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| Oak Systems Pvt. Ltd | Project Management Process | |
| Version: 2.2.2 | 25-Aug-12 | Doc. ID: OAK-PM-PR |

Document ID: OAK-PM-PR



Project Management Process

Version 2.2.2

25-Aug-12

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Abstract: This document describes the process to be followed for Management of the

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projects handled by Oaksys.

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CHANGE HISTORY

| Version | Release Date | Authors | Review team | Description |
|--|--------------|------------------|--|------------------|
| 1.0a | | Asmita | Pradeep, Pai, Bala | Refer below line |
| Base Version | | | | |
| 1.0 | 15-Jul-03 | Asmita | Pradeep, Pai, Bala, Swati, Asmita, Santosh, Ben, Manik | Refer below line |
| Sec 5.4 added for requirements management, Sections 5.1.1.1, 5.1.1.2 | | | | |
| 1.1 | 06-Sept-03 | Asmita | | Refer below line |
| Sec 16.0 of OAK-PM-FR-PPTK template changed(CR21), sec 5.0 PP review checklist point added (CR25), in sec 5.1.1.2 addition of templates mentioned(CR46), in sec 5.1.1.8 line for org metrics is added(CR25), in sec 7.0 PP review checklist added(CR18), in sec 9.0 appendix templates, guidelines, checklists are added(CR46), sec 9.0 Project plan template (sec 18.0 Customer feedback frequency is added(CR30)), Defect classification guidelines added (CR45), Estimation methodology is added (CR5) | | | | |
| 1.2 | 08-Sept-03 | Narendranath Pai | Asmita | Refer below line |
| Section 5.1.1.12 Added to Address Project Exit criteria. Section 5.1.1.11 changed to add reference to determining impact of the risk. Project Plan template changed to include exit criteria as section 8.2. existing life cycle is brought under 8.1. Guidelines for determination of Risk impact included in section 17.0.(Change request CR 73, CR 75) | | | | |
| 1.3 | 09-Sept-03 | Asmita | Pradeep | Refer below line |
| Change the section 5.1.1.2 to accommodate the test plan related details (CR), appendix 9.0 PPTK is also changed, OAK-PM-FR-PPC is also changed to accommodate validation mechanism. | | | | |
| 1.4 | 3-Jan-04 | Asmita | Pradeep | Refer below line |
| As per CR92 sec 5.1.1.4-Estimation shall capture more details, also change in PPTK template, also change PPC As per CR87 sec. 5.1.1.2 is changed, also changed in PPTK, also change PPC As per CR97 resources from sec. Of PPTK 15.1 –Resources is removed. In Sec. 11.0 resources are made more clear by mentioning Project SCM resource, Project SQA resource As per CR 91 Unit Test Plan template is included in the appendix and added into OAK-PM process folder As per CR86 in PPTK template on title page version of PPTK template is captured, PP version ,date is put in <> brackets. This has lead to PPTK version 2.0 | | | | |
| 1.5 | 6-Jan-04 | Asmita | Pai | Refer below line |

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As per CR104 in OAK-PR-CL-PPC (new ver 1.5) sec 21, pt regarding PPTK section 8.2 regarding exit criteria is added, also updated ML (new ver 1.5)

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| 1.6 | 15-09-04 | Asmita | Pai | Refer below line |
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To address CR -102, 5.0 Process Description is updated emphasizing inspection process for review.

Accordingly OAK-PM-FR-PPTK template section 8.1 (Life cycle activities) and Project review checklist OAK-PM-CL-PPC SI.No-18 are updated.

To address CR -103, in OAK-PM-PR Section 5.1 is updated and section 1.4 (Glossary) is also updated. This is related to involvement of org. SQA in review process

As per CR 108, sec 5.1.1.12 is changed and template OAK-PM-FR-PPTK sec 8.2 (project exit criteria) is updated.

OAK-PM-CL-PPC SI.No-21 -with Section number-8.1 is updated. This is related to mentioning of customer acceptance criteria

To address CR 126, in OAK-PM-PR section 5.1.1.4 Estimation is updated and template OAK-PM-FR-PPTK 10.2 (Actual estimation table) is updated. This is related to re-estimation as an activity.

