AGIIS Duplicates Task Force Recommendation

September 2011

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EXECUTIVE SUMMARY:

The AGIIS Duplicate task force comprehensively reviewed the issue of duplicate entities, both real and perceived, within AGIIS starting in January of this year. Significant time and effort was spent early on to understand, from a subscriber's perspective, what an entity is and how entities and the associated information is used as well as on educating themselves on entities and the associated business rules and data elements. The group created and de-duped a replica AGIIS database and reviewed the results to assist in identifying root causes of duplicates in AGIIS. This document contains the results of that work, a set of proposals designed to eliminate existing duplicates in AGIIS and prevent new duplicate entities from being added.

Clear and concise definitions for entity and duplicate entity are proposed as well as a recommendation to identify, inactivate and/or correct existing entity records and prevent entities containing substandard data from entering AGIIS through implementation of additional substandard data edits and deactivation of existing entity records containing substandard data. The group proposed making changes to the third name field (aka as :Grower Name") to address perceived duplicates and confusion among users and recommend we change the key used to identify unique seed licenses to allow the resolution of duplicate sets which cannot be resolved today due to the insufficient unique key elements.

The ADTF recommends a comprehensive de-duplication of AGIIS in which we would retroactively apply business rules and edits to the entire database to eliminate existing duplicates. Recognizing that no system can realistically eliminate all duplicates while meeting the business needs of a diverse group of users, the group also recommends an annual AGIIS de-dupe to remove duplicates that may be created through data maintenance processes such as LACS/NCOA or subscriber activities. In addition, the group recommends implementation of a duplicate reporting functionality which would allow ALL subscribers to report potential duplicates systematically and enable the Help Desk to efficiently process these records. A companion recommendation to allow Search View Only subscribers (subscribers without a subset) to provide entity updates is based on the understanding that 75 percent of the SVO subscribers within AGIIS are Ag Retailers, and because they have close business relationships with growers and farm businesses (which make up approximately 90 plus percent of the active entities in AGIIS), are uniquely qualified to accurately identify duplicate entities and provide the most current information. Finally, the group included a recommendation to enhance our annual AGIIS maintenance activities to support our efforts in eliminating duplicate entities.

Another recommendation considered by the group to be a critical success factor requiring all subscribers to synchronize their data with AGIIS, providing and applying updates, on a regular basis. This document contains a proposal to provide a simple synchronization process that could be used by all subscribers regardless of size or technical capabilities. An additional critical success factor identified was the need for extensive education and communication to current and potential users of AGIIS which was also included as a recommendation.

Due to the critical business applications reliant on the entity information in AGIIS and feedback from AGIIS subscribers, the ADTF recommends we implement these proposals starting in Q4 2011 to allow the comprehensive AGIIS de-dupe (a critical milestone) to occur in the December 2011/January 2012 timeframe as requested by the subscribers.

OBJECTIVE:

Define a set of recommendations which when implemented will eliminate existing duplicate entities and prevent the creation of new duplicate entities in the Ag Industry Identification System (AGIIS).

BACKGROUND:

AGIIS (Ag Industry Identification System) is a database and software that delivers a common set of identifiers and data elements to the Agricultural industry to foster e-business and e-commerce between and among those companies. The purpose of AGIIS is to provide unique id's for the facilitation of eBusiness interactions (i.e. both partners are confident they are using the correct and same id for a given entity)

The AGIIIS Duplicates Task Force (ADTF) was created to address one of the long standing challenges associated with the entities in AGIIS – the issue of duplicate entities, both real and perceived, within AGIIS. The purpose of the group, as defined by the group, is

> *To establish AGIIS as the industry benchmark for accurate and trusted information by defining a solution which eliminates existing duplicate entities and prevents the creation of new duplicate entities in AGIIS.*

The group consisted of a core, working group representing each of the AgGateway councils (Appendix A) and a larger Input Feedback (IF) group (Appendix B) to review the proposed recommendations and provide feedback to the working group. The core group met via weekly conference calls starting in January 2011 and three face to face meetings, in January (the kickoff meeting), March and May 2011. Recommendations were sent to the IF Group for review starting in July; however the majority of the recommendations were sent out for review in mid-late September. Many, but not all, of the recommendations were reviewed by the Entity Functional Group prior to presentation to the Directory Oversight Committee. In addition the recommendations were forwarded to the AgCIO Roundtable members for their review and feedback. The AGIIS Duplicates Task Force represents one in a set of task forces initiated in 2011 engaged in improving AGIIS (Appendix C). Many of the ADTF recommendations were also provided to the Entity Rules Task Force for their review and input.

The issue of duplicates predates AGIIS as it was an ongoing challenge in the databases brought together to create AGIIS in 2003 (the North American Purchaser Directory and the Allied Directory). Driven by a number of different root causes, resolution is complicated by the fact that whether an entity is seen as a duplicate or not depends on the subscriber's expectations, perceptions, and how the subscriber wants to use the unique identifier and the associated information (demographics).

Over the past nine months, the ADTF identified several elements as key drivers of duplicates in AGIIS either by preventing the identification of existing duplicates (ex. substandard data), driving the addition of duplicates to the directory (ex. business rule requiring one entity type per entity record), or by causing confusion and a perception of duplicates among subscribers (ex: third name field in the entity record titled "Grower Name"). The group also recognized the significant work done by the DOC and others such as the 2009 Seed Council AGIIS GLN De-Dup Task Force to address the duplicate entity issue and realized that while many changes and new business rules were implemented, none were ever retroactively applied to the entire AGIIS

database. Based on this realization, a replica of AGIIS was created and de-duped in a process which included applying the current business rules retroactively to the entire database and the results analyzed by the ADTF.

The root causes/drivers of duplicates and/or perceived duplicates within AGIIS identified include:

- Differing subscriber definitions of Entity and Duplicate
- Differing subscriber expectations on what AGIIS is and what AGIIS should do
- Differing subscriber application of the Entity Unique IDs and associated information
- Lack of retroactive application of current business rules to entire AGIIS
- Little to No subscriber data synchronization with AGIIS OR with Trading Partners
- Substandard data in Entity record name and address fields
- Third name field in Entity records
- Requirement of single Entity Type per Entity record
- Address Considerations

The group realized that not every root cause could be addressed systematically. Some will require subscriber education and participation and some are simply a function of the diversity of the businesses within Agriculture and within our membership.

This document contains a series of recommendations intended to address and resolve many of the root causes of duplicates and perceived duplicates in AGIIS. The ADTF focus was on clear and simple solutions that would address the business needs of all the councils, today and looking to the future. Some of the recommendations represent transitional steps to accommodate subscribers' current business needs and system limitations recognizing the preferred solution may require additional thought and development both within AGIIS and by the subscribers.

The elements addressed within this recommendation include:

1. Definition of Entity
2. Definition of Duplicate Entity
3. Sub-Standard Data Inactivation & Prevention
4. Third Name Field
5. Unique License Key
6. Address Considerations
7. AGIIS De-duplication
8. Subscriber Synchronization
9. Duplicate Reporting
10. Search/View Subscriber Update Functionality
11. Annual Maintenance - Entity
12. Education and Communication
13. Implementation Timeline

The ADTF recommendation is to implement all of the elements to maximize the probability of success in eliminating duplicates within AGIIS and addressing the perception of duplicates among subscribers. The group recognizes that this is a high level plan and that additional detail will be required in order to implement successfully and to minimize impact to subscribers.

RECOMMENDATION 1: Definition of Entity

Objective: Create a clear, concise definition of an entity that takes into account the needs of the various industry segments within AgGateway as well as the current and anticipated business applications.

Current Definition: An entity is a separate and distinct business, location or individual that conducts business with subscribers in the agricultural industry. Entities are identified in the AGIIS database with an EBID and/or GLN number.

Proposed Definition: A unique combination of name and location conducting business within the agricultural industry

RECOMMENDATION 2: Definition of Duplicate Entity

Objective: Create a clear, concise definition of a duplicate entity. This definition is needed to clearly articulate what a duplicate entity is and to allow the implementation of business rules to remove existing duplicates within AGIIS and to prevent duplicates from entering AGIIS in the future.

Current Definition: Records with same company name & address (no grower name) or with same grower name & address (no company name) or with the same company name & address, one with a grower name, the other without or all with matching grower names or where one has a company name that matches a record with only a grower name and the addresses on both records match.

Proposed Definition: An entity with the same name and location combination as another entity within AGIIS

RECOMMENDATION 3: AGIIS Substandard Data Inactivation & Prevention

Objective: Identify, inactivate and/or correct existing entity records containing substandard data AND prevent entities containing substandard data from entering AGIIS.

Background: The ADTF identified substandard data in existing entity records within AGIIS and defined substandard data as data that does not meet current or proposed AGIIS business rules. They identified two major categories of substandard data:

1. Sub-standard data in the name fields or a name that represents an inappropriate entity in AGIIS such as account (Seed Account, Cattle Account and etc).
2. Sub-standard data related to addresses such as an invalid address

During the creation of AGIIS in 2003, a substandard data elimination process was developed to improve the quality of data imported into AGIIS. Since then system edits have been in place to prevent certain words or characters such as CASH SALE, PREPAID, !, #, $, etc. from being entered into entity name fields. Over time more edits were added to maintain data integrity and to conform to AGIIS policy.

In October 2009 the Directory Oversight Committee (DOC) implemented an initative to standardize the addresses of all entities in AGIIS that did not have a valid USPS address (with the understanding that not all could be standardized using an automated process). After completion there were still 180,509 records with an invalid address. Currently, 146,324 records

exist (approx. 2.8% of AGIIS) that do not have a valid USPS address nor a corresponding address override flag. These records would be eliminated during the proposed substandard data processing

Results from the AGIIS replica database de-dupe demonstrated that additional substandard data contributed to the duplicate entity issue by preventing records from being recognized as duplicates. This indicates a need for additional substandard data edits.

Proposal: The ADTF recommends we

- Inactivate existing records containing substandard data through the implementation of a one-time AGIIS substandard data elimination process prior to deduplication of AGIIS. The process would leverage
  - processes used during the last substandard data elimination exercise (in 2003)
  - existing functionality wherever possible
- Prevent the addition of entity records containing substandard data by adding the system name and address edits outlined in Appendices D and E.
- Communicate extensively with subscribers as this was identified as a critical success factor for the proposed solution.

Proposed Implementation Process:

- Communicate the plan to subscribers 1 month in advance of implementation
  - Communication to include:
    - Outline of the project
    - Definition of substandard data with detailed examples
    - Information on how to identify and clean-up sub-standard data prior to the processing date (Note: Subscribers will be able to leverage the recently approved subset export process to assist in identification of substandard data.)
    - Opportunity to alert the help desk to any issues related to substandard data clean-up
- Shortly after subscriber notification, add the new sub-standard data instances (Appendices D and E) to existing entity edits and error codes
- Modify the existing Substandard Data process (used in 2003)
- Implement the new Substandard Data process to identify and inactivate entity records containing substandard data.
- Update Record Deactivation Notes and Record History to identify the reason for the entity inactivation.
- Communicate the results of the substandard data process implementation to subscribers via their EBID Subset Update Extract or GLN Subset Update Extract files (as appropriate based on the subscriber's preference).
- Subscribers may request reactivation AND update records they need which were inactivated during the process.

