

# New Opportunities in Testing and Certification of Smart Products

## 智慧產品檢測認證的新機遇

18 March 2019

Basil Wai, CEO HKEIA



# Outline

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1. Trends

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2. Technologies/ Products

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3. New Opportunities

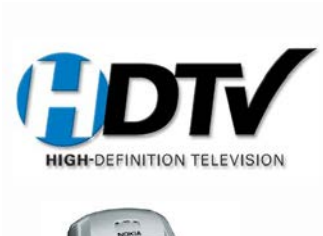
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# 1. Trends



Digital Age

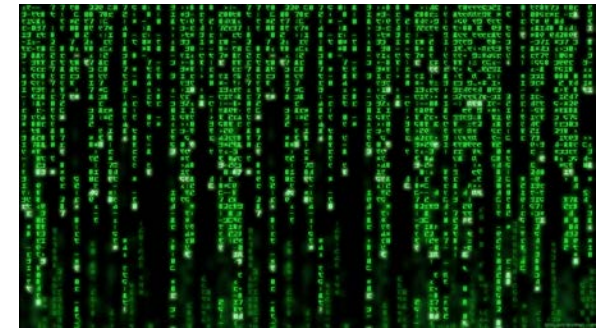


Connected Age



**NETFLIX**

Data Age



# 1.Trend

## 5G – The Next Generation

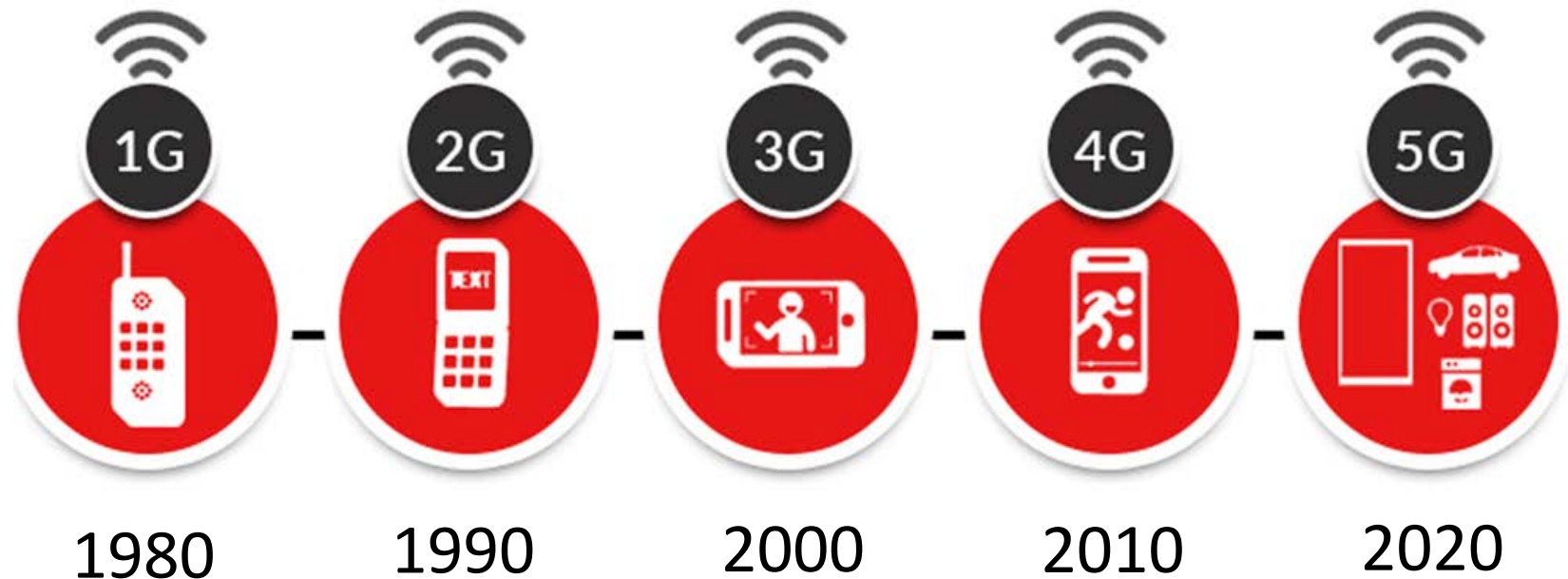


We spent the last 30 years connecting **people**.  
We will spend the next 30 years connecting **things**.



Brian Modoff, EVP, Qualcomm

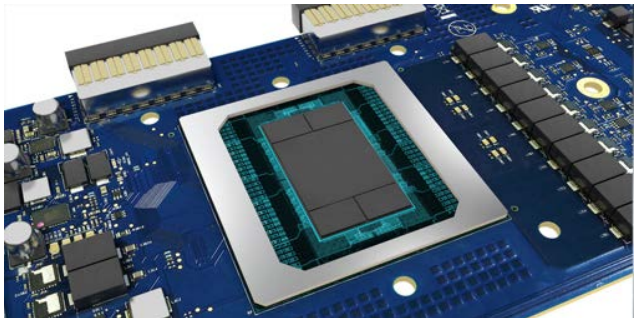
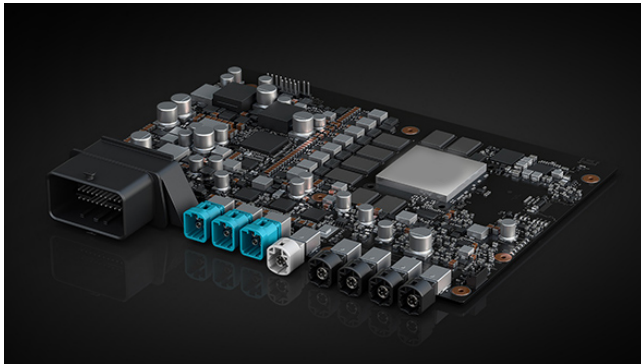
Source: The San Diego Tribune



