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You've Been Warned: iBeacons to Bring a Tsunami of Change to Data Security

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Will iBeacon be the knight to find the Holy Grail?

Quick Overview of iBeacons™ and BLE beacon

Since iOS7, Middle of Y2013

- **Core Location monitors Bluetooth LE beacon signals**
- **Various hardware can be a beacon**
  - Third party Bluetooth LE emitters
  - iOS devices
- **Advantages**
  - Accuracy and range awareness
  - One beacon ID can cover multiple locations

Since Android 4.3, with BLE 4.0

- **Nexus 4+**
- **Nexus 7+ 2013**
- **Samsung Galaxy S3+**
- **Samsung Note 2+**
- **HTC One**
- **HTC Butterfly**
- **etc**

Potential of iBeacon™ and Other BLE Beacons:

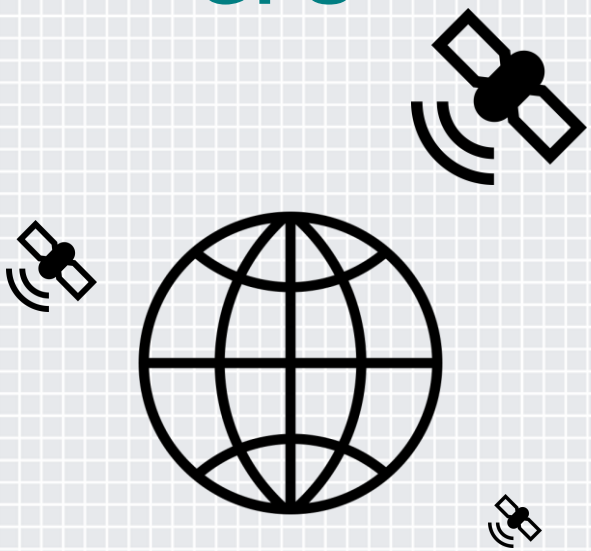
- # of installed Beacons in South Korea (Source: etnews.com)
  - In Y2014 – Approximately 100,000 units installed
  - In Y2015 – Approximately 300,000 ~ 400,000 units (Estimated)

60 million units by **2019**

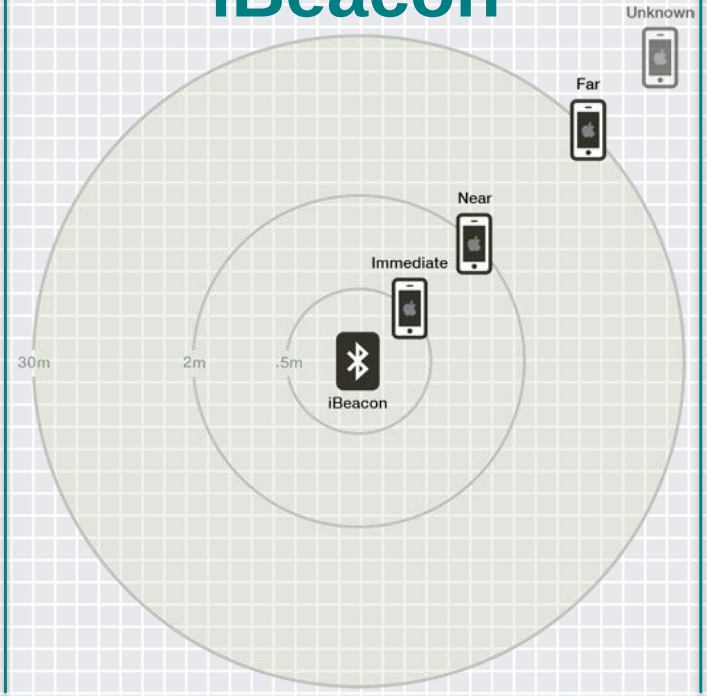
Source: ABI Research

Coverage:

