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TRUSTED DATA
SUSTAINABLE FUTURE
FRANKFURT + ONLINE | 24 JUNE 2026

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SUSTAINABLE FUTURE

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Agenda of the day

- How sustainability is reshaping business
- Showcasing sustainability practices
- The future of data sharing and AI enablement
- **Data sharing in action**

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Natalia Macia
Bosch

Trusted data, sustainable future

Data sharing in action

GS1 InterACT 2026 |
Preparing European Industry for the regulations that are reshaping our data

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24 June 2026 | Frankfurt

The Challenge with Data: Fragmented and non standardized

The Regulatory wave is here

Europe is introducing a set of regulations that will reshape and multiply how companies manage product, packaging and supply-chain information. For industry, this is not a future concern - it is an immediate operational reality.

📋 CSRD

Corporate Sustainability Reporting Directive - mandatory ESG disclosure for large companies

🪪 DPP

Digital Product Passport - product-level data accessible via a unique digital identity

🌳 EUDR

EU Deforestation Regulation - origin evidence and supply chain due diligence to eliminate deforestation risk

📦 PPWR

Packaging and Packaging Waste regulation- mandatory recyclability, reuse targets, and labelling standards for all packaging

The need is to build a data capability that can serve many obligations at once

What do these regulations actually require?

At their core, each regulation demands the same fundamental capability: **reliable, traceable, linked machine-readable data** about products, materials, and supply chain actors. Here is a brief recap.

CSRD - Sustainability Reporting

Companies with over 250 employees must disclose detailed environmental, social, and governance data - including Scope 3 emissions from their supply chains**. Data must be auditable and structured** to European Sustainability Reporting Standards (ESRS).

DPP - Digital Product Passport

Products sold in the EU must carry **a digital identity linking to verified data** on origin, composition, repairability, carbon footprint, and end-of-life instructions. Initially for *batteries* and *textiles*, expanding across sectors.

EUDR - Deforestation Regulation

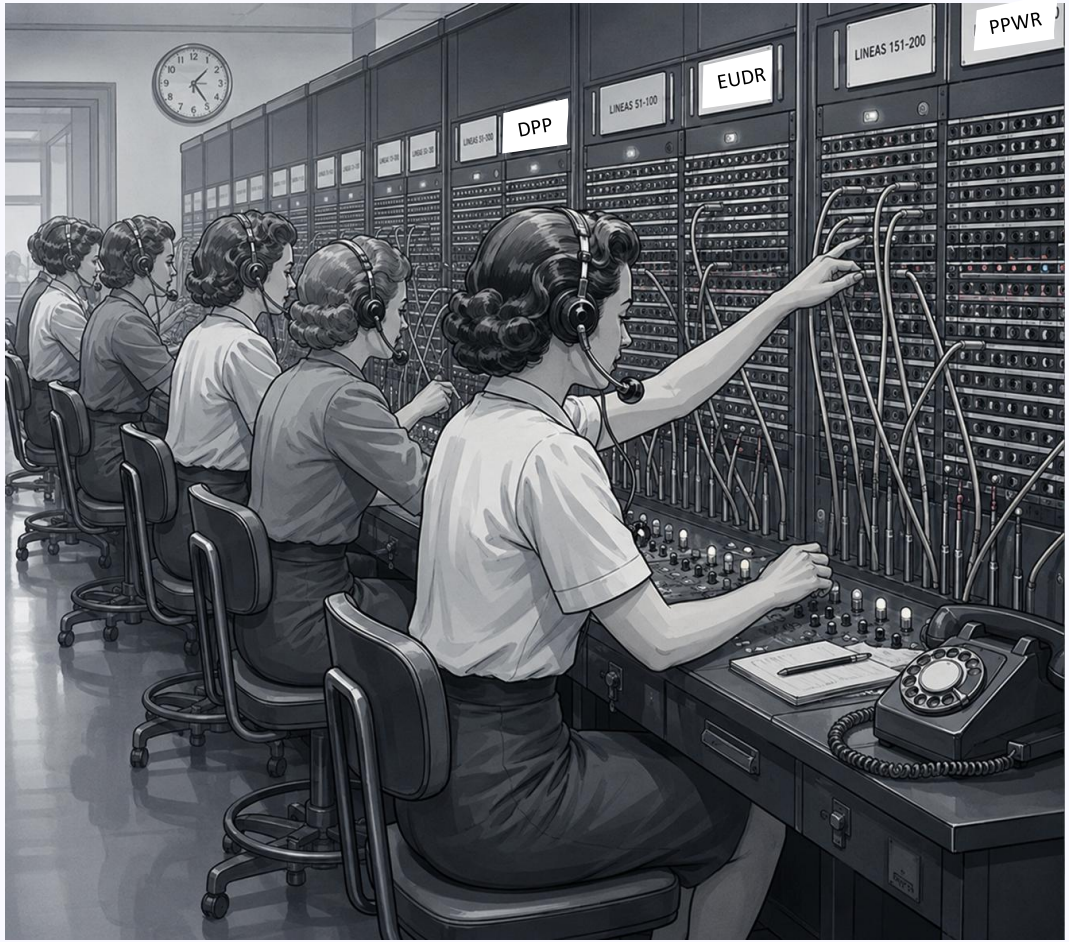
Operators placing cattle, soy, palm oil, wood, cocoa, coffee, and rubber on the EU market must prove their goods do not originate from deforested land - with **geolocated, time-stamped supply chain evidence.**

PPWR - Packaging Regulation

All packaging must meet recyclability standards by 2030, include clear consumer **information**, and use labels to communicate recycling instructions - **aligned with the Digital Product Passport** framework.

