



**MINISTRY OF INTERNATIONAL
TRADE AND INDUSTRY**



Industry 4.0 in government: **New horizon of data-driven economy**

**BY
MALAYSIA AUTOMOTIVE INSTITUTE (MAI)**

The Malaysia Automotive Institute (MAI) is an agency of the Ministry of International Trade and Industry (MITI) established in 2010

- We are a **think tank**, tasked with **strengthening** the Malaysian automotive industry.
- An Intermediary between stakeholders in Malaysia's automotive community
- We **Formulate policies** & perform **research** on the industry
- We also **develop human capital** & coordinate between public and private sectors

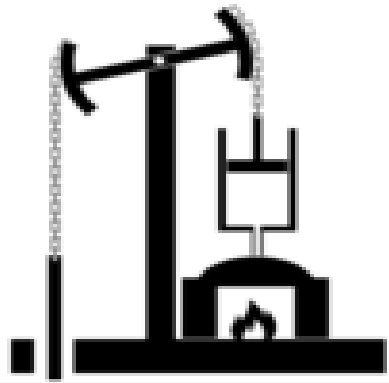


NATIONAL AUTOMOTIVE POLICY (NAP) 2014

Malaysia as regional hub for Energy Efficient Vehicles (EEV) with high technology uptake (**implementation of Industry 4.0**) among industry players for domestic & international export.

DIRECTION	Investment	Technology & Engineering	Market Expansion & Outreach
	<input type="checkbox"/> Hub for Energy Efficient Vehicles	<input type="checkbox"/> In line with Latest Technology	<input type="checkbox"/> Manufacturer & After Sales <input type="checkbox"/> Managing vehicle car price
STRATEGIES	Supply Chain Development		Human Capital Development
	<input type="checkbox"/> Global Efficiency and Effectiveness		<input type="checkbox"/> Adequate & competent manpower
	Safety, Security & Environment		
	<input type="checkbox"/> Whole Type Vehicle Approval <input type="checkbox"/> Anti Theft <input type="checkbox"/> Telematics		<input type="checkbox"/> Carbon Reduction <input type="checkbox"/> Fuel Efficiency <input type="checkbox"/> Preserving Natural Resources