Timing: The proposed timing for implementation of the substandard data process is outlined in Recommendation 13: Implementation Timeline, however it would occur prior to the Unique License Key project to reduce the need to re-assign licenses and prior to the AGIIS Entity De-duplication to improve the ability to detect duplicate entity records. The proposed schedule will also allow adequate time for subscriber communication and for subscribers to update their entities in AGIIS, avoid the regularly scheduled annual entity maintenance activities, and to ensure the lowest impact to subscribers' business.

RECOMMENDATION 4: Third Name Field

Objective: Address the perception of duplicates created by the presence of a third name field "Grower Name" in End-Use Business, Farm Business, Retailer, Distributor, Manufacturer, Drop Point, Rail Siding, Terminal and Industry Provider Entity types

Background

In AGIIS today an entity record with an entity type of End-Use Business, Farm Business, Retailer, Distributor, Manufacturer, Drop Point, Rail Siding, Terminal or Industry Provider contains three name fields as follows:

1. Company Name
2. DBA (Doing Business As) Name
3. Grower Name.

To avoid confusion with the Grower Name field associated with Grower entities (comprised of First Name, Middle Initial and Last Name), we will refer to the third name field referenced above (also titled Grower Name) for these entity types as the "Third Name" field for the remainder of this document.

The presence of a third name field within an entity record is a legacy from the North American Purchaser Directory (NAPD). The NAPD unique identifiers (aka NAPD IDs) were originally derived from Harvest Partner IDs associated with the Harvest Partners loyalty program operated by American Cyanamid. The Harvest Partners Program required a Contact Name field in their entity records and this field was included in the NAPD entity records when the NAPD was created in 1998. With the creation of the Agricultural Industry Identification System (AGIIS) through the consolidation of the North American Purchaser, the Allied and the Product Directories in 2003, the concept of a third name field (contact name) was continued. Over the years since there were many discussions about managing contacts in the directory and the confusion and perception of duplicates associated with multiple contacts per entity record. One outcome of those discussions was the consensus that the purpose of AGIIS is to provide unique identifiers for the facilitation of eBusiness, NOT to be a contact database. As a result, the number of contact names associated with a record was reduced from three to one and the third name field was titled "Grower Name" (in 2004).

The ADTF spent considerable time discussing the "third name" issue and determined it was a root cause of duplicates, both real and perceived, and causes confusion among subscribers when they search for entities in AGIIS. Adding to the confusion, particularly for newer subscribers, is the fact that the third name field is called "Grower Name" regardless of whether the entity is a Farm Business or not and that there is no definition or guidelines for what the "Grower Name" third name field is or how it should be used. Today, the third name field is used to identify a variety of stakeholders: growers, owners, contacts, decision makers, etc. dependent on the business need of the subscriber adding or updating the entity.

Further complicating the matter, a business rule intended to prevent entry of additional duplicates into AGIIS was implemented in 2009 by the DOC. Today, this business rule does not allow multiple records with the same company name and address even if the Third Name is different, i.e. if the following Entity record is in AGIIS today

Company Name: Smith Farms.
DBA Name: Smith Farms
Third Name (Grower Name): Wendy Smith
Physical Address: 123 Elm Rd, Anytown, NC 27587
Mailing Address: 123 Elm Rd, Anytown, NC 27587

one would not be able to add either of the following entities today as they would be identified as a duplicate of the existing entity.

Company Name: Smith Farms.
DBA Name: Smith Farms
Third Name (Grower Name): Mark Smith
Physical Address: 123 Elm Rd, Anytown, NC 27587
Mailing Address: 123 Elm Rd, Anytown, NC 27587

Company Name: Smith Farms.
DBA Name: Smith Farms
Third Name (Grower Name):
Physical Address: 123 Elm Rd, Anytown, NC 27587
Mailing Address: 123 Elm Rd, Anytown, NC 27587

However this business rule has not been applied retroactively to the current AGIIS database. So, if those three entities were entered into AGIIS prior to May 2009, all three entities still exist in AGIIS (even though you would not be able to enter all three today as two would be identified as a duplicate of the third). The significance of this is that when the business rule is applied retroactively during the proposed AGIIS de-duplication, some currently active entities will be inactivated. The ADTF is very concerned that many subscribers are unaware of the implications to their subsets post de-dupe. However, the group also realizes that the status quo is not acceptable and changes need to be made.

The ADTF considered elimination of the Third Name field altogether as this would be the simplest and cleanest approach to address the duplicate concern. The solution proposed (Appendix F) would have created new entities for the individual represented in the Third Name field if the individual did not already exist as an entity in AGIIS. An AGIIS de-duplication process would apply the business rules retroactively (ignoring the Third Name field) and inactivate duplicates. The next step would have eliminated the Third Name field as a data element in an Entity record. Subscribers would have had the opportunity to create cross references between individuals and farm businesses in their internal systems. While the majority of the taskforce agreed this was an appropriate solution, there were a few members that disagreed as they use the Third Name field for billing purposes in the case where growers want multiple accounts associated with their farm business. If the Third Name field was eliminated, these subscribers would have difficulty accommodating their customers' requests and tracking sales and invoicing appropriately. Alternative approaches to addressing the specific business need were discussed, but the group agreed a transition period was needed to allow development of an alternate approach and implementation of associated system changes. Although it appears that a minority of subscribers would be impacted, the consensus was that the Third Name field could not be eliminated without providing subscribers a viable transition option. The group anticipates

that the alternative approach and elimination of the Third Name field would be included in the topics that the upcoming AGIIS 2.0 Task Force would address.

Proposal: The ADTF recommends a solution which represents a compromise between addressing the needs of subscribers using the Third Name field today and addressing the needs of those who would like the Third Name field eliminated to remove duplicates from AGIIS. This solution will leave the Third Name field only in Farm Business entities flagged as exceptions necessary for subscribers to conduct business (Appendix G).

The ADTF recommends we

- Rename third name field to "Contact Name" and define

  The current title of "Grower name" for the Third Name field will be replaced by "Contact Name", and we will establish a definition and guidelines for the use of the Third Name.

- Create new individsual entities (based on analysis of third name field versus the grower entity name)

  Create new individual (First Name, Last Name MI) entities that represent the Third Name field. This would ensure that all entities that could be considered unique by a subscriber remain in AGIIS. This would also allow subscribers to create a cross reference in their internal system (after the AGIIS de-dupe) between entities with an individual name (Grower Entity Type) and entities with a Company name (Farm Business, etc.) as appropriate to capture the relationships the subcriber wishes to recognize.

- Apply current business rules retroactively during de-duplication process and inactivate duplicates.

  Implement an AGIIS de-duplication process which includes the retroactive application of current business rules, i.e. the Third Name field is not considered during the duplicate identification process. Duplicates are identified and inactivated according to the current business rules (outlined in the AGIIS De-duplication recommendation).

- Eliminate third name field from all active entities EXCEPT entity type Farm Business

  Entities with an Entity Type of Farm Business account for less than 1 percent of all entity records in AGIIS. Keeping the Third Name field ("Contact Name") for entity records with a Farm Business entity type will address the current subscribers need.

- Allow reactivation of inactivated Farm Business entities based on defined criteria

  The expectation of the ADTF is that many Farm Business entities with Third Names populated will be identified as duplicates and inactivated. Based on the subscriber needs identified in the group's discussions, the group felt it was necessary to define a reactivation process for Farm Business entities inactivated that are still needed by a subscriber. Any Farm Business entity with a Third Name that gets reactivated will be flagged as an exception in the AGIIS database. These entities will need to be flagged as exceptions per the definition of a duplicate entity – "An entity with the same name and location combination as another entity within AGIIS" and to the busines rules that identify and inactivate duplicate entities. Requests for reactivation of a Farm Business entity with a third name will be reviewed and approved by the AGIIS Help Desk (note: currently all reactivations are reviewed by the help desk). The proposed reactivation criteria follow:

  - Entity exists in AGIIS in an inactive state.

  - Entity is a Farm Business Entity Type and has a combination of Company Name and Contact Name (Third Name).
  - The Unique Identifier is needed to differentiate between Farm Business entities for billing purposes.
- Implement a business rule whereby the addition of new entities to AGIIS does not allow the inclusion of a Third Name field, regardless of entity type.

Proposed Implementation Process:

- Educate subscribers about the third name field and implications to duplicate entities within AGIIS
- Communicate the plan to subscribers in advance of implementation (timing TBD). Communication to include:
  - Outline of the project and proposed changes
  - Clear and concise definitions and processes regarding Third Name Field changes.
  - Information on creating cross references between Grower (individual) entities and Business entities (End-Use Business, Farm Business, Retailer, Distributor, Manufacturer, Drop Point, Rail Siding, Terminal and Industry Provider Entity Types)
  - Define the Entity reactivation process and criteria for reactivation
- Define and Rename third name field to “Contact Name”
- Create new individual entities (based on analysis of third name field versus entity name)
- Implement AGIIS de-duplication applying current business rules retroactively
- Following the AGIIS de-dupe, eliminate third name field from all active entities EXCEPT entity type Farm Business
- Implement a business rule whereby the addition of new entities to AGIIS does not allow the inclusion of a Third Name field option, regardless of entity type.
- Communicate to subscribers when the AGIIS de-dupe is complete and when requests for reactivation of inactivated Farm Business may be submitted

Timing: The proposed timing for implementation of the Third Name field change is outlined in Recommendation 13: Implementation Timeline, however it would occur after the Substandard Data process and implementation of the Unique License Key project. Implementation of the Third Name field recommendation would start prior to the AGIIS Entity De-duplication, continue during the AGIIS De-duplication and complete after the AGIIS De-duplication.

RECOMMENDATION 5: Unique License Key

Objective: Change the “unique database key” for licenses to include the “License Number” data element to allow AGIIS to dependably detect instances when the same license is applied to duplicate entity records. When the same license is detected on multiple entitites during resolution of duplicate entity records in AGIIS, the license on the record(s) being inactivated will not be moved to the surviving record.

Background: Today licenses are considered to be unique in AGIIS when the combination of the licensed entity, the agreement owner identifier/agreement identifier and the license effective date are unique. License Number is not currently considered one of the unique license key components in AGIIS, however discussions with subscribers loading licenses into AGIIS has revealed that the license number *is* a unique key component in their systems.

