Documentation of DMAT Tool

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Introduction  
  
The DMAT tool is a comprehensive solution designed to provide real-time monitoring and analysis for Android 5G NR and LTE devices. This powerful tool offers a range of features and functionalities that make it an essential asset for professionals and stakeholders in the telecommunications industry. With its compatibility with various Android devices, DMAT enables users to log and analyze data in real-time, allowing for quick identification and resolution of issues.  
  
One of the key features of DMAT is its Single-Sign-On (SSO) authentication, which provides a secure and convenient way for users to access the tool. Additionally, DMAT offers remote control features, enabling users to control and manage devices remotely, making it an ideal solution for large-scale deployments.  
  
DMAT's logging capabilities are another significant advantage, allowing users to collect and analyze data from various sources, including device logs, network logs, and application logs. This comprehensive logging capability enables users to gain valuable insights into device performance, network behavior, and application usage.  
  
With its advanced features and functionalities, DMAT is an essential tool for professionals and stakeholders in the telecommunications industry. Its compatibility, logging capabilities, SSO authentication, and remote control features make it an ideal solution for monitoring and analyzing Android 5G NR and LTE devices. Whether you are a network administrator, a device manufacturer, or a developer, DMAT is the perfect tool to help you optimize device performance, troubleshoot issues, and improve overall network quality.

**Purpose of the SDD**  
  
The Software Design Document (SDD) for the DMAT tool serves as a comprehensive blueprint for the software architecture, detailing specific design decisions and implementation strategies. The primary objective of the SDD is to provide a critical reference document for developers, testers, and stakeholders, ensuring alignment and coherence throughout the project lifecycle. The SDD facilitates effective communication and understanding among all project participants, helping to identify and mitigate potential risks and challenges early in the process.  
  
The SDD plays a vital role in maintaining consistency and clarity, ensuring that all aspects of the project are thoroughly documented and understood. It provides a detailed description of the software's architecture, components, and interfaces, enabling developers to implement the system efficiently. The SDD also serves as a guide for testers, outlining the expected behavior of the system and facilitating the creation of test cases.  
  
Furthermore, the SDD supports continuous improvement and future scalability of the DMAT tool. As the system evolves, the SDD provides a foundation for making informed design decisions, ensuring that changes are aligned with the overall architecture and goals of the project. The SDD is indispensable for the successful implementation, deployment, and maintenance of the DMAT tool, ultimately contributing to its long-term success and efficiency.  
  
In the context of the DMAT tool, the SDD is particularly important due to the complexity of the system's architecture and the need for precise documentation of its components and interfaces. The SDD ensures that all stakeholders have a clear understanding of the system's design and functionality, facilitating effective collaboration and communication throughout the project lifecycle.

**General Overview**  
  
The DMAT tool is a comprehensive monitoring and analysis solution designed for Android 5G NR and LTE devices. Its primary purpose is to provide real-time monitoring and analysis capabilities, enabling efficient device performance monitoring and facilitating various testing environments. With its advanced logging capabilities, DMAT enables effective data collection and analysis, making it an indispensable tool for testing and quality assurance teams.  
  
DMAT's compatibility with a wide range of devices is one of its key strengths, allowing users to test and analyze devices from various manufacturers. This broad compatibility provides numerous benefits, including the ability to test and compare different devices, identify potential issues, and optimize device performance.  
  
In addition to its technical capabilities, DMAT features a Single-Sign-On authentication mechanism, which enhances security and simplifies user management. This feature ensures that only authorized users can access the tool and its associated data, providing an additional layer of protection against unauthorized access.  
  
DMAT also includes remote control features that enable users to manage multiple devices simultaneously, improving operational efficiency and streamlining testing processes. This capability is particularly useful for large-scale testing environments where multiple devices need to be tested and analyzed concurrently.  
  
Furthermore, DMAT integrates seamlessly with existing post-processing tools, providing Verizon's testing teams with a robust and comprehensive testing solution. This integration enables users to leverage the strengths of different tools, streamline testing processes, and optimize device performance.  
  
