Build an Asset Location Tracker with Etisalat IoT Platform

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Date & time: Saturday, 22nd February 2020, 11:00am - 2:00pm

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Agenda

Incorporate location tracking into your IoT solution

- Set up GPS modules on remote edge devices & monitor transmitted location over the internet

- Sync and model location data streams for multiple assets to the cloud

- Build a consolidated web-based user interface using extensions to display maps & position simultaneously for all assets

About The Assembly

- A Smart Lab & makerspace based out of **in5** since 2014

- Over **250** Free workshops done

- **Assembly : HACK** - Embedded systems, IoT, hardware

- **Assembly : CODE** - Software - APIs, frameworks, apps

- **Assembly: Data Science** - Advanced topics in AI/ML

- Audience – Students | Professionals | Entrepreneurs

- Focus on Smart Technology & Practical Applications

- members.theassembly.ae | **@makesmartthings**
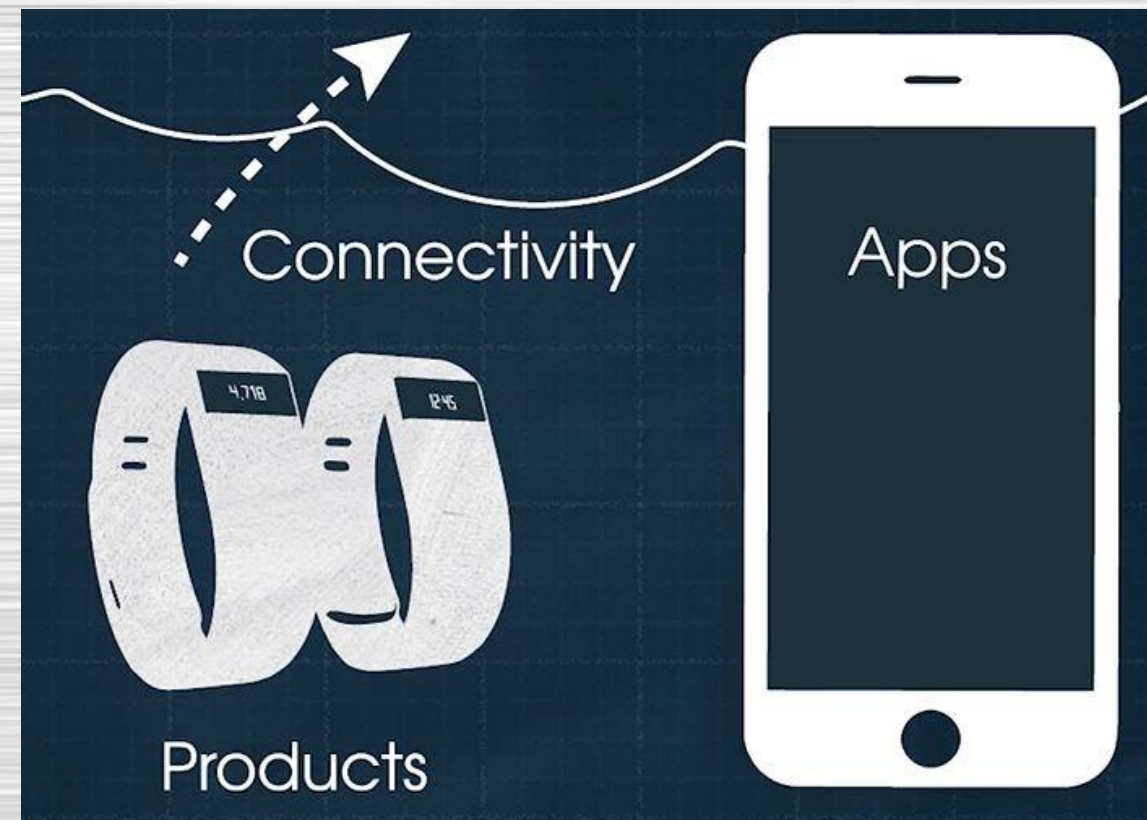
Resources

- **GITHUB**: https://github.com/The-Assembly/IoTAssetLocationTracker-With-Etisalat

