

Details of IT systems implemented/under implementation in MAHAGENCO

(Sr. No. 6)

Procurement and Implementation of FRS Biometric Attendance System

1. Biometric attendance is essential for employees and contract Labours in Mahagenco for marking attendance.
2. Considering the risks of contact-based attendance systems, FRS which is contactless attendance system is suitable for Mahagenco.
3. FRS system will help to improve efficiency in monitoring the attendance, leave record and overall working environment.
4. It will provide interface for the recording attendance in ERP-SAP System for all MAHAGENCO Employees.

Benefits –

1. Increased accuracy: Face recognition systems use advanced algorithms to identify unique facial features and can accurately identify individuals even in low-light or crowded environments.
2. Time-saving: Face recognition systems can quickly and efficiently record attendance, reducing the time and effort required for manual sign-in processes.
3. Increased security: Face recognition systems can ensure that only authorized individuals are able to access a facility or building, reducing the risk of unauthorized access.
4. Automated attendance tracking: Face recognition systems can automatically record attendance data, eliminating the need for manual data entry or tracking.
5. Cost-effective: Face recognition systems can be cost-effective in the long run as it eliminates the need for manual attendance tracking methods, security personnel to monitor the gate and more.
6. Contactless: As it is a contactless system, it reduces the risk of virus transmission.

(Sr. No. 11)

Microsoft office 365 E1 Plan

MAHAGENCO has implemented the Enterprise Mailing solution services for 1200 Mail IDs with Microsoft O365 E1 plan.

Following features are being used by end users from the Enterprise Mailing Solution (Microsoft office 365 E1 Plan)

- 1) Web version of word, Excel, PowerPoint, OneNote, Outlook
- 2) 1 TB Cloud Storage (OneDrive for Business)
- 3) Email (50 GB Mailbox), Calendar
- 4) Online meetings. IM
- 5) Communication & Team Site (SharePoint)
- 6) Teams (Video/Audio Conferencing & Collaboration)
- 7) Enterprise Social (Yammer)
- 8) Manage Task & Teamwork (Planner)
- 9) Active Directory Integration etc.

Since the implementation of the Microsoft O365 E1 Plan email solution, the benefits are as under:

- 1) MAHAGENCO users are experiencing secured, stable and reliable un-interrupted email service, with the mailbox size of 50 GB.
- 2) Online meetings conducted on Teams meeting.
- 3) 1 TB cloud storage (OneDrive for business) providing the facility to share files and collaborate on documents and sync files with the computer.
- 4) Backup the important files on OneDrive

Requirement – 1200 Mail IDs with Microsoft O365 E1 plan.

(Sr. No. 12)

Microsoft office 365 E3 Plan

MAHAGENCO is availing Enterprise Mailing solution services for 50 nos. email Microsoft O365 E3 plan with managed services. Following features are being used by end users from the Enterprise Mailing Solution (Microsoft office 365 E3 Plan)

Sr. No.	Features
1	Primary Mailbox: Minimum 100 GB, Calendar
2	Mail protection with Anti-virus/ Anti-spam
3	Teams (Video/Audio Conferencing & Collaboration)
4	Microsoft Office Online with Word, Excel, PowerPoint, OneNote, Outlook etc
5	Manage Tasks & Team works (Planner)
6	Communication & Team Site (SharePoint)
7	Enterprise Social (Yammer)
8	Collaboration Platform having capabilities of Chat, Note taking, file-sharing, Live broadcast, Recording with Live Captions, Team Sites, Microsoft Teams, Yammer, Planner, etc.
9	Online Meetings, IM
10	Protection for Mail, SharePoint, OneDrive, OneNote, Microsoft Flow, Sway, Teams Instant Messaging and PowerApps.
11	Accessibility from multiple devices like Tablets, Mobile Phones, Laptops, Desktops, etc. and capability to maintain sync.
12	Active Directory Integration etc.
13	Unlimited archive mailboxes storage

Since the implementation of the Microsoft O365 E3 Plan email solution, the benefits are as under:

1. MAHAGENCO users are experiencing secured, stable and reliable un-interrupted email service, with the mailbox size of 100 GB.
2. Online meetings conducted on Teams meeting.