In summary, DMAT is a powerful and versatile tool that enhances overall productivity and efficiency by providing comprehensive device performance monitoring and analysis capabilities. Its advanced logging features, broad compatibility, Single-Sign-On authentication, and remote control capabilities make it an essential tool for testing and quality assurance teams, while its integration with existing post-processing tools provides a robust and cost-effective solution for comprehensive device performance monitoring and analysis.

Key Pain Points Addressed  
  
The DMAT tool effectively addresses several key pain points associated with real-time monitoring and analysis of Android 5G NR and LTE devices. These pain points include inconsistent data collection, difficulty in managing multiple devices, and security concerns.  
  
Inconsistent Data Collection:  
The DMAT tool resolves issues related to inconsistent data collection by providing advanced logging capabilities. These capabilities enable the collection of accurate and reliable data, which is essential for effective device monitoring and analysis. The tool's logging features ensure that data is collected consistently, reducing the risk of errors and inconsistencies.  
  
Difficulty in Managing Multiple Devices:  
The DMAT tool simplifies the management of multiple devices through its remote control features. These features enable users to efficiently manage multiple devices simultaneously, reducing operational complexity. The tool's remote control capabilities allow users to monitor and analyze devices from a single interface, streamlining the management process.  
  
Security Concerns:  
The DMAT tool addresses security concerns through its Single-Sign-On (SSO) authentication feature. This feature enhances security by providing a single point of access for users, reducing the risk of unauthorized access. The SSO feature also simplifies user management, making it easier to manage user access and permissions.  
  
Integration with Existing Post-Processing Tools:  
The DMAT tool integrates with existing post-processing tools, streamlining the analysis process for testing teams. This integration enables users to easily analyze data collected by the DMAT tool, reducing the need for manual data processing. The tool's integration with existing post-processing tools also improves the efficiency and productivity of testing teams.  
  
In conclusion, the DMAT tool effectively addresses key pain points associated with real-time monitoring and analysis of Android 5G NR and LTE devices. The tool's advanced logging capabilities, remote control features, SSO authentication feature, and integration with existing post-processing tools make it an essential tool for device monitoring and analysis. By addressing these pain points, the DMAT tool improves efficiency, productivity, and overall performance in device monitoring and analysis.

**Use Case Solution**  
  
The DMAT tool empowers organizations to optimize their operations by providing a comprehensive solution for real-time monitoring, data collection, and analysis. In a real-world application, DMAT is effectively utilized in the telecom domain project, where it aggregates and filters mobile network data based on business requirements. The tool's ability to collect and process large amounts of data from various input files, such as mobile client, scanner user, and root matrix, enables organizations to gain valuable insights into network performance and device behavior.  
  
DMAT's secure access via Single-Sign-On ensures that only authorized personnel can access sensitive data, reducing the risk of data breaches. The tool's remote management capabilities allow users to manage multiple devices from a single interface, streamlining operations and improving efficiency. Additionally, DMAT's integration with post-processing tools, such as Elastic Search, enables organizations to further analyze and visualize their data, making it easier to identify trends and patterns.  
  
For instance, in the telecom domain project, DMAT is used to collect and process data from mobile networks, including device location and network strength. The tool's ability to filter and aggregate this data based on business requirements enables organizations to optimize their network performance and improve customer satisfaction. Furthermore, DMAT's integration with Elastic Search enables organizations to create customized reports and dashboards, providing valuable insights into network performance and device behavior.  
  
By utilizing DMAT, organizations can significantly enhance their operational efficiency, reduce complexity, and improve decision-making. The tool's real-time monitoring and analysis capabilities enable organizations to respond quickly to changes in network performance, reducing downtime and improving overall network reliability.

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Because available number difference point specific feature by anything out users there at certain much at want feature best once including several put.  
  
  
  
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**Scope of Proof of Concept (POC)**  
  
The Proof of Concept (POC) for the DMAT tool aims to validate the feasibility and effectiveness of the tool's key features and functionalities. The primary objectives of the POC are to:  
  
\* Test the real-time monitoring capabilities of the tool, ensuring that it can accurately track and display data in real-time.  
\* Evaluate the advanced logging capabilities, including the ability to collect, store, and analyze log data from various sources.  
\* Assess the Single-Sign-On (SSO) authentication feature, ensuring seamless and secure access to the tool.  
\* Validate the remote device management functionality, enabling administrators to manage and monitor devices remotely.  
  
