The Global Language of Business

RFID vs Data Matrix For Pharma Traceability

Panel Discussion

Wednesday 11th April 2018 - 16:00 - 17:15

The purpose of today's session

Look at both RFID and Data Matrix and understand the issues with adoption within Healthcare

Please welcome today's panel

- **Grant Courtney (Chair)**
  Manager, Falsified Medicines Directive Project, GSK

- **Pascal Aulagnet**
  Senior Manager, Global Serialisation - EMEA Client Partner, Pfizer

- **Sébastien Langlois-Berthelot**
  Project Manager, Roche

- **Camilo Higuita**
  IT & Innovation Manager, Crystal SAS, Colombia

Agenda

16:00 Introduction and purpose
16:15 Case Studies

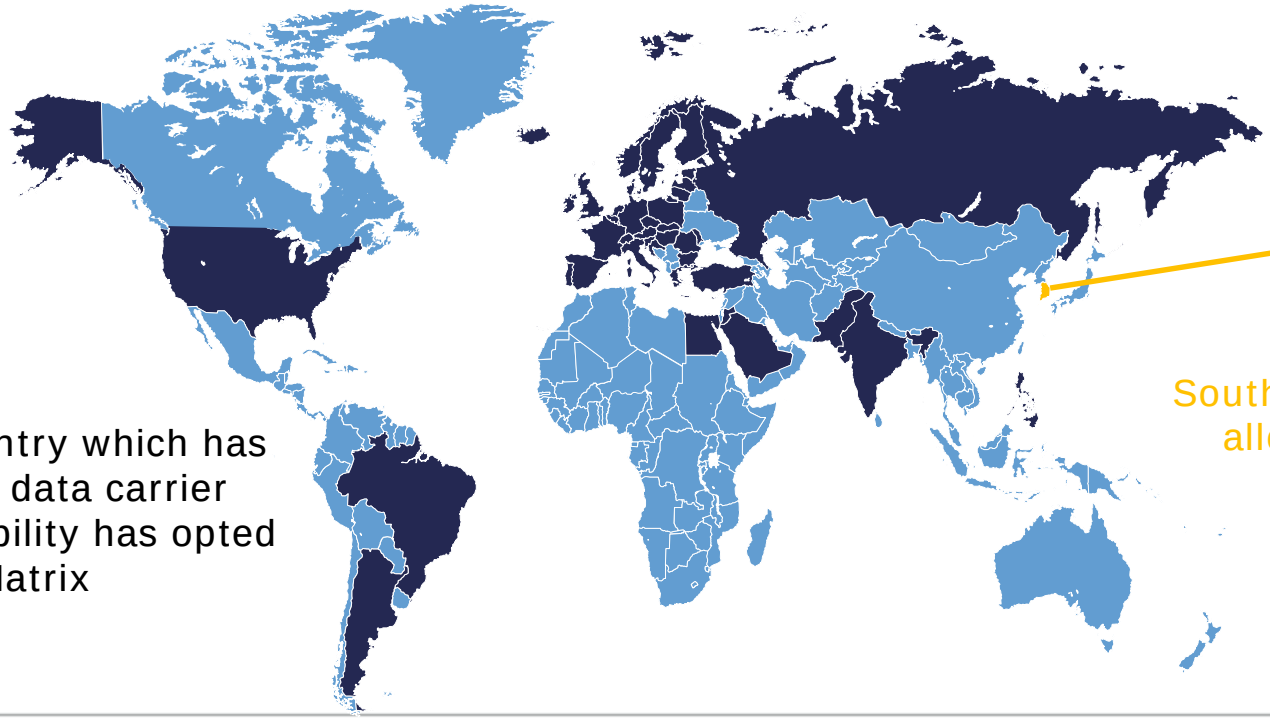
- GSK - Grant Courtney
- Roche - Sébastien Langlois-Berthelot
- Crystal SAS - Camilo Higuita
- Pfizer - Pascal Aulagnet

16:55 Questions & Answers
17:10 Summary
17:15 Close

RFID in use in retail

Data Matrix in use in Healthcare

Data Matrix vs RFID legislation overview



Every country which has selected a data carrier for traceability has opted for Data Matrix