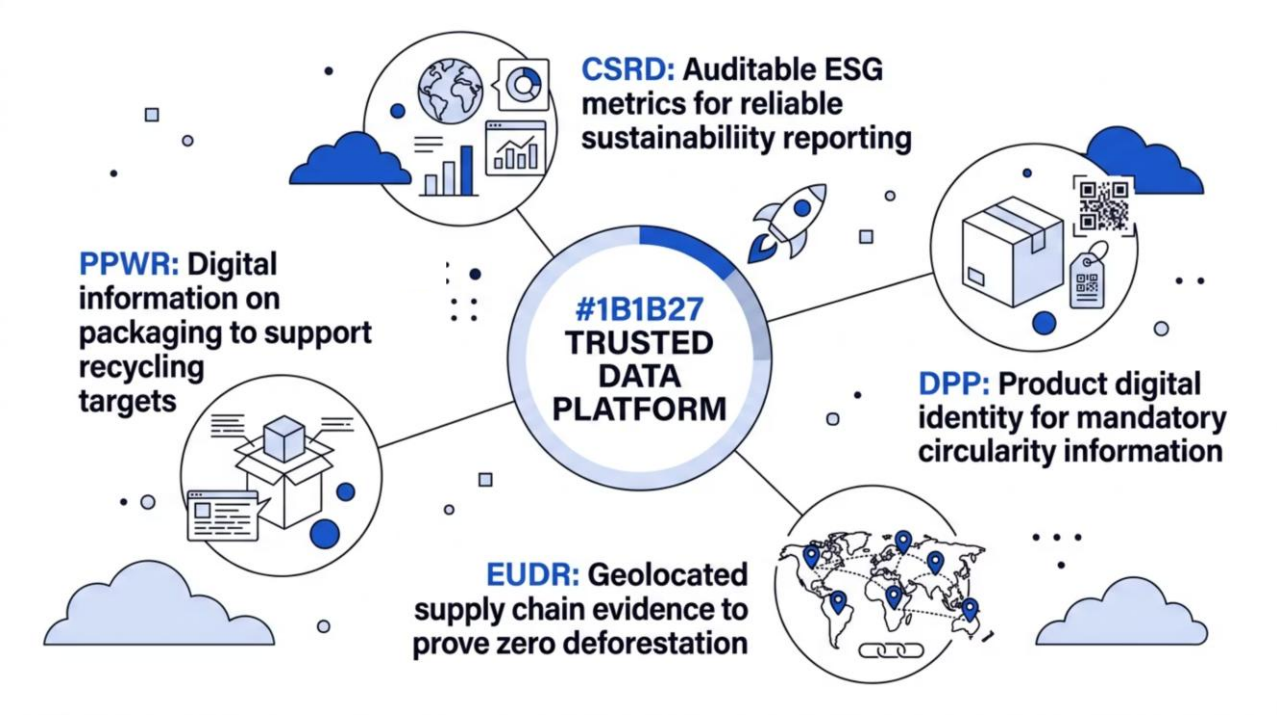
The industry:

Treating each regulation as a separate project instead of looking at the common foundation



The common thread: data you can trust

Every regulation demands the same foundation- data that is structured, verified, and uniquely linked to a specific product or actor. This is precisely where GS1 standards provide the answer.



"Regulation defines the destination - standards provide the roads, addresses and traffic signs"

GS1 standards do not replace regulation - they provide the infrastructure that makes compliance possible at scale, across complex international supply chains.

The main standards behind the solution

GS1 Digital Link and Web Vocabulary do not exist in isolation. They are built on and aligned with a robust ecosystem of international standards - giving them legal standing, interoperability, and longevity.

1

GS1 Standards

Global identifiers (GTIN, GLN), GS1 Digital Link URLs, and Web Vocabulary for supply chain and product data - the foundation of trusted product identity.

2

CEN/CENELEC (JTC 24)

European standardisation bodies whose work on the Digital Product Passport and Ecodesign for Sustainable Products Regulation (ESPR) defines the technical architecture for DPP implementation in the EU.

3

UNECE / UNTP

The UN Transparency Protocol (Recommendation 49) defines a global, decentralised protocol for verifiable supply chain credentials - Digital Product Passports, Facility Records, Conformity Credentials, and Traceability Events - that any actor can issue independently, without a central platform.

4

W3C

The World Wide Web Consortium sets the open web standards - including linked data and JSON-LD - that enable GS1 data to be published, discovered, and queried across the internet.

5

ESPR / EU Commission

The Ecodesign for Sustainable Products Regulation mandates the DPP and specifies the data categories every product passport must contain.

The main standards behind the solution

GS1 Digital Link and Web Vocabulary do not exist in isolation. They are built on and aligned with a robust ecosystem of international standards - giving them legal standing, interoperability, and longevity.

1

GS1 Standards

Global identifiers (GTIN, GLN) … vocabulary for supply chain and product data … duct identity.

Identifiers and product data standards

2

CEN/CENELEC (JTC 24)

European standardisation bodies … assport and Ecodesign for Sustainable … the technical architecture for DPP i…

European architecture for DPP (mandatory, but just for EU)

3

UNECE / UNTP

The UN Transparency Protocol (Recommendati… …ised protocol for verifiable supply chain cre… …s, Facility Records, Conformity Credentials … …y actor can issue independently, without a central

Global transparency protocols (non mandatory but global)

4

W3C

The World Wide Web Consortium sets the ope… …luding linked data and JSON-LD - that enable GS1 dat… …, and queried across the internet.

Open web standards

5

ESPR / EU Commission

The Ecodesign for Sustainable … …DPP and specifies the data categories ev… ….

Legal basis for the Digital Product Passport in Europe

6

ISO/IEC (JTC 5)

JTC 5 is the space where a new, internationally agreed standard can emerge that both Chinese and EU DPP systems could align to.

Trusted identification: the base

Sustainability compliance, digital passports, and supply chain transparency all share the same prerequisite: every product, location, and actor must have a **unique, globally recognised identity**. Without it, data cannot be reliably linked, shared, or verified.

GTIN

Global Trade Item Number - the unique identifier for every product, embedded in barcodes and QR codes worldwide

GLN

Global Location Number - uniquely identifies every company, facility, and legal entity in a supply chain

SSCC

Serial Shipping Container Code - tracks individual logistics units from warehouse to delivery

GS1 Digital Link

Wraps any GS1 identifier in a web-compatible URL, connecting physical items to their digital data records

Key concept: what is a GS1 Digital Link?

Think of a **GS1 Digital Link** as a *supercharged 2D code* evolved from the traditional barcode. It is a web address - a URL - that is built around a product's existing GS1 identifier (such as a barcode number). When scanned, it connects the physical product to a structured, verified data record online.

What it looks like

It can be a standard QR code, DataMatrix or NFC tag on the product or packaging, for example. One scan works for consumers, retailers, recyclers, regulators, and automated systems alike.

What it delivers

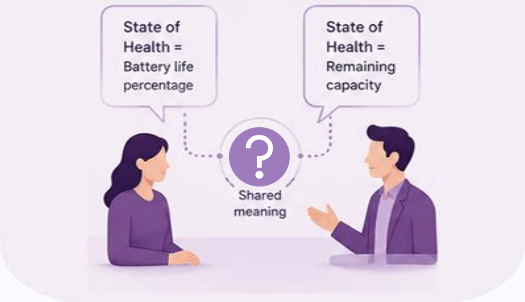
- Product origin and composition data
- Carbon footprint and sustainability certificates
- Recycling and end-of-life instructions
- Regulatory compliance documentation
- Brand and marketing content

Key concept: what is GS1 Web Vocabulary?

Data is only useful if different systems can understand it in the same way. **GS1 Web Vocabulary** is a shared dictionary - a set of agreed definitions - that describes what product data means. It ensures that when one system says "carbon footprint", every other system knows exactly what that means and how it is measured.

A Common Language

Standardised terms and structures so that data shared between companies, systems, or regulators is interpreted consistently - no manual translation needed.



Built on Schema.org

GS1 Web Vocabulary extends Schema.org - open, collaborative project - backed by Google, Microsoft, Yahoo, and Yandex - that defines a universal vocabulary for describing things on the web. It answers the question: "How do we make sure a computer understands what this data means?"

Regulatory Ready

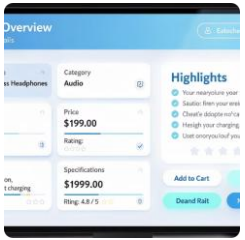
Structured vocabulary enables automated compliance checking - regulators and auditors can query data programmatically rather than reviewing documents manually.

