MITSUBISHI ELECTRIC
Changes for the Better

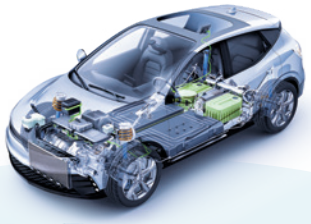
Automating the World

EV BATTERY MODULE / PACK MANUFACTURING

Key Features:

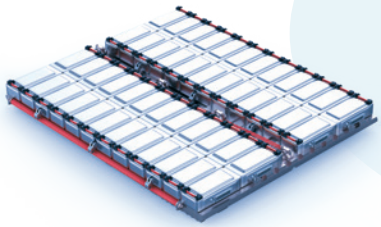
- Reduced costs
- Minimize start-up times
- One source for troubleshooting IT and OT

MITSUBISHI ELECTRIC
BY THE NUMBERS



10+ major
automotive customers worldwide

15+ years
experience in the EV battery market



12 product categories
in our comprehensive factory automation portfolio

Edge Computing Products

Controllers

Safety

Drive Products

Visualization

Robots

Solutions

Mitsubishi Electric Automotive Vehicle Manufacturing

MELFACS

iQ Monozukuri

Network (support most major N/Ws)

CC-Link IE TSN
CC-Link IE Field
CC-Link IE Safety
CC-Link IE Control
CC-Link

CANopen
BACnet
FL-net
Ethernet/IP
CIP Safety

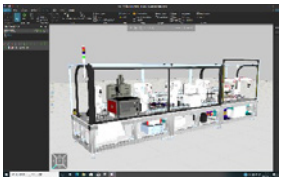
DeviceNet
Modbus/TCP
Modbus/RTU
PROFIBUS

