



GadgEon

Engineering Smartness

LIVESTOCK HEALTH MONITORING



Livestock Health Monitoring



\$5B lost annually to livestock disease. Customer needed real-time monitoring of livestock health for herds of up to 20K cattle

Results / Outcomes

- Design of battery-operated implantable “e-Pill” and full-stack IoT implementation
- Livestock health index transmitted through mesh network to cloud via gateway
- Product currently deployed- in field trials in NE USA



System Description

Challenge

Radio propagation issues

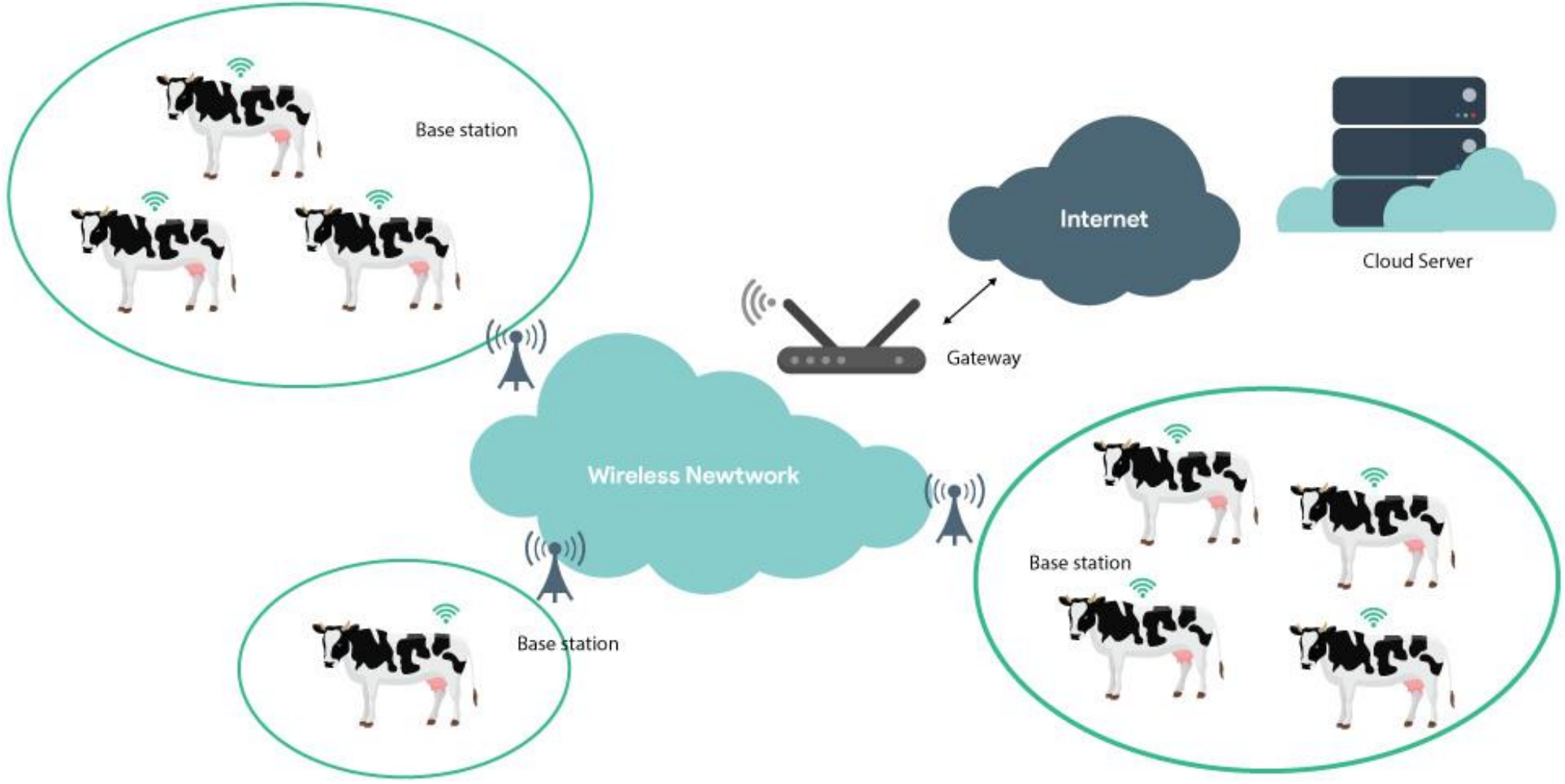
Swift identification and location of diseased livestock.

Architecture, Design and Implementation Of Firmware

- State machine code, Acquiring sensor data using I2C, analog and digital IO
- Data analysis and vital parameter extraction
- Entering Low power mode when not active
- Wireless data transfer using TI CC1101 radio and SimpliciTI protocol stack
- Buffering data to the flash memory when the ePill is out of coverage area of Access Point
- Ability to roam among different Access Points
- Supports configuration and status extraction from Access Point using the SimpliciTI interface
- Receive data from the ePill, which is implanted in the cattle, using SimpliciTI wireless interface.
- Transmit the received data using RS-232 interface to the Base Station.
- Wireless data transfer using TI CC1101 radio and SimpliciTI protocol stack.
- The design is highly scalable supports up to 500 ePills at the same time.
- Basic status displays based on link availability, heartbeat mechanisms.



Livestock Health Monitoring – Data Flow Diagram



THANK YOU



For More Details, Let's Connect



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