How can GS1 Web Vocabulary help navigating product compliance

The GS1 Web Vocabulary provides a structured language for communicating essential product information. By adopting these terms, businesses can ensure their products are machine-readable and compliant with new regulations like the PPWR and DPP.

Unique identifiers

Global Trade Item Numbers (GTINs) and Digital Links provide every product with a distinct identity readable and understandable across the web.



Core product data

Standardised attributes like brand, product name, description, and features ensure consistent, accurate information.

Traceability data

Batch/lot numbers, expiration dates, and production details enable comprehensive product tracking and recall management.

Sustainability & Compliance

Specific terms for environmental attributes, recycling instructions, and material composition meet the strict requirements of regulations.

GS1 Web Vocabulary also serves as dictionary for AI Agents

Think of GS1 Web Vocabulary as a comprehensive dictionary for AI agents. Just as a dictionary defines words, their meanings, and how they relate to each other, GS1 Web Vocabulary provides a universally understood framework for product information.

Words as Classes

In a dictionary, individual words like 'apple' or 'chair' are defined. Similarly, GS1 Web Vocabulary uses **classes** (e.g., `gs1:Product`, `gs1:Organization`) to define fundamental entities. These are the "nouns" of the digital product world, providing a blueprint for data.

Definitions as Properties

A dictionary defines what a word means. GS1 Web Vocabulary's **properties** (e.g., `gs1:gtin`, `gs1:packagingMaterialType`) are like these definitions. They describe specific attributes and characteristics of a class, ensuring every AI agent interprets product details consistently.

Grammar as Code Lists

Dictionaries often include usage notes or specific grammatical rules. **Code lists** in GS1 Web Vocabulary (e.g., `gs1:PackagingMaterialTypeCode`,) provide standardised, predefined values for properties. This ensures that when an AI "reads" 'glass' for a packaging material, it knows exactly what that means, preventing ambiguity and errors.

Understanding GS1 Web Vocabulary: an example

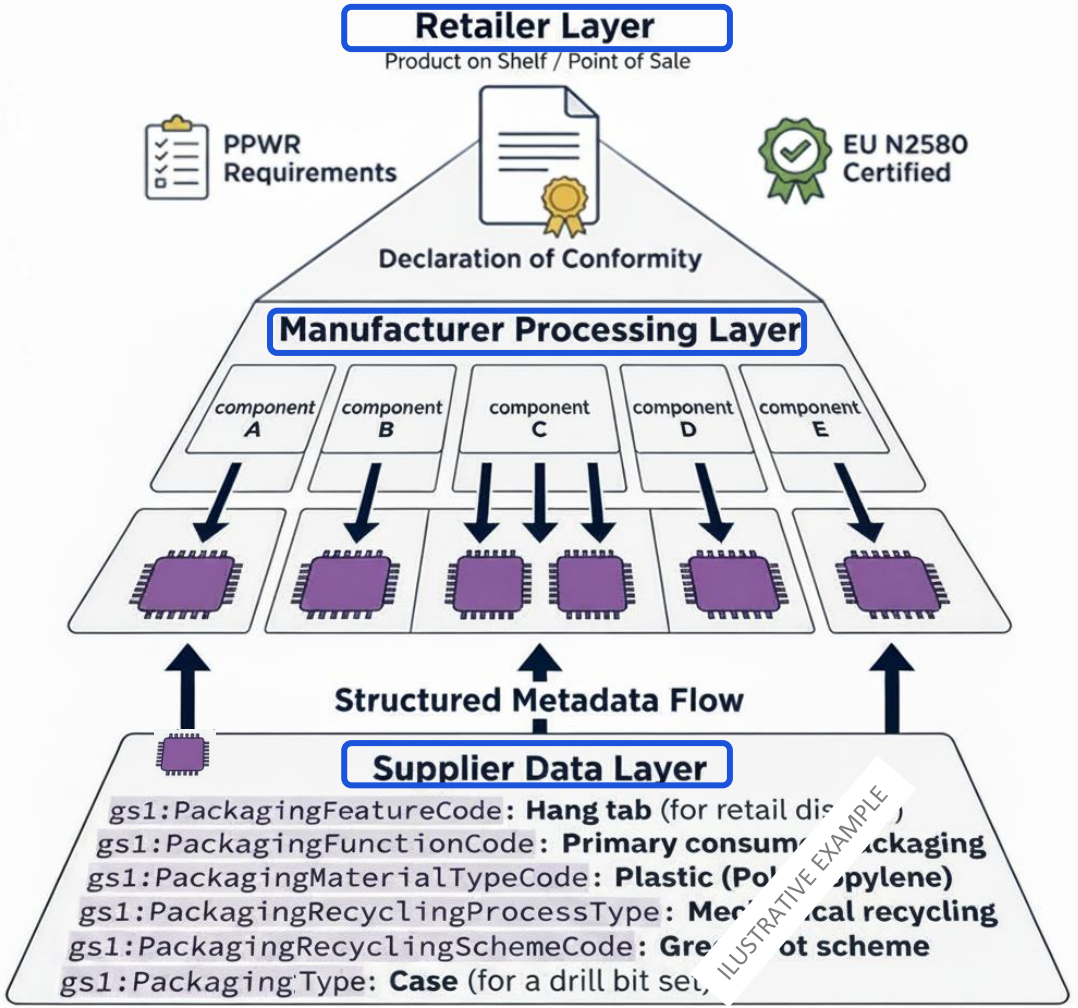
GS1 Web Vocabulary and schema.org are complementary standards designed to work together within the same linked data model. The GS1 Web Vocabulary defines specific properties to describe products in detail, ensuring that both universal product attributes and specialized information are machine-readable and unambiguous.

Universal product properties

These core properties apply to all trade items, providing fundamental identification and descriptive data for AI agents:

- `gs1:gtin`: **08710364023456** (GTIN for a specific drill bit set)
- `schema:name`: **High-Speed Steel Drill Bit Set / ...iece)**
- `gs1:productName`: **HSS Drill bit (** ...ner friendly short description of the product)
- `schema:brand`: **PowerDrill Pro**
- `schema:manufacturer`: **ABC Tool**
- `gs1:countryOfOrigin`: **Germ**
- `gs1:netContent`: **10 pieces**
- `schema:Description`: **Dur... HSS drill bits for metal, wood, and plastic, suitable for standard drills.**
- `gs1:image`: https://example.com/drillbit_set_10pc.jpg

The data exchange challenge: PPWR exampl



GS1 Web Vocabulary for DPP

Unique Identifiers

Every DPP must be anchored to a globally unique product identifier. GS1 supports this through the GTIN (Global Trade Item Number), encoded in a GS1 Digital Link URI such as https://id.gs1.org/01/05412345000013. The **gs1**:gtin property carries the 14-digit identifier, while **gs1**:serialNumber and **gs1**:batchLotNumber enable item-level and batch-level traceability. These identifiers are the entry point for any AI agent or regulatory system querying the passport.