These subscribers also recognize the need for a single license to be applied to multiple entities within AGIIS. Subscribers associate the same license with more than one AGIIS entity due to

- recognition that duplicate entity records exist in AGIIS or in their own systems, or both and so the subscriber chooses to apply the same license to all the relevant entities
- established relationships between entity records such as a licensed grower and each of the farm business entities associated with the grower, by the subscriber or their trading partner, and so the subscriber assigns each of the entities the same license.

These licenses will continue to be allowed in AGIIS because they are assigned to different AGIIS entities and are therefore unique from an AGIIS perspective.

However an issue arises with matching licenses when we try to resolve duplicate entities with the matching licenses in AGIIS. To resolve a duplicate entity, the AGIIS Help Desk "replaces" one entity with another. This "Replace By" function inactivates "Entity A" and links it to its replacement, the surviving entity, "Entity B". During the replacement process, any licenses from Entity A are moved to Entity B. However, when matching licenses exist (i.e. Entity B already has one or more of the same licenses associated with Entity A), AGIIS detects the problem and disallows the "Replace By" thereby also preventing the duplicate entities from being resolved.

Proposal: The ADTF recommends we

- Change the definition of the AGIIS unique license key to include License Number and install code changes to support the new key definition

An example of a "duplicate" license currently allowed in AGIIS:

Unique license key elements shown in black; non-key elements are in red

Agreement Owner	Gentech Seed Genetics	Gentech Seed Genetics
Agreement Identifier	Corntech II	Corntech II
Entity Identifer, Demographics	GLN: 1100001007813 John Doe, 123 Main St, Anytown, Mo, 64103	GLN: 1100001007905 John J.Doe, 123 Main St, Anytown, Mo, 64103
Effective Date	1/1/2011	1/1/2011
License Number:	12556799	99765521

By adding the license number to the unique database key for a license, the system would be able to detect an identical license during the "Replace" function, and that identical license associated with the record being inactivated will not be moved to the surviving record.

Once the proposed solution is implemented, the licenses referenced above will be unique because the license numbers are different. When the duplicate entity record is resolved both licenses will be on the surviving entity record.

Another example of a duplicate license currently allowed in AGIIS:

Agreement Owner	Gentech Seed Genetics	Gentech Seed Genetics
Agreement Identifier	Corntech II	Corntech II
Entity Identifer, Demographics	GLN: 1100001007813 John Doe, 123 Main St, Anytown, Mo, 64103	GLN: 1100001007905 John J.Doe, 123 Main St, Anytown, Mo, 64103
Effective Date	1/1/2011	1/1/2011
License Number:	12556799	12556799

Once the proposed solution is implemented,, these licenses will be detected as duplicates because the license numbers are the same. When the duplicate entity records are resolved the license on the entity record that is inactivated will not be moved to the surviving record because the license already exists on the survivor.

Proposed Implementation Process: The proposal is comprised of the following steps:

- Communicate the plan to subscribers in advance of implementation (timing TBD). Communication to include:
  - Outline of the project and the proposed changes
  - Detail examples of the proposed changes
  - Process for Subscribers currently "tracking" license data to track the changes that take place as the result of the reload
  - Temporary inactivation of "transactional license extract" functionality during the project installation window
- Delete all licenses in AGIIS (performed by CSC)
- License Key Definition Change
  - The current key: agreement owner identifier + agreement identifier + entity identifier + license effective date will be changed to the following key: agreement owner identifier + agreement identifier + license identifier + entity identifier + license effective date.
  - Although the internal AGIIS database key definition will change; no external interface changes will be required. The batch "license import" interface will not change nor will the fields on the AGIIS web "license page" change.
  - A few AGIIS internal system changes will be made in order to support the unique key change. The system changes include:
    - Edits designed to prevent "duplicate licenses" during the add license function and replace entity function
    - Functionality designed to move licenses during the "replace entity" function described above. There are two slightly different variiations that must be addressed (AGIIS web, batch AGIIS Entity Deduplication).

- Reload Subscriber's licenses in AGIIS
  - Subscribers will need to reload their licenses immediately following the implementation of the key definition and supporting system changes.
  - Licenses should not be reloaded for entity records the subscriber (that owns the license) considers to be duplicates.
  - As mentioned previously, the external interface for loading licenses (both web and batch) will not change. This will minimize the changes required to the license loading process from a subscriber perspective (in fact, a subscriber could reload licenses into AGIIS with no changes to their system if they so choose).
  - Subscribers should take the opportunity to provide the "cleanest", "most current license data" to AGIIS.

Critical Success Factors for the Unique License Key implementation include:

- Subscriber's participation and cooperation
- Removing and reloading licenses prior to the AGIIS de-duplication

Since license data usage is very important to some AGIIS subscribers, implementation of the entire project (delete licenses, install changes, reload licenses) should be completed in the smallest possible window of time. This will require close coordination with subscribers who currently load license data. Assuming close subscriber cooperation, it may be possible to perform the project in a single weekend.

- "Before" and "After" License Extracts

Subscribers currently "tracking" license data will be encouraged to use the License Extract – Subset option to track the changes that take place as the result of the reload. Running this extract immediately before and after the reload takes place will provide files that subscribers can compare for differences and take appropriate action. For example, a license that appeared in the "before" extract but does not appear in the "after" extract indicates that either the license was not reloaded or that the license was reloaded and associated with an entity that is not in the subscriber's subset. In either case follow up can take place with the license provider, if appropriate.

- Inactivation of Transactional License Extract Functionality

Because the volume of current license data is considerable (1,142,260 licenses), it will be necessary to temporarily inactivate certain "transactional license extract" functionality during the project installation window. Otherwise, "publishing" the license changes would overwhelm both AGIIS and the receiving subscriber systems because this functionality was specifically designed to handle only a small number of records. All "Adds Only" and "Adds/Changes Only" license extracts will be inactivated before the project installation windows starts and reactivated when the project completes. When the extracts are reactivated, the "last run date" will be advanced so that all license transactions from the delete\reload are bypassed. CSC will deactivate and reactivate extracts as necessary. There is currently only one such extract that is active in the system[i] but this will be rechecked at the time of project installation.

Timing: The proposed timing for implementation of the Unique License Key recommendation is outlined in Recommendation 13: Implementation Timeline, however, completion of this project is a prerequisite to the AGIIS de-duplication project. The license reload must take place prior to

AGIIS de-duplication because accurate license data is important in entity de-duplication survivorship rules. Another consideration in the timing is the fact that the reload can't take place until the subscribers who provide license data are ready to reload.

RECOMMENDATION 6: Address Considerations

Objective: Implement processes and business rules to resolve some issues associated with address data elements in entity records preventing resolution of duplicate entities in AGIIS.

Background

Through the analysis of the results of the AGIIS replica database de-duplication, the ADTF identified many issues impacting our ability to eliminate duplicate entities in AGIIS. Some issues were created by user error while other issues were related to the origin of the data. For example, entity records identified with a NAPD/HP ID required a mailing address while entity records with an EBID and Entity Type of Manufacturer, Distributor, Retailer, Industry Provider, or End Use Business required a physical address*. Business rules for GLN allow either a physical or a mailing address. The different business rules for the different unique identifiers used for entities led to instances of address format and placement of address information (data in mailing vs. physical address fields) that contribute to actual or perceived duplicates.

These following scenarios were identified and reviewed to determine how we can improve duplicate entity resolution. (Actual examples provided in Appendix H)

Scenario 1: Street address vs. PO Box

Two entity records with the same Name, City, State and Zip

- One entity record with a valid USPS physical and/or mailing address
- One entity record with a valid PO Box

Analysis: The ADTF decided combining the addresses into one record would be making an assumption of a duplicate set that may not be correct as a single business may have multiple PO Boxes. The group agreed the only way we might resolve potential duplicate entities in this type of scenario is through subscriber synchronization with AGIIS and with their trading partners. Subscriber Data Synchronization is addressed in Recommendation 8.

Scenario 2: RR# Box# vs. 911 address

Two entity records with the same Name, City, State and Zip

- One entity record with a rural route and box number
- One entity record with a valid USPS physical and/or mailing address

Analysis: The ADTF decided we should continue to use a Locatable Address Conversion (LACS) provider to update rural route addresses with 911 addresses but implement the LACS process quarterly instead of annually, for rural route addresses only. Implementing an annual de-duplication process would catch any duplicates created through the LACS process. Annual De-Duplication is addressed in Recommendation 11.

Scenario 3: Physical and mailing address vs mailing address only

Two entity records with the same Name and Mailing address

- One entity record with a physical address different than the mailing address
- One entity record with no physical address

Analysis: This scenario is a likely result of legacy business rules requiring only a mailing address (NAPD). The de-duplication process can use only one address per entity and preference is given to the physical address if available. The reason the de-duplication process can use only one address per entity is due the fact that if the process uses more than one address during a de-dupe run, a single record could be a member of more than one duplicate set and it could be a subordinate in one set and a master in another set. (Note: this situation is beyond the scope of the current de-duplication design). The ADTF recommended we implement a second de-duplication process with preference given to the mailing address during the annual de-duplication.

Scenario 4: Location Description

- Physical address can be descriptive instead of a valid address.

Analysis: Entities with only location descriptions (drop points and rail sidings) can be problematic when evaluating duplicates in the AGIIS Directory. Currently there is no standardization for location description or a required field that would uniquely identify these entities. The group discussed latitude and longitude as a required field but believed at this point that information may not be readily accessible or consistently collected by all subscribers. Most of these entities are used by the Crop Nutrition segment which encourages trading partner data synchronization. Today, there are less than 800 entities which fall within this scenario. The group has decided there needs to be more discussion around location descriptions in the future.

Proposal: The ADTF recommends we

- Continue LACS/NCOA, Orphan, Area Code Splits and City/State maintenance on the full database annually.
- Implement the LACS process on records with RR# Box# addresses quarterly.
- Implement an Annual Entity De-duplication (details addressed in the Recommendation 11: Annual Maintenance – Entity)
    - Perform an annual de-duplication to clean-up duplicates created by the LACS/NCOA address updates.
    - Add a secondary de-duplication during the annual maintenance with preference on mailing address.
- Require subscribers to implement data synchronization with AGIIS (Details addressed in Recommendation 8: Subscriber Synchronization). Subscribers would
    - provide updates to AGIIS
    - apply AGIIS updates to their internal systems

The group recognizes that not all address concerns can be addressed with changes to AGIIS processes or automated maintenance. The only way to achieve an acceptable level of subscriber confidence in the data integrity is for all subscribers to synchronize identifiers and entity demographics with AGIIS on a regular basis and maintain their entity subsets, including removing inactive entities.

Proposed Implementation Process: Implementation of the elements of recommendation is included in other recommendations referenced above.

Timing: The proposed timing for implementation is also included in the other recommendations referenced above.

RECOMMENDATION 7: AGIIS De-duplication

Objective: Define a process to eliminate existing duplicates from the AGIIS database

Background: The ADTF spent a significant amount of time educating themselves on the basics of AGIIS, defining an entity, reviewing the data elements associated with an entity, discussing what constitutes a duplicate, what creates duplicates and the processes used to address duplicate entities in AGIIS to date. Historically, duplicate entities have been inactivated in AGIIS through a de-duplication process and the last de-dupe of the database was completed in late 2007, almost four years ago.

