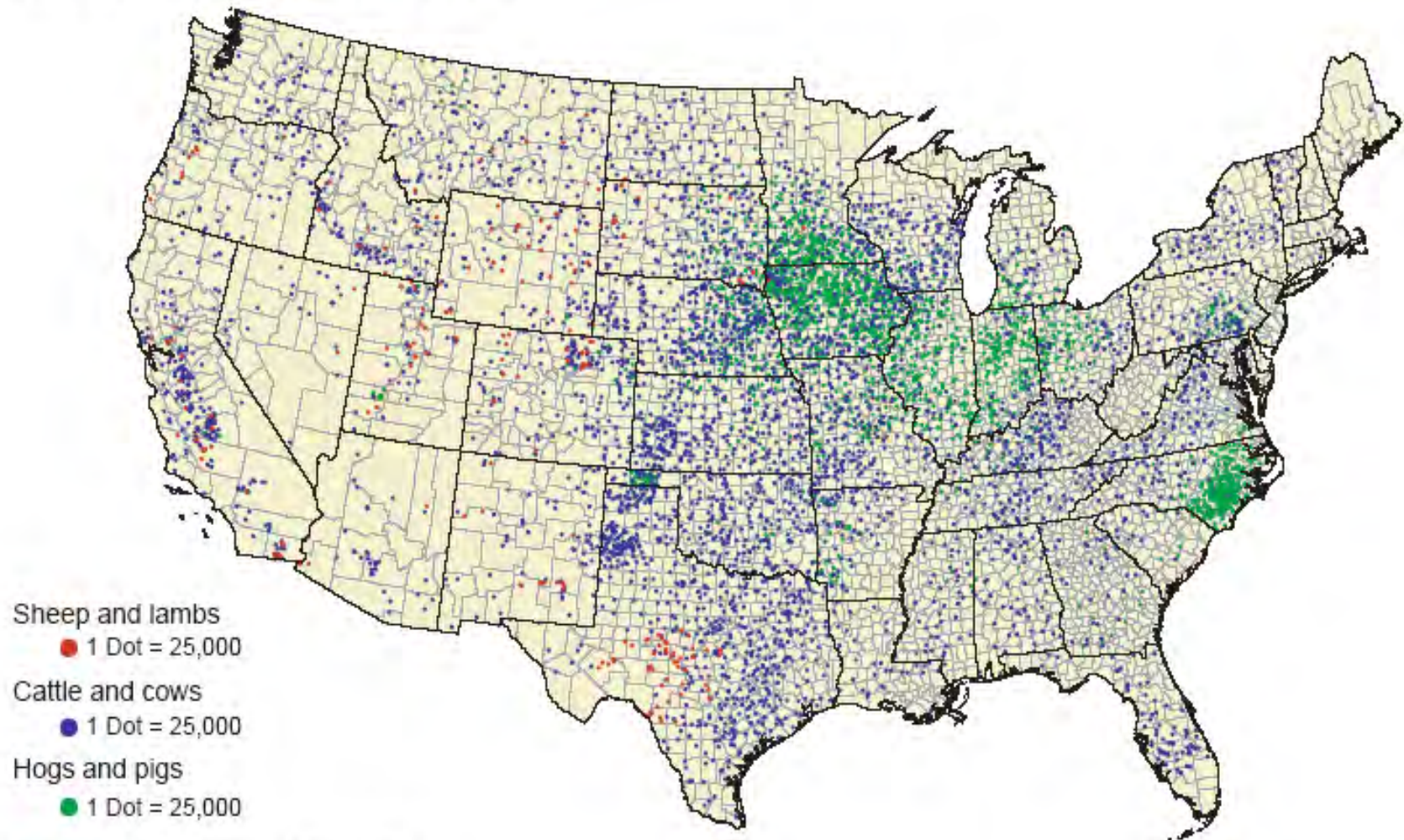


Kansas AHD/USDA NAIS Pilot Project

Animal Transport: Use of mobile technologies to link premise identification, animal location and individual animal identification to semi-loads of cattle or swine during commercial transport