South Korea also allows RFID

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Grant Courtney

Manager, Falsified Medicines Directive Project, GSK

GSK RFID Pilot

Introduction – Grant Courtney

- Member of GS1 Healthcare Leadership Team
- 23 Years experience in Healthcare - GSK
- 11 Years in Traceability

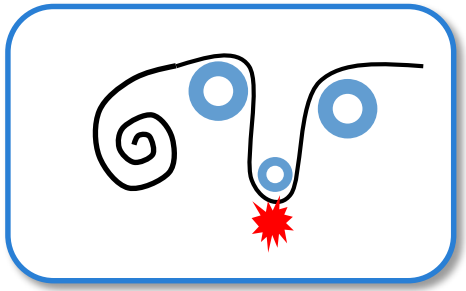
Scope

- Pilot to compare RFID vs Data Matrix
- Aggregation of US product
  - Bottle – Bundle – Case - Pallet
- Track and Trace from GSK to Wholesaler
  - Use of EPCIS to share traceability data
- Real product over a 6 month period
  - Stopped due to unacceptable ongoing issues

Key learnings

Reliability

- RFID labels were scanned and working on the production lines
- 2%-3% failed to scan (broke) at the warehouse – major disruption



Difficult technology to use

- Failure modes were difficult to identify and resolve

Key learnings

The need for a secondary back up

- Not all users of the product will have RFID readers and so the information has to be duplicated (at least human readable)
- This requires 2 solutions to be deployed, not just RFID
- Technically challenging to ensure both systems apply the same data

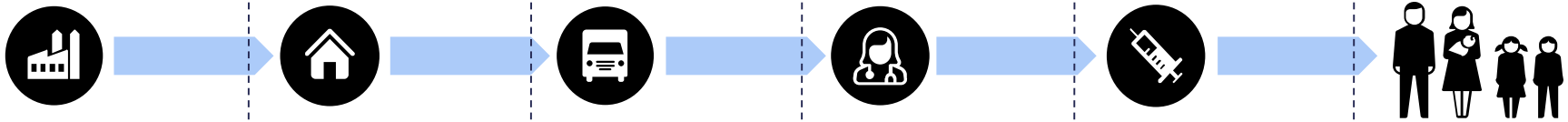
Expertise and knowledge

- There are very few experts available to design, deploy and problem solve RFID following the Healthcare level of validation and procedures

Acceptance by the patient

- There was concern show by users of the product e.g. privacy

Impacts on the supply chain



Ability to apply data in multiple formats

Reliability of RFID Tags

Knowledge and experience to set up and operate RFID technology

Scanning the wrong pack or failure to scan

Cost to implement

How to manage product returns if RFID tag is killed

Privacy issue if the RFID tags are not “killed” on dispensing

Unknown impact on product from scanning

Environmental impact – Millions of tags into landfill

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Sébastien Langlois-Berthelot

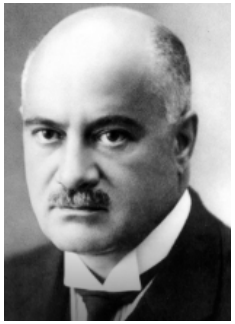
Project Manager, Roche

RFID vs DataMatrix for Pharma Traceability

Sébastien Langlois-Berthelot

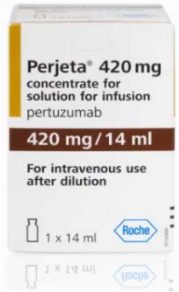
About Roche

A pioneer in Healthcare



- Founded in 1896 by Fritz Hoffmann-La Roche in Basel, Switzerland
- 1897 onwards Roche starts to expand worldwide
- 1968 Roche enters Diagnostics Market

TODAY – ROCHE CREATES INNOVATIVE MEDICINES AND DIAGNOSTIC TEST THAT HELP MILLIONS OF PATIENTS GLOBALLY



- Largest Biotech Company
- Frontrunner in Personalized Healthcare
- Global leader in Cancer Treatments

Benefits of RFID vs DataMatrix

Radio-frequency Identification (RFID) 	DataMatrix Barcode 
No need to scan each unit	No issues with physical interference with materials with radiofrequency sensitivity
No data limitation due to barcode size	Low costs compared to RFID implementation
Less database integration (required data available on the tag)	Wide adoption by customers and regulators around the world
No need to maintain and share hierarchy between units and logistics units	Small size customers, wholesalers and hospitals more likely to invest in barcode readers and data sharing rather than RFID technology

