



Homeland Security

Science and Technology

AgCONNECT and its Role in Enhanced Passive Surveillance (EPS)

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John Korslund, DVM

EPS Program Manager/ USDA Detailee to DHS

Chemical and Biological Defense Division

Science and Technology Directorate

202-254-6890; john.korslund@hq.dhs.gov





AgCONNECT

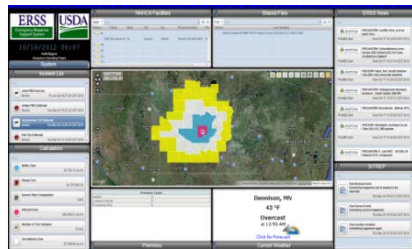
PERSPECTIVES

Biosurveillance



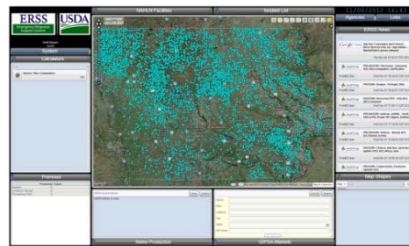
- USDA APHIS
- SAHOs
- Practitioners
- Industry

Emergency Response



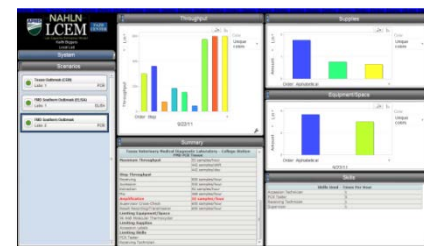
- USDA NCAHEM
- USDA ADDs
- SAHOs

Business Continuity



- USDA ADDs
- SAHOs
- Industry

Laboratory Capacity



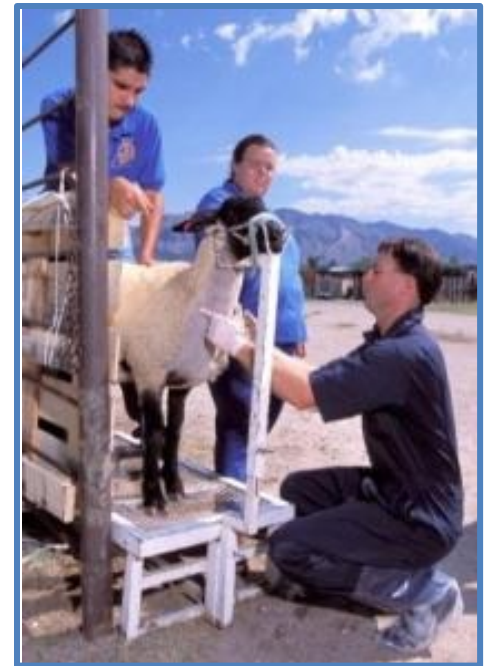
- USDA NAHLN
- Diagnostic Labs

USERS

Enhanced Passive Surveillance

Enhances situational awareness and demonstrates the usefulness of multiple-data stream syndromic surveillance by:

- Applying the power of real-time reporting and data aggregation to animal and wildlife surveillance
- Leveraging first responders (veterinarians) for animal and public health surveillance
- Estimating baseline prevalence rates of observed animal health anomalies for each stream
- Evaluating the significance of resulting signals as disease detection events
- Providing early warning information obtained from validated signaling activity to stakeholders to assist in making decisions



EPS System Concept

Data Collection



- Rapid Data Collection
- Data Standardization
- Data Compression

Data Stream Storage, Management, Privacy, Security, Access, and Processing



- Data Cleansing
- Semantic Data Integration
- Data Reduction and Transformations
- Querying Optimization Techniques

Interactive Decision Support

- Information Visualization
- Visual Analytics
- Multi-dimensional Analysis
- Cross Domain Analysis



Automated Decision Support

- Efficient Data Sharing
- Data Mining
- Predictive Analytics
- Agent-based Support

Stakeholders

EPS System Capabilities: Industry/Veterinarians



New Report

User: Keith Biggers
Date: May 28, 2014, 6:08:39 PM
Reason For Examination: Regulatory
Lab Sample Submission: Yes
County, State: [Redacted]

Species/Production: Swine/Commercial

Group Size: [Redacted] Weight: [Redacted]
Gender: [Redacted] Sick: [Redacted]
Cast/Neut: [Redacted] Dead: [Redacted]
Age: [Redacted]

Syndromes: [Redacted]

