GS1 Industry & Standards Event

Transforming Business Together

Plenary

Warsaw, Poland

Tuesday, 13 October 2015

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Welcome to Warsaw!

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Agenda

- Welcome
- GS1 Poland
- GSMP Achievements and Operationalised
- GS1 Global Office Leadership Team
- Keynote Presentation
- Close

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A special thank you to our host, GS1 Poland!

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Welcome to Warsaw- Brand New World

Elżbieta Hałas
GS1 Poland

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"Warsaw. Brand New World"

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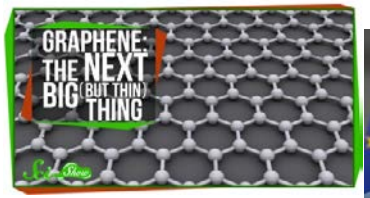
Poland – on a fast track to success

- the 6th most populous and the 6th largest of the European Union's 27 members
- Since it joined EU, its economy has grown by an average of 4% a year, among the fastest rates on the entire continent
- GDP /capita : 1700 USD in 1990 – 14 400 in 2014
- 1/3 of Poland is covered with forest, there are 9300 lakes, 23 National Parks and only one desert and beautiful Sudeten and Carpathian mountain ranges.
- 14 properties are on the World Heritage List, e.g. Historic Centre of Warsaw
- 6 Poles and 11 people of Polish descent have won 17 Nobel prizes (more than Japan, China, India or Australia), four Peace Prizes, and five in Literature.



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Institute of Logistics and Warehousing , GS1 PL

- **Research Institute** established by the Ministry of Economy
- Set up date – 1967 in Poznań
- **GS1 Poland – since 1990**
- **20 000** members of GS1

Mission:

„We develop, promote and implement innovative logistics and e-commerce solutions in key business processes”

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GS1 Poland objectives

4 Strategies Main projects	Industries	Services	Products
• **GS1 Logistic Label**	• **Retail**	• Verification	• Mobile app
• **GTIN+ on the Web**	• **T&L**	• **Consulting**	• ETLOG
• **Lot-based traceability**	• **Healthcare**	• Training	• GTIN registry
• **GTIN in IT Systems in HC**	• Defence	• **SP Program**	• API
	• Food sector	• Bar Code Quality Programme	
	• E-commerce		

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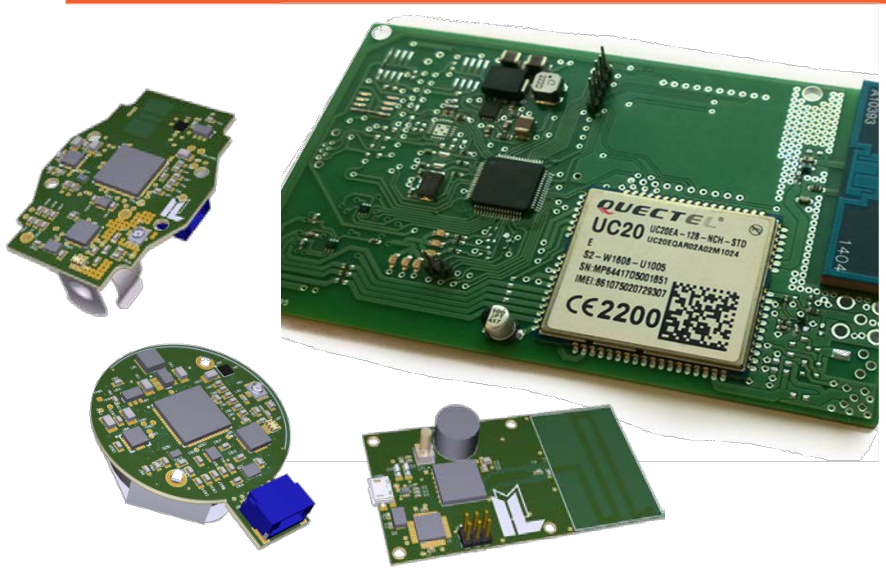
Laboratory of Identification Technologies

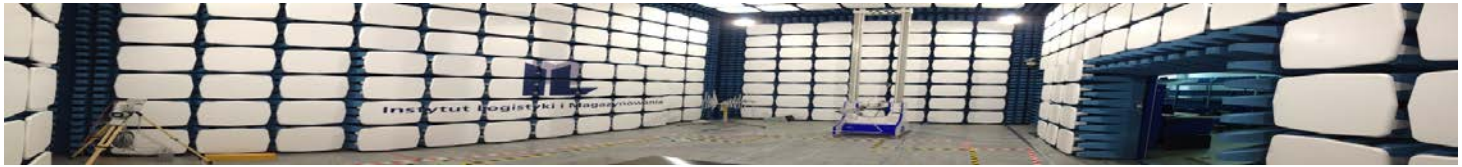


RESEARCH & DEVELOPMENT

- Identification technologies
- Static and dynamic tests (tags, readers, barcodes, conveyor tests, anechoic and GTEM chamber tests)

PROTOTYPING & DESIGN

- IOT - Wireless sensors networks
- New communications protocols (DASH7)
- Tracking and localization technologies



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What to do and eat in Warsaw ?

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Warsaw – Old Town

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Warsaw - Royal Route

Krakowskie Przedmieście

Royal Łazienki Park

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Warsaw - POLIN
Museum of the history of Polish Jews

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Tasty and traditional

Traditional Polish cuisine

- Potato pancakes
- Dumplings with meat, vegetables etc.
- Traditional Polish pork chop with potatoes and sour cabbage
- Żurek: sour soup with egg & sausage.
- Red borsch with pastry.

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Have a memorable stay in Warsaw !

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GSMP Update

Mark Holmes

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SwittersB

Standards ratified in 2015

- **3 new standards**
  - ✓ *GTIN+ on the web Vocabulary Standard*
  - ✓ *GS1 EPCIS Core Business Vocabulary Conformance requirements and application standard in rail*
- **5 new guidelines**
  - ✓ *Data Matrix*
  - ✓ *GTIN+ on The Web Implementation Guideline and Dictionary*
  - ✓ *Fresh Fruit & Vegetable Labelling Consumer Unit*
  - ✓ *New Fish Seafood Aquaculture Traceability Third Party Data Exchange in Healthcare*
- **3 new publications**
  - ✓ *EANCOM 2002 Edition 2014*
  - ✓ *GDS Trade Item Implementation Guide, issue 22*
  - ✓ *GPC Dec-2014 Publication*
- **12 standard improvements**

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Development Forecast 2015-2016

- EPCIS v1.2 Standard & Core Business Vocabulary (CBV) v1.2 Standard (Feb 16)
- EPCIS and Core Business Vocabulary (CBV) Implementation Guideline (Dec 15)
- Gen 2v2 Interoperability Document (Nov 15)
- Global Data Synchronisation Network Implementation Guideline for Pharmaceutical Products and Pharmacy (Jan 16)
- Global Location Number (GLN) Allocation Rules Updates (Oct 15)
- Meat and Poultry Guideline (Oct 15)
- Mobile Scanning and Digital Shelf Identification (formerly NGPI) (on hold)
- Tagged Item Performance Protocol (TIPP) (Sept 16)

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Best in Class Operationalised

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Operationalising Best in Class