DataMatrix is the Preferred Data Carrier for *Product Identification, Authentication and Traceability at Roche*

Product Identification

GS1 DataMatrix used on **primary and secondary packaging to identify product** (GTIN), batch and expiry date

Product Authentication

GS1 DataMatrix used on secondary packaging to **authenticate/verify sales pack** (GTIN+Serial Number) through database (EU, Argentina, Turkey)

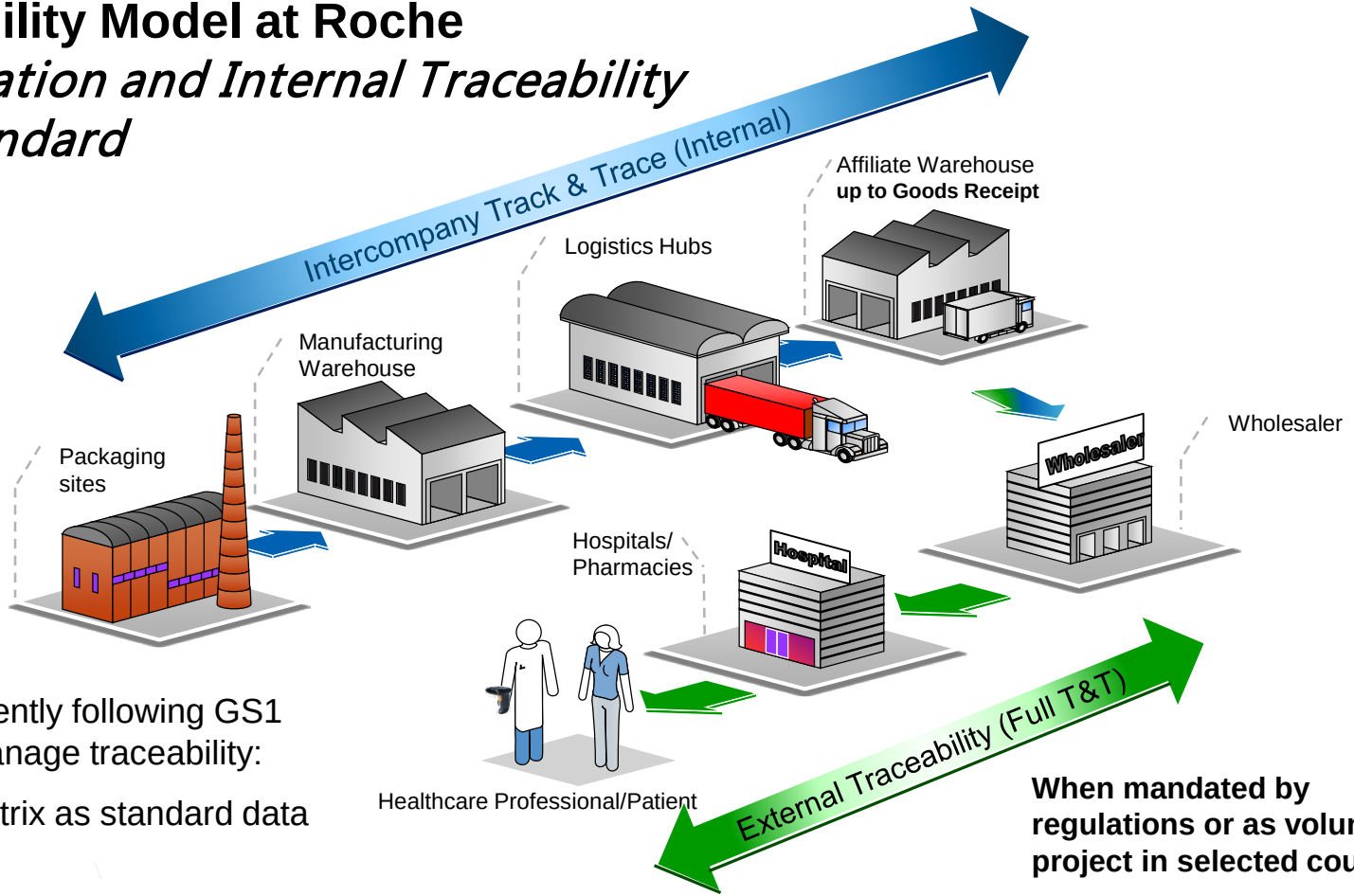
Product Traceability

Roche has invested in the last 10 years to allow **full aggregation based on GS1 DataMatrix** in all our facilities and CMOs in order to enable traceability

