

# WHAT'S HAPPENING WITHIN RFID & IOT AT A GLOBAL LEVEL

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**RFID & IoT in the Nordics 2019**  
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**RAIN<sup>®</sup>**  
R F I D

# RAIN is an AIM Industry Alliance



## RAIN RFID Alliance

**Membership:** ~160 companies worldwide

**Representing:** passive UHF RFID

**Similar to:**

Wi-Fi Alliance



Bluetooth SIG



NFC Forum



RAIN is an AIM  
Industry Alliance



# RAIN RFID Industries Include...



Retail

Packaging  
& Logistics



Aviation



Healthcare



Automatic Vehicle ID  
(AVI)



Manufacturing



Electronics



Food

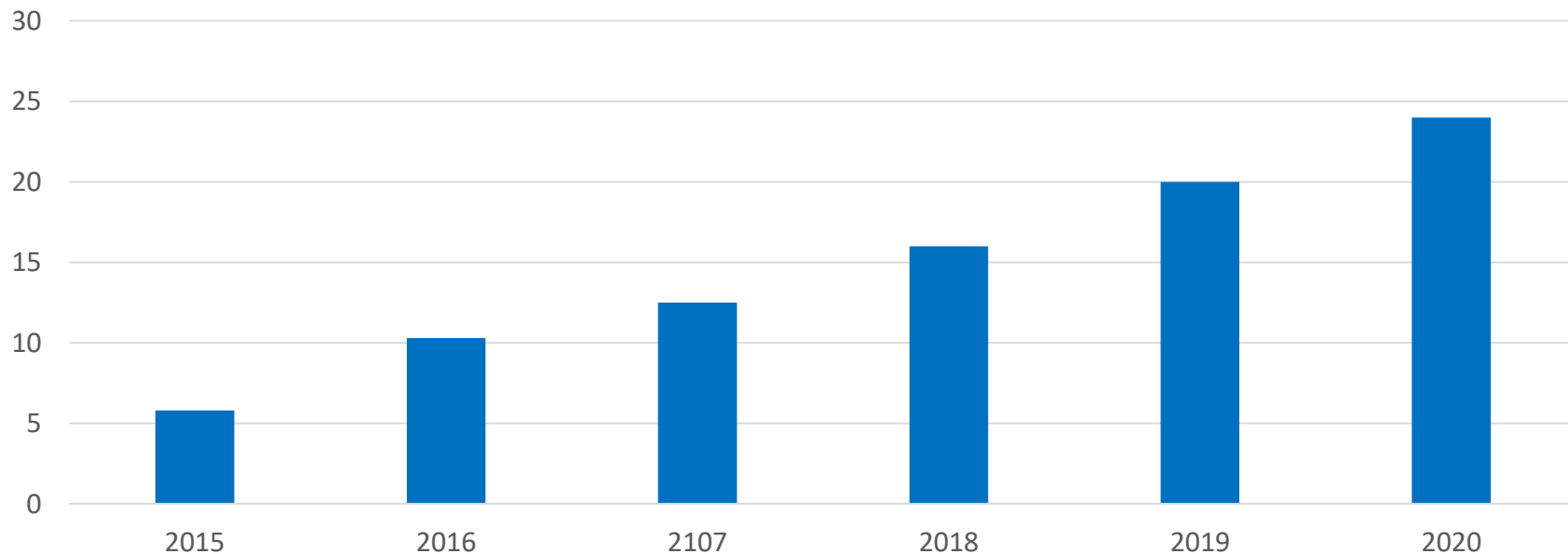
# What is RAIN RFID?

- **RAIN RFID is a wireless technology that connects billions of everyday items to the internet, enabling businesses and consumers to *identify*, *locate*, *authenticate* and *engage* each item.**
- **RAIN RFID makes it possible to connect *things*.**
  - ~15.4 billion things tagged in 2018
  - 20 billion annually by 2020



# Tag IC Volume

Tag IC Volume (Billion)



Data Collected by RAIN 2015-2018: Forecast 2019-2020

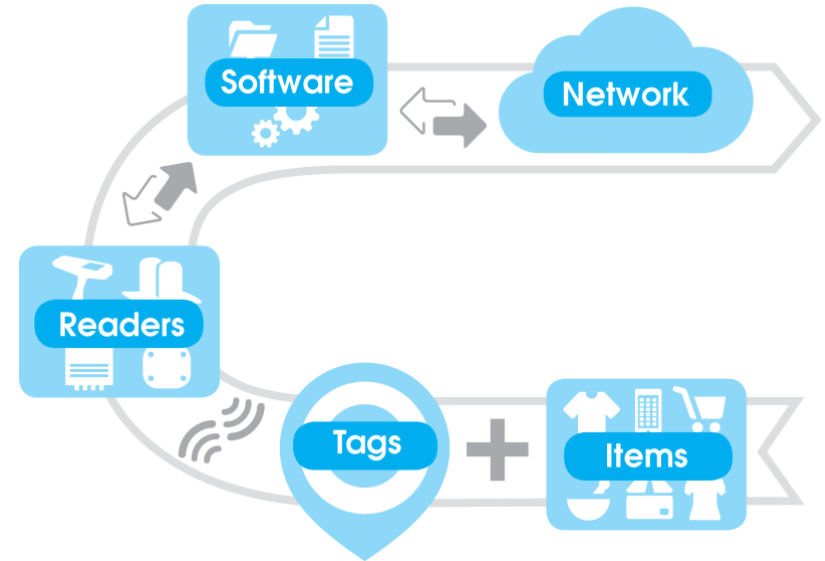
# Technology – how is it used?

