msi GLOBAL

End to end
Ticketing
Solutions

MSI Digital Mobility Solutions

Built to last

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Our Presence – Automatic Fare Collection Systems

MSI leverages on more than 20 years of experience maintaining Singapore's world class transport ticketing system for our parent company – Singapore's Land Transport Authority.

35,000	**6,000**	**134**
validators	buses	stations

The collective field data harnessed from Singapore's extensive public transportation network has enabled us to bring value added expertise to our clients as demonstrated in our successful AFC project deliveries across the globe.

Ireland

Philippines

Qatar

India

Thailand

Malaysia

Singapore

End to End Account Based Ticketing (ABT) Solution

Following a successful partnership with Mastercard to be the first city in Asia to trial the direct payment of public transport fares using contactless credit and debit cards, we packaged the lessons learnt from the trial into our Symphony e-Payment back-office system which has been smoothly delivered to our clients abroad. Our solution has since evolved into our cloud / on-premise deployable microservices based Digital Mobility Platform, designed to help our clients break free from expensive vendor lock-ins.

Driver Console for Buses and Trams
MSI Elypse C

Built as a successor to the field proven 1st generation bus fare console used across 7,000 buses in Singapore, the MSI Elypse C unifies the management of all on-board bus systems within a single interface.

› Quad-core ARM Cortex A53 / Cortex M7 dual processor

› Supports Yocto Linux, Android 11 and QNX 7.1

› IP65 Ingress Protection

› IK08 Vandal Resistance

› GNSS using dead reckoning allows the vehicle to be tracked even when navigating urban skyscrapers.

› Ultra-high brightness 10.1" LCD for optimal sunlight readability tested for up to 70,000h use at 50% brightness

› Projected Capacitive (PCAP) touch panel with optional tactile on-screen keypad overlay for enhanced user experience

How does our modular architecture help you?
Our System-on-Module (SoM) architecture allows you to upgrade the processor mid-life with newer SoM based processors to grow your computing power as needed. Likewise, the onboard peripherals such as QR module, WiFi + Bluetooth module, 4G and GNSS modules are all upgradeable too, allowing you to maximise the useful life of your device.

Can our device be integrated with existing systems?
Our driver console supports a wide range of connectivity and expansion options. These include PowerNet2, CANBUS, 100Base-T1, RS232, RS422, RS485, as well as TCP/IP over PoE Gigabit Ethernet.
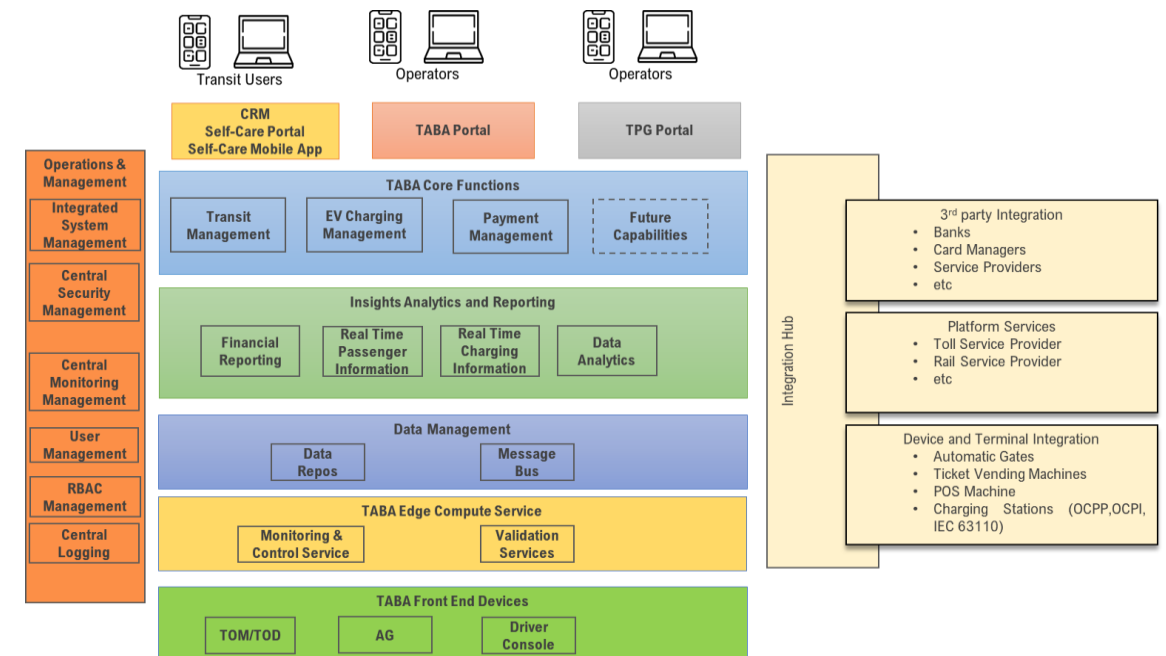
What makes our driver console special?
The ELYPSE C driver console is a ruggedized human machine interface (HMI) that uses carefully selected components that guarantee extended longevity to help us achieve a 10-year useful life. This means that components and spares will remain available throughout its lifecycle.