3. Microsoft 365 apps for desktop and mobile.
4. Windows for Enterprise.
5. Core security and identity management capabilities.
6. 1 TB cloud storage (OneDrive for business) providing the facility to share files and collaborate on documents and sync files with the computer.
7. Backup the important files on OneDrive

Requirement – 50 Microsoft O365 E3 subscription

(Sr. No. 13)

Microsoft O365 Apps Enterprise Subscription and Microsoft Copilot

MAHAGENCO is utilising Microsoft O365 Apps Enterprise Subscription for 600 nos. that includes Word, Excel, Powerpoint for carrying day-to-day office related activities through end-point devices (Desktop/Laptops/Thin Clients etc) for the day to day activities.

For using a Microsoft product, it is required to comply the Licensing Policy of Microsoft.

Key features of Microsoft Copilot for Microsoft 365:

- **Integration:** Copilot seamlessly integrates with familiar applications like Word, Excel, PowerPoint, Outlook, and Teams.
- **Functionality:** It offers a variety of functionalities, including content creation, data analysis, summarization, automation, and collaboration, all tailored to specific work context.
- **Learning:** Copilot is designed to learn and adapt to preferences over time, continuously improving its assistance.
- **Customization:** Through Microsoft Copilot Studio (Preview), we can personalize Copilot's behavior to better suit our needs.
- **Security:** Microsoft prioritizes enterprise-grade security, privacy, and compliance with Copilot.

Renewal 600 nos licenses for MS-Office Apps Subscription is required to utilize MS-Office Apps across all the locations.

Benefits of legal License Software;

- Mandatory for using MS-Office Apps
- Improved security
- Improved functionality
- Continuous innovation
- Software upgrade
- Security patches

Microsoft Copilot for Microsoft 365 seems like a promising tool to streamline workflow and empower to achieve more within the Microsoft ecosystem.

Requirement – 600 Microsoft O365 Apps Enterprise Subscription and 05 Microsoft Copilot.

(Sr. No. 14 and Sr. No. 15)

Hosting DSM, Mobile Application and Website Servers on STPI Cloud (DC and DR)

As per MERC DSM Regulations 2019, it has been directed to implement Deviation Mechanism Settlement (DSM) in Power Generating stations for a regulatory mechanism for treatment and settlement of deviation from schedule of drawal or injection of electricity in the interest of reliability, security and stability of the grid. As per guidelines received from MERC, DSM application is designed, developed & hosted in-house by MAHAGENCO IT and deployed for Thermal/Gas Turbine units across MAHAGENCO. IT section has also developed a dashboard as Centralized Monitoring Application for management. For accessing the dashboard, it was required to host the consolidated DSM at central location.

MAHAGENCO's existing website is an essential information portal. Website hosting is a service that makes website available on the internet. Indian Government has recommended and mandated the use of HTTPS for Government websites to ensure security, data integrity, and user privacy. MAHAGENCO has implemented security certificates on all its domains. These Wild cards certificates are being renewed yearly on all its domains. It is required to render the services for the renewal of Wildcard SSL Certificate (for the domain *. mahagenco.in).

The mobile application will provide convenient access to critical information and services, to stay updated with MAHAGENCO's operations, projects, and activities.

Requirement – Hosting DSM, Mobile application and Website Server on Cloud alongwith Disaster Recovery (DR).

(Sr. No. 16)

Design, Development and Maintenance for MAHAGENCO website <https://www.mahagenco.in> and services for developing and maintenance Mobile application.

Maharashtra State Power Generation Company Limited (MAHAGENCO) is a significant power generating company in India, dedicated to providing reliable and sustainable electricity. With a growing digital landscape, MAHAGENCO recognizes the importance of enhancing its online presence to better serve the public. To achieve this goal, MAHAGENCO proposals for a comprehensive revamp of its existing website and the development of a dedicated mobile application. The project encompasses the migration, redesign, redevelopment, and ongoing maintenance of the website, alongside the development and maintenance of a mobile application.

