“The term standard... includes all of the following”

- *Common and repeated use* of rules, conditions, guidelines or characteristics for products or related processes and production methods, and related management systems practices.

- The *definition* of terms; *classification* of components; *delineation* of procedures; *specification* of dimensions, materials, performance, designs, or operations; *measurement* of quality and quantity in describing materials, processes, products, systems, services, or practices; *test* methods and sampling procedures; or *descriptions* of fit and measurements of size or strength.

Source: [www.standards.gov](http://www.standards.gov) and OMB Circular A-119
Examples of Industry Standards

- Cell Phones / telecommunications
- Computer Hardware
- Computer Software
- Electrical Outlets and light bulbs
- USB devices / connections
- DVD / CD’s
- Automotive / Truck Tires
- Nuts & Bolts
- Train tracks
- Weights & Measures
- Paper Sizes i.e. letter, legal, etc.
- And many many more
What Are the GS1 Standards?

• Industry developed and accepted voluntary standards for
  – Company (Trading Party) Identification
  – Product identification
  – Electronic Data Interchange (EDI) / Electronic messaging
  – Bar Codes
  – Radio Frequency Identification (RFID)
  – Asset identification
  – … And more
Who is GS1 US?

• Established 1973 to manage development and adoption of the U.P.C.
• Not-for-profit, neutral, member driven
• Promotes implementation and voluntary use of GS1 Standards in the U.S.
• Works with industry to develop, understand, and adopt GS1 industry standards to improve supply chain efficiency and integrity
• Provides industry-driven solutions and services that help enhance the customers’ satisfaction and consumer safety
Industries Using GS1 Standards

- Agriculture
- Alcohol Beverages
- Apparel
- Audio / Video
- Automotive
- Chemicals
- Computer Hardware and Software
- Cosmetics and Fragrances
- Electrical Supplies and Equipment
- Electronics
- Food and Beverage
- Foodservice
- Fresh Meats, Poultry, Seafood, Deli
- Furniture
- General Merchandise
- Healthcare / Med Surg
- Healthcare / Rx
- Healthcare / OTC
- Hobbies and Crafts
- Home Accessories
- Home Furnishings
- Home Improvement / DIY
- Jewelry
- Lawn and Garden
- Maintenance Repair and Operations
- Pet Foods and Supplies
- Produce
- Public Sector / Government
- Publishing
- Raw Materials
- Shoes
- Sporting Goods
- Telecommunications
- Toys and Games
- And others
Who Are Using GS1 Standards in the Food Industry?

• Manufacturers
  – Grocery Products
  – Dairy Products
  – Beverage Products
  – Frozen Foods
  – Produce
  – Fresh meat, poultry, pork and seafood
  – Organic and Conventional Products
  – Branded and Private Label Products
  – Foodservice
  – Ingredients and raw materials
  – Equipment and supplies

• Retailers, Wholesalers, Distributors, Restaurant Operators

From the VERY LARGE to the very small

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## Automatic Identification, Data Capture, and Data Exchange

### Automatic Identification:

<table>
<thead>
<tr>
<th>Company</th>
<th>Product</th>
<th>Inner Pack, Case, Pallet</th>
<th>Location</th>
<th>Assets</th>
<th>Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>• GS1 Company Prefix</td>
<td>• GTIN® - Global Trade Item Number®</td>
<td>• GTIN - Global Trade Item Number</td>
<td>• GLN - Global Location Number</td>
<td>• GIAI - Global Individual Asset Identifier</td>
<td></td>
</tr>
<tr>
<td>• EPC Manager Number</td>
<td>• EPC - Electronic Product Code™</td>
<td>• SSCC – Serial Shipping Container Code</td>
<td>• EPC</td>
<td>• GRAI - Global Returnable Asset Identifier</td>
<td></td>
</tr>
<tr>
<td>• GLN</td>
<td></td>
<td></td>
<td></td>
<td>• GSRN - Global Service Relation Number</td>
<td></td>
</tr>
</tbody>
</table>