Implement new processes to improve relevance, efficiency and participation in global standards development

Relevance

When a standard is developed it is adopted and used by industry

Efficiency

Improve speed to market while maintaining integrity of the process

Participation

Broader input to GS1 standards

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How are we going to operationalise and execute

Relevance

- Implement new “entrance criteria” requirements within the work request
- Establish Industry Engagement Steering Committee (IESC)

Efficiency

- Consistency across work groups
- Involve the right people at the right time

Participation

- Implement community engagement plan
  - Targeted communication
  - Focused collateral
- Implement new participation models:
  - Distributed working groups
  - Local work group IP contribution model
  - Standards development public review

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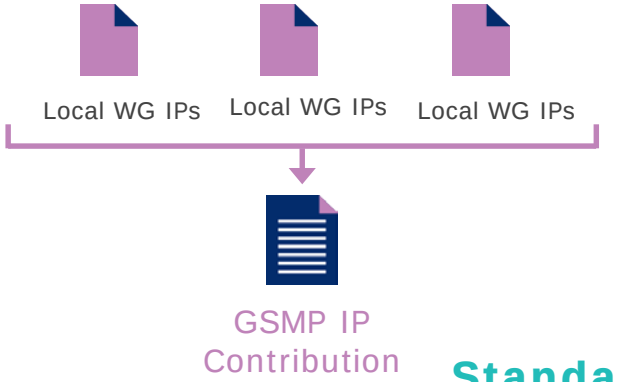
Participation models

GS1 IP contribution declaration for MO working groups



Distributed mission-specific working groups (MSWG)

Standards public review

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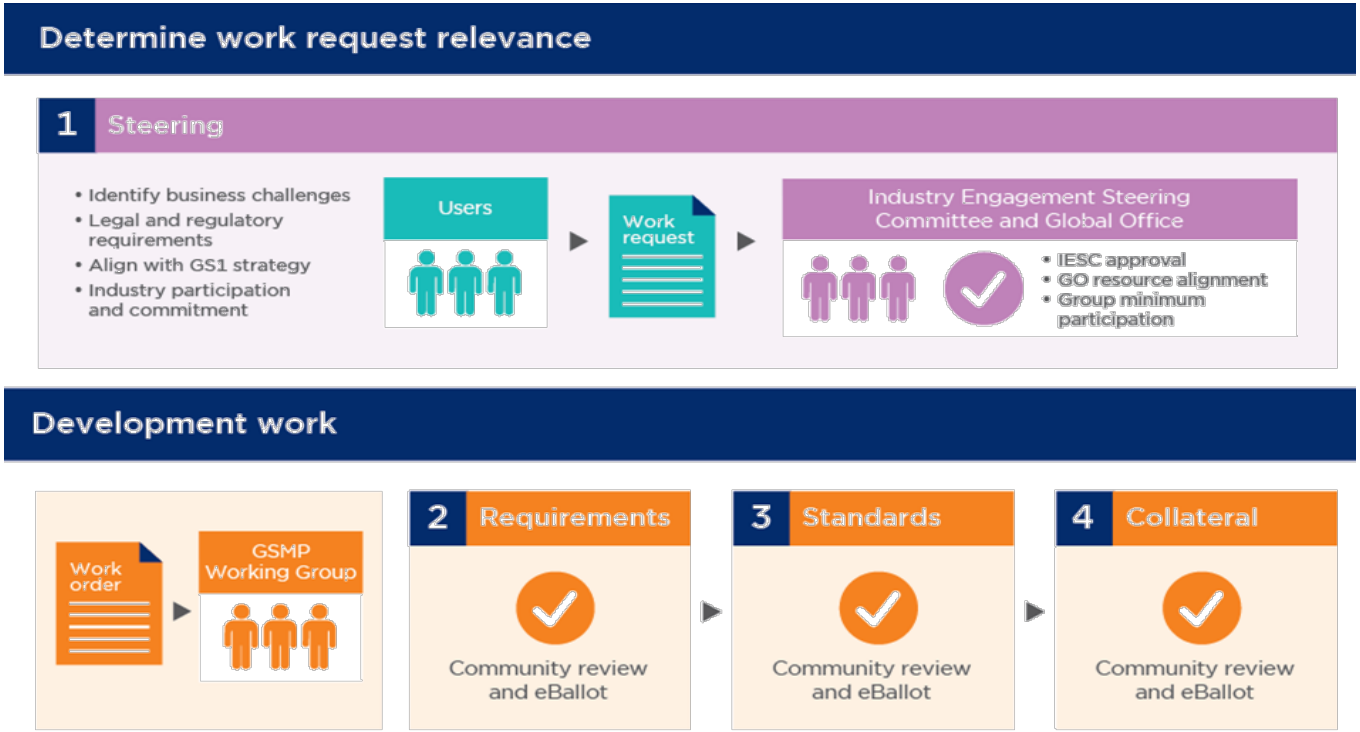
Relevant work requests to standards development

4 step consensus-driven process



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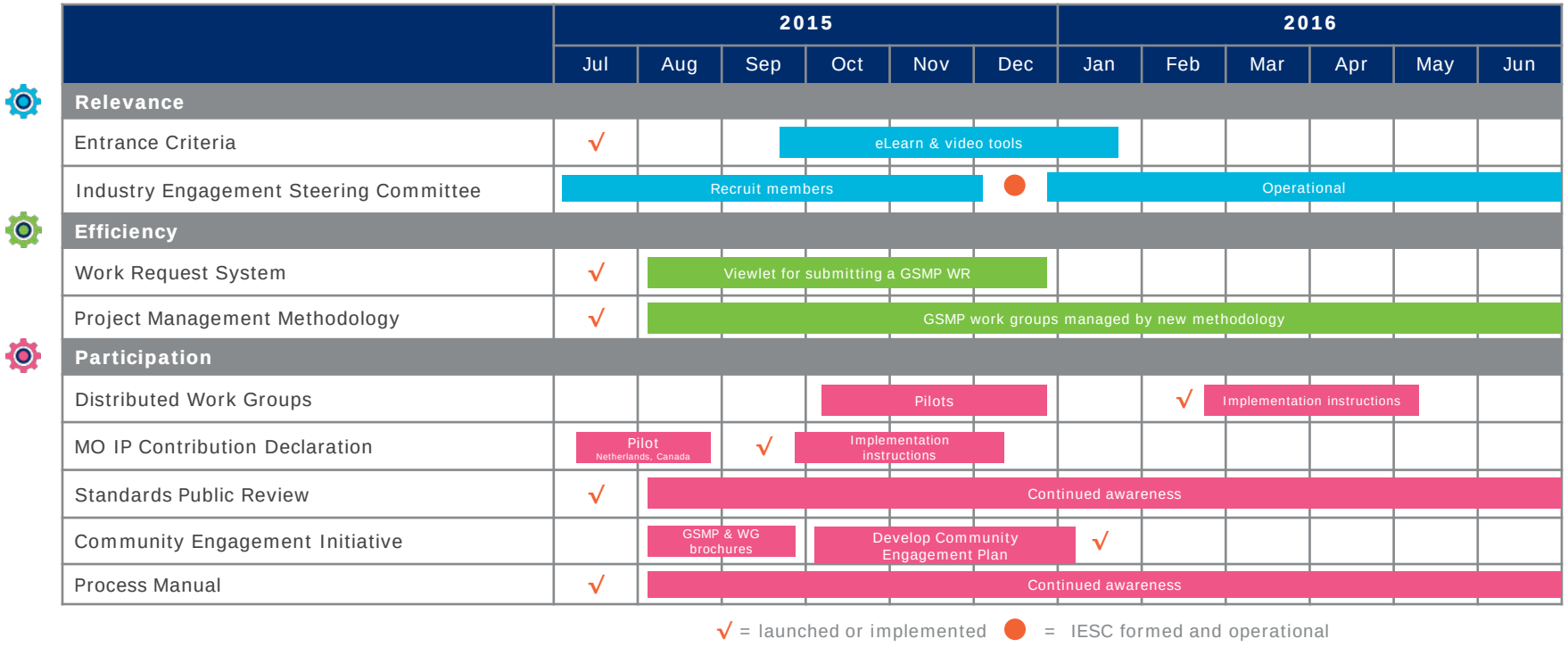
When: Implementation timeline for improvements



