The Global Language of Business

GS1 Industry & Standards Event 2020

Innovation Interest Group

Kevin Stark (GS1 GO) | Magali Granger (GS1 France) | Nus Sharif (GS1 US)
Staffan Olsson (GS1 Sweden) & Klaus Fuchs (ETH Zürich Auto-ID Labs)
Luiz Costa, Carolina Fernandes & Marina Pereira (GS1 Brasil)

30 November 2020

Anti-trust caution

- GS1 operates under the GS1 anti-trust caution. Strict compliance with anti-trust laws is and always has been the policy of GS1.
- The best way to avoid problems is to remember that the purpose of the group is to enhance the ability of all industry members to compete more efficiently.
- This means:
  - **There shall be no discussion of prices, allocation of customers, or products, boycotts, refusals to deal, or market share.**
  - If any participant believes the group is drifting toward impermissible discussion, the topic shall be tabled until the opinion of counsel can be obtained.
- The full anti-trust caution is available via the link below, if you would like to read it in its entirety: http://www.gs1.org/gs1-anti-trust-caution.

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Innovation MO Interest Group – launched in 2018

- Typically hold 5-6 Interest Group calls per year (MO only)
- Calls focus on sharing about projects, local trends, and innovation best practices
- Today is an **open session** to share activities within the community
- More to come at Global Forum 2021 in March!

Innovation Speakers in Lisbon, Industry & Standards 2019

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Topics & speakers

Digital Receipts
Staffan & Klaus

ProductChain
Magali Granger

3D Models to support cashierless retail
Nus Sharif

Business Platform, Carnival 4.0 and more!
Carolina, Luiz & Marina

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Digital Receipts

Staffan Olsson, GS1 Sweden
Klaus Fuchs, ETH Zürich Auto-ID Labs

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Digital Receipts

Why Digital Receipts are more relevant for GS1 than you think

30 November 2020

Klaus Fuchs, Associate Research Director, Auto-ID Labs ETH Zürich

Staffan Olsson, Senior Sales & Client Relations Manager, GS1 Sweden

What’s happening out there?

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Agenda

- What are digital receipts?
- Who are bringing digital receipts to the market?
- Why is this relevant now?
- Recommended focus areas
  - Targeted Recalls
  - Sustainability
- DRIG – Digital Receipts Interest Group
- Proposed next steps

from Paper Receipt to Digital Receipt

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Definition – Digital Receipt

"**Digital receipts as machine-readable, electronic substitutes for their contemporary paper-based printed counterparts.** Typical technical implementations store purchased products as line items, transaction time and location, basket size and corresponding value-added taxations within a structured file (e.g. XML format).

A digital receipt can for example be received after the payment e.g. by credit card or mobile payment, or in also after a cash payment and subsequently identification of a consumer (e.g. via loyalty card)".

Auto-ID Labs ETH/HSG

Klaus Fuchs, Auto-ID Labs ETH Zürich

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Examples of Service Providers

flux

Service Provider: flux

Provider description:
Get full receipts automatically in your banking app as you pay with your bank card at any store in the Flux network. Never forget your loyalty card again.

Year: 2016 Link

Slyp

Service Provider: Slyp

Provider description:
Slyp's proprietary retail technology enables an interactive and intuitive smart receipt to be automatically delivered to a customer's banking app post-purchase, without collecting customer data at point of sale.

Year: 2017 Link

ReceiptHero

Service Provider: ReceiptHero

Provider description:
ReceiptHero delivers receipts automatically from merchants to your banking & accounting apps or other third party apps.

Year: 2018 Link

Kivra

Service Provider: Kivra

Provider description:
Kivra is a digital hub that allows users to create a digital mailbox to receive, upload and store mails including digital receipts. Once linked to the E-Banking the receipts are paid with one click.

Year: 2011 Link

Cumulus

Service Provider: Cumulus Migros

Provider description:
Provides the loyalty card holder with complementary services of digital receipt over the last 18 month. The digital receipts are included in the retailer's app.

Year: 2010 Link

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Why are Digital Receipts Relevant Now?