To address CR-146 sec5.1 is changed. To address CR-144, sec 5.1.1.2 is updated. Also OAK-PM-FR-PPTK updated (section 8.2 is added)

To address CR-147, sec 5.1.1.9 (SCM Activities) updated. Related to this OAK-PM-FR-PPTK sec 15.1 also updated.

To address CR-109 Sec 9.0 Appendix is updated (OAK-PM-TC-CL). Also 5.1.1.2 is updated to indicate the possibility of using the test case identification checklist

To address CR 150 sections 18.1, 18.2 added in OAK-PM-FR-PPTK. This addresses capturing of Customer commn. and customer feedback in plan.

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| 1.7 | 13-Apr-05 | Prashant S O | Shashidhar Joshi | Refer below line |
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As per CR 151 Address, email-ID and phone number is changed in the first page of the process. Similarly it is affected to OAK-PM-CL-TC, OAK-PM-FR-PPTK, OAK-PM-FR-TP, OAK-PM-GL-DFC, OAK-PM-GL-ETS, OAK-PM-GL-GCG and OAK-PM-GL-WSG. As per CR 194 OAK-PM-GL-WSG existing scripting guideline is modified. As per CR 152 one more column is added in sec 15.1 of OAK-PM-FR-PPTK template. As per CR 175 Target Audience sec 1.3 is talking about Technical and BD group of OAK-PM-GL-DFC. As per CR 180 one more sheet is added by name Test Report in order to capture different testing in OAK-PM-FR-DR. As per CR 181 FURPS metrics is added in OAK-PM-FR-DR. As per CR 183 OAK-PM-FR-TC Test case template is enhanced. As per CR167, new checklist OAK-PM-CL-MPP is introduced and Sections 5.0, 7.0 and 9.0 are updated in this document

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| 1.8 | 30-Nov-05 | Hanumanth M | Prashant S O, Asmita | Refer below line |
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As per CR 83 section 5.1.1.8 is updated for collection of metrics for long projects.
As per CR 112 and CR 174 section 5.1 is updated for different type of projects and first page is

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updated in OAK-PM-FR-PPTK.

As per CR 178 project ID is added in OAK-PM-FR-PSQA

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| 1.9 | 15-Jun-06 | Deepa G C | Asmita | Refer below line |
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As per CR 262 Phone Number is changed in the first page of the process.

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| 1.10 | 15-Sept-06 | Asmita | Pai | |
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As per CR 288 , tool evaluation template is brought under PM process, asper 289 Project Plan review checklist elaborated for customer property.(point no 30 in checklist), as per CR 290 Review checklist for modified project plan is updated for revisiting the risks

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| 2.0 | 23-Jul-07 | Asmita | Pradeep | Refer below line |
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As per CR 106, Sec 5.2 is elaborated for participation of Org SQA (Quality)

As per CR 209 PSQA template modified (v 1.4)

As per CR 278 sec 5.1.1.8 is elaborated for process deviation and PPTK is updated for the same. (New version 2.4)

As per CR 317 Sec 5.1.1 is elaborated for Frequency of updating PP.

As per CR 316 Risk repository is separated from Project plan review checklist (PPC new version 1.6) & new doc OAK-QMS-RSK v 1.0) is saved as risk repository under OAK-QMS

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| 2.1 | 10-Aug-09 | Asmita | Pai | Refer below line |
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CR 386: ISO 9001:2008 mentioned;

CR 388: address change

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| 2.2 | 25-Mar-11 | Asmita | Pai | Refer below line |
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CR 349 Issue tracker is added in sec 5.3.1 of PP and 18.0 of OAK-PM-FR-PPTK(v 2.6)

CR 397 QMS release under PM process, changed in sec 1

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| 2.2.1 | 01-Aug-11 | Vinoth | Pai | Refer below line |
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CR 406 : Address change in this and in OAK-PM-FR-PPTK(v 2.6.1) and in OAK-PM-FR-TLEVL (1.1.1)

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| 2.2.2 | 10-Aug-12 | Asmita | Pai | CR 415, 421-Cosmetic, spelling correction in Sec 5.1.12 PPTK sec 11.1 cosmetic changes, version 2.6.2 is released |
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1.0 PROJECT MANAGEMENT PROCESS

1.1 Purpose

This document describes the process to be followed for Project Management of the projects handled by Oaksys. Project Management Process provides the basis for planning, implementation and tracking of the projects executed by Oaksys.