- **Thingworx Academic Simulator (TAS)** - simulates edge devices for feeding data to the platform

  - MAC - http://apps.ptc.com/schools/software/ThingWorxAcademicSimulatorSetup.dmg

  - WINDOWS - http://apps.ptc.com/schools/software/ThingWorxAcademicSimulatorSetup.exe
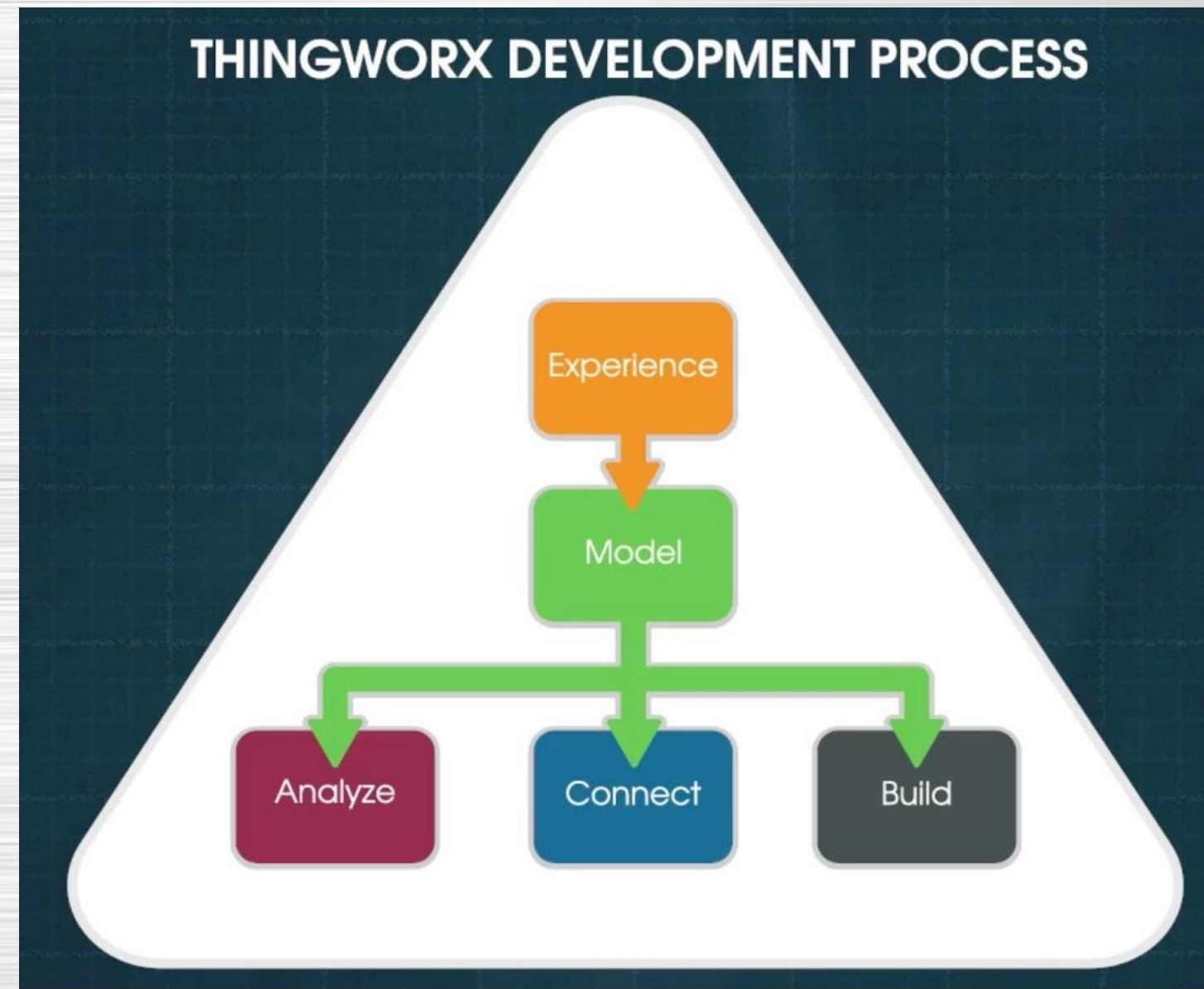
The Internet Of Things