The POC will focus on the following specific features and functionalities:  
  
\* Real-time monitoring: The tool will be tested to ensure that it can accurately display real-time data, including system performance metrics, network activity, and other relevant data.  
\* Advanced logging: The tool's logging capabilities will be evaluated to ensure that it can collect, store, and analyze log data from various sources, including system logs, application logs, and network logs.  
\* Single-Sign-On (SSO) authentication: The SSO feature will be tested to ensure that it provides seamless and secure access to the tool, eliminating the need for multiple usernames and passwords.  
\* Remote device management: The tool's remote device management functionality will be evaluated to ensure that administrators can manage and monitor devices remotely, including the ability to configure settings, update software, and troubleshoot issues.  
  
The criteria for success will be based on the following performance benchmarks:  
  
\* Real-time monitoring: The tool must be able to display real-time data with a latency of less than 1 second.  
\* Advanced logging: The tool must be able to collect and store log data from at least 5 different sources, with a storage capacity of at least 1 TB.  
\* Single-Sign-On (SSO) authentication: The SSO feature must provide secure access to the tool, with a success rate of at least 99%.  
\* Remote device management: The tool must be able to manage and monitor at least 10 devices remotely, with a success rate of at least 95%.  
  
The POC will also gather user feedback to identify areas for improvement and ensure that the tool meets the needs of its users.  
  
The key deliverables for the POC include:  
  
\* A comprehensive report detailing the results of the POC, including performance benchmarks and user feedback.  
\* A demo of the tool's key features and functionalities.  
\* A roadmap for the full-scale implementation of the tool, including timelines and milestones.  
  
The POC is expected to be completed within 6 weeks, with the following timeline:  
  
\* Week 1-2: Planning and preparation  
\* Week 3-4: Testing and evaluation  
\* Week 5-6: Analysis and reporting  
  
The outcomes of the POC will inform the full-scale implementation of the DMAT tool, ensuring that it meets the needs of its users and provides a robust and effective solution for real-time monitoring, advanced logging, Single-Sign-On authentication, and remote device management.

## Assumptions   
  
This section provides information about the key assumptions that are used for various facets in processing huge KDF format details given dataset depending specifically types utilizing datasets tool utilization available open key   
  
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**System Integration**  
  
The DMAT tool is designed to integrate seamlessly with existing systems, enabling users to leverage its features and functionalities within their current infrastructure. This section outlines the integration processes and procedures for the DMAT tool.  
  
**Integration with Verizon Systems**  
  
The DMAT tool is specifically designed to integrate with Verizon's systems, allowing users to access and utilize its features within their existing Verizon environment. This integration enables users to:  
  
\* Access DMAT reports and data within Verizon's systems  
\* Utilize DMAT's features and functionalities within Verizon's infrastructure  
\* Leverage Verizon's existing security and authentication protocols to access DMAT  
  
**Integration with Hadoop Cluster**  
  
The DMAT tool also integrates with Hadoop clusters, enabling users to:  
  
\* Push files to production  
\* Access and utilize Hadoop's data processing capabilities  
\* Leverage Hadoop's scalability and flexibility to support DMAT's features and functionalities  
  
**Integration with FTP Data**  
  
The DMAT tool integrates with FTP data, allowing users to:  
  
\* Access and utilize FTP data within DMAT  
\* Leverage FTP's data transfer capabilities to support DMAT's features and functionalities  
  
**Verification and Validation Procedures**  
  
To ensure seamless integration with existing systems, the DMAT tool undergoes rigorous verification and validation procedures, including:  
  
\* Prashasan verification  
\* Prashikshan verification  
\* Verification of data transfer and processing capabilities  
  
**Security and Authentication**  
  
The DMAT tool integrates with existing security and authentication protocols, ensuring that users can access and utilize its features and functionalities securely. This includes:  
  
\* Utilization of existing Verizon security protocols  
\* Authentication and authorization procedures to ensure secure access to DMAT's features and functionalities

Limitations / Out of Scope  
  
The DMAT tool is designed to provide a comprehensive analysis of network performance and quality. However, there are certain limitations and out-of-scope elements that users should be aware of.  
  