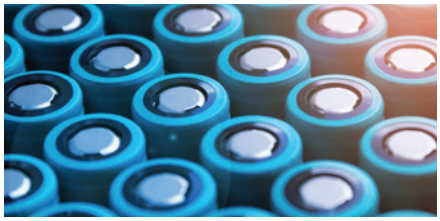
Power Monitoring

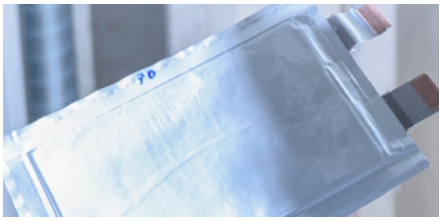
Low Voltage Power Distribution

Data Analytics

3D Simulator

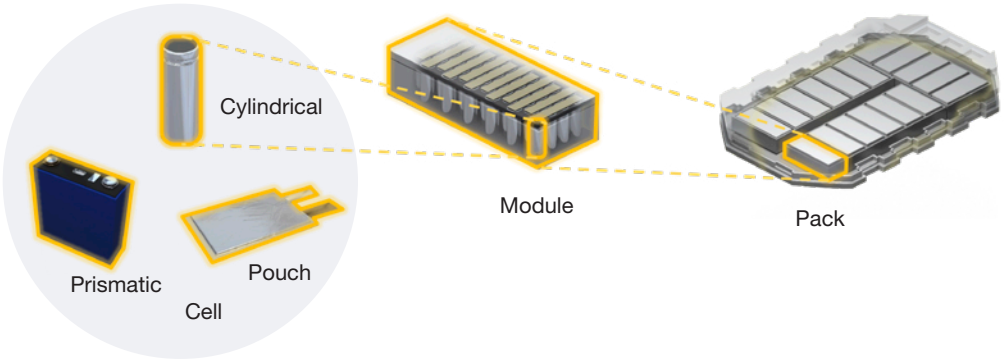






3 types

of batteries supported



4 major challenges solved

by MITSUBISHI ELECTRIC in the EV battery manufacturing process

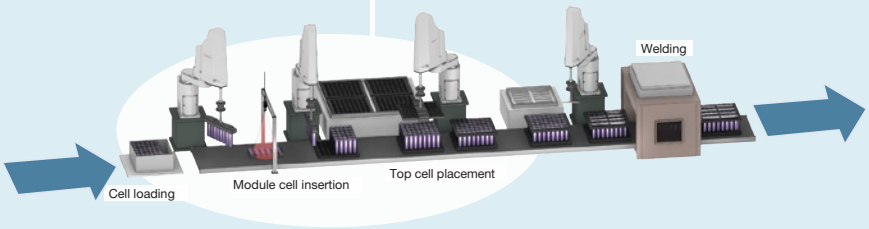
Challenge 1

Multiple OEM designs

Module Line
Fully automated

Challenge 2

Line optimization



Pack Line
Semi-automated

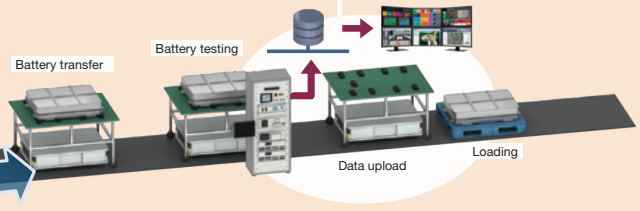
Challenge 3

Worker safety

EoL Test Line
Data tracking

Challenge 4

IT-to-FA communication



Challenge 1

Multiple OEM Designs are complicated to install, operate and maintain.

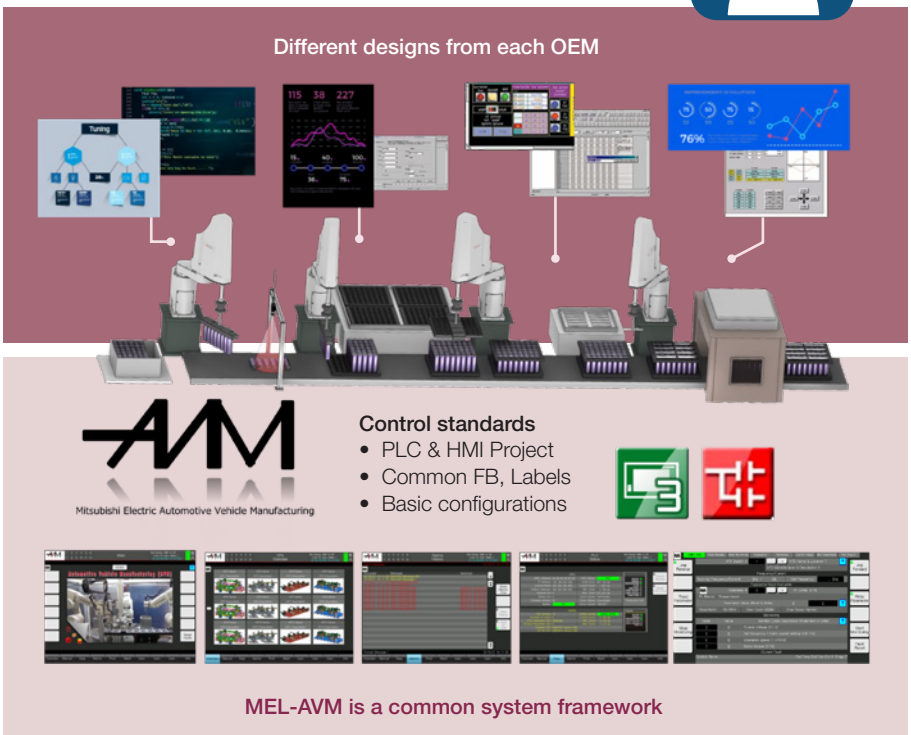
SOLUTION

MEL-AVM control standardization framework gets systems up and running quickly.

- PLC & HMI project
- Common function blocks and labels
- Basic configurationn

BENEFITS

- Reduce costs and start-up time for design, installation and adjustments by an average of 30 percent.
- Achieve consistent production quality throughout the line.



Challenge 2

Short cycle times and multiple battery types in production leave little time for line optimization during installation.