GPS

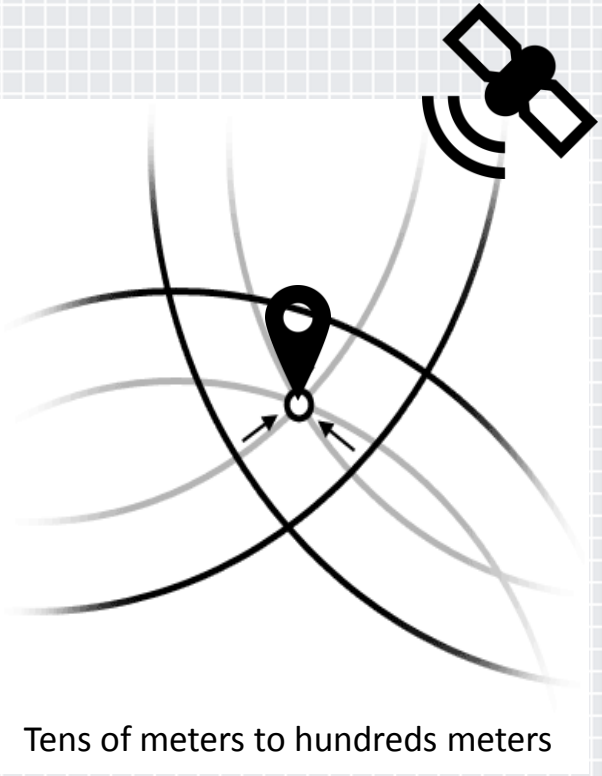


iBeacon

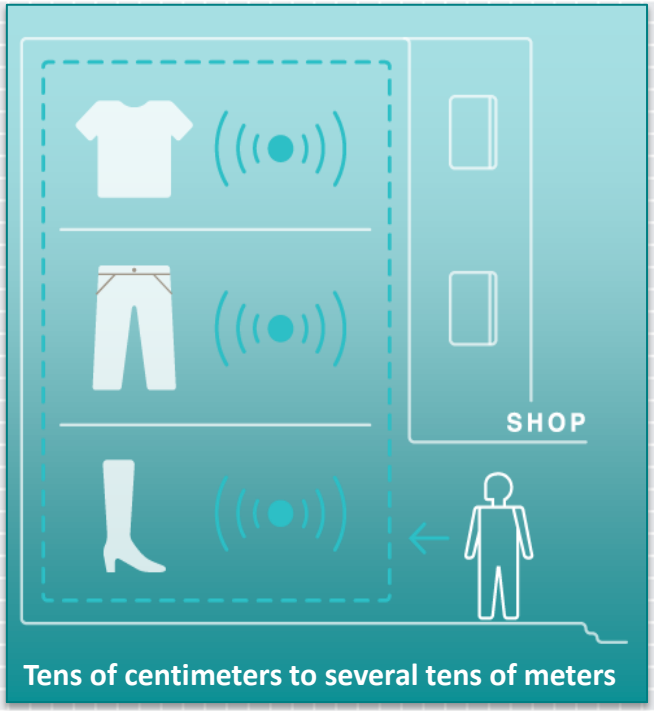


NFC

Coverage: Location, Proximity and Touching



Tens of meters to hundreds meters



Tens of centimeters to several tens of meters

Contacting or a few centimeters

MDM vendor's expectation with iBeacon

The market dominator of MDM in Korea(?)

iBeacon Fencing

- One iBeacon - Proximity
- Two iBeacons - Direction
- Three+ iBeacons - Location

GeoFencing vs iBeacon Fencing

Manage Geofences

Available Map Features

Results

Type	Name	Description	Latitude	Longitude	Actions
Geofence	CoSoSys Korea	Camera Off	37.505214258566184	127.05836958048167	

1 result [50 per page]

