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ERL MAINTENANCE SUPPORT SDN BHD

Co. Reg. No. 199901023674 (498574-T)

E-MAS

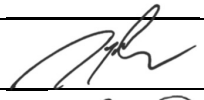
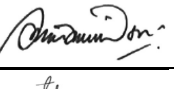
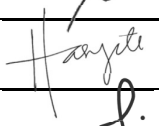
Effective Railway Operations; Reliable System Maintenance

INFRASTRUCTURE DEPARTMENT

MAINTENANCE MANAGEMENT AND TRAINING PROCEDURE

Ref. No. G00.OMI.M15000.BT.1001.A

Release

Released: f	Ham Mow Wai	Maintenance	29.09.2021	
Checked:	Suriani Farisa	Human Resource	23.9.2021	
Checked:	Haryati Khalil	CEO Office	23.9.21	
Checked:	Mohamad Azim Abdullah	CEO Office	13.9.2021	
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Checked: f	Anthony Arokianathan	Wayside	29.09.2021	
Checked:	Abdul Halim Baharom	Infrastructure	2·8·21	
Author:	Goh Suik Siong	Infrastructure	01.08.2021	
	Name	**Dept.**	**Date**	**Signature**

Amendments or additions to this procedure must be indicated with a vertical black line in the adjacent left margin.

Change Record and Configuration Control

A	21.04.2021	New procedure for Infrastructure Department	GSS & ABH
Revision	**Date**	**Modification**	**Name**

Planning Of Changes Reference For Revision: D10.OMI.M15000.BT.1001.A					
Issues To Consider	**Checked** *(Please mark X)*				**Remarks**
1) Are there any negative impact?	YES		NO	X	
2) Will the integrity of QEMS be affected?	YES		NO	X	
3) Resources available?	YES	X	NO		
4) Allocation or relocation of responsibilities and authorities required?	YES	X	NO		Refer to the clause 3.9.2 and 3.12

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1 Purpose

The purpose of the document is to provide guidance and training strategies to the Infrastructure Department to provide safe and efficient maintenance for ERL/CRS Systems.

This is also to define and describe the various maintenance and other supporting maintenance activities of the Infrastructure systems. To clearly defined the job functions of various staffs in the Infrastructure Department.

These strategies were developed from the initial training provided by the system suppliers, experience gained over the years from the maintenance and operation of the systems.

1.1 Abbreviations, Definitions and References

Term	Definition
BTS	Bandar Tasik Selatan
CEO	Chief Executive Officer
CM	Corrective Maintenance
Depot	ERL Maintenance Activity and E-MAS Main Office Base
Employee(s)	Staff that employed by E-MAS either on permanent, fixed term contract or contract basis
ERLSB	Express Rail Link Sdn. Bhd Co.Reg.No.199601003493 (375839-H)
EMSNET	E-MAS Domain
E-MAS	ERL Maintenance Support Sdn. Bhd Co. Reg. No. 1999901023674 (498574-T)
ERL/CRS	Express Rail Link / Commuter Rail Service
EDMS	Electronic Document Management System
FTC	Fixed Term Contract
HRD	Human Resource Department
HoD	Head of Department
INF	Infrastructure Department
KLIA	Kuala Lumpur International Airport
KLIA2	Kuala Lumpur International Airport 2
KLS	Kuala Lumpur Sentral
OCC	Operations Control Centre
O & M	Operation & Maintenance
OS	Operating System

OTD	Operations Train Driver
PC	Personal Computer
PCS	Putrajaya and Cyberjaya Station
PM	Preventive Maintenance
QEMR	Quality Environment Management Representative
RORL	Risk and Opportunities Review List
SAP	System Application Product
SUP	Supervisor
SD	System Development
STS	Salak Tinggi Station
SPYTL	Syarikat Pembinaan Yeoh Tiong Lay
TLE	Telecommunication
TPSS	Traction Power Sub-Station
Trackwork	Track work
XCR	Crossover
WSE	Wayside
WFS	Work Flow System
*	An asterisk (*) use to refer latest version

2 Scope, Distribution and access

The document provides an overview of the Infrastructure system maintenance and training procedure of the various training plans regarding the system supplier's manuals used by all INF staff.
All INF staffs can access this document from the EDMS and E-MAS Portal.