*Roche is manufacturing pharmaceuticals as well as medical devices. Therefore, a cross-divisional adoption of GS1 DataMatrix barcode as a standard data carrier made sense for Roche from the beginning, given that DataMatrix barcodes are also mandated by **UDI regulations** around the world*

Traceability Model at Roche

Aggregation and Internal Traceability as a Standard



We use consistently following GS1 standards to manage traceability:

- ❑ GS1 DataMatrix as standard data carrier
- ❑ EPCIS as traceability data

When mandated by regulations or as voluntary project in selected countries

Take Home Messages

- DataMatrix barcodes have been widely adopted by many regulatory authorities around the world, while RFID remains marginal
- DataMatrix barcodes require little investment to be scanned and their acceptance by customers is increasing
- The global healthcare industry is ready for 2D DataMatrix barcodes
- Data Sharing and Integration are key to leverage benefits of barcodes
- Avoid introduction of two technologies in parallel (high workload for maintenance, high costs)

Doing now what patients need next

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Camilo Higuita

IT & Innovation Manager, Crystal SAS, Colombia

Quienes somos?

NEGOCIO

- Paquete completo
- Comercialización de marcas propias

Canales

Retail propio

Franquicias
Grandes superficies
Medianas cadenas
Multimarcas
E- Commerce

MARCAS

PRESENCIA

VENTAS

$700.000

Millones año

Tiendas

- 200 tiendas
- 10 colecciones año
- Reposición diaria
- Traslados
- Devoluciones

	Recepción.	Reabastecimiento	Inventarios	Búsqueda de inventario venta	Pago y devoluciones.	Control de salida del producto.
QR	20 minutos	2 horas	2 horas	1 hora	3 minutos	
RFID	5 minutos	1 hora	40 minutos	5 minutos	2 minutos	+ Seguridad

QR

- Precisión del inventario (IPI)94%
- Inventario completo cada año

RFID

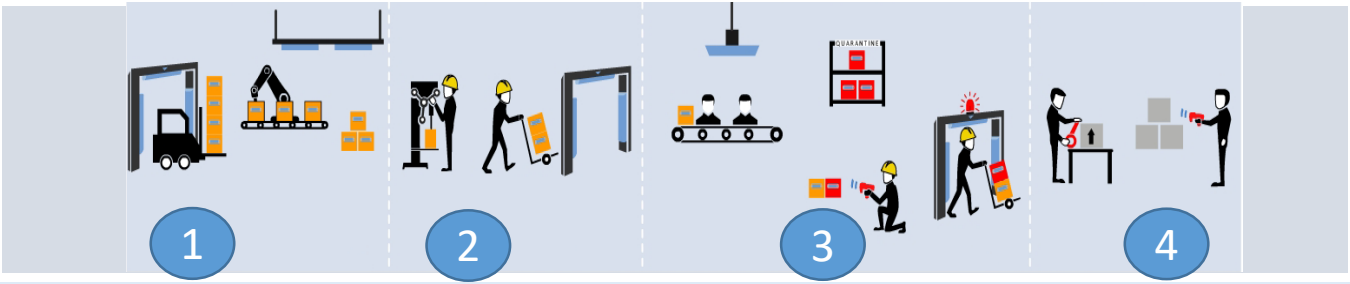
- Aumento en la precisión del inventario 98%
- Aumento de la disponibilidad del producto
- Menos tiempo de reabastecimiento
- Menos tiempo de búsqueda
- Eficiencia operativa

70% TIEMPO

60% PERSONAS

Producción

- 50.000 SKU
- 25% cambios de referencia diarios



	Materia prima	Tejido manufactura	Calidad y empaque	Remisión|
QR		7 días 1 lectura diaria	5 días 1 lectura diaria	
RFID		3 días Tiempo Real	3 días Tiempo Real	