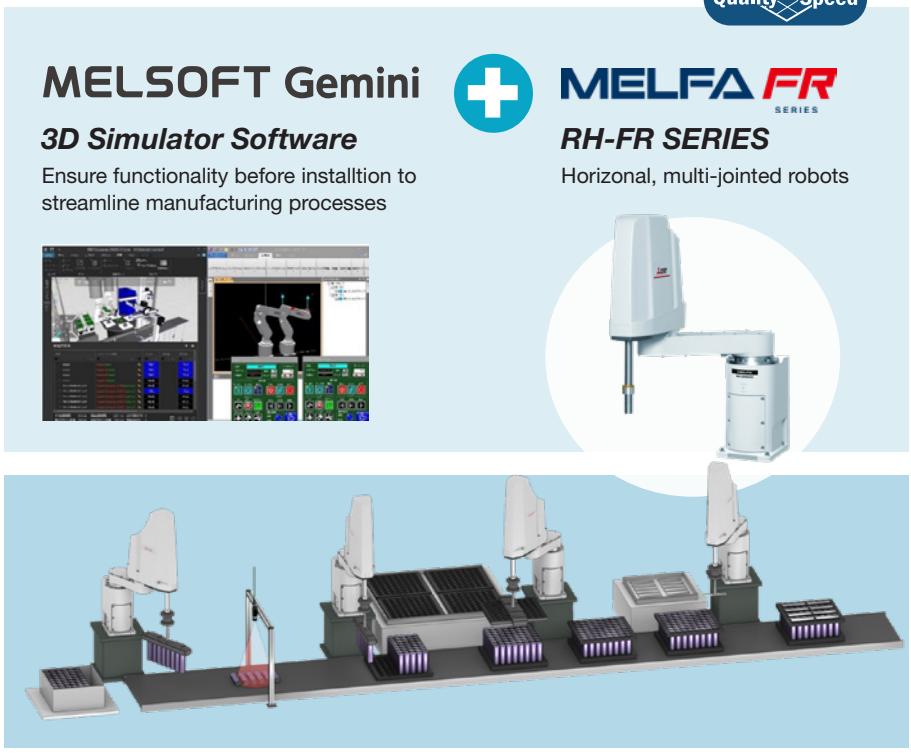
SOLUTION

MELSOFT Gemini and MELFA RH-FR Series robots let you simulate equipment, line and labor operations in advance.

- PLC simulation
- HMI simulation
- Robot simulation

BENEFITS

- Minimize startup time in real time.
- Resolve conflicting cycle time, quality and flexibility demands.



Challenge 3

Ensuring worker safety in high-risk environments comes at a high cost.

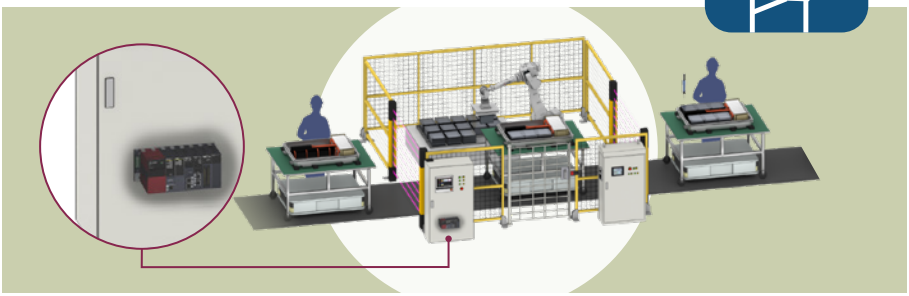
SOLUTION

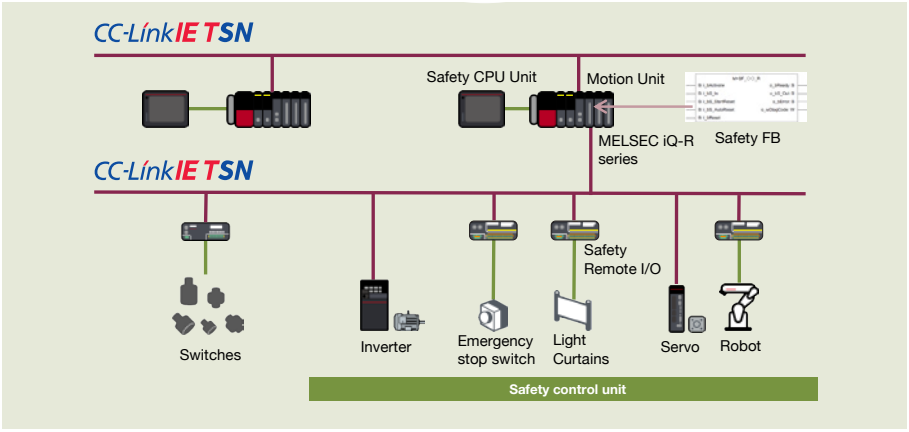
CC-Link IE TSN is an open motion control network that integrates operational, field and peer-to-peer safety components in a single CPU.

