

# Realizing Industry 4WRD with e-F@ctory

Mitsubishi Electric Asia  
S.Kuniobu

# Mitsubishi Electric Corporation

## OVERVIEW

*Changes for the better*



## Corporate Overview

### CEO Message

#### *Changes for the Better*

“This represents our volition to bring about change, always aiming for something better.

Each and every one of our employees around the world is resolved to carry on our mission to realize a better tomorrow through continuous innovation.”

*T. Sugiyama*

### About Mitsubishi Electric

**President & CEO :** Takeshi Sugiyama

**Established :** January 15, 1921

**Head Office :** Chiyoda-ku Tokyo

**Employees :** 142,340 \*\*

**Paid-in Capital :** ¥ 175,820 million  
(approx. US\$1,658 million\*)

**Consolidated  
Net Sales :** ¥ 4,431,198 million  
(approx. US\$41,803 million\*)

**Consolidated  
Total Assets :** ¥ 4,264,559 million  
(approx. US\$40,231 million\*)

\*As of March 31, 2018; JPY106=US\$1.00

\*\*As of March 31, 2018; includes employees of consolidated subsidiaries.



## Business Overview



### Industrial Automation Systems

- **Factory Automation Systems Group**
- Automotive Equipment Group



### Energy and Electric Systems

- Energy & Industrial Systems Group
- Public Utility Systems Group
- Building Systems Group



### Information and Communication Systems

- Information Systems and Network Service Group
- Electronic Systems Group
- Communication Systems Group



### Electronic Devices

- Semiconductor & Device Group

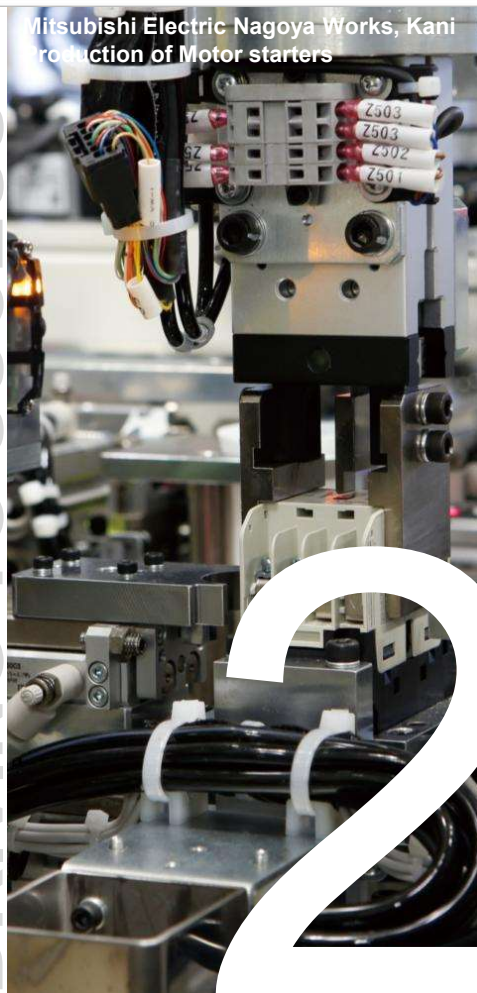


### Home Appliances

- Living Environment & Digital Media Equipment Group

# Factory Automation Systems Group **OVERVIEW**

DRIVING TO SUCCESS



## Product Line-up



### Industrial Automation Equipment

- PLCs and Programmable Automation Controllers (PACs)
- HMIs



### Drive Control Equipment

- AC Servos
- Motion Controllers
- Inverters
- Robots



### Distribution Control Equipment

- MCCB / ELCB / ACB etc.
- Motor-starters



### Mechatronics Products

- Numerical Controllers
- Electrical-Discharge Machines
- Laser Processing Machines