- *The network of physical objects that can exchange data for value*

- Smart Connected Products (SCPs) can:
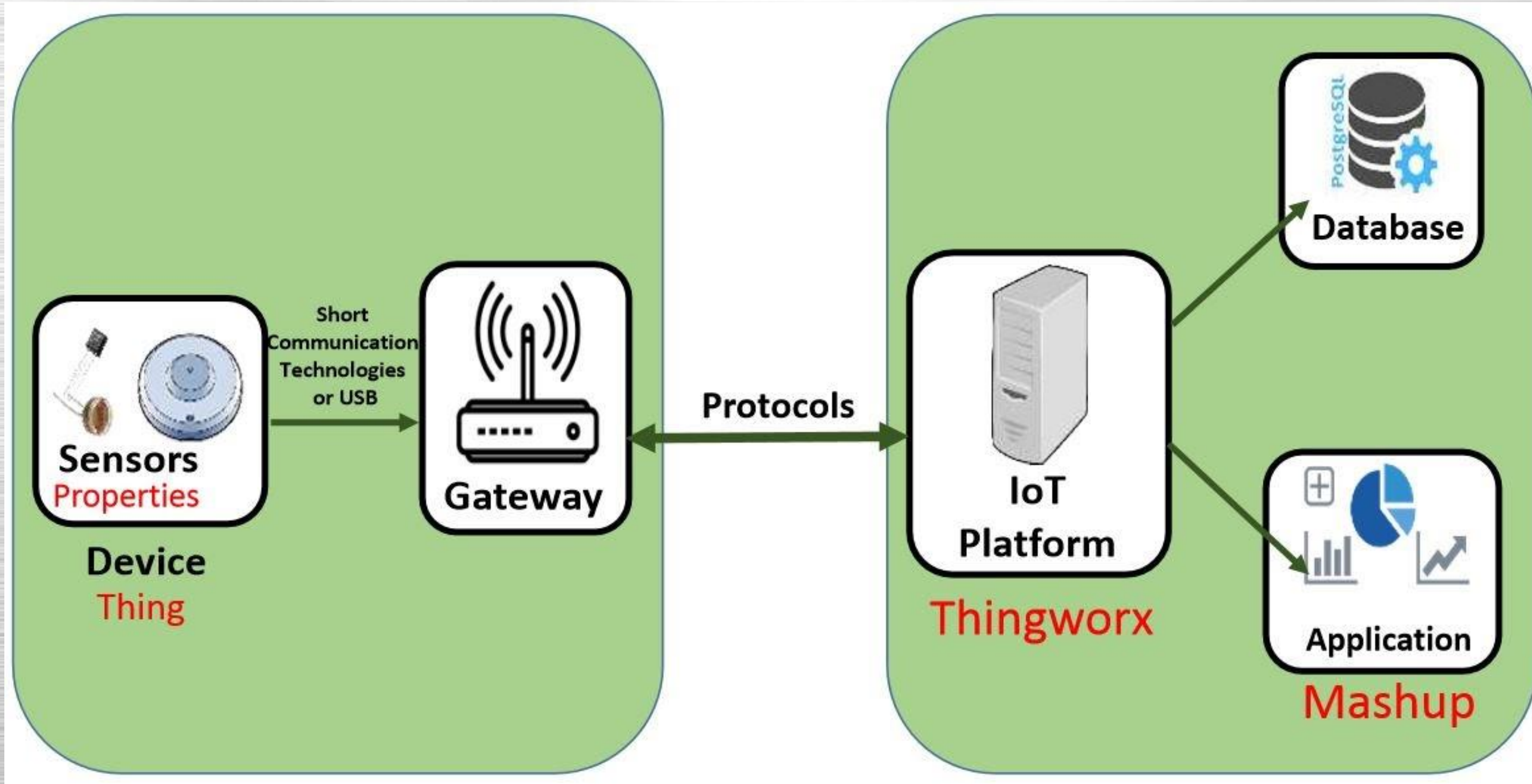
  - Monitor