Societal Drivers

- **Digitalization in general**
  - Everything that can be digital will be digital
- **Mobile payments**
  - When payments are digital, why not receipts?
- **Regulations**
  - Discussions on banning of paper receipts for small amounts & digital guarantee in some European countries
- **General Data Protection Regulation GDPR**
  - Retailers have to share their consumer data with the consumers in a portable way

General Business Drivers

Sustainability

Efficiency / Cashless checkout

Marketing

Consumer trust / Traceability

Product activation / registration

Distributed Data (GS1 DL)

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Too Much Possibilities

GS1 Digital Receipts Interest Group (DRIG) recommended focus areas:

- **Targeted Recalls**
- **Sustainability**
- **Nutrition**
- **GDPR 2.0**

More focus areas and recommendations in our Position Paper & White Paper

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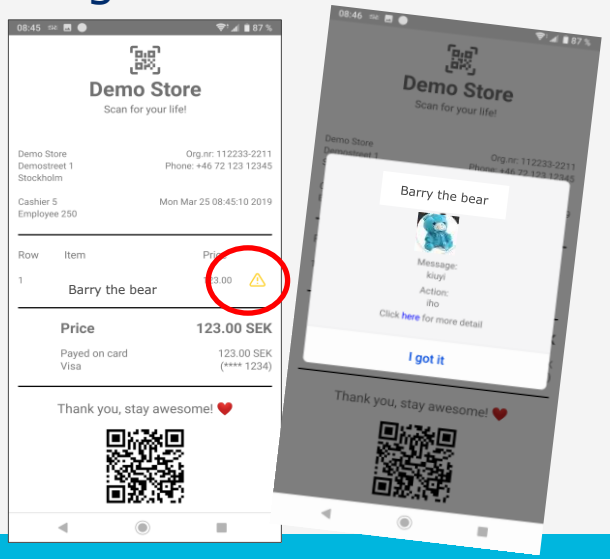
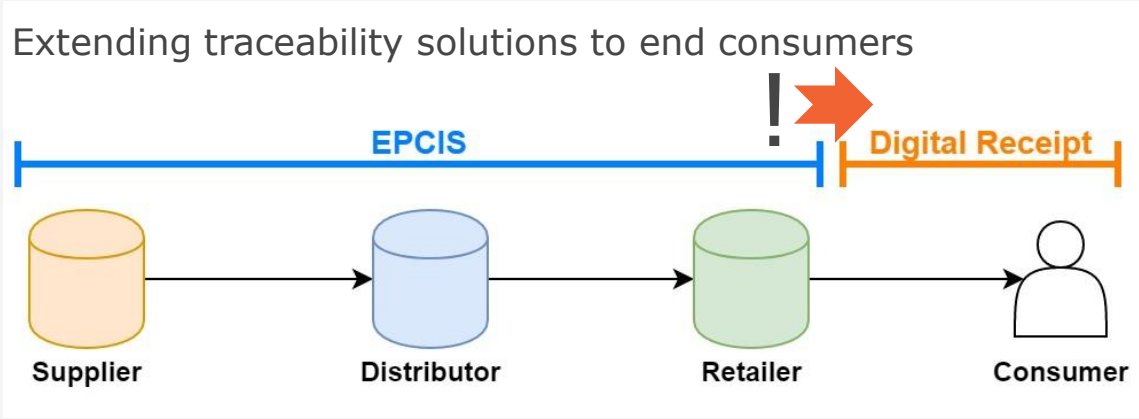
Targeted Recalls





- Consumers demand information on recalls (Trust)
- Why now: Traceability is already widely implemented (e.g. EDI, EPCIS, fTrace etc.). Targeted recalls do not require personal data necessary, e.g. decentralized identifiers, rehashed ids & we can do this today! → Digital Receipt as extension of traceability solutions

