

## OVERVIEW:

**The Passenger Information Displays** is a key innovation for improving travel experiences. It offers real-time updates on arrivals, departures, delays, and other important travel information. This system ensures that passengers are constantly informed through dynamic displays and audio announcements, making travel more predictable and reducing the anxiety often associated with delays.

Instead of relying on old-fashioned timetables, PID systems now provide automatic live updates, allowing passengers to adjust their travel plans on the go, such as grabbing a coffee during delays. They also help transit agencies compete with ridesharing companies by enhancing the convenience of public transport. The real-time displays can show platform changes, gate information, weather updates, and even emergency alerts, ensuring that passengers receive timely and relevant information as they move through stations or onboard vehicles.

PID System isn't just about providing information; it's about enhancing the overall passenger experience with smart, adaptable, and real-time solutions. This creates a friendlier, more reliable, and efficient travel environment, whether for daily commuters or occasional travellers.



## KEY FEATURES

The system offers **real-time data synchronization** with **redundant servers** for high availability, ensuring that even if a primary server fails, the system continues to operate smoothly using secondary data sources.

RAPID integrates with **existing Central Traffic Control (CTC)** systems, offering flexibility for operators to display **advertisements** alongside operational information, without affecting functionality.

- **Real-time Data Flow:** Displays real-time train information, including arrival, departure, and delays.
- **Offline Functionality:** In case of server failures, the system continues to display pre-loaded timetables using **offline mode**
- **Redundant Servers:** Built-in redundancy in the form of multiple data sources ensures system reliability
- **Advertisement Capability:** Allows operators to display dynamic advertisements while delivering train-related information
- **Integration with PA System:** Can interface with local public announcement systems for coordinated audio and visual updates

## HARDWARE:

| Key Features                             | Description                                                                                                                                                                                                                                             |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Central Control Unit (CCU) Server</b> | <ul style="list-style-type: none"> <li>Operating System: Microsoft Windows Server</li> <li>Database: Microsoft SQL Server Standard Edition</li> <li>Memory: 128 GB (buffer pool), 32 GB (column store segment cache), 524 PB (database size)</li> </ul> |
| <b>Local Control Unit (LCU) Server</b>   | <ul style="list-style-type: none"> <li>Operating System: Microsoft Windows Server Database: Microsoft SQL Server Express Edition, 10 GB (database size)</li> </ul>                                                                                      |
| <b>PIS Workstation</b>                   | <ul style="list-style-type: none"> <li>Operating System: Microsoft Windows 10, 64-bit</li> </ul>                                                                                                                                                        |
| <b>Display Panels</b>                    | <ul style="list-style-type: none"> <li>LCD displays (single and double-sided) are used at platforms and lobbies.</li> <li>Each LCD has a dedicated content player for displaying train information and advertisements.</li> </ul>                       |

## SOFTWARE:

| Key Features                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CCU-PIS Monitor and Manager</b> | <p>Manages real-time and offline timetable synchronization, system status, public announcements, and advertisement handling.</p> <ul style="list-style-type: none"> <li>Windows based application</li> <li>Centralised real-time/offline timetable management</li> <li>Centralised PI System status</li> <li>Centralised ALLPA control</li> <li>Centralised stations status display</li> <li>Centralised message(s) handling</li> <li>Centralised advertisement handling</li> </ul> |
| <b>Timetable Management</b>        | <p>Manages real-time and offline timetable synchronization, system status, public announcements, and advertisement handling at local station.</p> <ul style="list-style-type: none"> <li>Windows based application</li> <li>Local real-time/offline timetable management</li> <li>Local PI System status</li> <li>Local ALLPA control</li> <li>Local stations status display</li> <li>Local message(s) handling</li> <li>Local advertisement handling</li> </ul>                    |

## Communication & Integration:

### a) Integration with Existing Systems or New Systems

RAPID can integrate with various existing systems like **Siemens**, **Hitachi** and other Signalling Systems by connecting through the **TCP/IP network**. The system communicates using a local area network (LAN) and can sync with **signalling servers** to gather timetable and train movement data.

### b) RAPID Server and Display Synchronization:

Real-time timetable management between the Central Control Unit (CCU) and Local Control Unit (LCU) servers ensures continuous operation across multiple stations.

