



# Visibility as enabler towards the Internet of Things: a perspective

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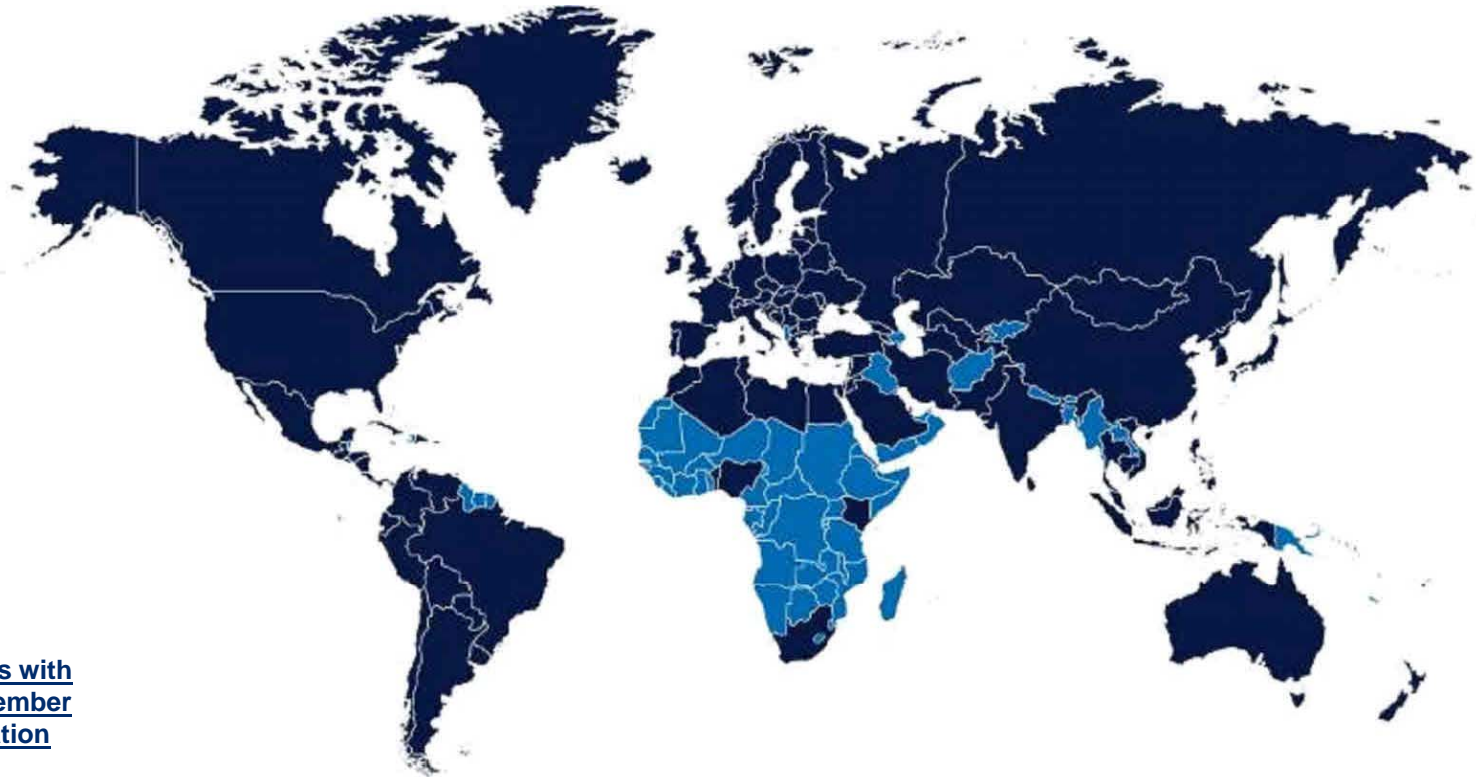
Public policy Europe

ICANN Studienkreis

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## Used by millions of companies



