Document ID: OAK-MAS-PR

Maintenance and Support Process

Version 1.7

25-Aug-12

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Abstract: This document contains the procedure to be followed for maintenance of machines and equipments at Oaksys

CHANGE HISTORY

Version	Release Date	Authors	Review team	Description
1.0a		Vivek	Pradeep, Pai	Refer below line
Draft				
1.0	15-Jul-03	Vivek	Pradeep, Pai Bala, Swati, Asmita, Santosh, Ben, Manik	Refer below line
Sections 1.2, 1.4, 5.1.2, 5.1.6 are changed				
1.1	13-Apr-05	Prashant S.O	Umesh Reddy	Refer below line
Address, Phone Number and e-mail ID is changed as per the CR 151 in the first page of the process.As per CR 166 sec 5.1 table is corrected.				
1.2	30-Nov-05	Hanumanth M	N.Pai, Asmita, Prashant S.O	Refer below line
As per CR 215, CR 239 OAK-MAS-FR-ME form is updated with two more columns vendor name, purchase date and AMC, Warrenty details respectively. As per CR 216 section 5.1.7 is updated by information about licence management and its responsibility As per CR 218 form OAK-MAS-FR-MBR is added in 5.1.6 As per CR 238 monthly report is added and its explanation is given as per CR 223 and CR 241 in section 5.1.2.4 As per CR 240 two more columns validity with start date and end date, and target machine is added in OAK-MAS-FR-SLL As per CR 242 section 5.1.1 is updated As per CR 121 section new Guidelines OAK-MAS-GL-GC are made and its details are given in sec 5.1.6.				
1.3	15-Jun-06	Asmita		
As per CR 265 review of monthly report of sys admin is elaborated. As per CR 262 phone number is changed.				
1.4	23-Jul-07	Asmita	Pradeep	
As per CR 132 Fine tuning is done for double maintenance of record in sec 5.1.6 As per CR305 duplicity in backup maintenance is removed sec 5.1.2.4 As per CR 318, 329Analysis of data related to breakdown is added sec 5.1.2.4				

As per CR 330 Necessity of Backup Request Form for other groups is elaborated in Sec 5.1.3.1 As per CR 333 If any part of System is exchanged how to mention it on MHC is elaborated in sec 5.1.6				
1.5	10-Aug-09	Asmita	Pai	
CR 386: ISO 9001:2008 included CR 388: change of address implemented				
1.6	09-Aug-10	Asmita	Pai	Refer below line
356, Info added in Monthly report review template (v 1.2) 360, Monthly Report Review checklist is added (OAK-MAS-CL-MRC) and referred in sec 5.1.2.4 and listed in Appendix 361-CD identification updated in sec. 5.1.5 363, 373- One column (CD Serial No.) 366, 372 Prventive maintenance(v 1.2) status checklist (OAK-MAS-CL-PMCL), and preventive maintenance charts (OAK-MAS-FR-PMC) are added in section 5.1.6 and listed in Appendix 367- SLL is categorized in sec 5.1.2 third para.				
1.6.1	01-Aug-11	Vinoth	Pai	Refer below line
CR 406 : Address change				
1.7	25-Aug-12	Asmita	N. Pai	CR 410, Monthly Report Review Checklist and Maonthly report brought at one place. Sec 5.1.2.4 text changed, Review checklist is added in Monthly Report, CR 419 general Cleaning Guidelines updated reg Anti Virus

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1.0 MAINTENANCE AND SUPPORT PROCESS

1.1 Purpose

To provide hardware and software support in such a manner as to optimise the employee's and project team's infrastructure requirements.
To ensure proper handling, storage, packaging, preservation and delivery of software.

1.2 Scope

This process shall apply to the maintenance and upgradation of all the hardware and software equipment and handling, storage, packaging, preservation and delivery of hardware / software.

1.3 Target Audience

SYSADMIN, H O&D

1.4 Glossary

HBD- Head Business Development
H O&D – Head Operations and Delivery
MR - Management Representative
PL – Project Leader
SYSADMIN – System Administrator

1.5 References

Quality Management Systems- Requirements ISO 9001:2008, Clause 6.3
Project Initiation Form - OAK-BD-FR-PIF
Software Configuration Management Process - OAK-SCM-PR

2.0 ENTRY CRITERIA

- New hardware or software is added to the organisation
- Customer hardware is borrowed for specific projects
- Any problem caused by failure or malfunctioning of equipment
- Change in requirements of Project Resources

3.0 RESPONSIBILITY

- The System Administrator shall be responsible for the Maintenance and related support functions

4.0 PROCESS FLOW DIAGRAM

Not Applicable for Maintenance & Support

5.0 PROCESS DESCRIPTION

5.1 Functions and Responsibility

The System Administrator is responsible for carrying out the activities listed below:

Section number	Activities
5.1.1	System administration
5.1.2	Installation of Hardware/Software
5.1.3	Backups, archival and restoration of software
5.1.4	Tracking of receipt and installation of new hardware/software and customer supplied hardware/software
5.1.5	Storage, handling, packaging of hardware, software and consumables
5.1.6	Hardware maintenance, attending of any breakdowns, troubleshooting and maintaining records of all the machines and equipment.
5.1.7	Software library maintenance

5.1.1 System Administration

The following activities shall come under the purview of the System Administration:
- Installation and maintenance of hardware and software
- Managing user accounts
- Setting up project area
- Preparation of Monthly report

    All the CDs, hardware's, documents, files and other things related to system administrator shall be kept in centralized area.