3 INF Management Procedure

3.1 Introduction

As of 15th Jan 2018, Maintenance Department has been re-structured and divided into two main departments (Wayside and Rolling Stock & Engineering). INF department is attached to the Wayside group. Kindly refer to the following 'Infrastructure Department Working Chart (Doc no: G00.OMI.M11110.BB.1002. *).

3.2 INF Sub-Groups

To maintain all Infrastructure systems, equipment and building maintenance support for ERLSB and E-MAS. To achieve the department functions. INF is divided into 2 sub-groups.

3.2.1 INF-Maintenance

INF-Maintenance group maintains the Infrastructure system on a 24-hour basis. They shall ensure the system's availability and assist in additional work that involves or affects the Infrastructure system.
INF-Maintenance groups consist of shift-based staffs; divided into 3 groups to provide the 24-hour support, stationed at KLS and Depot. However, the arrangement may be changed by the SUP depending on work requirements and workforce optimization.

- CM Group – To perform CM work and assist in PM task when required.
- PM Group – To perform PM tasks and assist in CM work when required.
- Handyman Group – To provide support to CM and PM group in daily work/task.

3.2.2 INF- System Development (SD)

The SD group consists of selected INF staff responsible for engineering works, such as system improvement, modification, research, investigation, analysis and to offer technical support when required.

3.3 Job Responsibility

3.3.1 Infrastructure Head of Department (HoD)

HoD is a part of INF group management team. HoD responsibilities are as follows;

a- To ensure 100% system availability for Infrastructure Systems and Building Services.

b- To do planning and strategies on training and development of INF staffs and Systems.

c- To look into improvising various Infrastructure Systems and building maintenance.

3.3.2 Infrastructure System Development (SD)

SD Group is to assist the SUP and HoD in technical and work process issues. The SD group consists of Engineers, Technical Executives, SUP and selected Senior technician. To study, analyze, and propose practical and effective solutions for solving technical and work processes problems.

The SD group reports directly to the HoD. SD Group working hour is on office hours (0815hrs-1715hrs or 0845hrs–1745hrs) or shift hours (0745hrs-1645hrs or 0915hrs – 1815hrs). However, for special maintenance activities such as testing, inspections or other special works, they may work during the maintenance period (2300hrs-0700hrs) when approved by the HoD.

Refer Appendices no 1.

3.3.3 INF Supervisor (SUP)

Supervisor responsibilities;

a- Ensure correct documentation for works that was carried out and monthly report analysis.

b- Ensure efficient handling of workforce.

c- Involve in PM and analyze monthly PM adherence report.

d- Responsible to monitor staff attendance and late coming.

e- Responsible for work order closing and ensure data accuracy on a monthly basis.

Any discrepancy and abnormalities found must be reported to HoD. The working hour is on shift base (0745hrs – 1645hrs or 0915hrs – 1815hrs).

Refer to Appendix no 2 for a detailed guide of the work process for the Supervisor.

3.3.4 Senior Technicians / Technicians

Senior technicians and technicians are responsible for carrying out the maintenance activities as per schedule for the entire ERLSB network.

- The INF Senior technicians and technicians are based at both KLS and Depot to ensure fast and effective response during failures. They worked on rotating shifts, CM group (0700-1525hr / 1500-2325hr / 2300-0725hr) and PM group (0915hrs-1815hrs / 2200hrs-0700hrs) to provide 24-hour coverage. They report to the INF SUP.

  Refer Appendices no 5.

- Another CM team is based in Depot and performs scheduled and un-scheduled maintenance work. Their work hour is from 0745hrs-1645hrs.