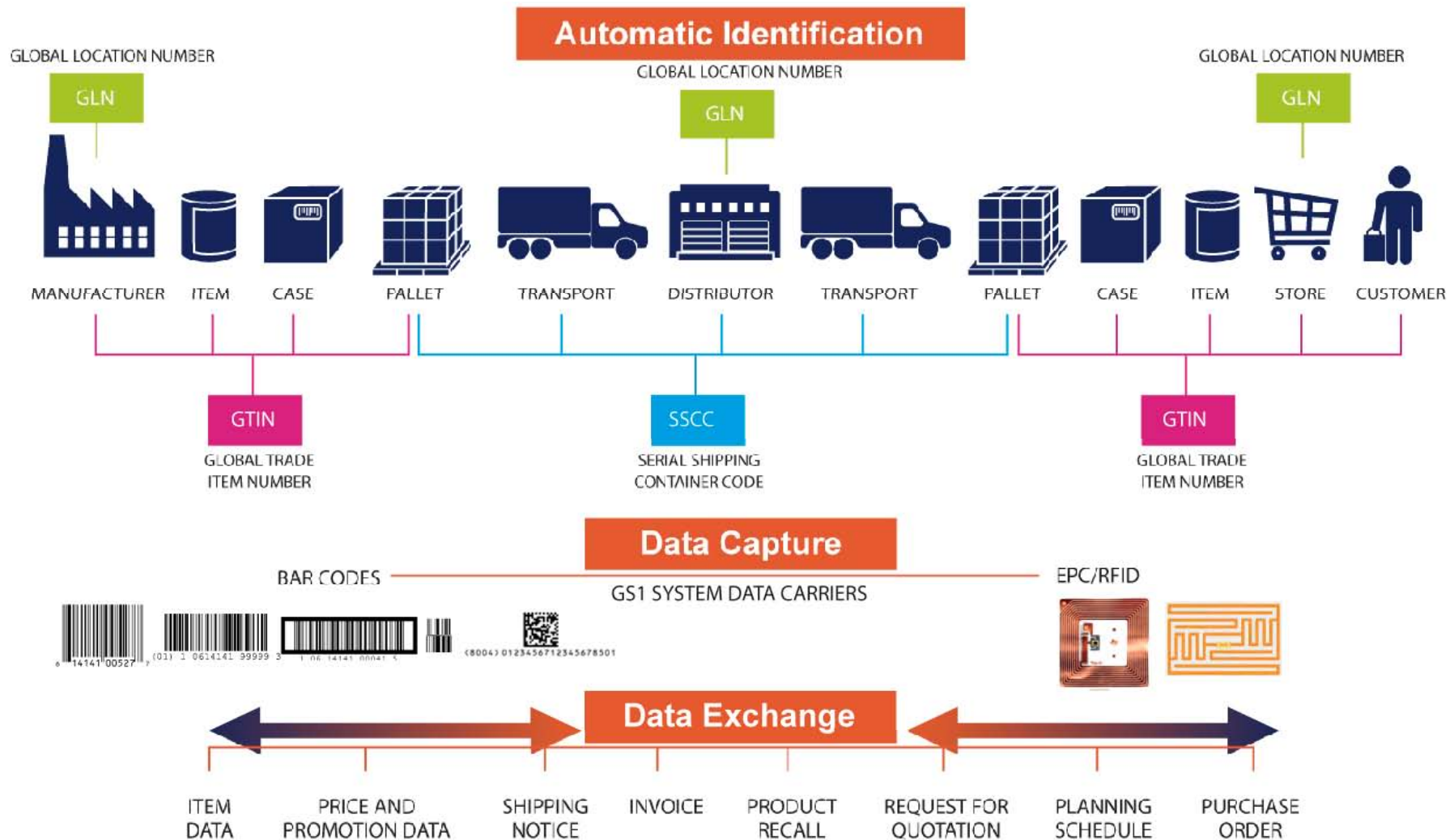
■ Countries with a GS1 Member Organization

■ Countries served on a direct basis from GS1 Global Office (Brussels)

**Global Office and 108 Member Organizations with 2,000 staff members.**  
**1.5 million companies**  
**in 150 countries served.**



# GS1 System in a Typical Supply Chain





# Visibility

- A capability that **enables** companies to **understand and improve processes that affect “things”** as they move through supply chains
- **Business** processes and **technology**
- Applicable in Food Safety, Healthcare, Food service, Aerospace & Defense, Transport & Logistics and other industries



## In other words..

*Visibility is the ability to see and act on information*

- Understanding the **business processes** that affect the “things” as they move through the supply chain
- Providing the ability to answer a broad range of questions

What do we want to know

- When will new iPhone v arrive at opening of Grand Opening Store 555?
- Which infusion pumps are missing from Ward 5 of Downtown Hospital?
- Did my laptop make it back to the Repair facility and what is the status?
- Where are all packages of ground beef packaged in #232 Manu. facility on 13 Jan 2009?
- Why is container of medical supplies for villages in Philippines hit by tidal wave held up in Customs?
- Case #678 of product is missing at the retailer. Where was it last seen?
- How do I recycle the packaging of this product?

# GS1 Value Chain Visibility Standards

## Identify

Company	Product	Inner Pack, Case, Pallet	Location	Assets	Services
<ul style="list-style-type: none"> <li>GS1 Company Prefix</li> <li>EPC Manager Number</li> <li>Global Location Number (GLN)</li> </ul>	<ul style="list-style-type: none"> <li>Global Trade Item Number (GTIN)</li> <li>Electronic Product Code™ (EPC)</li> </ul>	<ul style="list-style-type: none"> <li>Global Trade Item Number (GTIN)</li> <li>Serial Shipping Container Code (SSCC)</li> <li>EPC</li> </ul>	<ul style="list-style-type: none"> <li>Global Location Number (GLN)</li> <li>EPC</li> </ul>	<ul style="list-style-type: none"> <li>Global Individual Asset Identifier (GIAI)</li> <li>Global Returnable Asset Identifier (GRAI)</li> <li>EPC</li> <li>Global Document Type Identifier (GDTI)</li> </ul>	<ul style="list-style-type: none"> <li>Global Service Relation Number (GSRN)</li> <li>EPC</li> </ul>