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Collateral to promote value of GSMP

New “executive summary” for GSMP based on your input:

- Provides clear and compelling value propositions that can used locally
- Why is GSMP membership important to people, companies and industry?
- How do companies get involved?
- What current Working Groups are open to new members?

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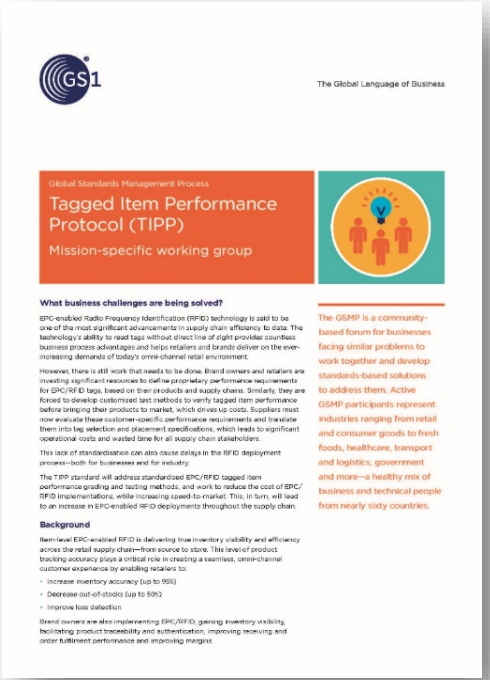
Focused collateral for working groups

Updated GSMP Working Group “info sheet” based on your input:

- Updated focus on the value proposition (case studies)
- What business challenge will this group solve for?
- Speaks to the value of joining a group – for business, for individuals (WIIFM)



GS1

The Global Language of Business

Global Standards Management Process

Tagged Item Performance Protocol (TIPP)

Mission-specific working group

What business challenges are being solved?

EPC-enabled Radio Frequency Identification (RFID) technology is said to be one of the most significant advancements in supply chain efficiency to date. The technology's ability to read tags without direct line of sight provides countless business process advantages and helps retailers and brands deliver on the ever-increasing demands of today's omni-channel retail environment.

However, there is still work that needs to be done. Brand owners and retailers are investing significant resources to define proprietary performance requirements for EPC/RFID tags, based on their products and supply chains. Similarly, they are forced to develop customised test methods to verify tagged item performance before bringing their products to market, which drives up costs. Suppliers must now evaluate these customer-specific performance requirements and translate them into tag selection and placement specifications, which leads to significant operational costs and wasted time for all supply chain stakeholders.

This lack of standardisation can also cause delays in the RFID deployment process—both for businesses and for industry.

The TIPP standard will address standardised EPC/RFID tagged item performance grading and testing methods, and work to reduce the cost of EPC/RFID implementations, while increasing speed-to-market. This, in turn, will lead to an increase in EPC-enabled RFID deployments throughout the supply chain.

Background

Item-level EPC-enabled RFID is delivering true inventory visibility and efficiency across the retail supply chain—from source to store. This level of product tracking accuracy plays a critical role in creating a seamless, omni-channel customer experience by enabling retailers to:

- Increase inventory accuracy (up to 95%)
- Decrease out-of-stocks (up to 50%)
- Improve loss detection

Brand owners are also implementing EPC/RFID, gaining inventory visibility, facilitating product traceability and authentication, improving receiving and order fulfilment performance and improving margins.

The GSMP is a community-based forum for businesses facing similar problems to work together and develop standards-based solutions to address them. Active GSMP participants represent industries ranging from retail and consumer goods to fresh foods, healthcare, transport and logistics, government and more—a healthy mix of business and technical people from nearly sixty countries.

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GS1 Leadership Team Updates

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GS1 Update

Miguel Lopera

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GS1 Global Strategy – Our Strategic Priorities

1 Mission / Vision

- Purpose & Beliefs
- Common Global Brand System

2

Execution Quality

- Standards Implementation
- Data Quality

3

Sector Focus

- Adoption of GS1 standards in Core and Emerging Sectors
- Global Classification of Sectors and Business Processes

4

Digital

- GS1 Digital Strategy with emphasis on GS1 Strategy for Omni-channel
- Key Projects
  - GS1 Source
  - GTIN on the Web

5

Innovation

- Global Business Technology Innovation
- Local entrepreneurship and MO-MO sharing

6 Organisation

- Common KPIs
- MO Clustering supported by GO Cluster Managers
- Common Trademark Agreement
- Review Advisory Council
- GS1 Organisational Culture