INDUSTRY 1.0 TOWARDS 4.0



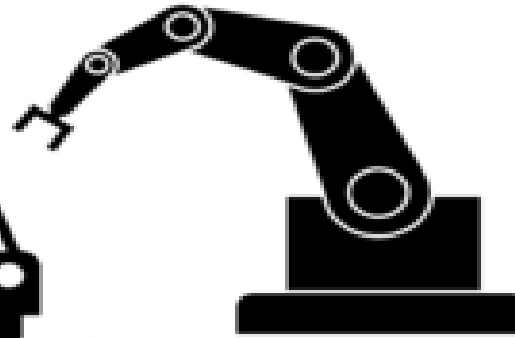
1st

Mechanization,
water power, steam
power



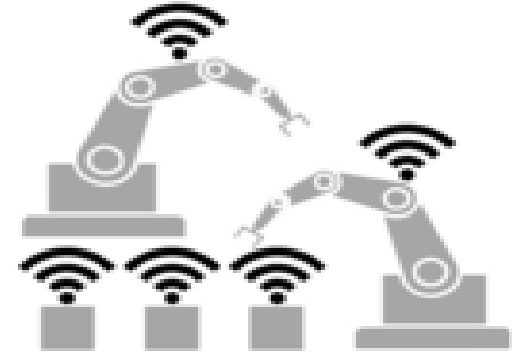
2nd

Mass production,
assembly line,
electricity



3rd

Computer and
automation



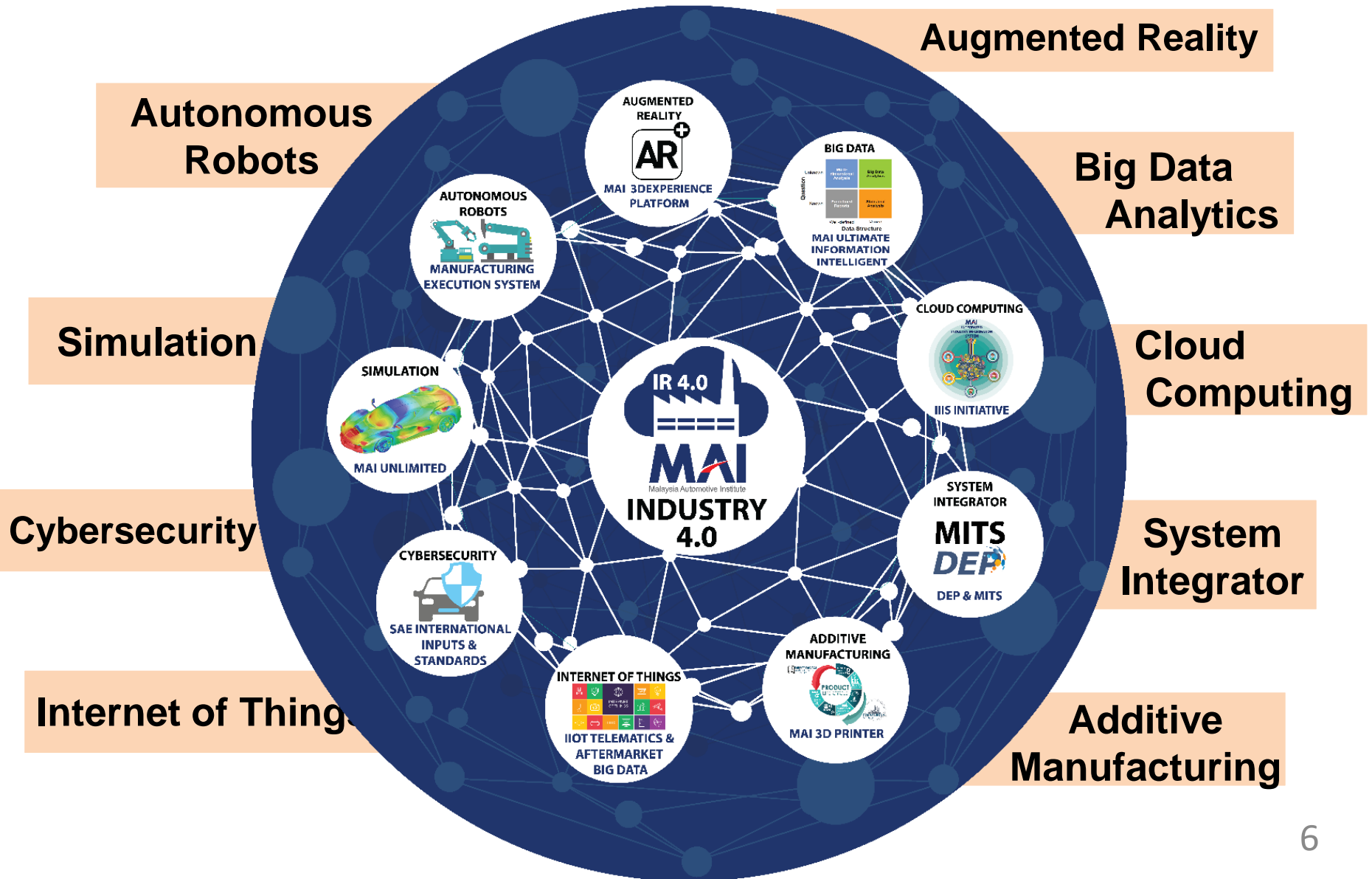
4th

Cyber Physical
Systems



VIDEO 1

9 PILLARS OF INDUSTRY 4.0



CREATIVE ECONOMY CALLS FOR THE NEW WORLD OF THE MAKERS – INDUSTRY 4.0



GOVERNMENT OR INDUSTRY DRIVEN?



G-driven

Industry-driven

Some of the leaders...



- **Industry-driven**
- Smart Manufacturing Leadership Coalition (SMLC)



- **Industry-driven** through the Industrial Value Chain Initiative launched by 30 Japanese companies (e.g. Nissan, Mitsubishi, Fujitsu, Panasonic)
- Done via collaboration with Germany for specific areas of interest



- **Industry-driven**
- Clear Government Policies via High-Tech Strategy 2020 Action Plan
- Industrie 4.0 as one of the 10 forward-looking projects



