



# GS1 Standards along the Supply Chain of Consumer Electronics

Optimising Logistic Processes

# Optimising Logistic Processes in the Sector of Consumer Electronics

In all supply chains, advanced logistic management optimises the circulation of products and materials. In the sector of consumer electronics a large number of suppliers are global players. Production often takes place in Asia, Europe or the US, whereas consumer electronic products are sold all over the world. Retailers instead – though they faced an intense period of internationalisation – will continue to run their sales business locally. For all these parties along a supply chain – with varying requirements and interests – efficient logistic processes are required.

Benefits derive on all levels along the global supply chain for consumer electronics, if all participants reduce the complexity and the diversity of existing relationships – for example by using the same language for business – based on globally valid solutions.

GS1 Standards provide such a solution and help companies to face the following challenges:

## Sector Particularities for Consumer Electronics

- >> Lean and global supply chain management becomes more and more the crucial success factor in an increasingly competitive business environment characterised by high cost pressure, global sourcing, long lead and transportation times, ...
- >> As transported goods move through multiple parties – manufacturers, logistics service providers, retailers and other parties – until arriving at the final customer at the POS, it is beneficial for all players involved to use the same identification and communication standards along the entire supply chain
- >> Consumer electronic products typically have a short life cycle – hence, providing rich product data in high quality and in a standardised way is crucial for successful sales processes
- >> At the POS technical and sales related information is required for consumer electronics products
- >> Consumer electronics products tend to be of high value and therefore are likely to be a target for counterfeiting

## Supply Chain Participants

The following supply chain participants find themselves at one time or another involved in all (or some) of the following logistic operations:

### Supplier/Manufacturer

- >> Receiving and inventory management; Manufacturing

process; Providing basic and product specific master data to retailers; Ordering, delivering and invoicing processes; Order picking, shipping and transportation

### Logistics providers

- >> Warehousing: Handling and storage of products; Transform, consolidate and deconsolidate units/lots; Receiving of product; Inventory management; Order picking
- >> Shipping: Transport and delivery of raw materials, packaging and/or finished products; Tracking/Tracing
- >> Distribution: Receiving and inventory management of final products of several manufacturers; Ordering from several manufacturers and delivering to several customers

### Retailer

- >> Receiving and inventory management of final products, in central distribution centre and/or at the POS; Ordering, delivering and invoicing processes – ideally in a single standardised way with various partners; Need to respect local requirements (e.g. supplier relationships, category management, advertising and prices), but want to deal in standardised way with business partners; Aim at decreasing logistic costs and process time by enhanced automated processes; Intend to increase product availability and thereby generate increase in turnover and profit

### Customer

Buys the product he wants at the store of his preference. Requests high product availability, no out-of-stocks, high level of product information for easy decision making at POS, excellent services and a long warranty period.

## Benefits of GS1 Standards in the Sector of Consumer Electronics

The most significant benefits are:

- >> Decreased costs of production and procurement
- >> Lower stock of inventories – less capital lockup
- >> Reduced number of supply chain partner disputes
- >> Increased product availability and less out-of-stocks
- >> Time and cost savings in product preparation, shipping and receiving – increased speed to market
- >> Improved sales information and optimised assortments
- >> Advanced traceability secures efficient management of product recalls and makes counterfeiting more difficult
- >> Intensified collaboration helps to meet customers needs better
- >> Better and effective after sales services

# GS1 Standards

A GLN (Global Location Number) is a 13-digit number that identifies any physical location and party involved in a given transaction. In the global CE supply chain for example, the order originator (buyer), the product manufacturing location, the product shipping/transhipping/unloading location and the final delivery destination can be identified with a GLN. Further details can be found on [www.gs1.org/id\\_keys](http://www.gs1.org/id_keys)

A GTIN (Global Trade Item Number) is an identification number for all products and services, which may be priced, or ordered, or invoiced at any point in any supply chain. It is normally constructed from a GS1 company prefix assigned to a company, an item reference designated by the company, and Check Digit.