The group reviewed the 2007 NAPD De-duplication process to determine which processes and business rules could be leveraged for future de-duplication processes. Entity rule modifications applied to AGIIS since the 2007 de-duplication to prevent entry of duplicate entities were evaluated to try to understand the impact of those changes if applied to existing duplicate entities. The group also reviewed duplicate survivorship rules and how the rules were applied previously. A significant result of this work was the realization that there are many entities in AGIIS today that do not comply with the current business rules.

With that basic knowledge and an understanding of the functionality we have today to eliminate and prevent duplicates in AGIIS, the group concluded we needed to apply the current business rules retroactively against the AGIIS database so a baseline could be set. The decision was made to implement a de-duplication process in an exact replica of the AGIIS production environment – both the web interface and the AGIIS database were replicated. While the programming code created for the 2007 NAPD de-duplication was used as a starting point, several modifications were made to bring the de-duplication code in line with current business rules and standards. The most significant changes were using the GLN as the unique identifier common to all the entities (instead of the NAPD ID), removing the concept of exemptions (EBID was exempt in 2007 de-duplication process) and when an entity record contained a Company Name, DBA Name and a Third Name (Grower Name), the Third Name was not considered in the identification of duplicates during the de-duplication process (consistent with the business rule implemented in May 2009). The ADTF also defined survivorship and data harvesting prioritization. Once the AGIIS replica de-duplication was complete, the members of the ADTF were granted access to review the results through AGIIS replica website (Appendix F).

Analysis of the de-duped AGIIS replica database provided insight into root causes of duplicates and issues preventing resolution of duplicate entity sets. The ADTF reviewed many duplicate entity sets to determine whether the process was identifying duplicates correctly. The group concluded the matching criteria (reviewed and tweaked by the DOC in 2009) in use by AGIIS was accurate. The analysis resulted in many of the recommendations included in this document.

Proposal: The ADTF recommends a de-duplication process which incorporates the following components: Entity Criteria, Defintions, Survivorship Rules/Prioritization, Data Harvesting and Analysis.

- Entity Criteria (for inclusion in the de-duplication process)

- Only active records will be eligible for the de-duplication process.
- No active records will be exempt from being replaced during the de-dupe process

- Definitions (refer to Recommendations 1 and 2)
  - Entity: A unique combination of name and location conducting business within the agricultural industry.
  - Duplicate Entity: An entity with the same name and location combination as another entity within AGIIS
- Survivorship: Survivorship prioritization is the process of determining which record should survive out of a set of duplicate entities. The same survivorship priority is used during the automated de-duplication process and any manual de-duplication performed by the AGIIS Helpdesk. The ADTF is recommends the following order for survivorship priority (listed from highest to lowest priority).
  1) Subscriber Owned GLN
  2) EBID
     a) AGIIS Help Desk Phone Verified EBID
     b) Duns assigned EBID
     c) AGIIS Assigned EBID
  3) Non-Subscriber Owned GLN
  4) Is a License present on the entity*

**Note: If a record with a license is replaced, the license moves to the surviving entity.*

  5) Subset Count - Number of EBID and GLN subsets in which the entity appears
  6) Oldest GLN – Determined by creation date
- Data Harvesting: Data harvesting is the process of copying data from a record being replaced into the surviving entity record. This occurs when there are multiple records in a duplicate set and the survivor record lacks data that exists on a subordinate record (e.g. phone number). Extreme caution needs to be taken when performing data harvesting so that the meaning of the data is not falsely altered. The ADTF recommend the following fields as candidates for data harvesting in the automated de-duplication process:
  - Latitude
  - Longitude
  - SPLC
  - Phone number

  In order to be consistent with Recommendation 5: Unique License Key, when duplicate licenses are encountered, the duplicate license(s) on the inactivated entity will not be moved to the survivor record.
- Analysis: Based on their experience with the AGIIS replica database de-dupe, the group concluded that capturing accurate statistics on what occurred is a critical component of the

de-duplication process. Therefore, they recommend an analysis of the results of the de-dupe to consist of

- general statistics which provide a high level overview of the process (e.g. records reviewed, duplicate sets identified, records replaced), and
- a detailed analysis report which provides more detail regarding specific duplicate sets (e.g. survivorship detail).

Proposed Implementation Process:

- Approve Entity & Duplicate Definitions: The de-duplication process will support and reinforce entity and duplicate definitions.
- Communicate the plan to subscribers in advance of implementation (timing TBD). Communication to include:
  - Outline of the project and impacts to subscribers
  - When the results will be shared with subscribers
  - What actions need to be taken by subscribers
- Complete programming for the AGIIS database de-duplication to
  - Define the entities to be included in the de-duplication process
  - Define the Survivorship Prioritization
  - Implement the Data Harvesting recommendations
  - Build data collection analysis that will be used to gather information during the de-duplication process
- Implement the AGIIS de-duplication
- Send subscribers a file containing entities in their subset that were inactivated due to the de-duplication process along with the identifier of the surviving record.
- All subscribers need to apply de-duplication results to their internal systems. (This is considered a critical success factor).

Timing: The proposed timing for implementation of the AGIIS De-Duplication is outlined in Recommendation 13: Implementation Timeline

RECOMMENDATION 8: Subscriber Synchronization

Objective: Provide a simple synchronization process that could be used by all subscribers regardless of size or technical capabilities

Definition of Synchronization: Synchronization is the process of keeping data in two or more electronic devices up-to-date so that each repository contains the identical information[1].

Background: The importance of synchronization is well documented regarding e-Business. Ensuring entity information transferred from one trading partner to another is correct and has

[1] Definition from PCMAC.COM

the same meaning for both parties is critical. The bottomline is deliveries and invoices need to be sent to the correct place, the first time.

AGIIS was designed as, and remains, a subscriber maintained directory, Primary responsibility for the accuracy of the data within AGIIS and ensuring AGIIS can be a "trusted source" of e-Business information lies with the subscribers. Through their review, the ADTF identified the lack of subscriber participation in certain basic functions associated with AGIIS as a root cause of the duplicate records in AGIIS including:

- Updating entity records in AGIIS
- Removing unused entity records from their subsets
- Applying changes from AGIIS to their internal data

Part of the overall ADTF recommendation includes inactivation of entity records with substandard data and conducting the regular annual maintenance prior to implementing the comprehensive entity de-duplication process. Since these activities will result in a large number of inactivated entity records, it will be critical for subscribers to synchronize with AGIIS subsets shortly thereafter. Subscribers will need to continue regular data synchronization with AGIIS in order to maintain the directory as a trusted data for use in conducting efficient e-Business.

Due to the importance of data synchronization, the ADTF believes it's important to make the process simple so synchronization can be performed by all subscribers, regardless of size or technical capabilities. The next question became "what information should be synchronized beyond the obvious choice of the unique identifier?" The ADTF reviewed the date elements associated with entities and split them into two categories: Primary Entity Data Elements and Secondary Entity Data Elements which are described further below. The group also identified three critical success factors for this element of the ADTF recommendation:

- Subscriber communication
- Subscriber education
- Subscriber participation in synchronization – initial and ongoing

Primary entity data elements define an entity such as the "Who" and the "Where" (name & address) and include:

1. Industry Identifiers (EBID/GLN)
2. Name (Company, DBA, Individual, Location Description)
3. Address (Physical and/or Mailing)
4. Entity status (In Business, Bought Out, Out of Business or Replaced)
5. Record status (Active/Inactive)

Secondary entity data elements provide additional information and can be beneficial, but are not considered critical to successful synchronization. These include:

1. Industry Flag(s)
2. Entity Type
3. Latitude/Longitude
4. SPLC

5. Phone number

Proposal: The ADTF recommends we

- Require EVERY subscriber to synchronize with AGIIS synchronizing primary entity demographics
- Require an initial synchronization to be completed immediately following the comprehensive de-duplication process
- Require ongoing maintenance synchronization on a regular basis (to be defined) as part of the ongoing subscriber maintenance of AGIIS

They also recommend that

- Primary entity data elements are required in the AGIIS Synchronization process and secondary data elements will be considered optional.
- Documentation is developed detailing the use of existing AGIIS transactions in support of subscriber synchronization with specific examples.
- Subscribers use the existing Trading Partner Entity Add Notification functionality in AGIIS if they choose not to synchronize with their Trading Partners

Proposed Implementation Process:

- Communicate the plan to subscribers in advance of implementation (timing TBD). Communication to include:
  - Outline of the project including the timeline for subscribers initial synchronization
  - Define the requirements and the process for synchronization
  - Educational opportunities to learn more about synchronization
- Subscribers request AGIIS Subset Export file via new subset export process (created to support synchronization)

The first step in the AGIIS Synchronization process will be for each subscriber to request a subset export file (EBID and GLN) from AGIIS. Currently, subscribers must call or email the AGIIS help desk to create a subset export, a manual process for both parties. As part of this recommendation, an automated process will be developed whereby subscribers can request their subset from the AGIIS website. The subset export file(s) will provide subscribers with entity information that exists in their AGIIS subset as well as their corresponding proprietary code.

- Subscribers compare their AGIIS Subset data with their internal data
  - Industry identifier – Subscriber will perform an initial match to determine if an identifier exists in their internal database that is not present in their AGIIS subset or vice versa.
  - Primary Entity Data Elements - Subscriber will perform a match to determine if any primary data elements in their AGIIS subset vary from their internal database
  - Secondary Entity Data Elements (if desired) – Subscriber will repeat the exercise completed for primary elements for the secondary data elements if they so choose. These data elements are optional.

If subscribers do not have the appropriate tool set to compare data elements, the group thought this might be a service some of the Allied Providers could offer.

- Subscribers submit unmatched entities to AGIIS

The next step would be for the subscribers to send the changes and additions based on the results of the data comparison to the AGIIS Directory. This information will be sent to AGIIS via website, bulk processes or web services dependant on the volume of data being supplied. The following AGIIS transactions can be used to synchronize the systems (AGIIS and the subscribers' internal systems):

  - Add
  - Update
  - Add to Subset
  - Delete from Subset
  - Demographic Search
  - Identifier Search

The subscriber will select the appropriate transaction based on the situation they encounter. For example a subscriber identified they had 5 identifiers in their internal system that was not in their AGIIS subset. They would use the "Identifier Search" transaction that would provide them with the demographics for the AGIIS Identifiers and then the subscriber could compare those demographics to the demographics in their internal system. If primary data elements matched they could use the "Add to Subset" transaction to complete synchronization with AGIIS.