**Limitations:**  
  
\* The DMAT tool is only compatible with a limited number of devices (up to 20 devices). Users with a large number of devices may need to limit their analysis to a subset of devices.  
\* The tool's reporting capabilities are limited to a specific date range and may not be able to provide real-time data.  
\* The DMAT tool requires users to select specific KPIs and report types, which may limit the depth and breadth of analysis.  
  
**Out of Scope:**  
  
\* The DMAT tool is not designed for real-time network monitoring or troubleshooting. Users requiring real-time analysis may need to use a separate tool or application.  
\* The tool's map analysis feature is limited to a specific zoom level (lower than level 9) for detailed hex analysis. Users may not be able to perform in-depth analysis at higher zoom levels.  
\* The DMAT tool is not compatible with all devices or systems. Users may need to check compatibility before using the tool.  
\* The tool's customizable report templates are limited to the templates provided. Users may not be able to create entirely new templates or customize existing ones beyond the provided options.  
  
It is essential to note that these limitations and out-of-scope elements are subject to change and may be addressed in future releases of the DMAT tool. Users are encouraged to contact the support team for any questions or concerns regarding the tool's capabilities.

# High Level Architecture and Design  
  
## Overview  
The DMAT tool is designed to facilitate efficient data collection, processing, and storage. The high-level architecture of DMAT consists of multiple components that work together to provide a seamless user experience.  
  
## System Components  
The DMAT tool comprises the following key components:  
  
\* Data Extraction Module: This module is responsible for extracting data from various sources and converting it into a standardized format.  
\* Data Processing Module: This module processes the extracted data and transforms it into a structured format for storage.  
\* Data Storage Module: This module is responsible for storing the processed data in a temporary table (temp table) for efficient retrieval.  
  
## Data Structure and Schema  
The DMAT tool uses a predefined schema to represent the extracted data in a structured format. The schema consists of various key performance indicators (KPIs) that are used to store and retrieve data.  
  
## Data Storage Strategy  
To optimize data storage and retrieval, the DMAT tool uses a partitioning strategy. The data is partitioned based on a specific time interval (e.g., weekly) to ensure that the data is stored in a way that allows for efficient querying and analysis.  
  
## Automated Updates  
The DMAT tool provides a feature to automate updates to the data structure and schema. However, this feature is not currently implemented, and updates are done manually.  
  
## User Interface  
The DMAT tool provides a user-friendly interface that allows users to interact with the system and perform various actions, such as:  
  
\* Creating buildings and rooms for throughput testing  
\* Conducting throughput tests and viewing results  
\* Uploading results to the DMAT Server  
  
## DMAT Server  
The DMAT Server is a centralized repository that stores the results of throughput tests conducted using the DMAT tool. Users can access the server to view and analyze the results of previous tests.  
  
## High-Level Architecture Diagram  
  
The high-level architecture of the DMAT tool can be represented as follows:  
  
```  
 +---------------+  
 | Data |  
 | Extraction |  
 +---------------+  
 |  
 |  
 v  
 +---------------+  
 | Data |  
 | Processing |  
 +---------------+  
 |  
 |  
 v  
 +---------------+  
 | Data |  
 | Storage |  
 +---------------+  
 |  
 |  
 v  
 +---------------+  
 | User |  
 | Interface |  
 +---------------+  
 |  
 |  
 v  
 +---------------+  
 | DMAT |  
 | Server |  
 +---------------+  
```

**Security Procedures**  
  
**Overview**  
  
The DMAT tool is designed with security in mind to protect sensitive data and prevent unauthorized access. This section outlines the security procedures implemented in the DMAT tool to ensure the integrity and confidentiality of the data.  
  
**Authentication and Authorization**  
  
\* Access to the DMAT tool is restricted to authorized Verizon personnel and outside agencies with written agreement.  
\* Users are required to authenticate themselves before accessing the tool, ensuring that only authorized individuals can view and interact with the data.  
\* Role-based access control is implemented to restrict user access to specific features and data, based on their group membership and permissions.  
  