MAHAGENCO's existing website is an essential information portal. However, over time, it has faced challenges regarding user experience, security, accessibility, and responsive design. The information is scattered across the site, and the user interface is outdated. To address these issues, MAHAGENCO aims to revamp the website with a fresh look, improved functionality, and a user-friendly interface.

In addition to the website redesign, MAHAGENCO recognizes the significance of offering its users a dedicated mobile application. The mobile application will provide convenient access to critical information and services, to stay updated with MAHAGENCO's operations, projects, and activities.

Government of India has formulated GIGW 3.0 guidelines jointly with Standardization Testing and Quality Certification (STQC) Directorate of the Ministry of Electronics and Information Technology and Indian Computer Emergency Response Team (CERT-In) in Mar'2023. These guidelines are to be incorporated in MAHAGENCO website. Mobile applications can help businesses to improve efficiency, increase productivity, and make better decisions.

Requirement – In view of the expiry of Website contract and newly directed GIGW guidelines, and requirement of Management for Mobile Application, render the services for Migration, Re-Design, Re-Development and Maintenance for MAHAGENCO website <https://www.mahagenco.in> to keep website up and running smoothly and render the services for developing and maintenance Mobile application.

(Sr. No. 17)

Augmented reality (AR)

Augmented reality (AR) is a technology that combines the virtual world with the real world, allowing users to interact with digital content in their physical environment.

AR is executed through a device such as a smartphone, tablet, or smart glasses. These devices use cameras, sensors, and algorithms to detect and track the real-world environment. Then, virtual objects or information are rendered and displayed in real-time, appearing as if they are part of the physical surroundings.

AR is beneficial in various industries including education, power generation, manufacturing, healthcare, architecture etc. It has the potential to revolutionize the way we interact with digital information, bridging the gap between the physical and digital realms.

AR is majorly being used in the industry sector to provide real-time data, instructions, or visualizations to assist workers in performing tasks more efficiently and accurately.

Use of Augmented Reality in Power Sector

Augmented reality (AR) can be applied in the power generation sector to improve operational efficiency, maintenance processes, and worker safety.

In addition to this, AR can be used for:

- **Training and Simulation:** AR can be utilized to train power plant operators by creating virtual simulations of power generation processes. This enables hands-on training in a safe and controlled environment, enhancing learning effectiveness and reducing the risk of errors during actual operations.
- **Maintenance and Repairs:** AR can assist maintenance technicians by providing real-time information and guidance during repair and maintenance activities. By wearing AR devices, technicians can overlay digital instructions, schematics, and equipment data onto the physical components they are working on. This helps **streamline the troubleshooting process, reduces downtime, and improves the accuracy and speed of repairs.**
- **Remote Assistance:** AR can enable remote experts to provide guidance to on-site technicians in real-time. By using AR-enabled devices, technicians can share live video feeds of their surroundings with remote experts. This can reduce the need for travel and minimize downtime by resolving issues faster.
- **Safety and Emergency Response:** AR can enhance worker safety by providing real-time hazard detection and warning systems. In emergency situations, AR can provide evacuation routes, emergency procedures, and instructions for handling critical situations.

These applications of AR in the power generation sector can help optimize operations, provide expert support in maintenance activities, reduce cost, improve safety, and enhance the overall efficiency of power plants.

Requirement – Total 40 nos. of Augmented Reality Hands Free Head Mounted Computer along with accessories and software license for RM (Remote Monitoring) and DW (Digital Workflow) application for 36 months along with Comprehensive AMC for 2 years after warranty period of 12 months this includes spares for hardware at various location of MAHAGENCO.

(Sr. No. 28)

ISO 27001:2013 Re-certification for IT & OT infrastructure in MAHAGENCO for 3 Yrs.