  - Control

  - Optimize

  - Automate

Thingworx

- Fast To Market

- Simplicity

- Scalability

- Built-In Analytics

- Multi-Tenancy Model
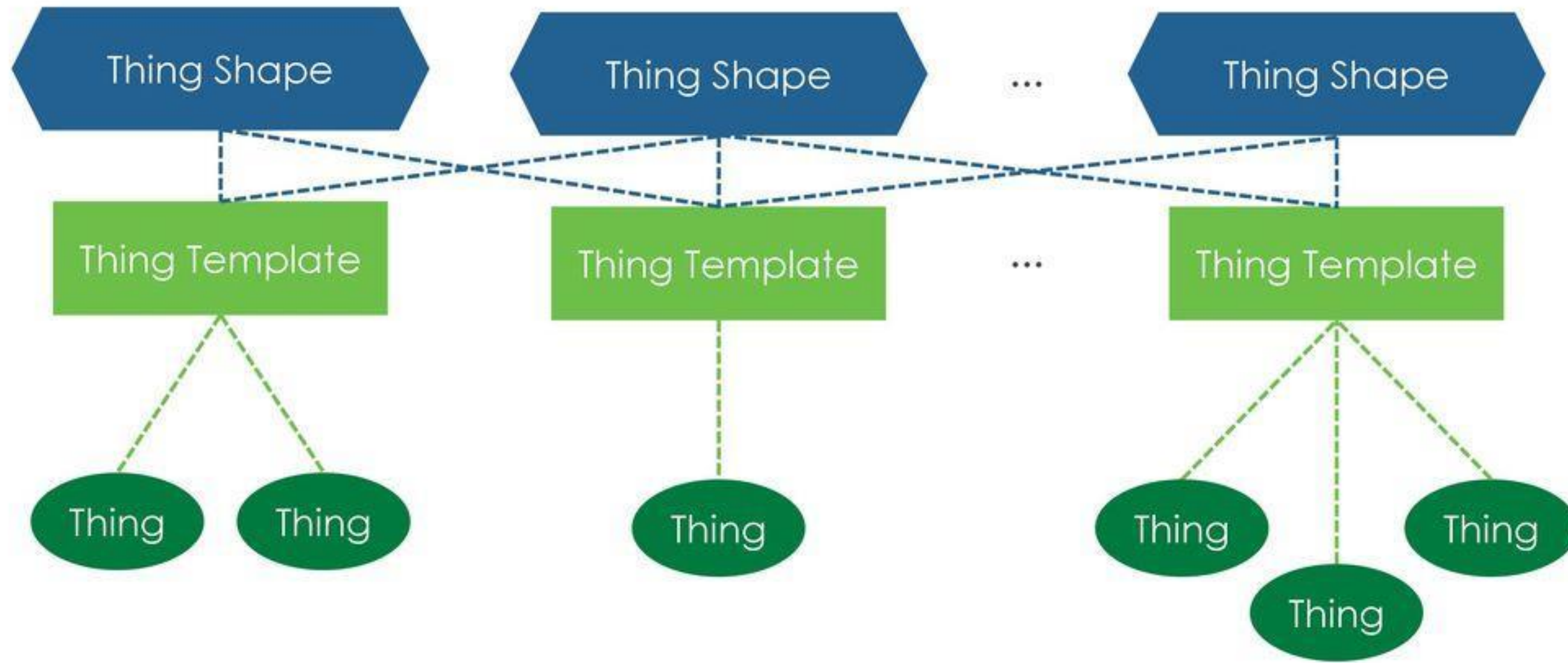
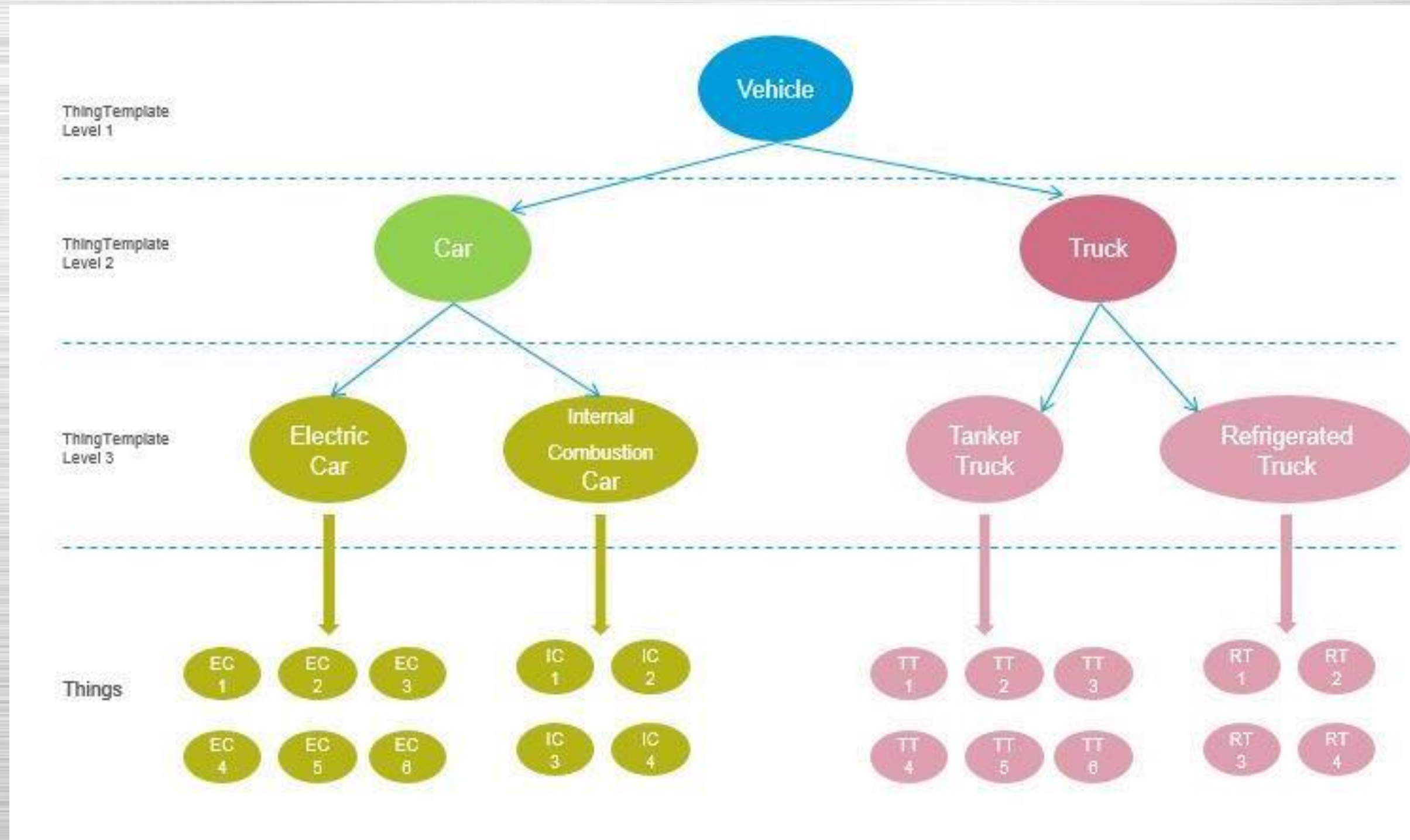- Data Encryption