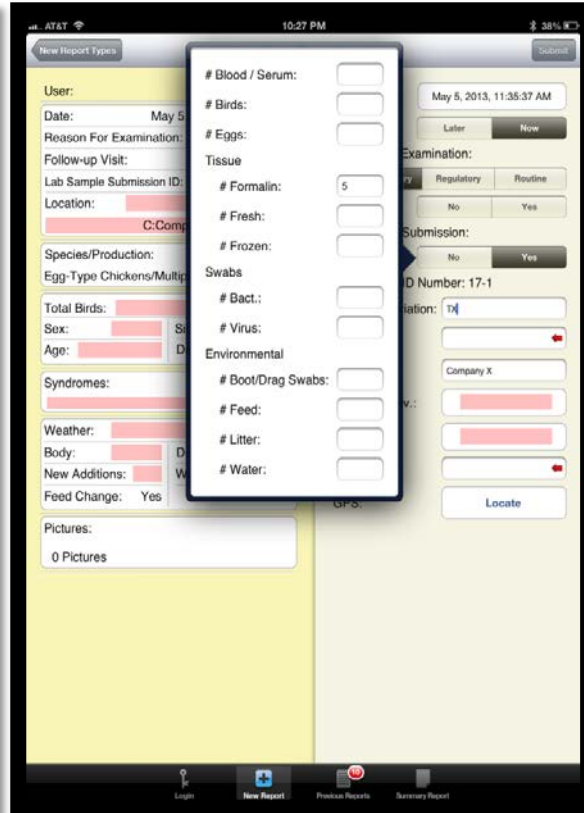
Weather: [Redacted]
Body: [Redacted] Recent Move: [Redacted]
New Additions: [Redacted] Duration: [Redacted]
Feed Change: [Redacted] First Exam: [Redacted]

Pictures: 0 Pictures

Animal Categories:
CERVIDS: Any
EQUINE: Breeder/Trainer, Competition, Pleasure, Ranch
SMALL RUMINANTS: Commercial, Feeder, Show
SWINE: Commercial, Show

Logos: Homeland Security, BFES (BIOSURVEILLANCE FIELD ENTRY SYSTEM), IFAID (INSTITUTE FOR INFECTIOUS ANIMAL DISEASES), TCS (TEXAS CENTER FOR APPLIED TECHNOLOGY)

Mixed Animal



New Report Types

User: [Redacted]
Date: May 5, 2013, 11:35:37 AM
Reason For Examination: Regulatory
Follow-up Visit: [Redacted]
Lab Sample Submission ID: [Redacted]
Location: [Redacted] C:Comp

Species/Production: Egg-Type Chickens/Multipurpose

Total Birds: [Redacted]
Sex: [Redacted] S: [Redacted]
Age: [Redacted] D: [Redacted]

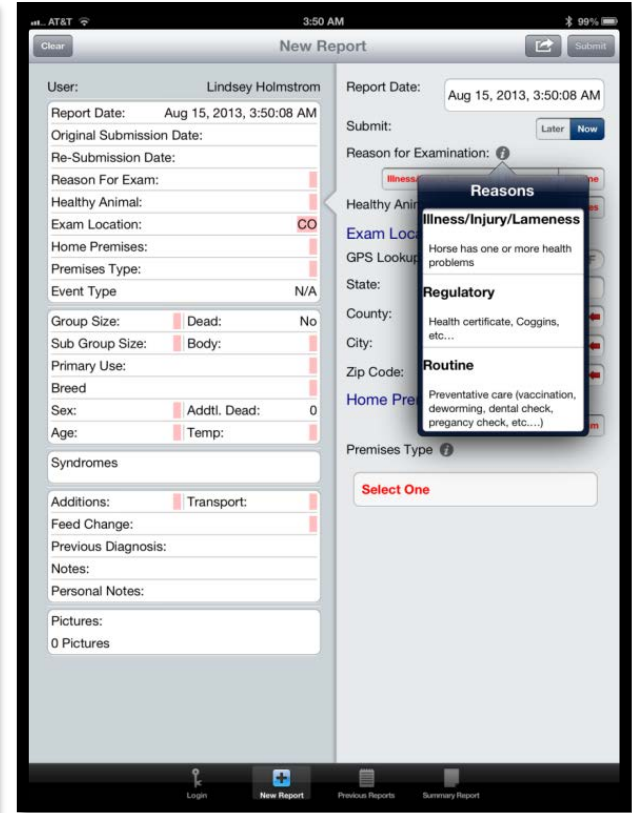
Syndromes: [Redacted]

Weather: [Redacted]
Body: [Redacted] D: [Redacted]
New Additions: [Redacted] W: [Redacted]
Feed Change: Yes

Pictures: 0 Pictures

Testing Options:
Blood / Serum: [Redacted]
Birds: [Redacted]
Eggs: [Redacted]
Tissue: [Redacted]
Formalin: 5
Fresh: [Redacted]
Frozen: [Redacted]
Swabs: [Redacted]
Bact.: [Redacted]
Virus: [Redacted]
Environmental: [Redacted]
Boot/Drag Swabs: [Redacted]
Feed: [Redacted]
Litter: [Redacted]
Water: [Redacted]