3.3.5 Handyman

The handyman will be responsible for rectification works that require a specific skill set. Mainly their duties will cover repair works in minor civil works, electrical works, plumbing works, painting works, etc. Other works will be scheduled according to the day-to-day requirement by the respective HoD or by the CEO. The handyman will report to the SUP and will support the technicians where possible.

Refer Appendices no 4.

3.4 INF Department Objective

The application of strategies, processes, resources and record management described above, together with other procedures is aim to achieve the following:

- Ensure 100% Building facilities and services availability during operational hours while maintaining an eco-friendly environment. Refer Doc. no: G00.OMI.M11460.QG.1001.*.

3.5 Department Administration

3.5.1 Leaves

All leave is governed by the HRD 'Leave Administration procedure'. Leave Application must be submitted via online system WFS.

Refer Appendices no 5.

3.5.2 Card Access System

All E-MAS employees are required to sign in and out when they report for duty and exit the office. This is vital to monitor their reporting time for duty. Those INF staff stationed in KLS and Depot is required to sign in and out at designated places (Depot -Administration building/Main workshop, KLS – INF office/OTD room).
HoD or his delegate must approve any deviation from the above practice. In case of emergencies, signing in or out at different places is allowed, but the HoD or his delegate must be informed verbally. The Card Access system contains all records and is send to the HoD as and when required. HRD will request the records as and when required.

3.5.3 Company vehicle

3.5.3.1 Company Pool vehicle

The Company pool vehicle for INF shift staffs stationed at KLS and Depot. These pool vehicles are used by all INF's office based and shift staff with valid driving licenses. Those caught driving without a valid driving license will severely penalize. The car users are required to fill in all the details in the Vehicle Log Record. Each pool car is assigned to a custodian and it is the custodian's responsibility to ensure proper usage and handling of the vehicle. The pool cars are not allowed to be driven back home, it is to be used for company purposes only. INF's staff must also ensure that enough fuel is available at all times.
Refer Appendices no 6.

3.6 Company Hand phone

3.6.1 Individual Hand Phone Allocation.

Individual Hand Phone allocation means that hand phones can be purchased and claimed for reimbursement once after every twenty-four (24) months completed from the last claim made. A monthly hand phone line allowance is provided to selected individuals who have to be reachable at all times. Only the recipient of the monthly phone line allowance legible to claim for hand phone purchase reimbursement.
Refer Appendices no 7.

3.6.2 Pool Hand Phone and SIM Card Allocation

The pool phone and SIM card is used only for work purposes. However, if it is used to make personal calls, it is their duty to settle the phone charges. If certain charges cannot be

justified, the group will share the cost. The SUP will collect the payment for the shift phones.

Refer Appendices no 7.

3.7 Work Orders

The SUP shall ensure the data accuracy and ensure work orders are completed and manually closed promptly i.e. not exceeding one month. Any delay in closing the work orders (due to work requirements) shall be justify via e-mail or verbal to HoD if requested.

3.8 Swap Duty

Shift base staff are permitted to swap duty (change duties) with their colleagues if they are unable to abide by the planned roster. Approval is subject to the following:

- Agreed by the colleague with whom the duties are to be changed (swapped) and prior approval from the SUP that the swapping of shift if no concern.
- The technician must then complete the form (Swap Duty Form Doc no: G00.OMI.M10000.DQ.1001.*.), and get the colleague's signature specified in item 1st bullet. This form shall be submitted to the SUP for recording purposes and updated on the roster.

3.9 Tools

3.9.1 Tools Usage

The shift based staff are issued with individual tools (refer Doc no: G00.OMI.M15510. RD.1001. *.), their acknowledgment of received recorded in the same document. They are responsible to replace any missing tools as described in the same document. Additionally, any tools required to perform the daily works, which are not available in the individual toolbox, will be issued by the SUP and handed over from shift to shift. The technicians are responsible for the proper usage of the tools and if any tools are found missing, damaged or unusable, the technicians must immediately inform the SUP (verbally or written). Person In-charge (PIC) or SUP will remove the defective tools and arrange for replacement of missing tools. A new tool will then be issued for replacement. All tools used must be in accordance with the O&M Manual.