Further details can be found on [www.gs1.org/id\\_keys](http://www.gs1.org/id_keys)

An SSCC (Serial Shipping Container Code) is an 18-digit number that uniquely identifies a logistic unit. It identifies items of any composition established for transport, storage or distribution, which needs to be managed through the supply chain. Two identical trade units will have the same GTIN but two different SSCCs.



The SSCC is the key to accessing information from the electronic delivery notice (DESADV) that includes dynamic information such as lot number, serial number, weights etc. Such information can also be provided in bar codes on the GS1 logistic label. Due to its global validation, the SSCC can be used along the entire global CE supply chain, e.g. from a production site in Asia until a retail location in Europe. This enables internal traceability within a facility and external traceability along the entire supply chain.

GS1 Global Product Classification (GPC) is a system that gives buyers and sellers a common language for grouping products in the same way, everywhere in the world.

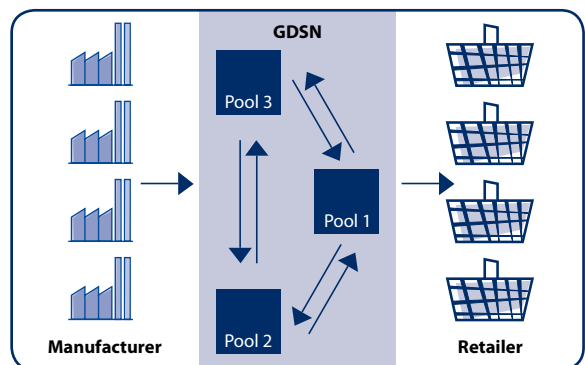
Benefits are:

- >> A global, multi-sector classification system for category management;
- A way to organise systems enabling internal and external data alignment;
- Allows to denote product groups with category specific attributes;
- Allows globally standardised positioning of products

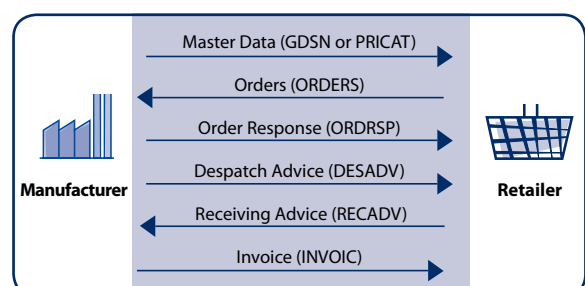
	Level	Example
<b>Segment</b>	78000000	Electrical Supplies
<b>Family</b>	78020000	Electrical Connection/Distribution
<b>Class</b>	78020500	Electrical Connection
<b>Brick</b>	10000551	Plugs

GDSN is the GS1 Global Data Synchronisation Network providing companies a powerful tool for continuous synchronisation of accurate data. As a result, trading partners have the same information in their systems, and all changes made to one company's database are automatically sent to all of the other companies who do business with them. GDSN helps to:

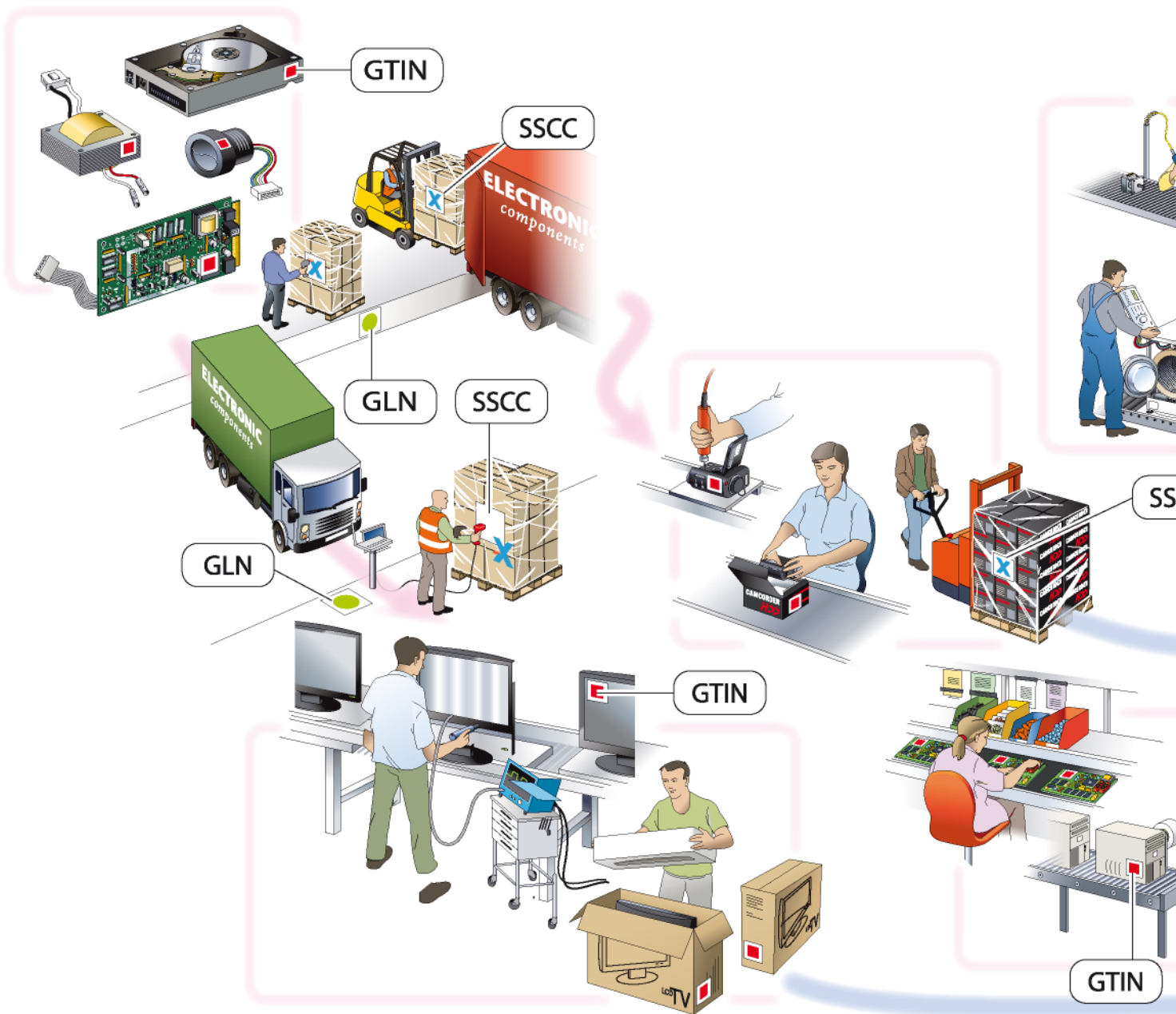
- >> Share important business information in a standardised way
- >> Leverage information needed for manufacturing, planning, inventory, sales, finance, operations
- >> Improved accuracy of orders, fewer forms to fill out, fewer duplicated systems and processes, less unnecessary costs along the supply chain



The development of electronic data interchange (EDI) enables companies to connect the physical flow of products with relevant information flows, facilitating the smooth operation of supply chains. The messages are electronically exchanged between manufacturer and retailer, using standard format valid across different countries and different business partners. Thereby, the amount of business relationships and the required numbers of mapping can be reduced significantly.



# Manufacturers →→→



## Sourcing ↑

- >> EDI for business communication e.g. standardised electronic messages for ordering, despatching and invoicing
- >> Receiving of shipping notice indicating traceability information of sourced items, e.g. lot/batch numbers, delivery dates, ...
- >> Easier quantity control of delivered components, materials and packaging by scanning the SSCC
- >> Linkage between used materials/components and final products for track and trace in order to meet legal requirements such as WEEE<sup>1)</sup> or REACH<sup>2)</sup>

<sup>1)</sup> WEEE: Directive 2002/96/EC of the European Parliament and of the Council of 27 January 2003 on waste electrical and electronic equipment (WEEE)

