Benefits

- Improved data accuracy
- Superior product traceability
- Improved efficiency of operations
- Increased productivity
- More information available to the dairy industry

The objective of this project is to secure the milk during transport and to automate the collection of the milk information for multiple dairy industry sectors. Along with the efficiencies gained from fast, accurate information, all users will also benefit from quick evaluations of bulk milk security coupled with rapid trace-back functions. In addition, consumers will be assured that the dairy industry is working diligently to improve milk safety and security.

Status

The system is currently in a testing phase with the prototype truck being used to pick up and deliver farm milk.

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Bulk Milk Transportation Security and Data Collection System

In our modern food supply chain, bulk food handling and transportation protocols are of significant importance, especially to the dairy industry. With input from producers, processors, and transportation companies, researchers in the University of Kentucky College of Agriculture have developed a prototype bulk milk transportation security system that will allow users to track milk from farm to processor to ensure milk security and safety.

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This practical transport security system offers:

- Higher level of accountability
- Increased security
- Unprecedented data collection capabilities
- Improved scheduling and logistics
- Ability to track specific farm attributes

How does it work?

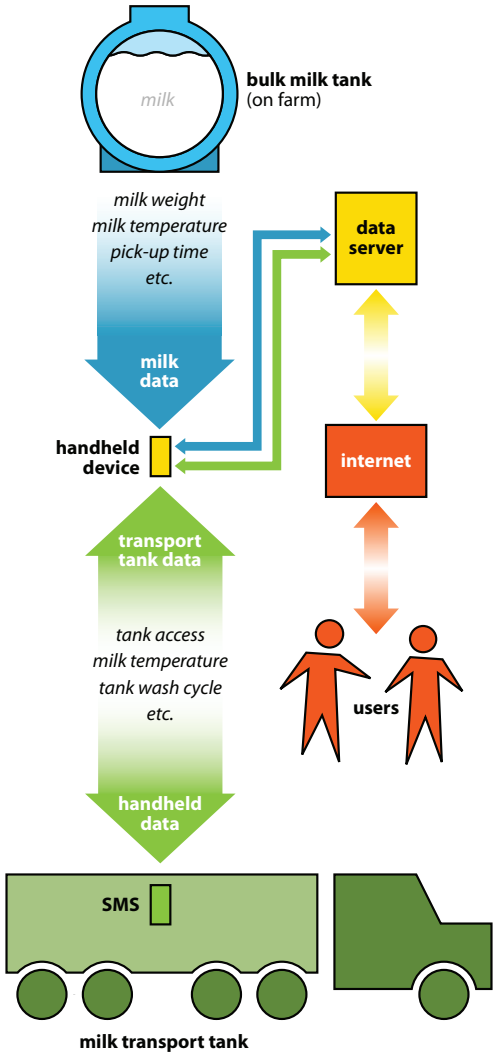
The integrated security and data collection system consists of three parts:

- A data server for storing information on bulk milk transport activities
- A mobile handheld computer that allows the user to input data and to access up-to-date information
- A computer processor installed on the tanker to operate the security monitoring system (SMS)

The SMS, mobile handheld computer, and the data server interface as events occur—for example, when a door is opened or when farm pickup information is entered into the handheld. All information is redundantly stored, and updates are communicated across the system. The core components include a GPS unit, electronic locks, a key pad, and temperature sensors, all of which are critical to the record-keeping system. The system is updated by users; server storage may be partitioned for major users, giving them access only to authorized records.

What can it do?

Information is entered to record who, when, where, and why a tanker's door, valve, or dome lid was accessed. Temperature sensors monitor milk in transit, the tanker's wash cycle, and milk samples in the storage cooler. Every tanker event is captured and stored. When appropriate, a producer's dairy herd information may be downloaded with each farm pickup to provide near-instant traceability from the processor to the individual cow.



Activities exceeding specified criteria will be "red flagged" and quickly communicated to system users. Such items include inappropriate access to the tanker, tanker wash tag expiration, or an elevated milk cargo temperature. The security and traceability features of the system will enhance the dairy industry's ability to quickly respond to an event.

Detailed near–real time information about a load of milk in transit—for example, location, volume, and temperature—has the potential to increase efficiencies and will benefit marketing agencies, processors, and transport companies.