



LOW-COST, HASSLE-FREE UPGRADE TO “DETECT & CONTROL” SCALABLE-ON-DEMAND SMART MANAGEMENT SOLUTION

“We needed a new, smart technology that would allow us to manage all the escalators, even when the mall is closed.”

Esther Leung, Assistant General Manager (Property Management)
Kai Shing Management Services Limited

“MOKO was first to implement this value-enhancing MCore+ solution throughout the Asia-Pacific region.”

Ivan Chung, Senior Channel Account Manager,
Motorola Solutions

UNDERSTANDING MOKO'S UNIQUE SET OF NEEDS AND PAIN POINTS WAS THE FIRST STEP IN DESIGNING A CUSTOM MCore+ SOLUTION.

Motorola Solutions has a long-term relationship with shopping malls that Kai Shing Management Services Limited (Kai Shing) operates, and spent two and a half years gaining insights into their shopping mall operations. When MOKO - one of the largest shopping malls in Mong Kok Hong Kong, decided to start integrating smart building management technology, Motorola Solutions was able to offer a customized, scalable-on-demand MCore+ smart management solution that was not only hassle-free to transition to because it leveraged MOKO's existing use of MOTOTRBO radio devices, but also offered a high level of flexibility in design and implementation.

The first set of MCore+ solutions delivered, at low-incremental cost, these three additional “detect + control” functions and benefits:

1. ESCALATOR MONITORING

Market first monitoring solution through electronic circuit that reduces demands on front-line staff; as they can spend less time monitoring and only respond when needed.

2. ENHANCED TOILET SAFETY

Management staff immediately alerted if a toilet user is down.

3. IAQ MONITORING

Save on energy costs.



M CORE+

MCORE+ → A CUSTOM SOLUTION with a

Motorola Solutions' innovative and reliable communications equipment

CORE data transmission network that uses RF, LoRaWAN, Bluetooth, Internet with WiFi / 4G / 5G connection, or any combination of these

+ a custom suite of IoT assets



THE LORA ADVANTAGE

LoRa is an RF modulation technology that provides a significantly greater communication range with low bandwidths than other wireless data transmission networks like NB-IoT (narrow band IoT), Bluetooth, WiFi internet, 4G or 5G mobile networks.

IN COMBINATION WITH DMR, LORA ENABLES THE FOLLOWING:

- Escalator monitoring
- Geofencing
- GPS location tracking
- Energy zoning & saving
- Event alerts