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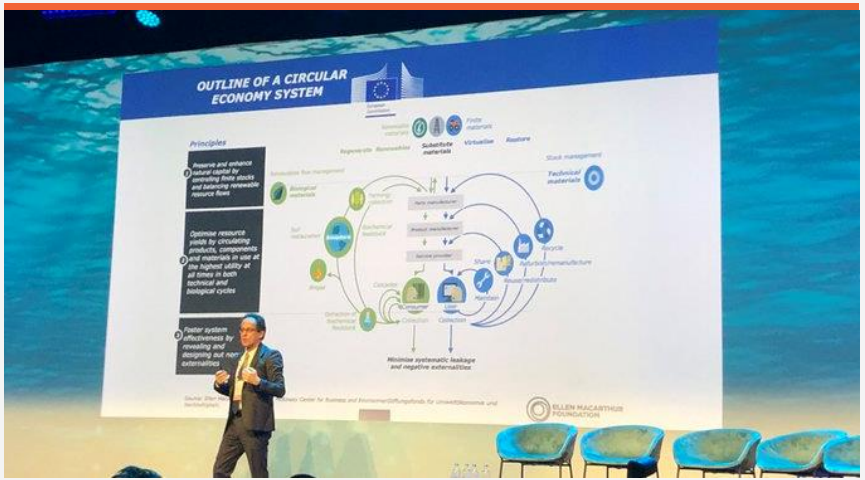
Sustainability – Digital Receipts Connect Products with People



Digital receipts can

- connect consumers to a **product passport**, which is an element for **circular economy.** GS1 Digital Link is a good enabler for this
- be used for **digital guarantees** or when a product is sold **2nd hand,** which is the new normal
- be assessed to **nudge consumers to more sustainable consumer purchase habits**

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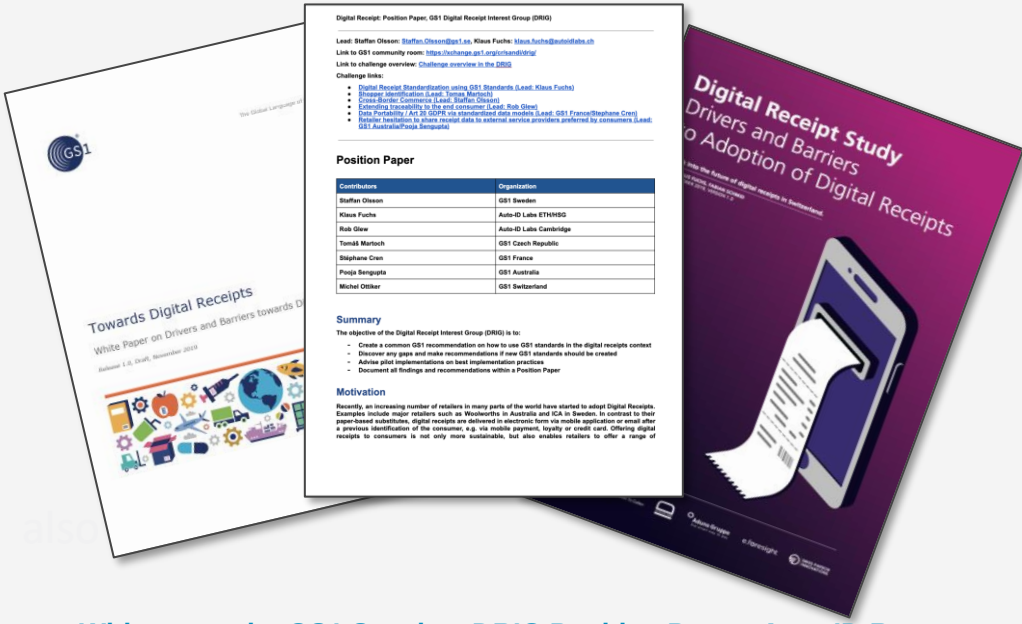
Digital Receipt Interest Group

10 MOs + 2 Auto-ID Labs

A Position Paper to:

- Create common understanding on digital receipts
- Discover any gaps and make recommendations
- Advise pilot implementations



White paper by GS1 Sweden, DRIG Position Paper, Auto-ID Report

- **Learnings: Consumers are demanding digital receipts**, mega trends support this movement. **We need to act** & **solve remaining challenges to support industry to introduce digital receipts**.
- We identified **recommendations for GS1 and challenges for the digital receipt introduction.** The DRIG's **Position Paper can be found here.**