- Indoor or Underground
- Very accurate without location

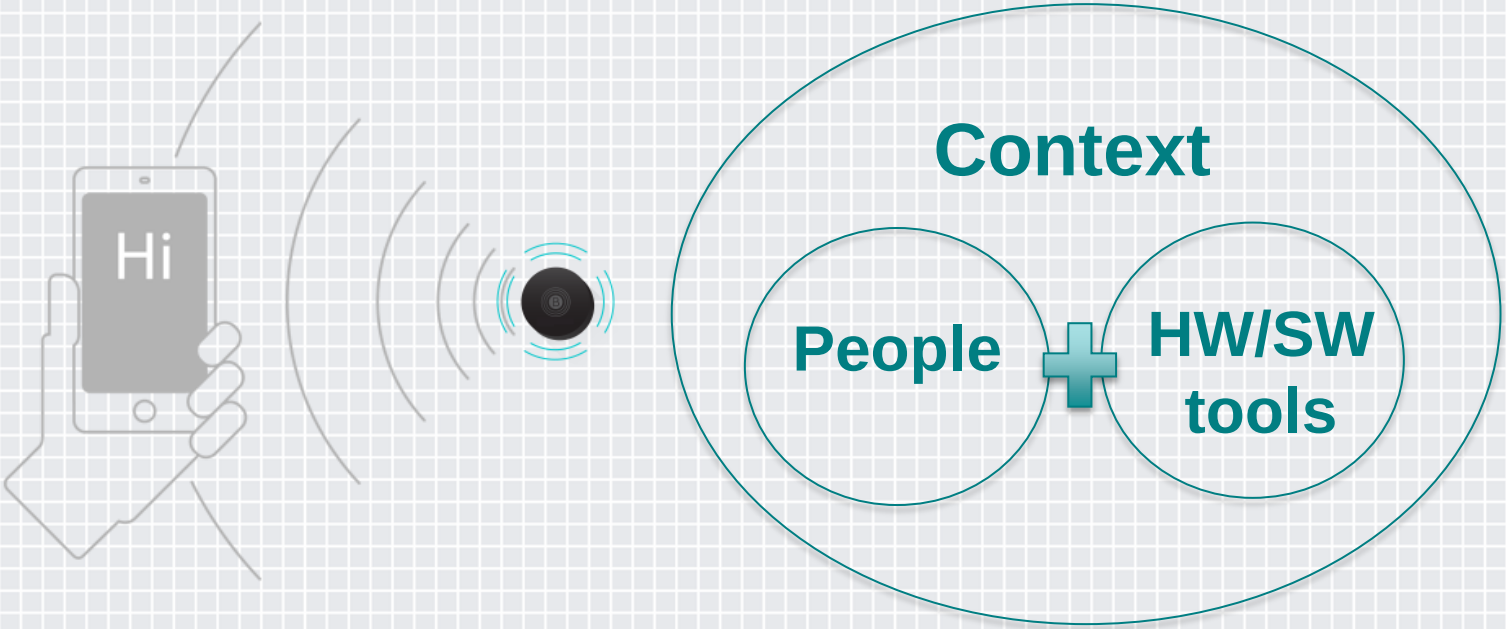
COSOSYS

In door location can improve safety

Your smart devices can lead you to get out of danger area safely when you get escape order

