VISUAL PASSENGER INFORMATION SYSTEM FOR SINGAPORE MRT AND LRT LINES

CUSTOMER

Land Transport Authority of Singapore

GENERAL

Singapore Technologies Electronics Limited (ST Electronics) was awarded a contract in 2000 to provide a state-of-the-art Visual Passenger Information System (VPIS) for the Mass Rapid Transit (MRT) and Light Rail Transit (LRT) systems in Singapore.

The VPIS is to be implemented progressively on all the current operational lines in Singapore, namely, the North-South and East-West MRT Lines, North-East MRT Line, Bukit Panjang and Sengkang/Punggol LRT Lines.

The VPIS solution provided by ST Electronics is based on ST Electronics' in-house Intelligent Rail Information System (iRIS) product which allows rail transit commuters in the trains to view live messages on LED displays and multimedia video on LCD screen.

VPIS uses advanced technology such as SDH Network to distribute text and video data to the selected rail transit stations from the OCC.

At the stations, the data will be downloaded to the trains via Wireless LANs as the trains stop at the stations.

This iRIS solution allows large files such as video clips to be downloaded onto the trains, thereby providing information updates for the benefit of the commuters. Video clips and messages displayed include weather forecasts, rail arrival and departure time, emergency messages and advertisements.

The VPIS system currently supports English, Chinese, Malay and Tamil languages but has a multi-lingual capability to support a worldwide market.

SYSTEM CONFIGURATION

Operation Control Centre:

It comprises a Content Creation & Operation terminal which allows:

- Creation, modification and downloading of content and master schedules
- Monitoring and alarm management of the display status
- Interfacing with station display sub-system
- Interfacing with other sub-systems such as Rail Travel Information System (RATIS), airport flight information and etc.

Station/Depot :

Every station/depot comprises a Wireless LAN network and server for communicating with train-borne VPIS sub-system. These stations and depots are connected to the Operating Control Centre (OCC) via the Communication Backbone Network.

Train-borne VPIS sub-system:

It comprises a VPIS controller, the displays and audio sub-system, distribution network and wireless sub-system.

VPIS controller is responsible for storing information to be displayed as well as time & event schedules. The displays support popular multimedia formats such as MPEG1, Shock Wave, Flash, JPEG.

The distribution network onboard the train is responsible for sending information to the displays.

The wireless sub-system on the train interfaces with the train-borne VPIS controller to facilitate information upload/download to and from the station/OCC.

FUNCTIONS PERFORMED

- Multimedia display such as advertisement and entertainment onboard train
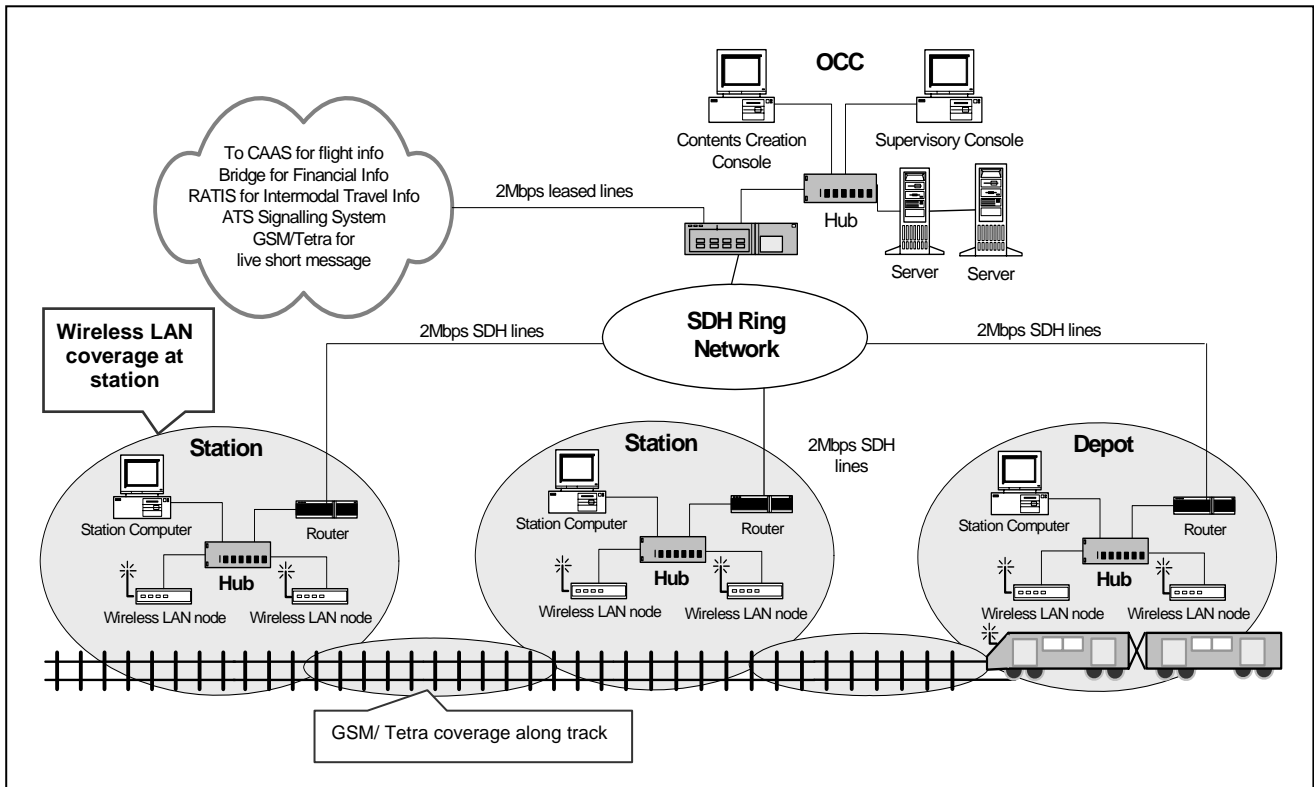
- Messages to advise commuters such as train-service operational messages, emergency messages and ad-hoc messages.
- Information such as :
  - News
  - Financial
  - Weather
  - Tourist attractions
  - General knowledge
  - Inter-modal travel advisory

SCOPE OF WORK

- Project Management
- Design
- Manufacturing & Procurement
- Installation
- Factory Test & System Integration
- Testing & Commissioning
- Documentation
- Training
- Warranty

System Configuration Diagram