As per CERT-In, NCIIPC, MOP, GOM Guidelines for identifying the Critical Information Infrastructure (CII) for MAHAGENCO and streamline the IT services and IT security policies as per the ISO standard 27001:2013 for Information Security Management.

MAHAGENCO has implemented ISO27001: 2013 Certification for yr. 2018-19 and continues improvement for yr. 2019-2020 and yr. 2020-2021 for its IT Department at 17 locations mentioned in the scope including its Data Centre facility in Dharavi Mumbai. The certificate is valid up to 24-02-2022 and intends to hire a consultant who will help for Re-Certification of ISO27001: 2013.

Benefits –

- 1) Identification of Critical Information Infrastructure.
- 2) GAP Assessment for current documented MAHAGENCO's IT Security Policy, Security Framework by NCIIPC, implemented controls and other requirements.
- 3) Recommendations and support required to streamline the controls in view of Cyber Security and Gap assessment.
- 4) Helping MAHAGENCO team in implementing ISO 27001: 2013 Controls Implementation Support.
- 5) ISO 27001: 2013 Re-Certification.

(Sr. No. 31)

Manage, Detection and Response MDR subscription for 36 Months

During an incidence of malware infection in MAHAGENCO IT Network, National Critical Information Infrastructure Protection Centre (NCIIPC) shared threat alert regarding persistence of Threat Actors in the IT Network of MAHAGENCO. During the visit, team found security gaps, vulnerabilities, mis-configuration and accordingly guided MAHAGENCO for requisite actions.

The final Incident Response Report was submitted by Dy.DG, NCIIPC along with the findings and the recommendations. In the report, it is stated that-

There is no Cyber Security Operation Center (C-SOC) for preventive, detective and corrective controls to secure against advanced, malicious activities and emerging cyber threats.

And recommended as:

As part of the long-term strategy, Organisation shall establish a Cyber Security Operation Center (C-SOC) using tools and technologies to implement preventive, detective and corrective controls to secure against advanced and emerging cyber threats. In addition, Cyber Security Operation Center is to be utilised for identifying unauthorized access, unusual and malicious activities, by analysing the logs on regular basis.

Benefits –

The Sophos MDR Complete service is a dedicated, round-the-clock team of threat hunters and response experts who constantly scan for and act on suspicious activity.

Key Capabilities of MDR are:

- 24/7 Threat Monitoring and Response
- Compatible with Non-Sophos
- Full-Scale Incident Response
- Weekly and monthly Reporting
- Provides Adaptive Cyber Security Ecosystem
- Expert-Led Threat Hunting
- Dedicated Incident Response Lead
- Root Cause Analysis
- Continuous endpoint Health Check-up
- Threat Containment

(Sr. No. 32)

Upgradation of existing Sophos XG firewall to Sophos XGS with 3 yr subscription

As per Cyber Security & NCIIPC guidelines, a dedicated Firewall is necessary to secure the IT perimeter of the office for every organization. In the view of increased Cyber Security threat across the globe, The Hardware Firewall has become mandatory to provide overall IT security in addition to Unified Threat Management at perimeter level. Also, the identification of zero-day attacks and increased frequency occurrences of new sophisticated viruses, malwares, spywares etc. it has become utmost important to have Advanced threat protection mechanism to identify and rectify the similar cyber threats in real time.

Benefits –

Upgrading to an XGS firewall significantly strengthened network security and performance. XGS firewalls provide advanced threat protection through real-time analysis, machine learning, and AI-driven insights, enabling the detection of sophisticated cyber threats such as zero-day attacks and advanced malware. With superior performance, XGS firewalls handle higher traffic volumes with minimal latency, ensuring

seamless operations. Enhanced visibility and granular control over applications, users, and devices is achieved, allowing for better policy enforcement and traffic management. Additionally, XGS firewalls provide robust SSL/TLS inspection, ensuring encrypted traffic is secure without compromising performance. Unified security management and detailed reporting make it easier to monitor network health, ensuring regulatory compliance while reducing operational complexity. This upgrade resulted in a more secure, efficient, and scalable network infrastructure.