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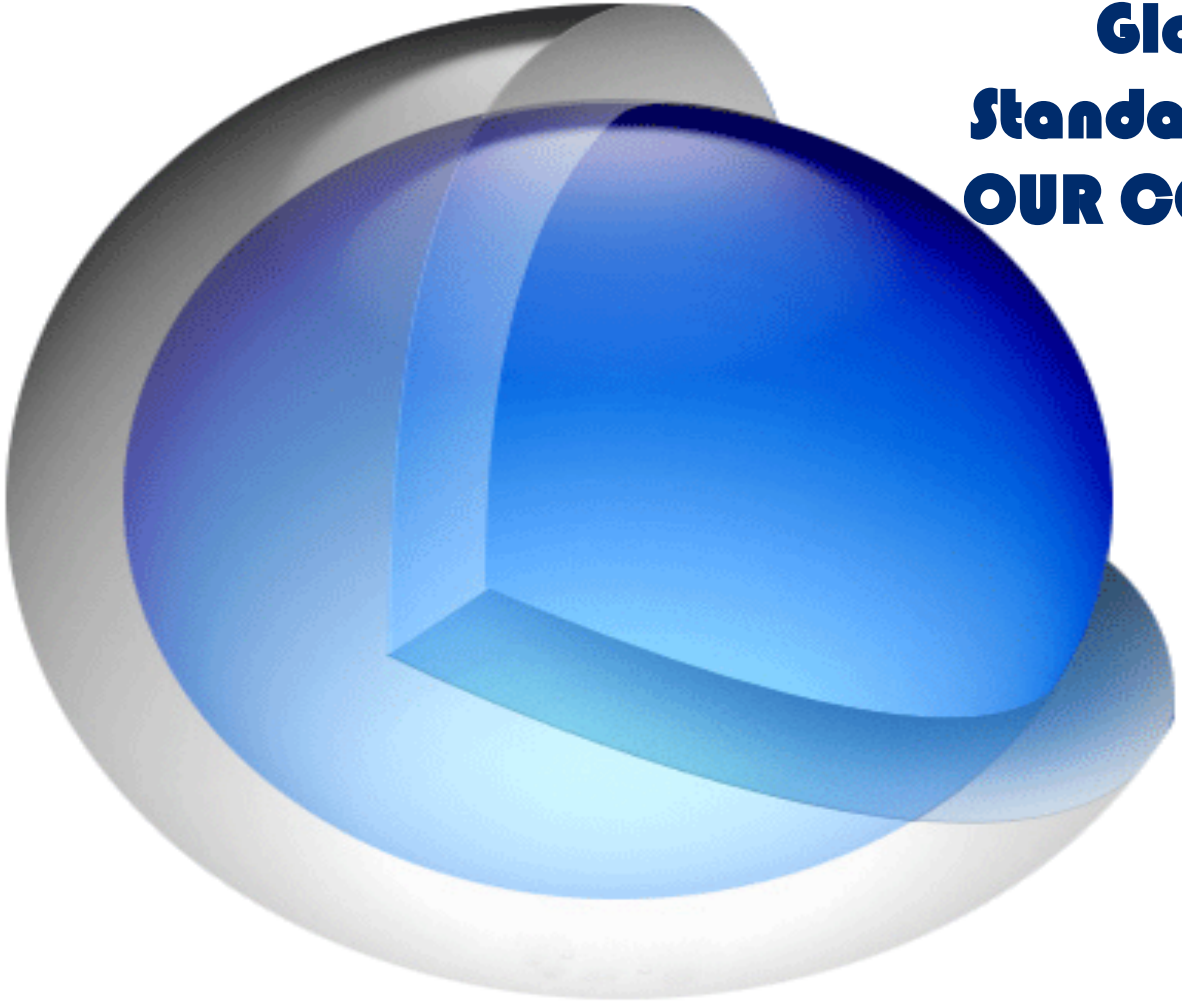
Global Standards: OUR CORE



THANKS

- ✓ Thanks to the veterans!
- ✓ Thanks to new comers!
- ✓ Keep the Global Standards spirit
- ✓ ☺ ☻ ☺ !!!

Data Excellence

Malcolm Bowden

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GS1 Global Strategy – Our Strategic Priorities

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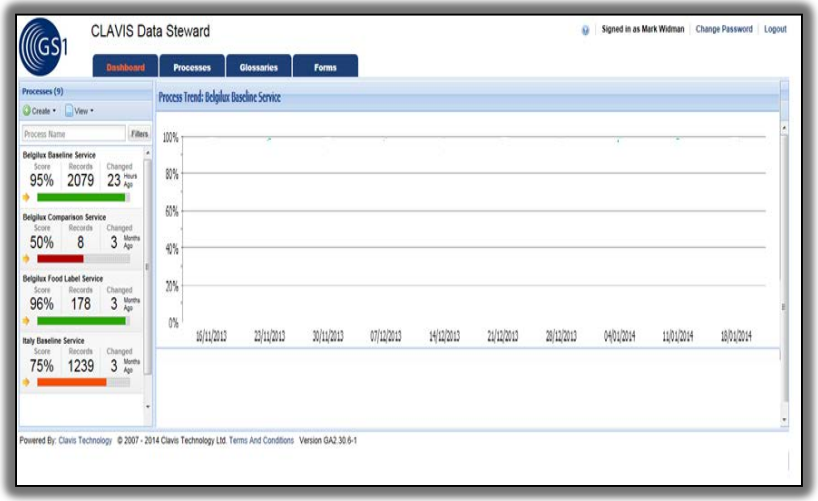
GS1 Data Quality Update

Data Quality Status

1. **DQ at Source**: **Completed** - Available as of December 2014
2. **DQ Certification**: **On target** - To be signed off by the Data Excellence Board in Dec 2015
3. **DQ Measuring and Monitoring Service**: **On target** - Service deployed and in use by 8 Data Pools out of 30 GDSN- certified Data Pools. Over 1 million GTINs have been published to and checked by the service.



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GS1 Data Quality Update

Data Quality Status

4. **GEPIR / GLN Conformance**: **Delayed** - There has been agreement to delay conformance until new GEPIR release (4.0) is deployed. Production rollout will be Jan 2016.

GLN Conformance requirements specification completed.

- 42 Spot tests will be executed quarterly for each MO.
- If an individual test fails, two monthly retry attempts will be made. If any of the two retry attempts fail, the quarter will be marked as “failed” and the “four consecutive quarters” start over
- Pilot the GEPIR Conformance program with 2 hosted and 2 non-hosted MO’s (November – December 2015)

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GS1 Data Quality Update

DQ Breakthrough proposal – MB approved

- **Background**: Best DQ results are in countries where product introduction and changes require manufacturers and retailers to use the GS1 DQ Services.

- **Proposal**: Implement a GS1 DQ certification program. Phase 1 includes top 10 MOs, CPG category and consumer data.

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Innovation

Steve Bratt

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GS1 Innovation Network
Foresight via Sharing, Action and Actionable Results

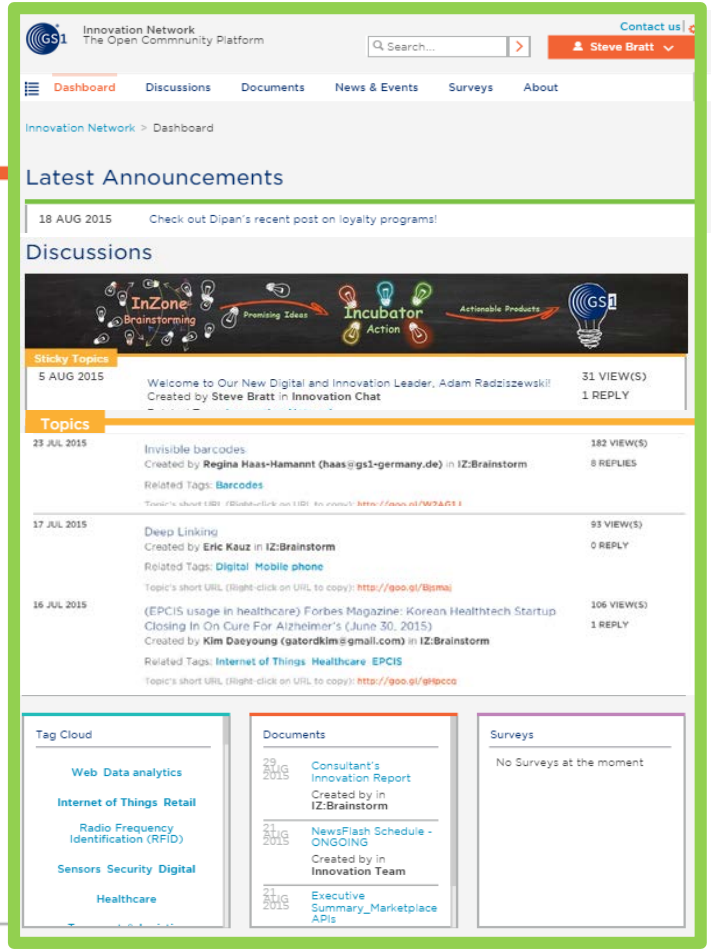
* Actionable products include: forward-looking analysis, recommendations, prototypes, draft standards, etc.