# 1. Trends

## Artificial Intelligence (AI) The New IoT: The Intelligence of Things

Processors and Chips



Embedded A.I.



Machine-Learning



Digital Assistants



# 1. Trends

## Ingredient Technologies

## Consumers

## In the Market

Voice Computing

Robotics

5G

Biometrics

Blockchain

Artificial Intelligence (AI)

Deep Learning/  
Machine Learning

Digital/ Cyber  
Privacy/Security

Digital Assistants

AR/VR

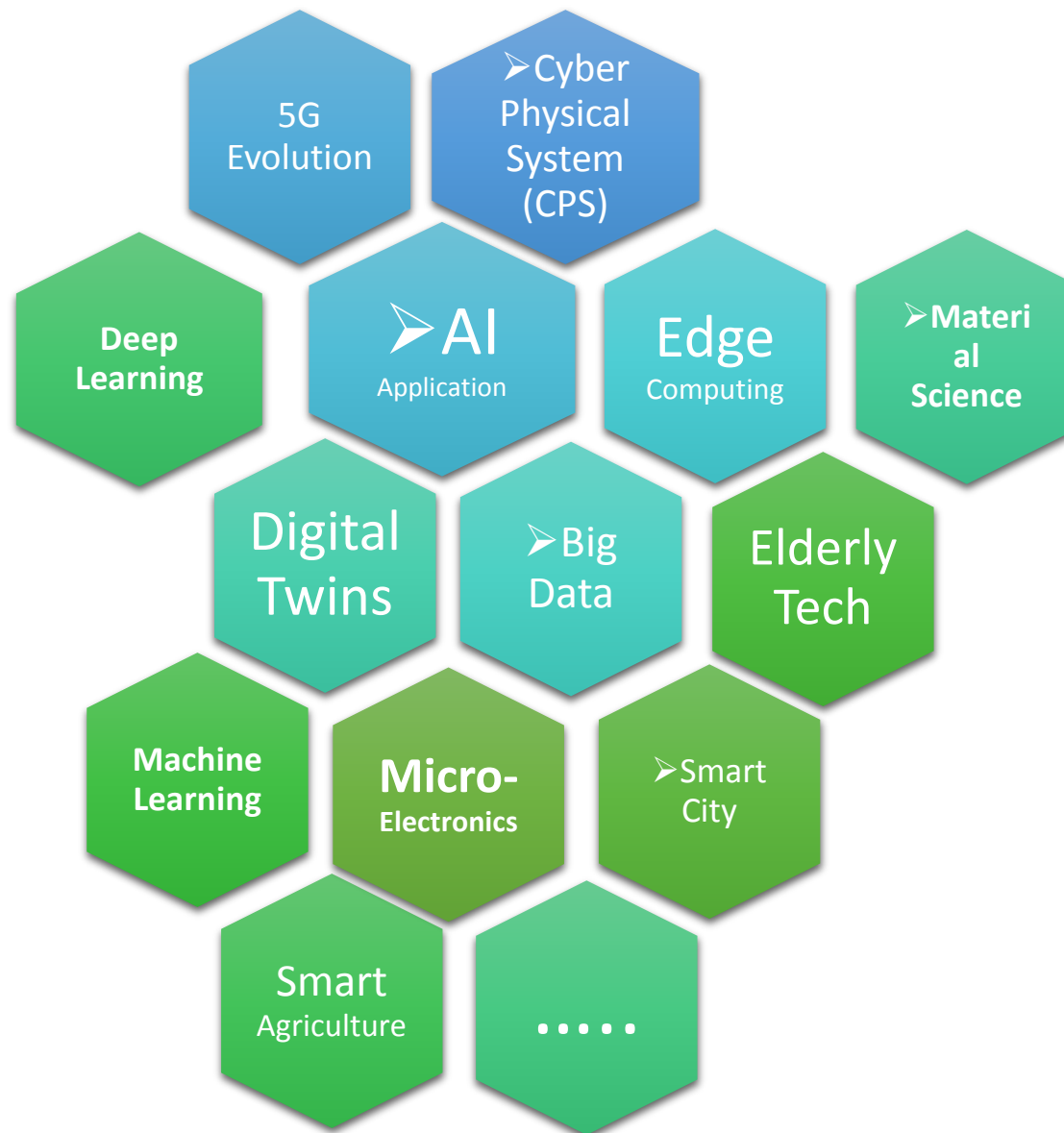
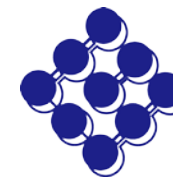
Vehicle Tech