## DISPLAY UNIT SPECIFICATION:

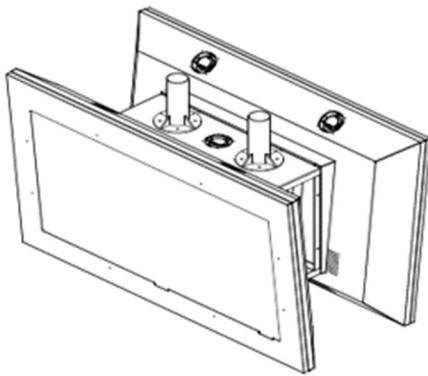


Figure 2 Platform LCD Casing Design - Back-to-Back Arrangement

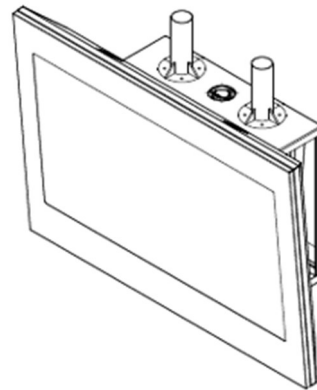


Figure 1 Lobby LCD Casing Design - Single Arrangement

| Key Features       | Description                                                                                                                                                                                                                                     |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type               | <ul style="list-style-type: none"> <li>Single-sided or Double-sided LCD panels</li> <li>Available in Standard HD or 4K resolution</li> <li>Suitable for both Indoor and Outdoor environments</li> </ul>                                         |
| Size (option)      | <ul style="list-style-type: none"> <li>32", 43", 55", and 65" customizable sizes</li> </ul>                                                                                                                                                     |
| Brightness         | <ul style="list-style-type: none"> <li>Standard: 700 nits (suitable for indoor areas)</li> <li>High-Brightness Option: 2500 nits (suitable for outdoor and high-glare areas)</li> </ul>                                                         |
| Display Protection | <ul style="list-style-type: none"> <li>IP Rating: IP65 for outdoor models (dust and water-resistant)</li> <li>Anti-reflective glass with vandal-resistant casing</li> <li>Operates between -30°C and 50°C for all-weather resilience</li> </ul> |

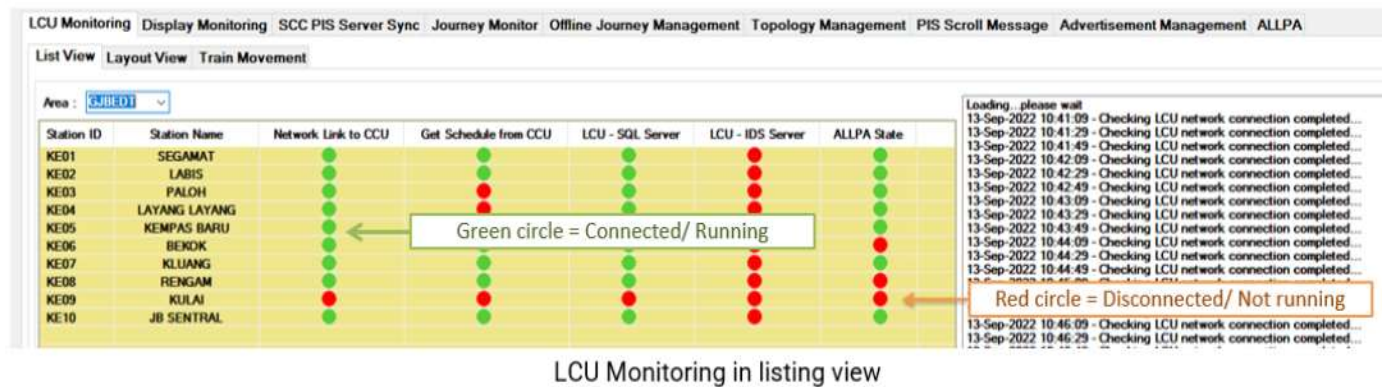
|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Resolution</b>                   | <ul style="list-style-type: none"> <li>Resolution: 1920 x 1080 (Full HD) or 3840 x 2160 (4K)</li> <li>Aspect Ratio: 16:9 standard</li> <li>Contrast Ratio: 4000:1</li> <li>Viewing Angle: 178° horizontal and vertical</li> </ul>                                                                                                                                                                                                                                                                                                                                   |
| <b>Media Player Integration</b>     | <ul style="list-style-type: none"> <li>Processor: Intel i5, 2.4GHz or higher</li> <li>RAM: 8GB DDR4 (Upgradeable)</li> <li>Storage: 128GB SSD (Expandable to 1TB)</li> <li>Operating System: Windows or Linux-based custom OS</li> <li>Connectivity: Wi-Fi, Ethernet, 4G/5G (optional)</li> </ul>                                                                                                                                                                                                                                                                   |
| <b>Communication</b>                | <ul style="list-style-type: none"> <li>Network Protocol: <ul style="list-style-type: none"> <li>TCP/IP for data synchronization with central servers</li> </ul> </li> <li>Customization Options:<br/>Display layouts and templates are customizable according to client preferences. This includes: <ul style="list-style-type: none"> <li>Train Information Display: Arrivals, Departures, Delays</li> <li>Advertisement Panels: Dynamic media integration</li> <li>Emergency Messaging: Quick display of evacuation or safety instructions</li> </ul> </li> </ul> |
| <b>Mounting Options</b>             | <ul style="list-style-type: none"> <li>Pole Mount, Ceiling Mount, and Wall Mount</li> <li>Back-to-back displays for dual-sided viewing (platforms)</li> <li>Single-sided displays for lobby and concourse areas</li> </ul>                                                                                                                                                                                                                                                                                                                                          |
| <b>Environmental Specifications</b> | <ul style="list-style-type: none"> <li>Operating Temperature: -30°C to +50°C</li> <li>Humidity Resistance: 5% to 95% non-condensing</li> <li>Power Consumption: 100W to 150W (varies by size and brightness)</li> </ul>                                                                                                                                                                                                                                                                                                                                             |
| <b>Compliance</b>                   | <ul style="list-style-type: none"> <li>EN50121 for electromagnetic compatibility in railway applications</li> <li>ISO 9001 for Quality Management Systems</li> <li>CE, RoHS, and FCC certifications</li> </ul>                                                                                                                                                                                                                                                                                                                                                      |