The QMS release can be considered as one of the turnkey project and relevant sections of PM process can be applied to it.

1.2 Scope

This process is applicable to all turnkey projects executed by Oaksys.

1.3 Target Audience

Quality Group, HO&D, Project leaders, Team Members

1.4 Glossary

FURPS+ – Methodology used to identify Project Quality Goals (**F**unctionality, **U**sability, **R**eliability, **P**erformance, **S**upportability, any additional characteristics)

HBD - Head Business Development

HO&D - Head Operation & Delivery

IQA – Internal Quality Audit

ISO — International Organization for standardization

LC - Life Cycle

OakpV- Parallel V model adopted by Oaksys

Oaksys - Oak Systems Pvt. Ltd.

OakTA –Test Automation Model adopted by Oaksys

PL-Project Leader

PMR- Project Management Review

QC- Quality control

SCM-Software Configuration Management

SQA-Software Quality Assurance

Org SQA- Organization SQA

TM -Team Member

V&V - Verification and Validation

WBS-Work Breakdown Structure

1.5 References

- Quality Management Systems- Requirements IS/ISO 9001:2008
- International Standards ISO 90003

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- SCM process OAK-SCM-PR
- PMR process OAK-PMR-PR
- IQA process OAK-IQA-PR
- Metrics process OAK-MT-PR

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2.0 ENTRY CRITERIA

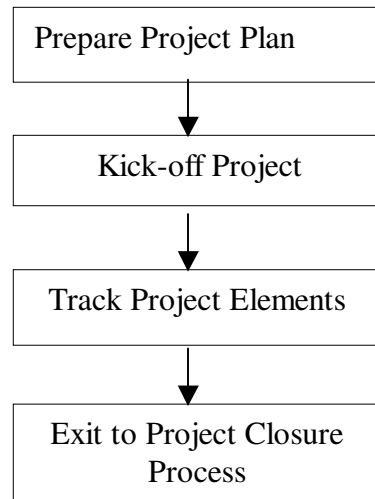
Project getting initiated by Business Development process

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3.0 RESPONSIBILITY

Project Leader is responsible for planning and implementing the projects as per this Project Management Process.

4.0 PROCESS FLOW DIAGRAM



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5.0 PROCESS DESCRIPTION

This process is entered by way of filling the Project Initiation Form and with assignment of Project Id and PL by H O&D. The project team is identified and Project Plan is prepared by the PL according to the **Project Plan template (OAK-PM-FR-PPTK)**. New project plan prepared shall undergo inspection process for review. This Project Plan is reviewed against the **Project Plan Review Checklist (OAK-PM-CL-PPC)**. During the project lifecycle, the Project Plan may undergo modifications. All such modifications shall be reviewed as per the peer review process. **Modified Project Plan Review Checklist (OAK-PM-CL-MPP)** shall be used during such reviews. The process is exited when project reaches its closure state by way of customer accepting the deliverables or the project getting cancelled or suspended by Customer or Oaksys.

5.1 Prepare Project Plan

For each turnkey project, the Project Leader shall prepare a project plan as per the standard format (OAK-PM-FR-PPTK). Project plan will capture the type of project. Following will be the type of project

- Development
- Testing
- Maintenance
- Automation
- Quality consultancy
- Any other type not covered above
- Or in any combination of above

While preparing the Project Plan, the Project Leader is advised to look into past project information such as best practices, pit falls, lessons learnt etc. He can refer to Post Project Reports available at Org. SQA. One of the inspectors for Project Plan Review shall be Org SQA. Details of planning and execution of turnkey projects are detailed below.