Thingworx

Location & IoT

- Location awareness of assets has many benefits:

  - Route optimization

  - Geofencing

  - Analytics and pre-emptive response

  - Enabling smart contracts

  - Not just restricted to GPS – other systems too

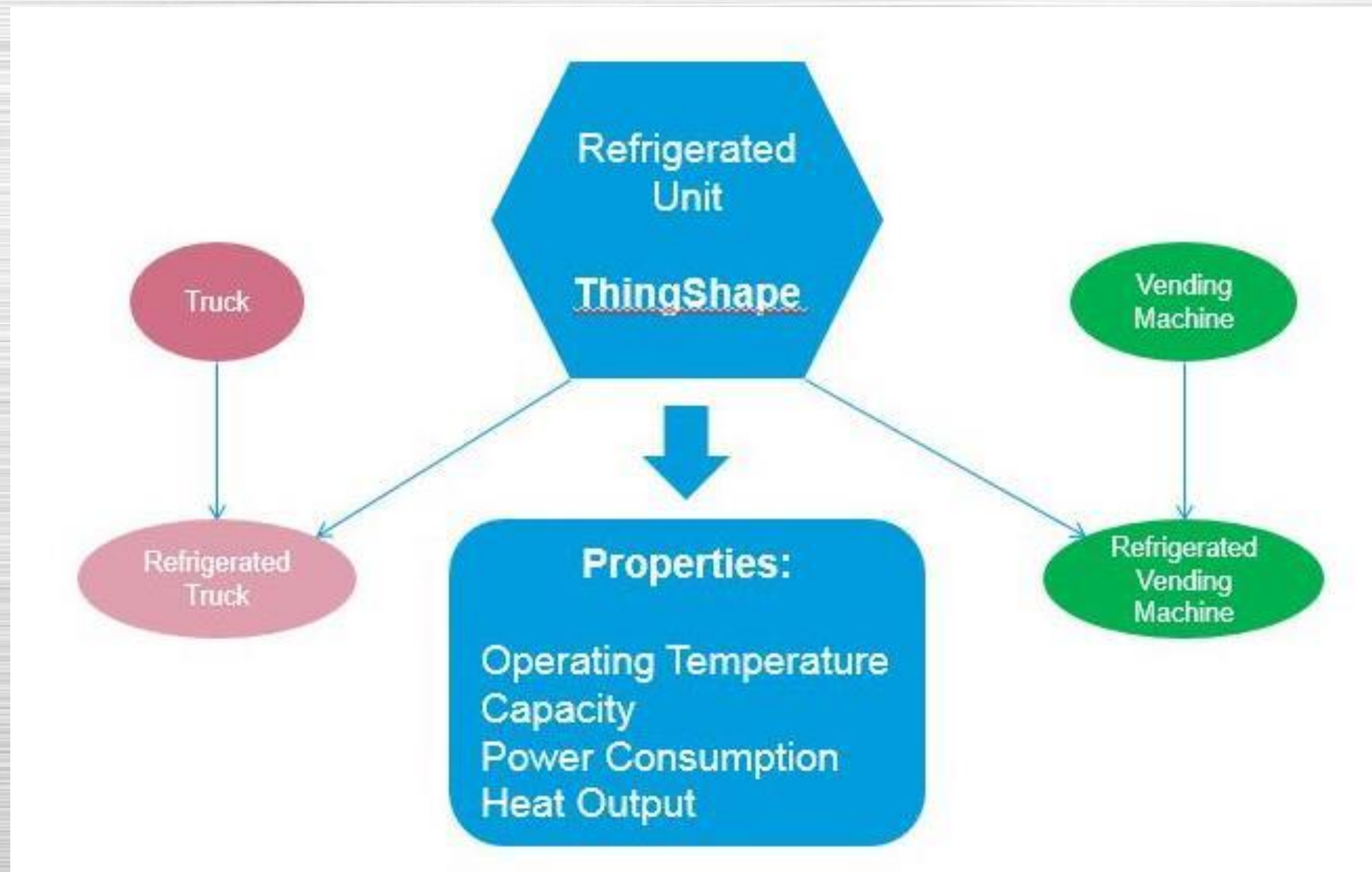# Thingworx Data Inheritance Model

Thingworx Inheritance – Template vs Shape

Thingworx Inheritance – Template vs Shape

More https://developer.thingworx.com/en/resources/guides/data-model

Google Maps Extension

Marketplace:

https://marketplace.ptc.com/apps/218633/google-maps-widget-303#!overview

Guide:

https://developer.thingworx.com/resources/guides/google-map-widget-how
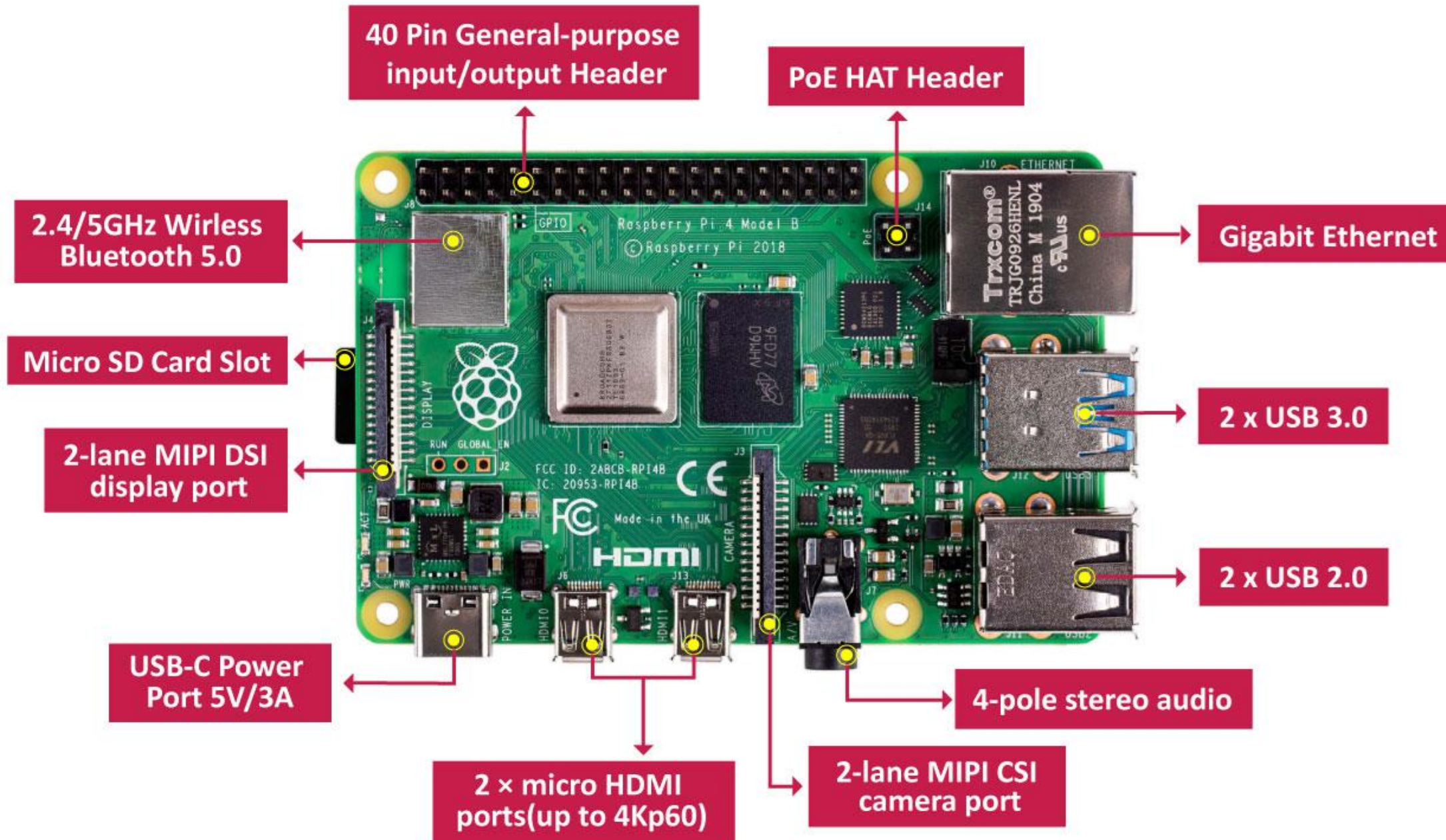
Value Stream

- Used for storing historical values for things

- Must be associated with a thing or a template

- Linked to a **ThingworxPersistenceProvider** that serializes values to underlying database