<sup>2)</sup> REACH: Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

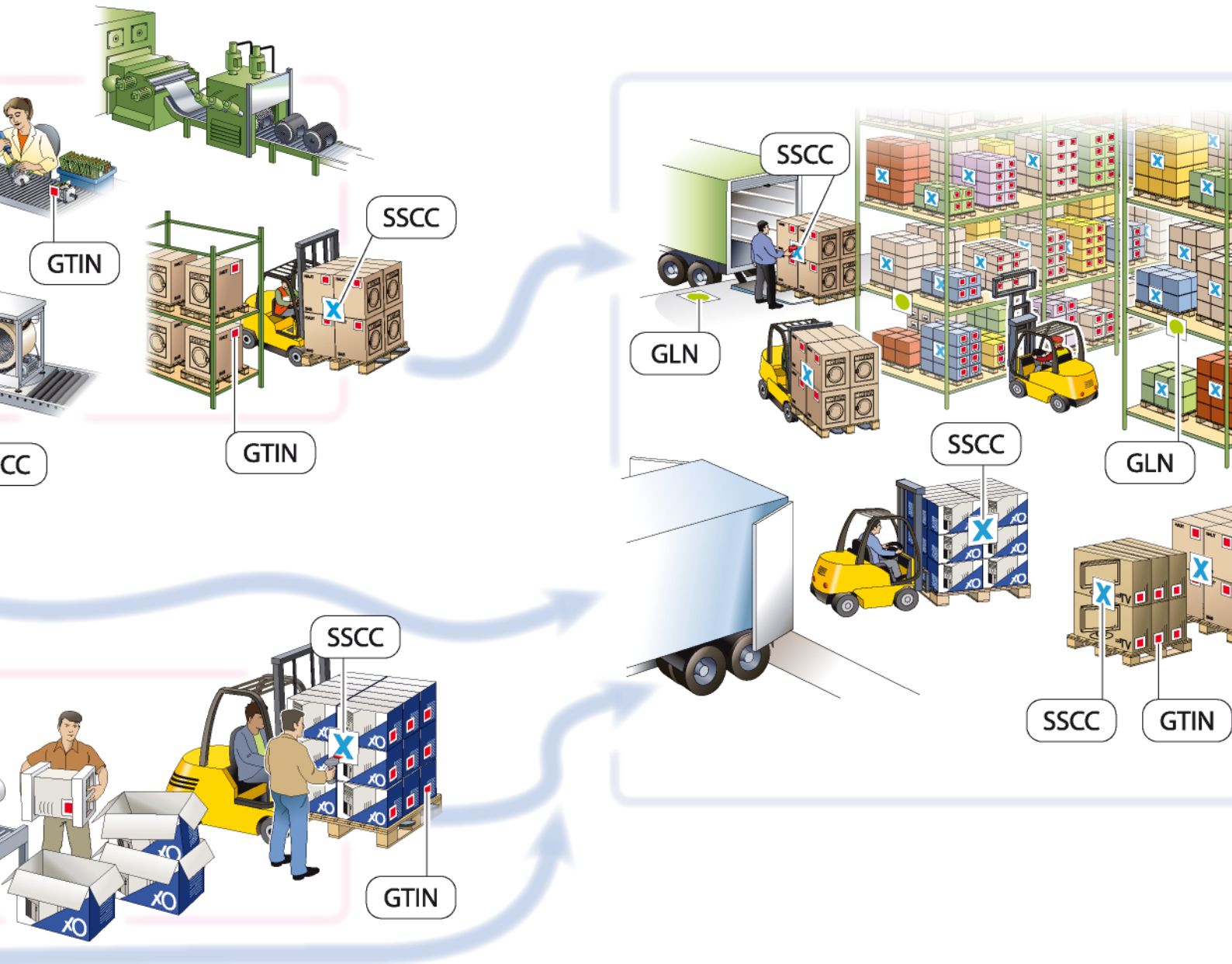
## Production ↑

- >> GTIN assignment to final products and creation of serial numbers
- >> Link between lot number and raw materials/components used to secure traceability and legal requirements (e.g. palette)
- >> Providing relevant product master data and product classification – electronically, in high quality and a standardised way – through the GDSN to central ERP-systems of retailers
- >> Providing additional information (e.g. pictures, media, on-shelf sales data, ...) electronically, in high quality and a standardised way through the GDSN – chance to differentiate from competitors, enhances effective marketing and merchandising at POS
- >> GTIN and SSCC assignment for logistic units
- >> Standardised ordering (ORDERS) and invoicing (INVOIC) processes reduce the amount of relationships and mappings

# GS1 Standards along the Supply

Benefits deriving from a close collaboration between suppliers of p

## Logistic Pro



- >> Using standardised order confirmation (ORDRSP) and delivery notices (DESADV) – to efficiently minimize possible discrepancies as early as possible
- >> Invoicing of effectively delivered numbers of products by comparison of standardised receiving notices (RECADV) with ORDERS, ORDRSP and DESADV before sending electronic invoice (INVOIC)
- >> Record link between SSCC and the content of logistic units: GTIN + lot/batch number + additional information such as warranty issues, WEEE/REACH information