**Data Encryption and Storage**  
  
\* All data stored in the DMAT tool is encrypted to prevent unauthorized access.  
\* Data is stored in a secure environment, with access controls in place to prevent unauthorized access or disclosure.  
  
**Data Export and Sharing**  
  
\* Data export is restricted to authorized users, and only one log file can be exported at a time.  
\* Exported data is provided in a secure format (Excel file) with timestamp, ensuring data integrity and authenticity.  
\* Users can only export events or KPIs that they are authorized to access, based on their role and permissions.  
  
**Access Control and Auditing**  
  
\* All user activity is logged and monitored, including logins, data access, and data export.  
\* Audit trails are maintained to track changes to data and user activity, ensuring accountability and transparency.  
  
By implementing these security procedures, the DMAT tool ensures the confidentiality, integrity, and availability of sensitive data, protecting against unauthorized access and misuse.

Information Architecture - Data Flow  
  
  
1. **Data Extraction and Collection**  
 \* DMAT extracts and collects KPI (Key Performance Indicators) data from raw input files  
 \* Collected data is stored as log records and further converted into list data frames  
  
  
2. **Data Transformation and Saving**  
 \* Data from the collected list data frames are represented into structured high table  
 \* Inorder to provide more accessible understandable results   
   
 A. To extract insights KPIs for mobile towers, network analysis is done using 3 and 4 sparx  
  
  
3. **Data Processing and Aggregation**  
 \* Data is then stored in HDFS to HBase tables for easier data handling  
  
  
4. **Data Distribution**  
 \* We import for different version of project ftp sparx data in order for us for DMAT data extraction

**Design and Usability**  
  
The DMAT tool is designed to provide a user-friendly and efficient experience for generating custom reports and managing data. The tool's design and usability aspects are crucial in ensuring that users can easily navigate and utilize the tool's features.  
  
**User Interface**  
  
The DMAT tool's user interface is designed to be intuitive and easy to use. The tool's home page provides a clear and concise overview of the available features, including the ability to generate custom reports and create report templates. The user interface is organized in a logical and consistent manner, making it easy for users to find the features they need.  
  
**Report Generation**  
  
The report generation feature is a key aspect of the DMAT tool. The tool provides a step-by-step process for generating custom reports, including selecting data, specifying a date range, and choosing the desired KPIs. The tool's user interface guides the user through this process, making it easy to generate reports that meet their specific needs.  
  
**Custom Report Templates**  
  
The DMAT tool also allows users to create custom report templates. This feature enables users to save frequently used report settings and generate reports quickly and efficiently. The tool's user interface provides a clear and concise process for creating and managing report templates.  
  
**Usability Features**  
  
The DMAT tool includes several usability features that enhance the user experience. These features include:  
  
\* **Clear and concise instructions**: The tool provides clear and concise instructions for each feature, making it easy for users to understand how to use the tool.  
\* **Logical organization**: The tool's features are organized in a logical and consistent manner, making it easy for users to find the features they need.  
\* **Error handling**: The tool includes error handling features that prevent users from making mistakes and provide clear and concise error messages when errors occur.  
  
**Accessibility**  
  
The DMAT tool is designed to be accessible to all users, including those with disabilities. The tool's user interface is designed to be compatible with assistive technologies, such as screen readers, and provides clear and concise instructions for users with disabilities.

**System Design**  
  
### Overview  
The DMAT tool is designed to aggregate and filter mobile network data from various input files based on business requirements. The system architecture is divided into several components, each responsible for a specific task in the data processing pipeline.  
  
### System Components  
#### 1. Data Ingestion  
\* **FTP Server**: The FTP server receives raw mobile network data files from various sources.  
\* **Java Job**: A Java-based job, known as the "Status Copy" job, is used to copy data from the FTP server to the HDFS (Hadoop Distributed File System).  
  
#### 2. Data Processing  
\* **HDFS**: The raw data files are stored in HDFS, which serves as the input for the data processing pipeline.  
\* **Spark Job**: A Spark job is used to process the data stored in HDFS, converting it into a parquet file format.  
\* **5 Table**: The processed data is stored in a 5 table, where business rules and aggregations are applied.  
  
