The Global Traceability Standard

Supporting Visibility, Quality and Safety
in the Supply Chain

The Global Traceability Standard

GS1

GS1 is a global organisation dedicated to the design and implementation of global standards and solutions to improve the efficiency and visibility in supply and demand chains.

We have more than 30 years experience in the development and support of global supply chain standards and technologies.

GS1 is a neutral, not-for-profit standards (and related services) organisation.

We offer a diversified portfolio of products, solutions and services, including the GS1 System of standards, the most widely used supply chain standards system in the world.

Our portfolio ranges from GS1 BarCodes to GS1 eCom (electronic commerce tools) to next generation technologies, such as GS1 EPCglobal (using RFID), and solutions such as GS1 GDSN (Data Synchronisation) and GS1 Traceability.

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The Global Language of Business

OVERALL BENEFITS: Improving efficiency & visibility in supply and demand chains

GS1 SOLUTIONS & SERVICES USING GS1 STANDARDS
Solutions: POS / Inventory Management / Asset Management / Collaborative Planning / Traceability
Services: Global (GSMP, GEPIR, Global Registry, Training and Accreditation) & Local (e.g. Certi•cation, Implementation, Training)

((GS1 System - Integrated system of standards

((GS1 BarCodes	((GS1 eCom	((GS1 GDSN	((GS1 EPCglobal
Global standards for automatic identification	Global standards for electronic business messaging	The environment for global data synchronisation	Global standards for RFID-based identification
Rapid and accurate, item, asset or location identification	Rapid, efficient & accurate business data exchange	Standardised, reliable data for effective business transactions	More accurate, immediate and cost-effective visibility of information

GS1 Identification Keys (e.g. GTIN, GLN, SSCC, GRAI, GIAI, GSRN, EPC)
& Attribute Data (e.g. Best Before Date)

GS1 around the world

Countries with GS1 Member Organisations
Countries served on a direct basis from GS1 Global Office (Brussels)

We operate in more than 20 industry sectors ranging from Retail, Food and Fast Moving Consumer Goods to Healthcare, Logistics and Defence.

GS1 and its Member Organisations play a leading role in supply and demand chain management improvement worldwide for large, small and medium-sized organisations.

Formed from the joining together of EAN International and the Uniform Code Council (UCC), GS1 is truly global, with a presence in **over 103 countries** driven by more than **a million companies** that execute over **five billion transactions each day** using GS1 standards, solutions and services.

Introduction

> **Because of its ability to provide globally unique identification of trade items, assets, logistic units, parties and locations, the GS1 System is particularly well suited to be used for traceability purposes.**

> **"A global traceability process standard helps enable a consistent approach to traceability throughout the supply chain."**
>
> **NESTLÉ**

Safety, security and traceability are currently at the forefront of both government regulations and industry concerns around the world. As a result, numerous irreconcilable track and trace solutions have been proposed to the national, regional and global supply chain participants.

The cost of diverse government regulations, proprietary service offerings and incompatible commercial solutions to the consumers, companies and the global supply chain called for defining traceability as a business process, which is supported by voluntary business standards that are accepted around the world.

GS1 has succeeded in producing a global business agreement on generic requirements and a common way to describe the traceability process, while taking into account differences imposed by diverse legislative and business requirements and diverging expectations in terms of enabling technologies.

