Traceability Date Exchange Architecture (TDEA)
White Paper

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TDEA Objectives

- Advance the dialogue around **<u>serialized</u>** data exchange and data architecture models

- Encourage input from all industry stakeholders

- Establish a common understanding of existing models

- Determine if consensus views exist and if harmonization of models may be possible

- Assess the need for additional pilots/proof of concept work

- Identify desired aspects of future pilot/proof of concept work

- The White Paper documents the workgroup comments on all of these topics.

Goals of White Paper

- Delineate choreography types and other considerations
- Establish a common understanding of the various models
- Document the merits (pro's and con's) of the various models as seen by the work group participants
- Discuss harmonization opportunities or define a hybrid approach to be assessed
- Advance the work effort required in order to make decisions regarding the desired choreography for future mandates (U.S. and other)

High Level Questions

- Where the data resides
- How the data moves
- Who owns and manages the data
- Who has access to the data

Individual Market Requirements

- Differences in market requirements illustrate different data choreography models.

- Done in template format: Mandate status/Serialization/Key Dates/Supply Chain Data/Data Repositories/Funding/Governance.

- Markets covered: Brazil, China, US, EU, Turkey, South Korea, Argentina,

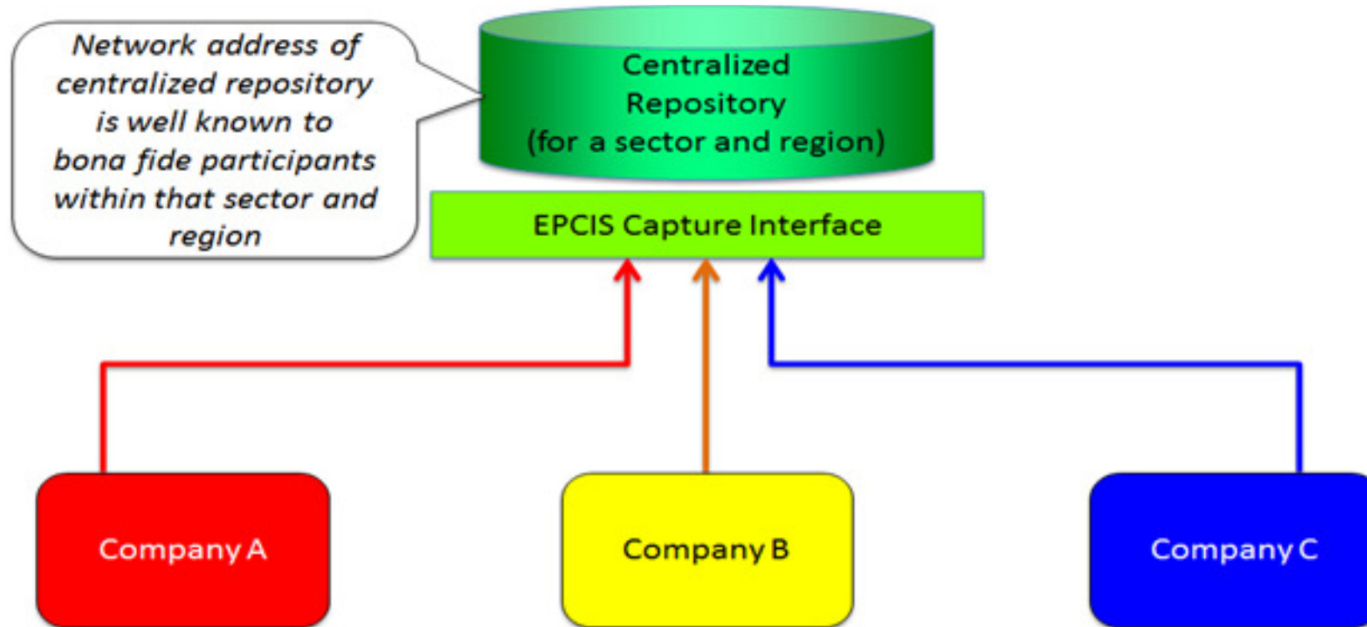# Data Storage & Choreography Model

Fundamental Model Aspects:

- What data is needed?
    - Master Data
    - Transaction Data
    - Event Data
- Where does the data reside?
    - Centralized
    - Semi-Centralized
    - Distributed
- What is the data choreography?

