

The Internet of Things





GS1: A **global** system of standards

**GS1
designs and
implements a
global system
of supply
chain
standards**

GS1 standards provide a framework that allows products, services, and information about them to move efficiently and securely for the benefit of businesses and the improvement of people's lives, everyday, everywhere





GS1: Bringing companies **together**

**GS1 brings
together
companies
representing
all parts of the
supply chain**

Manufacturers, distributors, retailers, hospitals, transporters, customs organisations, software developers, local and international regulatory authorities, and more work together under our leadership to create standards





Our vision



A world where things and information about them move efficiently and securely for the benefit of businesses and the improvement of peoples' lives, everyday, everywhere



Our mission



To be the neutral leader enabling communities to develop and implement global standards providing the tools, trust and confidence needed to achieve our vision

Global reach, local presence



■ Countries with a
GS1 Member
Organisation

■ Countries served on a
direct basis from GS1
Global Office (Brussels)

**108 Member Organisations.
150 countries served.
2,000 people helping us.**



Our four key product areas



Global standards for automatic identification
Rapid and accurate item, asset or location identification



Global standards for electronic business messaging
Rapid, efficient & accurate business data exchange



The network for global data synchronisation
Standardised, reliable data for effective business transactions



Global standards for RFID-based identification
More accurate, immediate and cost effective visibility of information



Helping businesses work more efficiently



GS1 BarCodes:
The most well-known and
universally recognizable
GS1 standard.

Businesses and organisations around the world use them to **automatically identify products, pallets and places**, and manage their supply chains more efficiently.



Global standards for electronic business messaging

Rapid efficient & accurate business data exchange



- Global standards for electronic business messaging
- Rapid, efficient and accurate automatic electronic transmission of agreed business data between trading partners all along the supply chain
- Improved efficiency and visibility in the supply chain



Enabling new ways of working together



To work together, companies need to share accurate, properly classified data.

The GS1 Global Data Synchronisation Network (GDSN) enables companies who do business with each other to always have the **same information** in their systems.

Any changes made by one company are made available to all of the others who do business with them.

Broad geographic coverage with multiple sectors engaged

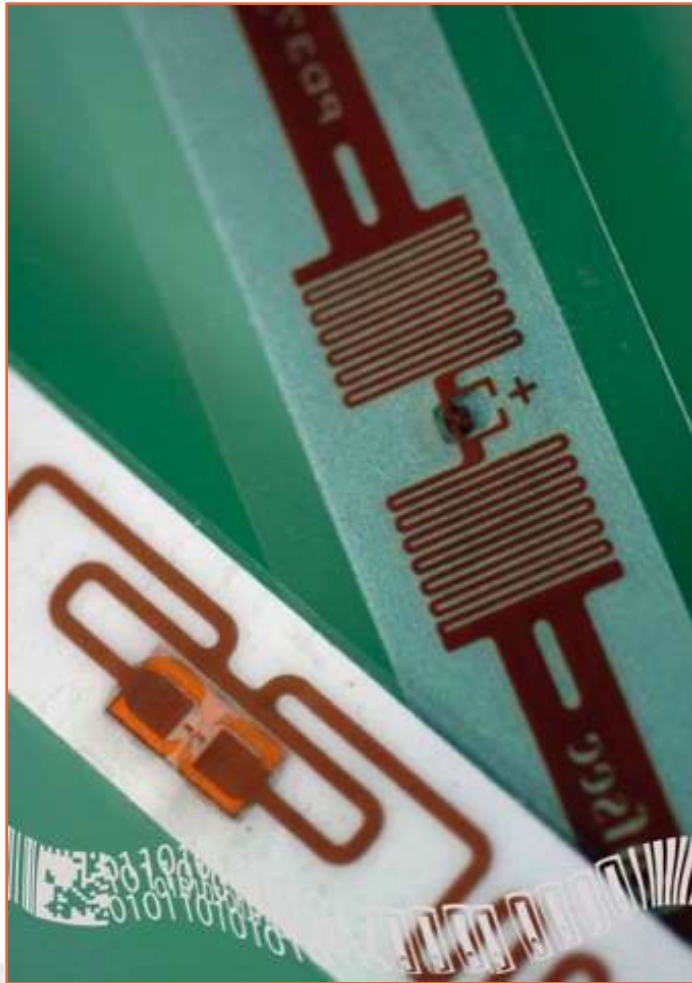


There is local support for GDSN in over 66 countries around the world

GS1 GDSN Standards support CPG, Grocery, DIY / Hardlines, Consumer Electronics, Healthcare, with work ongoing in Chemical Ingredients/Sustainability



Better visibility throughout the supply chain



GS1 EPCglobal® standards put RFID technology to work for businesses and for people.

