

Livestock Tracking and management solution

博立信科技有限公司

Livestock industry includes the growing and production of

- 1) Cattles, cows
- 2) Swine (pigs)
- 3) Sheep/goats
- 4) poultry (including egg-producing poultry) such as chicken

We will use pig as example in this solution document. Other animals such as cow, chicken, and sheep are similar and equally applicable.

Polysense LoRa based (NB-IoT/LTE Cat M1 based in 2018) livestock tracking and health management IoT solution offers the following key benefits:

- 1) livestock's health monitoring

Growers could only identify a sick animal through visual observation. But because animals do not typically openly display symptoms, a sick animal is often not identified until they are very ill. Polysense solution consists of a collected health tracker that attaches to the animal and provides constant monitoring of livestock body temperature, movement and vital signs such as heartbeat

- 2) Location Tracking and Geofencing

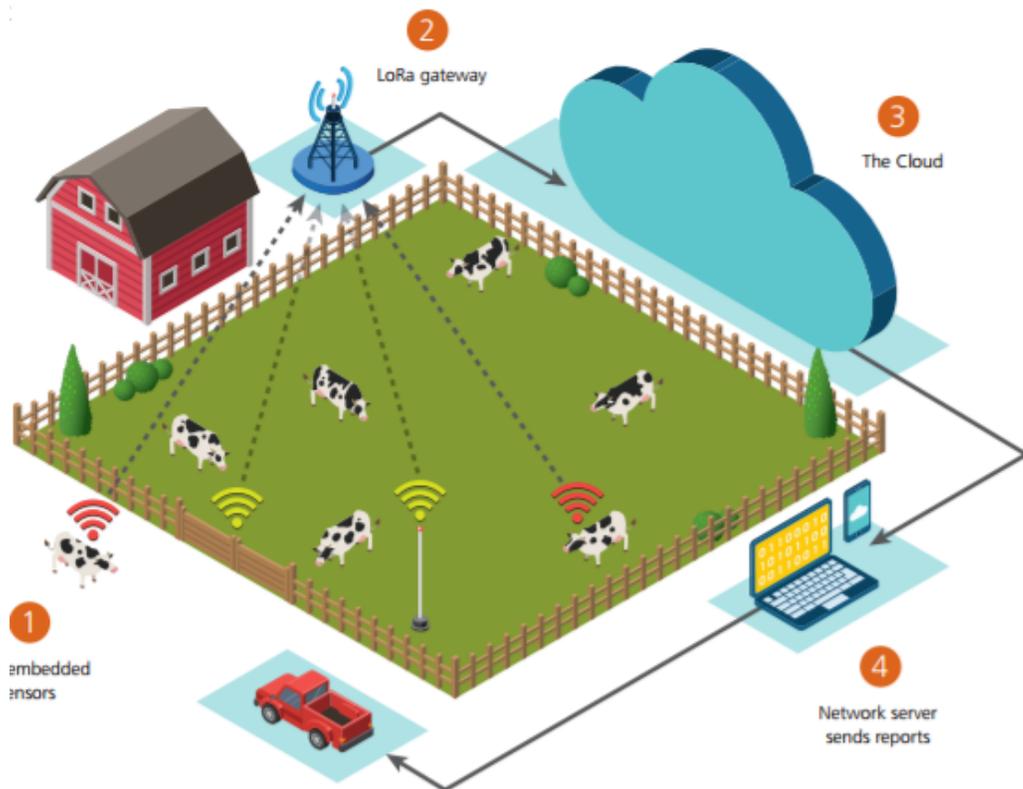
Each large animal, such as cow or pig, can be a very valuable, worth from \$500 to \$2,000. When the animals are roaming on a large area pastures, they can be lost. Polysense solution allows to define a virtual fence – alert will be sent when any animal travels outside the defined boundary

- 3) Inventory counting (清点)

Grower often needs to count the number of animals daily or weekly. This can be a tedious task. Polysense solution will enable growers to efficiently count in real time, any time, accurately.

4) Livestock exercise and movement

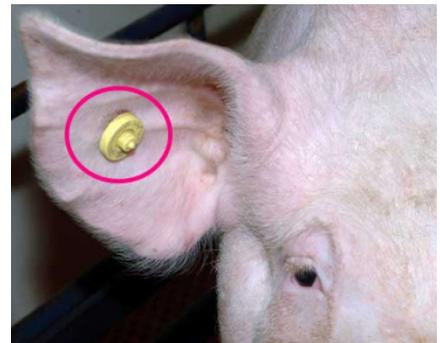
Nowadays, consumers are increasingly favoring healthy food, with special concerns about the quality and health of the meat on their daily dinner table. They want to meat from livestock that has grown in a healthy environment, free range (散养殖, 走地), and adequate exercise/movement, not from livestock grown from a super crowded space where a pig can barely move its body around.