For Testing projects, Project plan shall also be used as the Test plan. Hence, while preparing project plan for Testing projects, it shall be ensured that all the sections of test plan are covered in the project plan by referring to the TEST PLAN MAPPING MATRIX available in OAK-PM-FR-PPTK.

5.1.1 Turnkey projects

The PL in consultation with HO&D prepares the Project Plan. The team members for the project are identified.

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The project plan shall be updated whenever required. The instances could be milestone completion, before PMR, after PMR, internal and external audits, change in scope etc. The project plan shall be updated immediately without much delay.

5.1.1.1 Contract Quality objectives and Project Quality Goals

Project Plan shall list the quality requirements, agreed with the customer as per the contract. The Project Quality goals on the basis of contract quality requirements and organization quality objectives are also to be identified. FURPS+ shall be the methodology for defining the project quality goals. FURPS+ is an acronym used to identify quality attributes necessary for successful delivery of services.

FURPS+ stands for:

Functionality: - feature set

Usability: - ease of use

Reliability: - dependability; absence of failure

Performance: - system efficiency; response time

Supportability: - ease of maintenance; cost of ownership

+: - Localizability; portability; other key attributes.

5.1.1.2 Life Cycle Activities

The PL shall define the appropriate Project Life Cycle for the project based on the nature of project using past experience. This LC shall be mentioned in the Project Plan. The complete life cycle shall be mentioned as bullet points and then suggested table in PPTK can be used to capture the details of LC Typical V & V life cycle (OakPV Model) and Test Automation life cycle (OakTA model) are available as guidelines in appendix. These life cycles can be used with necessary changes.

For each phase in the LC, the following shall be identified,

- Key inputs to the phase
- Entry criteria for the phase
- Activities and tasks to be carried out to accomplish these deliverables
- Tools, techniques, methodologies planned to be used to accomplish tasks
- Verification and Validation mechanisms
- Key deliverables of the phase
- Customer Acceptance/Exit criteria

Any Templates/Guidelines/Checklists needed by the project for carrying out any LC activities shall be mentioned under Tools, techniques, methodologies section of the corresponding phase.

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If the project requires some special tools to be used in any one of the phase of life cycle, then different tools shall be evaluated. The evaluation report shall be captured in template OAK-PM-FR-TLEVL. The tool evaluation shall become one of the artifacts of the project.

Generic Coding Guidelines (OAK-PM-GL-GCG) are available. Wherever required, these can be used to develop project specific Coding Guidelines and shall be used for development projects.

The table suggested in the Project Plan Template can be used. In appendix typical templates for Test Plan, Test Case, and Defect Report are attached. These templates can be used while executing typical testing or development project. Defect classification guideline can be used for categorizing the defects.

Test Case Identification Checklist shall be used as an aid while writing Test cases or Reviewing the test cases. This is applicable when test cases are written for the type of testing addressed in the checklist.

Validation mechanism is a means of testing the project to ensure that the project has met its Quality goals. The validation mechanism will depend upon the type of the project. The validation mechanism shall be identified and defined for each project and detailed in the respective phase of the life cycle activity in the project plan.

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5.1.1.3 WBS

The PL shall identify WBS for the project and record it in the Project Plan. This shall be based on the project scope, quality goals, life cycle, milestones agreed upon, etc. PL and Team Members shall decide unit of Measure for the WBS. The WBS shall contain the following information at least at each milestone level -

- Activity/Task,
- Planned start date
- Planned end date
- Planned effort
- Role

Actual performance data shall be recorded into the WBS at least at the end of each milestone -

- Actual start date
- Actual end date
- Actual effort

The WBS can be captured in the table suggested in the Project Plan Template. A separate table can be created as per documentation standard and a link to it can be provided from the WBS section in the Project Plan.

5.1.1.4 Estimation

Project Plan shall identify the estimation technique to be used for project. Following points should be considered.

- What is to be estimated
- Unit of measure
- Estimation tool used and methodology used for estimating

Actual estimates considering project SCM, project SQA, Org SQA efforts shall be captured in project plan along with the assumptions made. Effort and schedule estimates including planned / replanned start & end dates are mandatory. Estimation of project shall be relooked at regular intervals (milestones)

The estimation guideline is attached in Appendix for reference.