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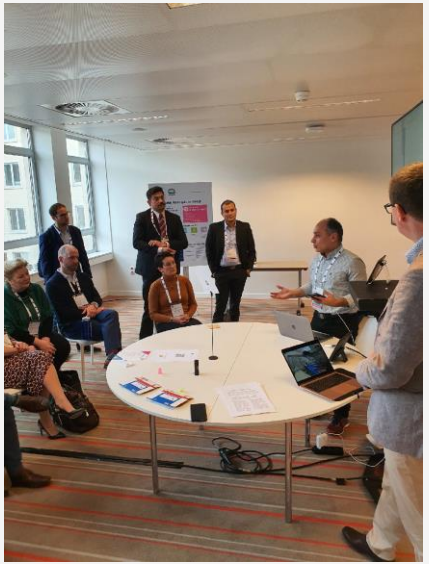
Proposed Next Steps

Digital Receipt Demo on Targeted Recalls via Digital Receipts at Global Forum in Feb 2020



- Form an **Industry Engagement** group to broaden the discussion
- **Pilot** a few compelling use cases
- Create a **GS1 Recommendation** for use of existing GS1 Identification standards for digital receipts

GS1 Sweden

AUTO-ID LABS

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Thank you to all DRIG Contributors!
Let’s move from paper receipts to digital receipts!

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staffan.olsson@gs1.se

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ProductChain

Magali Granger, GS1 France

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ProductChain

The product information data space

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Product Information is changing

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The future of data sharing

- ProductChain is a DRAFT decentralized protocol for multi-stakeholders product information communication based on GTIN
- Productchain is a not solution provider, it’s the future of the product data sharing :

✓ Open

✓ Trust

✓ Unconstrained

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#1 a new breed of consumer
#2 Tech matters

#3 New regulations are coming

- Green deal : Carbon efficiency, Product passport
- Industrial Data Spaces
- Personal Data portability

#Certification Bodies

- Certifications / valididy
- Ethical, Environnemental claims
- Etc.

#Brands

- GTIN
- Official name pictures, description,
- Nutritionnal info
- Allergen
- Etc.

#Retailers #marketplaces

- Product offering, Prices, Warranty
- Consummer comments
- Etc

#Traceability plateforms

- Batch data
- Live audit
- Etc.

#Others ?

- …

#Evaluators #Coaching App’

- All kind of scores, status,
- Profil compliance
- Advices
- Etc.

#Innovative services

- Receipts
- Meal planning
- Etc.

A product, multiple voices

Information sharing made possible by blockchain technology

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Business model agnostic : from open data to value added services

Fair and inclusive: open governance, all data sources are welcome.

ProductChain

Secure and auditable : with cryptographic signatures identifying the source of information

A structured data space : offers an easy way to prioritize the information

Standardized but adaptative: to quickly integrate new formats and data models.

Decentralized model for trust and resilience. No more data monopoly.

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Benefits for all stakeholders

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Benefits for retailers

Unique access point for all product information, including rich content (video, instruction manual, images, etc.)

Proof of information authenticity (extended to labels, certifications, etc.)

E-commerce ease (e-merchandising, site animation, marketplaces, etc.)

Lower cost and recovery of independency

Benefits for brands

Unique broadcast system for all markets, with granular control if relevant (timing, exclusive offer, etc.)

Possibility to monitor product reputation and scoring.

Playing a core role in a trustee ecosystem

Affordable softwares for SMEs

Extra opportunities

E-Advertising

IA

Alerting

Loyalty program

Thank you.

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Julien.masanes@gs1fr.org

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3D Models to support cashierless retail

Nus Sharif, GS1 US

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The Global Language of Business

3D Model Standards – Proof of Concept

To scale cashierless checkout, e-commerce, and more…

Nus Sharif – Innovation Manager, GS1 US

11/30/20

2D → 3D

GS1 Product Image Specification Standard

establishes rules for the storage of digital images associated to products and provides details on all aspects of digital imaging storage.