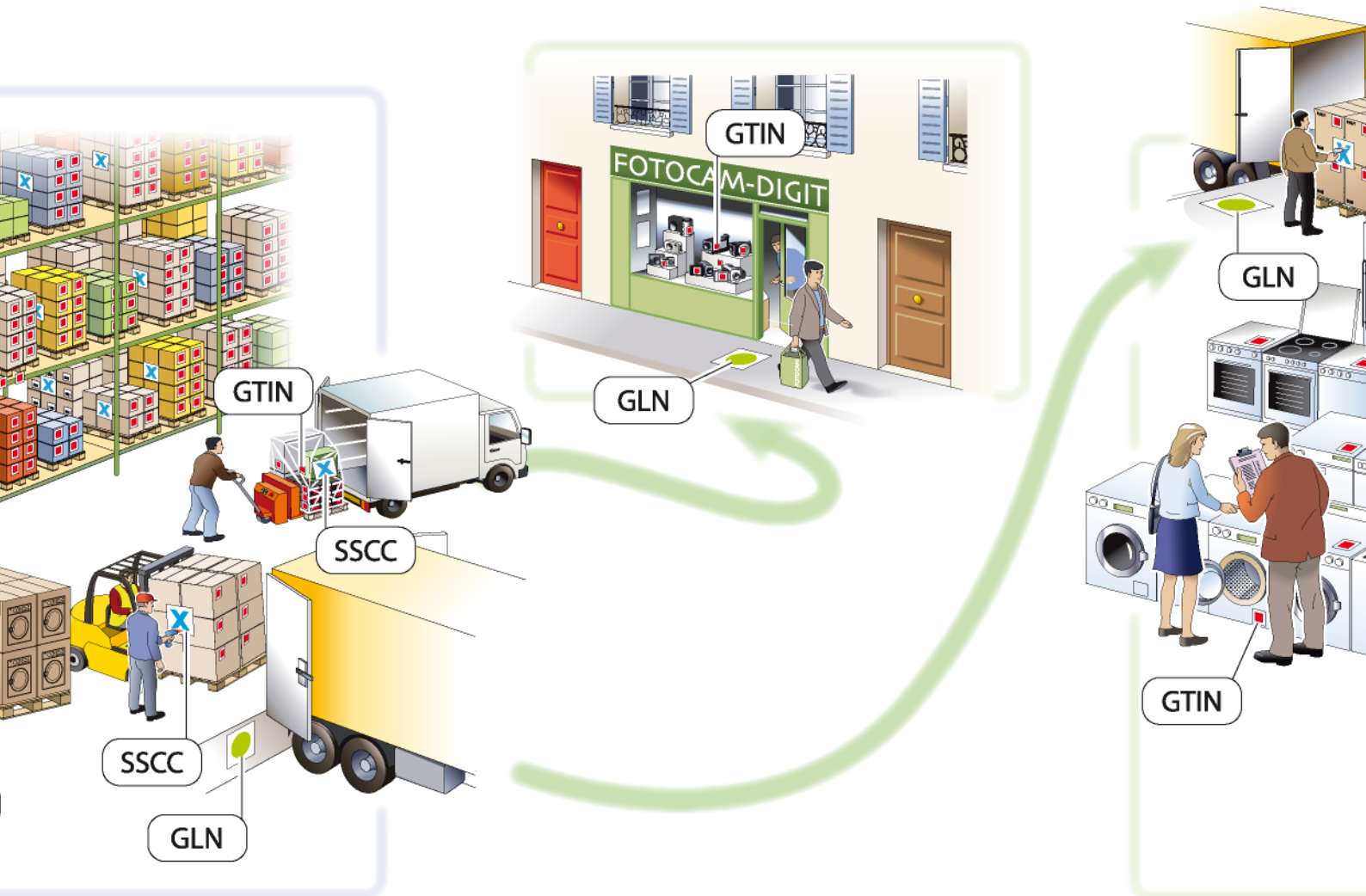
### Warehousing ↑

- >> IT-supported management of physical product arrivals and shipments by scanning the SSCC
- >> Automatic assignment of storage location by scanning SSCC of both transportation unit (e.g. pallet) and storing position (e.g. high-bay warehouse)
- >> IT-supported monitoring of physical inventory
- >> IT-supported order picking
- >> Decomposition of lots, creation of (new) logistic units, assignment and remarking of SSCC
- >> Cross Docking