Distribution of selected livestock



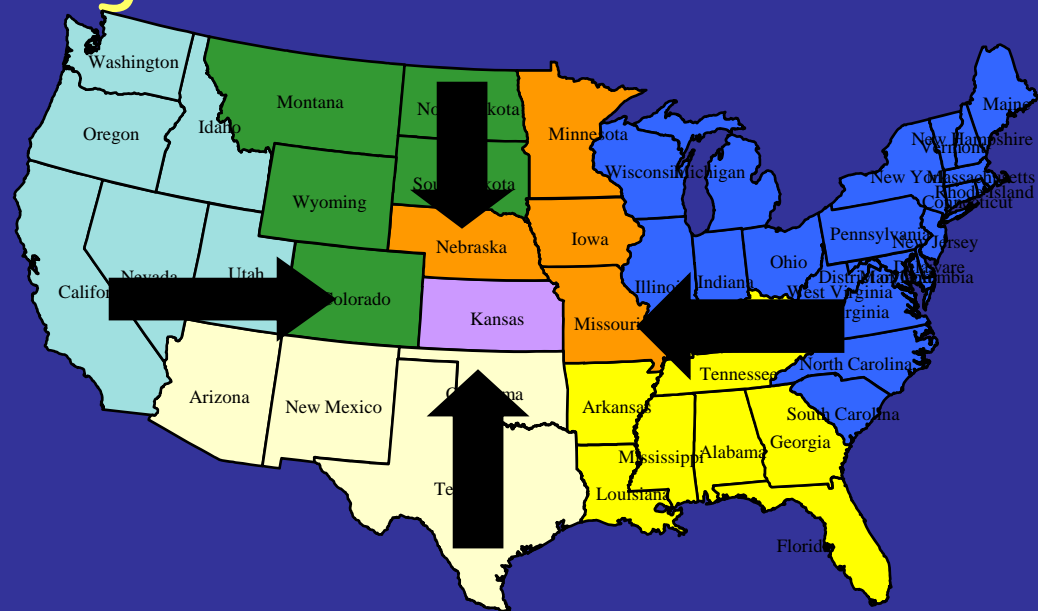
Source: 1997 Census of Agriculture.

Kansas Cattle Demographics

- 1.57 million base cow herd
- 3.0 million stocker/backgrounders
- 6.1 million fed cattle
- 7.1 million cattle harvested

Kansas herd is at risk to disease introduction and spread !

- Import cattle from all over United States
- 48 hours from both coasts
- No quarantine on interstate shipment
- Semi-Communal grazing
- Few Cattle Operations have Biosecurity Plans



2004 Transportation Study - Driver Demographics

- 69% of companies have less than 5 drivers
- High turnover rate with 44% of companies hiring 2 or more drivers in last 12 months

- The survey was mailed to 353 members of the Kansas Motor Carriers Association and to 50 companies providing services to Excel Corporation
- 132 surveys were returned (32.8% response)
- 88 were completed by companies hauling cattle

2004 Transportation Study - Equipment Demographics

- 44% of companies have a single tractor/trailer
- 55% of trailers are manufactured by Wilson
- Majority of tractor/trailers have been on road less than 5 years
- Only 2% of units are equipped with global positioning systems
- Average number of hauls per trailer - 480

2004 Transportation Study - Haul Characteristics

- 77% of hauls are within Kansas
- Type of cattle hauled
 - Calves (<300 lbs.) - 5.5%
 - Stockers (301-650 lbs.) - 21.0%
 - Feeders (>650 lbs.) - 34.5%
 - Fats (to processing facility) - 34.5%
 - Cows and Bulls - 4.5%
- 6% are mixed loads delivered to more than one location