- Subscribers apply results of comparison from the initial synchronization to their internal systems
- Ongoing maintenance synchronization

The ADTF noted that data synchronization cannot be implemented as just a onetime process. Rather, it is critical for subscriber's to keep their data synchronized with AGIIS as an ongoing activity

- Subscribers apply AGIIS updates

AGIIS provides GLN and EBID Entity Update Extracts (XML and CSV format) on a schedule selected by the subscriber (daily, weekly or monthly). The file contains before and after information on any additions or changes made to the subscriber's subset. Subscribers will review the changes reported in the file and apply them to their internal data.

- Subscribers provide updates to AGIIS

When subscribers get updated information for entities in their database from another source, they should submit the updated information to AGIIS.

- Trading Partner Synchronization or Trading Partner Entity Add Notification

The ADTF spent a lot of time discussing the concept of Trading Partner Synchronization. Based on the feedback for the group, it was decided that it might not be realistic to expect or require subscribers to synchronize with their trading partners. The ADTF reviewed the existing Trading Partner Entity Add Notification functionality in AGIIS created through an enhancement request from the Crop Nutrition Council. This notification feature is used by the Crop Nutrition segment regularly and has been for several years. The functionality allows subscribers to notify their trading partners in real time via EB-messaging that an entity has been added to their subset.

The ADTF believes this would be a good method for subscribers to stay in-sync with their trading partners in the absence of trading partner synchronization.

Timing: The proposed timing for implementation of the Subscriber Synchronization is outlined in Recommendation 13: Implementation Timeline, however the initial synchronization by subscribers should immediately follow the planned AGIIS De-duplication process.

RECOMMENDATION 9: Duplicate Reporting

Objective: Allow ALL subscribers to report potential duplicates systematically and enable the Help Desk to efficiently process these records.

Background: Early in 2009 the DOC started reviewing issues related to duplicate entities in AGIIS and as a result, implemented seven enhancements (between 2009 and 2011) that directly or indirectly addressed preventing duplicate entites from entering AGIIS. Through the duplicate issue review process, a large number of entities were identified as potential duplicates requiring AGIIS Help Desk review. Due to the large number of potential duplicate entities and the very long time period estimated to complete the review of the potential duplicates, the DOC decided to take a step back and review current entity rules and processes in AGIIS. This led to the decision to form the AGIIS Duplicate Taskforce (ADTF) as well as the Entity Rules and Dun & Bradstreet Transition Task Forces.

As the ADTF reviewed duplicate examples and business rules they realized there is no standard published method to report duplicates to the AGIIS Help Desk today. At the same time, the DOC asked the ADTF for input on a Project Change Request (PCR 159- Simplify Duplicate Entity Reporting) that had been pending since 2009. This request focused on providing duplicate reporting functionality via the AGIIS website. The ADTF reviewed PCR 159 and decided that, with a few modifications, it would be a valuable component of the ADTF recommendation to the DOC.

One of the modfications considered by the ADTF was to allow “Search and View Only” (SVO) subscribers to report duplicate entities. Today 75 percent of the SVO subscribers within AGIIS are Ag Retailers. Of current AGIIS subscribers, retailers have the closest business relationship with growers and farm businesses (which make up approximately 90 plus percent of the active entities in AGIIS). One potential concern raised regarding providing this functionality to SVO subscribers was the lack of education or knowledge about AGIIS business rules which would allow them to accurately report duplicates. Upon further discussions the group determined that this concern applied to all AGIIS subscribers not just the SVO subscribers which led the group to add the concept of “AGIIS Duplicate Certification” to their recommendation.

Proposal: The ADTF recommends we

- Provide SVO subscribers the capability to identify and report duplicate entities
- Require all subscribers to be certified prior to providing access to this new functionality
- Implement additional functionality to enable the AGIIS Help Desk to efficiently review and respond to duplicate entity reports

The ADTF recommendation consists of a User Certification process, Duplicate Reporting functionality and Administrative (Help Desk) functionality.

User Certification: The ADTF believes a critical success factor to preventing duplicates from entering AGIIS is to educate users on the business rules regarding duplicates and the correct method to identify and report duplicates. This will reduce the number of inappropriate duplicate entity reports submitted to the help desk. The ADTF recommends an AGIIS Duplicate Certification process for all users set-up with "Duplicate Reporting" privileges within AGIIS.

AGIIS Duplicate Reporting Certification will be implemented as an online application to educate users on the business rules that define duplicate entities, provide examples of duplicates, and interactively test their knowledge/understanding of how to report duplicates in AGIIS. At the end of the certification the user will be given a test. If the user's score is satisfactory the certification is complete. If the score is unsatisfactory, the user must try again until they pass the certification.

The online certification process will be regulated by a new Duplicate Reporting user privilege. When the privilege is initially granted to a new or existing AGIIS user, completion of the certification process will be required prior to the AGIIS website or web services duplicate entity reporting functionality becoming available to the user. In order to report duplicate entities using the GLN or EBID Bulk Process, a Subscriber Administrator for the Subscriber must complete the Duplicate Reporting Certification. Re-certification will only be necessary following a major change to duplicate entity rules.

The Entity Functional Group (EFG) along with the AGIIS Provider will be responsible for preparing and maintaining the Duplicate Reporting Certification material as business rules or functionality changes. The AGIIS help desk will monitor the effectiveness of the certification and report issues back to the EFG.

AGIIS Duplicate Reporting: The ADTF recommend three options for users to report duplicates to AGIIS - through the website, bulk processes and web services. The end destination for all duplicates will be the AGIIS help desk for review and final resolution.

AGIIS website: Modifications will be made in two key areas where users are most likely to identify duplicate records, the

- Entity Duplicates web page
- Entity List web page (used to display entity search results).

The web pages will be modified to include check boxes and a "report duplicates" button. A new Report Duplicates page will be created to display each of selected entity record's name and demographic information. A comments field will be available for the user to enter comments intended to assist the Help Desk. When the submit button is pushed, a new request type called Suspected Duplicates will be sent to the Help Desk for review.

AGIIS Bulk Process: This process currently allows users to report a single duplicate entity. The ADTF recommends enhancing the bulk process so the XML submission file format users can identify a "set" of duplicates instead of the "single duplicate" transaction supported today.

Web Services: Providing duplicate reporting functionality via web services will replicate the duplicate transaction functionality supported by the bulk process in the "Entity Maintenance" web services. Since the "Entity Maintenance" web service uses the same XML definition as the Bulk Process, the inclusion of this functionality in a web service will be easy once implemented in the Bulk Process.

Additional Considerations: The ADTF believes these enhancements present an opportunity to support "Add Entity" and "Update Entity" functionality as web services and recommend the

implementation of that functionality as well. Since these functions are already defined in the web services interface and fully implemented in the AGIIS Bulk Process, web services implementation will be fairly easy and cost effective.

Administration: The AGIIS Help Desk will need efficient tools to process the duplicate reporting submitted through three mechanisms described (website, bulk process, web services). An administration web page will be created to optimize duplicate entity resolution which will display the set of reported duplicates. Functionality to perform "Replace By" and "Data Harvesting" processes without leaving this web page will be provided to the Help Desk. The approved survivorship rules will be embedded in the functionality as well.

Proposed Implementation Process:

- Communicate the plan to subscribers in advance of implementation (timing TBD). Communication to include:
  - Outline of the project
  - Define the certification requirements and the process for certification
  - Educational opportunities to learn more about certification and entity business rules as relates to duplicate entities
- Educate potential Service Providers on the features and the benefits of enabling their customers with AGIIS "entity update" functionality
- Create the new Duplicate Reporting Privilege and the new web pages needed to implement
- Develop the Duplicate Reporting Certification Material with the Entity Functional Group
- Create the on-line AGIIS Duplicate Certification Process
- Implement the on-line AGIIS Duplicate Certification Process
- Implement the AGIIS Duplicate Reporting Process
  - Web Site
  - Bulk Process
  - Web Services
- Implement the Administration Functionality
  - "Replaced by"
  - Data Harvesting
  - Survivorship

Timing: The proposed timing for implementation of the Duplicate Reporting is outlined in Recommendation 13: Implementation Timeline

RECOMMENDATION 10: Search/View Subscriber Update Functionality

Objective: Allow ALL subscribers, including Search & View Only Subscribers (SVO), to submit entity updates.

Background: AGIIS allows different subscription levels one of which is the Search and View Only subscription. This subscription type allows subscribers to search and view AGIIS entities and products via the web interface or web services. As stated in the previous recommendation, 75 percent of the SVO subscriber in AGIIS are Ag Retailers and, as such, have some of the closest business relationship to growers and farm businesses. The ADTF decided that allowing these subscribers to provide updates would benefit all subscribers and would support the goal to obtain input from this subscriber segment to increase the quality of data in AGIIS.

The ADTF recommended earlier in this document that SVO users be allowed to report duplicates after completing an AGIIS Duplicate Certification course. Allowing them to provide updates seems like a logical addition to SVO subscriber functionality. Since the same concern regarding education and knowledge of entity business rules exists with giving SV subscriber's update privileges as with duplicate reporting privileges, a similar type of certification would provide the SVO subscribers with an understanding of the business rules related to updating entities.

Proposal: The ADTF recommends we

- Provide SVO subscribers the functionality to update entities through either
    - Providing certification plus entity update privileges and/or
    - Encourage subscribers to upgrade their subscription to a "Subset" Subscriber.

Certification Plus Privileges: The ADTF recommends a two-pronged approach to providing SV) subscribers entity update functionality. The first approach is to provide certification plus entity update privileges. This will leverage the AGIIS Duplicate Certification concept and create a curriculum tailored to update functionality. The certification process will be very similar to the duplicate certification previously described in that it will be administered online and regulated by the user privilege ("Entity Update"). When a new or existing SVO user is granted the entity update privilege, completion of the certification process will be required (prior to the AGIIS website or web services entity update functionality becoming available to the user). At the end of the certification the user will be given a test. If the user's score is satisfactory the certification is complete. If the score is unsatisfactory, the user must try again until they pass the certification. Re-certification will only be necessary following a major change to entity rules impacting "update" functionality.

The Entity Functional Group (EFG) along with the AGIIS Provider will be responsible for preparing and maintaining the certification material as business rules or functionality changes. The AGIIS help desk will monitor the effectiveness of the certification and report issues back to the EFG. This approach will allow subscribers to provide updates without maintaining a subset.

Subset Subscriber: The second approach will be to encourage subscribers to upgrade their subscription to a "Subset" Subscriber. This will leverage current functionality already available in AGIIS and will not require additional development. In many cases SVO subscribers can upgrade their subscription for minimal cost and thus would be able to provide updates and receive updates provided by others and stay in-sync with AGIIS.

