

### **LoRa to Build Smart Communities and Factories**

Mike Wong, VP China Sales and Marketing, Semtech Corp.

## LoRa technology from space

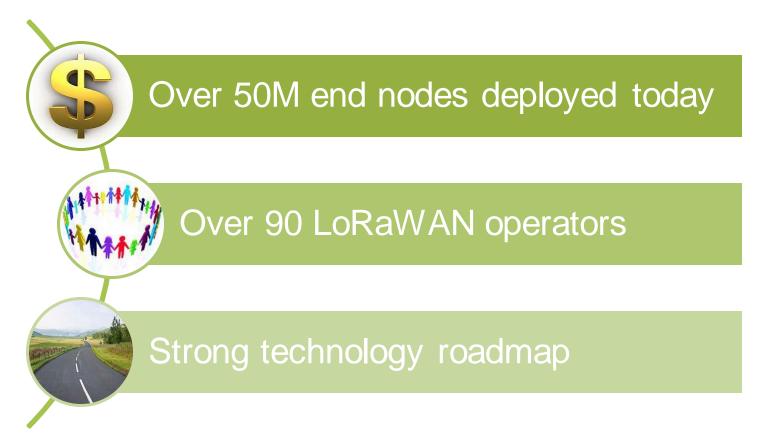


- Delivering long range with very low power sensors
  - Satellites (low earth orbit 600 1600km) are using LoRa technology for IoT today
- □ Long battery life with no repeaters
- □ Flexible network deployment model
- □ Supported by global LoRa Alliance



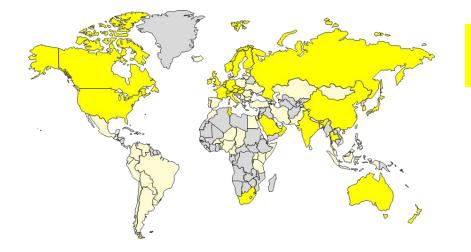
### Proven technology, Sustainable growth





### **LoRaWAN** operators





### 100 % increase in the last 12 months

### Expect > 90 operators in 2018

- LoRa technology enables operators to support indoor and outdoor networks
- Network coverage expanding with outdoor gateways
- Network densification with indoor gateways

### **Some LoRa Alliance Members**



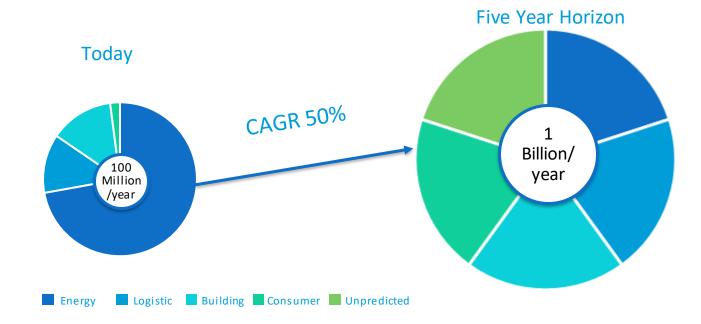


### https://lora-alliance.org/member-directory

### **Worldwide LPWAN Market Growth Opportunities**



IoT Market is Dominated by Low Power Wide Area Network (LPWAN)

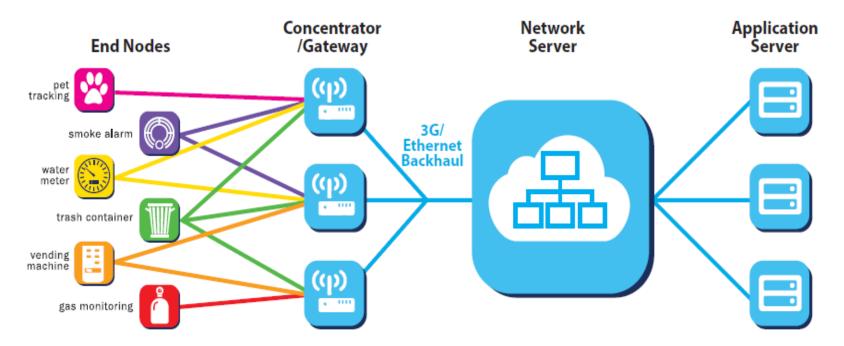


Source: IHS + Semtech Internal

# LoRa: Making Things Smarter

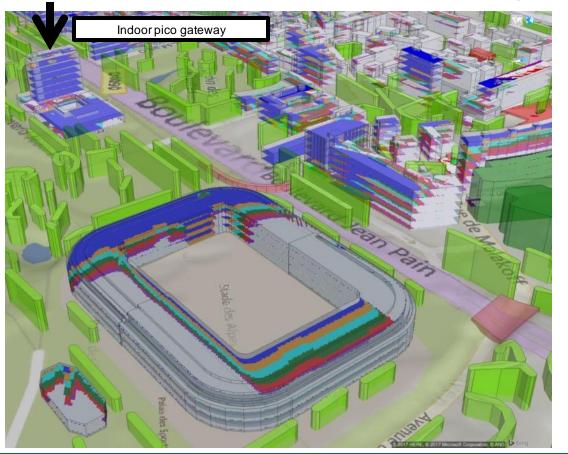


- □ Simple Star networking structure
- □ Smart Industrial is a LAN application



### 3D multi floor SF maps – indoor range





-	eading actor	Th	Throughputs (bps)				
	SF12		290				
	SF11		530				
	SF10		970				
	SF9		1700				
	SF8		3100				
	SF7		5400				

#### 11/30/2018

# **Smart Factory and Community: use cases**

- **Lighting**
- Parking
- Entrance Guard
- Manhole
- Charging pole
- People Tracking and Localization
- Asset Tracking
- Environmental Monitoring
- Surveillance
- □ Fire Prevention

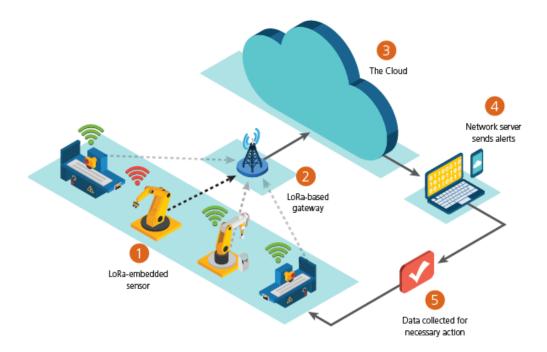




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# **LoRaWAN-Based Industrial Control System**





- 1. LoRa Sensor embedded in equipement
- 2. Sensor data sent to GW
- 3. GWs send sensor data to Cloud
- 4. Cloud sends to Application server
- 5. Data collected for decision

# **LoRaWAN Certified Products**



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#### https://lora-alliance.org/lorawan-certified-productsSensor

# China platform and solution providers





#### http://www.claaiot.com



### Thank You !