ON-THE-JOB TRAINING (OJT) RECORD

JOB TITLE:	DEPARTMENT:	DIVISION:	MONTH / YEAR:
Traffic Video Analytic System	Project	Ingensys Pte Ltd	JANUARY / 2025

NAME OF TRAINER:	EMPLOYEE NUMBER:	DESIGNATION:	DATE OF TRAINING	PROJECT REFERENCE (if applicable)
PHUA CHEE KIAN	11621	Project Manager	15th Jan 2025	Punggol Digital District (JTC)

NAME OF TRAINEE(S):	EMPLOYEE NUMBER:	DESIGNATION:
1. AHMAD ZUHAILI BIN JULJALAL 2. TIANG WAI HONG	1. 14589 2. 11897	1 Project Member 2 Project Member

SN	Main Task	Task Elements	OJT Hours
1	Install, calibrate, testing & commissioning.	1 Identify the location/position of installation. 2 On-site installation and calibration. 3 Fine-tuning targeted regions of interest (zone of focus). 4 Alignment of zone of focus with centralise control management program module. 5 Testing and commissioning.	8.0 hours

Date of record: 17th January 2025

ON-THE-JOB TRAINING (OJT) WRITE-UP

Department	Project	**Total Tasks**	1 Identify the location/position of installation. 2 On-site installation and calibration. 3 Fine-tuning targeted regions of interest (zone of focus). 4 Alignment of zone of focus with centralise control management program module. 5 Testing and commissioning.
Job Scope	Install, calibrate, testing & commissioning.		
Job Title	Traffic Video Analytic System		
Task to learn	The task for the project team is to design, install, and configure the Traffic Video Analytic System, ensuring proper hardware setup (cameras, sensors), software integration (analytics platform), and real-time data processing. Team members must also test system accuracy, optimize performance, and train users for effective operation.		
Types of Learning	On job training and practical hands-on at site (in-situ).		
Resources	Site teaching, demonstration and execution.		
Duration	8.0 hours.		

Task to Learn:				
S/N	**Task Steps** (Steps necessary to perform the task. List the steps of the task in the sequence they are normally performed)	**Key Learning Points** (Tacit Knowledge / pointers which aids the successful execution of the task steps.)	**Task Standards** (Specific criteria that define successful task performance. The criteria should be observable and measurable. Eg. Degree of tolerance from the standard? Quality of the final product? How well must each step be performed?)	**Notes to Trainer**
1	Pre-Installation Checklist • Site Survey: • Inspect camera mounting points (poles, gantries). • Verify power and network availability. • Ensure clear field of view covering lanes of interest. • Hardware Verification: • Confirm receipt of cameras, NVR/server, networking gear, and accessories. • Check for compatible cables and connectors. • Software Readiness: • Ensure TVA software licenses and activation keys are available. • Pre-install software on server, if applicable.	A thorough site survey is critical before installation. Understanding the site layout, camera mounting positions, lighting conditions, traffic flow, and network infrastructure helps in avoiding issues later.	Site Preparation Standards Conduct a detailed site survey before installation. Verify power sources, network availability, and mounting structures. Ensure clear line of sight for all cameras, with no physical obstructions. Standard: All critical infrastructure (power/network) must be operational before starting installation. Survey must be documented and approved.	Focus on Hands-on Experience Training should be highly practical. Walk trainees through actual installation steps (mounting cameras, connecting cables, configuring software) in a real or simulated environment. Emphasize Site Survey Importance The success of the entire installation hinges on a thorough site survey. Ensure trainees understand how to assess camera placements, lighting conditions, and environmental factors (e.g., wind, sun glare).