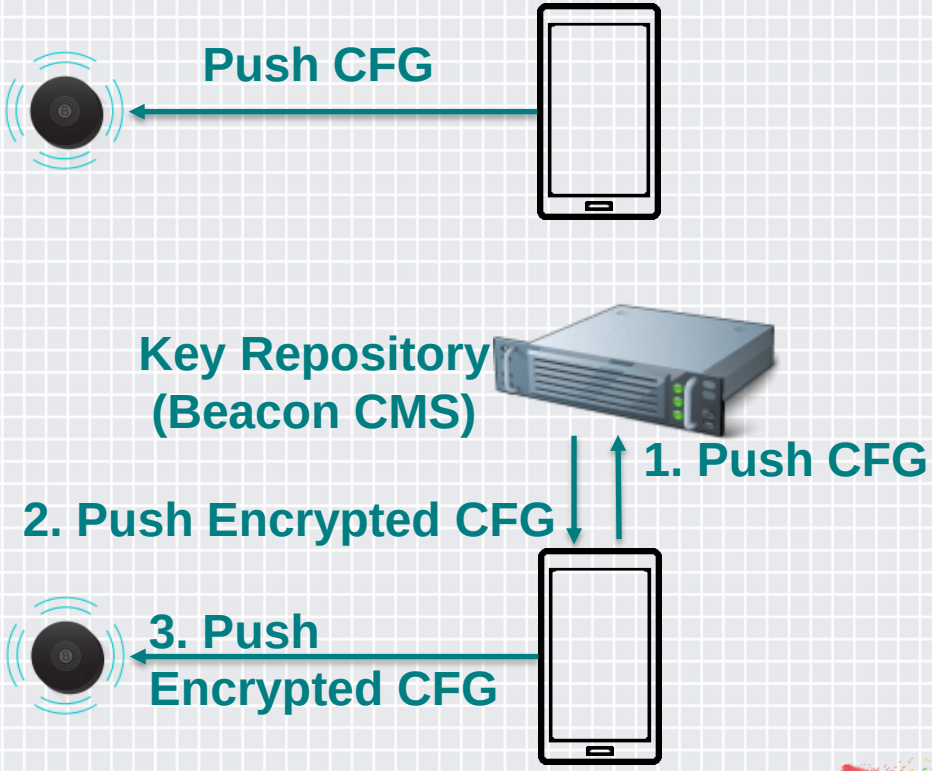
COSOSYS

Only Secure Beacon gives CONTEXT data in trust!