Material & Composition

The GS1 Web Vocabulary increasingly includes packaging-related constructs, partly aligned with regulatory and market needs such as PPWR and Textiles DPP. Examples are **gs1**:PackagingMaterial, **gs1**:PackagingMaterialTypeCode, **gs1**:PackagingComposition, **gs1**:packagingMaterialCompositionQuantity, For textiles, these already exist: **gs1**:textileMaterial, **gs1**:textileMaterialContent, **gs1**:textileMaterialDescription, **gs1**:textileMaterialPercentage, **gs1**:textileMaterialWeight We also have free text via **schema.org:**material . However, equivalent constructs for bulk product material composition are not broadly defined.

Sustainability Metrics

ESPR requires quantified environmental impact data. GS1 Web Vocabulary could map to this through **gs1:**SustainabilityInfo and third-party verification certificates via **gs1**:certificationInfo. Additionally, it would be good to be able to independently identify **gs1**:carbonFootprint (expressed in kg CO_2e per functional unit, per ISO 14067) or **gs1**:energyConsumptionPerCycle (kWh). For batteries - the first product category under mandatory DPP from 2027 -concepts like **gs1**:recycledContent.

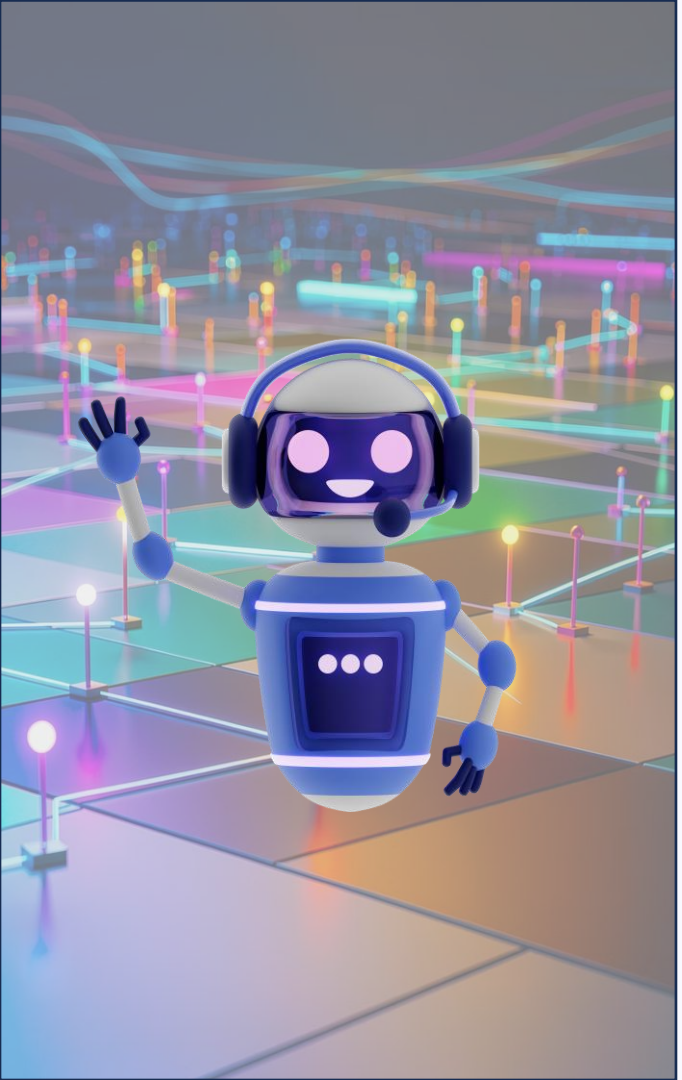
Circularity & Lifecycle

Within the GS1 Web Vocabulary, these are mostly expressed through linked information resources rather than structured attributes. Core properties such as **gs1**:instructions, and **gs1**:safetyInfo provide entry points to documentation across the product lifecycle. These are complemented by others including **gs1**:consumerRecyclingInstructions, gs1:warranty. Limited circularity exist via gs1:purchaseSuppliesOrAccessories-supporting spare parts ecosystems-and, when implemented, gs1:ReferencedFileTypeCode-DISPOSAL_INSTRUCTIONS.

New terms are developed and ratified according to the Global Standards Management Process.
Terms may be suggested and commented on in the vocabulary's GitHub repository

Security & access: protecting commercial data

While product descriptions and sustainability metrics will be publicly accessible, sensitive supply chain and compliance data must be restricted. The architecture utilizes standard web access controls and Verifiable Credentials (VCs) to authenticate users.



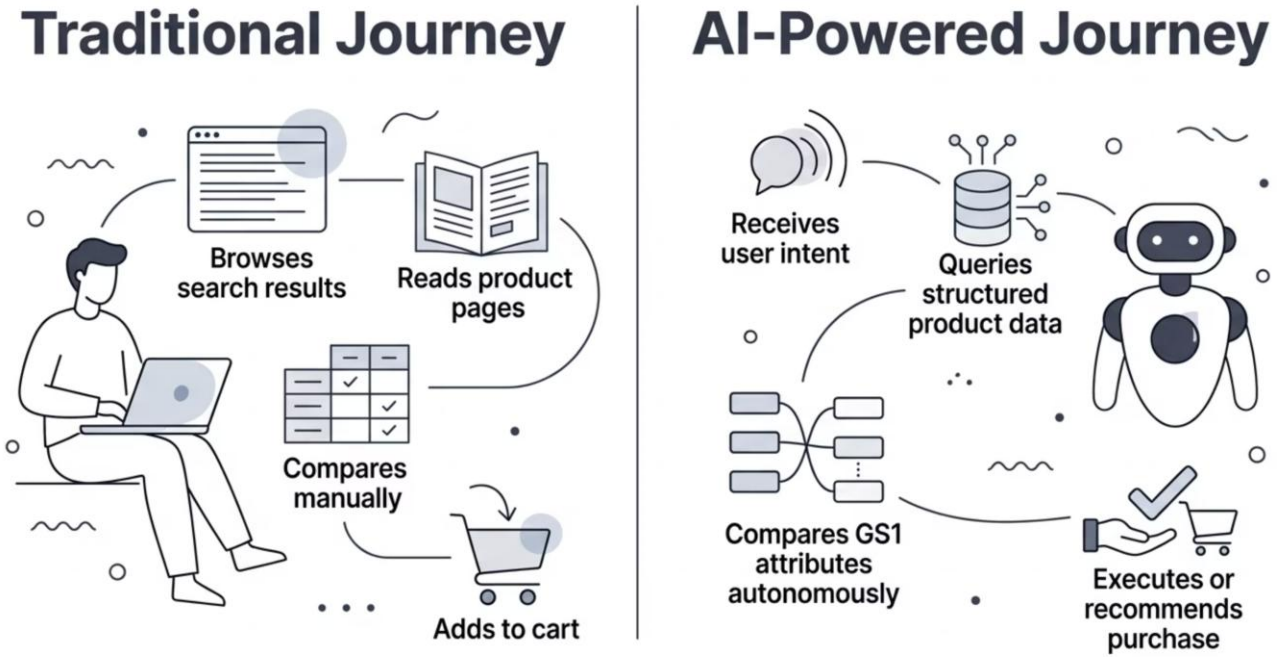
The Future: AI Agents and GS1 Web vocabulary