From an information management point of view, implementing a traceability system within a supply chain requires all parties involved t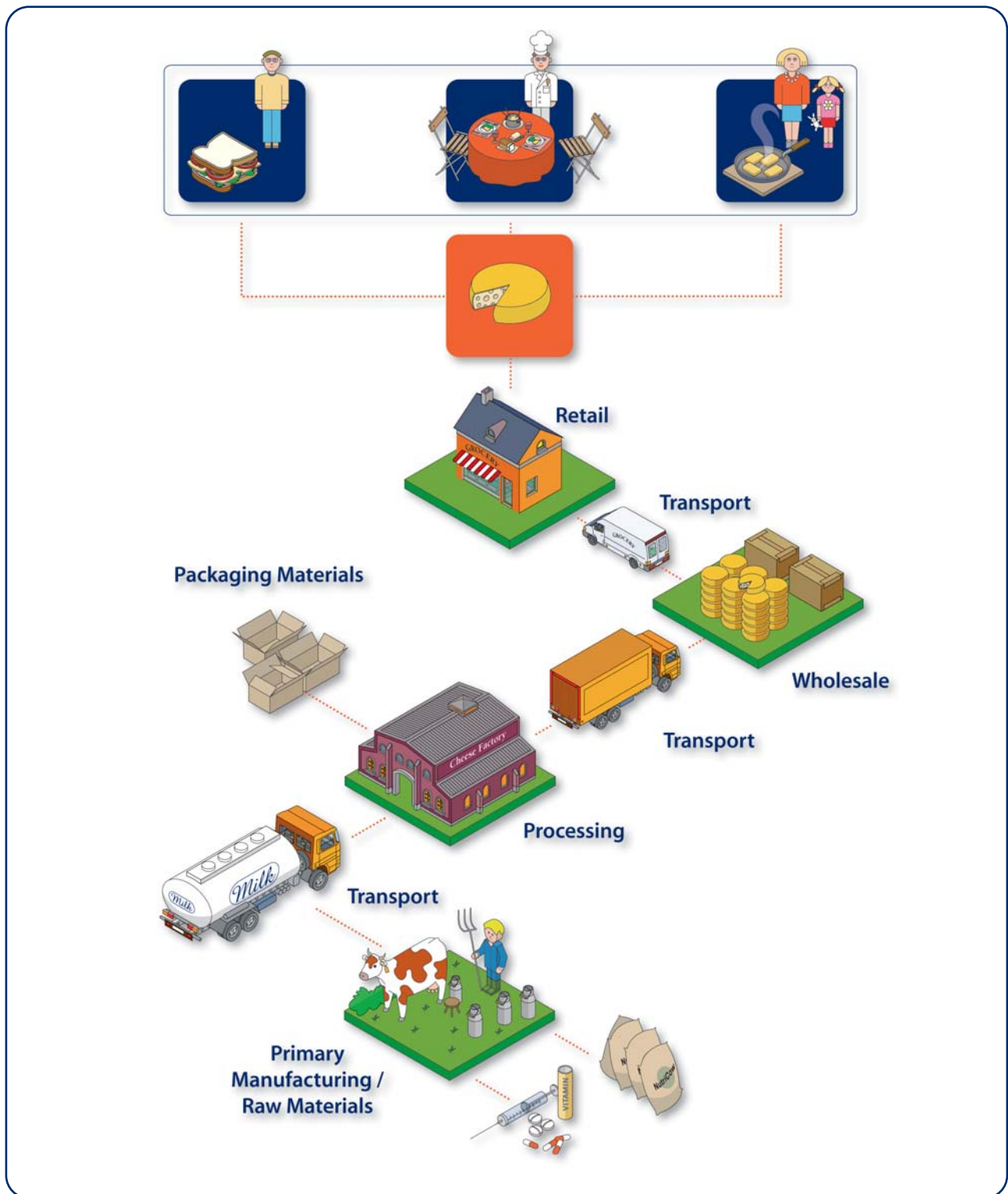o systematically associate the physical flow of materials, intermediate and finished products with the flow of information about them.

This requires a holistic view of the supply chain, which is best attained by deploying a global language of business – the GS1 System. Its universal acceptance around the world makes it uniquely positioned to appropriately respond to traceability system design and implementation requirements.

Because of its ability to provide globally unique identification of trade items, assets, logistic units, parties and locations, the GS1 System is particularly well suited to be used for traceability purposes. Leading business organisations, such as CIES and ECR Europe, have endorsed the use of GS1 Traceability Solutions.

To further develop our capability to assist consumers, businesses and governments worldwide, we have now defined traceability as a business process and produced a Global Traceability Standard, which links it to enabling technologies and relevant GS1 System tools.

Examples of traceability actors in the supply chain

The Global Traceability Standard

The GS1 Traceability Standard is a business process standard describing the traceability process independently from the choice of enabling technologies. It defines minimum requirements for companies of all sizes across industry sectors and corresponding GS1 Standards used within information management tools.

The Standard maximises the use of globally established and implemented GS1 System tools that uniquely identify any "traceable item", describe the creation of accurate records of transactions, and provide for fast data communication about the traceable item between trading partners.

It meets the core legislative and business need to cost-effectively trace back (one step down) and track forward (one step up) at any point along the whole length of the supply chain, no matter how many trading partners and business process steps are involved and how many national borders have been crossed.