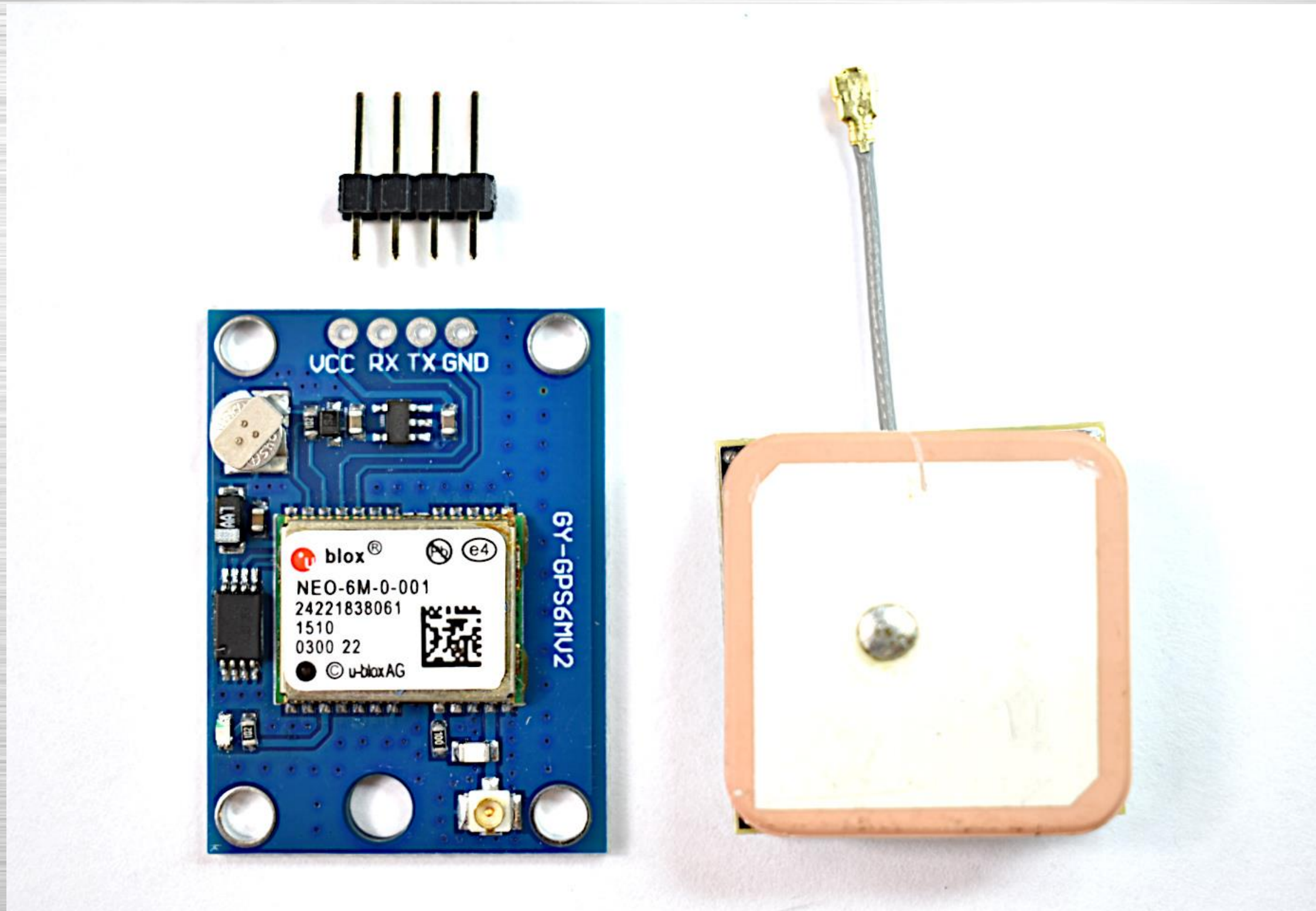- Values retrieved through **QueryPropertyHistory** service

Guide:
https://community.ptc.com/t5/IoT-Tech-Tips/ThingWorx-Tutorials-Introduction-to-Value-Streams/td-p/532557

Hardware: Raspberry Pi

Hardware: Neo 6M GPS Module

Circuit

GY-NEO6MV2

GND -> Pin 6 (Pi) Black
VCC -> Pin 2 (Pi) Red
TX -> Pin 10 (Pi) Blue