5.1.2 Installation of Hardware/Software

The concerned supplier shall install hardware normally. In case this is not feasible, for example: Imported equipment, then assistance may be sought from any Approved vendor to install the equipment.

Any new software, on receipt, shall not be immediately installed on the Target machine. After being checked for proper installation on any other available PC, the accepted software shall be normally maintained in its original package, till a need arises for installation.

Any new Hardware /Software installed shall be added in monthly report. HOD shall ensure that new hardware/Software installed is mentioned in monthly report with required information.

The **Software Library List** (OAK-MAS-FR-SLL) shall be maintained and updated by the System Administrator. The SLL is categorized as - *Frequently used software*, *Rarely used software*, *Temporary softwares*, *Software not in use*. On receipt of any new Software, after testing the Software, the list shall be updated under relevant category. The need for installation may arise from any of the projects or from a decision taken by Management to install the new software. For project

needs, the software shall be installed by the PL with support from SYSADMIN. For other needs the Software shall be installed by the SYSADMIN and communicated to the concerned people by e-mail or in person.

It may become necessary to re-install corrupted software based on complaints from users. Where updates to existing software are received, the software is updated and communicated to the concerned people by e-mail or in person. All such activities are carried out as part of software maintenance.

5.1.2.1 Managing user accounts

This activity shall involve creating user accounts, so as to enable the user appropriate authorization and access. Unique password locks for each user account may be provided to ensure protection of user documents/data.

The process shall be initiated by the Group head for creation of a user account. Before creation of the user account, appropriate access rights are assessed for the user. This may also be discussed with the concerned Group head, and on his recommendation, appropriate right granted.

The **Machine History Card** (OAK-MAS-FR-MHC) shall reflect the new User name.

The user logs-on to the network through his/her PC, by keying-in the user-id and password at the system prompt on boot-up.

When a user leaves the company, the user account is deleted from the Domain.

5.1.2.2 Setting up project area

This activity shall involve creation of a directory structure, on the identified machine for the purpose of storage and handling of project related documents/data.

The System Administrator in conjunction with the Project Leader creates the necessary project directory structure. Access to the project database is limited only to those project team members as identified.

5.1.2.3 Management of disk space

Disk space on the identified project machine is regularly monitored to ensure availability of adequate space to users at all times. If, at any point of time, adequate disk space is not available, the disk is cleared of unnecessary files/ data to make the required space available.

The project leader with the help from System Administrator is responsible for this function.

5.1.2.4 Monthly report

This activity shall involve creation of monthly reports **(OAK-MAS-FR-MR)** related to the maintenance of system to ensure the machines are updated with respect to backup, antivirus, break down, machine allotment, software installation and any other maintenance done.

The monthly backup details shall be captured in monthly report. In addition to this the System Administrator shall maintain ORG-SCM report for monthly backup which shall be submitted to ORG SQA (Quality Group).

The system administrator consolidates data for breakdown based on time taken for rectification of the problem and type of breakdown for eg hardware/software/network/UPS/electrical. He shall do the analysis of the same. This data shall be submitted to Head O&D in the monthly report. Based on the analysis Head O&D shall take the action if required.The system administrator prepares the monthly report. Head O& D reviews the monthly report and gives approval to the monthly report. Monthly report review checklist is present as additional sheet in the Monthly Report Template. This checklist shall be usedwhile reviewing the monthly report

5.1.3 Backups, archival and restoration of software

5.1.3.1 Backups

Backups of projects are carried out and maintained by respective project teams as per the Project Management Process.

The Turnkey projects shall use Backup Request Form of SCM process for monthly backup.

The Organizational Level backups are taken by the Org.SCM with help from the System Administrator, as defined in the SCM process.

5.1.3.2 Archival

At the end of the project, the archival as described in the Project Closure process shall be carried out by the PL with the help of Org. SCM.

5.1.3.3 Restoration

User files / documents / software's etc. may have to be restored from the backups taken, whenever there is a corruption of data. This is initiated by users to the system administrator.

The restoration process is described in the SCM Process shall be carried out by the Org.SCM with the help of System Administrator

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5.1.4 Tracking of receipt and installation of new hardware / software

Items received at OAKSYS can be classified under any one of the following categories:
- Customer supplied hardware/software
- Locally sourced or imported Hardware (PCs, Peripherals, PCBs, floppy diskettes etc.) and Software (application packages/ operating system software)
- Consumables (Printer cartridges/ ribbons, stationery items, etc.)
- Any item received at Oaksys shall be checked by the Front Office & System Administrator for correctness of the item identity and quantity as per the invoice / Purchase Order, and also for presence of any physical damages on the items.
- In cases floppy diskettes and consumables the items shall be received and checked by the Front Office in charge.