With GS1 standards encoded on RFID tags, business people can know **what** an item is, **where** it has been and **when** it was there. It's also possible to deduce **why** it was there and in combination with sensors, **how** it was.

Knowing this enables much more effective and streamlined processes across retail and supply chains in many industries.

Global standards for RFID-based identification

More accurate, immediate & cost-effective visibility of information



- A global standard system that combines radio frequency identification (RFID) technology, existing communications network infrastructure and the Electronic Product Code (a number for uniquely identifying an item)
- Immediate and automatic identification and tracking of an item through the whole supply chain
- Improved efficiency and visibility in the supply chain



Solutions for many sectors

Efficient logistics

Traceability

Patient safety

Authentication

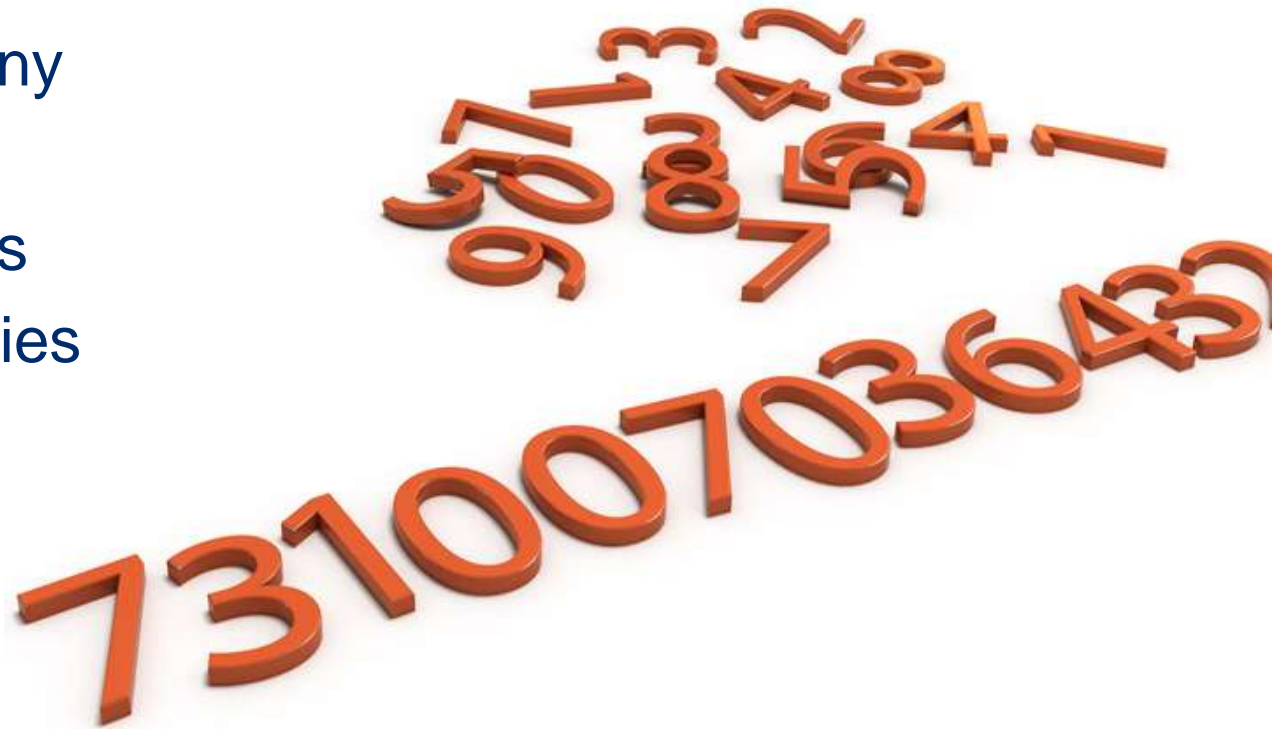




Numbers – the business language everybody understands

A global standard enables communication

- Within a company
- Within a sector
- Between sectors
- Between countries



Development can go fast

1991 (2G)