Choreography is the sequence of steps and movements needed to operate the model and define the process.

General discussion of the three aspects highlighted multiple topics including;

cost, data rights, and ownership
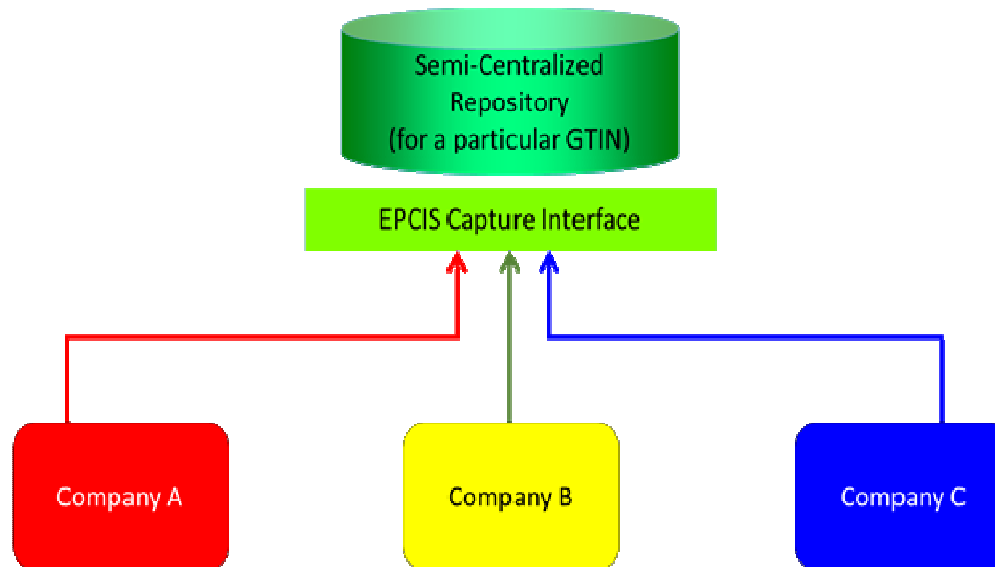
Centralized Model Archetype

Network address of centralized repository is well known to bona fide participants within that sector and region

Centralized Repository (for a sector and region)

EPCIS Capture Interface

Company A

Company B

Company C

Model graphics used with permission from GS1 Global.

In a central database model, the central repository where all participants store their event data is queried in order to obtain data required for reporting.
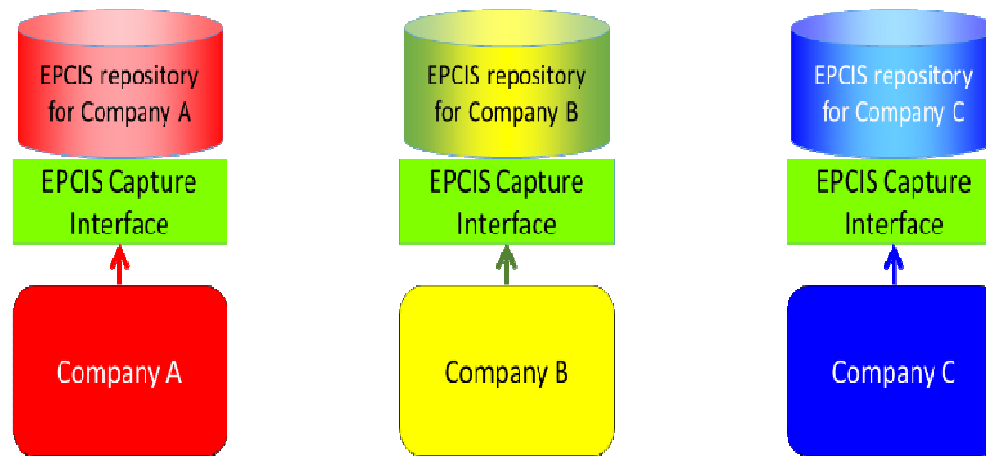
Semi Central Model Archetype