Integrated Validator Configurations

MSI Elypse V

An integrated ticketing solution often extends to a range of devices. The MSI Elypse V can be configured to be pole mounted in a bus or tram and can also be configured to be mounted to static devices, such as fare gates and floor mounted stanchions as platform validators.

MSI Elypse V has two operating configurations for Automatic Gates (AG).

Master Mode

› The validator has an application processor running QNX.

› The validator connects to the AG controller(s) through:

  › RS232 / RS422 / RS485

  › TCP/IP over RJ45

  › CANBUS

  › DIGITAL I/O

› The validator can connect to a slave validator in bi-directional gates

› It can be packaged as a one-stop retrofit kit

Slave Mode

› The validator does not have an application processor.

› It is connected to a host ECU or master validator

› It provides the following:

  › Patron Information Display

  › Contactless Smartcard Reader

  › QR Scanner

  › Configurable LED Indicators

  › Speaker

Microservices Architecture
Digital Mobility Platform (DMP)

In anticipation of the evolving urban mobility landscape, MSI has developed a cloud native back-office system that supports integration with different mobility verticals. This back-office, named the Digital Mobility Platform, performs all the features of our Central Clearing House System and more.

How does our modular architecture help you?
We have developed all functional components into microservices based modules. When upgrades and enhancements are made, regression testing is not necessary on unaffected modules. This significantly brings down the time and cost to maintain and upgrade DMP in production.

Is your existing tech stack costing you?
Our solution is designed to work with commercial, and open-source frameworks. This allows our clients to break free from costly vendor lock-ins and infrastructure royalties.

What else can DMP do for you?
DMP has powerful built-in reporting tools that presents data on-time, as-needed, when-needed. Our data analytics module empowers managers to make calculated, data-substantiated decisions to manage the business more efficiently.
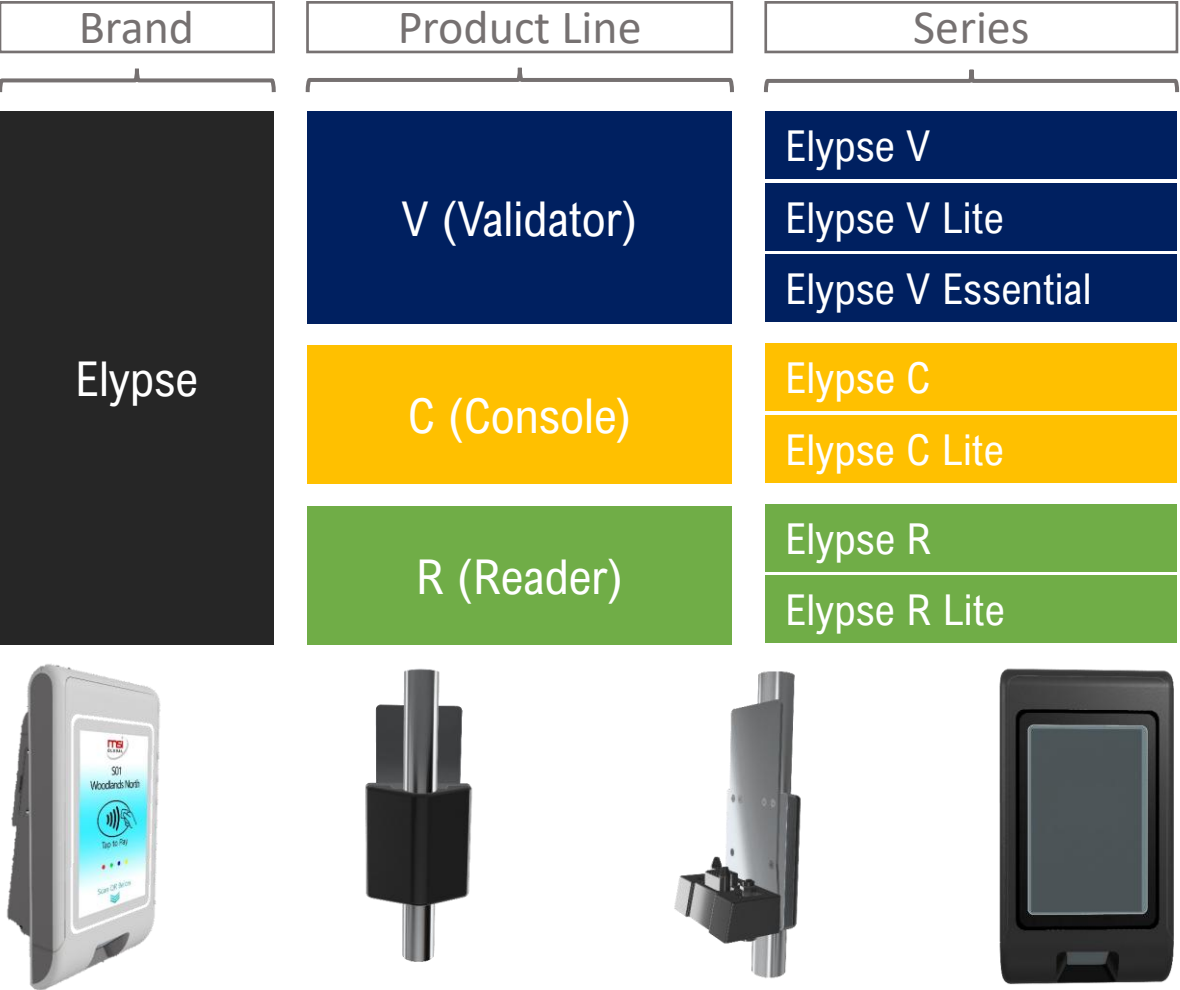
How about EMV Acceptance?
Our DMP is designed to integrate with both Visa CyberSource and Mastercard Payment Gateway Services (MPGS) used by major banks globally. Using Tokenization, we effectively limit the PCI-DSS scope to bring shorter time to market for our customers.