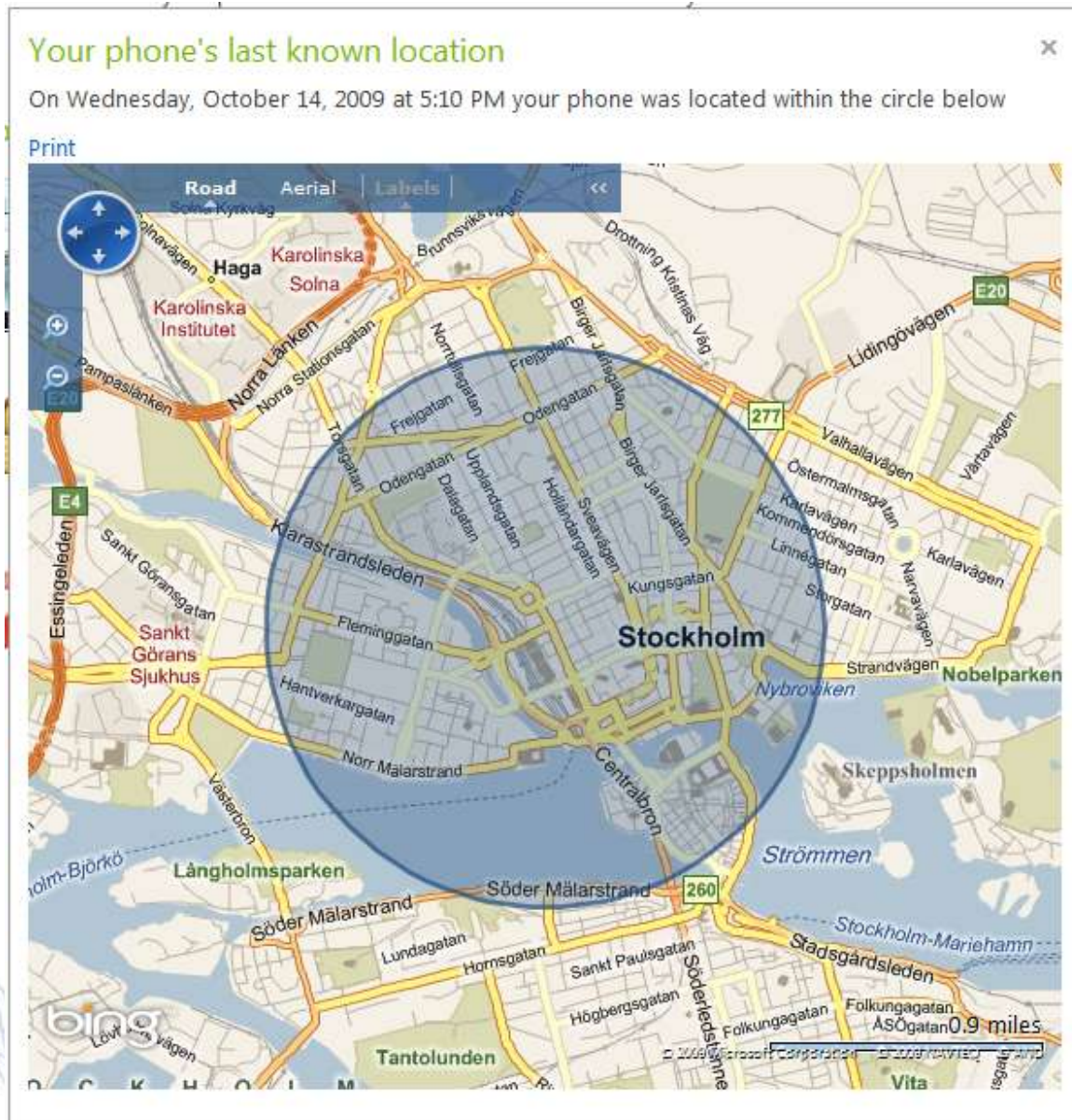
2011 (4G?)



In less than 20 years from
low-quality voice only to
voice, data and even HDTV

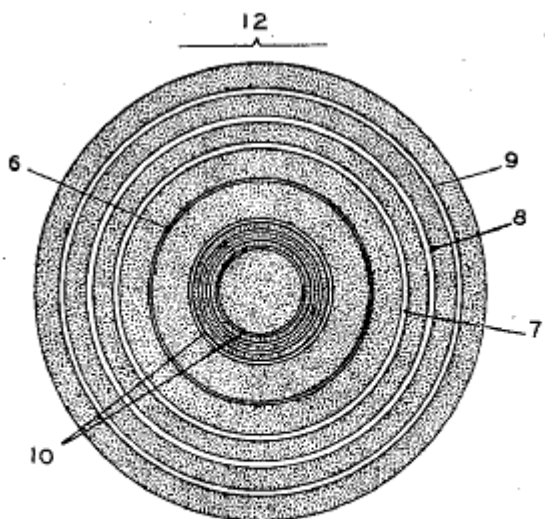


And much more ...



So with barcodes

1949



NOTE: LINES 6, 7, 8, AND 9 ARE LESS REFLECTIVE THAN LINES 10.