Digital Health

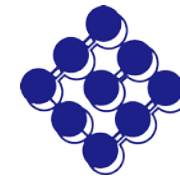
Resilient Technologies

Sports Innovation

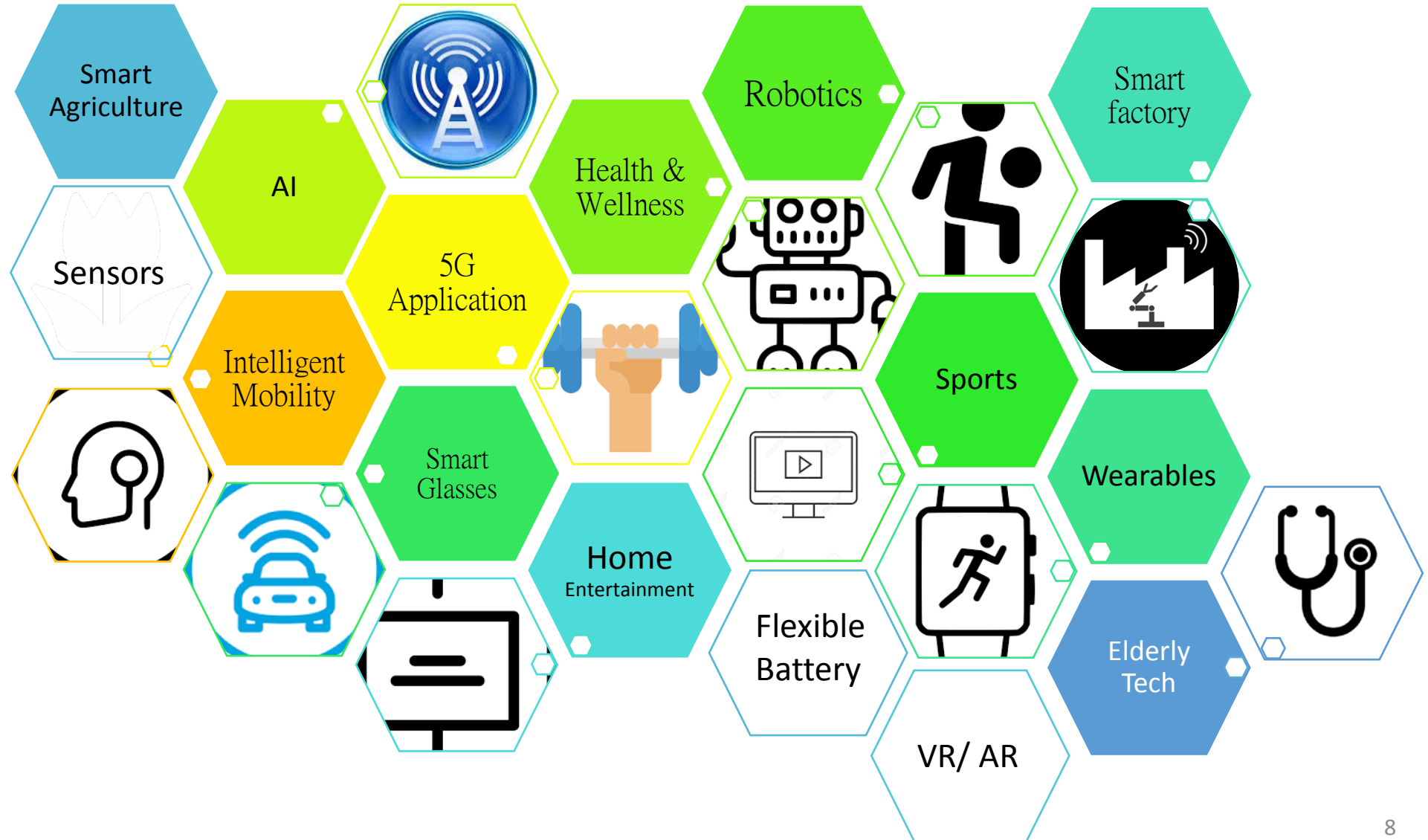
# 1. Trends



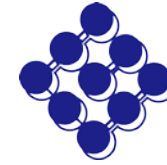
# 2. Technologies/ Products



- AI
- 5G Application
- Smart Agriculture
- Smart Glasses
- Flexible Battery
- Health & Wellness
- Elderly Tech
- Smart Lighting
- Sensors
- Micro Electronics
- Robotics
- Smart factory
- Intelligent Mobility
- Sports
- Home entertainment
- VR/ AR
- Wearables