All accepted materials shall be taken into stock and all rejected shall be returned to their sources.

Installation of hardware / software is carried out as described in section 5.1.1.1.

In most cases, the supplier / vendor is required to install the item and demonstrate satisfactory functioning, before acceptance. In a few cases, where this is not feasible or necessary, for example: Printer cartridge installation, OAKSYS staff shall install the equipment themselves.

5.1.5 Storage, handling, packaging of hardware, software and consumables

All items are stored in designated areas, free of dust, heat and direct sunlight. The bought-out software and any uninstalled hardware are stored in their original packages. Customer supplied hardware/software is labeled. The CDs received can be identified with certain information such as inward date, received from, identification no.etc. Itis the responsibility of the PL once handed over to him/her to maintain customer supplied hardware or software. The System Administrator shall maintain a list of all customer-supplied hardware & software.

All items shall be handled as specified by manufacturers of the Hardware /Software / consumables. Where contractually agreed, the company's products are packed appropriately to ensure safety during transit and satisfactory receipt at customer's end.

5.1.6 Hardware Maintenance

Preventive maintenance of the hardware shall be carried out on a monthly basis by the System Administrator. Preventive maintenance checklist (OAK-MAS-CL-PMCL) shall be used for preventive maintenance. The preventive maintenance chart (OAK-MAS-FR-PMC) shall be updated once the preventive maintenance is done

All the hardware and software employed shall be checked for functionality and recorded in the maintenance register.

General clean up guidelines (**OAK-MAS-GL-GC**) can be used by each user by referring to soft / hard copy prepared by system administrator.

Machine History Card And System Numbering

A Machine History Card shall be prepared and maintained by the System Administrator for each of the Installed hardware equipment. The List of Machines and Equipments shall be maintained by the System Administrator

All the hardware equipment shall be uniquely identified with the numbering system. The numbering system is as follows:

XXX/YYY/ZZZ

Where:

XXX – is the number of the hardware

YYY – is the name of the Machine

ZZZ - is the type of the hardware/component

For Eg:

3/Manasa/KYB

3 – is the number identified for the hardware

Manasa – is the name of machine

KYB _ type of component i.e.: Keyboard

Stickers shall be affixed to each system / hardware. If any part of system such as monitor, CPU, Keyboard, mouse is replaced, the correct configuration shall be mentioned on Machine History Card. Responsibility for all hardware items shall lie with the System Administrator. However, once a hardware item is issued to project personnel, the responsibility, till the item is returned, lies with the concerned Project Leads.

In addition, breakdown maintenance shall also be attended to expeditiously, to reduce system downtime. The Breakdown attended shall be recorded in the Machine Breakdown register(OAK-MAS-FR-MBR). The System Administrator can update the Machine History Card based on the Machine Breakdown register. The breakdown of machine shall be reported into monthly report of that particular month.

In case a system has to be taken out of use due to non-availability of spares or a major breakdown, a sticker is affixed to the system with the following message: `UNDER MAINTENANCE - PLEASE DO NOT USE'. It is the responsibility of every user to ensure compliance with the instructions.

5.1.7 Software library maintenance

In order to keep track of all software available at Oaksys, this activity is vital and involves proper identification, location, storage, and updating of Operating System software, Office automation packages, Customer supplied software, and project related bought-out software. Responsibility for all software items lies with the System Administrator. However, once a software item is issued to project personnel, the responsibility, till the item is returned, lies with the concerned personnel. The same applies to all books and manuals.

The *Software Library List* and original cd with licenses shall be maintained and updated by the System Administrator. On receipt of any new Software, after testing the Software, the list shall be updated.

As a policy, no software is issued to users as such. Requests from users for installation of new software are handled as detailed in section 5 of this document.

Any software version, which is formally declared as obsolete by the System Administrator, is deleted from the Software Library List.

6.0   DELIVERABLES AND QUALITY RECORDS

- Software Library List- OAK-MAS-FR-SLL
- Machine History Record- OAK-MAS-FR-MHC
- Machine Breakdown Register- OAK-MAS-FR-MBR
- List of Machines and Equipments - OAK-MAS-FR-ME
- Monthly Report

7.0 VERIFICATION

- Through the Internal Quality Audits

8.0 EXIT CRITERIA

- Any Hardware or Software component removed from use due to various reasons
- Change in Project Resource requirements (e.g. Deletion of User ID's)

9.0 APPENDIX

9.1 Software Library List - OAK-MAS-FR-SLL

9.2 Machine History Card - OAK-MAS-FR-MHC

9.3 List of Machines and Equipments - OAK-MAS-FR-ME

9.4 Machine Breakdown register - OAK-MAS-FR-MBR

9.5 Monthly report - OAK-MAS-FR-MR

9.6 General clean up guidelines - OAK-MAS-GL-GC

9.7 Monthly Report Review Checklist – OAK-MAS-CL-MRC

9.8 Preventive Maintenance Checklist – OAK-MAS-CL-PMCL

9.9 Preventive Maintenance Chart – OAK-MAS-FR-PMC