QR

- WIP (Work in Process) : 7 días

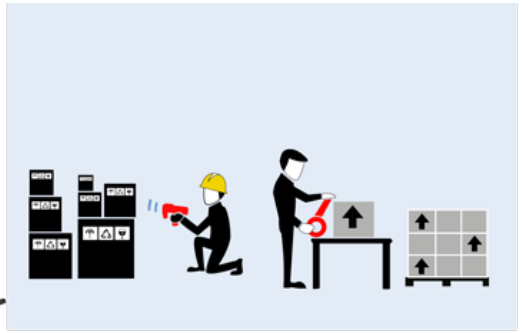
RFID

4% Eficiencia Operativa

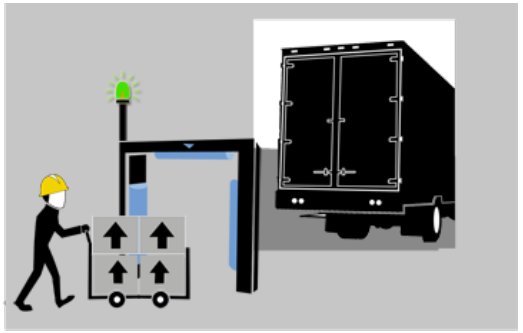
57% Wip 3 días

CEDI

Bodega



Embalaje



Despacho

QR

- Precisión del inventario 92%
- Inventario completo cada 2 años

RFID

- Precisión del inventario 92%
- Disminución del tiempo
- Entrega confiable

Lecciones aprendidas

- Tener un líder del proyecto
- Alto compromiso de la partes involucradas en los procesos.
- Capacitación de alta calidad al personal .
- Cumplimiento con los estándares recomendados por GS1.
- Incorporar la tecnología y escoger a los aliados estratégicos.
- Selección de la tecnología adecuada de acuerdo a las necesidades del negocio
- Tener en cuenta el área de trabajo (apantallamiento).
- RFID inmerso en los software del negocio.
- Evitar etiquetar en la tienda.
- Usar la tecnología de RFID en la inteligencia del negocio.

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Pascal Aulagnet

Senior Manager, Global Serialisation - EMEA Client Partner, Pfizer

RFID Pilot feedback

RFID vs data matrix for pharma traceability

Pfizer Global Serialization Program

GS1 Global Healthcare Conference - Bogota

Pascal Aulagnet, Senior Manager Business Technology, **Pfizer Inc**

11th of April 2018 – Bogota

Disclaimer: *This presentation outlines a general technology direction. Pfizer Inc. has no obligation to pursue any approaches outlined in this presentation or to develop or use any functionality mentioned in this presentation. The technology strategy and possible future developments are subject to change and may be changed at any time for any reason without notice.*

The views and opinions expressed in this presentation and any related discussion(s) are solely those of the individual presenter(s) and may not express the views of and opinions of Pfizer Inc.

Pfizer Serialization History

2001 – Serialization Initiatives Started US Customer

2002 - HUD US Blisters

2005 / 2007 – VTag E2E Pilot

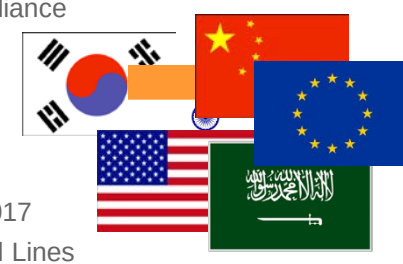
2009 / 2010 – Core Strategies & Technologies

2013 – Global Governance, Program, and Solution

2013 / 2017 Deployed Lines

- 2013 – 7
- 2014 – 33
- 2015 – 35
- 2016 – 40
- 2017 – 87

2014 to present compliance



- Compliance – China, India, Korea, US, Saudi Arabia, Australia NBA (Turkey, Argentina)
- Active – China, Korea, Saudi Arabia, US, EU FMD, Brazil, Russia, …
- Monitoring – 28+ mandates …. and counting
- Funding approvals: US – 2011, EU – 2012, Emerging Markets – 2013
- 450+ active projects; 36 sites, 108 CMOs, 14 PC1 customers, 33 logistics facilities, 467 pkg lines and over 13,000 SKUs