Innovation Network Activity
(since Feb 2015 launch)

Join us! http://ocp.gs1.org/in

- **Share** news, observations & ideas
- **Grow** local projects to global scale
- **Participate**: > 550 participants
- **Discuss:** > 125 topics in the InZone

  2 ID Workshops, Hackathons ..
- **Act:** Incubator Projects & Prospects
  - *Digital Coupons (UK), Marketplace APIs (AUS)*
  - *Future of ID & a GS1 "Platform"*
  - *IoT Lab (future retail as 1st focus?)*



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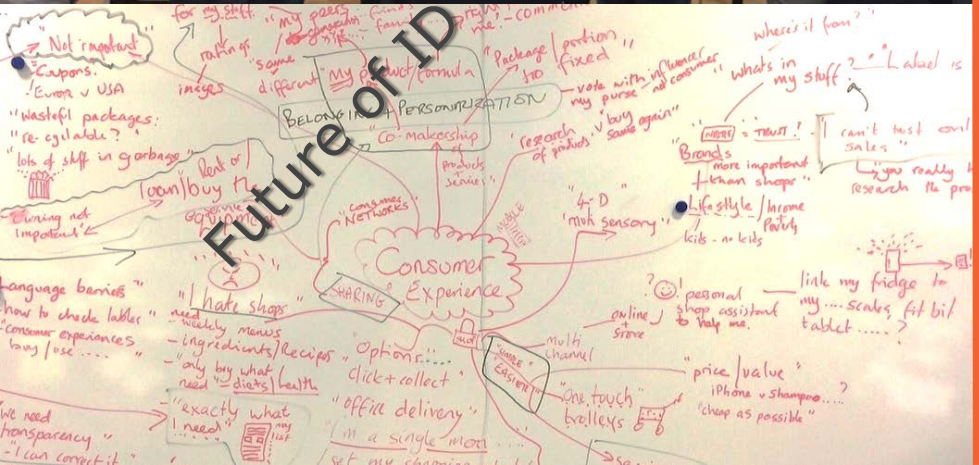
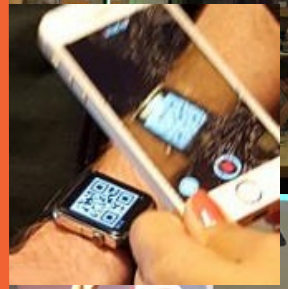
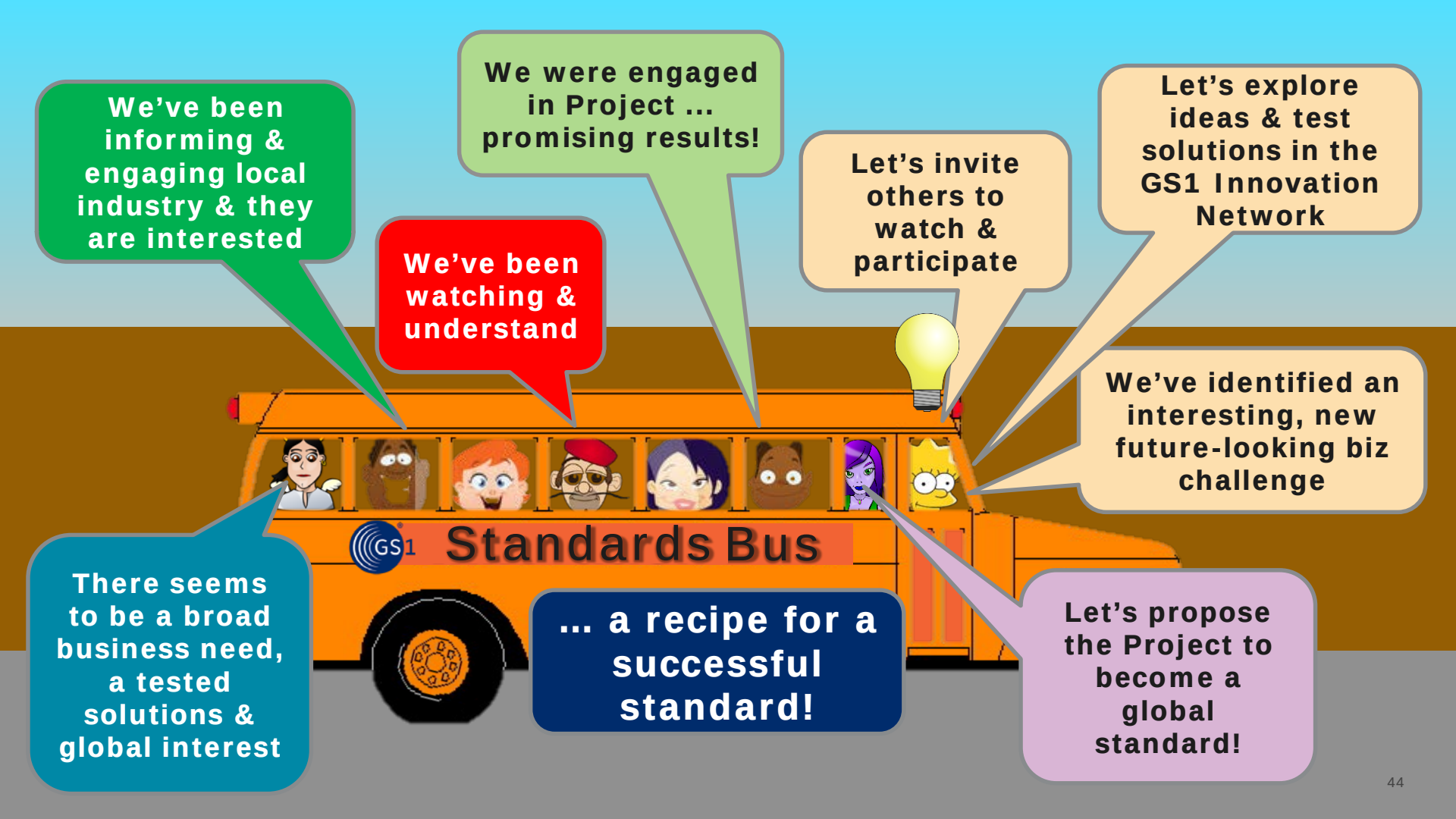




GS1/Auto-ID Labs Challenge:
"Kiosk of the Future"


We've been informing & engaging local industry & they are interested
We've been watching & understand
We were engaged in Project ... promising results!
Let's invite others to watch & participate
Let's explore ideas & test solutions in the GS1 Innovation Network
We've identified an interesting, new future-looking biz challenge
Standards Bus
There seems to be a broad business need, a tested solutions & global interest
... a recipe for a successful standard!
Let's propose the Project to become a global standard!

"Innovation will keep us relevant as a company and as people"

The Importance of Community

Marianne Timmons

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“Some people think they are in community, but they are only in proximity. True community requires commitment and openness. It is a willingness to extend yourself to encounter and know the other.”
—David Spangler

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We are 450+ Companies Strong!