(Sr. No. 38)

Memory (RAM) for ECP HANA in ERP Landscape space & Disk space in SAP BW landscape

To maintain the SAP ERP & SAP BW landscape and System availability for 24*7, the resources including CPU/Processing, Disk Space and Memory (RAM) are allocated.

HANA utilized the combination of Hardware and Software innovations to deliver the results. Simple HANA Box would be a multi-core (64 to 1000 CPU's) machine with huge amount of RAM (main memory) 100'sGB to 2 TB of memory. An SAP HANA system consists of multiple services that all consume RAM memory and stores all data in Memory (RAM), hence SAP-Hana system is Memory (RAM) dependent.

For additional memory requirement needs to Upgrade the HANA box.

SAP BW is also a development platform that programmers use to create and modify data warehouses, perform data management tasks, generate reports and develop analytics applications. SAP BW allows for defining data warehouse objects like data sources, data stores and queries. Using this features and accessing the SAP BW through an application Mahagenco has develop the SAP Dashboard which use to view various dashboard reports.

Hence, the disk space of BW landscape get occupied at higher rate as it depends on the processing of BW system. As per the current growth trends, SAP BW system is growing at concerning rate than the currently allocated capacity.

Requirement - The additional disk space of **2200 GB** at production and quality system of SAP BW system and the additional of **1280 GB** Memory (RAM) at production and quality system of SAP ECP HANA DB system.

(Sr. No. 39)

Multi Factor Authentication Solution for MAHAGENCO's SAP Fiori Dashboard.

MAHAGENCO all the services available on SAP Fiori Dashboard (<https://dashboard.mahagenco.in>) are accessible from Internet as well as Intranet.

Considering the accessibility of SAP Fiori Server via Internet, an additional level of cyber security measures is utmost essential and recommended. As per reference no. 2, a Guideline from the Government of India (Ministry of Power) regarding mitigating cyber-attacks at the organizational level, every Internet facing application/portal should have

Multi Factor Authentication to secure the identity-based access to sensitive & confidential information.

Requirement:

MFA services for 6300 Users.

(Sr. No. 40)

ATS/ AMC of Customized Access in FOIS from M/s. Centre for Railway Information System, Indian Railway.

MAHAGENCO's SAP-ERP requires RR Data in electronic form for Fuel Management Process Module (FMP). It is utmost essential to have continuous access in FOIS from M/s. Centre for Railway Information System, Indian Railway.

CRIS-FOIS (Indian Railways) connectivity (interface) with the MAHGENCO SAP System is required to fetch the voluminous Railway Receipt (RR) information directly into SAP system. As the RR detail information is readily available for all MAHAGENCO Thermal Plants in SAP-FMP module it has following benefits:

- Users need not to create RR manually and can transact/process readily available RR information in SAP
- Automated process saves man power, efforts, time and avoid manual errors
- The RR information is available in the SAP system before actual rake receipt at plant this enables better coal inventory management and planning at plant and HO.

Requirement:

AMS/ATS of the customized access of FOIS.

(Sr. No. 41)

SAP Analytics Cloud subscription

The SAP analytic Cloud base license was implemented in Mahagenco for design & development of analytical reports in SAP-ERP system since 03/01/2020 from OEM M/s SAP India Pvt Ltd.

The SAC analytic Cloud base license has following items:

- SAP Analytics Cloud for bi, predictive edition, public option (user) -100 Quantity
- SAP Analytics Cloud for planning, predictive professional edition, public option –1 Quantity
- SAP Analytics Cloud for planning, predictive standard edition, public option –1 Quantity

With help of SAP Analytical Cloud, the reports related to MORM, HR, PTP, Finance etc. are developed, which are being regularly used for analysis.

