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Overview of various equipment and systems in OCC

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DOCUMENT CONTROL

REV	DOCUMENT TITLE & COPY NUMBER	Date	Prepared by	Reviewed by	Approved by
0	Overview of various equipment and systems in OCC Copy____of _____	15th December 2009	Melvin Yeo (SOE)	Alfred Loh (SOE)	Soh Ling Tim (MOPN)
1	Overview of various equipment and systems in OCC Copy____of _____	XX October 2013	Chiam Zhi Wei (DySOE) Chua Teck Leong (AOM, ITSO OCC)	Ng Soon Han, Frankie (DOM, ITSO OCC)	Yeo Se Lay (SM,Ops)
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AMENDMENT HISTORY RECORD

Rev. No.	Effective Date of Change	Section & Sub-Section Amended	Amendments/ References	Party Requesting for Change
1	XX Oct 2013	Whole Document	Due to organization change of division name from ITSC to ITSO.	DOM, ITSO OCC
2	XX Dec 2020	Whole Document	Due to change of Staff Designations in ITSO OCC. Delete SOE, insert DM Delete DySOE, insert DyAM	Mgr, ITSO OCC

Section 1. Introduction

1.1.1 This document gives a brief overview of the various equipment and systems that the DM, DyAM, OE & FC use in ITSO OCC during their course of duty.

1.1.2 ITSO OCC equipment and system consist mainly of the following:

a i-Transport software
b EMAS Front End Logic System (FELS)
c SCATS and GLIDE software for traffic lights
d J-EYES & Endura system for junction cameras
e VICON software for image recording of EMAS PTZ
f J-EYE software for recording of junction images.
g UMH for documentation of work order
h RBBI for tunnel message break-in crisis situation
i RCS base station for monitoring of EMAS equipment signal
j Wall projector and monitor
k Monitor with keyboard for controlling of cameras.
l Parking Guidance System (PGS)
m Fire alarm panel connecting to the respective tunnel, ITSO building and facility buildings

Section 2. ITSO OCC Equipment & System

Sub-Section 2.1 i-Transport System Software

2.1.1 The i-transport system software is the main platform used by DM, DyAM, OE and FC to monitor and control the various EMAS, GLIDE, Tunnel PMCS, and camera equipment for the purpose of monitoring traffic on all the expressways and arterial roads. In short, it supports integrated traffic monitoring and control of the ITS systems.

2.1.2 It also integrates the Traffic.smart software that gives updated real time traffic information (including web-camera images) on the internet website www.onemotoring.com.sg and the traffic scan system which taps on the GPS satellite technology for taxis in Singapore (average reading of 5,000 taxis) to track the traffic flow on Singapore roads (this is in addition to detection cameras and SCATS unusual congestion monitor).

2.1.3 Each ITSO OCC operator will use one IW each in the respective zone working position for integrated management of the expressways and arterial roads.

Sub Section 2.2 EMAS Front End Logic System (FELS) software

2.2.1 The FELS System software can be use by the ITSO OCC operator to monitor and control EMAS & Tunnel PMCS equipment.

2.2.2 There is only 1 FELS workstation in ITSO OCC, this is located at the back shelf behind the FC position.

Sub Section 2.3 SCATS & GLIDE Software for Traffic Lights

2.3.1 SCATS & GLIDE software system is available in the DM, DyAM , FC and OE positions. It is use for monitoring and controlling traffic lights in Singapore's Road Network.

2.3.2 The DMs, DyAMs & OEs uses the system to monitor, adjust traffic lights and detect congestions. Whereas the FC uses the system mainly for monitoring and basic trouble shooting of traffic lights

Sub Section 2.4 J-EYES & Endura System for Junction Cameras

2.4.1 J-EYES system is available in every OEs ,DM, DyAM and FC position. It is use for monitoring and controlling of junction cameras in Singapore's Arterial Road Network. The Endura software system is also used for the same purpose with the other Endura workstation located at the back shelf behind the FC position.

2.4.2 The DMs, DyAMs & OEs uses the system to monitor incidents at and around major traffic light junctions. Note that the access level of the OEs and DMs are different, with the DM having a higher access level.