#### 3. Data Storage  
\* **5 Table**: The final processed data is stored in the 5 table, which serves as the output of the system.  
  
### System Flow  
The following steps describe the system flow:  
  
1. Raw mobile network data files are received by the FTP server.  
2. The Java job copies the raw data files from the FTP server to HDFS.  
3. The Spark job processes the data stored in HDFS, converting it into a parquet file format.  
4. The processed data is stored in the 5 table, where business rules and aggregations are applied.  
5. The final processed data is stored in the 5 table, ready for consumption.  
  
### Key Technologies Used  
\* **Java**: Used for the Status Copy job to copy data from FTP to HDFS.  
\* **Spark**: Used for data processing and conversion to parquet file format.  
\* **HDFS**: Used for storing raw and processed data.  
\* **5 Table**: Used for storing final processed data and applying business rules and aggregations.

**External Interfaces**  
  
The DMAT tool utilizes several external interfaces to facilitate data exchange, analysis, and reporting. The following external interfaces are used by the DMAT tool:  
  
### 1. Data Sources  
  
The DMAT tool interfaces with various data sources to collect and process data. These data sources include:  
  
\* **Device Data**: The tool collects data from up to 20 devices, which can be selected by the user.  
\* **Group Data**: The tool interfaces with group data, which is based on the user's membership.  
\* **State Data**: The tool collects data from different states in the United States.  
\* **Log Data**: The tool interfaces with log data, which can be selected based on different graphs.  
  
### 2. Reporting Interface  
  
The DMAT tool provides a reporting interface that allows users to generate custom reports. The reporting interface includes the following features:  
  
\* **Custom Report Generation**: Users can generate custom reports by selecting data, duration, and KPIs.  
\* **Report Download**: Users can download reports as PDF files.  
  
### 3. Spotlight Analysis Interface  
  
The DMAT tool provides a Spotlight Analysis interface that allows users to select multiple logs and save them as a Spotlight analysis entry. The Spotlight Analysis interface includes the following features:  
  
\* **Log File Filter**: Users can filter log files based on file names.  
\* **Spotlight Analysis Entry**: Users can save selected logs as a Spotlight analysis entry for future analysis.  
  
### 4. Elastic Search Interface  
  
The DMAT tool interfaces with Elastic Search to aggregate and insert data. The Elastic Search interface includes the following features:  
  
\* **Data Aggregation**: The tool aggregates data based on selected files.  
\* **Data Insertion**: The tool inserts aggregated data into Elastic Search.

**FAQs for DMAT Tool**  
  
**Q: What is the purpose of the DMAT tool?**  
A: The DMAT tool is designed to extract, collect, and store data into a list of log records, which can then be represented in a structured format for easy understanding.  
  
**Q: How does the DMAT tool store data?**  
A: The DMAT tool stores data in a temporary table, which can be read through or used to create a permanent table.  
  
**Q: What is the structure of the data stored by the DMAT tool?**  
A: The data stored by the DMAT tool is represented in a high-level structure, making it easy for anyone to understand.  
  
**Q: Can I use the DMAT tool to create a new subject?**  
A: Yes, the DMAT tool allows you to create a new subject by passing the proper names, dependent on your cluster.  
  
**Q: How do I update the schema of the DMAT tool?**  
A: To update the schema, you can import it from scratch or update the existing schema to a new version.  
  
**Q: Is there a UI available for the DMAT tool?**  
A: Yes, there is a UI available for the DMAT tool, which can be used for local setup and to view messages.  
  
**Q: Can I use the DMAT tool to monitor clusters and jobs?**  
A: Yes, the DMAT tool allows you to monitor clusters and jobs, making it easier to manage and troubleshoot issues.  
  
**Q: Is the DMAT tool compatible with both on-premise and AWS environments?**  
A: Yes, the DMAT tool is compatible with both on-premise and AWS environments, making it a versatile solution for different deployment scenarios.  
  
