

**ERL MAINTENANCE SUPPORT SDN BHD**

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



**SYSTEMS (SYS) DEPARTMENT**

**SIGNALLING TRAINING MODULE**

Ref. No. E10.OME.M50000.SA.1001.B

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**Release**

<b>Released:</b>	Ham Mow Wai	Maintenance	01.03.2023	f 
<b>Checked:</b>	Jayarajah Savarimuthu	Rolling Stock & Engineering	28.02.2023	
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<b>Checked:</b>	Muhammad Azim Abdullah	CEO Office	01.03.2023	
<b>Checked:</b>	Anthony Arokianathan	Wayside	28.02.2023	f 
<b>Checked:</b>	Noel Devan	Systems	28 Feb 2023	
<b>Author:</b>	Tengku Nadzuan	Systems	28.02.2023	
	<b>Name</b>	<b>Dept.</b>	<b>Date</b>	<b>Signature</b>

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

**Change Record and Configuration Control**

B	21.01.23	Renamed SYS – SIG TRAINING GUIDELINE to SIGNALLING TRAINING MODULE to reflect the same as in SYSTEM's Document Structure List. No changes in the content.	Tengku Nadzuan
A	25.10.21	Department Re-structuring (ELT & SIG merged into SYS) Incorporated previous training documents into one sub department's document. G00.OMW.M12950.SA.1001.A	Tengku Nadzuan
<b>Revision</b>	<b>Date</b>	<b>Modification</b>	<b>Name</b>

**Planning Of Changes Reference For Revision: E10.OME.M50000.SA.1001.B**

<b>Issues To Consider</b>	<b>Checked (Please mark X)</b>				<b>Remarks</b>
1) Are there any negative impact?	YES		NO	X	Not required. No changes to content.
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		NO	X	

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## 1. Purpose

The purpose of this document is to be used as a guideline for SYS-SIG subdepartment trainer or his/her assignee to conduct internal trainings.

## 2. Scope, Distribution & Access

This document is intended to act as a guide and to serve as a reference point for department's trainers in identifying the relevant topics to be covered, source of training aids materials, and training evaluations documents to be used to conduct training.

Access to this procedure is limited to the SYSTEMS department only.

## 3. Objective

The objective of this module is to provide the trainer or assignee with a quick reference for conducting SIG subsystem training for the maintenance team (SYS-SIG) and operations (OCC & other) personnel as and when required. This module will ensure all relevant topics are covered in uniformity during training even when conducted by different trainers.

For maintenance, the objectives of the training are to ensure that SIG personnel understand the technical specification of the subsystem, components, function and features. The hands-on exercise will provide the troubleshooting skills to improve the corrective maintenance work. In addition, during the refresher training, recent failures and experiences will be shared between the trainer and trainees. Upon completion of this training the trainees will be able to:

- Identify the SIG subsystem components.
- Understand the SIG subsystem functions & features.
- Troubleshoot SIG subsystem failures.
- Maintain the SIG subsystem as required by the O&M contract.
- Evaluated for competency

For operating, the objectives of the training are to ensure that the operation (OCC & other) personnel understand the SIG subsystem, components, function and features. Upon completion of this training the participants will be able to:

- Identify the SIG subsystem components, and controls
- Understand the SIG subsystem functions & features
- Operate the SIG subsystem in a safe manner

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#### **4. Signalling Subsystem Guideline**

All Signalling subsystem trainings are conducted based on the content of the O&M Manuals & As-Built Drawings

##### **Operation & Maintenance Manuals (O&M) (Volume 1 – 9)**

Volume 1: System  
Volume 2: PLC  
Volume 3: Interlocking Do70-E  
Volume 4: Point Machine  
Volume 5: Axle Counter  
Volume 6: TMS  
Volume 7: ATP  
Volume 8: PIDS \*  
Volume 9: Cables and Signals\*\*\*

##### **As-Built Drawings – (Folder 1 – Folder 6)**

Folder 1: General Documentation  
Folder 2: PLC, UPS, Points \*  
Folder 3: PIDS, TMS, ATP \*\*  
Folder 4: Schematics  
Folder 5: Occupancies  
Folder 6: Station wise Outdoor Equipment

Note:

\* For Depot UPS reference is made to GIANT 20KS UPS Manual

\*\* For KLIA & KLIA2 PIDS reference is made to Industronics Manuals

\*\*\* Additional LED signal manuals are made reference

#### **4.1 Point Machine**

Refer Point Machine Training Guideline - G00.OME.M50000.SH.1001\*

#### **4.2 Automatic Train Protection (ATP)**

Refer to Automatic Train Protection (ATP) Training Guideline - G00.OME.M50000.SH.1002\*

#### **4.3 Axle Counter**

Refer to Axle Counter Training Guideline - G00.OME.M50000.SH.1003\*

#### **4.4 Passenger Information Display System (PIDS)**

Refer Passenger Information Display System (PIDS) Training Guideline - G00.OME.M50000.SH.1004\*

#### **4.5 Power Supply & UPS**

Refer to Power Supply & UPS Training Guideline - G00.OME.M50000.SH.1005\*

\* Indicates the latest version.

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**4.6 Signals**

Refer to Signals Training Guideline - G00.OME.M50000.SH.1006\*

**4.7 TMS**

Refer to Traffic Management System (TMS) Training Guideline - G00.OME.M50000.SH.1007\*

\* Indicates the latest version.