2.4.3 The Endura system is also used for recording images around the traffic light junctions that have J-eyes.

Sub Section 2.5 VICON Software for Image Recording of EMAS PTZ

2.5.1 The VICON System software is used by the ITSO OCC operator to record, archive EMAS PTZ cameras.

2.5.2 There is only 1 VICON workstation in ITSO OCC, this is located at the back shelf behind the FC position.

Sub Section 2.6 J-EYES Software for Recording of Images

2.6.1 The J-EYES software is used by the ITSO OCC operator to record and take snapshots EMAS PTZ and J-eyes cameras images.

2.6.2 There is only 1 workstation in ITSO OCC that has this software, this is located at desk position behind FC position.

Sub Section 2.7 UMH for Documentation of work Orders

2.7.1 The UMH software is used by the DM, DyAM & FC to check, send, update and retrieve work orders sent to maintenance for rectification of equipment faults.

2.7.2 Only the DM, DyAM and the FC has this software in their workstation.

Sub Section 2.8 RBBI for Tunnel Message break-in for Crisis Situations

2.8.1 The RBBI System software is used by the ITSO OCC operator to break in to regular broadcast system to make emergency announcements during crisis or emergency situation in the tunnel.

2.8.2 There are only 2 RBBI systems in ITSO OCC, they are located at the back shelf behind the FC position. One workstation is for CTE tunnel and the other is for FCT and WVT.

Sub Section 2.9 RCS base station for monitoring of EMAS equipment signal

2.9.1 The RCS base station software is used by the FC to monitor the health status of the EMAS equipment signal.

2.9.2 There is only 1 RCS base station system in ITSO OCC & this is located at the back shelf behind the FC position

Sub Section 2.10 Wall projector and Monitors

2.10.1 The wall projector and Monitor screens are used for overall monitoring of cameras and real time traffic situation map on the Singapore Road network.

2.10.2 The projector consists of 4 big monitor screens. The left most screen (when the orientation is facing the screen) is screen 1, usually in a 16 windows configuration displaying camera images. The right most screen is screen 4 and display set up is similar to screen 1. The center two screens are screens 2&3 displaying the GIS map of Singapore road network.

Sub Section 2.11 Monitors and keyboards for controlling of Cameras.

2.11.1 Monitors and keyboard system is available in every OEs ,DM, DyAM and FC position. Each position has its own password for the system.

2.11 The system is used to control PTZ and navigate to the various monitors and cameras.

Sub Section 2.12 Parking Guidance System

2.12.1 The Parking Guidance System displays information on VMS in the CBD area to car park users heading towards participating carparks with about number of available parking lots in each of the participating car parks.

2.12.2 This system is available in every OEs ,DM, DyAM and FC position and can also be used to detect faults for the on site PGS equipment.

Sub Section 2.13 Fire alarm panel connecting to the respective tunnel, ITSO building and facility buildings

2.13.1 There are five facility buildings that are connected to the fire system main panel. Four of which are facility buildings and the fifth one is the control building itself (ITSO).

2.13.2 This alarm panel is located behind the FC's position.

Sub Section 2.14 Woodsville Tunnels Fallback Control Panel in ITSO building

2.14.1 This panel allow remote local control of Woodsville Tunnel in fallback mode.

2.14.2 This panel is used to control Ventilation System and Deluge System

2.14.1 This fallback control panel is located behind of Zone 5 position.

Section 3 ITSO OCC Servers

Sub Section 3.1 OCC Server Set Up

3.1.1 The architectural set-up of the i-transport system consists of 3 main server components, hardware and Operating System (OS).

3.1.2 The 3 main server components are listed as follows:

a. i-transport OI Engine
b. i-transport TI-Hub
c. i-transport Database

3.1.3The hardware would include the Integrated Workstations (IW) and the computers for the various server components as mentioned in Section 2 above.

Section 4 Abbreviations

EMAS Expressway Monitoring Advisory System
FC Fault Coordinator
GLIDE Green Link Determining System
ITSO Intelligent Transport Systems Operations
J-eye Junction eye
OCC Operations Control Center
OE Operations Executive
PTZ Pan Tilt Zoom
DM Deputy Manager
RBBI Radio Broadcast Break In
DyAM Deputy Assistant Manager
UMH Unified Maintenance Hub
WVT Woodsville Tunnels