### Data Capture:

<table>
<thead>
<tr>
<th>Product:</th>
<th>Barcodes</th>
<th>Radio Frequency Identification - RFID</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAN/UPC</td>
<td>GS1 DataBar™</td>
<td></td>
</tr>
<tr>
<td>Data Matrix</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Case &amp; Pallet:</th>
<th>Electronic Commerce (Transactional Data)</th>
<th>Data Synchronization (Master Data)</th>
<th>Physical Visibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>GS1-128</td>
<td>Electronic Data Interchange (EDI)</td>
<td>Item data</td>
<td>EPC Information Services – EPCIS</td>
</tr>
<tr>
<td>ITF-14</td>
<td>GS1 Business Message Standards using Extensible Markup Language (XML)</td>
<td>Price and promotion data</td>
<td></td>
</tr>
</tbody>
</table>
**Our vision**
A world where things and related information move efficiently and securely for the benefit of businesses and improvement of people's lives — everyday, everywhere.
GS1 Traceability Vision

• All traceable items are identified with the appropriate GS1 identifier at point of production

• Identification remains with/on the item until it is used

• All physical locations are identified with the appropriate GS1 identifier across the entire supply chain
GS1 Traceability Vision

• Agreed master data is captured and shared (e.g. via GDSN) on demand among trading partners

• Agreed event and transactional data is captured and shared on demand amongst traceability stakeholders

• Trading partners or industry sectors determine the relevant level of accuracy and depth of their traceability system

• Trading partners or industry sectors choose the relevant enabling technologies to implement traceability in their environment
Two Key GS1 Standards

• Global Trade Item Number (GTIN)
  – The GTIN uniquely identifies any one product offered in commercial trade. Assignment of GTINs is standardized worldwide. GTINs can be 8, 12, 13 or 14 digits in length and its three components are a GS1 company prefix, an item reference, and a check digit.

• Global Location Number (GLN)
  – The GLN is a 13-digit number used to uniquely identify a physical location, functional entity, or legal entity. Its three components are a GS1 company prefix, a location reference number, and a check digit.
GS1 Standards in the Supply Chain

GLN

Mfg  Item  Case  Pallet  Distributor  Pallet  Case  Item  Store  Customer

GTIN  EPC

Barcodes

GS1 System Data Carriers

EPC/RFID

Automatic Identification

Data Capture

Item data, price and promotion data, ship notice, invoice

Data Exchange

request for quotation, planning schedule, PO

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GS1 Standards in the Fresh Foods Supply Chain

Grower     Packer   Case         Pallet     Trucks   Distributor    Trucks      Pallet   Case              Store           Customer

GTIN: Global Trade Item Number
GLN: Global Location Number

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The GS1 assigned Company Prefix forms the basis for all GS1 identifiers for products, locations, assets, documents, etc.
Barcode Symbols Used on Cases

ITF-14 Symbol
- Used to encode only Global Trade Item Number (GTIN) to identify products
- Can be printed directly on cardboard or adhesive label
This GS1-128 barcode encodes the GTIN (Global Trade Item Number), AI (01) and Batch or Lot Number, AI (10), where the Batch/Lot number is numeric digits.

This GS1-128 barcode encodes the GTIN (Global Trade Item Number), AI (01), Packaging Date, AI (13) in YYMMDD format, and Batch/Lot Number, AI (10), where the Batch or Lot Number encodes alphanumeric characters.
Leveraging the Global Trade Item Number

GTIN: 10614140000001

Product Master

Record and Store
• Product
• Location
• Day / Time

Brand XYZ 12 Pack 32 oz
Canned Tomatoes
Height 18”, Width 18”,
Depth 24”
Produce Industry Moving to GS1 DataBar

- Specific grower / packer / shipper identification
- Specific product identification
- Still carries PLU for those not scanning GS1 DataBar
- Retailers promoting use
  - Walmart*
  - Kroger
  - Winn-Dixie
  - Publix
  - More coming
Food Industry Traceability Initiatives
Leveraging GS1 Standards

• Produce Traceability Initiative (PTI)
  – Launched in late 2008 and focusing on case level identification
    • Global Trade Item Number (GTIN)
    • Lot / Batch Number
  – Target completion date of 2012

• Grocery Industry
• Dairy Industry
• Meat, Poultry, Pork Industries
• Foodservice
In Closing …

• GS1 Standards for product and location identification can provide the building blocks for business processes and information to support traceability.

• Manufacturers, Retailers and Solution Providers can leverage these open standards to build systems and solutions to meet individual industry, customer and supply chain needs.

• GS1 US and the other GS1 organizations around the world are working to ensure the proper standards are in place to support industry’s traceability needs.
Questions?
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