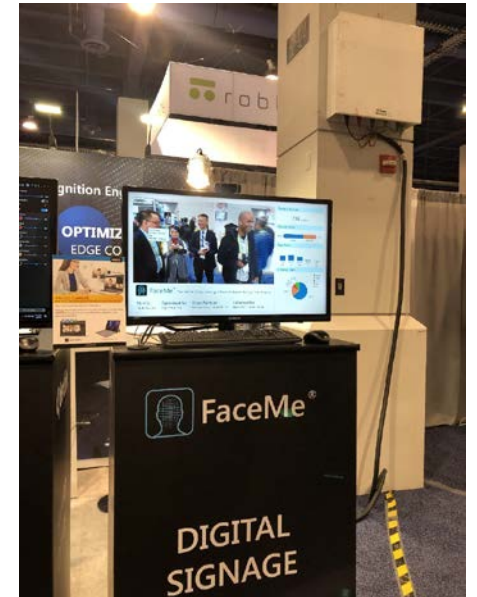


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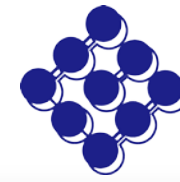
## 2. Technologies/ Products

### - AI

- Facial recognition
- Machine-Learning
- Chips and Processors
- Digital Assistants



# 2. Technologies/ Products – 5G Applications

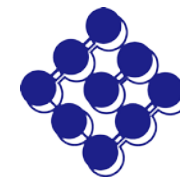


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## 2. Technologies/ Products

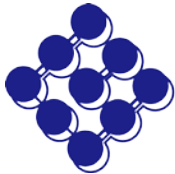


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### ➤ Smart Agriculture



# 2. Technologies/ Products ➤ Smart glasses



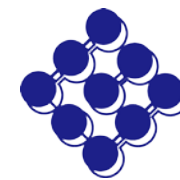
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## 2. Technologies/ Products

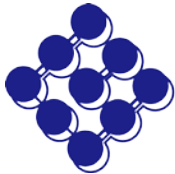
### ➤ Flexible Battery



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# 2. Technologies/ Products



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– Health & Wellness



# 2. Technologies/ Products ➤ Elderly Tech

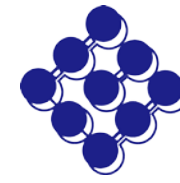


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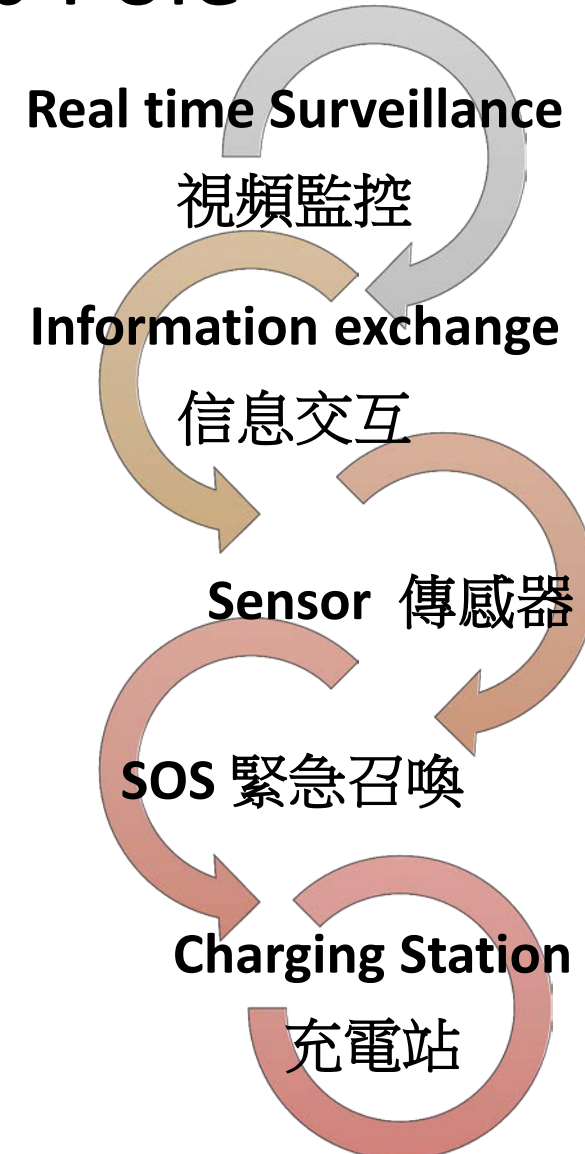
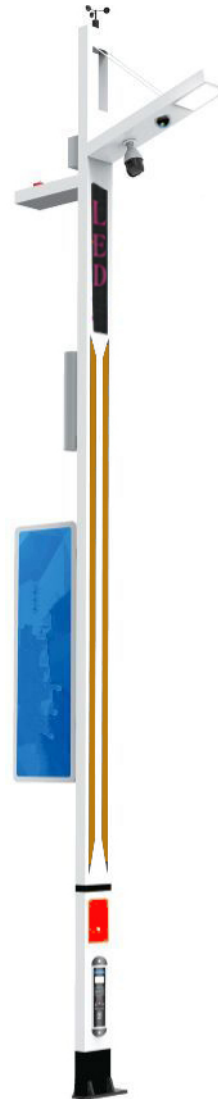
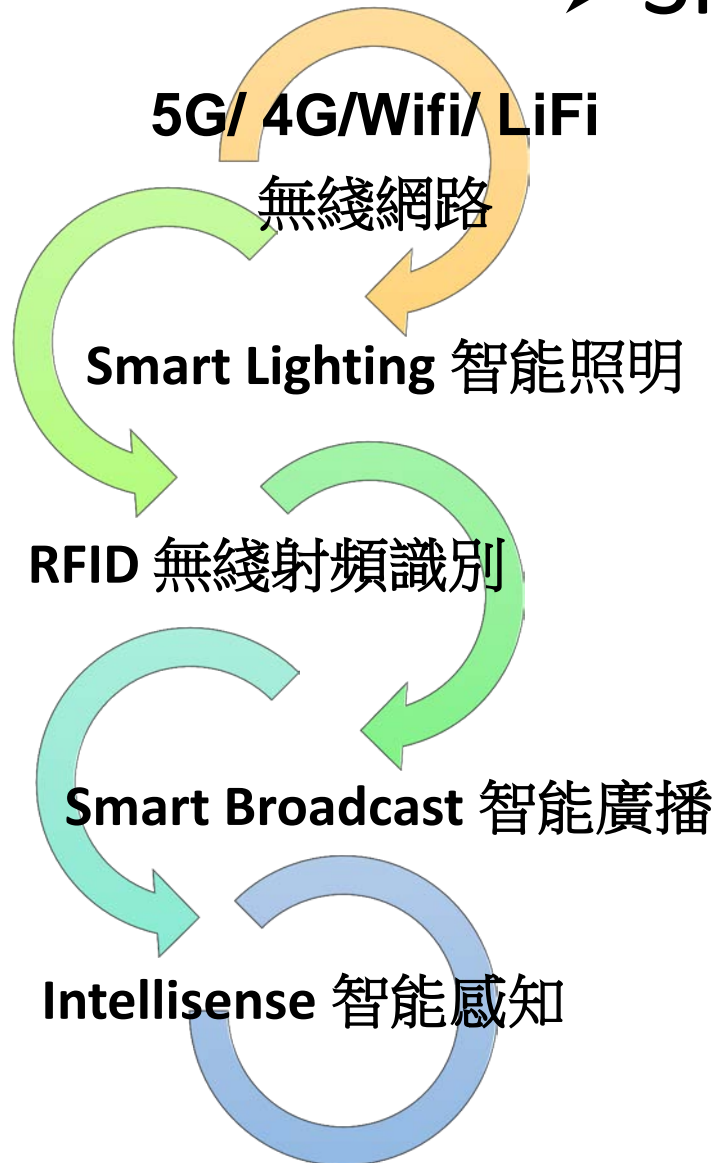