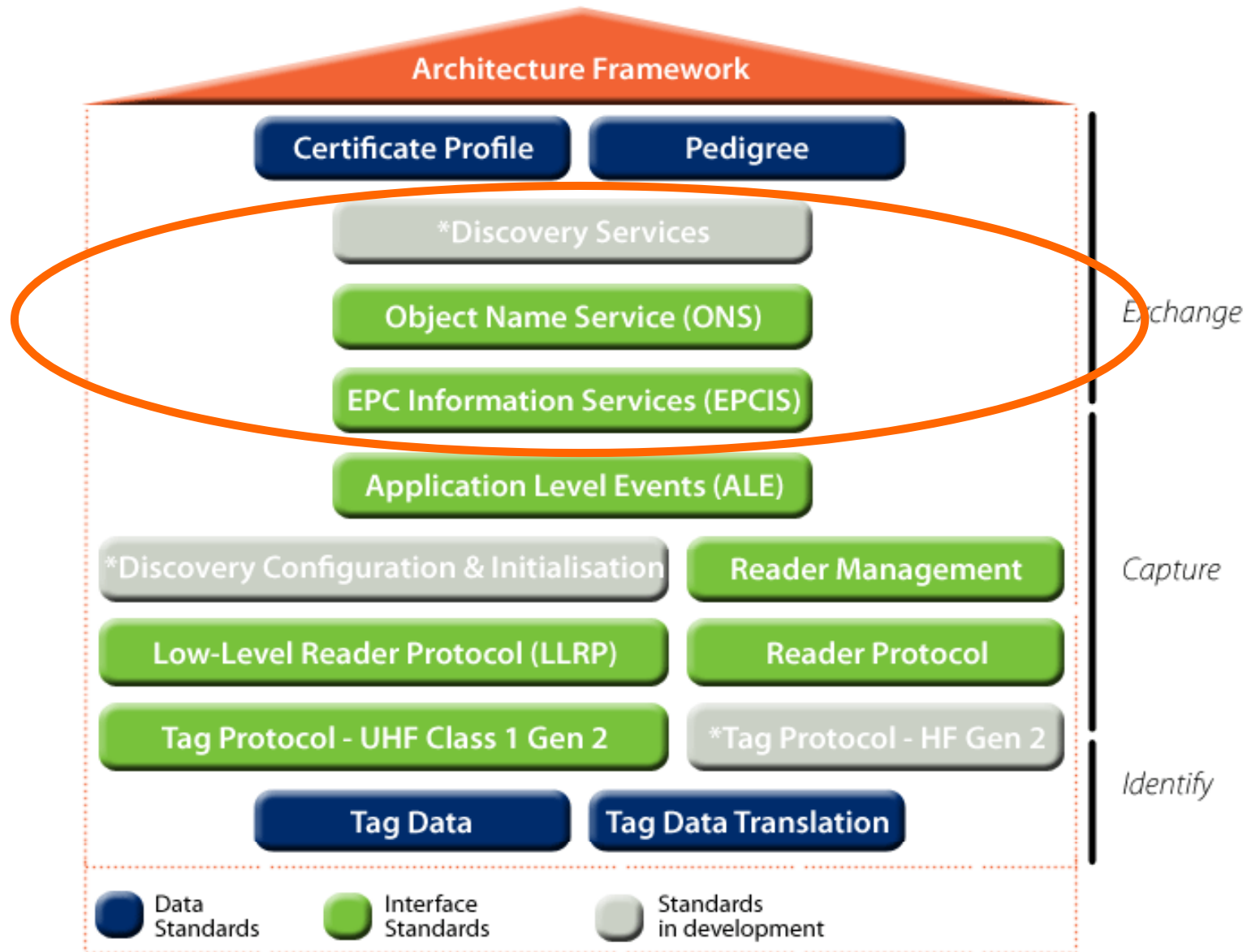
## Capture

Bar Codes					Radio Frequency Identification (RFID)	
EAN/UPC 	GS1 DataBar™ 	ITF-14 	GS1-128 	Data Matrix 	EPC HF Passive 	EPC UHF Passive 

## Share

Electronic Commerce (Transactional Data)	Data Synchronization (Master Data)	Physical Visibility
<ul style="list-style-type: none"> <li>Electronic Data Interchange (EDI)</li> <li>GS1 Business Message Standards (XML)</li> <li>RosettaNet</li> </ul>	<ul style="list-style-type: none"> <li>Item Data</li> <li>Price and promotion data</li> </ul>	<ul style="list-style-type: none"> <li>EPC Information Services (EPCIS)</li> </ul>

# A Visibility Framework



# What is EPCIS Visibility Data?

- EPCIS Data consists of **events**, each of which records something that happened in the real world.
- Often, though not necessarily, triggered by reading an RFID tag.
- An event has four dimensions:
  - **What:** what physical objects were involved (EPC or other identifier)
  - **When:** when the event took place (timestamp)
  - **Where:** where the event took place (location identifier)
  - **Why:** what business process step was being carried out