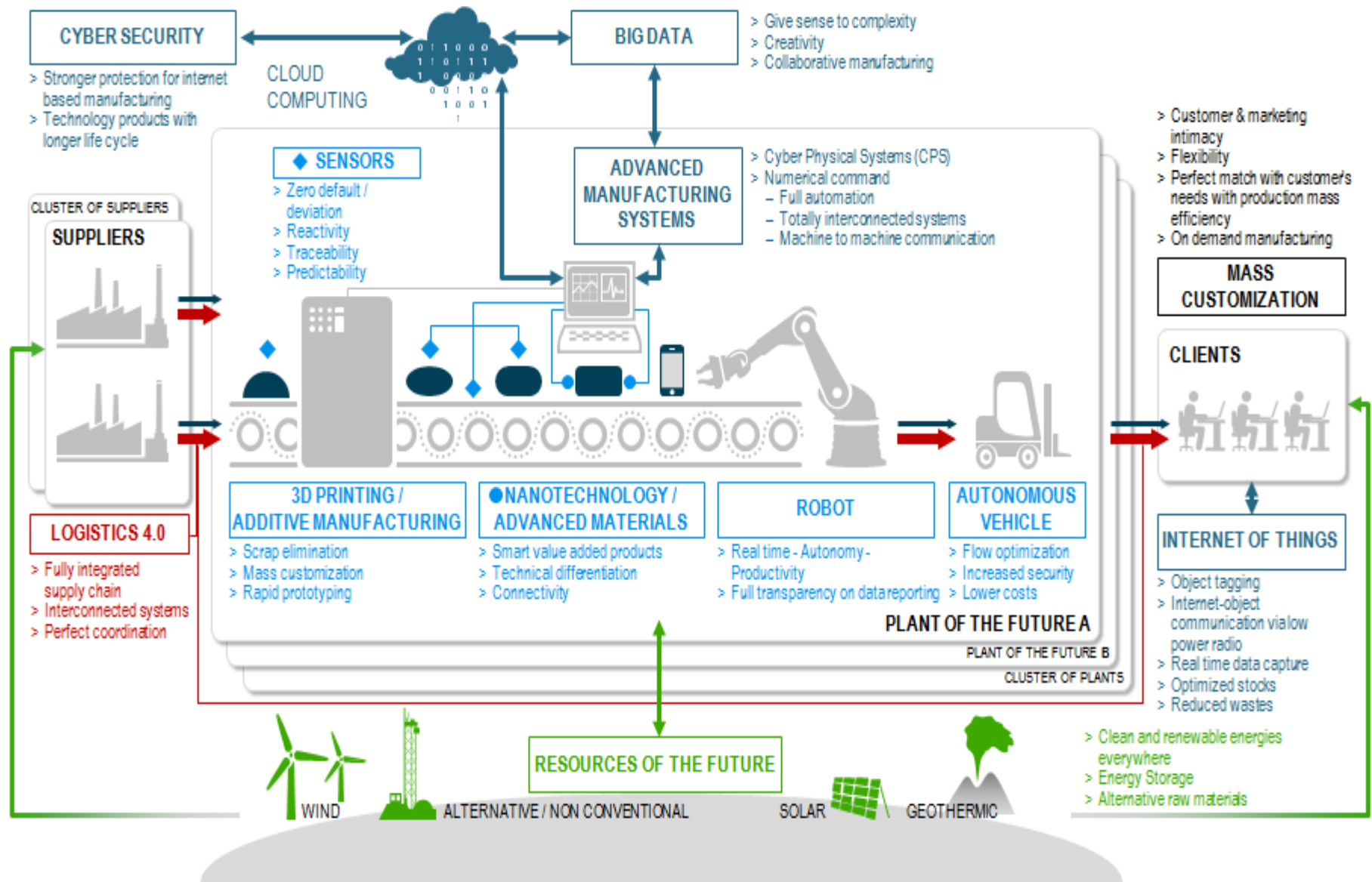
- **Government-driven** via Smart Nation Programme (Prime Minister's Office)
- Provide infrastructure and Innovation Grant
- Invest S\$19 billion in R&D over the next five years (2016-2020)



- **Government-driven** through the 'Made in China 2025' national initiative
- Inspired by Germany's "Industrie 4.0"
- 10 priority sectors identified for targeted assistance

VIDEO 2

INDUSTRY 4.0: MANUFACTURING INNOVATION



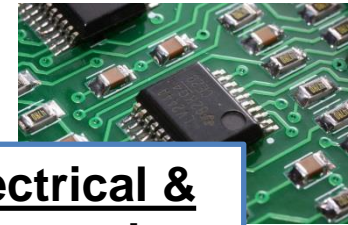
EXAMPLES OF SECTORS ADOPTION INTO INDUSTRY 4.0



Automotive



Aerospace



**Electrical &
Electronics**

- Promote energy efficient vehicles (EEV)
- Digital Engineering & Prototyping (DEP)
- Automotive Cloud Computing
- Industry Integrated Information System (IIIS)
- Smart Manufacturing concept advocacy
- IoT Open Innovation Platform
- Integrated and Intelligent Process Manufacturing
- Proposal of Innovation Manufacturing Centre (IMC) via Research Management Agency (RMA) under EPU
- Data inter-operability
- Cloud computing
- Factory of Future initiative
- National Aerospace R&T Roadmap and industry-led R&T
- More complex aircraft parts work packages that require advanced manufacturing technology
- Digital infrastructure

INDUSTRY 4.0 MANUFACTURING FRAMEWORK

**DIGITAL ENABLEMENT
ARCHITECTURE**
Unified Automotive Platform (UAP)

**MAI AUTOMOTIVE
DATA OCEAN**



CAD

CAE

PLM

Level 5

Corporate Performance

BI

Level 4

Business Logistics

Plant Production Scheduling, Shipping,
Receiving, Inventory, etc.