Product Line

MSI Elypse Series

The MSI Elypse Validator series are produced with longevity in mind, using minimally industrial grade components to support the longevity needed for a 10-year product life cycle.

Brand	Product Line	Series
Elypse	V (Validator)	Elypse V
		Elypse V Lite
		Elypse V Essential
	C (Console)	Elypse C
		Elypse C Lite
	R (Reader)	Elypse R
		Elypse R Lite

Hassle-free Field Replacements

MSI Elypse V

The docking cradle revolutionizes field replacements by bringing the mean-time-to-repair (MTTR) to less than 1 minute. The METRIMATE connectors are configurable to enable instant connection to power, ethernet, CANBUS, serial communication and more.

Furthermore, the docking cradle can be loaded with device commissioning data to achieve a truly "plug-and-play" experience.

	Elypse R	Elypse V Essential	Elypse V	Elypse C
Certifications	› CE / FCC › EMC / EMI › PCI-PTS › EMV L1 / L2	› CE / FCC › EMC / EMI › EMV L1 / L2 › IP54 / IK08	› CE / FCC › EMC / EMI › PCI-PTS › EMV L1 / L2 › IP65 / IK08 › MIL-STD-810H	› CE / FCC › EMC / EMI › IP65 / IK08 › MIL-STD-810H
Fare Media Acceptance	› ISO 14443 A/B MIFARE, CIPURSE, FeliCa › Visa, Mastercard, Amex › 8 x ISO7816 SAM Slots › ISO 18092 NFC › ISO 15693 Tags › 85mm contactless card detection range			› Paired with Elypse V series validators
QR Acceptance	› NIL	› Yes	› Yes	› Optional
Display Indicators	› 4 x Coloured LED Indicators	› 4.3" LCD Display › 4 x Coloured LED Indicators	› 7" Ultrabright (1000nits) LED Display › Audio Buzzer › Wraparound LED Indicator	› 10.1" Ultrabright (1000nits) LED Display
Wireless Connectivity	› NIL	› WLAN 802.11 b/g/n/ac › Bluetooth 5.0 + BLE › GNSS 4G LTE	› WLAN 802.11 b/g/n/ac › Bluetooth 5.2 + BLE › GNSS (BEIDOU, GALILEO, GPS, GLONASS) with Dead Reckoning › 4G LTE	
Wired Connectivity	› RS232 / RS422 / RS485	› USB › RJ45	› USB 2.0 x 2 › USB 3.0 x 1 › RJ45 x 2 › RS232 x 2 › CANBUS x 1	› USB › CANBUS › RS232 › RS422 › RS485 › 100Base-T1 › PowerNet2
Temperature	› Operating Temperature: -20°C to 60°C (0% - 95% RH, non-condensing) › Storage Temperature: -20°C to 70°C (0% - 95% RH, non-condensing)			
OS	› Yocto Linux	› Embedded Linux	› QNX 7.1 (16GB eMMC)	› QNX 7.1 (16GB eMMC)
Peripherals	› Serial Connector › 12VDC Power Adapter	› Docking Cradle using RJ45 Connector	› Docking Cradle with METRIMATE connector › Li-Ion Battery	