- PLC
- SV
- VFD
- I/O
- and more

BENEFITS

- Avoid frequent machine shut-downs with safety monitoring functions.
- Reduce certification time and cost with safety function blocks.





Challenge 4

Establishing IT-to-OT communication for data management, when possible, can be a tedious process.

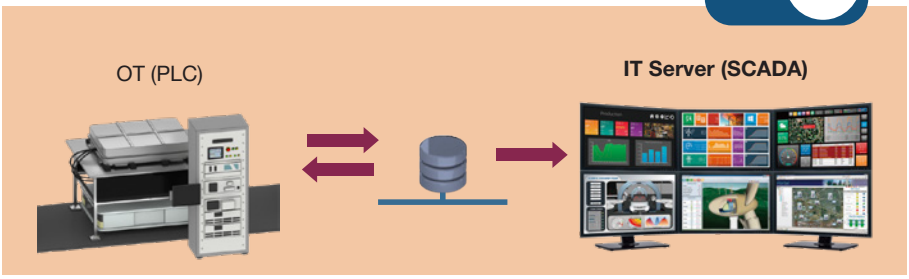
SOLUTION

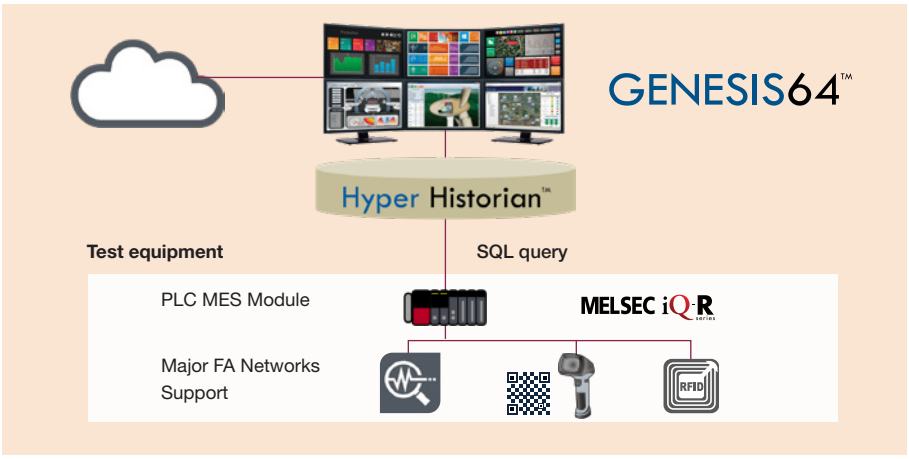
GENESIS64 is a SCADA solution to manage your machine, line or entire plant.

- GENESIS64™ SCADA with server
- Hyper Historian™ data collector
- iQ-R PLC MES interface/OPC UA module
- FA network interface support

BENEFITS

- Gather data from multiple network components and upload SQL queries from the PLC.
- Integrate component, trouble-shooting and system information in one database.
- One source for supporting/ troubleshooting IT and OT.