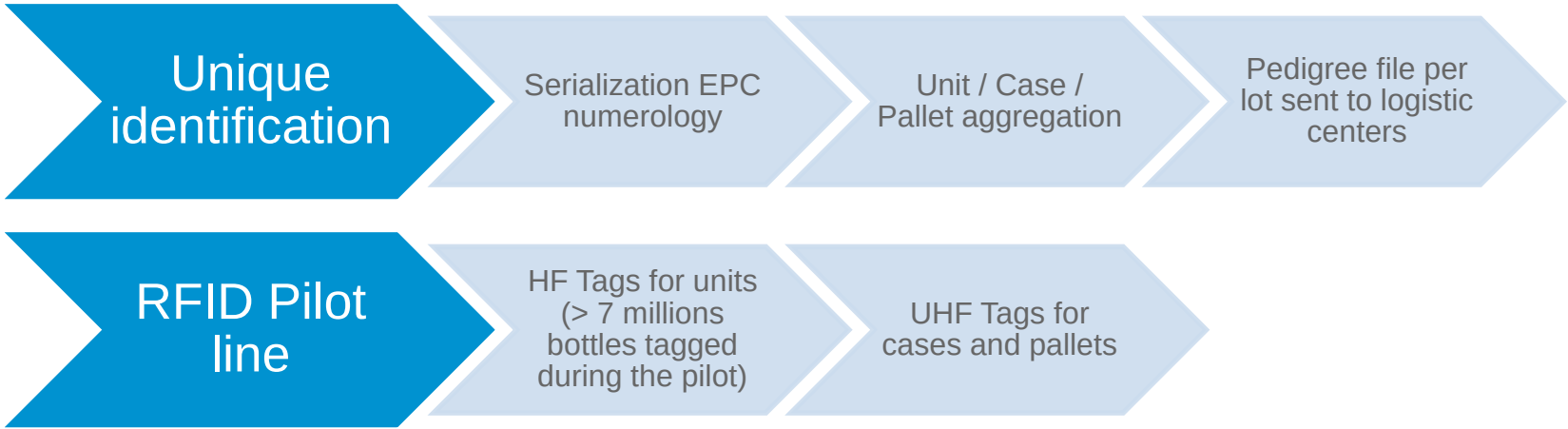
Serialization Pilot using RFID

In a 2004 joint press release with the FDA, Pfizer committed to piloting RFID (radio frequency identification) based serialization to better understand what is required to implement serialization across supply chain partners

In 2005, Viagra became the first pharmaceutical product distributed in the U.S. with serialization of every unit, case, and pallet

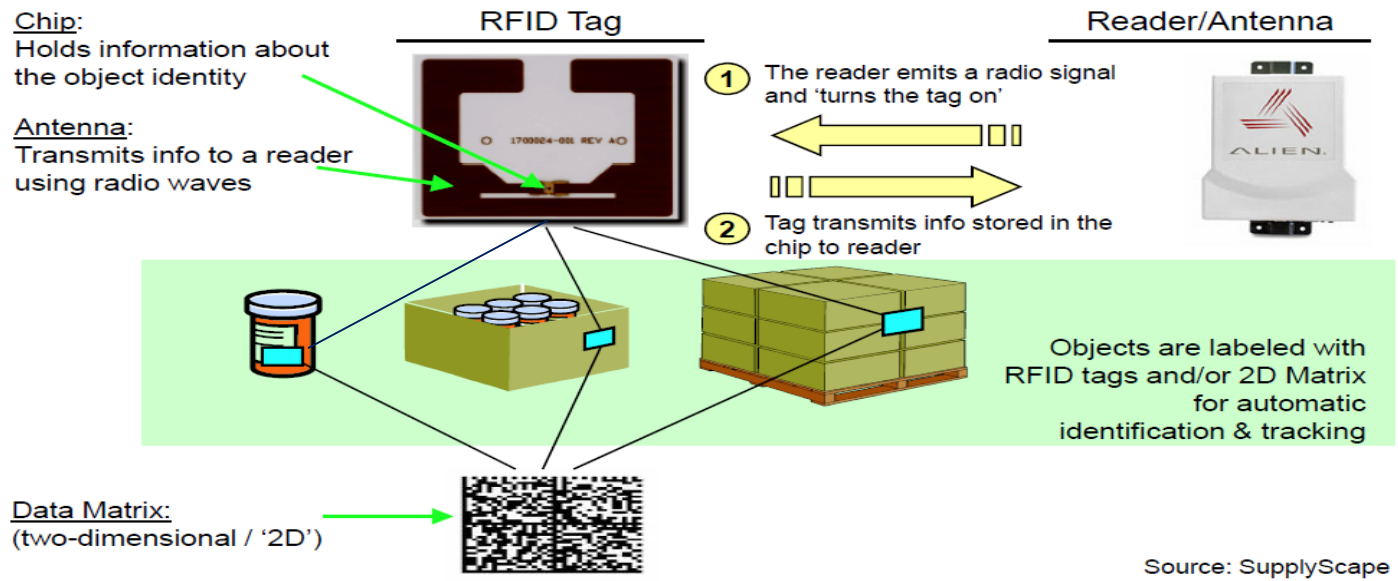
In 2007, Pfizer implemented serialization at the case and pallet level on Celebrex to demonstrate to industry the effectiveness of case level serialization supportive of risk-based model