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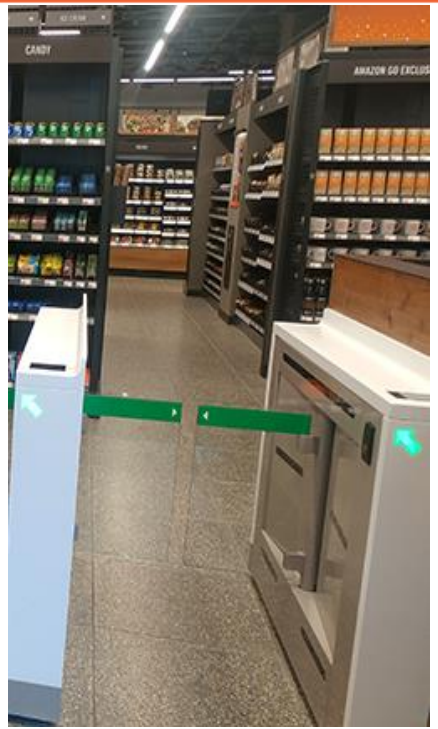
Computer vision-based cashierless checkout

Scan n Go

Just Walk Out



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3D models are digital twins

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OREO
Nutrition Facts
Calories
160
Milk's Favorite Cookie
OREO

Problem

Two Tiered

Checkout is a pain and cashier-less solutions are not ubiquitous

1. **Interoperability**
   - Brands are not talking to retailers. Naming and storage is proprietary and silo'd.

1. **Training Data**
   - Each retailer is using labor, equipment, and time to make proprietary 3D models

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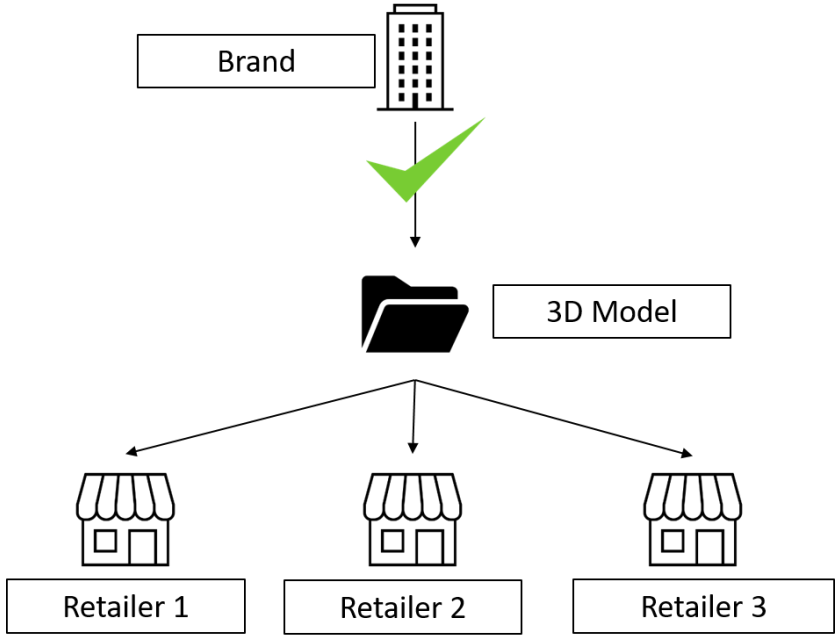
Solution 1: 3D Model Interoperability