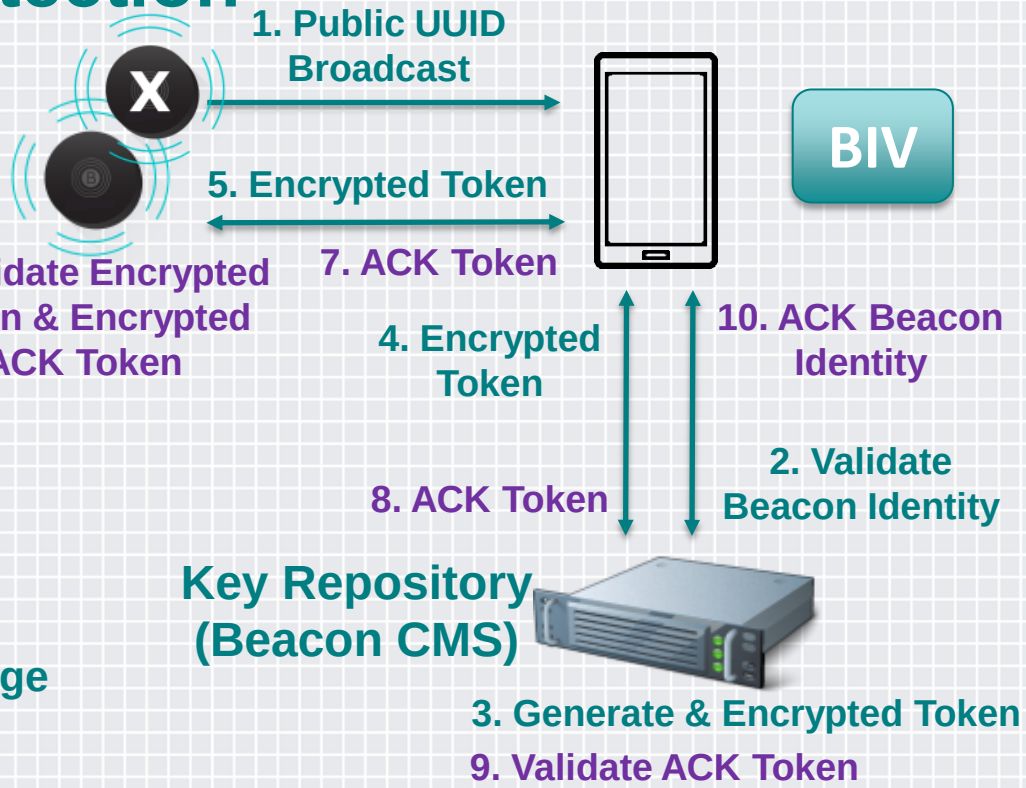
iBeacon Hijacking Protection

- It happens when an unauthorized user provisions the beacon with new configuration (UUID, Major, Minor)
- It leads to infrastructure theft
- Hijacking Protection
  - Each beacon has a Private Key
  - Mobile SDK simply relays encrypted messages
  - Server side Key Repository
  - AES-128 and MAC (Message Authentication Code) handshake



iBeacon Spoofing Protection

- It happens when a fake beacon impersonates the configuration of another beacon
- leads to fake notifications processing
- Beacon Identity Validation
  - Public beacon notification Initiates a BIV
  - Mobile App initiates a security handshake
  - Server Key Repository generates security token and encrypts message
  - Beacon ACK the token
  - Server ACK beacon identity



SECURITY POLICIES
based on location!