© GS1 2015

...but the world is better because we do

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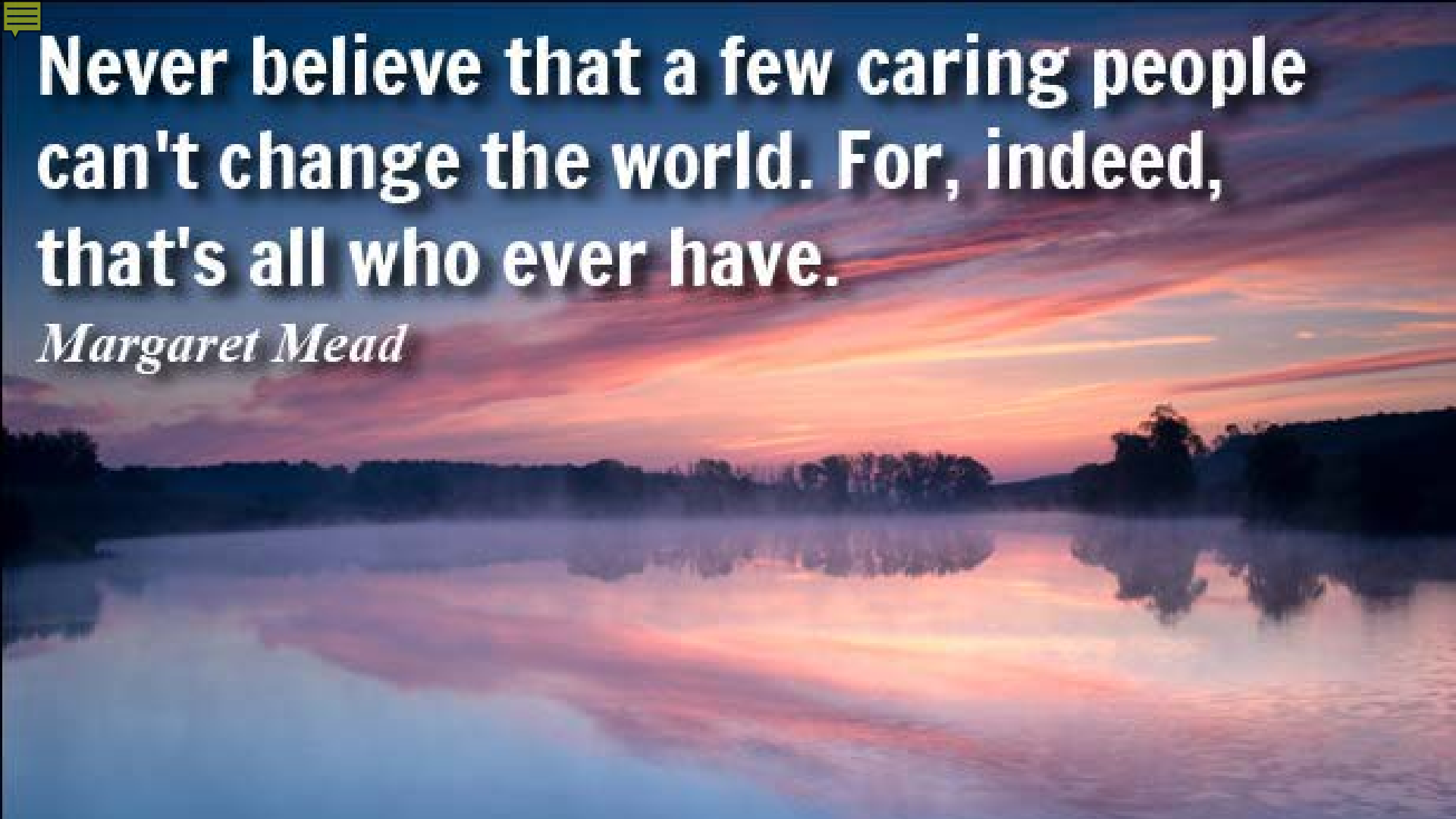
Never believe that a few caring people can't change the world. For, indeed, that's all who ever have.
Margaret Mead

Let’s go forward in community to make a difference!

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Keynote

Dr. Gerd Scheying, Director, RFID Competence Center @ Bosch

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Transforming Business Together

Relevance of *Confining* Standards for Business in the IoT and Industrie 4.0

Dr Gerd Scheying

Center of Competence RFID@Bosch
Robert Bosch GmbH,
Stuttgart, Germany

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BOSCH

Overview

- Introducing Bosch
- Connected Industry (Industrie 4.0) Initiative at Bosch
- Internet of Things (IoT) and Industrie 4.0 (I4.0)
- Standardization as Key Element

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Who's Bosch

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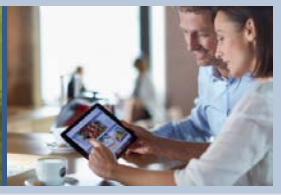
A Global Enterprise with 4 Business Sectors…

Mobility Solutions

Industrial Technology

Energy and Building Technology

Consumer Goods



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BOSCH

…that generated these Key Figures in 2014

Bosch Group	→ **48,9 billion euros in sales** → 290,000 associates → **360,000 associates as per April 1.15***		
Mobility Solutions	→ **One of the world's largest suppliers of automotive technology Technology**	68% share of sales	
Industrial Technology	→ Leading in drive and control technology, packaging, and process technology		
Energy and Building Technology	→ Leading manufacturer of security technology → Global market leader of energie-efficent heating products and hot-water solutions	32% share of sales	
Consumer Goods	→ Leading supplier of power tools and accessories → Leading supplier of household appliances		

*including BSH Hausgeräte GmbH (formerly BSH Bosch und Siemens Hausgeräte GmbH) and Robert Bosch Automotive Steering GmbH (formerly ZF Lenksysteme GmbH).

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BOSCH

…that is present in some 150 Countries

Bosch Group	→ 48,9 billion euros in sales → 290,183 associates → 360,000 associates as per April 1.15* → **223 manufacturing sites**	
Europe	→ 53% share of sales → 174,025 associates → **134 manufacturing sites**	
Americas	→ 20% share of sales → 33,879 associates → **33 manufacturing sites**	
Asia Pacific	→ 27% share of sales → 82,279 associates → **56 manufacturing sites**	

*including BSH Hausgeräte GmbH (formerly BSH Bosch und Siemens Hausgeräte GmbH) and Robert Bosch Automotive Steering GmbH (formerly ZF Lenksysteme GmbH).