3.9.2 Tools Audit.

All common shared tools and individual tools shall be audit twice a year. This is to ensure no tool(s) are missing or damaged. This is crucial for safe work and to ensure proper tools used during maintenance works. Tools Audit Report shall be submitted to HoD or his delegate for further action if required.
Refer Doc no: MZE.OMI.M15510.1002.* for INF Tools Audit report.

3.10 Calibration

HOD or his delegate shall ensure all tools shall be calibrated in accordance with the predefined calibration date.
For further details of the calibration process guide, please refer to document G00.OMI.M15510.CC.1001.* & G00.OMI.M15510.CC.1002.* for the Calibration & Verification Process.

3.10.1 Requirement of Calibration /Verification.

Calibration / Verification requirement depends on the INF work necessity as below:

- User
- Usage
- Accuracy
- Regulation

3.10.1.1 User

Users have to determine the usage parameters of the measuring instrument based on their work requirements and conditions. If the said instruments are being used for a particular work, the requirement for calibration will cover only that particular work. The measuring instruments are very vital to operation and safety. Thus, it needs to be calibrated or verified on a regular basis.

3.10.1.2 Usage

The frequency for each calibration/verification shall be based on the usage frequency of the measuring instruments. Typically, the critical instruments are calibrated on yearly basis.

3.10.1.3 Accuracy

The accuracy of measuring instruments can be defined when the measurements are taken, the results fall under the specific requirement.
Generally, high accuracy instruments require calibration. For instruments that are for general use, verification is sufficient.

3.10.1.4 Regulation

Measuring instruments required by regulatory bodies shall be calibrated according to the regulations and/or acts.

3.10.2 Calibration /Verification Fields

The measuring instruments (tools/equipment) is categorized into several fields of calibration, as follows:

- Electrical – Instrument used for measuring the electrical characteristics i.e. multi-meter.

- Mechanical – Instrument used for measuring the mechanical characteristics i.e. torque wrench.

3.10.3 Traceability

The calibration of measuring instruments is according to reference standards that are traceable to National or International Standard.

3.10.4 Calibration / Verification Record Management

Calibration / Verification Records

For safekeeping of original records such as certificate of calibration, shall be store and maintained in EDMS.

Electrical – Instrument used for measuring the electrical characteristics i.e. multi-meter. Upon successful verification, Verification Status Sticker shall be applied on the visible part of the instruments. The marking of the sticker will include:

- Date of verification done.
- Date of next verification due.
- Person who performed the verification.
- Serial No. of the instrument.

3.10.5 Calibration Status Sticker

The calibration company shall apply a calibration status sticker on all measuring instruments (working standards and working instruments).

3.10.5.1 Verification Status

Verification will be conduct internally by the Electronic Repair Centre (ERC), for general multi-meter only.

3.10.5.2 Calibration/Verification work

The person assigned by HoD is responsible for all the works within the calibration or verification scopes, typically:

- Manage the measuring instruments
- Checked and analyzed the verification works done by ERC
- Raise the Calibration / Verification Requisition form. (Refer Doc no: G00.OMN.M11411.DQ.0001.*)
- Raise Justification of Purchase Requisition form. (Refer Doc no: G00.OMU.M10540.CD.1010.*)
- Check measuring instruments after calibration is done.

- Monitor the calibration and verification schedules.
- Update calibration and verification status.
- Any other calibration/verification works directed by the HoD from time to time.

3.10.5.3 Measuring Instruments List

A complete list of measuring instruments shall be store in the EDMS for easy update and reference.