Primary Objectives - NAIS Transportation Pilot Project

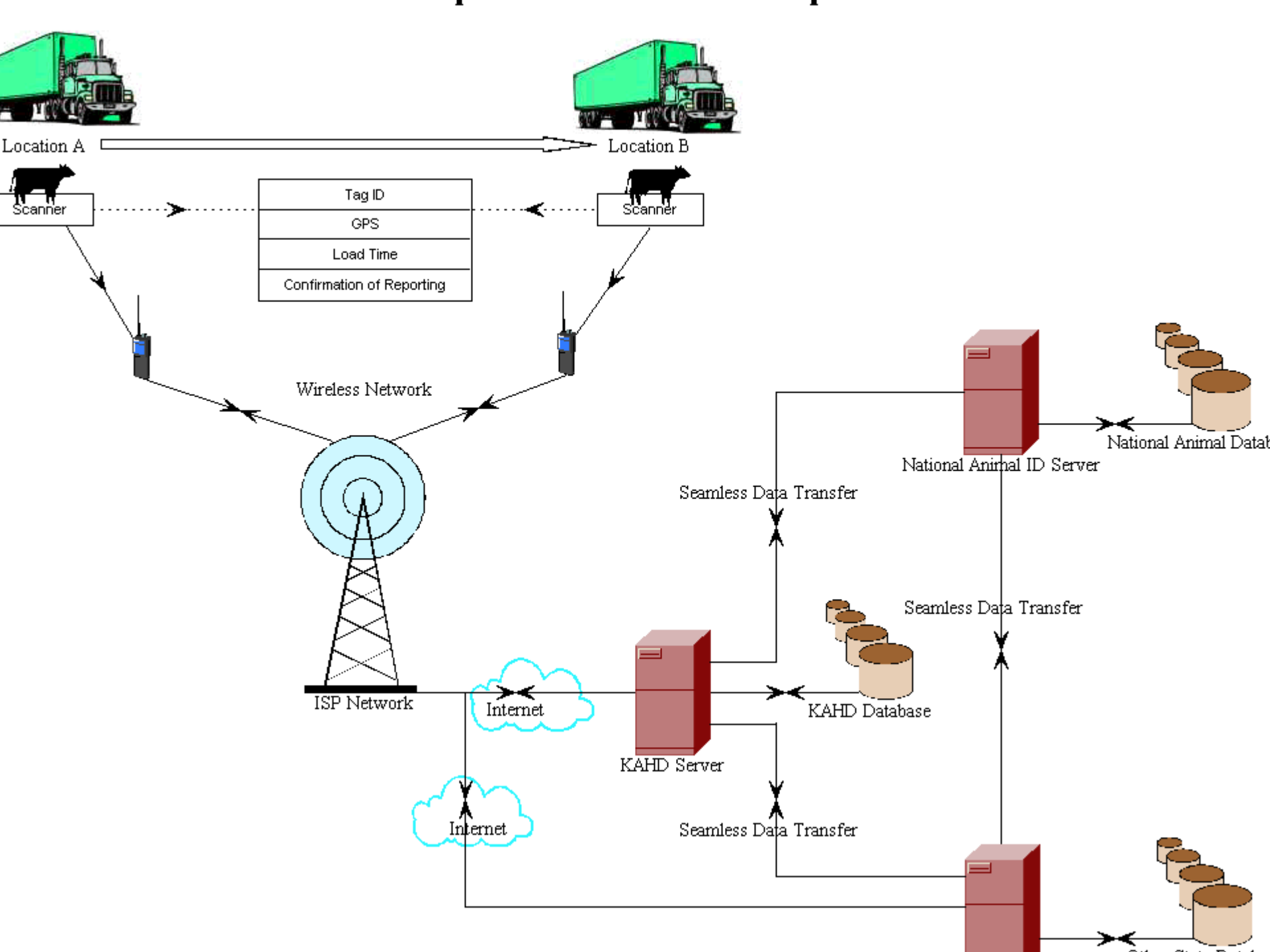
To assess feasibility of using wireless, internet-based mobile RFID technology in multi-deck commercial trailers to monitor movement of cattle or swine during any relocation process

Technical Cooperators with KAHD

- AgInfoLink
- Digital Angel
- Kansas State University
- National Beef
- National Carriers
- Osborne Industries
- U.S. Premium Beef

USPB/NB Supply Chain Cooperators

- Colorado
- Kansas
- Illinois
- Iowa
- Missouri
- Nebraska
- New Mexico
- Oklahoma
- South Dakota
- Texas





