-	\vdash	-	1			-							