ERP



Level 3

**Manufacturing Execution
System**

Dispatching, Detailed Production Scheduling,
Production Tracking ...

MES



vMould

Level 2

**Batch
Production
Control**

**Continuous
Production
Control**

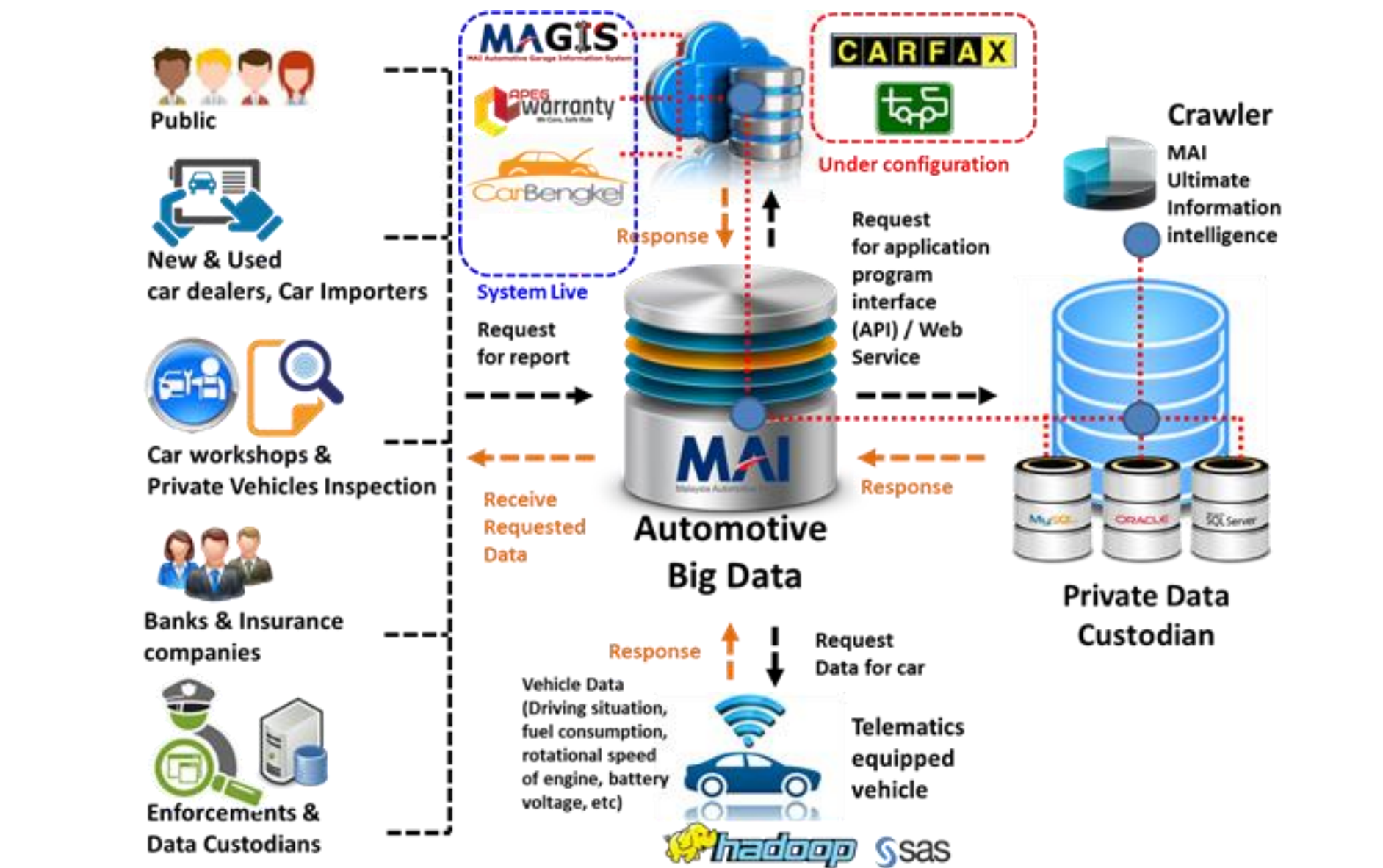
**Discrete
Production
Control**