"One to Many" Model: Brands to Retailers



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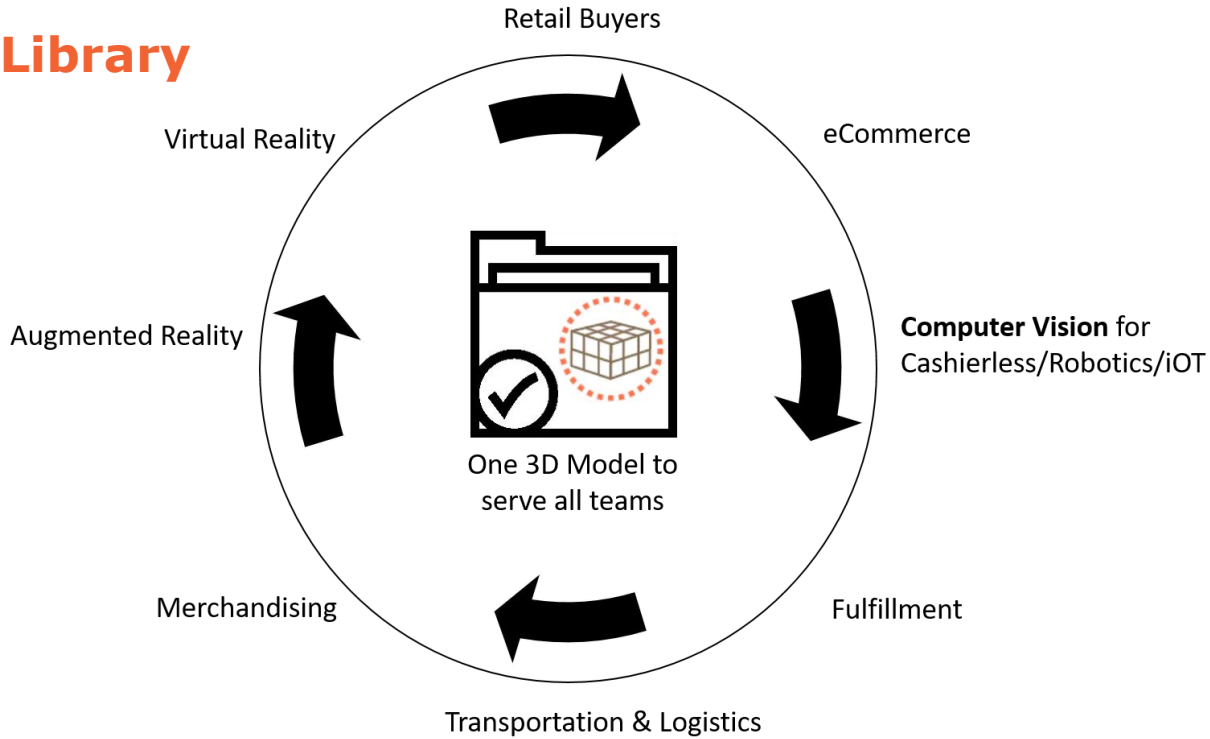
Intra-operability – continued…

Retailer 3D Library



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Solution 2: Training data for computer vision

Virtual photos v Real photos…which is which?

Real **A**

¯_(ツ)_/¯

B Virtual

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Training Data for Retail Grocery

Testing virtual training data

- Boxes
- Cans
- Bottles
- Flexible Packaging

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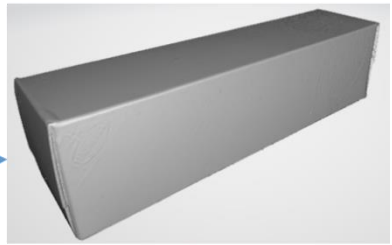
3D Models are NOT a single file – they're multiple files

GDTI (Global Document Type Identifier) handles complexity well

Description	GDTI	erial dentifier
	0614141000005	
Wireframe for 5.2oz cookies	0614141000005	0000001
	0614141000012	
Graphics for 5.2 oz Oreo	0614141000012	0000001



GTIN: 00614141999996

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Proof of Concept (POC) Partners

RETAILERS

Walmart International

LIDL

LOWE'S

SOLUTION PROVIDERS

[Sc] STANDARD COGNITION

AWM SMART SHELF

LEXSET BETTER VISION, BETTER DATA

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Timeline

Phase 2 – In Focus

Phase I: Retailers
Completed
September 2020

Deliverable
- Validation of Problem
- Understanding Current Market Landscape

II: Brands
October – Q1 2021

Deliverables
- Brand Engagement
- 1st Test Results

III: End to End Testing
Q2-Q3 2021

Deliverables
- Pilot Results
- Standards Recommendation
- Computer Vision Best Practices

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Summary

RECAP:

- ✓ Problem has been VALIDATED by retailers
- ✓ Solutions undergoing TESTING
  - ✓ GDTI for file naming
  - ✓ Computer Vision attributes
- Phase II: Engagement w/ BRANDS

CALL TO ACTION:

1. Be Aware. Questions?
   - Let us know
2. Let industry know we're pursuing 3D model standards
3. Start Conversations w/ Brands

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Thank you!