# 2. Technologies/ Products



## ➤ Smart Lamp Pole





# 2. Technologies/ Products ➤ Sensors

Smart Home  
A/C and TV  
Controller



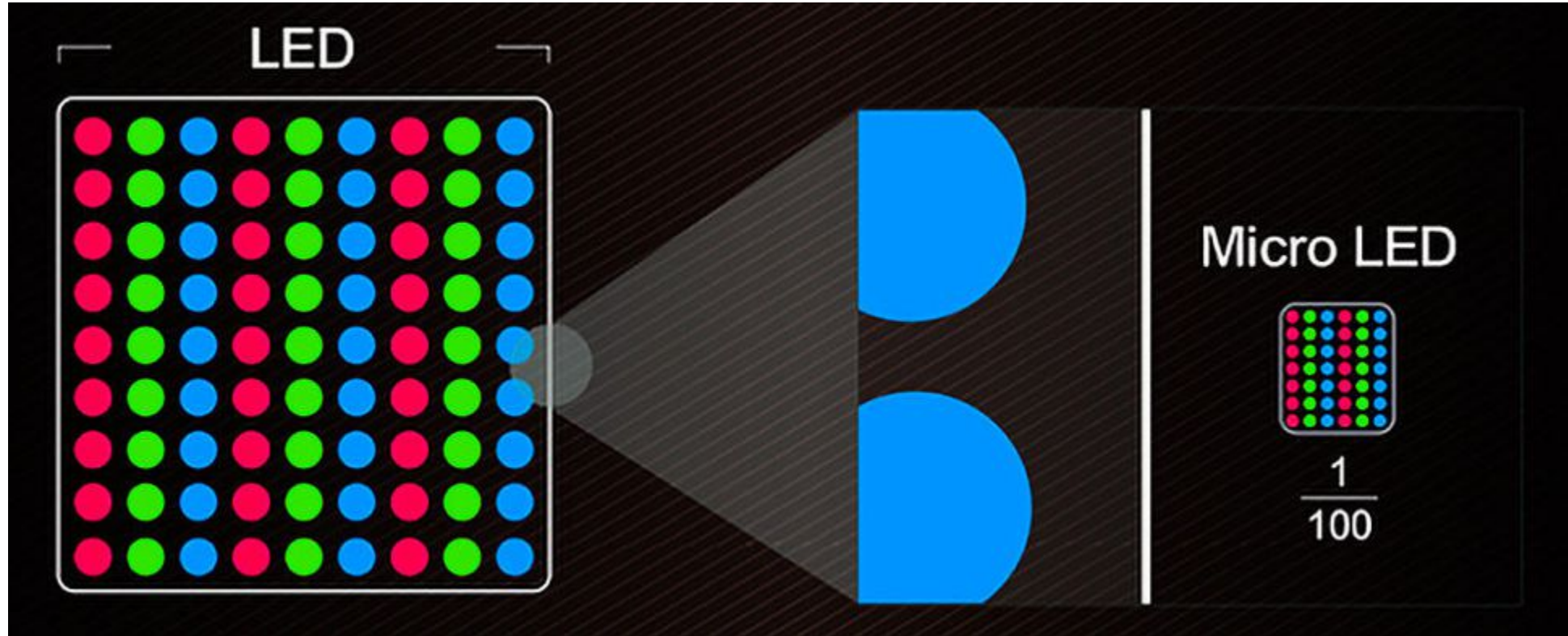
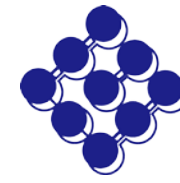
Control Your A/C and TV  
with Only our KUUU APP  
and Z-Wave IR Extender