1. 博立信 aTraQ 可穿戴物联网解决方案 for animals

The aTraQ tag can be attached to the animal's ear or collar or leg.

- a) Health/sickness monitoring with embedded biometric sensor such as heartbeat or body temperature
- b) GPS/北斗定位
- c) 无源 RFID (范围大于 3 米—第 2 代超高频标签)
- d) 6. 优先 LoRa wireless RF
- e) 7. 一次充电可使用长达 6 个月 至 2 年的长电池寿命
- f) 8. 无线充电



aTraQ 灵活的支持以下服务：

- ✓ 方便穿戴—可以夹在耳朵，亦可以戴在脖子上，或腿上
- ✓ 防水
- ✓ 自定义日程安排—设置自己的位置报告的频率
- ✓ Guard 模式—在进入或离开保护区时接收通知
- ✓ 按需模式—随时要求定位

2. Battery operation time

Table below shows the growing stage of an average market pig

Livestock	Average weight	Average time from birth to market	Market value
Pig	280 lbs.	6 months	\$500
Cow	1,200 lbs.	20 months	\$2,000
Chicken	6 lbs.	45 days	\$10

Polysense solution will be able to operate with the battery for 1 or multiple growing cycles of the above animals. The exact battery operation time depends on the frequency of sensor data, type of sensor data collected.

3. Pricing of the aTraQ tag

aTraQ tag product line will have three product models:

aTraQ model	Model Description	Target Application	Estimated price (1,000 units or above)
aTraQ-H	Embedded biometric sensors	Animal health monitoring	RMB 950
aTraQ-M	3 axis accelerometer	Animal movement monitoring	RMB 240
aTraQ-T	GPS/Beidou and 3 axis accelerometer	Animal location tracking and movement	RMB 350

As the volume reaches 10,000 or higher, the price of the above tags will be further reduced.

4. ROI analysis (投资回报分析)

Livestock	Average weight	Average time from birth to market	Market value	Free Range/movement additional value per lbs.	Free Range/movement additional value total per pig
Pig	280 lbs.	6 months	\$500	\$1.2	\$300+

With aTraQ-M at about \$35 (RMB 240), the ROI is very strong (\$35 investment vs. \$300+ return). This benefit is even stronger, considering that each tag can be used for multiple growing cycles.

5. Development of the aTraQ tag

Polysense WxS 8800 already supports 3 axis accelerometer, GPS, and temperature, and all necessary software. We will be able to develop and deliver the aTraQ tag, based on WxS 8800, within 3 months.

关于 Polysense

博立信科技有限公司(Polysense Technologies)是一家专业从事物联网与传感 (IoT/Sensing) 产品与解决方案的研究、开发、销售、系统集成的高新技术企业。公司位于美国加州硅谷, 中国北京, 上海和洛阳。

博立信核心团队来自于工业界领袖企业, 包括思科、日立、英特尔、博通等, 和领先的科研与学术机构。团队成员拥有不同的知识背景, 包括有线、无线网络通信、互联网应用、云计算、先进的低功耗、高精度传感器、MEMS 传感器和半导体。公司计划通过统一的系统架构来实现融合通信, 传感和互联网功能, 同时结合最新的半导体技术和光电技术, 在保持成本竞争力的情况下, 达到比较高的性能。公司团队拥有深厚的专业知识和经验, 致力于开发适合于现实部署的物联网产品和解决方案。

博立信坚持聚焦客户的经营理念, 致力于为客户提供高质量的、具有丰富功能的产品, 提供最好的性价比。

联系我们



博立信（北京）科技有限公司

地址：北京市海淀区上地信息路 26 号

中关村创业大厦 8 层 0820 室 100085

总机：010-01060607008

邮箱：info@polysense.net



博立信（洛阳）科技有限公司

地址：洛阳市涧西区青岛路 29 号天鹅堡三层 B 区 471000

邮箱：

info@polysense.net



Polysense 美国硅谷

地址：3000 Scott Blvd, Suite 108, Santa Clara, CA 95054

电话：408 800 7728

邮箱：info@polysense.net