The ADTF believes this recommendation provides value to current subset subscribers through increased data quality, more timely entity updates and expanded subscriber knowledge and

interaction with AGIIS. The recommendation provides SVO Subscribers input to the data in AGIIS, decreased exception resolution (related to sales reporting), and timely and accurate eBusiness transactions

Proposed Implementation Process:

- Communicate the plan to subscribers in advance of implementation (timing TBD). Communication to include:
  - Outline of the project
  - Define the certification requirements and the process for certification
  - Educational opportunities to learn more about certification and entity business rules as relates to updating entities
- Educate potential Service Providers on the features and the benefits of enabling their customers with AGIIS "entity update" functionality
- Create functionality needed to implement the Entity Update Privilege for SVO subscribers
- Develop the Entity Update Certification Material with the Entity Functional Group
- Create the on-line AGIIS Entity Update Certification Process
- Implement the on-line AGIIS Entity Update Certification Process
- Implement the AGIIS Entity Update Process
  - Web Site
  - Web Services

Timing: The proposed timing for implementation of the Search /View Subscriber Update Functionality is outlined in Recommendation 13: Implementation Timeline, however this will occur after the Duplicate Reporting project so the certification process created within that project can be used as a starting point for this project's certification.

RECOMMENDATION 11: Annual Maintenance – Entity

Objective: Outline additions which support the elimination of duplicate entities from AGIIS to the current AGIIS annual maintenance process

Background: Annual system maintenance activities associated with entities occur on a regular schedule and have since the inception of AGIIS. Designed to automate data maintenance and improve data accuracy, maintenance activities include:

- Locatable Address Conversion System (LACS) - updates used to convert rural route addresses to 911 addresses;
- National Change of Address (NCOA) - updates based on change of address forms submitted to the USPS;
- Area Code Splits - updates when a new area code is established to increase the phone numbers available in a specific area; and
- Orphan maintenance - to inactivate entities not in any subscriber's subset.

Within the past year, the DOC added a maintenance activity to ensure that all active entities have city and state information, where appropriate.

The ADTF reviewed current maintenance processes and agreed the activities provide value in eliminating duplicate entities. However, through review of the results of the replica AGIIS database de-duplication, the ADTF determined that the annual maintenance activities themselves have the potential to create duplicates.

For example: A subscriber adds a new entity when their customer's address changes (rather than update the existing entity) so now there are two entities for that customer in AGIIS. We run our annual maintenance processes, including the LACS/NCOA processes, which updates the address information of the original entity. The result is two entity records with the same name and address information.

The group believed that inclusion of some additional maintenance activities would strengthen the existing process.

Proposal: The ADTF recommends we add the following to our Annual Maintenance process

- An annual de-duplication process

The de-duplication process will be the same as that described in the Recommendation 7: AGIIS De-Duplication and will be implemented immediately follow completion of the current maintenance activities (described above) each year to address duplicate records created by the LACS/NCOA processes.

- A quarterly LACS process

The LACS process will be scheduled quarterly ONLY for entities with an address consisting of a rural route and box number (RR# Box#) in order to apply 911 updates to records more frequently than our current annual basis. This will ensure the entity address is up to date and reduce the opportunity for potential duplicates to enter AGIIS.

Proposed Implementation Process:

- Communicate to subscribers in advance of implementation as we do today for our annual maintenance activities.
- Communicate to subscribers in advance of implementation for the new quarterly maintenance activities.
- Execute the LACS process for entities with rural route and box number quarterly
- Implement the following processes annually as per our current protocols
    - LACS (all entities)
    - NCOA
    - Area Code splits
    - City/State verification
- Implement an annual De-Duplication processes annually as per the protocol outlined in Recommendation 7: AGIIS Duplication

Timing: The proposed timing for implementation of the Annual Maintenance - Entity is included in Recommendation 13: Implementation Timeline, however we typically perform the annual maintenance activities in the December/January timeframe.

RECOMMENDATION 12: Educate and Communicate

Objective: Outline a plan to communicate to and educate current and potential AGIIS subscribers regarding the changes to AGIIS throughout the implementation process.

Background: The ADTF outlined communication and education as critical success factors of a majority of the individual recommendations which comprise this document.

Proposal: The ADTF recommends we implement an extensive communication and education plan to accompany the implementation of the ADTF recommendation immediately following approval by the DOC.

Proposed Communication Plan:

- Following DOC approval of the ADTF recommendation
  - Communicate approval and general project overview. Communication to include
    - Outline work done by the ADTF and refer to the webpage for documentation
    - Communicate the purpose of AGIIS
    - Inform of the AGIIS Task Force Recommendation presentation planned during the Business Meeting at the Annual Conference
    - Communicate planned education opportunities
  - Implement an AGIIS improvements webpage on the AgGateway web site to keep member and subscribers informed about
    - Changes planned
    - Implementation plan and status of implementation
    - Contacts for questions or concerns
    - Relevant educational opportunities, etc.
- Communicate the plan to subscribers in advance of implementation of each element in the recommendation plan. Amount of notice required is dependent on the change and subscriber impact and will be defined in the detailed implementation plan. These communications will include
  - Outline of the project
  - Definitions - as appropriate
  - Subscriber impacts – as relevant
  - Actions required by subscribers - as relevant
  - Notifications to expect - as relevant
  - Other Information – as appropriate
- Post Annual Conference, implement a series of webinar discussions to communicate and educate subscribers and others on the approved changes.
- Communication methods will include:

- Constant Contact email blasts
- Directory Alert email
- AgGateway newsletter
- AgGateway and AGIIS websites
- Web meeting/Webinars

- Preliminary list of topics to be addressed through communication and/or education
  - Approved Recommendation
  - New Entity and Duplicate definitions
  - Entity Subset Extract
  - Substandard Data Edits
  - Substandard Data Processing
  - Third Name Field Changes
  - Unique License Key
  - AGIIS De-Duplication
  - Subscriber Synchronization with AGIIS
  - Subscriber Synchronization with Trading Partners
  - AGIIS Trading Partner Entity Add Notification
  - Duplicate Reporting Functionality and Certification
  - Search View Only Subscriber Entity Update Functionality and Certification
  - Annual Maintenance Process

Timing: The proposed timing for implementation the Education and Communication activities recommended will be prior to and throughout implementation of the ADTF Recommendation. Scheduling of the various activities will be defined based on the detailed implementation plan and timeline.

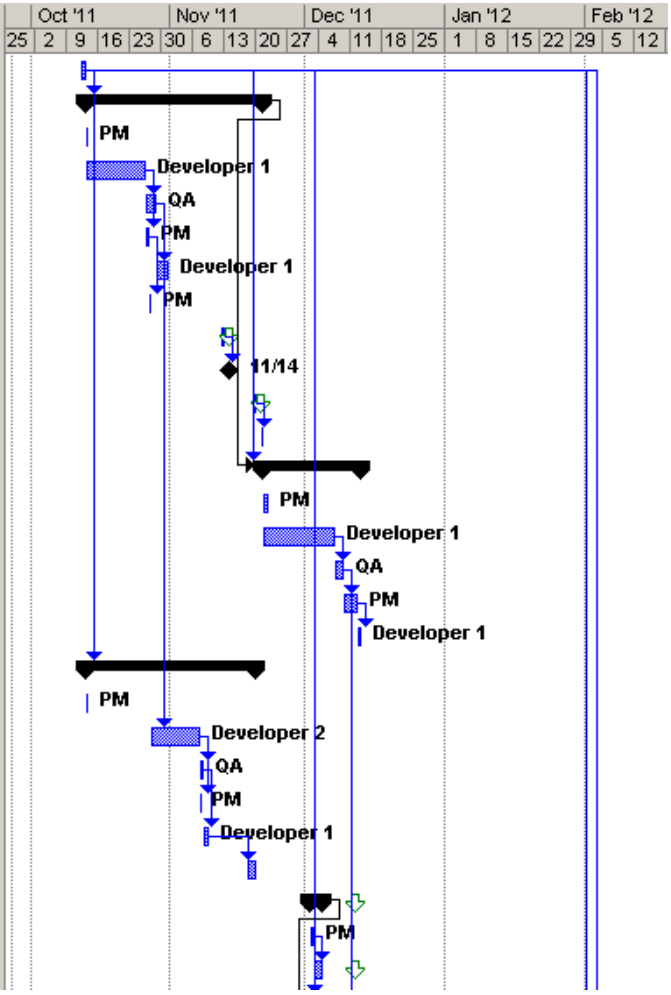
RECOMMENDATION 13: Implementation Timeline

Objective: Outline a high level implementation plan and timeline which addressed each of the components of the ADTF Recommendation. .

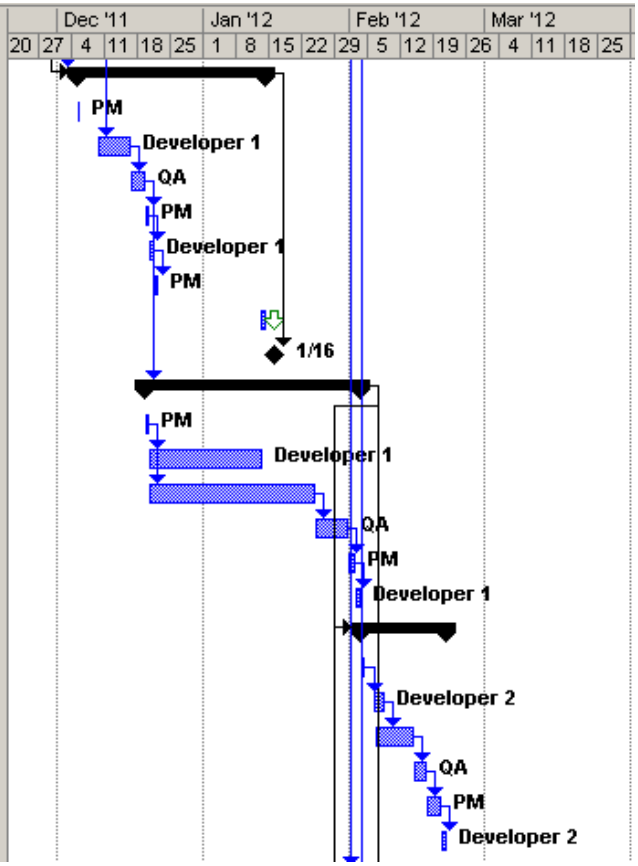
Background: The ADTF recognized, due to the number of changes proposed as well as the complexity and interconnectivity between various components of their recommendation, that we cannot simply address these changes as a series of PCRs (Project Change Requests) which are brought forward to the DOC one at a time, prioritized and approval requested. Rather we need to treat this recommendation as a project and implement the changes through a project plan. The project plan may very well include PCRs as part of the implementation process, but rather than approving individual PCRs, the overall recommendation and project plan which will be submitted for approval to the DOC. This recommendation document and the presentation to the DOC on Wednesday, September 28, 2011 are the first steps in this approval process.

Proposal: The ADTF recommends we adopt the high level implementation plan and timeline which follows.