An "INF Master List of Controlled Tools / Equipment", G00.OMI.M15510.CZ.1001.* will be updated by the responsible person.

3.10.6 Acknowledgment

The HoD is responsible for the acknowledgment and endorsement of all calibration/verification documentation in the department. Documents include procedures, forms, and records, shall be acknowledged and endorsed before released to employees.

3.10.7 Calibration Certificates Verification

The person in-charge shall verify the results of measuring instruments upon receiving the certificates and instruments from the calibration house. The certificates must be stamped and signed on the cover page, including confirmation of passed or failed remarks. For verification, the end-user shall stamp and signed on the cover page of Recording of Verification EDMS.

Ref. Doc no: G00.OMI.M11411.RE.1001.*.

For instrument with a failed remark, it will be send to Electronic Repair Centre (ERC) for internal repair and go through the calibration process again.

However, if the instrument is beyond repair, it will be scrap and replace with new.

3.10.8 Calibration Process Flow

INF Dept. Tools / Equipment send for Calibration and Processes Work Chart", ref. Doc no: G00.OMI.M15510.CC.1001.* & G00.OMI.M15510.CC.1002.* can be used as a guideline to the process of calibration and / or verification.

3.11 Spares

ERLSB provides all spares; spares that have a long lead-time are also stocked. In addition, parts are checked for obsolesces to avoid the unavailability of spares.

3.12 Computerized Maintenance Management System (CMMS)

In E-MAS the selected CMMS is the SAP system. This system is used to plan preventive maintenance activities, report failures and obtain spares from the store. The SAP is also used to record man-hours spend performing various different job functions.

The process flow for the SAP system and its usage can refer to SAP Unscheduled or Scheduled Maintenance Process Flow. (Doc no: G00.OMI.M11070.CC.1002.* or G00.OMI.M11070.CC.1001.*)
In addition, the SAP system is used to analyze failure trends, produce productivity reports monthly and analyze goods movement and other functions.

4 Maintenance Process Management

The various types of maintenance carried out by INF is described in item 4.1, 4.2, 4.3, 4.4 and 4.5 below. These maintenance activities are governed by the O&M Manual and carried out as specified in the mentioned manuals. Excerpts are created from these manuals to enable an easier and more effective maintenance planning and execution.

Any deviation from the normal practice (as in the O&M Manual) must communicate to the SUP to obtain approval. Once all maintenance work is completed, inform OCC that the system is fit for service. For some maintenance work, a general guidelines and forms is required. These guidelines and forms are list in INF Record Matrix Doc no: G00.OMI.M11413.QB.1002.*.

4.1 Scheduled Maintenance

Scheduled maintenance is the PM specified for each subsystem. The scheduled maintenance activity for these subsystems is mention in the O&M Manuals. These manuals are the basis for all maintenance activities to be carried out and the basis for creating scheduled maintenance processes (checklists).

PM Overview of the Scheduled Maintenance was created based on the O&M Manuals. The purpose of this overview is to assist in planning and creating the monthly scheduled maintenance activities. Refer to Doc no: G00.OMI.M18500.CZ.1001.*.

4.1.1 Monthly overview of Scheduled Maintenance

The Overview of the Scheduled Maintenance is used to plan and execute the monthly scheduled (PM) activities. The SUP shall provide the technicians with the monthly scheduled activities and monitor the execution of the scheduled maintenance activities. He shall arrange a sufficient workforce to ensure the monthly plans are complied. The Overview of the Monthly Maintenance Schedule: Doc no: G00.OMI.M18500.DP.100*.*.

4.1.2 Infrastructure Scheduled Maintenance checklist

A series of checklists created from the activities mentioned in the O&M Manual to provide a clear process and indicate what activities are required for each of the scheduled maintenance activities. These checklists are divided according to the subsystems and different time intervals as specified in the O&M Manuals. Refer INF Record Matrix Doc no: G00.OMI.M11413.QB.1002.* for the checklists of the systems.

