





SCADA System For Oil Fields

Customer wanted to automate the tasks historically performed manually by a “Pumper” job role.

Project Size: 6 members

Project Duration: 9 months

Technology Used: MSP430, Digimesh, AM335x, MQTT, AWS, iOS

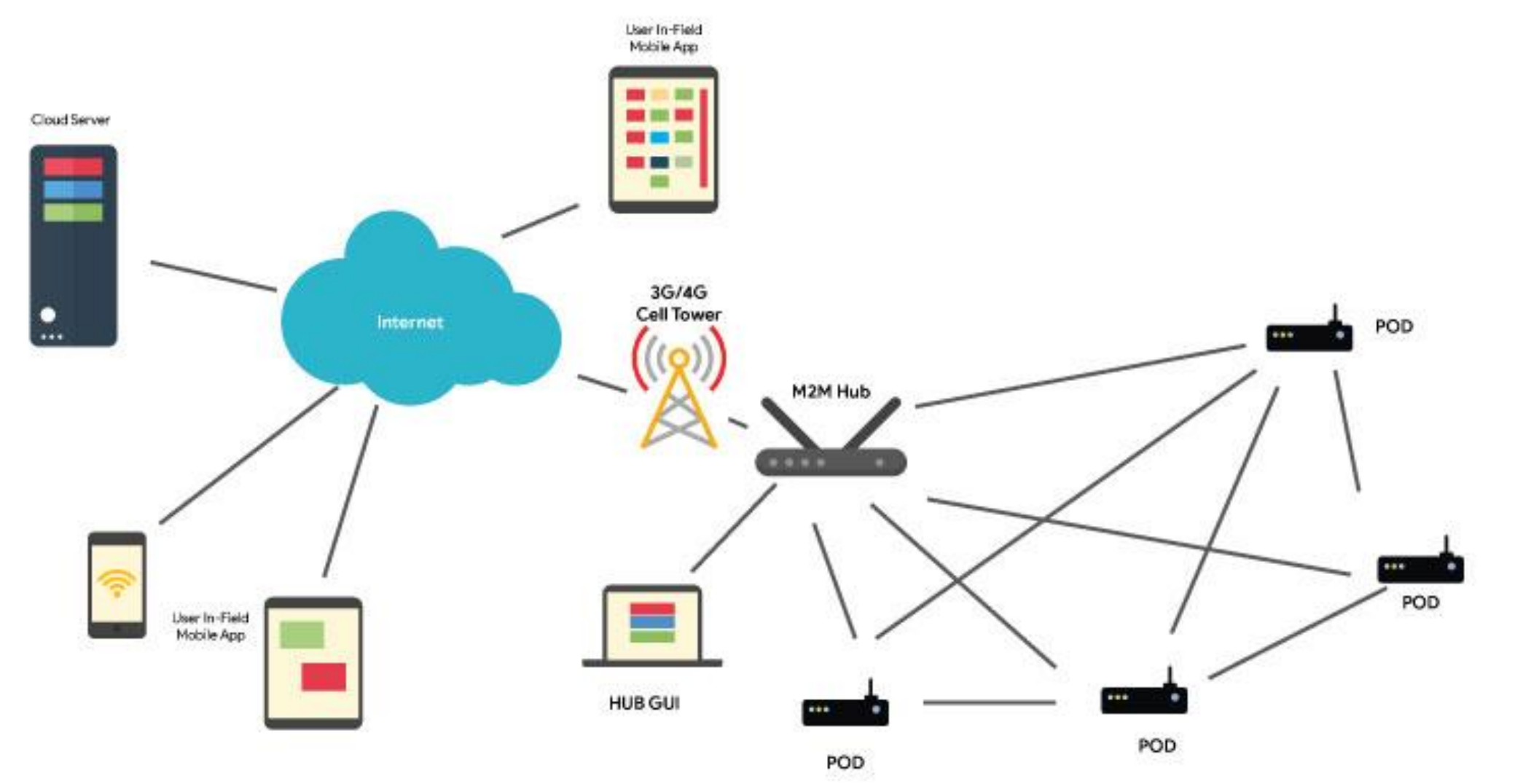
Challenge

- Individual pump health difficult to detect, resulting in high-cost of ownership per pump.