**Q: How do I create a schema for the DMAT tool?**  
A: To create a schema for the DMAT tool, you can follow the instructions provided, which include creating a temporary table and representing the data in a high-level structure.

**DMAT Tool User Stories**  
  
The DMAT tool is designed to provide users with a comprehensive platform for managing and analyzing data. The following user stories outline the key features and functionalities of the tool.  
  
**User Story 1: Custom Report Generation**  
  
\* As a user, I want to generate custom reports based on specific data criteria, including nationwide data, device, group, states, and logs, so that I can analyze data from multiple perspectives.  
\* I want to select a specific date range and Key Performance Indicators (KPIs) to include in the report.  
\* I want to download the generated report as a PDF file for further analysis and sharing.  
  
**User Story 2: Report Template Creation**  
  
\* As a user, I want to create custom report templates to save time and effort in generating reports with frequently used data criteria.  
\* I want to select KPIs, enter a template name, and choose a report type to create a template.  
\* I want to save the template for future use and make it accessible for easy report generation.  
  
**User Story 3: User File Management**  
  
\* As a user, I want to manage user files, including uploading and downloading files, so that I can access and share data with others.  
\* I want to view and manage files in different folders, including FTP data, staging data, and user directories.  
\* I want to ensure that files are properly organized and easily accessible for analysis and reporting.  
  
**User Story 4: Data Extraction and Analysis**  
  
\* As a user, I want to extract data from files and analyze it to gain insights and make informed decisions.  
\* I want to extract KPIs from files and create reports to visualize data trends and patterns.  
\* I want to analyze data in different formats, including DLF and CSV files, to ensure compatibility and ease of analysis.  
  
**User Story 5: Data Security and Access Control**  
  
\* As a user, I want to ensure that data is secure and access-controlled, so that sensitive information is protected from unauthorized access.  
\* I want to assign permissions and roles to users to control access to data and reports.  
\* I want to ensure that data is encrypted and protected from unauthorized access or breaches.

Testing and Validation   
  
6Auto Test and Antenna Venue Testing and Validation, Building Based and Device End point Device Automated Features Tests

# Deployment and Maintenance Plan  
  
This document provides detailed steps to effectively plan for deploying the Distributed Meta-Multiprotocol Augment Transmission, ‘(DMAT tool successfully without extensive instructions concerning necessary execution so implementation flows or getting high outbuild according simple rule get standard make application a highly get you flow necessary working smoothly quickly no experience difficulty maintaining because understand once plan its different function other side does easier well is be information are next case same action such everything over  
  
  
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Appendix  
  
A. DMAT Tool Overview  
  
The DMAT tool is a data extraction and storage utility designed to collect and process large datasets. It provides a structured approach to data collection, allowing users to extract information from various sources and store it in a centralized repository.  
  
B. Technical Specifications  
  
\* The DMAT tool is built using a combination of programming languages, including Python and SQL.  
\* It utilizes a modular architecture, allowing for easy integration with various data sources and storage systems.  
\* The tool supports multiple data formats, including CSV, JSON, and XML.  
  
C. Data Processing and Storage  
  
\* The DMAT tool uses a data processing engine to extract, transform, and load (ETL) data from various sources.  
\* It supports data partitioning and mapping, allowing for efficient storage and retrieval of large datasets.  
\* The tool provides data validation and quality control features to ensure data accuracy and consistency.  
  
D. Debugging and Troubleshooting  
  
\* The DMAT tool provides a built-in debugger for troubleshooting and testing data processing workflows.  
\* It supports logging and error tracking, allowing users to identify and resolve issues quickly.  
\* The tool provides a user-friendly interface for monitoring data processing and storage operations.  
  
E. Security and Access Control  
  
\* The DMAT tool provides robust security features, including data encryption and access control.  
\* It supports user authentication and authorization, allowing administrators to control access to sensitive data.  
\* The tool provides auditing and logging features to track data access and modifications.  
  
F. Scalability and Performance  
  
\* The DMAT tool is designed to handle large datasets and high-volume data processing workloads.  
\* It supports distributed processing and parallel processing, allowing for efficient scalability and performance.  
\* The tool provides optimization features for improving data processing and storage efficiency.