MODULE 1-1
UNDERSTAND THE DESIGN FLOW
Hardware Design Flow

Proof of Concept
- Design or Assemble Hardware
- Write & Test Core Functionality

Prototype
- Full Scope & Optimisation
- Assembly (small quantity)
- Pilot

Deployment
- Assembly (large quantity)
- Devices in the Field

Ongoing Dev & Maintenance
- Troubleshoot & Maintenance
- Further System Dev
Proof of Concept

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Proof of Concept

- Spec core requirements and functions of device
- Know deployment conditions
- Source or design hardware
- Assemble and test the hardware works together as expected
- Write the core functionality code. Check we can do it.
Prototype

- Add remaining functionality and optimisations
- Determine enclosures and mounting
- Note device assembly time
Prototype

Pilot

- 3-5 devices
- Test environments
  - Lab – tests how reliable devices are and accuracy of data. Baseline reference.
  - Sandbox – controlled outdoor. Introducing unpredictable real world.
  - Field – as close to deployment conditions as possible.

*Aim: Isolate errors so we can debug and troubleshoot*
Prototype

Pilot Outcomes

• How device will interact in real world
• Tests data accuracy
• Reveals unknown user requirements and functionality
• Reveals hardware limitations
Deployment

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Deployment

- Source larger quantities of hardware, components, enclosures etc. Check bulk discounts!
- Streamline assembly process
- Establish testing process
- Create ‘in the field’ repair kit, and include spare parts
- Training others on deployment and maintenance
Ongoing Dev and Maintenance

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Ongoing Dev and Maintenance

• Establish troubleshooting checklist
• Order more of the parts that are more difficult to source locally
• Create modification and feature wish list for next iteration
COMING UP - 1-2A

UNDERSTAND THE FULL DESIGN STACK - HARDWARE