e-F@ctory; a Manufacturing vision

## ACTIVITY IN MALAYSIA



## Sales and Support Bases in Malaysia

### Service Network

**We support your production sites by our service network.**

Sales Office / FA Center in Malaysia



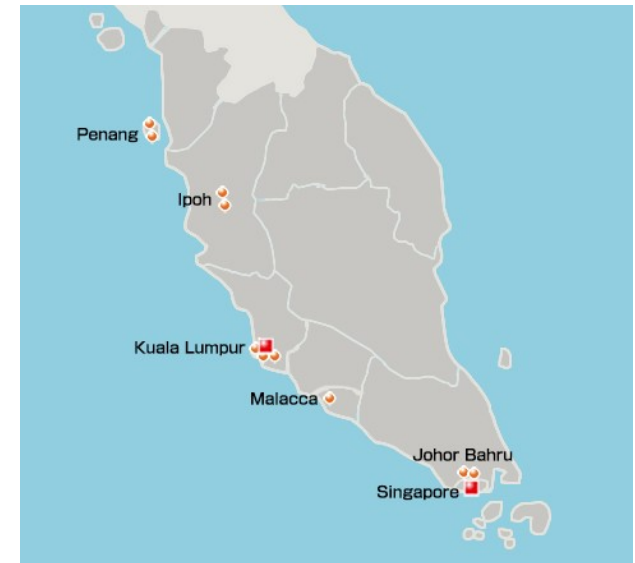
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- Language English/Chinese/Malay
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- Products PLC, HMI, SV, INV, RB, LVS, MC, CNC
- Service Area Malaysia



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- HP <http://sg.MitsubishiElectric.com/fa/en/>
- Products PLC, HMI, SV, INV, RB, LVS, MC, CNC
- Service Area Singapore/Malaysia/Philippines



■ Sales Office/FA Center : Singapore, Kuala Lumpur

● Distributor : 3 distributors, 10 locations: Kuala Lumpur(3),  
Penang(2), Johor Bahru(2), Ipoh(2), Melaka(1)

