USDA

United States
Department
of
Agriculture

Marketing
and
Regulatory
Programs

Animal and
Plant Health
Inspection
Service

National Animal Identification System (NAIS)

"Integration of Private and State Animal Tracking Databases with the NAIS"

Interim/Development Phase

April 6,2006

INTRODUCTION

The National Animal Identification System (NAIS) is being advanced through the following guiding principles:

- The system must be able to allow tracking of animals from point of origin to processing within 48 hours without unnecessary burden to producers and other stakeholders.

- The system's architecture must be developed without unduly increasing the size and role of government.

- The system must be flexible enough to utilize existing technologies and incorporate new identification technologies as they are developed.

- Animal movement data should be maintained in private systems that can be readily accessed when necessary by State and Federal animal health authorities.

Establishing a government-industry partnership will provide many benefits to all stakeholders, and the U.S. Department of Agriculture (USDA) is committed to, and will support, this activity to ensure its timely and effective implementation. This report provides USDA's initial plans for moving forward with the implementation of a process to facilitate the holding of animal tracking and movement records by the industry and States.

INFORMATION TECHNOLOGY (IT) CONSIDERATIONS

USDA's objective is to support the privatization of the animal tracking information component for NAIS in the most practical, timely, and least burdensome manner possible. When the issue of a single portal was proposed, USDA received numerous questions and comments on the potential for there to be several different animal tracking databases. Based on that feedback, USDA is establishing the system using a metadata layer (or portal) architecture. The establishment of a metadata portal is an effective way of supporting a distributed architecture for animal movement databases. By simple definition, metadata is usually described as "data about the data." The metadata system provides the greatest flexibility for affected industries and stakeholders. Organizations that wish to consolidate their tracking data can still do so, and are encouraged to do so.

No animal movement records from producers, markets, and other stakeholders will be submitted to the metadata **portal.** The metadata system will contain a list of Animal Identification Numbers (AINs) that each participating database has in its system, and, independent of the AINs, the participating databases will report the Premises Identification Numbers (PINs) that they have in their systems. In the event that animals need to be identified in order to confine and/or eradicate a disease, the metadata system will submit a request to participating databases that are known to have records for a specific animal or premises.

VETERINARY SERVICES (VS) ANIMAL TRACE PROCESSING SYSTEM (ATPS)

USDA will manage the metadata portal and the system that processes the information from participating Animal Tracking Databases (ATDs) within the VS Animal Health Information System. The metadata portal or system and related functionality for processing the animal movement records returned to VS are referred to as the Animal Trace Processing System (ATPS). The ATPS also provides the security, the interfaces and communication platform, the auditing process of participating ATDs, and the integration of other relevant data from other VS managed systems within the VS Animal Health Information System.

The Messaging System provides the communication method between the private databases and the metadata system. A business intelligence tool will provide the means for analyzing data using predetermined and ad-hoc query capability. A monitoring/auditing application will look at daily communications, for example, to determine if a system or systems are not responding and notify support personnel. Data from

the Animal Health Information Factory (AHIF) may be used in conjunction with movement data during a trace investigation. The Animal Health and Surveillance Management system (AHSM) contains data from disease regulatory programs. NAIS is the National Animal Identification System. Veterinary Services Process Streamline (VSPS) encompasses the animal health permitting certificates, in particular the Interstate Certificate of Veterinary Inspection and permits for importing and exporting of animals.

ACCESS CRITERIA TO ATDS

Access to ATDs for State and Federal animal health officials is enabled through the ATPS to support animal health programs according to the following criteria:

- A confirmed positive test for a foreign animal disease.

- An animal disease emergency as determined by the Secretary of Agriculture and/or State Departments of Agriculture.

- The need to conduct a traceback/traceforward to determine the origin of infection for a program disease (brucellosis, tuberculosis, etc.).

- The need to conduct surveillance for another domestic or emerging disease.

In addition to access for animal health programs, the administrators of the ATD would be encouraged to provide animal health authorities access to support the following activities:

- The need to assist with resolving issues related to lost animals, in particular in natural disaster circumstances, as well as supporting authorities with regard to the recovery of stolen animals.