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5.1.1.5 Project Resources

Project plan shall contain the details of hardware, software and personnel resources that are required to execute the project along with the duration for which each resource is to be used by the project and whether it is required full-time or for partial time. For personnel, the required skills shall be listed. The table shown in Project Plan template can be used.

5.1.1.6 Training requirements

Project specific training requirements shall be documented in the Project Plan. WBS may have to be revised to include these activities. This would form the basis for developing the individual training plan for project personnel.

It is to be noted that the training requirement are those required by the project and not based on what training courses are offered in the organization-wide training calendar.

The table shown in Project Plan template can be used.

5.1.1.7 Project Organisation

The roles and responsibilities in the project shall be identified in the Project Plan. The assignment of a role to an individual resource shall also be recorded in the plan. The table shown in Project Plan template can be used.

5.1.1.8 SQA Activities

The contract quality requirements and product quality objectives shall be clearly mentioned in the Project Plan. In LC table verification and validation mechanisms of the project shall be clearly mentioned

Every project shall have a project SQA. He/she shall perform following SQA activities,

- Help PL in planning the project's SQA activities (reviews, audit planning, metrics collection, etc.)
- Train and support the project team members regarding the SQA activities (reviews, audit planning, metrics collection, etc.). This can be added in training requirements of the project.
- Carryout the verification of the SQA activities throughout the project's lifecycle. The Project SQA shall carryout process reviews by participating in reviews/testing on sample basis as planned in the LC table.
- Conduct reviews to verify the conformance of process and standards that are documented.
- Setup mechanism to collect the metrics data from projects at defined frequency. For long term projects metrics are computed at milestone levels. The mandatory metrics are defined in **Metrics process (OAK-MT-PR)**. Mention the relevant Organisation's mandatory metrics

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with goals in the Project Plan. Any additional metrics if required to measure the project quality goals can also be mentioned in the Project Plan.

- The Project SQA shall submit SQA report to the PL and copy of it to the Quality Lead using the **Project SQA Report (OAK-PM-FR-PSQA)**. If the frequency of submitting this report is different from 'monthly', it shall be mentioned in the Project Plan.
- Any deviation in the processes shall be approved by Org SQA(Quality). The deviations shall be mentioned in project plan (OAK-PM-FR-PPTK)

5.1.1.8.1 Project Management Review

Each project shall have at least one Project Management Review (PMR) once every two months. Each project shall have minimum one PMR during its tenure. PMRs shall have at least one member from Oaksys senior management. The PMR shall be conducted according to PMR process. The schedule for this PMRs shall be captured in Project Plan. The table shown in Project Plan template can be used in capturing PMR details.

5.1.1.8.2 Audits

The projects' IQA shall be aligned with Org IQA calendar. Any additional IQAs for the project, if needed, shall be mentioned in the Project Plan. The IQA date received from MR shall be mentioned in the WBS. It is recommended that this IQA should happen before PMR.

5.1.1.9 SCM Activities

Each project shall have a Project SCM identified and documented in the Project Plan. The SCM activities are performed according to the SCM process (OAK-SCM-PR). Any deviation from this standard SCM process shall be mentioned in Project Plan. . Customer property, if any, shall be clearly mentioned with reference to the media of storage (Electronic/Paper)

5.1.1.10 Project Dependencies

The project's internal and external dependencies shall be documented. The plans shall be drawn up for necessary co-ordination and communication if required. All the affected groups shall be identified. The contribution, interfaces and events for each group shall be identified. The table shown in Project Plan template can be used in capturing project dependencies.

5.1.1.11 Risk Management

Each project shall identify the risks and document in the project plan. For each risk, its impact on project quality goals, preventive action and contingency plan shall be listed.

The table shown in Project Plan Template can be used in capturing risk management details. Impact of risk shall be determined based on the guideline mentioned in the project plan.

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5.1.1.12 Project Exit Criteria

Each project shall identify the Exit criteria for the project. Project Plan Template shall be used to mention the Customer Acceptance/ Exit Criteria.

Once Project Exit criteria is met, Project closure process (OAK-PC-PR) shall be initiated on the project.