e-F@ctory; a manufacturing vision

# THE ART OF MANUFACTURING

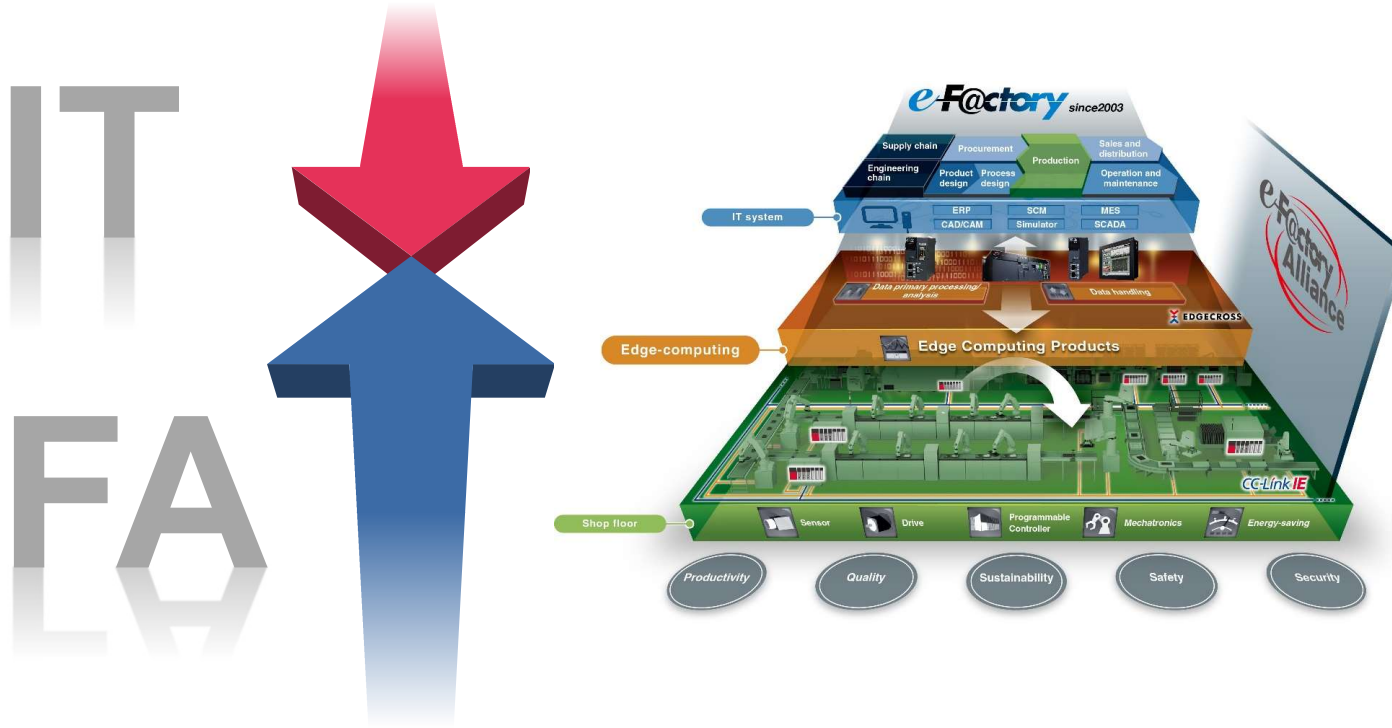


# What is e-F@ctory?

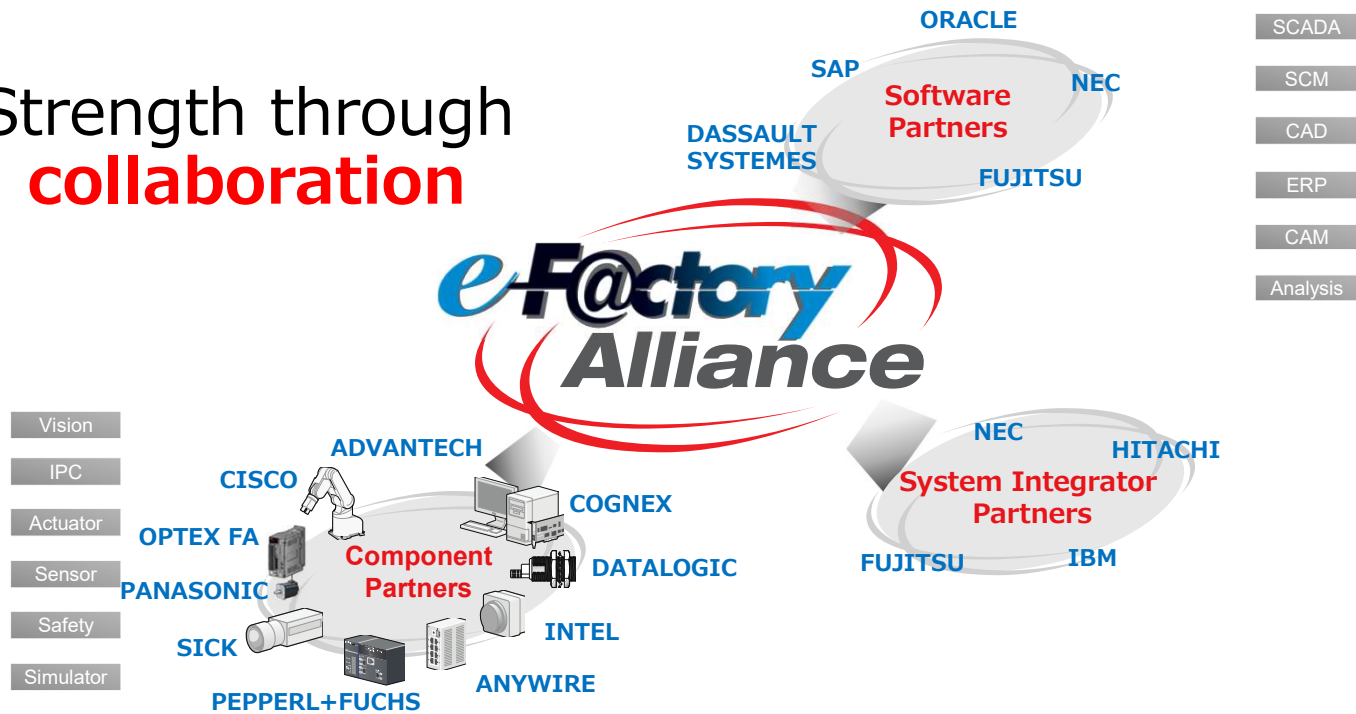
- Utilizes FA/IT
- Solution platform
- From Design, Development through Production, and Maintenance
- Reduces TCO
- Supports your “Kaizen”
- Achieves manufacturing that is “a step ahead of the times”