The GS1 Traceability Standard is a high level description of the traceability process enabling and promoting supply chain collaboration. At the same time, it allows each company to design its own traceability system in terms of scope, precision and automation in accordance to its own commercial objectives.

By defining a shared minimum requirement and showing what action is required from trading partners, the GS1 Traceability Standard enables maximum interoperability between traceability systems across the whole supply chain whilst accommodating specific commercial, industry sector legislative requirements.

It serves as a foundational standard for all GS1 members to use as a starting point for identifying their unique requirements. This framework will ensure a common approach and understanding of key principles by businesses and governments around the world.

Furthermore, having a proven standard-based traceability process can demonstrate that an organisation has met requirements of corporate responsibility.

At the same time, it allows each company to design its own traceability system in terms of scope, precision and automation in accordance to its own commercial objectives.

"A common understanding of how products can be traced as they move along global supply chains has never been more important. The GS1 Global Traceability standard provides the necessary foundation on which individual Industry standards for traceability will be built."

PRODUCE MARKETING ASSOCIATION

and **CANADIAN PRODUCE MARKETING ASSOCIATION**

Uses of Traceability

Increasingly, the ability to trace materials and products up and down the supply chain has become an integral part of doing business. One traditional use has been to identify and locate unsafe foods or pharmaceuticals and remove them from commerce. Later, track and trace systems have been used to validate the presence or absence of attributes important to consumers (e.g., organic foods, non-allergenic cosmetics). Traceability has also become one tool in fighting product counterfeiting and protecting brands. Most recently, traceability of foods has become a regulatory requirement to protect against bioterrorism.
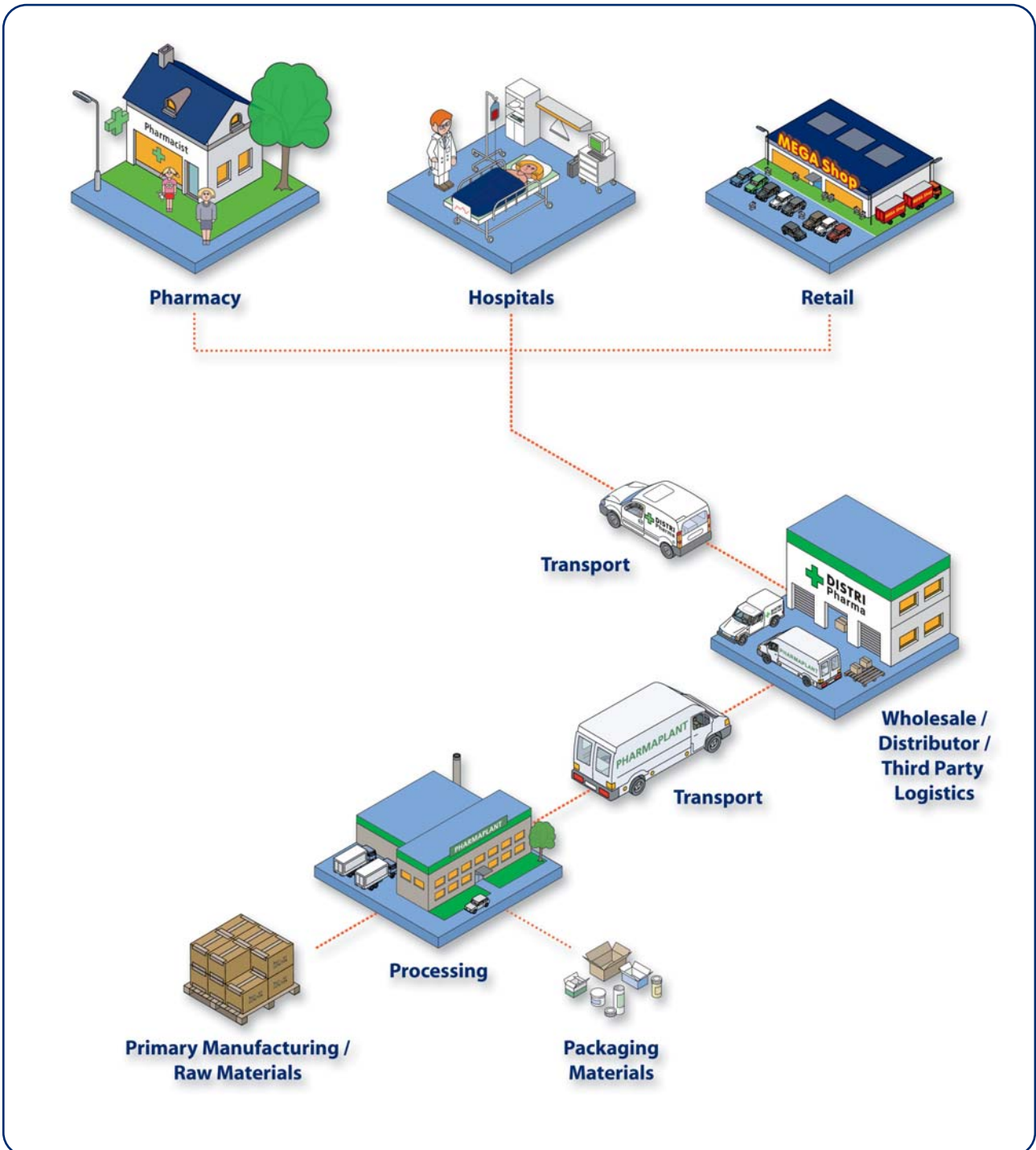
Traceability can be used for these specific objectives as well as a tool to assess other business systems and tools such as:

- Quality Management
- Risk Management
- Information Management
- Logistical Flows
- Commercial Advantage
- Evaluation of Management Demands

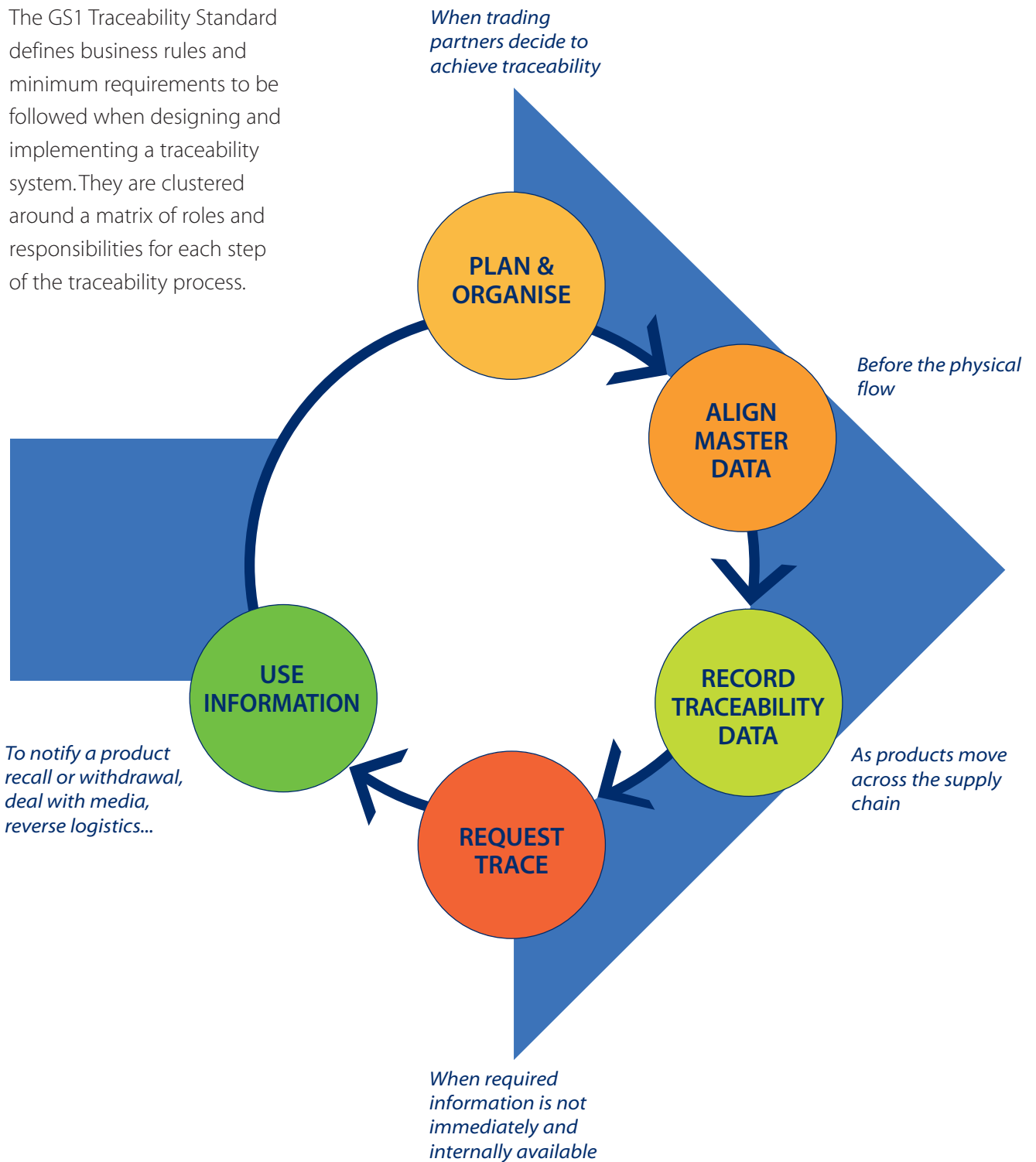## Examples of uses of traceability and of trace requests

