

# EPC and RFID

## The Challenges of Tag Serialization

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New York City, NY August 13, 2008

*Ich freu' mich drauf!*



# SGTIN-96 Standard Layout

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## EPCglobal SGTIN-96 Standard Layout

	Header	Filter Value	Partition	EPC Mgr. Number (Co. Prefix)	Class (Item Reference)	Serial
96-bit GTIN	8 bits	3 bits	3 bits	20-37 bits	7-24 bits	38 bits
	0011 0000 (actual value)	8 (decimal capacity)	8 (decimal capacity)	137,438,953,471 (decimal capacity)	16,777,215 (decimal capacity)	274,877,906,943 (decimal capacity)

Note: Company Prefix + Item Reference = UPC.

Example: UPC 0039307704915 with Serial Number 227,438,954,819 becomes  
EPC 303402662C44D6F4F46B0943.



## What Is Serialization?

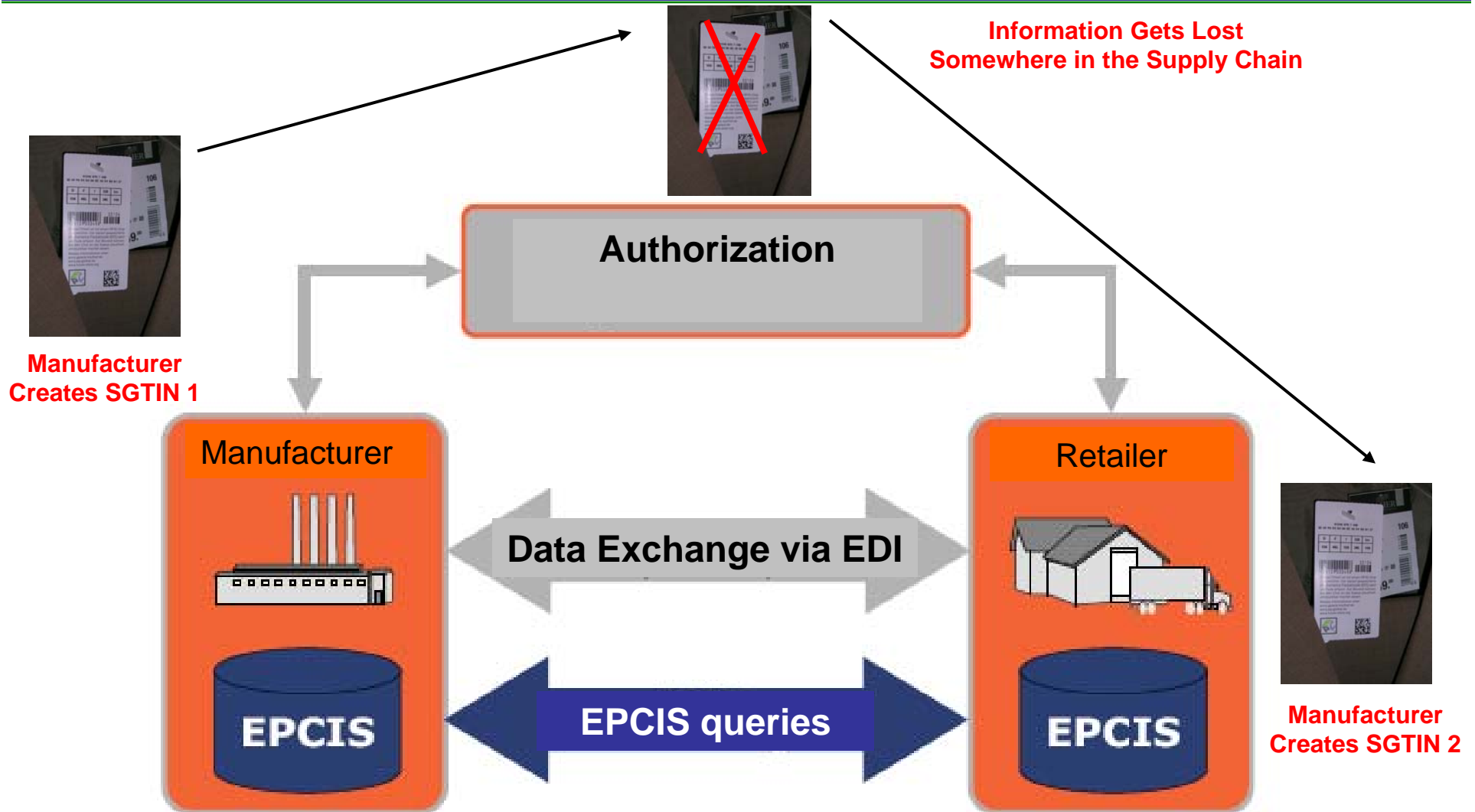
- Each item is unique. A serialized number is added to the GTIN -> SGTIN.
- Each item has to be tracked & traced individually.