2	Installation Procedure A. Mounting Cameras: • Install cameras at designated positions. • Adjust height and angle for optimal lane coverage. • Use weatherproof enclosures if outdoors. B. Cabling & Power: • Lay power and Ethernet cables (PoE if applicable). • Secure cables to avoid environmental or mechanical damage. • Connect to power supply and network switch/router. C. System Connection: • Connect cameras to NVR or video analytics server. • Assign IP addresses and verify connectivity via ping or camera interface.	Proper Camera Placement is Crucial Cameras must be installed at the correct height, angle, and distance to ensure a clear, unobstructed view of traffic lanes. The effectiveness of analytics depends heavily on optimal positioning. Avoid glare, shadows, and occlusions for accurate detection.	Equipment Handling & Installation Cameras must be mounted securely at the correct height and angle. All cables (power, data) must be neatly routed, protected, and labelled. Enclosures used must be weatherproof (minimum IP66 rating for outdoor use). Mounting must resist environmental factors (wind, vibration, tampering). Standard: Equipment must be installed using proper tools and safety gear. All mounted devices should pass a physical stability and weather resistance check.	Teach Troubleshooting Skills During the commissioning phase, issues like poor network connectivity, incorrect camera angles, or misconfigured software are common. Teach troubleshooting as part of the core curriculum. Importance of Accurate Calibration Calibration is critical for video analytics to function correctly. Incorrect configurations lead to false positives, missed detections, and unreliable data.

3	Configuration & Calibration • Camera Settings: • Set resolution, frame rate, and exposure for day/night conditions. • Enable image stabilization and noise reduction if available. • Analytic Zone Setup: • Define virtual zones (detection lines, no-entry zones, counting zones) in the software. • Calibrate for distance, scale, and perspective. • Software Configuration: • Configure video streams and assign to analytics engine. • Set classification parameters (e.g., car, bus, bike). • Enable event triggers (e.g., wrong-way, stopped vehicle).	Reliable Power and Network Setup Ensure consistent power supply (or PoE) and secure network connectivity. Fluctuations or interruptions can disrupt video streams and compromise data collection. Cable management and weatherproofing are key for long-term reliability.	Power & Network Connectivity Use PoE or stable AC/DC power sources. Network connections must support the required bandwidth and latency for real-time analytics. Each camera and device must have a unique, properly configured IP address. Standard: All power and network tests must show 100% uptime and connectivity for a minimum of 24 hours before handover. System Configuration Cameras should be configured for optimal resolution, frame rate, and bitrate based on analytics requirements. Analytic zones (e.g., detection lines, virtual barriers) must be precisely calibrated. Software should be configured with correct classification parameters and event triggers.	Networking and Power Requirements Teach trainees the importance of proper networking and power setups. Disrupted power or low bandwidth will lead to unreliable system performance.

4	Commissioning • Functional Testing: • Validate live feeds and recorded footage. • Simulate traffic scenarios to verify event detection. • Check alert generation and system logging. • Integration: • Connect to central management system, if applicable. • Test data transmission (e.g., API, FTP, or cloud sync). • Documentation: • Record IP addresses, configuration details, and user credentials. • Update system layout drawings. • User Training: • Provide basic training for operators on system usage and monitoring. • Share troubleshooting guide and escalation contacts.	Precision in Configuration and Calibration The video analytics engine must be calibrated accurately for scale, distance, and perspective. Defining virtual zones (e.g., counting lines, restricted areas) with precision ensures events are detected correctly. Poor calibration leads to false positives or missed detections.	Testing & Validation Conduct functional testing for all camera feeds and analytic features. Test detection of real-world events (e.g., stopped vehicles, speed violation, wrong-way entry). Validate data logging, alert notifications, and integration with central systems. Standard: System must pass all test cases with documented results. False positive/negative rates should meet project KPIs.	System Integration and Alerts A TVA system is rarely standalone. It integrates with other systems, such as central management platforms, incident response systems, or cloud storage.

5	Handover & Sign-off • Present test reports and system documentation. • Address punch list items, if any. • Obtain client sign-off confirming successful installation and commissioning.	Integrate cameras and analytics software with backend systems such as central management servers, dashboards, or cloud platforms. Understanding protocols (e.g., RTSP, ONVIF, or custom APIs) is essential for smooth data flow and real-time alerting. Testing is Not Optional Commissioning requires thorough testing under different conditions (e.g., day/night, light/rain, high/low traffic). Simulate events like stopped vehicles or wrong-way movement to validate system accuracy and performance. Documentation and Record-Keeping Maintain detailed records of IP settings, system configuration, network diagrams, and test results.	Safety & Compliance Follow work-at-height safety protocols, use appropriate PPE, and adhere to local traffic control regulations.	Focus on Documentation and Compliance Emphasize the importance of maintaining accurate documentation (IP plans, system configurations, test results) for both operational purposes and regulatory compliance. Emphasize Safety Practices Safety should always be a priority, particularly when working at height or with electrical equipment.

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