Scope and Implementation



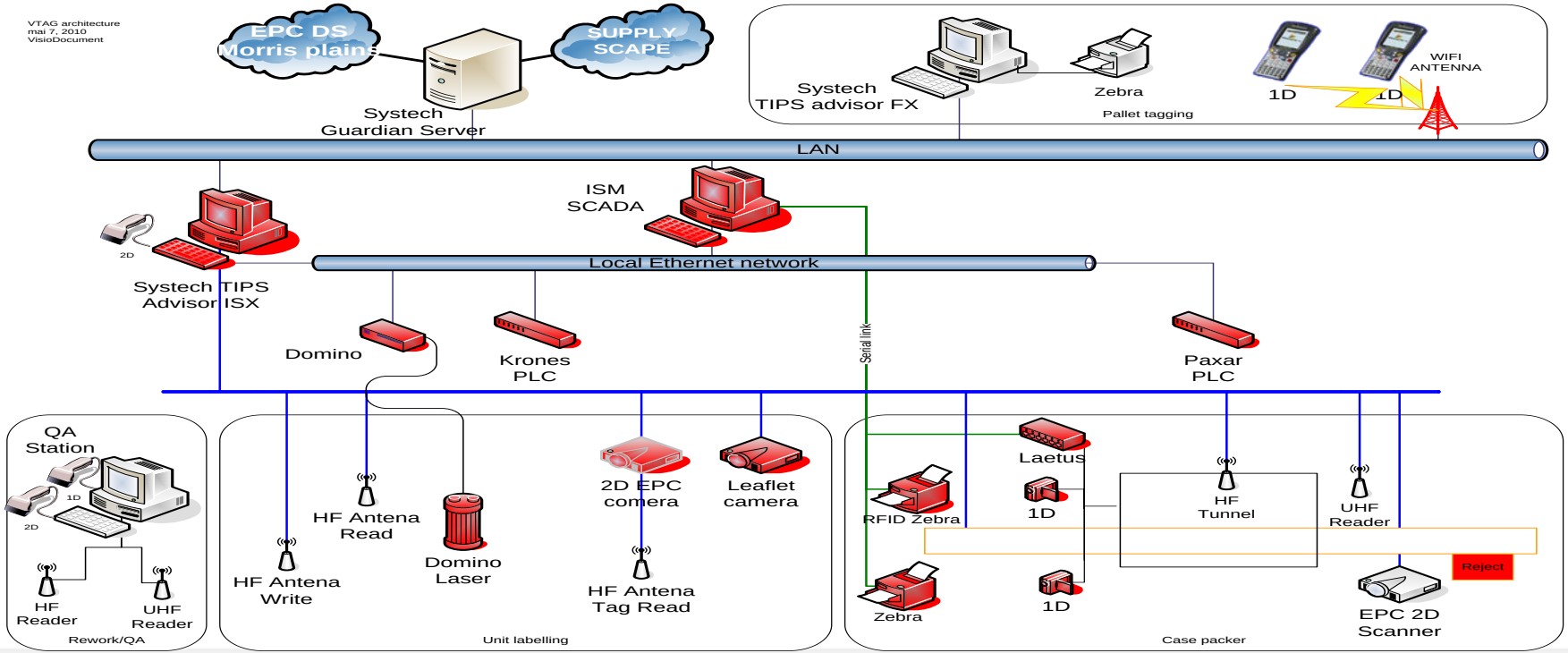
Implementation

- **Data Carrier Technology**
  - 2D Data Matrix as global primary choice, and as secondary data carrier together with RFID where viable (U.S.)