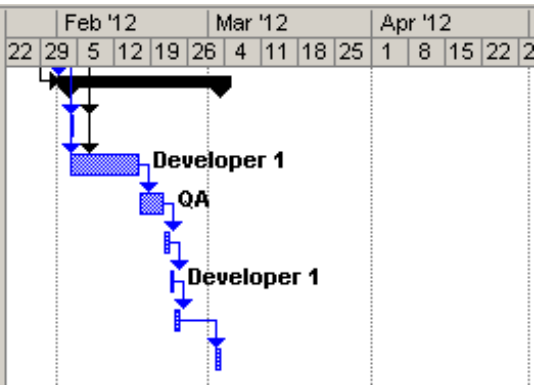
Task Name	Duration	Start	Finish
DOC Approval	1.07 days	Wed 10/12/11	Thu 10/13/11
Substandard Data Edits	**29.8 days**	**Thu 10/13/11**	**Mon 11/21/11**
Communication	1 day	Thu 10/13/11	Thu 10/13/11
Development	75 hrs	Thu 10/13/11	Wed 10/26/11
Quality Assurance	20 hrs	Wed 10/26/11	Fri 10/28/11
Documentation	5 hrs	Wed 10/26/11	Thu 10/27/11
Installation	1 day	Fri 10/28/11	Mon 10/31/11
Communication	1 day	Thu 10/27/11	Thu 10/27/11
Processing - I	3 days	Sat 11/12/11	Sun 11/13/11
Subscribers Receive Files	1 day	Mon 11/14/11	Mon 11/14/11
Processing - II (Contigency)	3 days	Sat 11/19/11	Sun 11/20/11
Subscribers Receive Files (Contigne	1 day	Mon 11/21/11	Mon 11/21/11
Third Name Change	**14 days**	**Mon 11/21/11**	**Tue 12/13/11**
Communication	1 day	Mon 11/21/11	Tue 11/22/11
Development	10 days	Mon 11/21/11	Wed 12/7/11
Quality Assurance	2 days	Wed 12/7/11	Fri 12/9/11
Documentation	1 day	Fri 12/9/11	Mon 12/12/11
Installation	1 day	Mon 12/12/11	Tue 12/13/11
Unique License Key	**28.8 days**	**Thu 10/13/11**	**Sat 11/19/11**
Communication	1 day	Thu 10/13/11	Thu 10/13/11
Development	50 hrs	Thu 10/27/11	Mon 11/7/11
Quality Assurance	10 hrs	Mon 11/7/11	Tue 11/8/11
Documentation	5 hrs	Mon 11/7/11	Mon 11/7/11
Installation	1 day	Tue 11/8/11	Wed 11/9/11
Processing	4.4 days	Fri 11/18/11	Sat 11/19/11
Annual Maintenance	**7.53 days**	**Fri 12/2/11**	**Sun 12/4/11**
Communication	1 day	Fri 12/2/11	Fri 12/2/11
Processing	48 hrs	Fri 12/2/11	Sun 12/4/11



Task Name	Duration	Start	Finish
DeDuplication	**28.8 days**	**Mon 12/5/11**	**Fri 1/13/12**
Communication	1 day	Mon 12/5/11	Mon 12/5/11
Development	40 hrs	Fri 12/9/11	Fri 12/16/11
Quality Assurance	10 hrs	Fri 12/16/11	Mon 12/19/11
Documentation	5 hrs	Mon 12/19/11	Tue 12/20/11
Installation	1.07 days	Tue 12/20/11	Wed 12/21/11
Communication	1 day	Wed 12/21/11	Thu 12/22/11
Processing	2 days	Fri 1/13/12	Fri 1/13/12
Synchronization	1 day	Mon 1/16/12	Mon 1/16/12
Duplicate Reporting Enhancement	**32.67 days**	**Mon 12/19/11**	**Fri 2/3/12**
Communication	1 day	Mon 12/19/11	Tue 12/20/11
Development	120 hrs	Tue 12/20/11	Fri 1/13/12
Certification	180 hrs	Tue 12/20/11	Tue 1/24/12
Quality Assurance	40 hrs	Tue 1/24/12	Tue 1/31/12
Documentation	10 hrs	Tue 1/31/12	Thu 2/2/12
Installation	1 day	Thu 2/2/12	Fri 2/3/12
SV Subscriber Update Functionality	**13.33 days**	**Fri 2/3/12**	**Tue 2/21/12**
Communication	1 day	Fri 2/3/12	Fri 2/3/12
Development	20 hrs	Mon 2/6/12	Wed 2/8/12
Certification	50 hrs	Mon 2/6/12	Tue 2/14/12
Quality Assurance	20 hrs	Tue 2/14/12	Fri 2/17/12
Documentation	10 hrs	Fri 2/17/12	Mon 2/20/12
Installation	1 day	Mon 2/20/12	Tue 2/21/12



Task Name	Duration	Start	Finish
Quarterly LACS Maintenance	**22.33 days**	**Fri 2/3/12**	**Sat 3/3/12**
Communication	1 day	Fri 2/3/12	Fri 2/3/12
Development	10 days	Fri 2/3/12	Thu 2/16/12
Quality Assurance	3 days	Thu 2/16/12	Tue 2/21/12
Documentation	1 day	Tue 2/21/12	Wed 2/22/12
Installation	1 day	Wed 2/22/12	Thu 2/23/12
Communication	1 day	Thu 2/23/12	Fri 2/24/12
Processing	3 days	Fri 3/2/12	Sat 3/3/12



APPENDICES:

Appendix A: AGIIS Duplicates Task Force Working Group Participants

Name	Company	Liaisons
Chip Donahue	John Deere	Precision Ag Council (1°)
Greg Erler	Monsanto	Seed Council (1°)
Pam Gaines	Brandt	Ag Retail Council (1°)
Lorie Gasso	CSC/AGIIS	
Amy Groh	CF Industries	Crop Nutrition Council (1°)
Brent Kemp	Southern States Coop	Feed Council (1°) & EFC Project
David Lane	AgData	Allied Provider Council (1°)
Steve Leary	Winfield Solutions	PCI Project, Seed Council (2°)
Keith Milburn	Growmark	Precision Ag, Ag Retail Council (2°)
Denise Nelsen	Mosaic	CNCII Project, Crop Nutrition & Feed Councils (2°)
John Reichle	Bayer Crop Science	Crop Protection Council (1°) & GTTR Project
Dave Rye	Syngenta	Seed Council (2°)
Tiffany Smith	BASF	Crop Protection Council (2°)
Wendy Smith	AgGateway	Ornamental Horticulture Council
Kelly Uland	Dow Agroscience	Crop Protection Council (2°)
Josh Wall	CSC/AGIIS	

Appendix B: AGIIS Duplicates Task Force Input Feedback Group Participants*

Name	Company	Name	Company
Jason Bass	Winfield Solutions	Sylvester Miller	Syngenta Seeds
Teresa Belton	AgData	Ann Moody	Growmark
Karen Bourneuf	Monsanto	Ed Nimtz	Dow
Mike Boyer	Dow	Charlie Nuzzolo	GlobalRange / F4F Agriculture
Richard Bramhill	Dow	Richard Penhale	CPS
Cindy Camacci	DuPont	Burgess Perry	Bayer Crop Science
Vickie Campbell	Southern States Coop	Seth Petersen	Wilbur Ellis
Kay Campe	Rosens	Paul Petrie	AgData
Tammy Clausen	Mosaic	Linda Ramsey	Growmark
Christine Dingman	CF Industries	Karen Rajtar	Winfield Solutions
Dave Hoyt	United Suppliers	Rosemary Reid	Monsanto
Lori Edwards	Syngenta Seeds	Tim Roberts	AGRIS
Marianne Embree	CF Industries	Phil Romero	CPS
Denise Forrester	AgData	Brandon Scherzer	SSI
Kevin Hinksen	Bayer Crop Science	MaryAnn Semore	Monsanto
Sherman Hollins	AgData	Donna Skene	Mosaic
Doug Hoberty	Dow Agro Sciences	Jon Spelde	Growmark
Pam Innes	CPS	Jason Sprout	Growmark
Andrew Jeremiah	Monsanto	Valerie Stopher	J. R. Simplot
Merritt Kohn	XS Inc	Bonnie Straight	J.R. Simplot
Kelly Kuball	Syngenta Seeds	Dave Surber	Dow Agro Sciences
Pat Land	Southern States	Bob Whitty	Southern States
Peter MacLeod	Crop Life Canada	Jim Wilson	AgGateway
Paul Mackendrick	Heartland Coop	Pam Wilson	AgData
Bill Manwarren	Winfield Solutions	Vijay Yalamanchili	Winfield Solutions
Dan McMenomy	TKI	Lisa Zaudtke	Syngenta Seeds
Leean Mein	J. R. Simplot	Marilyn Hunter	AgGateway

*****All recommendations were also provided to the AgCIO Roundtable for review and feedback.

Appendix C: 2011 AGIIS Related Task Forces

- AGIIS Duplicates Task Force: addressed in this document
- Entity Rules Task Force: Reviewing current entity rules and creating a recommended set of entity rules supporting the eBusiness needs for all councils
- Product Task Force: Reviewing current "Product Directory" rules and process of the and will create a recommended path forward to increase value, use, consistency, and support the eBusiness needs for all councils
- D&B Transition Task Force: Developing a plan and process recommendation for an orderly transition away from the use of Dun & Bradstreet numbers and for a verification process to meet current and future needs
- Seed Council AGIIS Products Task Force: Completed. Their objectives were to 1) ensure AGIIS is maintained in a consistent and agreed upon manner by all subscribers by adhering to established guidelines and 2) to clean existing product data according to those guidelines. The deliverables included guidelines on how to load and maintain product data in AGIIS.