- **Identify**
  - What is the identification of the item
- **Locate**
  - Where is the item
- **Authenticate**
  - Is this the real thing
- **Engage**
  - Read a temperature, pressure, and toggle a switch



# How does RAIN RFID work?

- **Each item is tagged**
- **Readers read and write tags**
- **Tags can be paper labels or “hard tags”**
- **Tags can have simple 96 bit serial numbers or can include memory for other use**
- **Tags can have security and can be made untraceable or killed**
- **Readers can be fixed or handheld**
- **Readers feed the information to the cloud**



# RAIN Tags and Readers



- **Are either attached to or embedded in items**
- **Tagged items store and send information**
- **Thousands can be identified simultaneously and do not have to be visible to the human eye**
- **Can be paper labels or hard tags**



- **Have antenna(s) for either short or long-range communication**
- **Can be small and portable, or larger and installed, or embedded in other devices**





# RAIN Solutions (Software & Data)



- **Identify – Locate – Authenticate – Engage**
- **Use the tags and readers to create, collect, and use the item's data – locally, or on a server, or on a cloud**
- **Authentication starts with determining an item is genuine**
- **Engage can involve sensors, or other means of interacting with the item**



# Why RAIN?

## Retail

- 2 to 20% sales boost
- Reduction in out of stocks
- 96% time reduction with smart inventory
- Over 9% decrease in shrinkage
- Over 98% inventory accuracy results



## Healthcare

- Higher inventory accuracy
- Reduced product expiration
- Effective recall management
- Improved patient safety and care
- Automated payments and increased profitability
- Decreased supply chain and equipment costs



## Aviation

- Improve end to end tracking
- Higher customer satisfaction
- Rapid return on investment
- Easier bag handling



# RAIN – Enabling the IoT

- **Unique item identification**
- **Low cost**
- **Batteries not required**
- **Line-of-sight not needed**
- **Long or short range**
- **Security availability**
- **Connects to sensors**



# Just the facts?

- **20.4 billion devices connected to the internet by 2020, up from 8 billion in 2017**
- **Consumer use will be mostly smart TVs and digital set-top boxes with 5.2 billion**
- **Traditional computing devices (e.g. smartphones, tablets, smartwatches, etc.) will comprise more than half**
- **BUT these are DEVICES not things**

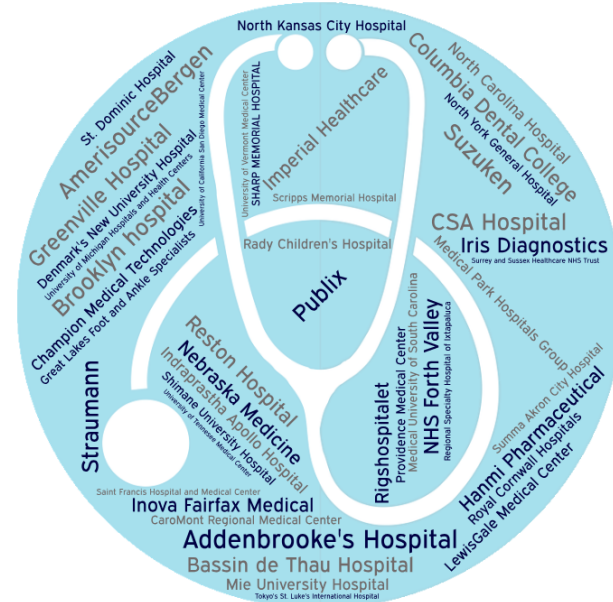


# Smart Retail

- Growing at a fantastic rate
- Over 100 retailers currently using RAIN
- Big savings in inventory management
- Increases in sales
- Losses



- 
- A cartoon illustration of a person's feet standing on a scale. The scale has a face with a wide, toothy grin and a circular clock-like display showing the number 12. A speech bubble from the scale reads: "850 or I tweet this out."