# Supply Chain of Consumer Electronics

preliminary products, manufacturers, logistic providers and retailers

Providers →→→



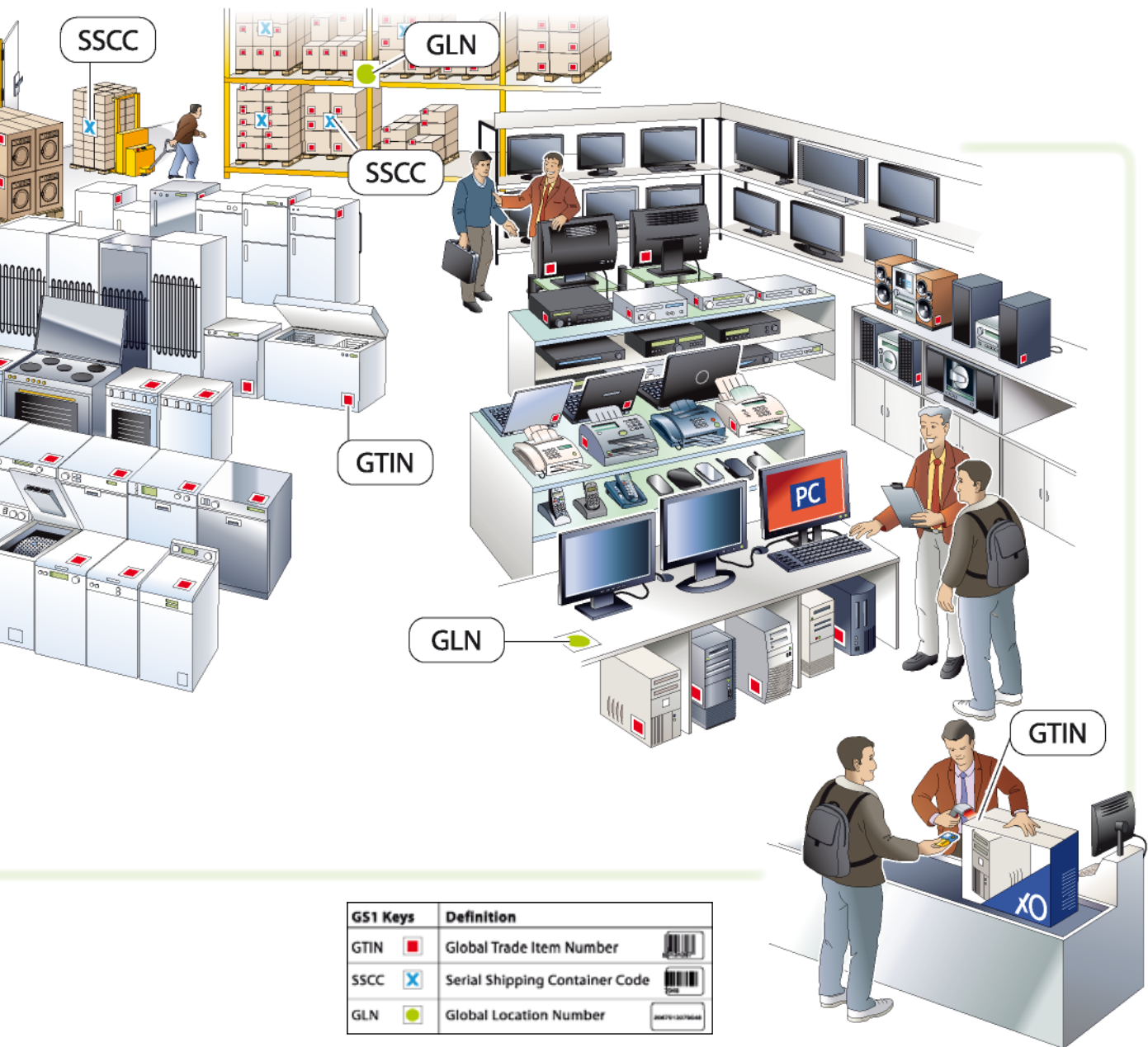
## Shipping/Transportation ↑

- >> Loading of products
- >> Reading and registering freight – by scanning SSCC
- >> Creation of shipping notice and sending it to recipient with a list of itemised delivery
- >> Sender orders shipment from carrier
- >> After delivery, carrier sends transport status to sender
- >> Integrating information in order to efficiently coordinate ordering, delivering, and invoicing
- >> SSCC and shipment information electronically recorded on touch and Track and Trace systems

## Receiving ↑

- >> Preparation of the arrival of goods based on shipping notices (DESADV)
- >> Quicker unloading and IT-supported receiving of products by scanning the SSCC – secures the linkage of physical product flow to information flow
- >> IT-supported storage or direct replenishment of products on the shelf at POS
- >> Confirmation of effectively received numbers of products by sending standardised receiving notices (RECADV) to manufacturers – after comparison with ORDERS, ORDRSP and DESADV
- >> Transmitting information to efficiently minimize possible discrepancies as early as possible – thereby avoid unnecessary correction of invoices and credit notes

# Retailer →→→



## Selling ↑

- >> Master data and product specific information – provided electronically, in high quality and a standardised way through the GDSN to central ERP-systems – helps to serve customers in a better way and leads to increased sales
- >> Additional information (e.g. pictures, media, on-shelf sales data, ...) enhances effective marketing and merchandising at POS
- >> Standardised ordering (ORDERS) and invoicing (INVOIC) processes reduce the amount of relationships and mappings

- >> Higher product availability, better services, better consultation due to smooth and reliable logistic processes
- >> Monitoring of ongoing sales activities by providing SLSRPT to Headquarter
- >> Better forecasting and ordering process by comparing sales (SLSRPT) with available inventory (INVRPT)
- >> Increased turnover by collaborative management of assortments; effective category management helps to meet customers needs better

## Final customer/Checkout ↑

- >> Simple clarification of warranty issues due to unique identification of products (e.g. GTIN, GTIN + serial number)
- >> Less complex product recalls possible due to serialisation of products and effective track & trace systems
- >> More simple application of technical services/repairs
- >> Increased Anti-Counterfeiting

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GS1 in Europe is a collaboration of 45 GS1 member organisations. We lead the creation and implementation of harmonised, user-driven solutions for improving the supply and demand chain of European companies.



One world. One system. One global language of business.



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