iBEACON™ in Business Environments

iBEACON™ in a store

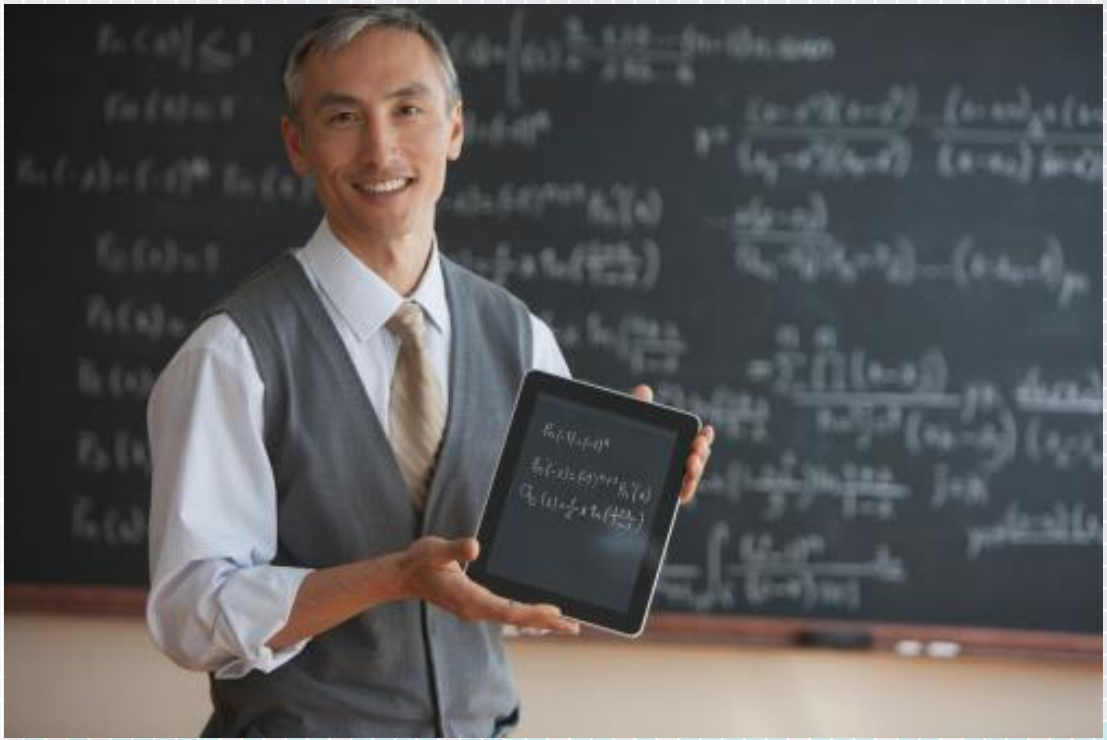
iBEACON™ in Data Loss Prevention

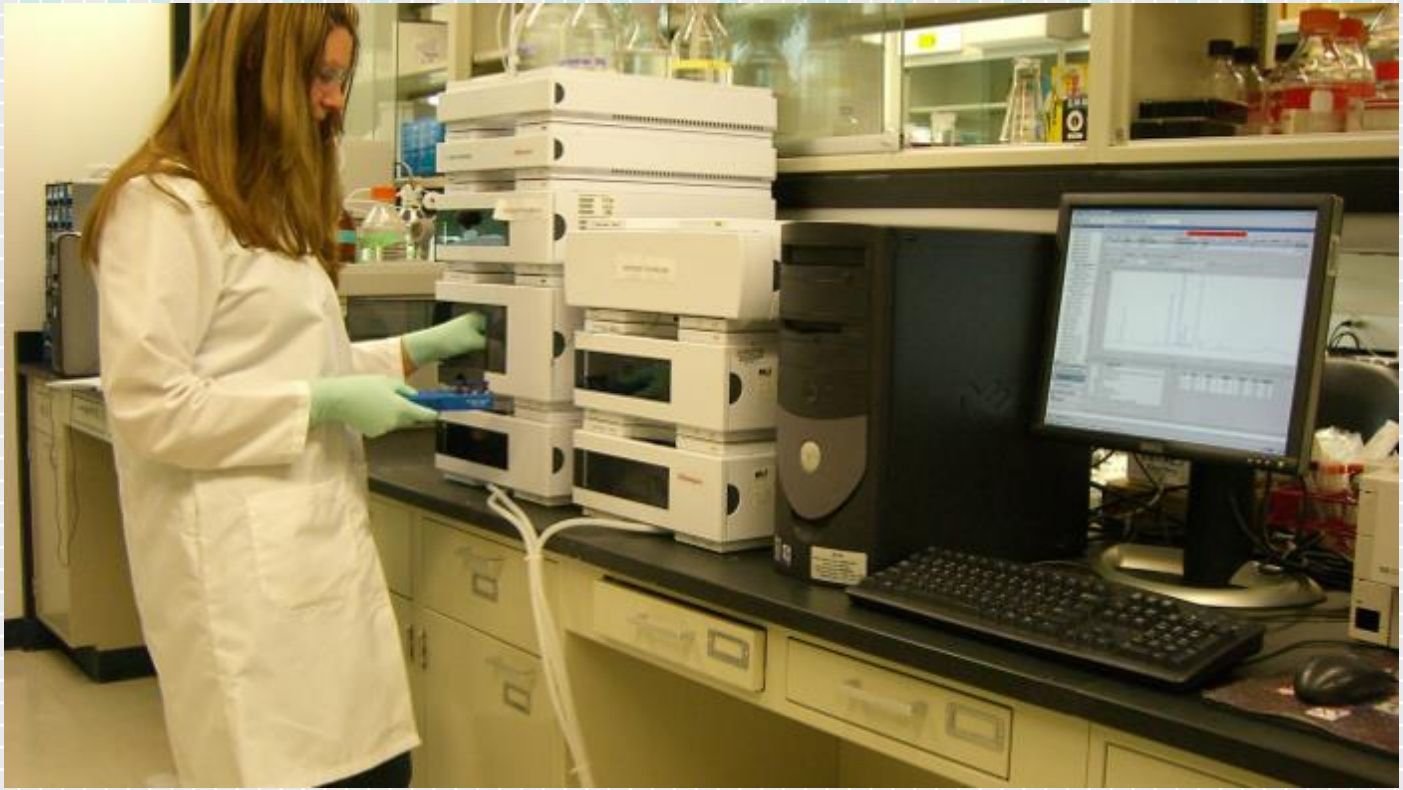
- An additional factor of authentication
- policy enforcement

  - No Beacon, Lockdown mode

IBEACON™ in healthcare

IBEACON™ in education





iBEACON™ & BLE beacon in Data Loss Prevention

- Device Control Policy based on location
- Lockdown content on computers outside of organization
- Important data recognize who can access to
- Locating important data in the organization
- Imagine what can you do with context.

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