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GS1 Brasil Indexes, Business Platform, Carnival 4.0 and other use cases

Luiz Costa
Carolina Fernandes
Marina Pereira

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GS1 Brasil
ASSOCIAÇÃO BRASILEIRA DE AUTOMAÇÃO

A Linguagem Global dos Negócios

Innovation Brazil

30 November 2020

Index

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Industrial Activity Index
Automation Index

Caolina Fernandes
Carolina.fernandes@gs1br.org

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GS1 Brasil Industrial Activity Index

- Measure the number of new GTINs requests.
- Related to Innovation; When and which sectors are investing to renew theirs portfolio.
- Related to the Brazil IPI – Industrial Production Index published by the Brazilian Institute of Geography and Statistics (IBGE).
- Includes the Brazilian manufacturing industry.

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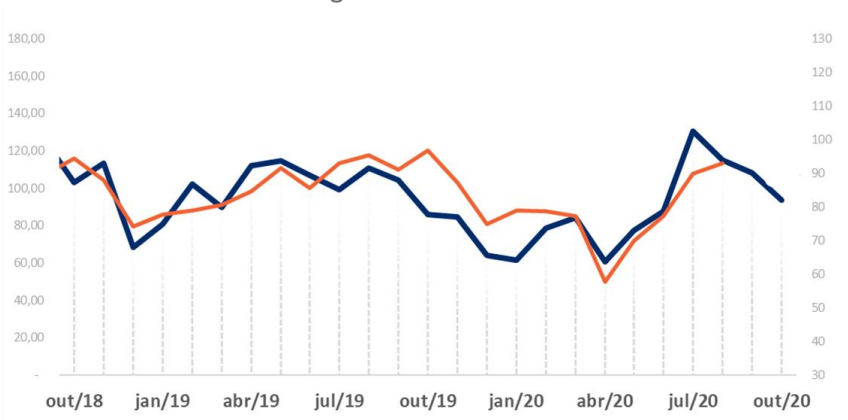
October

GS1 Brasil Industrial Activity Index

Index number 2012 Average = 100



	Original Index	Seasonally Adjusted
MoM Month over Month	-13,6%	-5,3%
YoY Year over Year	8,8%	-
12 Months	-11,9%	-
YTD Year To Date	-10,8%	-

12-month rate

-11,9%

The GS1 Brazil Industrial Activity Index dropped 5,3% in October compared to the previous month in the seasonally adjusted data. In comparison with the same month of the previous year, it was 8,8% higher. The accumulated of the last 12 months presented a -11,9% in the intention to launch new products.

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Automation Index

✓ Measure the adoption of automation Technologies for companies and consumers all over the country.

CONSUMERS

- ✓ Internet Access
- ✓ Apps
- ✓ Personal Itens (gadgets)
- ✓ Home appliances
- ✓ House and house complex
- ✓ Cars

TRADE AND SERVICES

- ✓ Sistems (Softwares)
- ✓ Employee activities monitoring
- ✓ Customer Relationship
- ✓ Customer Service
- ✓ Logistics
- ✓ Shop

INDUSTRY

- ✓ Sistems (Softwares)
- ✓ Employee activities monitoring
- ✓ Customer Relationship
- ✓ Customer Service
- ✓ Logistics
- ✓ Factory (Assembly line)

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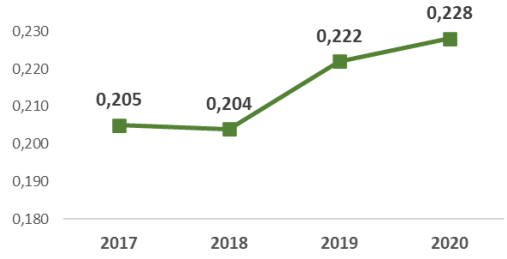
COMPANIES AUTOMATION