- Information needed to determine compliance with future State and/or Federal regulations relative to the reporting of animal movements with animal health programs.

IMPLEMENTATION PLAN

APHIS VS has initiated the design of the metadata portal, contained in the ATPS. The design, development, and testing of the ATPS will continue throughout 2006, with deployment anticipated in early 2007. The current interim activities between USDA and the private sector will help in the development of the metadata portal.

INTERIM/DEVELOPMENT PHASE

To initiate the integration of private and State animal movement/tracking systems with the NAIS, APHIS has developed an interim phase that will allow interested organizations to participate in early 2006. The private sector will be a part of this development phase. APHIS will enter into a Cooperative Agreement (CA) with organizations that have databases that meet the minimum requirements of the animal tracking databases in the interim phase and that wish to participate in the integration of the private and State animal tracking databases into the NAIS.

The data standards and technical requirements and specifications that systems must meet to participate in the CA are defined in this report. Participation in the CA does not imply that the system will participate in the NAIS as a fully compliant system after the ATPS becomes operational and the requirements for compliance are established.

Organizations must complete the "Request for System Evaluation - Interim/Development Phase for Private/State Animal Tracking Databases" to initiate the review of their systems. APHIS will initiate the agreement if the system under review meets the interim requirements.

IMPLEMENTATION PHASE

APHIS will continue to develop the complete requirements for the integration of private and State animal tracking systems with the NAIS. Systems that meet these complete specifications will be defined as "NAIS Compliant Animal Tracking Databases" upon the signing of the agreement with the organization responsible for the information system.

It is anticipated that the requirements for compliance will be completed by late 2006, and the actual integration of such system with the ATPS is targeted for early 2007.

APHIS will establish a separate agreement with each participating organization that maintains a database with animal tracking information and that elects to provide access to the information according to the final NAIS requirements. In addition to outlining data elements and access and operating procedures, this agreement will also stipulate how movement data will be archived and transferred to ensure uninterrupted access by APHIS in the event the organization and/or technology company ceases business or elects to discontinue the operation of the ATD. In the event that interim participants continue to be interested and elect to make necessary changes, we expect relationships to continue beyond the development phase.

MINIMUM TECHNICAL REQUIREMENTS FOR COOPERATIVE AGREEMENT- INTERIM/DEVELOPMENT PHASE

The purpose of the cooperative agreement is "to enable private organizations with systems that meet minimum requirements to participate in the development of the infrastructure for the timely advancement of the National Animal Identification System (NAIS)."

As such, any organization requesting to enter into the cooperative agreement with APHIS and take part in the collaborative development of the integration of Animal Tracking Database (ATD) with NAIS will be evaluated on their internal operations and will need to meet minimum technical prerequisites. The evaluations will be conducted by a third party organization contracted by APHIS. The evaluating organization will define the technical, security, and operation criteria based upon best-practice and acceptable industry standards. The preliminary (first phase) evaluation will require a sign-off on the preliminary criteria only. Any subsequent evaluations deemed necessary for the continued involvement of an organization with the project will be defined by the evaluating organization resulting from the collaborative efforts of participants in the cooperative agreement(s).

The following list of criteria is a categorical approach. The final requirements by which an organization will be deemed able to participate will be defined in further detail by the evaluating organization and will be submitted to those organizations requesting evaluation prior to their evaluation(s).

Minimum requirements shall include, but are not limited to, the documentation and/or demonstration of:

- IT System Security
  - Physical
    - System Access Policy
    - Facility Security
  - Data
    - Disaster Recovery Plan (DRP)
    - User Access Policy
    - System/User Security Audit
    - Privacy Assurance
- IT Technology Operational Standards
  - Service Level Agreement (SLA)
    - System availability
  - Error Logging and Resolution

- ○ Data Assurance and Data Integrity Process
  - ○ Industry Standard Technology **Infrastructure**
  - ○ Database Administration
- Industry Standard Technology Infrastructure
- Data Administration
  - ○ Data Assurance and Data Integrity Process
  - ○ Maintenance of all defined fields and formats as defined in the **NAIS** Draft Program Standards (see Table 1, page 6)
- Daily **Confirmation** of Active Status to APHIS
  - ○ Transmit and receive Java Messaging Service messages
  - ○ Appropriate Technical Staffing

PRELIMINARY REQUIREMENTS FOR ANIMAL TRACKING DATABASES

This section provides preliminary requirements for the ATDs that will serve as a discussion document in the **interim/development** phase as APHIS works with participants in the cooperative agreement to provide input into the final technical solutions and requirements.