Example of PIDS Display unit. The Display can be customised depending on the project requirements.

| BEKOK <span>22 Mar 2024 16:05:20</span> |              |          |            |          |
|-----------------------------------------|--------------|----------|------------|----------|
| Jenis Tren                              | Destinasi    | Platform | Perlepasan | Status   |
| Komuter                                 | Kuala Lumpur | 2        | 16:08      | Expected |
| Komuter                                 | Paloh        | 2        | 16:30      | Expected |
| Komuter                                 | Segamat      | 1        | 17:00      | Expected |
| Komuter                                 | Kluang       | 2        | 17:30      | Expected |
| SILA BERHATI - HATI                     |              |          |            |          |

| BEKOK <span>22 Mar 2024 16:18:02</span> |           |
|-----------------------------------------|-----------|
| Platform 1                              |           |
| Train To                                | Departure |
| Segamat                                 | 17:00     |
| Next Train To                           | Departure |
| Labis                                   | 18:00     |
| SILA BERHATI - HATI                     |           |

## LCU Monitoring:



LCU Monitoring in listing view

| Station ID | Station Name  | Network Link to CCU | Get Schedule from CCU | LCU - SQL Server | LCU - IDS Server | ALLPA State |
|------------|---------------|---------------------|-----------------------|------------------|------------------|-------------|
| KE01       | SEGAMAT       | ●                   | ●                     | ●                | ●                | ●           |
| KE02       | LABIS         | ●                   | ●                     | ●                | ●                | ●           |
| KE03       | PALOH         | ●                   | ●                     | ●                | ●                | ●           |
| KE04       | LAYANG LAYANG | ●                   | ●                     | ●                | ●                | ●           |
| KE05       | KEMPAS BARU   | ●                   | ●                     | ●                | ●                | ●           |
| KE06       | BEKOK         | ●                   | ●                     | ●                | ●                | ●           |
| KE07       | KLUANG        | ●                   | ●                     | ●                | ●                | ●           |
| KE08       | RENGAM        | ●                   | ●                     | ●                | ●                | ●           |
| KE09       | KULAI         | ●                   | ●                     | ●                | ●                | ●           |
| KE10       | JB SENTRAL    | ●                   | ●                     | ●                | ●                | ●           |

Green circle = Connected/ Running  
Red circle = Disconnected/ Not running

Function LCU Monitoring allows user to monitor the network link and PIS main services for PIS that runs in LCU Servers.

The service runs inside LCU are:

- **Get Schedule** : Service that downloading online schedule from CCU and managing the local schedule switchover for LCU when CCU is not available or when local station is Forced Offline by CCU.
- **SQL Server** : MSSQL database system service

Status under listing are shown in red or green coloured circle. The listing shall be updated with the statuses retrieved from all LCUs in 10 seconds' interval.

- **Network Link to CCU** : shows the status for network connection between LCU and CCU server.
- **Get Schedule from CCU** : shows the status for the service running in LCU that is responsible to download schedule from CCU.
- **LCU - SQL Server** : shows the status for the service that manages the database inside LCU servers.

**ALLPA State** : shows the status for ALLPA.

## AIM ANALYTICS SDN. BHD.

Address  
Suite M.8,  
No.3 Jalancempakasd 12/1A,  
Bandar Sri Damansarapju9,  
52200 Kuala Lumpur. Malaysia

## Contact us

Email: [info@asgb.com.my](mailto:info@asgb.com.my)  
Phone: +603-6273 3386  
Fax: +603 6273 3387  
Toll Free: +1800-88-3386