4.1.3 Preventive Maintenance Adherence Report

All technicians are required to understand the processes and the proper order of carrying out the scheduled maintenance. A 'Preventive Maintenance Adherence Report' is produced monthly for the scheduled maintenance carried out the previous month. The adherence report shall clearly indicate the planned activities; re-schedule activities complete with justification and completion status of the re-schedule activity. Refer to the following documents:
Doc no: G00.OMI.M18500.DP.100*.*.

4.1.4 Scheduled Maintenance Plans

The scheduled maintenance plans shall be entered in SAP and these plans will trigger work orders at the scheduled times. The triggering is automatically by the SAP system based on the interval inserted in the system. These scheduled maintenance plans are based on the O&M Manuals.
The costs of work done are produce by recording all the details on the work order in the SAP system.

4.1.5 Work Orders triggered

The SUP or technicians shall attend to the work orders triggered. These work orders shall also be used to withdraw required materials from the store.

4.1.6 Closed work order

After the maintenance work is completed, the work orders are fill up and closed by the respective SUP or his delegate in the SAP system.

4.1.7 Retrieve Work order

All completed work orders can be retrieved from the SAP system when required or request. Refer Doc no: G00.OMI.M15881.CC.1001.* on INF Daily work process for INF Senior Technician and Technician.

4.2 Unscheduled Maintenance

The unscheduled maintenance shall be carried out in accordance to the O&M Manual. The priority in the circumstances is to rectify the failure urgently. On notification of failure (normally verbal notification by OCC/HoD/SUP), the maintenance staff shall proceed with the work immediately.

4.2.1 SAP failure notification

The OCC shall create the SAP failure notification and the person in charge will generate a work order from the notifications. After filling in all details of work carried out for the unscheduled maintenance, the person in charge will "Technically Completed" the work order in SAP system.
Refer Doc no: G00.OMI.M11070.CC.1001.* for INF SAP Unscheduled Maintenance Process Flow.

4.3 Modifications

The modification may be initiated by any related party (OEM, system provider, ERLSB, EMAS) when and if required. The implementation of non-safety critical modification can be immediately based on operation requirements (continuous non-disrupted service) and system improvement works upon discussion with EMAS CEO. Major modification (system upgrade) requires approval from EMAS CEO.

4.4 Improvements

The improvement strategy of INF shall be to seek a continuous development in: (list not in priority)

- Safety
- Process
- Method
- Cost Reduction
- Techniques
- Personal Development of staff

The priority at any point in time (except for safety), is determine by the circumstances of the time and the needs of the service.

All RORL improvements plans are monitored by HoD or his delegate periodically, refer to the document Doc no: G00.OMI.M11413.AG.100*.*.

4.5 System Performance

4.5.1 INF Group

The various maintenance planning executed to meet the objective specified in the INF Department Objective, Commitment and Function.
Refer Doc no: G00.OMI.M11400.QG.1001.*.

The system performance monitored, analyzed, and proper countermeasure implemented (if required) to meet the Department Objective.

A comprehensive system performance monitoring implemented to meet the Department's Objective, the following documents are prepared and analyzed.

- Energy saving program (OTP) - Doc no: G00.OMI.M11426.RN.100*.*.
- INF Department KPI – Doc no: G00.OMI.M11413.AH.100*.*.

Apart from the monthly updates, INF also provides Infrastructure system status to the general management on a daily basis. The HoD or his delegates shall send this daily status via e-mail before 9 am.

5 Incident Management

5.1 Incident Report

In the event of a failure that caused service disruption or considered a failure of a critical system, the HoD or his delegate is required to generate an incident report. This incident report will contain all details (time, location, employee/material involved) relating to the failure and clearly specify the chronology of the event. Then, submitted to Document Controller and the hardcopy is filed for reference and system analysis.