PLC

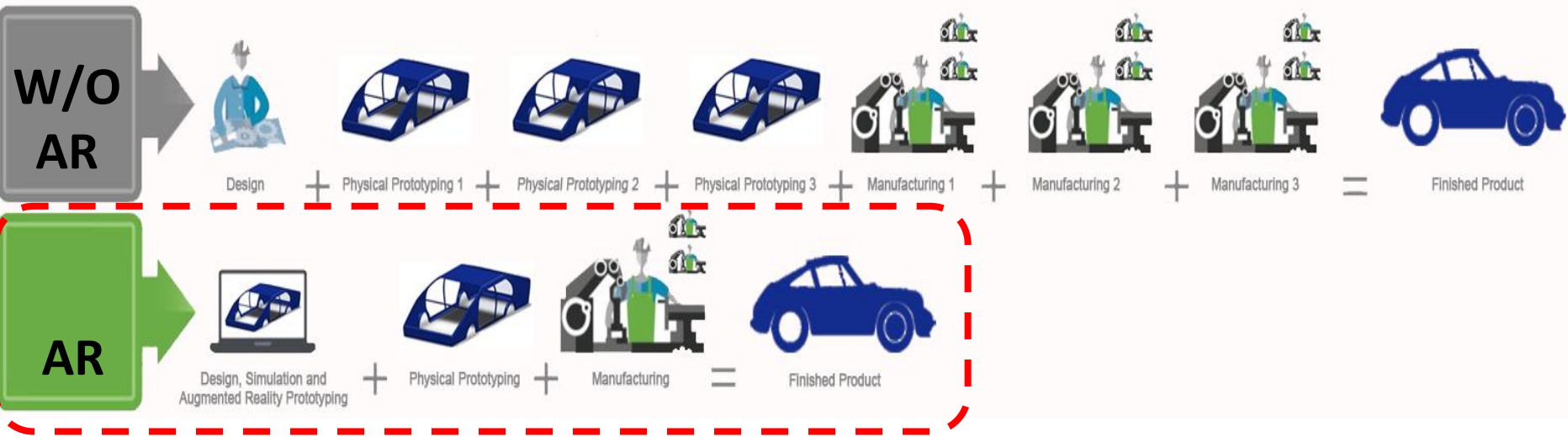
Level 1

**Sensors,
Actuators**

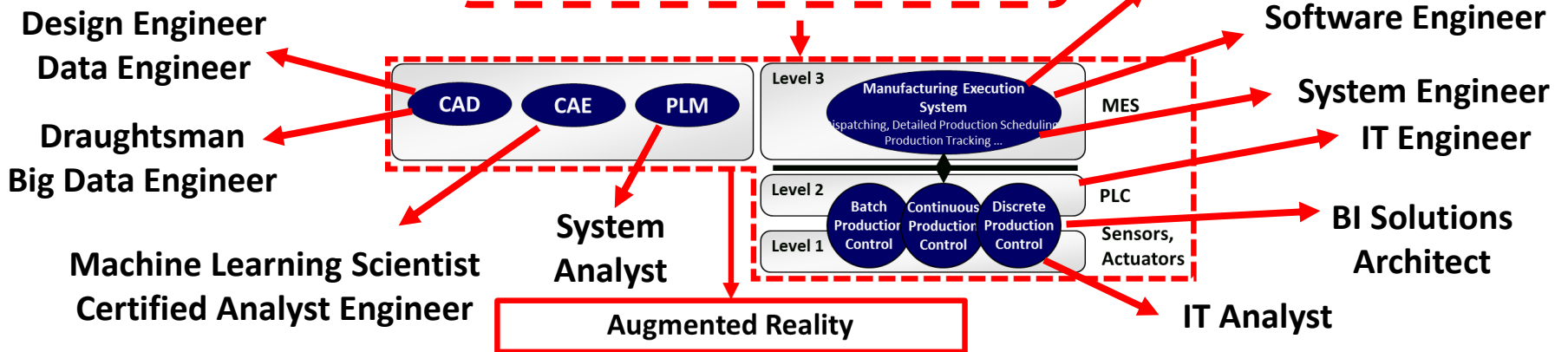
INDUSTRY 4.0: SERVICES INNOVATION



INDUSTRY 4.0: NEW JOBS CREATION



Creation of new jobs & skills.



VIDEO 3



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