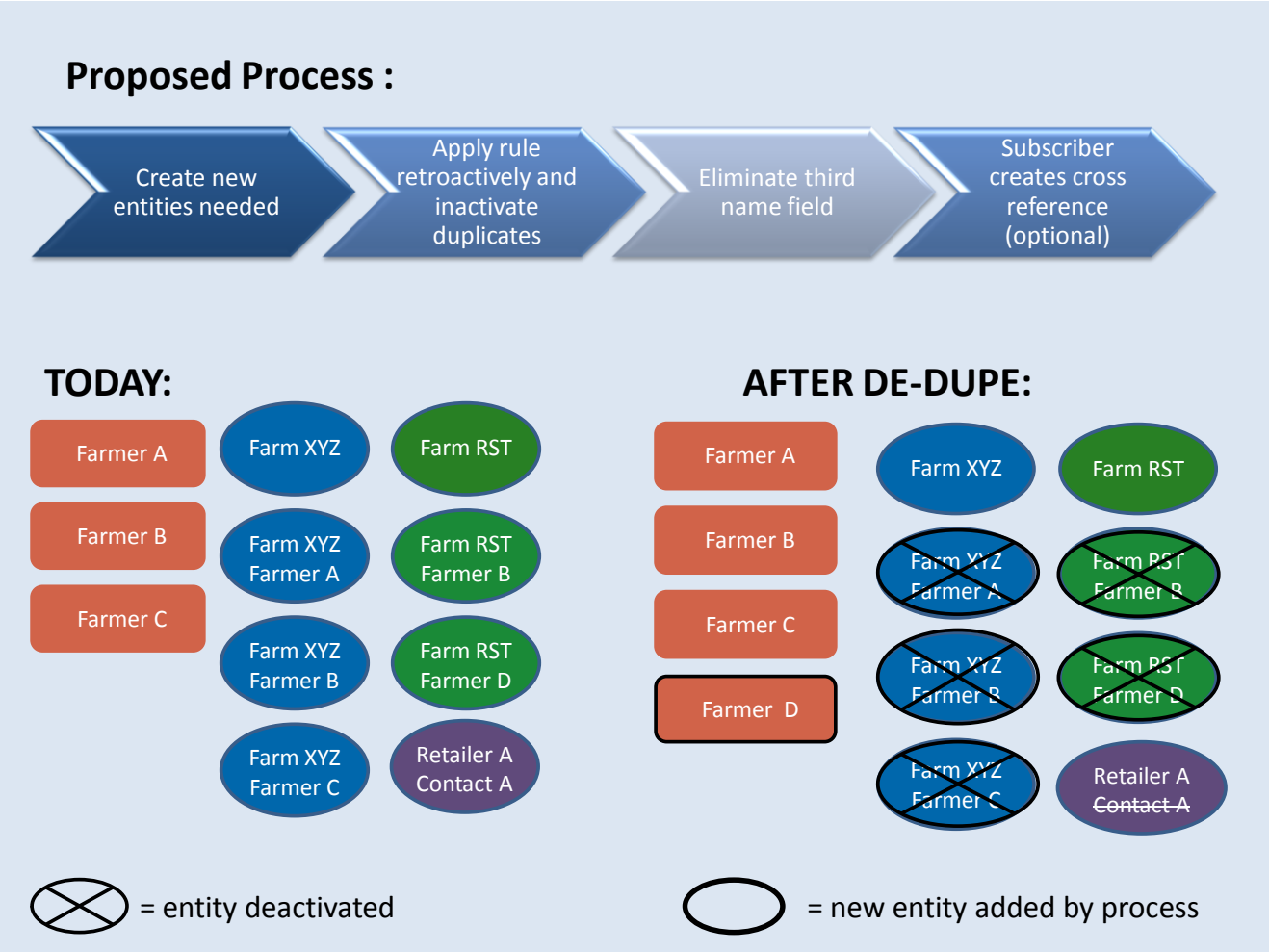
Appendix D: New Name Edits

*- CASH	*COD SALES	*Land Acc*	*seed dump*
* et al*	*COTTON ACC*	*Master Acc*	*seed Manager*
Ag Acct	*Cow Acc*	*Material Acc*	*Seed*Acc*
Ag Account	*Credit Card*	*Misc*Acc*	*Spec* Acc*
AGRONOMY ACC	*Crop*Acc*	*Misc*Cash*	*Split Acc*
*ATTN *	*Customer*	*New Acc*	*Spray Acc*
Bean Acc	*Dec'd*	*NOVARTIS ACC*	*Store Acc*
C ASH SALE	*Deceased*	*PETROLEUM ACC*	*Swine Acc*
C.O.D.	*DEFER*ACC*	*Pig Acc*	*Temp Acc*
C/O	*Deferred*	*Postal Acc*	*Test Acc*
COD *	*Delete*	*Poultry Acc*	*Test Grower*
*-Cash	*Expense Acc*	*Ranch Acc*	*Timber Acc*
CASH ACC	*EXPERIMENTAL ACC*	*Regular Acc*	*Tobacco Acc*
CASH Cust	*Farm Acc*	*Rep Acc*	*Transfer Acc*
CASH ONLY	*Feed Acc*	*Respray*Acc*	*Truck Acc*
Cash Patron	*FEEDLOT ACC*	*RESTRICTED ACC*	*Wheat Acc*
CASH Reimbursement	*FERT*ACC*	*Sale*Cash*	
CASH S.A.	*Fert*Only*	% or * anywhere in name	
CASH SAL	*Food Acc*	Co name = Account (only)	
CASH Tickets	*FUEL ACC*	First name = 5 digit number, Last name = Cash	
Cash-	*General Acc*	First name = Account, Last name = Cash	
Cash/	*Grain Acc*	First name = Cash, Last name = Cash	
CASHSALE	*GROWER SALE*	First name = Farms	
Cash-Sale	*Hay Acc*	First name = LLC, LLLP, LLP	
Cattle Acc	*Hog Acc*	Last name = *CashSale*	
*Chem*Acc*	*HOLD ACC*	Last name = Account (only)	
CHEMICAL ACC	*Holding Acc*	Last name = Manager	
Closed	*House Acc*	Last name = II, III, IV, V, VI (only 1)	
COD ACC	*Internal Acc*	Last name = LLC, LLLP, LLP (only 1)	
COD ONLY	*Inventory*	Last name = MC (only)	

Appendix E: New Address Edits

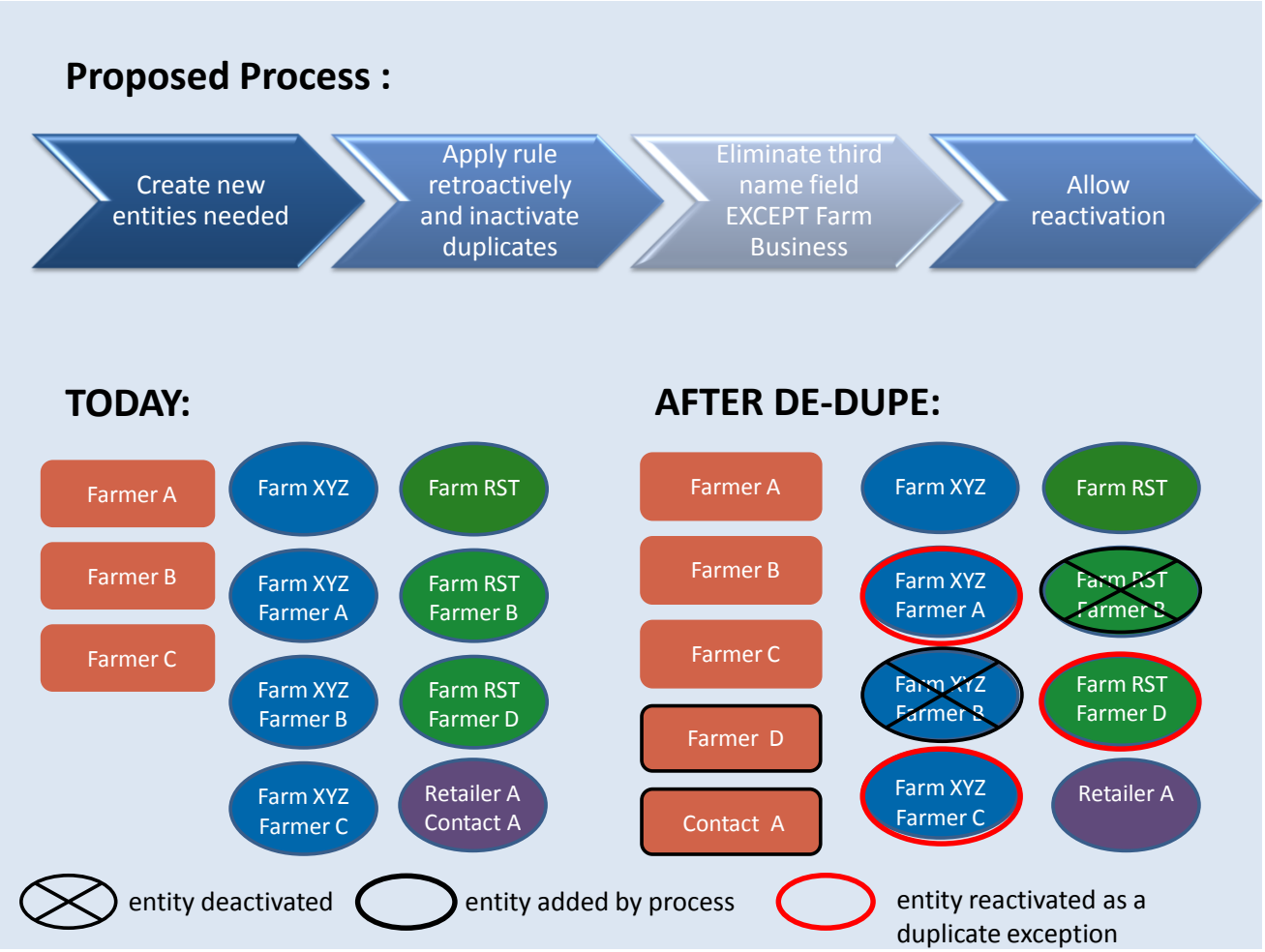
Invalid address without address override
RR without box number
General Delivery
Unknown

Appendix F: Original Third Name Proposal



Note: All blue records have the same address; all green records have the same address.

Appendix G: Proposed Third Name Solution



Note: All blue records have the same address; all green records have the same address.

APPENDIX H: Examples of Address Scenarios

1. Street address vs. PO Box

#		
1	Company Name:	IMPERIAL TERMITE & PEST
	DBA Name	IMPERIAL TERMITE & PEST
	Grower Name	
	Physical Address	5511 N 30TH ST, OMAHA, NE 68111-1612
	Mailing Address	
2	Company Name:	IMPERIAL TERMITE & PEST
	DBA Name	IMPERIAL TERMITE & PEST
	Grower Name	
	Physical Address	
	Mailing Address	PO BOX 111390, OMAHA, NE 68111-5390

2. RR# Box# vs. 911 address

#		
1	Company Name:	
	DBA Name	
	Grower Name	JAMES C HALL
	Physical Address	
	Mailing Address	RR 1 BOX 193, SOUTH HILL, VA 23970-9509
2	Company Name:	
	DBA Name	
	Grower Name	JAMES HALL
	Physical Address	
	Mailing Address	165 S MECKLENBURG AVE, SOUTH HILL, VA 23970-2603

3. Physical & mailing address vs mailing address only

#		
1	Company Name:	
	DBA Name	
	Grower Name	MARK BEER
	Physical Address	122 W SOUTH ST, MASCOUTAH, IL 62258-1913
	Mailing Address	6350 LIEBIG SCHOOL RD, MASCOUTAH, IL 62258-4026
2	Company Name:	
	DBA Name	
	Grower Name	MARK BEER
	Physical Address	
	Mailing Address	6350 LIEBIG SCHOOL RD, MASCOUTAH, IL 62258-4026

4. Location Description

#		
1	Description	ARIZONA DEPT OF TRANSPORATION
	Grower Name	
	Physical Address	THREE WAY MAINTENANCE JUNCTION US 191 SR75 &78, DUNCAN AZ 85534
	Mailing Address	