## Marathon Bibs are IoT



- Improved Runner Tracking
- Social Media Integration
- Real-Time Race Updates

RAIN Tag





# Aviation

- **Enable hands-free scanning of baggage throughout the handling process**
- **Track passenger's baggage in real-time**
- **Automate freight tracking and increase accuracy**
- **Reduce mishandling of baggage by 25-50%**
- **Ease tracking of airplane safety equipment and reduce errors**
- **Authenticate and track repair parts for maintenance**





# Smart Agriculture & Smart Animal Farming

- **Farm to Fork initiatives**
- **Freshness tracking**
- **Refrigerated transport**
- **Vending machines**



RAIN Tag



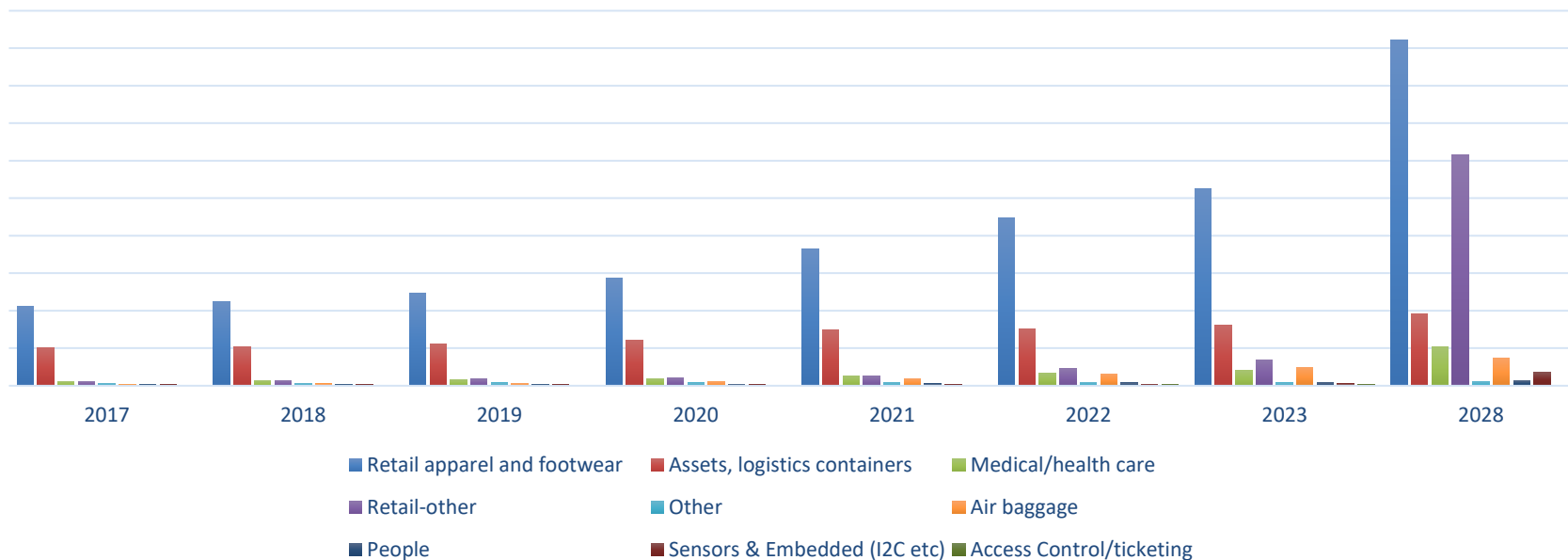
# RAIN and IoT by Geography



# RAIN RFID Sales by Application

© ID Tech Ex - 2018

Sales (\$ Millions)

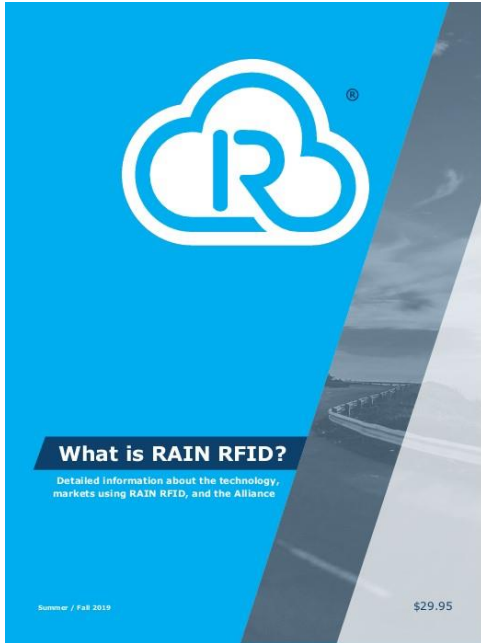


# Summary

- The IoT is about **THINGS** not Devices
- Things will mostly not have IP addresses
- Passive UHF RFID “**RAIN**” will have a major part to play
- We need to better vocalize the importance of the IoT to industry



# Download the eBook



Get it Now – New edition  
just published



# Learn More About RAIN



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R F I D

**Get more information about  
RAIN RFID and the Alliance  
and sign up for our  
newsletter on**

**[www.RAINRFID.org](http://www.RAINRFID.org)**

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