…a new kind of customer is in town

The value of structured product data extends well beyond current regulatory compliance. We are entering an era where **AI agents** - autonomous software that acts on behalf of companies, regulators, and consumers - **will query, verify, and act upon product data eventually without human involvement.**

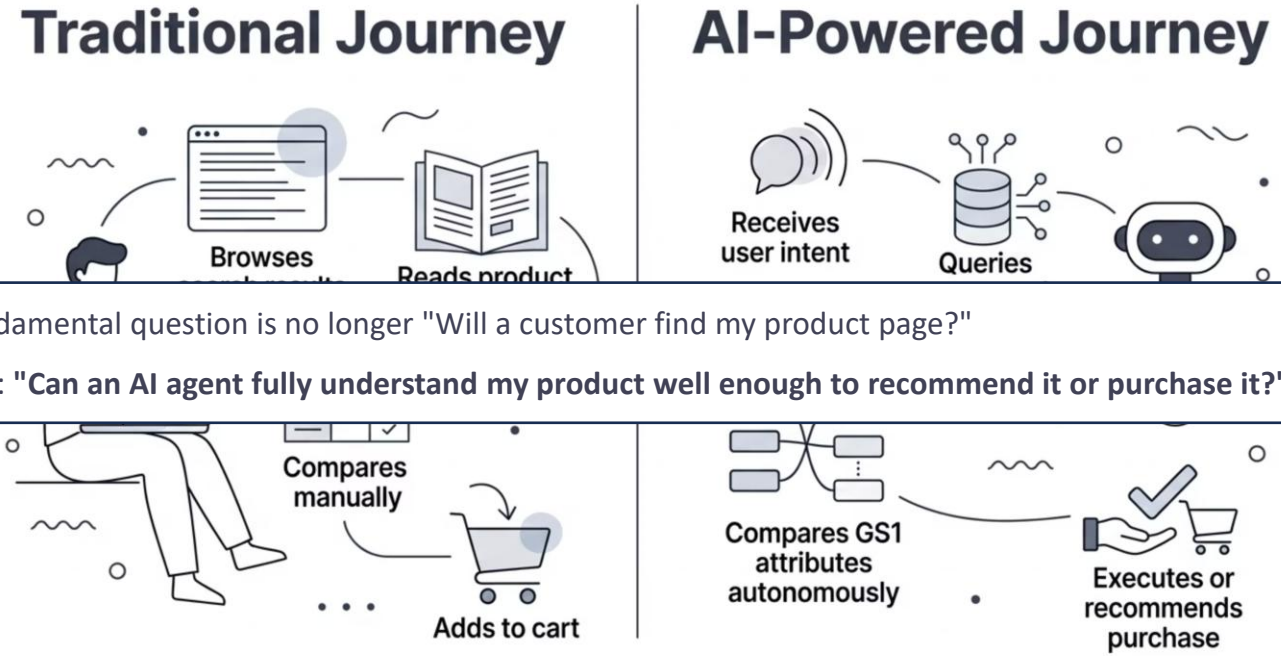
The Impact on online commerce

How the online shopping journey is shifting



The Impact on online commerce

How the online shopping journey is shifting

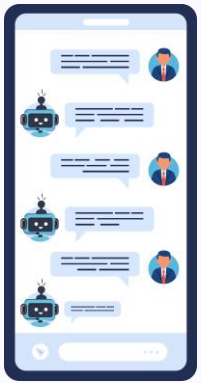


The fundamental question is no longer "Will a customer find my product page?"

It's now: **"Can an AI agent fully understand my product well enough to recommend it or purchase it?"**

AI Agents in the Supply Chain: use cases emerging

These are not hypothetical scenarios. Early deployments of AI agents in supply chain contexts are already demonstrating what becomes possible when data is structured, linked, and machine-readable from source.



Near term possibilities

Automated Compliance Checks

AI agents query a product's Digital Link record and verify regulatory compliance - flagging issues before they reach customs or a regulator.

Autonomous Supplier Qualification

Procurement AI agents verify a supplier's sustainability certifications, location credentials, and product data quality automatically

AI-Powered Product Discovery

When product data is structured with GS1 Web Vocabulary, AI search agents can surface products based on buyers' procurement criteria.

Longer term horizon

Fully autonomous purchasing

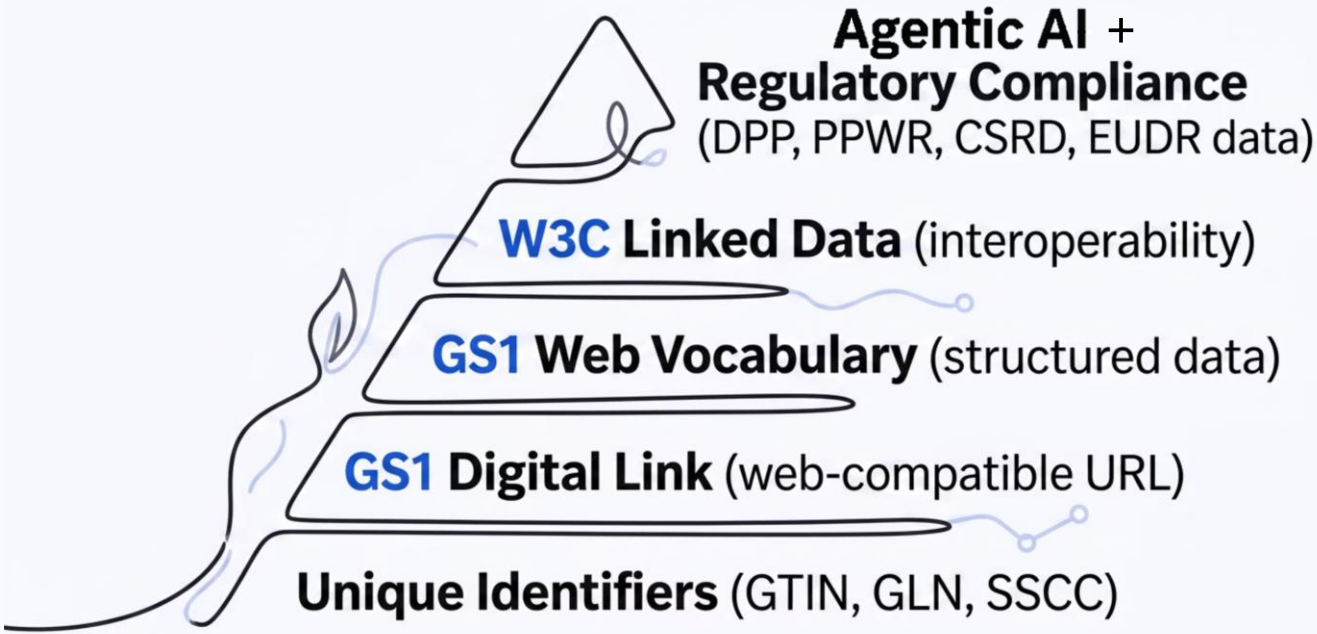
Agents replenish household or business supplies automatically based on usage patterns and live product data.