RFID Reader Truck Mount

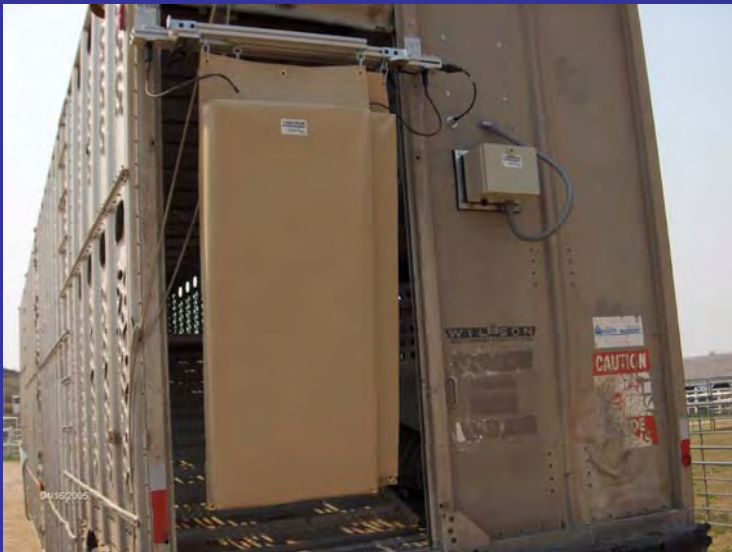


RFID Controller

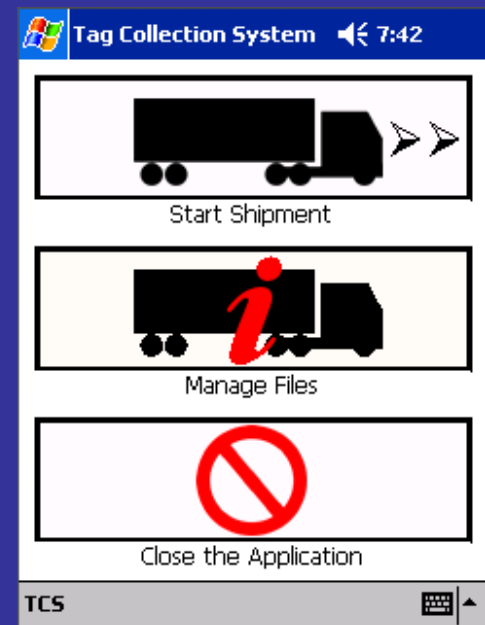
Kansas Animal Transportation Project



Hardware



Software



Kansas Animal Transportation Project



Hardware

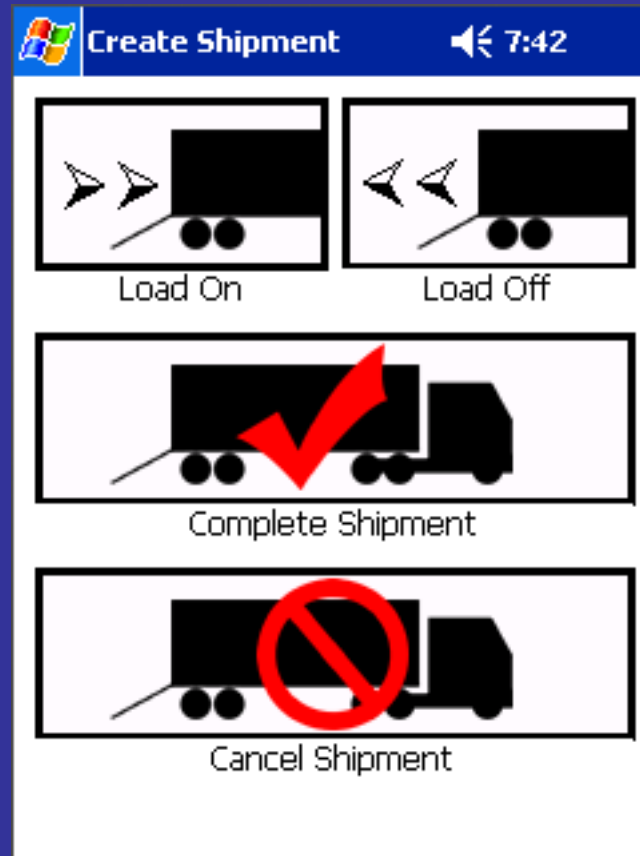


Kansas Animal Transportation Project



Are you going to Load or
Unload?