Requirement- Renew the SAP Analytics Cloud subscription

(Sr. No. 42, 43)

SAP HEC & AMS

SAP-HANA being propriety SAP and for all aligned required services like HANA hosting, HANA implementations/maintenance. The primary characteristic of HEC is that it is a complete managed service by which SAP provided the infrastructure as well as the deployment and management of the applications. The data centers are run entirely by SAP's application management services team.

Annual Maintenance Support (Annual Services) is required for maintaining the implemented solutions and to configure the new requirements/changes/faults end-to-end Technical and Functional Support.

As aware, all the business processes are working in SAP only and SAP has become backbone business system for the MAHAGENCO day to day working. Hence, it is mandatory to maintain the SAP systems on high availability with priority.

Requirement:

- **SAP HANA Enterprise Cloud (HEC) Services**
- **SAP Annual Maintenance Support (AMS) Service**

(Sr. No. 44, 49)

Upscaling disk space storage for of SAP BW, SRM and Cfolder Production system.

In SAP SRM (Supplier Relationship Management) module, Cfolder is used as a document management system to manage and store various types of documents related to procurement processes. Cfolder provides a central repository for all documents related to procurement such as contracts, purchase orders, invoices, and other related documents.

Disk space gets full, the SAP BW, SRM and Cfolder system will stop functioning and it will directly impact the SAP BW, SRM production and quality system processes as well as the tendering process of MAHAGENCO.

Requirement:

System-wise additional disk space

BWP PROD: 1000 GB

SRM PROD: 1100 GB

C-Folder: 200 GB

(Sr. No. 45)

SAP Learning Hub

MAHAGENCO SAP Landscape is currently hosted on SAP-HEC (HANA enterprise cloud) having its ECC 6.0 EHP 7 system running on HANA DB and other systems like PO/PI, BW, SRM, cFolders, DMS, Fiori, Solman etc. on SAP-ASE DB.

Considering the technology changes, to maintain this landscape SAP Core team & Users are required to be UpToDate with recent SAP module changes and functions.

To address these challenges there are multiple options available viz. Books, eBooks subscriptions, SAP Training (Class room & Virtual), SAP Learning Hub, etc.

SAP Learning Hub:

A complete cloud-based SAP enablement solution that provides 24/7 unlimited access to SAP education content, including e-learning, e-books, interactive learning rooms, delta trainings and learning journeys to guide you through your training.

Requirement:

Subscription of SAP Learning Hub to SAP Core team (IT & FUNCTIONAL) for one year.

(Sr. No. 46)

Procurement of License & Implementation of Governance, Risk and Compliance (GRC) solution.

GRC for SAP-ERP systems is essentially about setting up a framework of different rules, policies and procedures including

- Segregation of Duties,
- User Activity Monitoring,
- Privileged Identity Access Information,
- SoD Compliant Provisioning,
- Role Design and Management,
- Continuous Controls Monitoring around key processes and systems to identify the possible Access and Process Risks which are applicable for the organization and thereby define the necessary mitigation controls to comply.

Out of above areas of monitoring & controls, establishing a framework for SOD Management and Monitor User Activities are required for MAHAGENCO's SAP landscape. After successful implementation of these GRC modules, the remaining modules will be evaluated & separate proposal will be initiated for the same, if required.

The SAP recommends to store transaction & audit logs of each, and every transaction & action made by the users in the SAP system for minimum 2 days and maximum up to 7 days. Storing of audit logs more than recommendation degrades the overall SAP system performance.

Requirement:

License Subscription for GRC solution having

- i. Access Control or Segregation of Duties Module
- ii. User Historical analysis (Transaction analysis through audit logs)

for MAHAGENCO's SAP ECC & other ABAP systems for 6300 SAP user licenses along with the installation and opting the ATS with 5 Years commitment.

Renewal of SAP-Annual Technical Support (ATS) for complete MAHAGENCO SAP-ERP Landscape

MAHAGENCO is availing ATS service from M/s SAP India Pvt. Ltd. for the implemented ERP Landscape.