# Bringing the world together

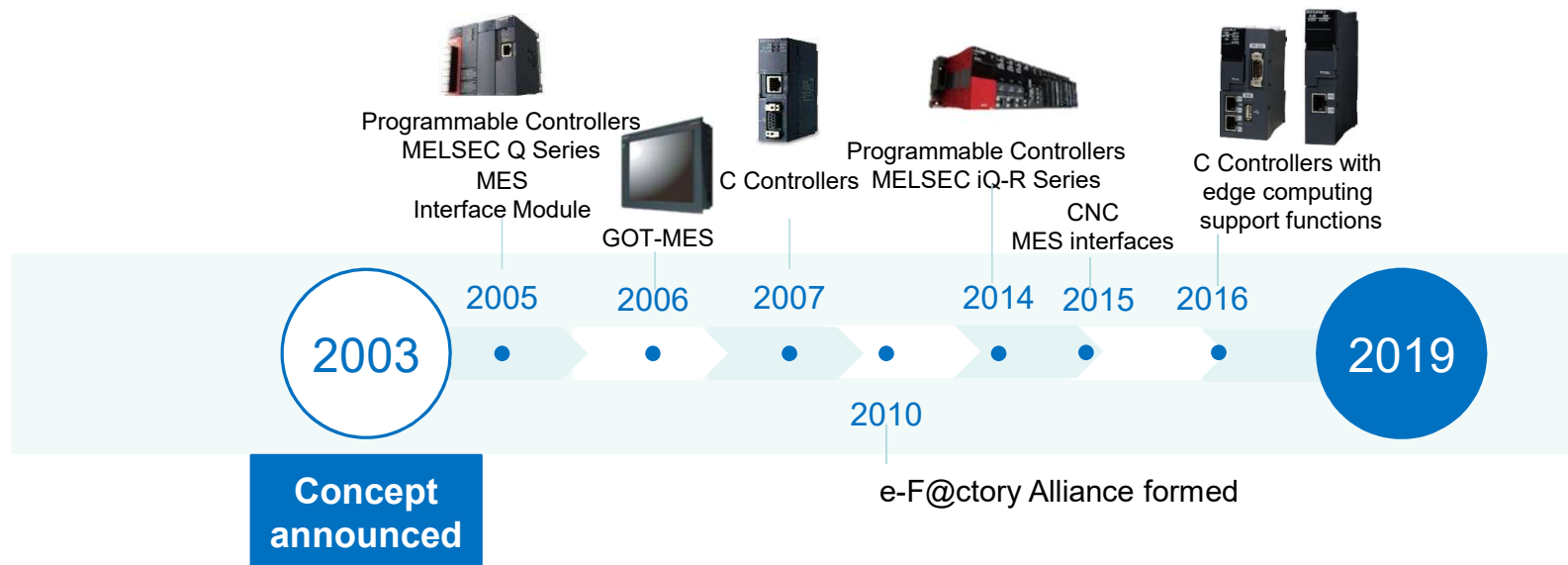


# Strength through collaboration



# FA-IT Integrated Solution *e-F@ctory*

Proposing solutions for manufacturing that stays one step ahead by reducing total cost of development, production and maintenance through the utilization of FA and IT technologies





## Installation result of system

More than 7,700 systems running in the world



Examples of introducing various applications

2013

Nagoya Works  
FA products  
production line



2017

Mitsubishi Electric  
Automation  
Manufacturing  
(Changshu)  
Co., Ltd.  
servo motor assembly line



2018

Power Distribution  
Systems Center  
vacuum  
interrupters (VI)  
and vacuum circuit  
breakers (VCB) factory



## Wide Variety of Partners



Approx. 640 participating companies\*<sup>1</sup>

- Software partners (approx. 170)
- SI partners (approx. 320)
- Equipment partners (approx. 150)



CC-Link Partner  
Association\*<sup>2</sup>

Approx. 3,300 participating companies\*<sup>1</sup>  
Approx. 1,800 connectable products\*<sup>1</sup>

\*<sup>1</sup> No. of partner companies and connectable products as of December 2018.

\*<sup>2</sup> Organization promoting industrial network, CC-Link

**e-F@ctory**

**e-F@ctory in action**

## CASE STUDY 2

# Screw tightening in electronics factory

### Problem

Due to reduced number of veteran workers many mistakes by new workers  
Quality level varied by product, tools and person

### e-F@ctory solution

Installation of job instruction system  
Reduction of mistakes by display  
Work data analytics for feedback to engineering  
Quicker education for new staff