As of 12.14

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BOSCH

…that is Dedicated to Lead in Innovation

- Over the past five years, Bosch has **invested** more than **20 billion euros** in research and development
- **Some 45,700 researchers and developers** work at Bosch: **At 94 locations** worldwide, in a single network
- Bosch files **18 patents** on average per working day
- **Our objective:** To develop innovative, useful, and exciting products and solutions to enhance quality of life – **Technology** that is **Invented for life**

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Connected Industry (Industrie 4.0@Bosch)

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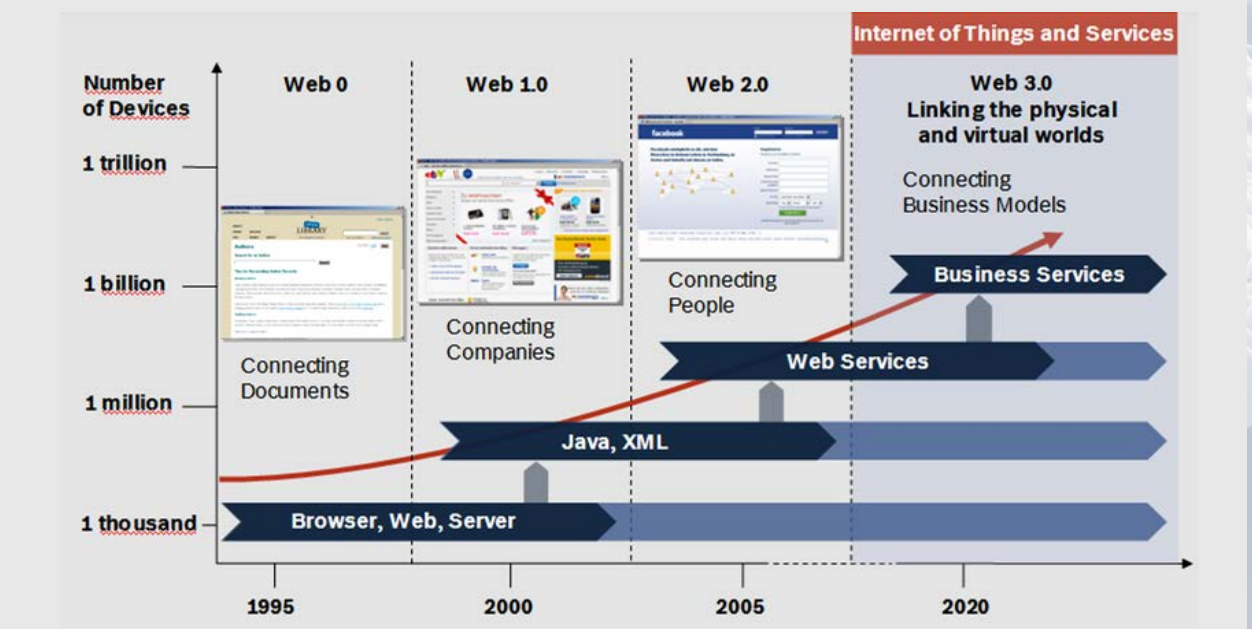
The IoTS or Web 3.0 is a Driver for i4.0



"Web 3.0" links the digital world to the physical world of things and vice versa. Thus, it opens the path to entirely new business models.

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Bosch's Industrie 4.0 dual strategy

Lead Provider
System manufacturer/
Production resource view

I 4.0 solution provider with external business	enabler technology or internal I 4.0 solution provider
Rexroth Bosch Group — Drive and Control Technology	Industrial Sensor Solutions
Bosch Software Innovations	Bosch Sensortec
Packaging Technology	Innovations-management Logistik
ATMO — Assembly Systems and Special Machinery	Machine Platforms
Bosch Connected Devices & Solutions	Data Mining, Big Data
...	Center of Competence RFID@BOSCH
	...

Lead Operator
Product manufacturer/
Product view

223 Bosch plants world wide

- **Manufacturer of products**
- **Machine operator**
- **Plant operator**
- **Interface to customers/suppliers**

Many practical pilot applications are bundled within the 'Innovation Cluster'

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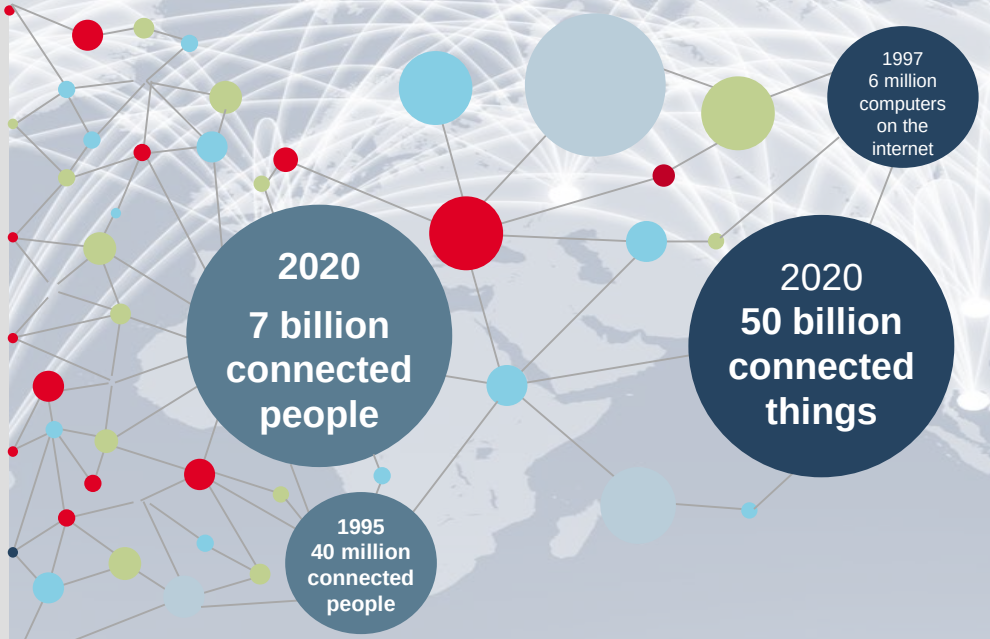
Outlook to 2020

- Volatile markets
- Individual customer requirements
- Shortened delivery times
- Shortened product life cycles
- 24/7 worldwide service
- Social behavior, new cooperation
- Disruptive business models