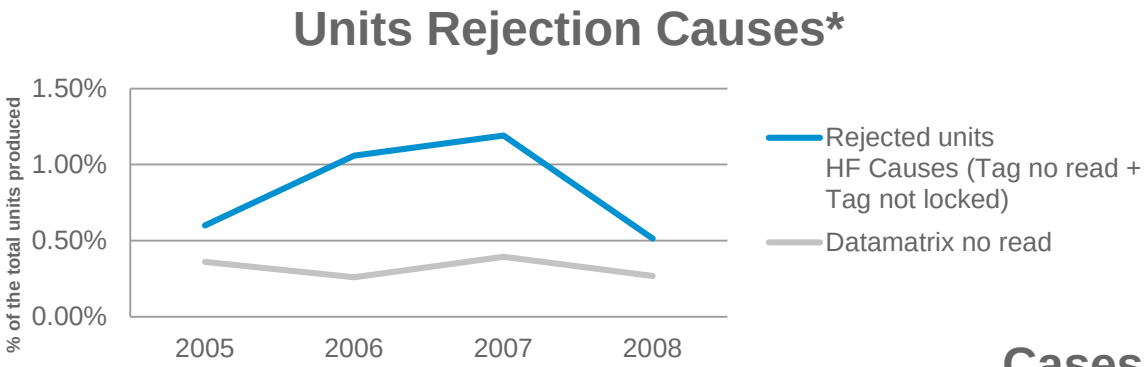


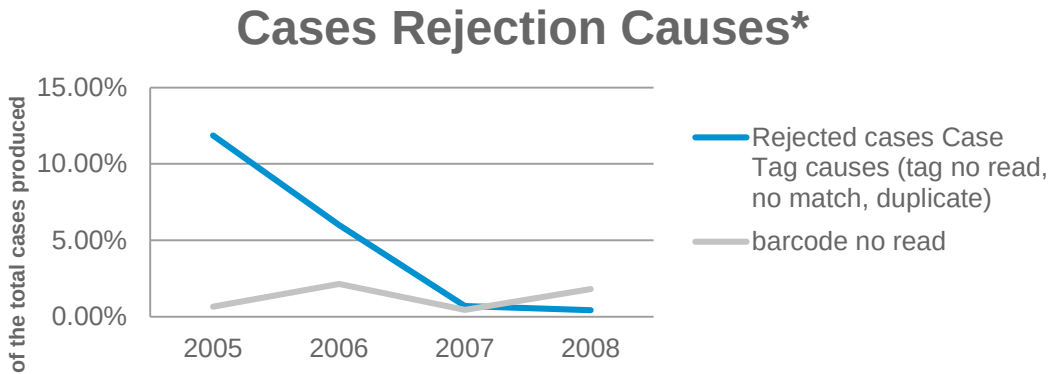
Source: SupplyScape

Line Architecture



Lesson Learned : Impact on the line





* Line breakdown study from 2005 and 2008

7,8MM bottles and 200k+ cases inspected

In Summary

DataMatrix

- Leverage existing labelling processes known and used since years by the industry
- No extra equipment for the supply chain and Healthcare Providers
- Insignificant COGs increase

RFID

- New and Complex processes and SOP to put in place (with associated expertize)
- Extra Equipment and Software to install
- Increase COGs
- Ecological footprint


thank you!

Questions & Answers

Networking Dinner on Wednesday, 7:00 pm

ANDRÉS D.C.

Calle 82 #12-21 Dentro del centro comercial

El Retiro, Bogotá

Meet in the main lobby for shuttle bus departure:
6:30 pm

Bus departure: in the main lobby at 6:30 pm

Bus return: beginning at 9:30pm until 12:00am, running on a loop

Dress code: business casual.

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