Cross-platform negotiation

Agents interact directly with retailer systems to secure the best available terms

In summary: the stack of a successful value chain

Putting it all together: a GS1-enabled, regulation-ready value chain is not a single system - it is a set of interlocking standards that ensure data flows reliably from creation to consumption, and from product to regulator.



Each layer builds on the one below it.

Companies that invest in the lower layers - clean identifiers and structured data - automatically gain the ability to meet regulatory requirements and AI Agent visibility at the top.

Your practical roadmap

Preparing for European sustainability regulations does not require a complete technology overhaul. A structured, phased approach - building on GS1 standards you may already use - is the most effective path forward.

Step 1 – Audit your identifiers

Confirm that all products, locations, and supply chain partners have valid, current GS1 identifiers (GTINs and GLNs). Clean, complete identifiers are the prerequisite for everything that follows.

Step 2 – Adopt GS1 Digital Link

Migrate existing barcodes to GS1 Digital Link QR codes on packaging. This single step simultaneously addresses Sunrise 2027, PPWR requirements and enables DPP data delivery without redesigning your label architecture.

Step 3 – Structure your product data

Implement GS1 Web Vocabulary and Schema.org markup for product records. Engage your data pool or solution provider to ensure sustainability attributes - carbon data, certifications, material composition - are captured in standardised fields.

Step 4 – Connect to regulation

Link your structured data to DPP registries, TRACES submissions (EUDR), and ESRS reporting templates (CSRD). With data already structured, this becomes a configuration exercise rather than a data collection project.

Key takeaways

The regulations are real, the deadlines are firm, and the infrastructure to respond already exists. The companies that act now will be compliance-ready - and competitively advantaged - as the regulatory landscape continues to evolve.

🌿 Regulations demand data

DPP, CSRD, EUDR, and PPWR all require structured, traceable, verifiable product data - not documents or narratives.

🩹 GS1 Standards are the common bridge

GS1 Digital Link, Web Vocabulary, and Schema.org provide the exact infrastructure regulators are designing their frameworks around.

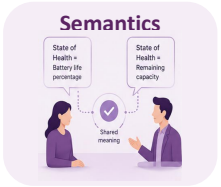
🤖 AI is the new customer

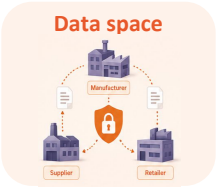
Structured data today powers AI agent compliance, procurement, and discovery tomorrow - a strategic investment, not just a regulatory one.

🚀 Start with your identifiers

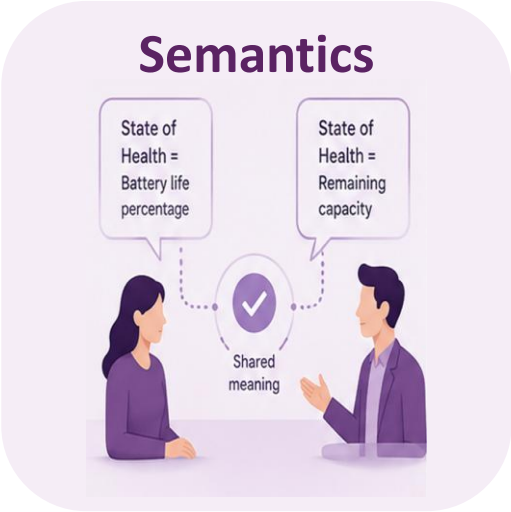
Clean GS1 identifiers and Digital Link adoption are the first, highest-leverage steps any company can take - regardless of sector or size.

Annex





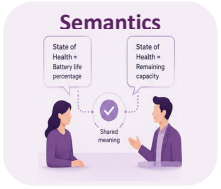
Explanation of some technical terms



Semantics

Shared meaning.

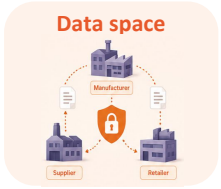
When two companies say state of health or carbon footprint, do they mean the same thing?

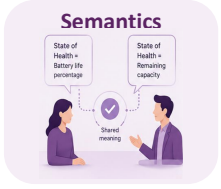


JSON-LD

Web-readable product facts.

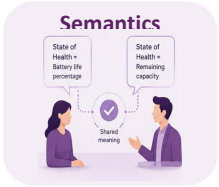
It lets software and AI agents read product data with labels and context.

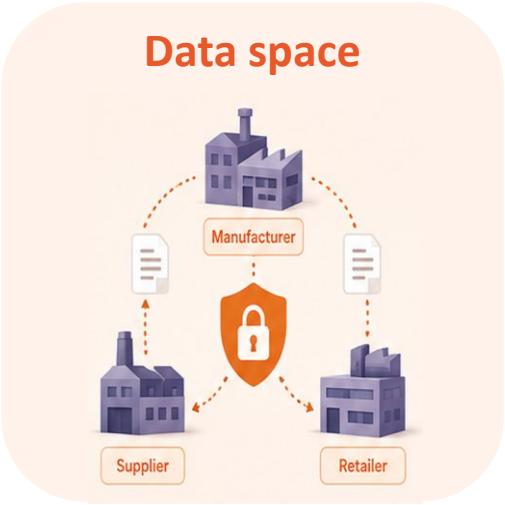




Digital twin / Asset Aadministration Shell (AAS)

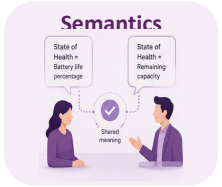
Web-readable product facts.
It lets software and AI agents read product data with labels and context.

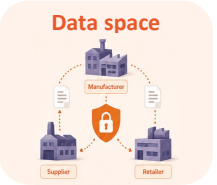




Data space

A controlled exchange network.
Companies keep their data but share selected parts under rules.

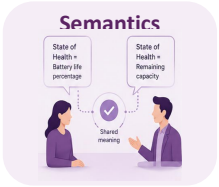




Verified Credentials

Verified credentials

Digital proof of who is asking, what role they have, and which evidence is valid.



Resolver

Resolver

The traffic controller behind a QR code.

It routes different users to the right resource.

Trusted data, sustainable future

Data sharing in action

Thank you

Natalia Macia,
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24 June 2026 | Frankfurt

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Thank you!

The slide deck and recording of the session will be shared afterwards

TRUSTED DATA
SUSTAINABLE FUTURE
FRANKFURT + ONLINE | 24 JUNE 2026

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TRUSTED DATA SUSTAINABLE FUTURE

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Robert Beideman

GS1 Global Office

Trusted Identification.
Trusted Data.
An AI-driven world.

Robert Beideman
Chief Product Officer – GS1
June 2026

The question has changed.

A YEAR AGO

AI answered.

Where did the answer come from?
Was it right? Did it hallucinate?

TODAY

AI acts.

It searches. Compares. Negotiates. Buys. Files. Ships — before you've finished pouring your morning coffee.

AI has crossed from answers to actions.

FRANKFURT, 2027.

An expectant mother

asks her AI assistant to reorder.

WHAT SHE WANTS

Her probiotic. The brand she trusts.
Delivered before Friday.