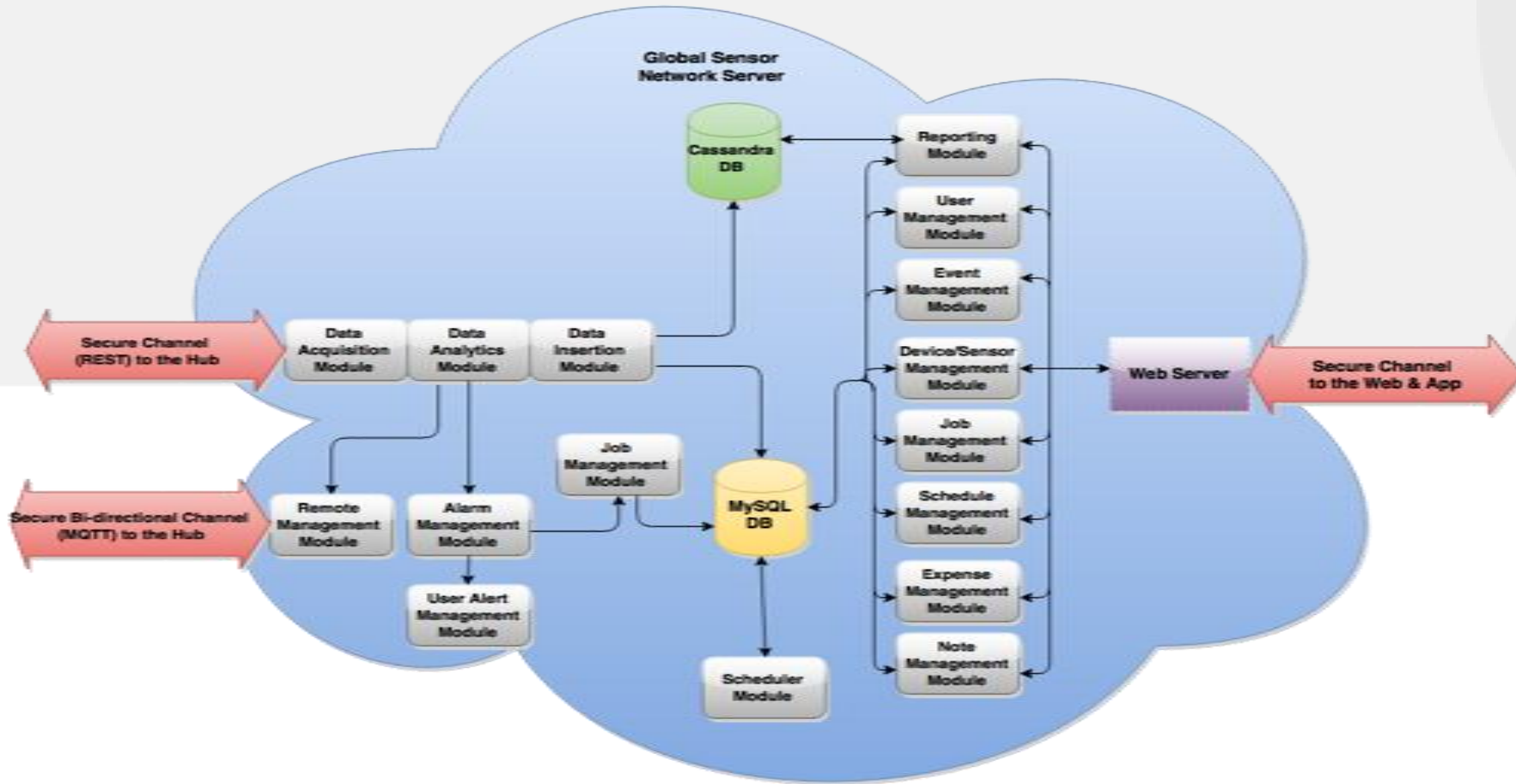
Outcome

- GadgEon designed the HW, radio communication system and built the back-end cloud systems
- Data collection system and automated control system was implemented
- Control valves and on/off machines.

System Overview



Cloud Architecture



WHAT DID GADGEON DO?	PLATFORMS/ TECHNOLOGIES USED
1) Architecture for complete system including POD, Hub, Cloud and mobile application	Requirements Gathering & Analysis, Uses cases, Architecture development, identification of functional components.
2) POD Hardware and Firmware	<p>MSP430, Xbee digimesh, Sensor integration 4-20mA circuits, Analog inputs, Temperature sensor, PIR motion sensor, Digital inputs, Relays and Camera module</p> <p>Proprietary protocol over Digi mesh to exchange sensor data, optimized for small payloads</p>
3) Hub Firmware	<p>MQTT for cloud communication, Firmware upgrade support, reassembly of packets to create image from segmented packets over Digimesh.</p> <p>Web UI for system configuration and status. Data backup to DB in case of uplink connectivity loss.</p>
4) Cloud server	User & Device Management, data storage, alert notifications, interpretation, intelligence, reporting and distribution to the mobile devices interacting with the Cloud server. The Cloud platform used is Amazon AWS
5) iOS Mobile App design and development for controlling and managing the hub	The iOS App will enable plumbers to monitor the field equipment, receive notifications and remotely manage them.



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