



IME GROUP OF COMPANIES

INDUSTRY 4.0



KEY ELEMENTS



Intelligent sensors and actuators

Enable data collection and obtain direct feedback from machines for data analysis.



Real-time data analytics

Real time analytics is possible on the edge (local), and in the thing itself (sensor), leading to distributed computing.



Robotics

Collaborative robots create new opportunities to work together with human and change the working environment.



Next generation manufacturing system

Equipment, software, and new knowledge and skills are needed to meet the next generation manufacturing.



Additive manufacturing

Durable and geometrically complex products can be produced, free from traditional manufacturing constraints.



INDUSTRY 1.0

Mechanisation
Water power
Steam power



INDUSTRY 2.0

Mass production
Assembly line
Electricity



INDUSTRY 3.0

Computer
and
Automation



INDUSTRY 4.0

Cyber
Physical
Systems

INDUSTRY 4.0 - ACCELERATING DIGITAL MANUFACTURING

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INDUSTRY 4.0

ACCELERATING DIGITAL MANUFACTURING

OUR EXPERTISE

BIG DATA ANALYTICS

Real-time Overall Equipment Effectiveness (OEE)

- Direct communication with machines
- Automate data collection
- Real-time status and throughput

Predictive maintenance

- Monitor condition of in-service equipment
- Time-based preventative maintenance

Energy management system

- Metering, sub-metering and monitoring functions
- Save cost by optimising energy usage

Manufacturing operations management

- Optimise end-to-end manufacturing process

AUTOMATION

Intuitive industrial robotic arm

- Improve productivity by 95%
- Reduce labour cost
- Interactive and flexible deployment

DIGITISATION

CAD/CAM/CAE

- Optimise design before manufacturing
- Shorten design cycle

SYSTEM INTEGRATION

Digitising old machine

- Integrate new system for digital manufacturing
- Interconnect entire organisation's system

INTERNET OF THINGS

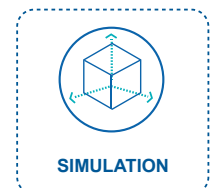
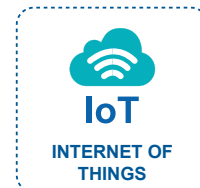
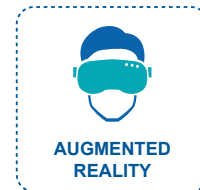
Intelligent sensors and actuators

- Seamless data collection from machines
- Decentralise decision-making

SIMULATION

Virtually simulate and optimise process

- Leverage real-time data
- Virtually models machines, products and humans



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INDUSTRY 4.0 READINESS WORKSHOP

5 STEPS

To Kick Start Industry 4.0

Step 1: Preparation (Prior to the workshop)

- Industry 4.0 readiness assessment
- Comprehensive assessment of strength and weaknesses
- Align expectation towards Industry 4.0

Step 2: Analysis

- Identify current state of organisation and competency level
- Measure gap between own competency and perceived competency

Step 3: Creativity

- Idea generation
- Establish Industry 4.0 ready business model

Step 4: Evaluation

- Evaluation of business model
- Develop clear vision on future product & production
- Prioritise; define short term and long term goals
- Derive the implementation road map

Step 5: Implementation (After completing the workshop)

- Walk the talk
- Continuously review progress and improvement

TRAININGS

Equip your workforce with 4.0 skill sets

1. Industry 4.0 fundamental

- a) Introduction and demystifying I4.0
- b) Key I4.0 technologies
- c) Human and machine collaboration
- d) Managing I4.0 change
- e) Alignment between I4.0 and business strategies

2. Industry 4.0 readiness assessment

3. Design automation

4. Industry 4.0 pillars related courses

- a) Product simulation
- b) Production simulation
- c) System integration
- d) Additive manufacturing
- e) IIOT

5. Control and manufacturing automation

- a) Sensors
- b) PLC
- c) SCADA
- d) RFID technology
- e) Flexible manufacturing

6. Lean manufacturing

7. Predictive maintenance

8. IIOT software development related courses



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