5.2 Incident Failure Analysis

Major incidents that involve critical or frequent system failure required failure analysis. It is carried out by SD Group, which requires reviewing of documents, testing and simulation.
After completing the failure analysis, a report is then submitted to the HoD for further action if required. The hard copy is filed for reference and system analysis. The matter may also be referred to the system supplier for further action if required.

5.3 Communication structure

5.3.1 INF ←→ OCC

OCC will contact INF staff on duty (KLS) when a failure occurs. The mode of communication will be via hand portable radio or INF shift handphone. In case the staff unable to be contacted via hand portable radio, OCC shall try to contact the staffs via the shift hand phone. All INF shift handphone numbers are list in OCC. The communication flow between OCC and INF is a shown in Doc No: G00.OMI.M15881.BT.1002.*.

5.3.2 INF internal communication flow.

The first point of communication regarding a failure is between OCC and INF technician. The technician will then proceed to the incident site to rectify the failure. The technician needs to inform SUP if the problem is unable to resolve. This will allow the SUP to arrange for assistance or advice on the next course of action. The SUP needs to notify HoD of the failures.
Refer Doc no: G00.OMI.M15881.BT.1001.* for INF Dept. Internal Communication Flows.

5.4 Management of Defects

5.4.1 Management of Maintenance detected defects

Defects detected by maintenance staffs during inspection and or maintenance will fall into three categories:

- Operational impact defects
- Safety impact defects

- Non-Operational and non-safety impact defect

5.4.2 Operational Impact Defect

The following steps are to be follow:

- OCC shall be advised of the defect and the impact of operations (if known)
- OCC will raise SAP failure notification
- SUP will create a work order
- HoD or his delegate will make the necessary arrangement with the Operation Manager to carry out restoration activities based on operational requirements
- Work carried out following all normal operations and safety procedures
- SAP reports provide collected costs.

5.4.3 Safety Impact Defect

The following stages are to be follow:

- OCC shall be advised of the defect and the safety impact.
- OCC will raise SAP failure notification.
- SUP will create a work order
- INF HoD or his delegate will make the necessary arrangement with the Operation Manager to carry out restoration activities based on operational requirements.
- Work carried out following all normal security and safety procedures.
- SAP reports provide collected costs.

5.4.4 Non Operational and Non-Safety Impact Defect

The following stages are to be follow:

- SUP shall be advised of the defect.
- SUP will create a work order
- SUP will raise work order.
- SUP will make the necessary arrangement to carry out restoration activities based on operational requirements.
- Work carried out following all normal operational and safety procedures.

6 SAP reports provide collected cost INF Training Flow

6.1 On the Job training (OJT)

New staff (Permanent or FTC) shall attach with senior staff for OJT to gain the necessary experience and confidence working on Infrastructure system and equipment before attending the subsystem training. This training will cover the safe working principle as specified in the checklist, PM, CM and related activities. Evaluation will be carry out in 3 phases over the period of 12 months for both theoretical and practical knowledge as follow:

- Orientation Program: Shall include an introduction to Organization structure, department structure and all related subsystem overview within one month from the reporting date.
- On Job Training: Five months after the completion of the orientation program and followed by interview-based evaluation.

Refresher Training: Six months after the completion of On Job Training followed by written examination based evaluation.

The confirmed or permanent staff will continue the On Job Training with the senior staff to gain more experience and to increase confidence level working on Infrastructure systems and equipment.

6.2 Subsystem training

Once the OJT is completed (or during the OJT), the new staff will be scheduled together with confirmed or permanent staff to attend subsystem re-fresher training. The objective of the subsystem training is to make the participants aware of the various safety measures, technical documents, procedures, processes and As-build drawings available in assisting them in PM and CM activities. INF subsystem trainer shall conduct this training (Refer Doc no: G00.OMW.M12950.SF.100*.* for INF In-house Training Calendar).