- Annual Technical Support (ATS), an Annual Services, is SAP Standard Software Support for SAP services. ATS is charged to customers by M/s. SAP toward ensuring customers have access to the latest technologies and tools, as well as access to SAP experts and to have regular updates and support for SAP Application/ Licenses.
- ATS charges are 22% of SAP License cost for every year.

The detail scope of Sap Annual Technical Support (ATS) is as under,

- Annual Technical Support (ATS), an Annual Services, is SAP Standard Software Support for SAP licenses.
- Provide prompt and reliable response to technical disruptions
Get round-the-clock support for mission-critical business processes and access to SAP Service Marketplace and SAP Notes – both online support portals for SAP end-users.
- Keep SAP systems up and running with regular systems health check and maintenance.
- Check your SAP system for any systems integrity issues
Verify with these diagnostic tools - SAP Early Watch Check, Total Quality Check for Implementation, SAP Going-Live Check services, SAP OS/OB Migration Check and Total Quality Check for business processes performance optimization.
- Get FREE 24/7 online access to SAP Enterprise Support Portal
This means getting latest software updates as well as expert support from the SAP support advisory center, and access to SAP Solution Manager and SAP Enterprise Support Academy - an online learning platform.
- **Requirement**

SAP-ERP ATS service renewal

(Sr. No. 49)

Implementation of E-invoicing

‘E-invoicing’ or ‘electronic invoicing’ is system in which Business-to-business (B2B) invoices are authenticated electronically by GST for further use on the common GST portal. All the Sales transactions, where GST is applicable and where Sale is to a GST Registered customer, the e-invoice has to be generated. An e-invoice may need

to be reported first to the government system to be validated against e-invoicing guidelines before it is passed on to the buyer either by the vendor or by the government itself.

The GST is collected by MAHAGENCO on supply of Goods or Services, the E-invoice is required to be generated from SAP system which will be available for upload to GST portal.

Requirement:

E-invoicing Application for Mahagenco.

(Sr. No. 50)

Hosting Apache Tomcat Server Landscape for SAP SRM Payment Gateway

- MAHAGENCO has implemented SAP-Supplier Relationship Module (SRM), for the purpose of carrying out eTendering/Auctions of MAHAGENCO. In the SRM landscape, the Apache Tomcat Server acts as payment Gateway in the MAHAGENCO SAP –SRM Landscape and used for the process of tender fees, EMD Vendor - Renewal, Vendor – Registration, etc.
- This TOMCAT server is not a part of SAP-HEC landscape and presently the services are rendered separately from M/s ESDS Software Solutions Pvt LTD, Nashik.
- As per the timely guidelines from cert-in and NCIIPC, to mitigate with the ongoing cyber-attacks security managed services for networks and servers are important and required on the servers which are hosted on cloud. Security managed services opted for hosting of tomcat server are Managed Service, Antivirus+HIPS Primary and DR, DDOS , vWAF for primary site, SIEM.

Requirement

Hosting Apache Tomcat Server Landscape for SAP SRM Payment Gateway on confirmatory basis.

(Sr. No. 51)

SAP AMS Additional Hrs

The present AMS contract is utilised from the above it is envisaged that the hours utilised is more than the hours available. Hence, in case of exhaust of AMS hours, it may not be possible to get the services from the present AMS contract.

Requirement:

Additional hours for developing the new functionality of all modules is 1074 Hours.

(Sr. No. 52, 53)

Upgradation of MAHAGENCO SAP landscape's to RISE WITH S/4 HANA

MAHAGENCO's existing SAP-HEC contract is expiring on January'2024 and ATS expiring on December'2023. Meanwhile, SAP informed that as per SAP roadmap, HANA Enterprise Cloud(HEC) will be formally retired by SAP from 2024 and the SAP-ECC and SAP-SRM announced an end of mainstream support for ECC and SRM by December'2027. In view of this, MAHAGENCO HEC will not be renewed by SAP. SAP S/4 HANA is next version of SAP-ECC and SAP-RISE is an alternative to HANA Enterprise Cloud(HEC). SAP customers have to migrate on new SAP version i.e. SAP RISE with S/4 HANA.