In a semi-central database model, each repository nominated to store a given GTIN's event data is queried in order to obtain data required for reporting.
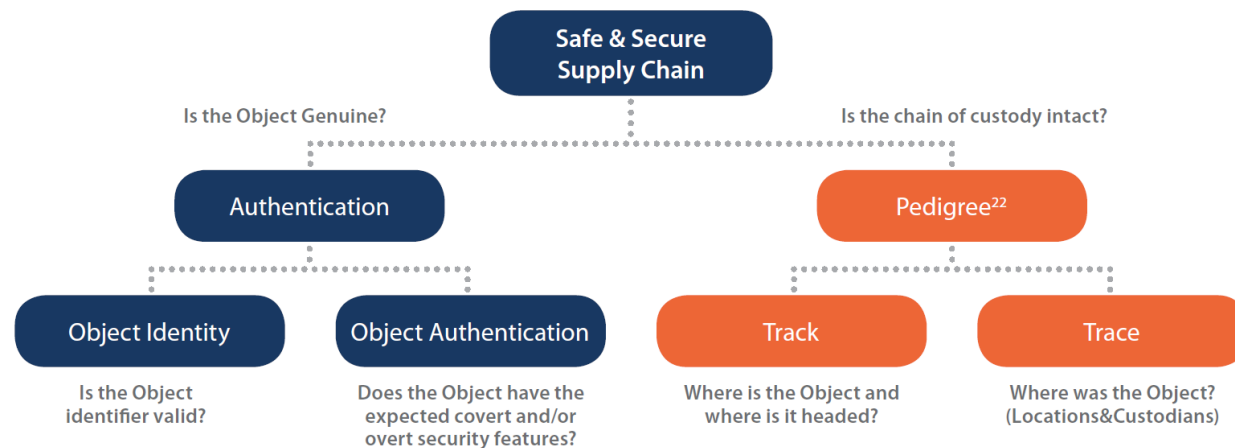
Distributed Model Archetype