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5.2 Project Kick-off Meeting

The PL shall prepare draft Project Plan as per this process. The draft Project Plan shall be presented in this kick-off meeting. A member from Org-SQA and/or H O&D shall attend this meeting. Customer focus and customer satisfaction shall be discussed in the kick-off meeting. The importance of relevant processes shall be discussed in this meeting. Project specific quality objectives shall be discussed. The details of this meeting shall be captured in the MOM template.

5.3 Tracking of Project Plan Elements

5.3.1 Tracking

- The PL shall assign specific activity/activities of the project explicitly to an individual as per the WBS table.
- The PL shall maintain a Project Folder (hard or soft copy) consisting of the following
 - Technical aspects of the proposal
 - Project Initiation Form
 - Project Plan
 - Technical documents (supplied by customer and prepared by project team)
 - Customer correspondence and clarification requests raised
 - Audit records
 - All review records
 - Weekly reports
 - Customer feedback reports
 - Any other relevant information regarding the project
- PL shall submit weekly report to HO&D. **Weekly Report** (OAK-PM-FR-WR) format shall be used for this purpose.
- Project SQA shall submit project SQA report to PL, with a copy to Quality Leader.
- The PL can decide on the mechanism of tracking team member's activities.
- The PL shall maintain and update the issue tracker for the project. This issue tracker is shared with customer as part of customer communication and while attending meetings with customer

5.3.2 Reporting

The PL shall conduct periodic reviews with the team members on the activities done during the period and those planned for the next period. A corrective action has to be taken if the activities

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do not satisfy the project WBS. The Project Plan has to be modified to make effect of the current activities. Effort spent on the project by the team member shall be reported to Quality group using **Time Sheet (OAK-MT-FR-TS)** defined in Metrics process. All timesheets shall be approved by the PL before submission to Quality Group.

The PL shall report the project status using -

- Weekly reports
- Presentation material for PMR

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5.4 Requirements Change Management

Any change to requirement requested by the customer shall follow the change management procedure of the SCM process. The change impact analysis is done. The impact on the project will be discussed with the H O&D and communicated to customer. Whenever needed, customer's approval is sought for the same. Based on the customer approval, the project plans can be updated, if required. The person affected shall be communicated. In the case of new requirement, entire Requirement Management process has to be repeated

5.5 Project Closure

Please refer to the Project Closure Process (OAK-PC-PR).

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6.0 DELIVERABLES & QUALITY RECORDS

- Project Plan
- Weekly reports
- Project SQA Reports
- PMR material
- All project documents generated during execution of the project

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7.0 VERIFICATION

- New Project Plan is reviewed against *Project Plan Review Checklist*
- Updates to Project Plan are reviewed against *Modified Project Plan Review Checklist*
- Project Plan is approved by H O&D
- Periodic IQA

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8.0 EXIT CRITERIA

Project closure due to

- Successful completion of the project
- Cancellation of project
- Suspension of project

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9.0 APPENDIX

9.1 Project Plan-Turnkey - OAK-PM-FR-PPTK

9.2 Weekly Report - OAK-PM-FR-WR

9.3 Project SQA Report - OAK-PM-FR-PSQA

9.4 OakpV model –OAK-PM-GL-OPV

9.5 OakTA model – OAK-PM-GL-OTA

9.6 Test Plan - OAK-PM-FR-STP

9.7 Test Case Template (For system testing) - OAK-PM-FR-TC

9.8 Unit Test Plan(For Unit testing) –OAK-PM-FR-UTP

9.9 Defect Report - OAK- PM-FR-DR

9.10 Project Plan Review Checklist OAK-PM-CL-PPC

9.11 Defect Classification Guidelines - OAK-PM-GL-DFC

9.12 Estimation Guidelines & Techniques - OAK-PM-GL-EST

9.13 Test Case Identification Checklist-OAK-PM-CL-TC

9.14 Modified Project Plan Review Checklist OAK-PM-CL-MPP

9.15 Tool Evaluation Template OAK-PM-FR-TLEVL

9.16 Consolidated Issue Tracker OAK-PM-FR-IST