A two-second moment. The AI agent makes the call.

WHAT'S AT STAKE

Whether the brand wins or loses.

If the data is ready, the right product ships. If it isn't, a lookalike wins the reorder — and the brand never even sees the query.

Six moments will decide the outcome.

One agent. Six moments. Very different outcomes.

Frankfurt, 2027. An expectant mother asks her AI assistant to reorder her probiotics.

	ASK The agent receives the request	IDENTIFY One identifier, one truth	TRUST The claim is provable	TRADE Across borders	DELIVER On time, as ordered	STAY SAFE After the sale
WITH *trusted data*	**The right brand identified.** *Trusted by the consumer.*	**GTIN resolves to the right SKU.** *No look-alike confusion.*	**Credential confirms the brand.** *The agent orders the real product.*	**The platform recognises the brand.** *Clearance in 2 hours.*	**Right bottle. Right day.** *Brand gets the reorder.*	**Recall reaches the right buyers.** *Consumer trust compounds.*
WITHOUT *trusted data*	**Generic category match.** *Brand bypassed entirely.*	**The agent guesses from the web.** *It gets the details wrong.*	**The claim can't be checked.** *A lookalike ships instead.*	**The brand isn't recognised.** *48-hour clearance drag.*	**Late, wrong, or substituted.** *Other product gets the reorder.*	**Recall misses the buyers who need it.** *Customer lost to false recall.*

Every moment matters. Those moments decide who the value flows to.

Trusted identification. Trusted data. An AI-driven world.

SINGAPORE, 2027.

A daughter shops *for her mother's kitchen.*

WHAT SHE WANTS TO KNOW

Is this olive oil the real thing?

Aisle 7 at FairPrice. Three brands. One QR code on each. Her mother trusts only one of them.

WHAT'S AT STAKE

Whether the scan tells the truth.

If the data is ready, one scan delivers the brand's authoritative information…origin, claims, recall status…all in her language. If it isn't, the QR experience is limited.

Six moments will decide what she trusts.

One label. Six moments. Trust in the aisle.

Singapore, 2027. A daughter scans a QR code at FairPrice. Watch what one Digital Link can do.

	SCAN	AUTHENTIC	VERIFY	INFORM	CONNECT	STAY SAFE
	One QR on the pack	*Brand-registered, traceable*	*Origin, claims, allergens*	*In her language*	*The brand keeps talking*	*Recall, every time*
WITH *trusted data*	**One scan. One portal.** *Brand-owned, cross-functional, real-time.*	**Resolves to the brand's domain.** *Confirmed via the GS1 Registries.*	**Origin and claims confirmed.** *PDO, organic, allergen-free.*	**Right language, right format.** *Mandarin, Malay, Tamil, English.*	**One link, updated by the brand.** *Offers, recipes, follow-ups.*	**Recall status live.** *Pushed to her phone, not the news.*
WITHOUT *trusted data*	**QR to generic information.** *Or to a marketing page from 2024.*	**No registry entry.** *Could be anyone's Brand.*	**Claims unverifiable.** *She trusts the label or doesn't.*	**English only.** *Her mother can't read it.*	**No connection back.** *The brand never reaches her again.*	**Recall by newspaper.** *Days late, if at all.*

In physical retail, the moments are the difference between a brand relationship...and a guess.

AMSTERDAM, 2027.

A young man researches *a new television.*

WHAT HE WANTS TO KNOW

Where it’s from, and what happens to it after.

An AI assistant. Three models from three brands. One of them is made in Korea, and he wants to know what that means for the planet.

WHAT’S AT STAKE

Whether the brand can answer.

If the brand has published origin, materials, repairability and the Digital Product Passport, the AI cites it directly. If it hasn’t, the assistant scrapes a review site — and the brand loses control of its own story.

Six moments will decide who he buys from.

One product. Six moments. Long-term value.

Amsterdam, 2027. A young man researches a Korean-made television. Watch what trusted data does.

	SEARCH	ORIGIN	SUSTAIN	COMPARE	ORDER	OWN
	The AI assistant asks	*Where it's made*	*DPP, recyclability, repair*	*One identifier, every channel*	*The right unit, cross-border*	*After the sale*
WITH *trusted data*	**Indexed with GS1 Web Vocabulary.** *The brand shows up in the answer.*	**Manufacturer and factory verified.** *Signed at source.*	**ESPR-ready DPP, live.** *Repair advice, end-of-life plan.*	**Same GTIN across marketplaces.** *Like-for-like comparison.*	**Customs sees the brand.** *Cleared and delivered.*	**Warranty registers itself.** *Updates flow to the right unit.*
WITHOUT *trusted data*	**Scraped from a 2025 review site.** *The brand isn't the source.*	**"Made in Korea" — maybe.** *He'll never know.*	**A PDF from a different model.** *Or nothing at all.*	**Different SKUs, every site.** *Apples to almost-apples.*	**Held at the border.** *Or the wrong unit arrives.*	**He fills in a form.** *Updates miss his unit.*

Online, sustainable, owned for years. The brand's story only travels if its data does.

SÃO PAULO, 2027.

A patient comes home *with a new medication.*

WHAT SHE NEEDS

To take it correctly. Tonight.

The hospital is closed. The nurse is gone. She has the package and her phone.

WHAT'S AT STAKE

Her safety. Her reassurance.

If the data is ready, she gets authentic guidance from the manufacturer in seconds. If it isn't, an AI agent guesses and she potentially receives the wrong guidance.

Five moments will decide whether she's safe.

One package. Five moments. Health on the line.

São Paulo, 2027. A patient discharged from hospital scans the medication at home. Watch the trust.

	IDENTIFY	AUTHENTIC	VERIFY	INFORM	SIGNAL
	What's in the box?	*What's the origin?*	*Right dose, not recalled*	*How do I take it?*	*The link works both ways*
WITH *trusted data*	**The right medication.** *No confusion at home.*	**A signed proof of origin.** *Confidence in authenticity.*	**Dose, expiry, recall checked.** *Before the first tablet.*	**Trusted guidance.** *From the manufacturer, not the web.*	**Recall reaches her phone.** *No need to scan again.*
WITHOUT *trusted data*	**Look-alike packaging.** *Confusion at the kitchen counter.*	**No way to prove it's real.** *Counterfeit risk.*	**Recall and expiry unknown.** *A near-miss waiting to happen.*	**The agent guesses.** *Wrong dose. Hallucinated advice.*	**Recall by newspaper.** *She takes the tablet anyway.*

In healthcare, the moments matter to patient safety.

Four Critical Enablers. One holistic system.

Four stories…all with the same answer. None of these industry shifts can deliver alone.

2D migration at scale

Advanced data carriers (2D, RFID, NFC) that people and machines can read and act on.

Without it, the scan never starts.

Trusted identification & trusted data

The registries and data-sharing infrastructure. Identifiers that are anchored, attributes and data that are discoverable. Links to brand-provided and decentralised quality data. All AI-native.

Without it, the scan goes nowhere.

Regulatory Alignment

Public policy engagement and standards harmonisation. DPP, FSMA, EUDR, FMD all recognising the GS1 system.