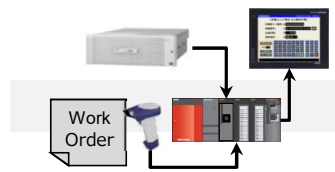


- video

# System Overview



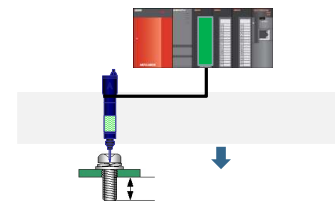
# Preventive Errors



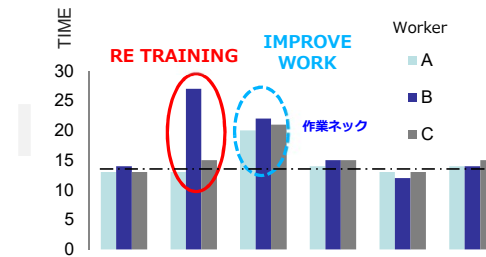
AUTOMATIC SETUP



POKAYOKE

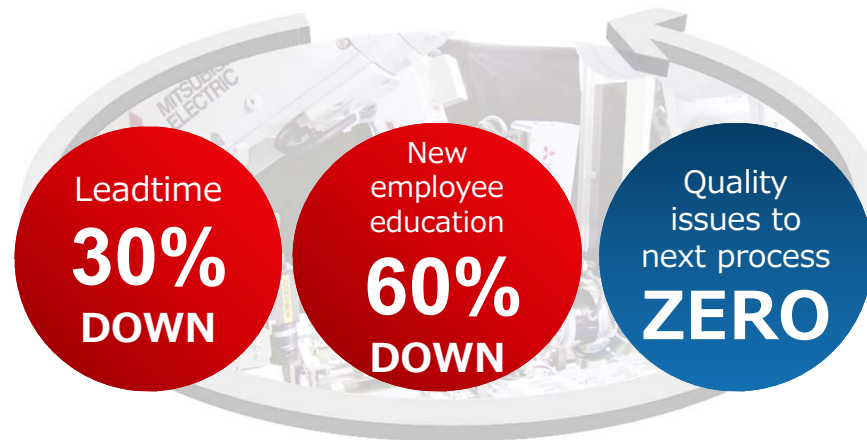


SCREW CHECK



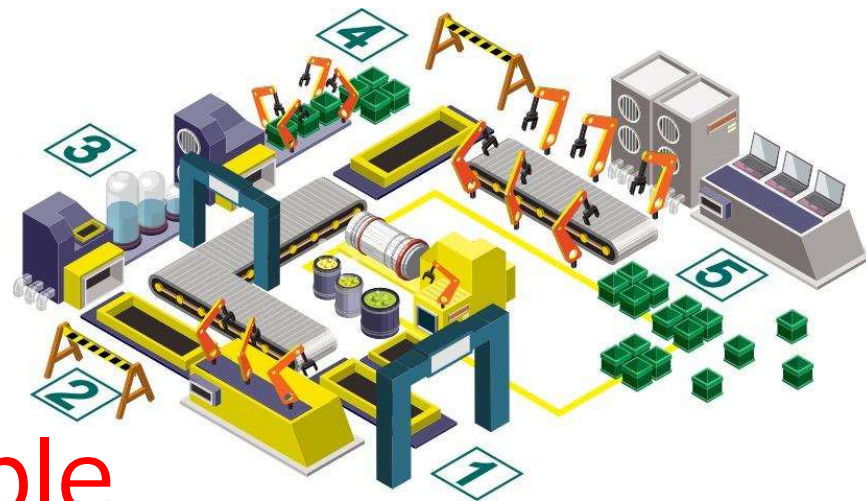
# e-F@ctory in action!

## Managing and Utilizing Data throughout



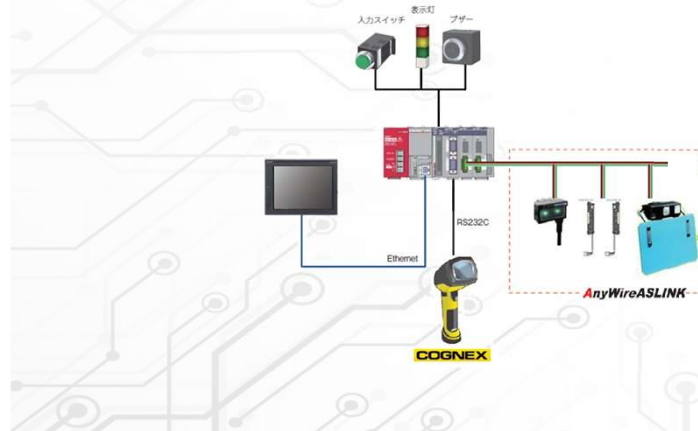
Not “all or nothing”

Modular  
&  
Scaleable



## Easy e-F@ctory

Kits/solution modules that  
can be “plugged together”



...to make  
**Solutions**