## Concerns:

- More data and more data traffic.
- Which partner creates and defines the serial number?
- When does the EPC get created?
- What to do if the serialized information gets lost (EPC unreadable)?
- What to do if the serial number changes (retagged)?
- Will this serial be used in all systems or only when necessary?
- Will all events be shared between partners or only shared on demand?
- What length vendor number to use when encoding a new tag?

# Loss of Tag or EPC

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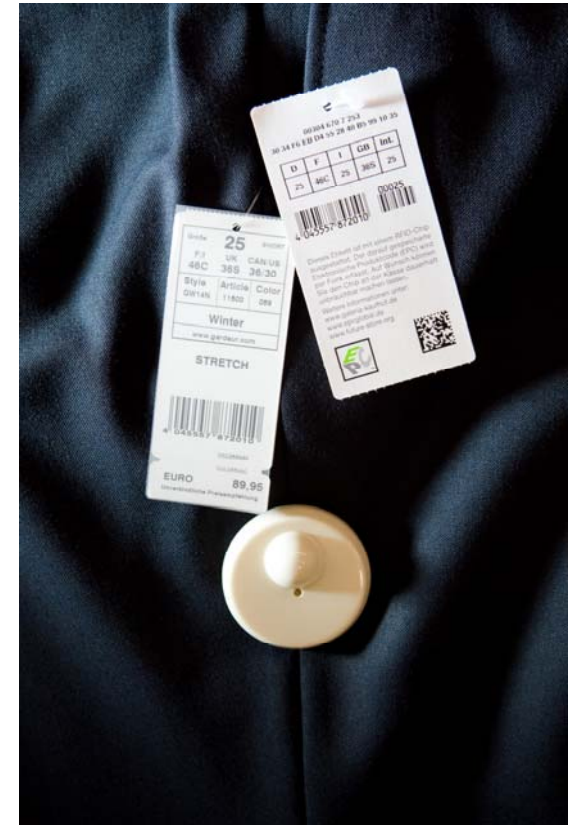


## Dealing With Lost Information

- Currently 2D barcode with EPC on the paper tag.
- Future: Additional 2D barcode as a sewn-in label or printed onto the package.
- Long Term: Transponder integrated into the product as a sewn-in label, into the packaging or into the product (depends on consumer acceptance).

## Data Exchange When New EPC Is Encoded

- Currently no solution implemented.
- Internal working group to develop a process and data flow description for general EPC data exchange with a supplier.



## Dealing With Lost Information

- Currently 2D barcode with EPC on the paper tag.
- Store can re-encode tag by scanning 2D barcode.
- Long Term: Transponder integrated into the product as a sewn-in label, into the packaging or into the product (depends on consumer acceptance).

## Data Exchange When New EPC Is Encoded

- Currently can create new tags at the DC or store.
- New serial number is pulled from the DC or store range.
- The new EPC is not related back to the vendor or cross referenced back to the original EPC (if known).
- So far vendors are only concerned with UPC not EPC.



Managing of serialization is less a technological but more a procedural topic:  
Responsibility was taken by GS1 (head office in Brussels (Belgium) and not by EPCglobal.

Missing Identification Resolution Work Group  
Launch: June 2008, Sunset: End of year 2008.

Scope:

***What to do if the serialized information of an EPC is lost?***

Data type could be: EPC tag, GS1-128, GS1 DataBar, GS1 DataMatrix

1. Analyze the scope of the problem including use cases, identify current applications affected and temporary solutions.
2. Provide guidance to produce business users on how to apply the GS1 System in this particular case within their sector and across all regions.
3. Gives pro's and con's of every recommendation and possibility of implementation.

Contact:

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Link:

[http://www.gs1.org/docs/gsmc/call\\_to\\_action/CTA\\_%20Missing\\_ID\\_WG\\_06\\_2008.pdf](http://www.gs1.org/docs/gsmc/call_to_action/CTA_%20Missing_ID_WG_06_2008.pdf)

## Implementation and Migration

Implementation and Sharing Joint Requirement Group:

Guidelines and recommendation for new or forthcoming RFID users:

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Thank You!

Any Questions?