Without it, interoperability suffers.

Adoption at scale across industries.

All four are critical. None of them delivers alone. **And we have a lot of work to do.** The architecture is ready. The standards work. What's left is adoption at scale, cross-industry and globally.

Trusted identification. Trusted data. An AI-driven world.

What’s new…and who makes it work.

The GS1 architecture and solution portfolio serves all four stories. Every stakeholder has a role.

THE IDENTIFIERS

GTIN, GLN, SSCC

Global scaling of trusted identification. Every downstream actor recognises the same product, resource, asset.

THE CARRIERS

Advanced Data Carriers + GS1 Digital Link

QR and DataMatrix replace the linear barcode (+ RFID and NFC). Brands prints them. Consumers and AI agents read them.

THE GRAMMAR

GS1 Web Vocabulary

The structure AI tools can read. The brand publishes product attributes in it. GS1 maintains the language with industry.

THE PROOF

Verifiable Credentials

Brand-signed claims any actor can verify instantly. The brand signs. Retailers, customs and AI agents can check the signature.

THE TRUTH LAYER

GS1 Registry Platform + Verified by GS1

Global by design. Customs query it. Marketplaces query it. AI agents query it. One source of truth across actors and borders.

THE CONNECTIONS

Resolver + GS1 Digital Link

One identifier, many destinations. Each audience sees what they are looking for: DPP, recall, dosing…all from one scan.

Components of one portfolio. One federated system. Every stakeholder doing their part.

Four stories. Four industry needs. One architecture.

Frankfurt. Singapore. Amsterdam. São Paulo. The same system serves every core industry need.

Market access

Frankfurt's reorder. Amsterdam's cross-border purchase. Brands win because they're identifiable. Customs clear in hours, not days.

Sustainability & the Circular Economy

Amsterdam's pre-purchase research. EUDR, ESPR and the Digital Product Passport, all served by the same identifiers brands already publish.

ONE SYSTEM

Four stories. One federated layer of trusted identification and trusted data.

Consumer experience & patient safety

Singapore's aisle. São Paulo's kitchen counter. Authentic guidance from the brand or manufacturer. Recalls reach the people who need them.

Operational Efficiency

Every story. Machines find, verify and act on trusted data with agentic commerce, customs clearance and supply chain flows optimised.

Four stories. Four core industry needs. One architecture doing every job at once.

Four moves for all users of GS1 standards.

What industry needs to do to be ready for AI, regulation and modern commerce.

01

Invest in digital identification.

Publish your GTINs and GLNs in the registries with discipline. Coverage is the foundation everything else depends on.

02

Author master data once.

One authoritative source, published using GS1 Web Vocabulary and on the web, so trading partners, LLMs and agents can all understand it.

03

Adopt GS1 Digital Link.

One identifier, many trusted destinations. Publish in the link registries so every scan resolves to authoritative data.

04

Be reachable by agents.

Expose product data via APIs and structured endpoints, either directly, or through the GS1 registries or GDSN.

Four moves for GS1 to support you.

How GS1 will help you get there…across every market.

01

Drive adoption at scale.

Scale active use of GTIN, GLN and publication in the registries.

Coverage and quality are the foundation for everything downstream.

Integrate with key agentic protocols (UCP, AP2, A2A, etc)

02

Support AI-ready master data.

Help users and solution providers create, manage and publish master data using GS1 Web Vocabulary.

03

Support GS1 Digital Link adoption.

Help users and solution providers implement GS1 Digital Link across data management, 2D and link resolution.

Build it into services where it fits.

04

Ship standards as code.

Expand Machine-readable standards.

JSON-LD. Live APIs. Customs-grade specs. DPP-ready schemas. RAG-compatible endpoints.

GS1 in Europe | GS1 INTERACT

Thank you!

The slide deck and recording of the session will be shared afterwards

TRUSTED DATA
SUSTAINABLE FUTURE
FRANKFURT + ONLINE | 24 JUNE 2026

GS1 in Europe | GS1 INTERACT

Panel discussion

TRUSTED DATA
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What is the main reason your organisation works on improving how it shares sustainability data?

- To comply with regulations and avoid penalties (e.g. EU requirements)
- To improve internal efficiency and speed of operations
- To meet growing demands from customers and partners for transparency
- Other reason

To achieve it all - regulatory compliance, operational speed, and consumer transparency - without duplicating data, where should companies start establishing their single source of truth for sustainability data?

In the future, how will your company primarily share its product data with business partners and consumers?

- **Through an updated GDSN network** (automated, centralized spreadsheets pushing bulk master data directly to traditional retail and healthcare partners)
- **Through secure, collaborative Data Spaces** (direct, decentralized sharing where your business retains full ownership and control of who gets to see specific data)
- **Through 2D barcodes (GS1 Digital Link)** (an open, web-connected approach where scanning a single QR code routes data to retailers, regulators, or consumers depending on who is scanning it)
- **Other way**

We believe these solutions can coexist. What are your thoughts and on the future of data sharing?

How confident are you that your current product data is clean and structured enough to feed directly into an AI-driven tool, LLM, or smart search engine?

- Very confident — our data is fully optimized
- Moderately confident — good metadata, but needs manual oversight
- We have an extensive amount of data cleansing left to do
- Not confident at all — our data is heavily siloed and unverified

How can companies get started on getting their data ready? How is GS1 able to support?

What is the biggest challenge companies will face going forward?

- AI readiness
- Trusted data sharing
- Trusted identification
- Regulatory compliance

If you can give one piece of advice to the audience here, what would it be?

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SUSTAINABILITY

- Protect natural resources
- Lower emissions
- Create long-term value for people and planet

TRUSTED IDENTIFICATION

Verifying entities and products across the value chain

Trusted Identities

- ✓ Verified
- ✓ Authentic
- ✓ Accountable

TRUSTED DATA

Accurate • Transparent • Secure

- Provenance
- Environmental impact
- Compliance
- Transactions

A sustainable future through responsible choices and systems that regenerate.

Trusted identification and trusted data build confidence, enable transparency and drive better decisions.

When sustainability, circular economy and trusted data come together, we build a resilient, transparent and prosperous future for all.


Albania
Armenia
Association Greece
Azerbaijan
Belarus
Belgium & Luxembourg
Bosne i Hercegovine
Bulgaria
Croatia
Cyprus
Czech Republic
Denmark
Estonia
Finland
France
Georgia
Germany
Hungary
Ireland
Israel
Iceland
Italy
Kazakhstan
Kyrgyzstan
Latvia
Lithuania
Malta
Moldova
Macedonia
Montenegro
Netherlands
Norway
Poland
Portugal
Russia
Serbia
Romania
Slovakia
Slovenia
Spain
Sweden
Switzerland
Turkmenistan
UK
Ukraine
Uzbekistan
Türkiye
UAE
Connect with your local GS1 organisation!

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Thank you...

... to all our speakers
... to our hosts
... to the GS1 in Europe team
... to our GS1 colleagues
... to the technical team
... to our attendees in Frankfurt and online

And see you next year!

TRUSTED DATA SUSTAINABLE FUTURE

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