2009





But barcodes have problems

- You need to see them to read them
- The reader must be compatible with the symbology
- The context of what is read needs to be known

There is a solution

- **RFID**
 - No line of sight needed
 - One global standard for supply chain applications
 - One global standard for context-independent numbering





This means

- Any tagged object can communicate with any reader
- The reader knows what type of object it has seen

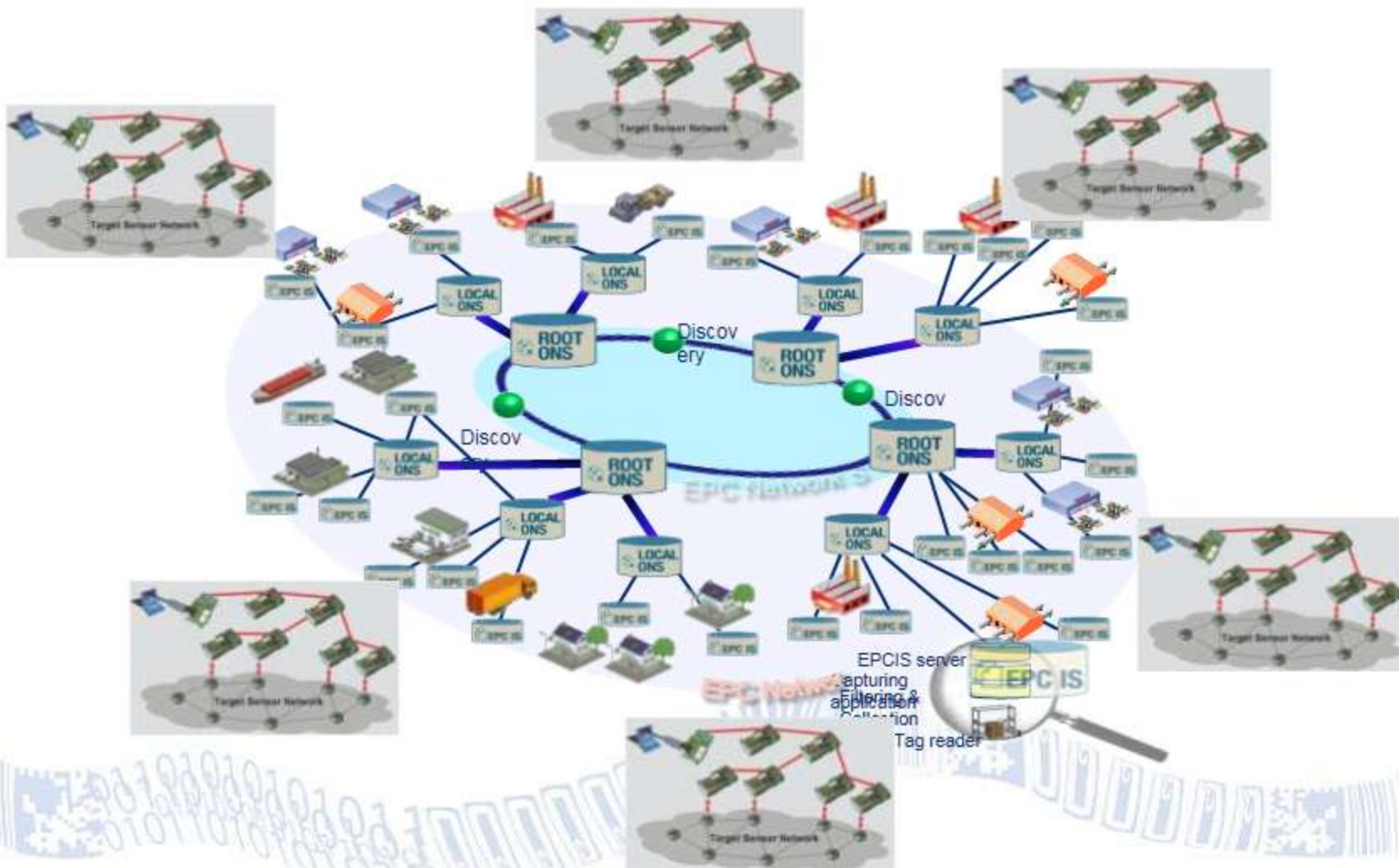
But all you get is a “meaningless” number.

That’s where the Internet of Things starts.

In the ‘old days’ you took the data to the user. Now you take the user to the data, which is somewhere in “the cloud”.



Interconnected hierarchies





The IoT is already here!

- The Internet of Things is not exclusively RFID
- Advanced barcodes carry more than just article numbers
- The Internet is everywhere – wired or wireless
- All along the supply chain, barcodes reveal the location and status of their “things”
- Applications in health care, transport, travel use barcodes for quality and accuracy
- Fixed and mobile scanners provide access to a wealth of data in “the Cloud”
- All enabled by Global Standards
- Powered by GS1!



At the end of the day
It's all about numbers...