• Tap on proper box to indicate if
you are picking up or delivering
cattle





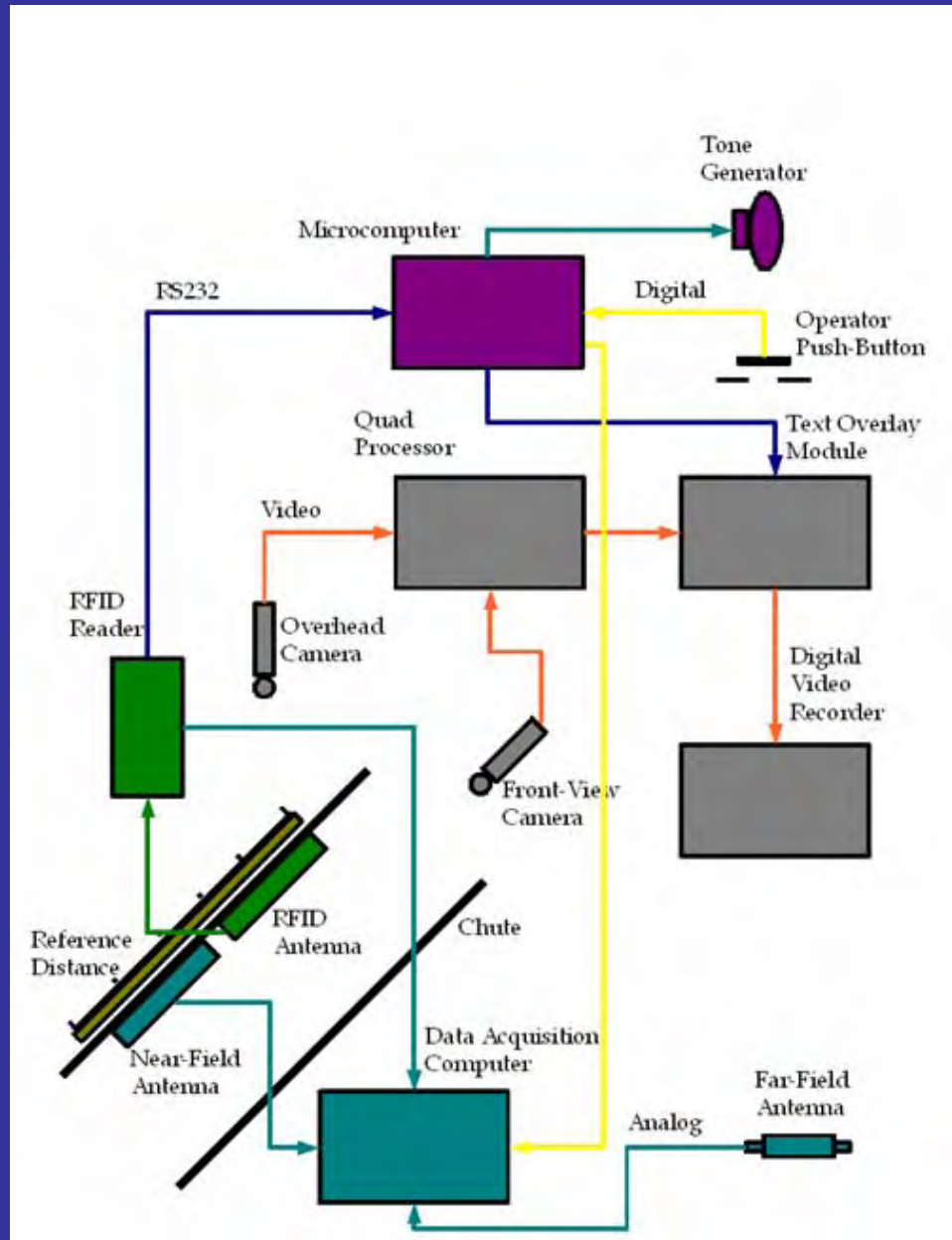
Transmitted Data Bundle

- Transaction number
- Time/date
- Driver ID
- Vehicle ID
- Origination PIN and GPS
- Destination PIN and GPS
- Movement Code
- AIN (individual or group/lot)
- ICVI #
- Brand Certificate #