en.ironico.com.hk

## 2. Technologies/ Products

### ➤ Micro Electronics e.g. Micro LED





# 2. Technologies/ Products - Robotics

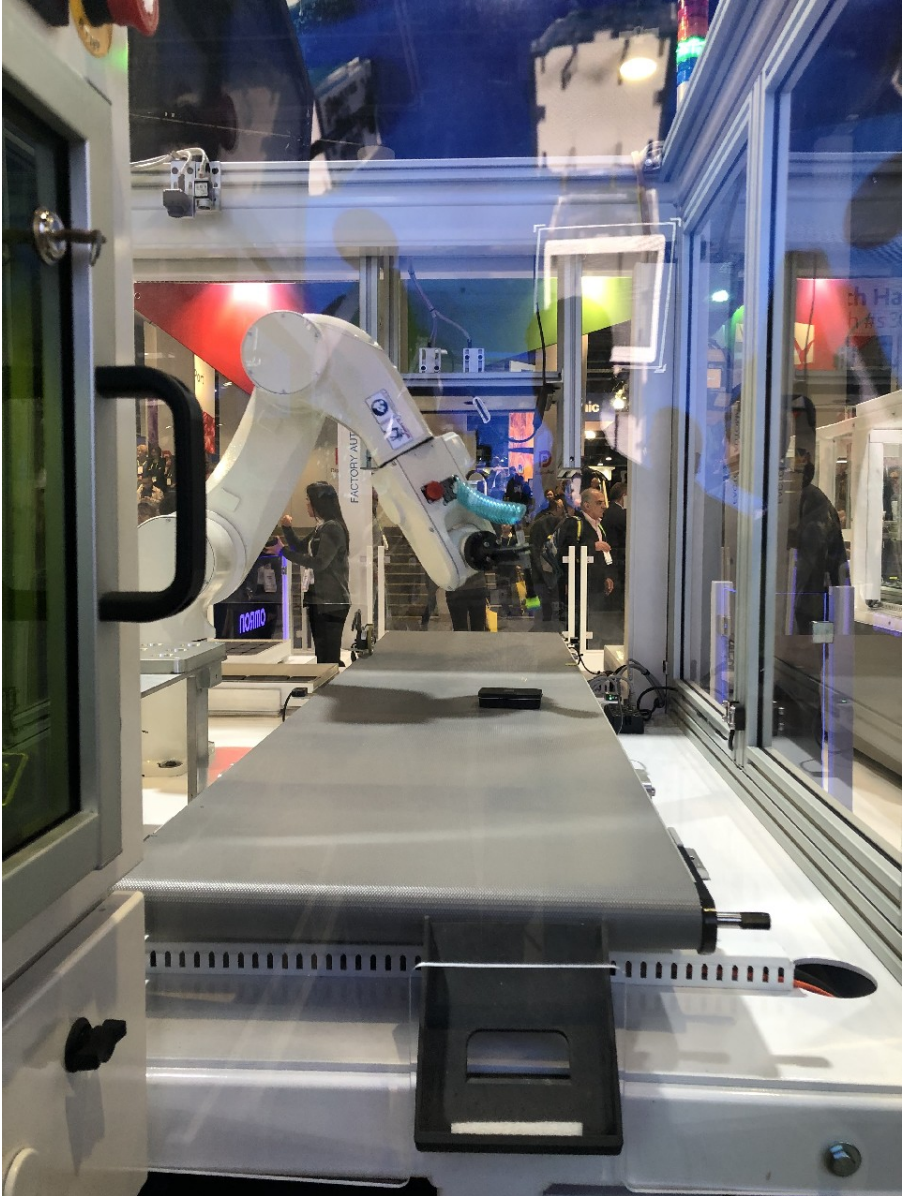




# 2. Technologies/ Products –

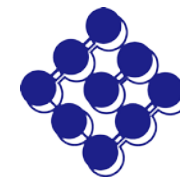


## Smart Factory





## 2. Technologies/ Products



### ➤ Cyber Physical System (CPS)



## 2. Technologies/ Products

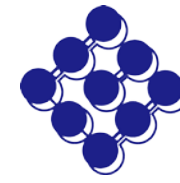
### ➤ Edge Computing



Minimal the calculation time on massive machine-based data into actionable intelligence closer to the source of the data.