In a distributed database model, each repository which was used to store a given product instance's captured event data along each step of the supply chain path is queried in order to obtain data required for reporting.
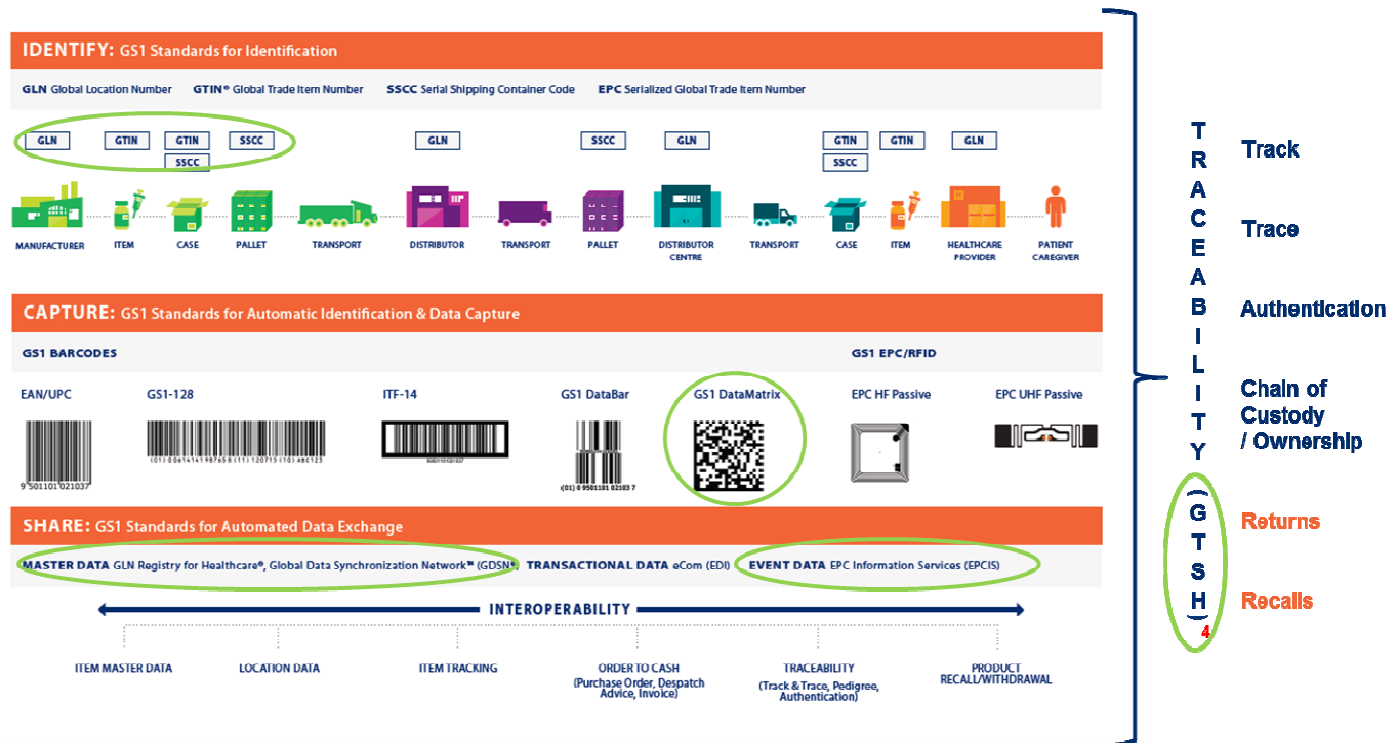
Data Choreography

- Ideal model choreography is achieved when alignment of created data allows appropriate access for the intended purpose.
- Can the product identification features be verified?
- Can the product be tracked to where it is – or traced to where it came from?

Safe & Secure Supply Chain

Is the Object Genuine?   Is the chain of custody intact?

Authentication   Pedigree[22]

Object Identity   Object Authentication   Track   Trace

Is the Object identifier valid?   Does the Object have the expected covert and/or overt security features?   Where is the Object and where is it headed?   Where was the Object? (Locations&Custodians)

Identify, Capture, Share

- How will things be identified?
- What is used for data capture?
- How will data exchange be performed?
- What is the process to ensure objectives are met?

Summary of Data Storage & Choreography Issues

Stakeholders must agree on:

- What data is needed to meet the objective?
- Where is the data stored?
- How does the data move and who has access to it?
- How to define the process of "who has to do what – and when does it need to be done?"

Advancing the Industry Dialog

- Proactive collaboration among all sectors.
- Understand the priorities and concerns of each sector.
- Timing of POC work.
    - What characteristics should be tested
    - How would results be evaluated against each other.
    - Can we test on an appropriate scale to determine real operational impact?
    - Can more than one industry pilot run concurrently?

- Future Harmonization and Implementation Impact.

Assessment Criteria for Characteristics

- Cost-effectiveness
- Ease of Use/Access
- Complexity
- Scalability
- Flexibility
- Reliability
- Operational Impact
- Interoperability
- Security
- Governance
- Data Access and Ownership
- Standards-based

POC Work

The TDEA participants labeled these as a list of characteristics requiring POC work:

- Aggregation & Inference
- Operational Impact of Serialization
- Errors and Exception Handling
- Data Movement
- Transaction Data v. Master Data
- Cost Comparisons
- Data Access & Ownership
- Inventory Visibility
- Test Semi-centralized model

Next Steps and Timing

- PDSA Assessment Criteria & Evaluation

- HDMA POC Work

- US FDA and ABAC (APEC Business Advisory Council) Pilots

- Industry call to action.

  - Industry must engage in 2015 to have impact on developing requirements.

Thank You