Poultry



New Report

User: Lindsey Holmstrom
Report Date: Aug 15, 2013, 3:50:08 AM
Original Submission Date: [Redacted]
Re-Submission Date: [Redacted]
Reason For Exam: [Redacted]
Healthy Animal: [Redacted]
Exam Location: CO
Home Premises: [Redacted]
Premises Type: [Redacted]
Event Type: N/A

Group Size: [Redacted] Dead: No
Sub Group Size: [Redacted] Body: [Redacted]
Primary Use: [Redacted]
Breed: [Redacted]
Sex: [Redacted] Addtl. Dead: 0
Age: [Redacted] Temp: [Redacted]

Syndromes: [Redacted]

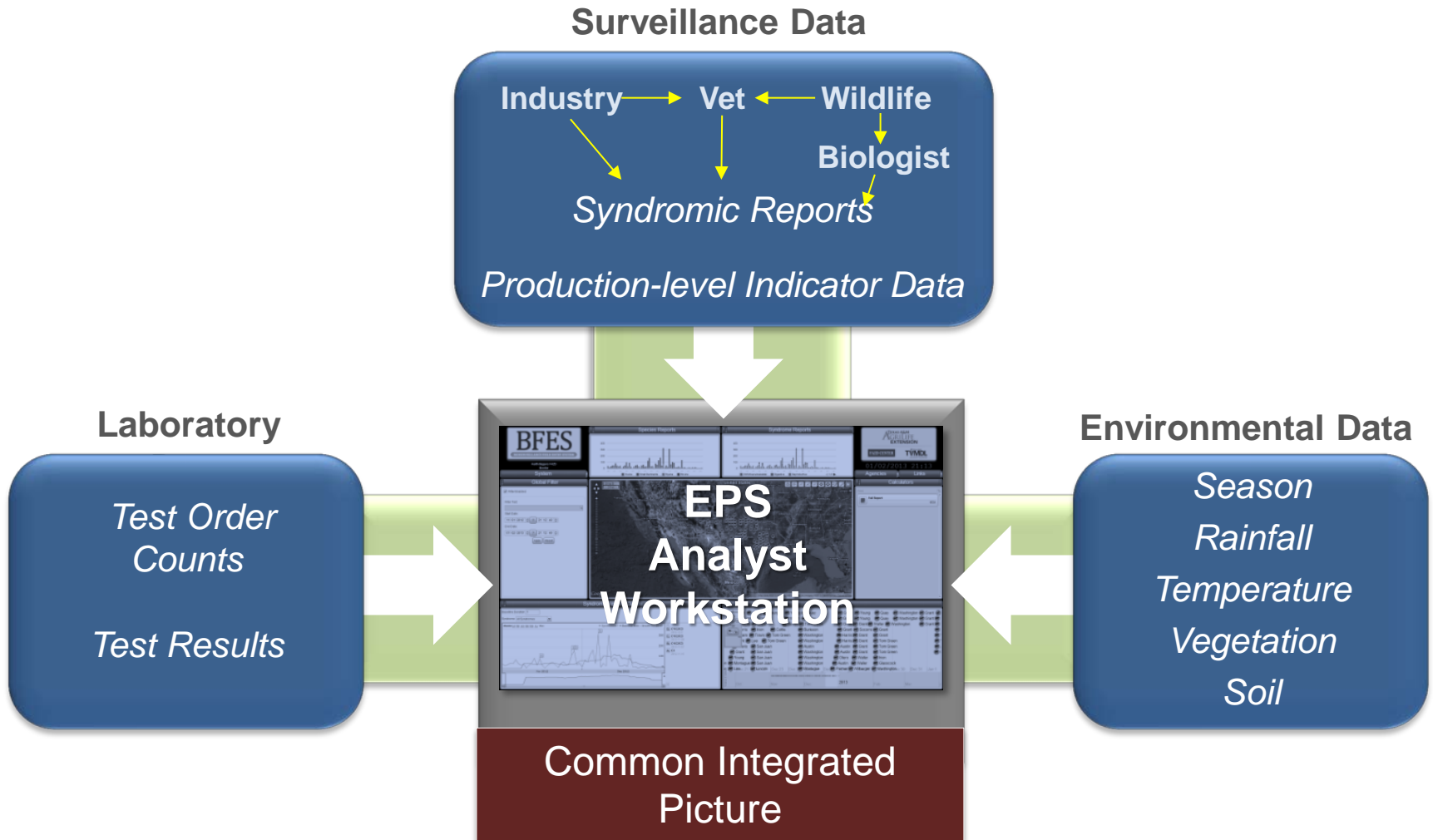
Additions: [Redacted] Transport: [Redacted]
Feed Change: [Redacted]
Previous Diagnosis: [Redacted]
Notes: [Redacted]
Personal Notes: [Redacted]
Pictures: 0 Pictures

Reasons:
Illness/Injury/Lameness: Horse has one or more health problems
Regulatory: Health certificate, Coggins, etc...
Routine: Preventative care (vaccination, deworming, dental check, pregnancy check, etc...)