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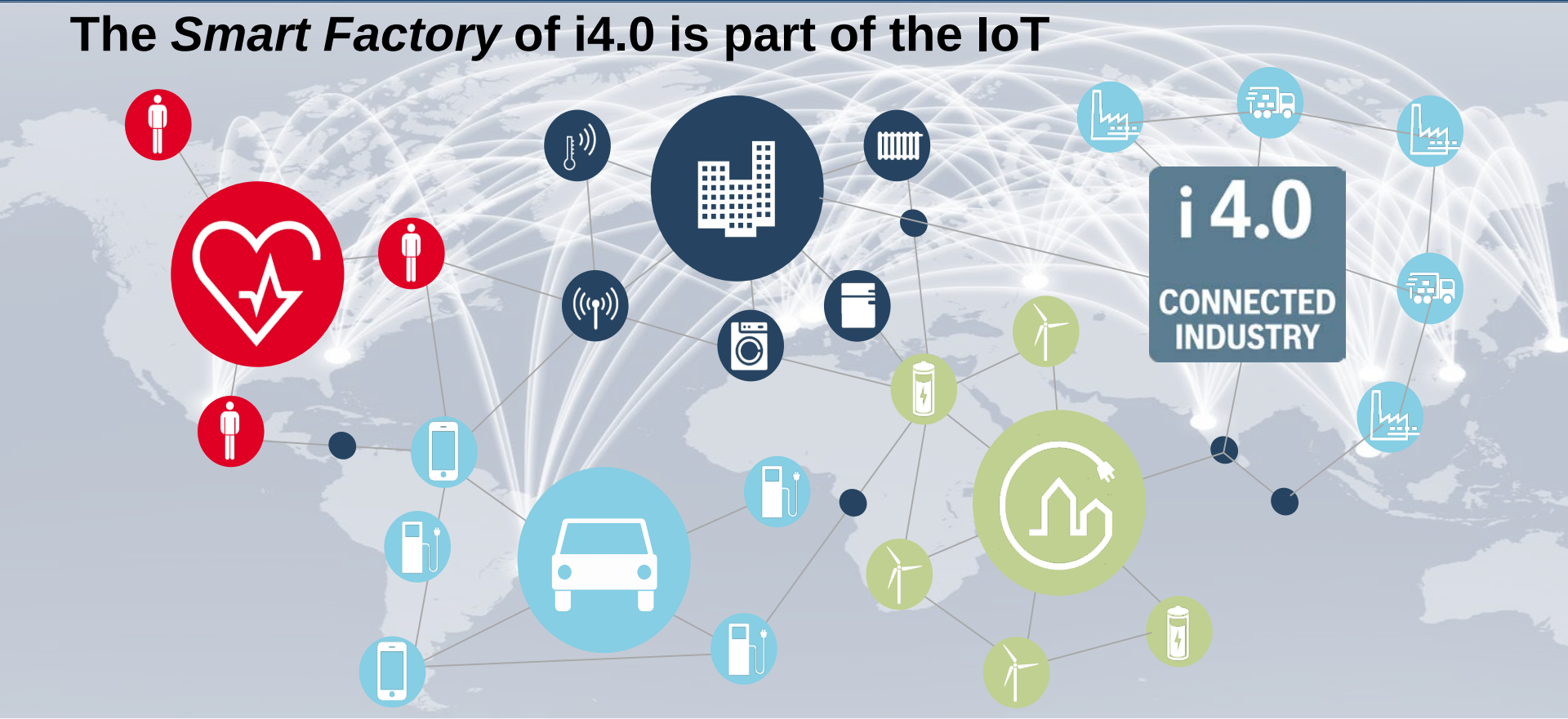
The *Smart Factory* of i4.0 is part of the IoT



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Overview

- Introducing Bosch
- Connected Industry (Industrie 4.0) Initiative at Bosch
- Internet of Things (IoT) and Industrie 4.0 (I4.0)
- **Standardization as a Key Element**

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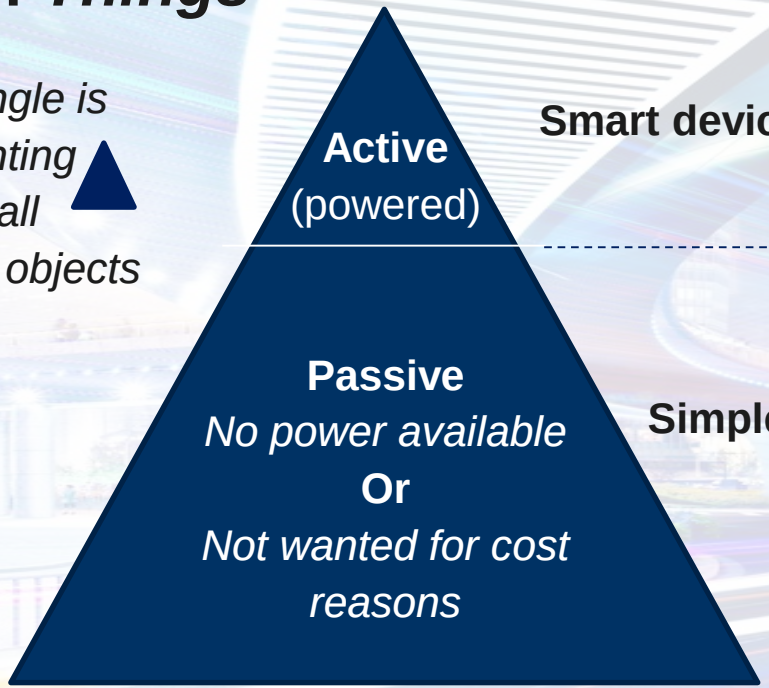
The World of *Things*

The triangle is representing virtually all physical objects



Smart devices, identified via e.g. IPv6

Simple objects, identified via

?

IoT: Entirety of physical objects or Things

I4.0: Objects (e.g. in manufacturing) as part Cyber Physical Systems

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I 4.0 / IoT Data Exchange

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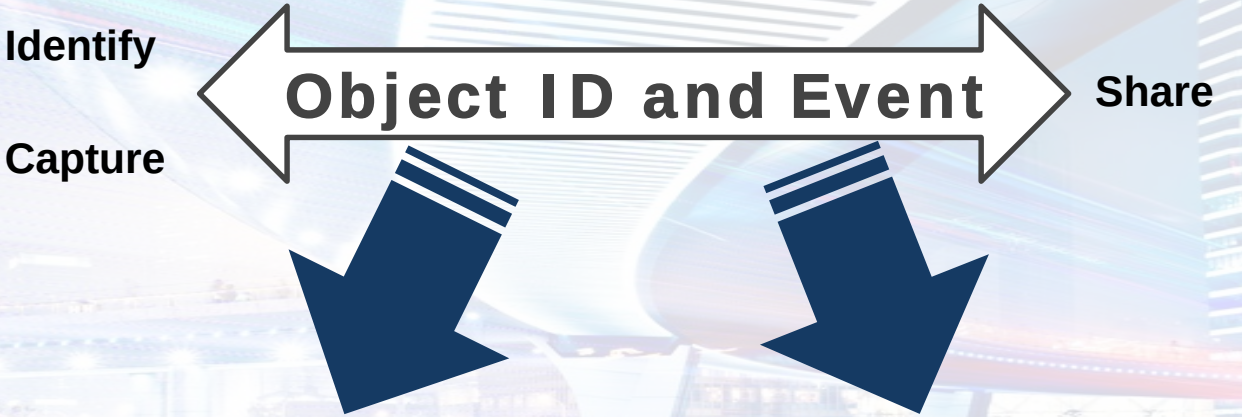
Common Language or Green Field Approach?



ISO/IEC 15961, 15962
ISO 17363 to 17367
…
New Coding Scheme ?
or
***Maybe* GS1 ID-Key ?**

EDI(FACT) ?
OPC UA ?
…
New <XML> scheme ?
or
***Maybe* EPCIS ?**

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Example: German Automotive Industry (VDA)

VDA | Verband der Automobilindustrie

- **Object ID based on ISO/IEC**
- **Select Data Identifier (DI)**
- **Select Appl. Fam. Identifier (AFI)**
- **Choose IAC (DUNS, Odette, …)**
- **Design *your* ID pattern**
- **Issue company specific rules**
- **Company specific data exchange**
- **Instruct your supplier base**

GS1

- ID Key: SGTIN or CPID

FOR COMPARISON ONLY!

- Use well documented and maintained GS1 Standards

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It’s working productively with GS1 Standards

Kanban Booking

Container (RTI)

Inventory Taking

OE Products

RFID Gates

FIFO Lanes

Value Stream Control

Logistics operation, Manufacturing control, Asset-Management, OE Products, Car pool management, Tool management, …

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Dr Gerd Scheying
Center of Competence RFID@Bosch
Robert Bosch GmbH,
Stuttgart, Germany
gerd.scheying@bosch.com

Thank you for your attention ☺

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Questions?

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In closing

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Save the Date!
GS1 Industry & Standards Event
11-15 April 2016
Jersey City, USA

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