

The challenge



Patni enables Animal Tracking – “Farm to Plate”, using RFID

Patni helped its client implement a high-tech “Animal Traceability” System, to help it meet new European and US government regulations and expand its leadership in the South American market.

The outbreak of mad cow, and foot and mouth diseases has resulted in significant losses for the US and Europe livestock industry. To develop control mechanisms for such epidemics, Government agencies have enforced regulations; resulting in super markets mandating a code of practice for all suppliers. This requires unique animal identification for providing total traceability and accountability throughout the food chain.

The client thus needed to implement a reliable system to track its meat shipments, within a short 8-month window.

The client

A leading supplier of livestock information services and products in the UK.

RFID Solutions

The solution



Patni leveraged its RFID expertise, SmartVISION solution suite, and project management skills, and quickly ramped up a team to develop and implement an integrated “Animal Traceability” System.

The key requirements of the solution included:

- Complete traceability of cattle from the bone-in carcass back to birth; achieved by capturing the parentage of the animal and its progeny.
- Tracing of all holdings on which the cattle has resided, and thus the breeding regime followed in each holding.
- Capture of records of the feed used by the grower; documenting of cattle feeding regimes and constituents and making them readily available for inspection; ensuring a documentation audit trail.
- Providing a database at the national level, for use by Governmental agencies for controlling movement, butchering, audits, grading the product, etc.

How the “Farm to Plate” traceability is achieved

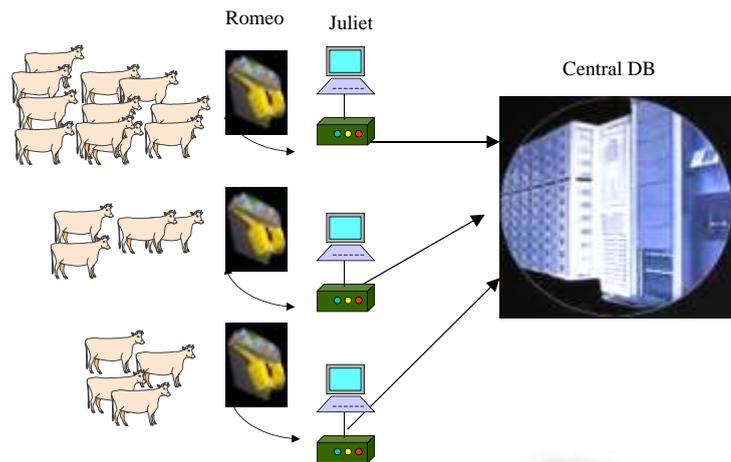
- All animals are tagged with unique electronic-ids, using an RFID tag
- A handheld device containing a RFID reader/writer (called Romeo) is used to capture the animal data like sex, date-of-birth, breed-species, parent details. Similarly all data like animal’s movement history, health records, treatment product details are also recorded.
- At regular intervals, Romeo is docked on another desktop device namely Juliet for data synchronization. All new/modified data from Romeo is transferred to Juliet and Juliet will synchronize its data with a central server.
- When animals move from one farm to another, or farm to abattoir, data like the date of movement, vehicle-info carrying this animal batch, etc., is recorded.
- The abattoir also accesses the central server using web applications. At the abattoir, additional animal data like temperature, weight, fat are captured just before slaughtering the animal. All these data are transferred to the central database along with a KILL event. The electronic-ids of these slaughtered animals are not reused thus ensuring the unique identification of animals. Once the meat is packed the barcode identification on the package will have mapping to the unique electronic identification of that animal. Thus the total backward traceability of the meat can be achieved.

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The technology

All the applications required for “Animal Traceability” have been developed and implemented by Patni. These include:

- Embedded applications for Romeo-Juliet devices, which include features like Voice recognition processing, Printer interface, Interface with external devices and Online up-gradation of Romeo application.
- Central server application for synchronizing the global data from multiple farms.
- Several web applications for viewing, modifying central server database data.
- Web applications for abattoir interface.
- Developing and maintaining SDKs.
- The hardware RFID tags and handheld readers were supplied by a hardware vendor.



The benefits

- Client deployed the “Animal Traceability” system successfully in the UK, France, Australia, Uruguay, Brazil and Chile.
- Ability to trace meat products from “Plate” right to the animal with access to all relevant information including its feeding data, parentage and other vital information helped to provide customers with an assurance of getting disease-free products.
- Enabled timing of feeds, vaccinations, etc and creating an audit trail for the same.
- Additional benefits from ability to analyse aggregated data to understand trends and responses to certain actions.