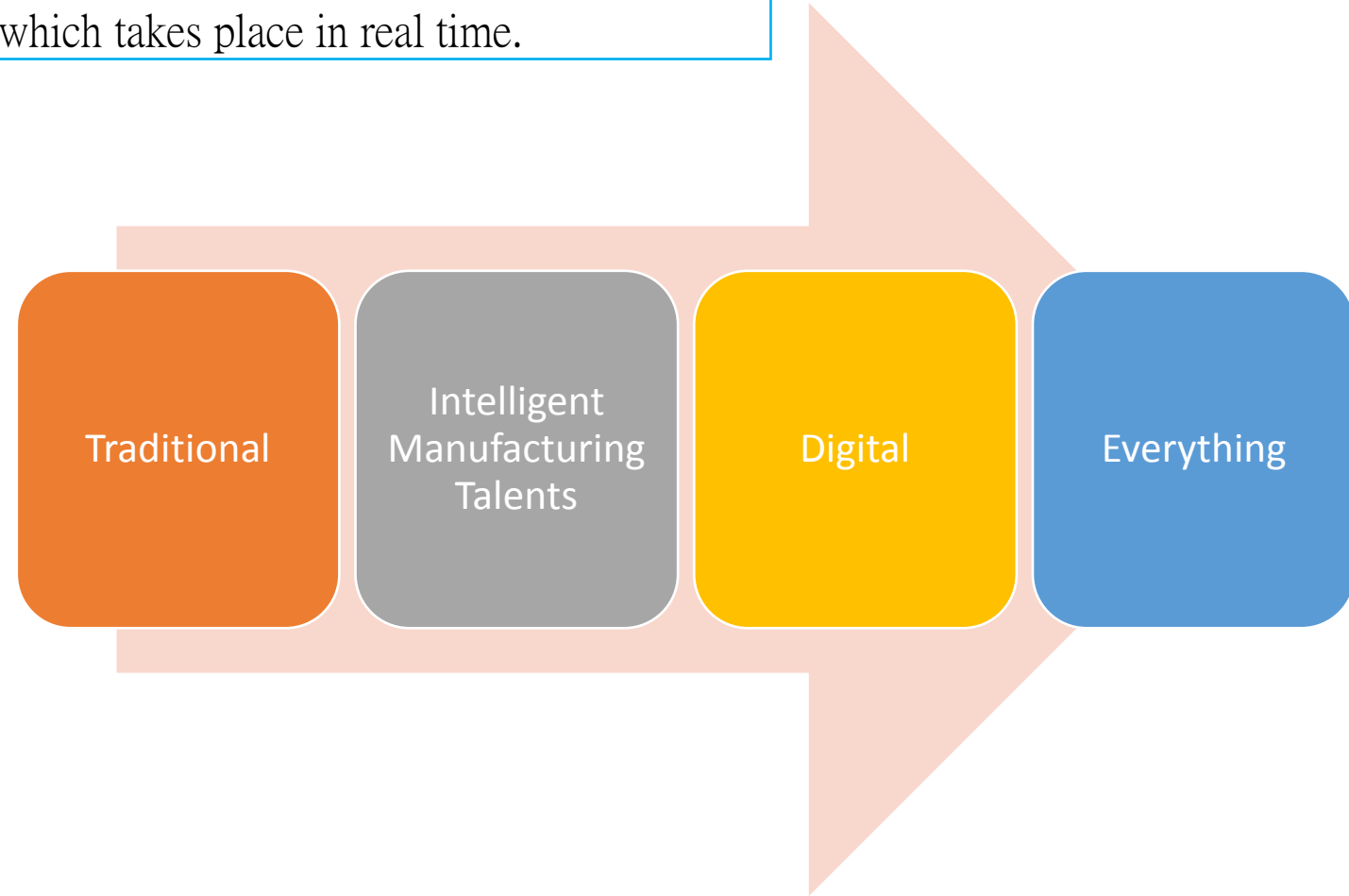


## 2. Technologies/ Products



### ➤ Digital Twins

a mirror image of a physical process that is articulated alongside the process in question, usually matching exactly the operation of the physical process which takes place in real time.



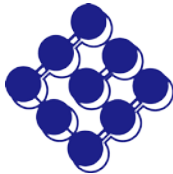
# 2. Technologies/ Products

## – Intelligent Mobility







# 2. Technologies/ Products - Sports



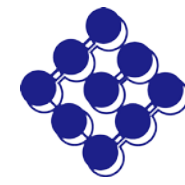
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TESLASUIT  
virtual reality reinvented  
The world's first full-body haptic feedback,  
motion capture, thermo controlled suit.

A photograph of a man wearing a black, form-fitting, segmented suit (TESLASUIT) and a VR headset. The suit has various sensors and actuators visible on the chest, arms, and legs.