Driver Log

- Head Count
- Type of Cattle
- Set up time - on- and off-load
- Environmental Conditions - weather, lightening, electrical motors, lighting - proximity, type
- Photograph of loadout facilities
- Problems with animal handling
- Problems with equipment - reader, controller, wireless, printing

RFID Benchmark Testing Apparatus



Camera Setup -

Proximity
Orientation
Speed
Collision







EMERGENCY

FAH&M

DODGE





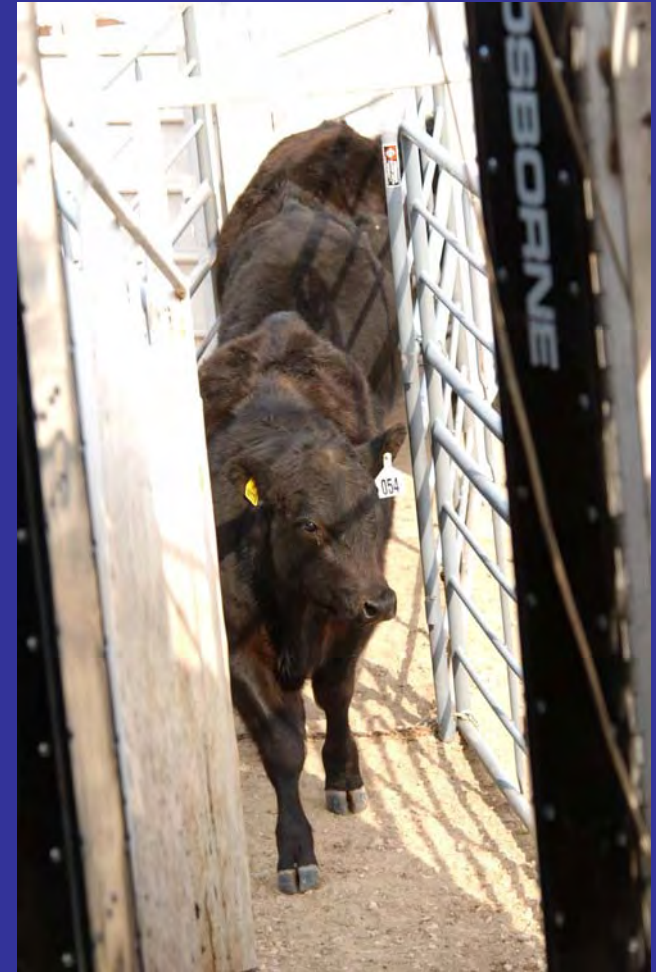
CAUTION

Kansas State University
FAH&M
Food Animal Health & Management
Center

00004

Project Summary (to date)

- Driver educational programs (25 drivers)
- Installed Digital Angel units on commercial trailers
- Begun collecting data on cattle shipments from feedyard to harvest
- Using an information management system designed by AgInfoLink, we have begun shipping data packets to animal health authorities - Approx. 300 head



4th Quarter Goals for KAHD Transportation Pilot Project

- Have 10 units installed on commercial carriers
- Transport 5,000 head originating from a wide geographic area
- Cattle originate from multiple production sectors
- Document the performance of equipment



Contact:

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Primary Objectives

- to assess the feasibility of using wireless, internet-based mobile RFID technology in commercial multi-deck livestock transports to monitor the movement of cattle during any relocation process
- To establish premises identification framework

Project Goal

20,000 head tracked

Ranch of origin, market, grazing,
backgrounding, feedlot, processing