CONTACT INFORMATION

The client system will provide APHIS with:

- Organization name
- Business Contact Information
- Company name (hosting the client system)
  Hosting information
  - ○ Operating hours (system and support hours)
  - ○ Scope of the client system (State and species)
- Support contact
  - ○ Support start time
  - ○ Support end time
- Client system owner
- Project management owner

The client system will include its Client ID in all transactions with the ATD.

OPERATIONAL SYSTEM REQUIREMENTS [i]

- **24x7** with 96% planned uptime
- Message Services
- Must be able to receive system generated emails
- Daily submission
- Process Auditing (monthly and/or quarterly)
- Certification and Accreditation (C & A) Type Process (security assessment of client systems)

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[i] Criteria may be increased in conjunction with 3rd party contractor and discussions with ATDs.

SECURITY

ATPS will authenticate message senders and will log activity in an effort to ensure a high degree of data integrity and system performance, and to provide the means for troubleshooting data or communication problems.

DATA ELEMENTS

The Animal Tracking Database must have tables to store, at a minimum, the following information in the established formats.

Field Description	Data Type	Size	Reqd.	Example
Event Type Code	Numeric	2	Y	1 *(see Draft Program Standards)*
Sighting/Reporting Premises Identification	Character	7	Y	
Source/Destination Premises Identification	Character	7	N	
Event Date & Time	Date		Y	
Animal Identification number	Character	15	Y *	AIN may have leading "840"
Species	Character	3	N	
Identification Electronically Read	Boolean	1	Y	0 (False default) / 1 (True)
Animal Date of Birth	Date	8	N	YYYYMMDD 20020101
Age of Animal	Character	3	N	(M)onth, (D)ay, (Y)ear e.g. M11 (Zero fill if less than 10)
Gender	Character	1	N	(M)ale, (F)emale, (C)astrated/neutered male, (S)payed/neutered female
Breed of Animal	Character	2	N	See document Breed codes US and Can1.pdf
Remarks	Character	50	N	Description/other comments (may include brand information)
Status	Character	1	N	(C)orrection
Alternate Animal ID	Character	17	N *	Alternate official identification number if 840 AIN not available; Group/lot identification number if animal has AIN and was moved out of a lot; old AIN if tag replaced
Alternate Animal ID Type	Character	1	N	(A) AM with leading USA, (U)SDA eartag, (R) AIN with lead manufacture code, (B)reed registry number, (G) GIN, (T)attoo, required if alternate identification (field 15) is provided, R(E)eplacement AIN number if event code 6 used

* At least one official ID required. Provide for storing multiple alternate animal IDs.

Table 1

The Animal Tracking Database must be able to receive and/or record the following:

AIN

- Event–Date
- Source ID
- Date Submitted
- Date Updated

- Date Reconciled
- Disabled Flag
- Dead Animal Flag
- Batch/Record ID for the Submission

Field Description	Data Type	Size	Source	Reqd.	Example
AIN	Character		Received	Y	Animal Identification Number
Event–Date	Date		Received	Y	Date the movement occurred
Source System ID	Character		Received	Y	Unique identifier of the source system
Source Record ID	Number		Received	Y	Unique identifier of the individual record originating from the source system.
Date Submitted	Date		Received	Y	Wte Record entered the source system
Date Updated	Date		Received	Y	Date Record was updated in the source system
Bate Reconciled	Date		Derived	Y	Sysdate of Monthly Reconciliation
Disabled Flag	Character	1	Received	Y	Y/N
Dead Animal Flag	Character	1	Received	Y	Y/N
Batch ID	Number		Received	Y	
Load–Date	Date		Derived	Y	Sysdate
Total Record Count	Number		Received	Y	Total Monthly records submitted.

Table 2