Examples of traceability actors in the supply chain

The Traceability Process

The GS1 Traceability Standard defines business rules and minimum requirements to be followed when designing and implementing a traceability system. They are clustered around a matrix of roles and responsibilities for each step of the traceability process.

When trading partners decide to achieve traceability

Before the physical flow

As products move across the supply chain

When required information is not immediately and internally available

To notify a product recall or withdrawal, deal with media, reverse logistics...

PLAN & ORGANISE

ALIGN MASTER DATA

RECORD TRACEABILITY DATA

REQUEST TRACE

USE INFORMATION

The **Plan and Organise** sub-process determines how to assign, collect, share and keep traceability data. Furthermore, it determines how to manage links between inputs, internal processes, and outputs.

The **Align Master Data** sub-process determines how to assign identifications to the parties and physical locations, trade items and if appropriate to assets. It also determines how to exchange Master Data with trading partners.

The **Record Traceability Data** sub-process determines how to assign, apply and capture traceable items identification and how to collect, share and store traceability data during the physical flow.

The **Request Trace** sub-process determines how to initiate and respond to a traceability request.

The **Use Information** sub-process enables the use of the previous processes to take appropriate action as required by legal and business requirements.

The following GS1 standards enable implementation of the GS1 Traceability Standard:

- **Global Trade Item Number (GTIN)**
- **Global Location Number (GLN)**
- **Serial Shipping Container Code (SSCC)**
- **GS1-128 Bar Code**

- **Reduced Space Symbology (RSS)**
- **Data Matrix**
- **Electronic Product Code (EPC)**
- **Global Data Dictionary (GDD)**