Considering the above, this office has to initiate the proposal for upgrading MAHAGENCO SAP landscape to RISE with S/4 HANA and related services from August-2023 to December'2027 – as SAP ECC & SRM retiring on December'2027.

To upgrade existing landscape to RISE with S/4 HANA, following activities are required,

- To setup S/4 HANA Project period infrastructure
- Migrate existing SAP-ECC to S/4 HANA - Technical Upgrade

Migrate or Lift 'N' Shift MAHAGENCO HEC to RISE – Cloud

Requirement:

- RISE with SAP Private Cloud Subscription Fee for 50 months
- Consulting for S/4 HANA Technical Upgrade

(Sr. No. 54)

Procurement, Installation, Commissioning and Maintenance of Smart Rack Solution

1. Critical and important applications and data is stored on Servers which are installed in Racks at Dharavi Office.
2. Non-IT System such as air conditioning, UPS, Rodent, humidity sensor are having issues since these have become old.
3. Due to water leakage at Dharavi office it has become necessary to install all servers, UTMs, Core Switches in Smart Rack which will have redundant Infrastructure.

Benefits-

1. The smart server rack is 42U Rack with separate/embedded utility for AC, PDUs, UPS, KVM switches and console for monitoring online conditions of the Smart Rack.
2. Servers, UTM devices, switches are to be installed in the smart server rack.
3. As the ACs, UPS and Safety equipment are available in separate /embedded utility there is no need to maintain it separately thereby reducing the maintenance cost.
4. Smart Rack provides safety and security to the servers and devices as these are enclosed in closed rack with cooling and backup facility.
5. Smart Rack provides the comfort to standardize the deployment of equipment.

5 By installing smart rack maximum uptime can be ensured as real time monitoring of cooling, backup, humidity is taking place in Smart Rack.

(Sr. No. 55)

Procurement, Installation, Commissioning and Maintenance of Backup Solution

During an incidence of malware infection in MAHAGENCO IT Network, National Critical Information Infrastructure Protection Centre (NCIIPC) shared threat alert regarding persistence of Threat Actors in the IT Network of MAHAGENCO. During the visit, team found security gaps, vulnerabilities, mis-configuration and accordingly guided MAHAGENCO for requisite actions.

The final Incident Response Report was submitted by Dy.DG, NCIIPC along with the findings and the recommendations. In the report, it is stated that-

In the finding at sr.no.15 in the report, it is recommended that Incremental backup shall be maintained, and requisite cyber security drills shall be undertaken, and natural/manmade hazards shall also to be considered to check the efficacy of business continuity plan.

Key features of the Backup Solution include the following: -

- Complete data protection solution supporting all major operating systems, applications, and databases on virtual and physical servers, NAS shares, cloud-based infrastructures, and mobile devices.
- Simplified management through a single console; view, manage, and access all functions and all data and information across the enterprise.
- Efficient storage management using deduplication for disk and tape.
- Complete virtual infrastructure management supporting both VMware and Hyper-V.

Benefits –

- Control over data: organisation has full control over the data, including how it is stored, protected, and managed. This can be particularly important for businesses that handle sensitive or confidential information.
- Security: On-premises backup solutions can provide a higher level of security than cloud-based solutions. One can physically secure backup data and have more control over access to it, which can help prevent unauthorized access and data breaches.
- Performance: On-premises backup solutions can provide faster data recovery times, as the backup data is stored locally and can be accessed more quickly than data stored in the cloud.

- Cost: On-premises backup solutions can be more cost-effective than cloud-based solutions, especially if data to store is of large amount i.e., in TBs.
- Privacy: On-premises backup solutions can provide more privacy as the control of data is with organisation, it is not shared with any other.
- Customization: On-premises backup solutions can be customized to meet the specific needs of the organization.

----- *End of Document* -----