6.2.1 Training Guideline

Training guideline was prepared for each subsystem. Upon completion of the training, each individual is required to fill up the 'Training Course Evaluation Form' and 'Training Confirmation and Verification' form to evaluate their understanding and for attendance confirmation record.
Refer to Appendices no 10 and no 11.

6.2.2 Assessment

No assessment is required for OJT. Those new staff that passed the Examination Base Evaluation will be scheduled to attend the subsystem training (Clause 6.2).

After completion of this training, the new staff (INF FTC or transferred) are required to undergo an assessment after 12 months from the date of employment. The INF assessments document was list in the INF Records Matrix (Doc no: G00.OMI.M11413.QB.1002.*). They will be considered successful if they have obtained 70% marks and above, of the total 100% marks from all the trainings. Unsuccessful

staff will require undergoing the assessment for a maximum of three attempts after a brief revision is conducted.

However, if:
INF FTC staff continuously failed in their attempt within a period of 12 months, they are not competent. HoD will take further action with advice from HRD.
The successful FTC and transferred staff will then be able to carry out PM and CM activities without supervision (excluding Major Corrective Maintenance work on the Technical room and outdoor system). All Major Corrective Maintenance works on the Technical room and outdoor system to be carry out with supervision of the Senior technician, SUP or SD team.

6.2.3 Training Records

All training records of OJT or transfer staff [attendance list, evaluation papers, evaluation result, and schedules/calendar of training] shall be maintained by HoD or his delegate. The responsibility to plan and ensure the training being carried out and completed successfully is the responsibility of the HoD. It is monitor by SUP via the INF in-house training calendar. SUP will highlight any non-compliance to the HoD for further action (if required).

6.3 Refresher Training

The refresher training for INF technician is carried out once every 2 years.

For industrial trainees assigned to INF, he or she will not require for the subsystem training but will participate in the planned refresher training.

The refresher training shall cover all INF subsystems.

6.3.1 Training Guideline

The refresher training shall follow the training guideline as provided in the List of Infrastructure Subsystem's Training Guideline.

Refer to Appendices no 11.

No certificate will be produced for the successful completion of the refresher training.

7 External Training

External training is carried out based on the requirement of the department. HoD is responsible to plan and budget for such training.

As the requirement for the department changes progressively, the HoD shall forecast and manage any external training required for the department with the assistance of the SD team and QEMR.
HoD to identify staff that shall be further develop technical and soft skills areas. The process and policy for external is defined in HRD procedure.

8 Additional Training

Additional training is carried out based on the necessity of the situation or any deviation from the original training. This training shall be necessary if maintenance work is restricted due to lack of knowledge, the additional scope of work or a different approach is adopted for maintenance. HoD will decide the necessity of such training.

The additional training shall focus on educating the staff on the functionality of the subsystem and defines how the maintenance activities can be carry out in a more efficient manner.

The additional external training assessment would be based on the training provides to ensure that the objective of the additional training is met. The passing marks would also be based on the training provider's standard.

Appendices

No	Procedure / Form	Reference Number
1	Daily Work Process – System Development	G00.OMI.M15881.CC.1004.*
2	Daily Work Process - Supervisor	G00.OMI.M15881.CC.1003.*
3	Daily Work Process – Senior Technician / Technician	G00.OMI.M15881.CC.1001.*
4	Daily Work Process – Handyman	G00.OMI.M15881.CC.1002.*
5	Leave Administration Procedure	G00.OMH.M11750.ZP.0001.*
6	Company Vehicle Procedure	G00.OMM.M11715.CD.1008.*
7	Telecommunication Facilities Procedure	G00.OMM.M11150.CD.1005.*
8	INF Equipment Calibration Record	G00.OMI.M11411.RE.1001.*.
9	Training Course Evaluation (TCE) Form	G00.OMW.M11411.RE.1001.*
10	Training Confirmation and Verification	G00.OMH.M10580.ZF.0016.*
11	List of Infrastructure Sub-System Guidelines	G00.OMW.M15010.BT.0001.*