- **GS1 XML and EANCOM e-business messages (Align and Deliver)**
- **General GS1 Specifications**
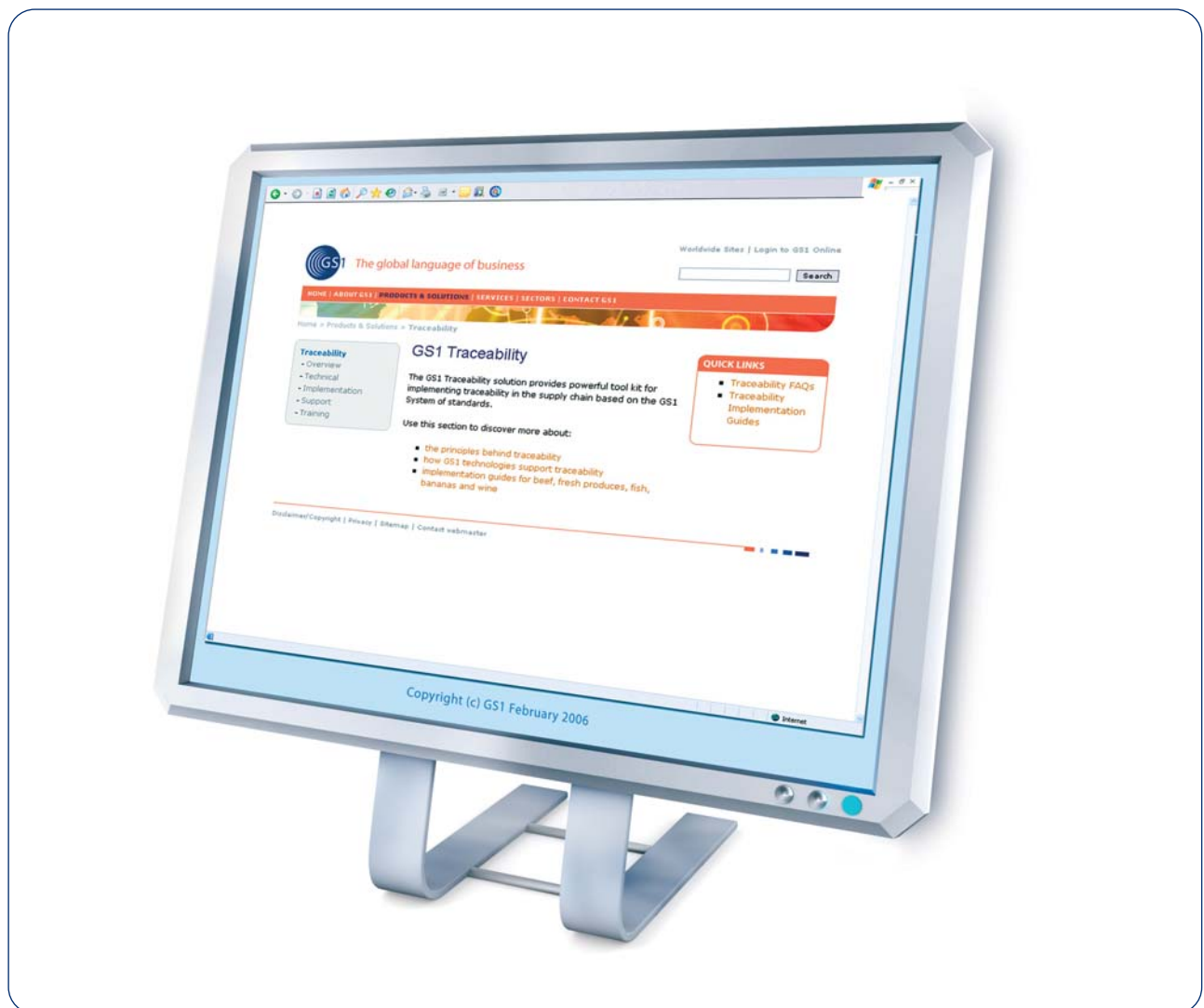- **Global Product Classification (GPC)**

Benefits

While businesses recognise the value of traceability, they do not want multiple, potentially conflicting, traceability systems, and they do not want to increase costs un-necessarily. Businesses also recognise that an individual company is only one partner in the supply chain, and that a chain is only as strong as its weakest link. So they want a system that could easily be adopted by just about everyone in the supply chain.

The GS1 Traceability Standard addresses these business needs, we believe, in the following ways:

- It is **based on existing business practices**, and there is no need to purchase, create or integrate new systems.

- It **uses a common language**, the GS1 System of identification and bar coding, as well as GS1 EANCOM® and GS1 XML messaging.

- It is, therefore, **broad-based** in that GS1 Standards are used in over 140 countries around the world by a large majority of supply chain partners (there are over 1 million GS1 user companies).

- It takes a **global approach**, addressing the supply chain as a whole rather than any particular individual partner.

- It is **thorough**, covering the fundamentals of traceability – identification, data capture and management, links man-agement, and communication.

- It focuses on the interfaces of physical flow of materials and products, **establishing an open, global relationship between independent partners.**

- It is **flexible**, recognising that circumstances vary within and between sectors, and thus providing for tailored applications.

- It is not a standard for internal traceability, although it does show the inputs and outputs that must be linked by an internal traceability system.

- It is not a law or regulation, although it is designed to help business comply with existing and expected laws or regulations.

- It is not a replacement for a service provider for e.g. training or implementation support, although it does identify the types of information and core specifications that a service provider needs to consider in designing a system to manage traceability.

- It is not a replacement for safety or quality programmes. It complements them when a problem arises. For example, food safety programs such as the CIES Global Food Safety Initiative and quality pro-grammes such as EUREPGAP.

For further information contact the Traceability Solutions Manager at traceability@gs1.org
or contact your local GS1 Member Organisation. The GS1 Members list is available at www.gs1.org

Do not hesitate to have a look at www.gs1.org/traceability for more information, updates and news regarding
the GS1 Traceability Standard.

www.gs1.org/traceability

GS1 - The global language of business