# 2. Technologies/ Products - Wearables



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## 3. New Opportunities

**Tested in Hong Kong!**  
**Certified in Hong Kong!**



- Safety
- Trust
- Traceability



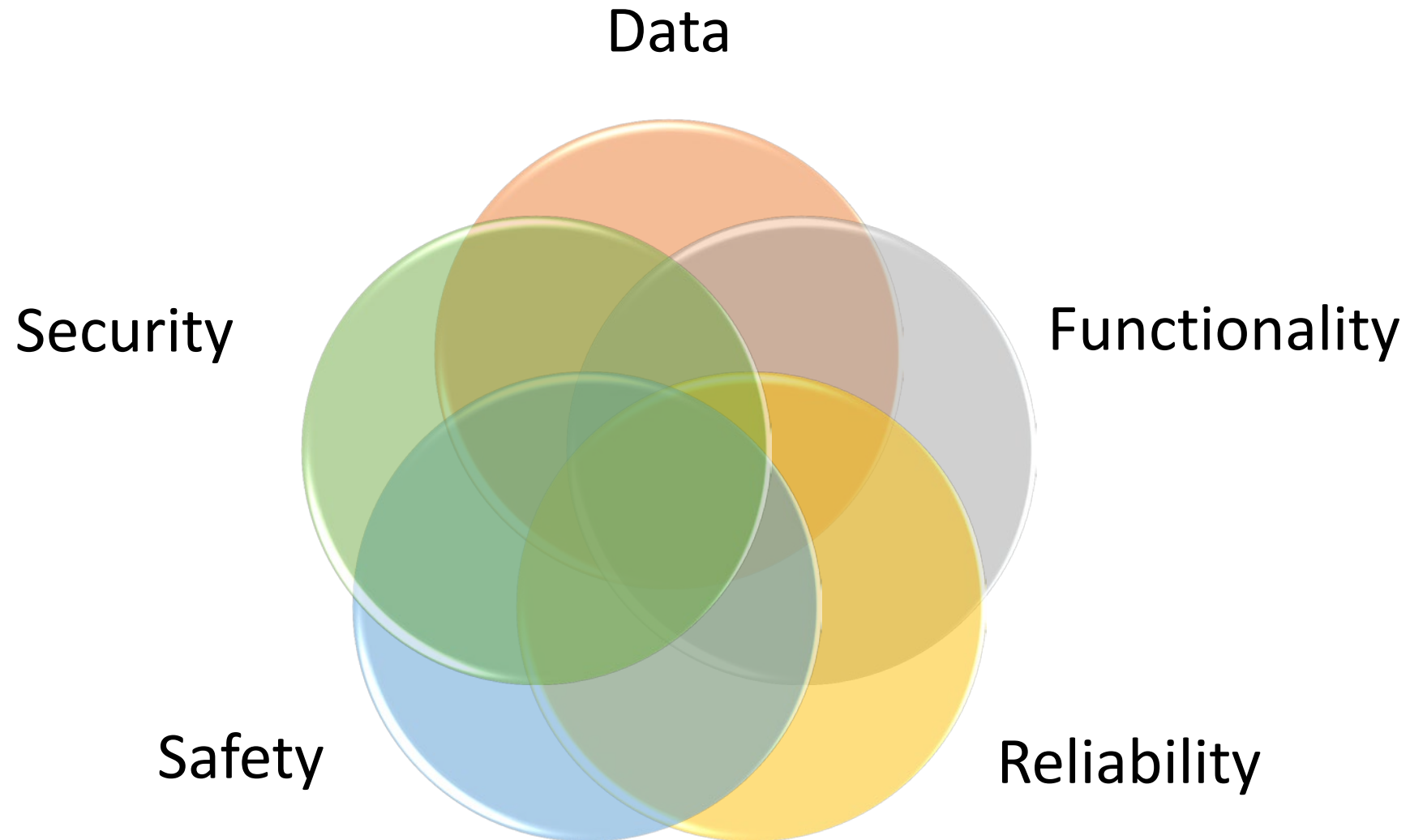
GBA/ One Belt One Road

# 3. New Opportunities

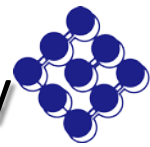
- Smart City
  - e.g. Street Pole
- Re-Industrialisation
- AI/ Robotics
- Power Electronics
- Digital Health
- Resilient Technologies
- Buildings
- IoT everywhere
- New Materials
- STEM



# 3. New Opportunities



# 3. New Opportunities -Data, Functionality, Reliability, Safety



1. Reliability & Safety  #AI Reliability or #AI related products or #Product Design or #Smart City

2. Standards  Certification Scheme on AI Development

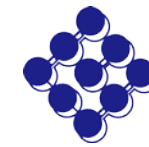
3. Smart Products  Useful life on all smart products related to electronics, tele-communications & IT Products → Expected Reliability

4. Security  Certification on Cyber security, Labelling System

5. Expert/ Talents  Professional Certificate in Hong Kong, AI

6. Infrastructure  Certification on Infrastructure i.e. Smart Lamp Pole

# 3. New Opportunities - Cyber Security



Scope: Multi-layer Security testing of specific IoT systems

- Network security (Internet connections)
- Communication protocol security
- System security (firmware control, side channel attack checking)

Possible Platform Projects with ASTRI

- Certification testing infrastructure for IoT security or IoT devices in smart factories
- Testing framework of IoT security for specific types of products (smart home & e-Health devices, Smart Lamp Pole etc.)





# Thank You!