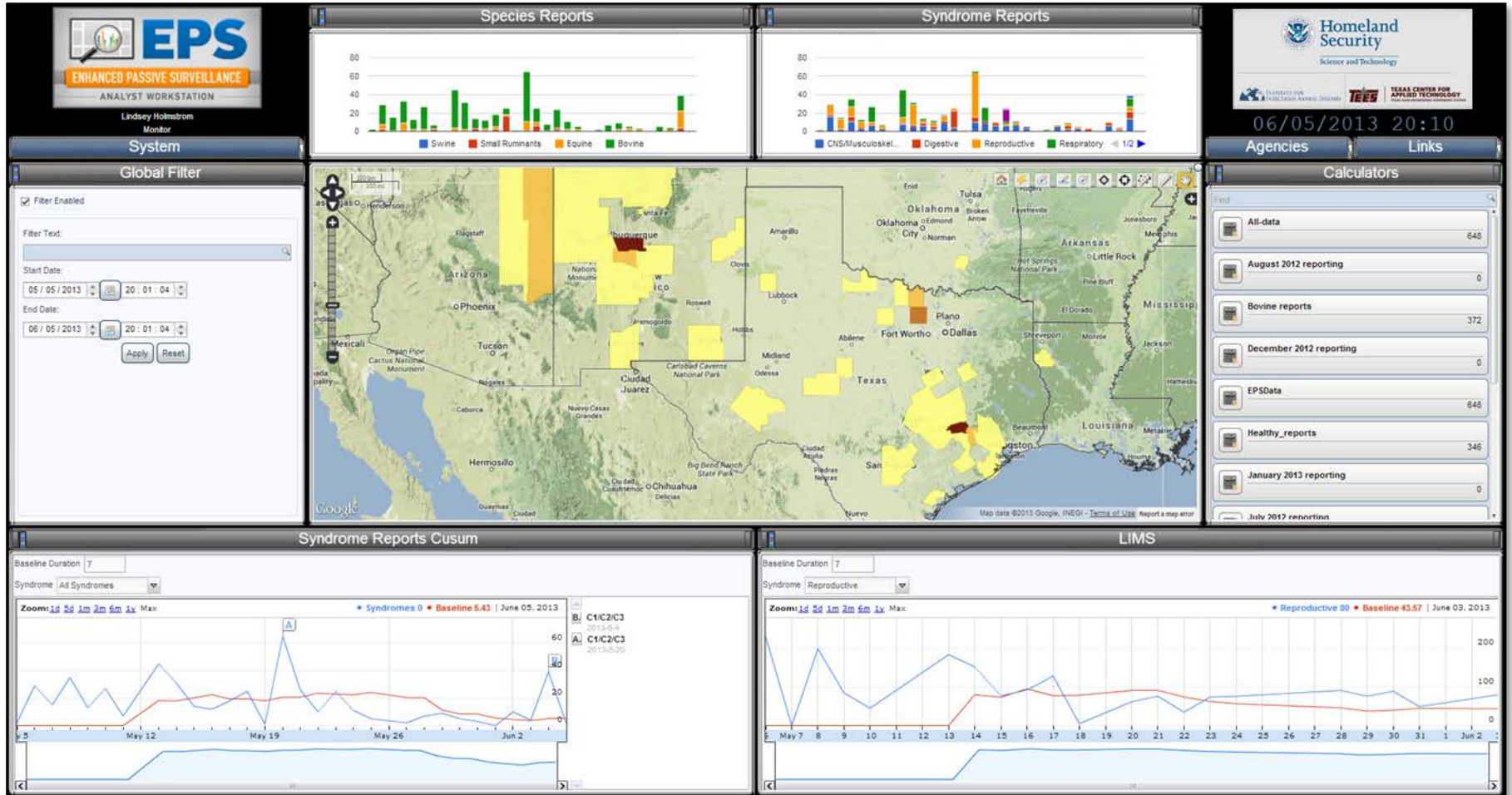
Select One

Equine

EPS System Concept: Integration of Data Streams



Analyst Workstation



Analyst Workstation

EPS Objectives

- Expand to all major livestock/poultry industries & wildlife
- Work with partners to develop data confidentiality rules and processes
- Work with partners to design mobile applications and analyst workstation
- Integrate multiple data streams: field data, D-lab data, livestock market data, production-level data
- Integrate sophisticated analytical tools capable of processing complex/big data
- Work with partners to develop concepts of operations to support the implementation of a national EPS system
- Perform exercises to evaluate the efficacy/utility of the system
- Transition a low-cost, low-maintenance system to a third-party for long-term hosting, management, and support of the program



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