MITSUBISHI ELECTRIC

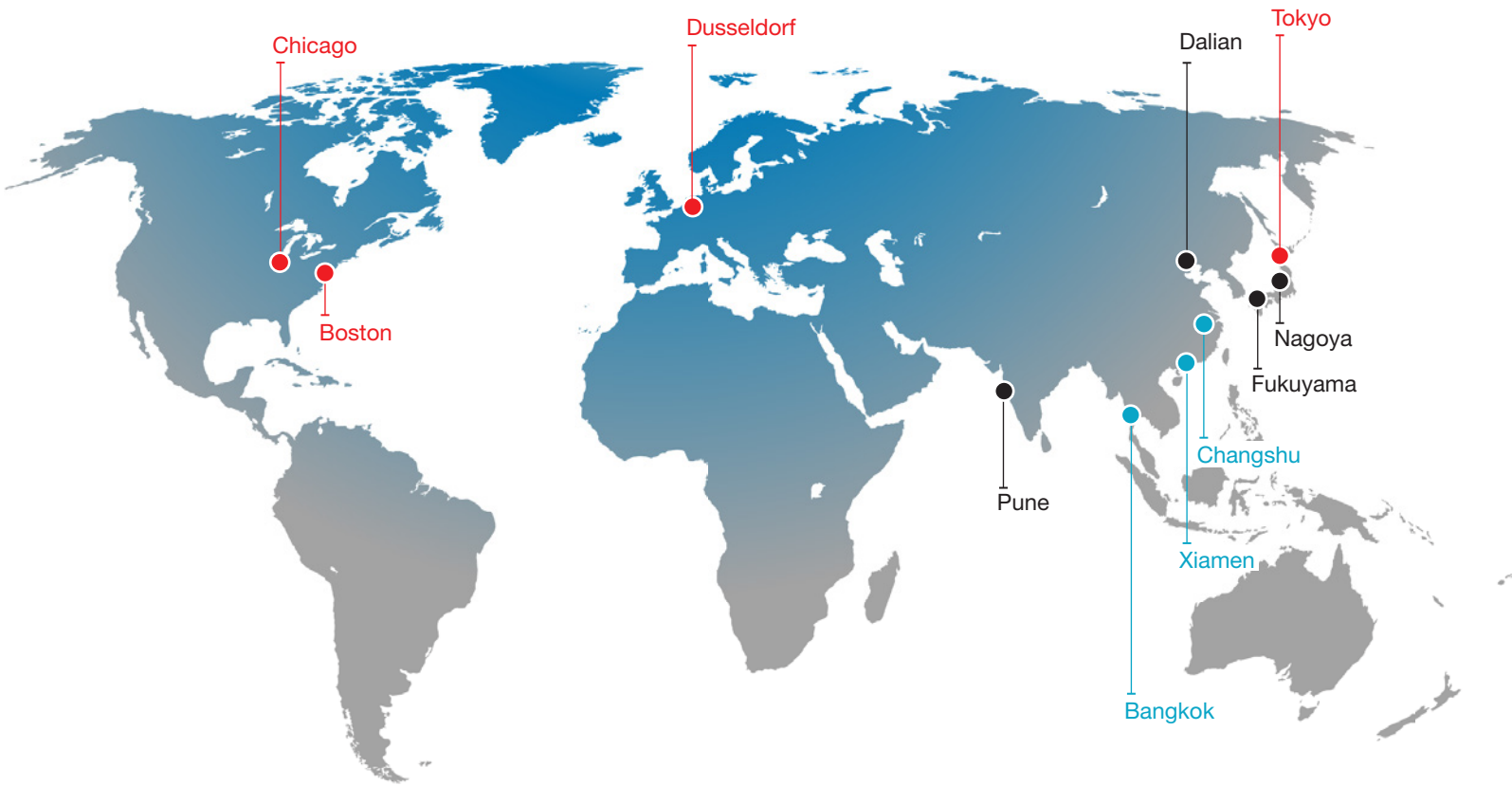
EV BATTERY DIGITAL MANUFACTURING

30 factory automation centers

12 factory automation center satellites

600+ sales and service bases

Global one-stop support for EV battery manufacturing



Global Design
- Boston
- Chicago
- Dusseldorf
- Tokyo

Global Design + Manufacturing
- Dalian
- Nagoya
- Fukuyama
- Pune

Manufacturing
- Bangkok
- Changshu
- Xiamen

Contact Mitsubishi Electric to put your solution in motion.

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e-F@ctory

e-F@ctory Alliance

Mitsubishi Electric's e-F@ctory concept utilizes both FA and IT technologies, through collaboration with e-F@ctory Alliance Partners, to reduce the total cost of development, production, and maintenance, with the aim of achieving manufacturing that is a "step ahead of the times".

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