LoRaWAN CHARACTERISTICS



LONG RANGE

- Greater than cellular
- Deep Indoor coverage
- Simple star topology



MAX. LIFETIME

- Low power optimized
- Battery lifetime of 10 years
- >100 vs cellular M2M



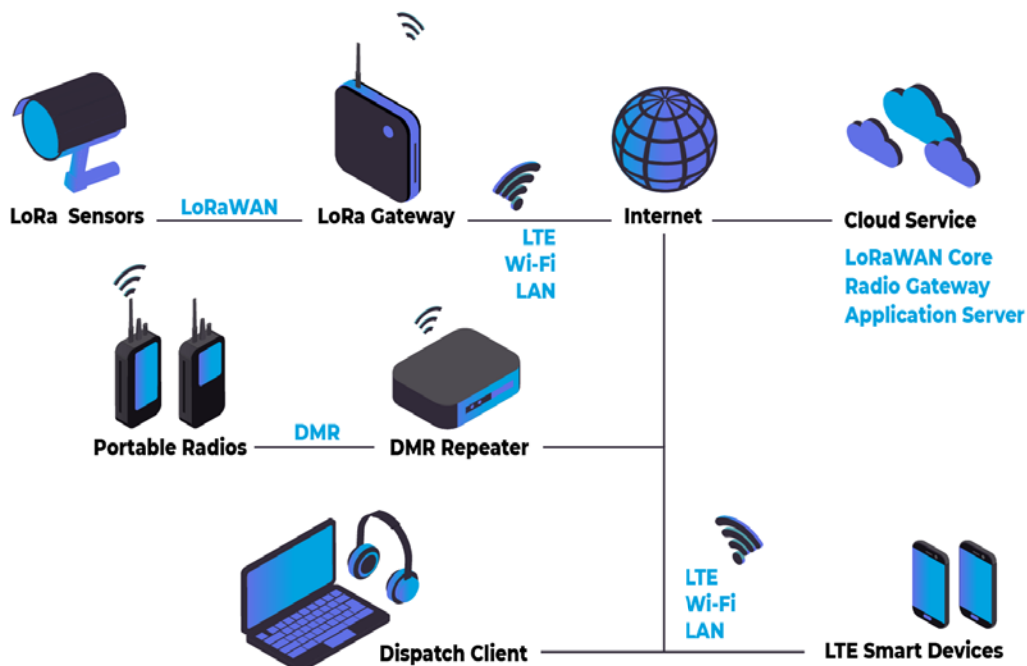
MULTI-USAGE

- High Capacity
- Multi-tenant
- Public Network



LOW COST

- Minimal Infrastructure
- Low Cost End Node
- Open SW



MCORE+ FOR MOKO

Motorola Solutions' devices: R7 and ION radios with display screen

CORE : LoRaWAN + DMR

+ : a custom suite of IoT assets



NEED / PAIN POINT

ESCALATOR MONITORING

- Efficiently monitor and manage the operation of 40 escalators, especially when the mall is closed (i.e. with minimal frontline staff) because they are critical pathways to and from the MTR
- An escalator monitoring solution that did not require an escalator technician (i.e. installation of shock vibration sensors)
- Ability to remotely turn off/on an escalator (not just be notified of malfunctions)



MCORE+ SOLUTION

- Market first use of MOTOTRBO to monitor & control escalators
- Use of escalator circuit detection instead of shock vibration sensors
- Use of LoRa data transmission network to transmit data from sensors and allow MOTOTRBO devices to receive data and control what's being monitored



BENEFIT

- Low incremental cost to MOKO since they were already using MOTOTRBO
- Friction-free migration since staff were already familiar with MOTOTRBO
- Use of shock vibration sensors would have required escalator company technicians, added cost and time, while prone to false alarms
- Installation of LoRa is low-cost, fast & easy, secure & stable

ENHANCED TOILET SAFETY

- Accessible toilets are not frequently monitored due to low usage
- Alerts when there are accidents in the toilet and a log of when it is occupied

- Use of vertical and horizontal sensors to detect occupancy and falls

- Ability to monitor accessible toilets without additional staff
- Real-time alerts in case of emergencies

IAQ MONITORING

- Monitor air conditioner
- Control as needed



- Sensors to monitor air quality

- Ability to detect when air conditioner can be turned down or up
- Ability to adjust energy usage accordingly
- Saves energy costs

INCREDIBLE ENERGY & COST SAVINGS

Time was not the only thing MOKO saved by implementing an MCORE+ solution. The smart management system allowed MOKO to save energy, manpower, and money. First of all, the implementation cost is low because the system is built on top of existing equipment. There's less waste.

The system allows for more effective deployment of staff, especially when the mall is closed but the escalators still need to run.

Energy savings from improved monitoring and control of the air conditioning system not only saves money, but also saves the planet, improving MOKO's ESG (environmental, social, and governance) standing.

“With the new IoT solutions that MCORE+ offers, we’ve seen incredible workflow improvements as well as time, energy, and cost savings in MOKO. The most important is, the increased efficiency in problem detection, control, and resolution.”

David Leung, Assistant General Manager (Technical)
Kai Shing Management Services Limited

MOKO is just one of the 20 shopping malls that Kai Shing operates in Hong Kong. Kai Shing is already planning to implement MCORE+ solutions in its other shopping malls.



Integrated Solutions for Hong Kong: mcore.plus
For more information, please visit motorolasolutions.com



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