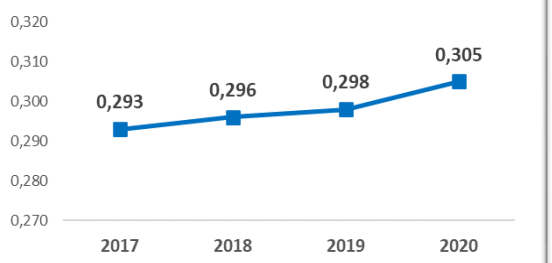
TRADE AND SERVICES

3% ↑



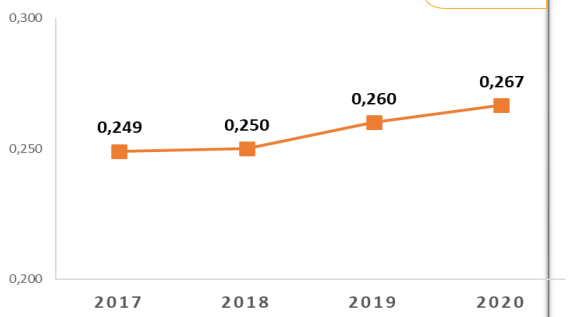
INDUSTRY

2% ↑

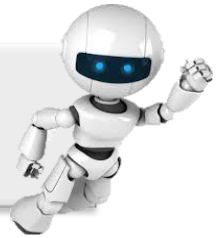


BRAZIL

3% ↑



3% growth between this and previous year



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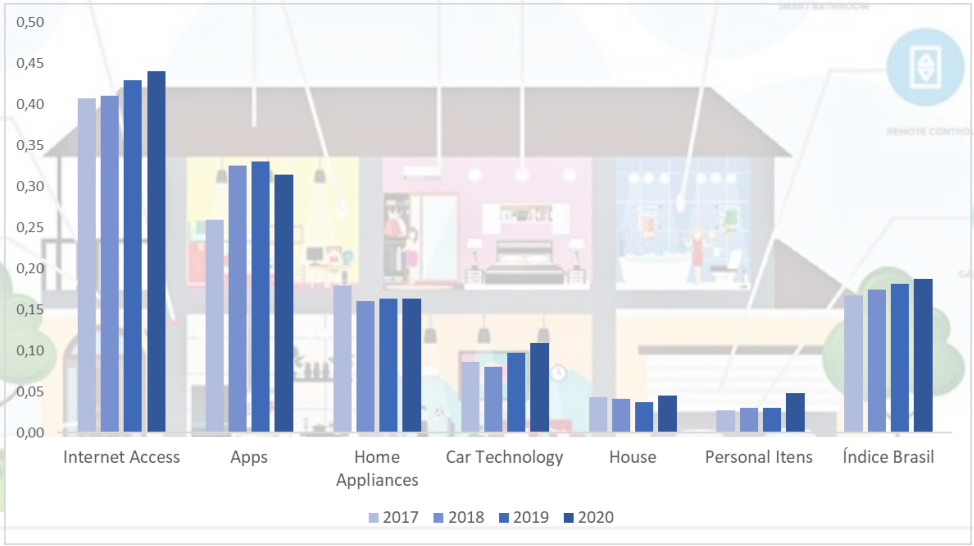
CONSUMERS AUTOMATION



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Results obtained for both Indexes

GS1 Brasil	**Improve:** Knoledge of our internal and market data Sector and industry analysis The brand awareness – press disclosure
GS1 Brasil Members	**More information about:** Market Trends (Technology and Automation) Sector activities Product releases
Industry, government, Press, retail, financial groups, etc...	**More accurate analysis of:** Brazil IPI (Previous of the official number) Brazil Technology adoption Products releases

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Business Platform

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The scenario

01 The global crisis caused by the coronavirus has shown how SMEs need support to be active in the market.

02 In Brazil, many companies have created initiatives to support SMEs and help them in this scenario.

03 GS1 Brasil has this important role of helping to transform market uncertainties into solutions, and we will work to ensure that the dream of each GS1 member company can stay alive

04 Retailers, marketplaces and e-commerces were looking to GS1 Brasil in search of an Industry reference to diversify their supplier portfolio.

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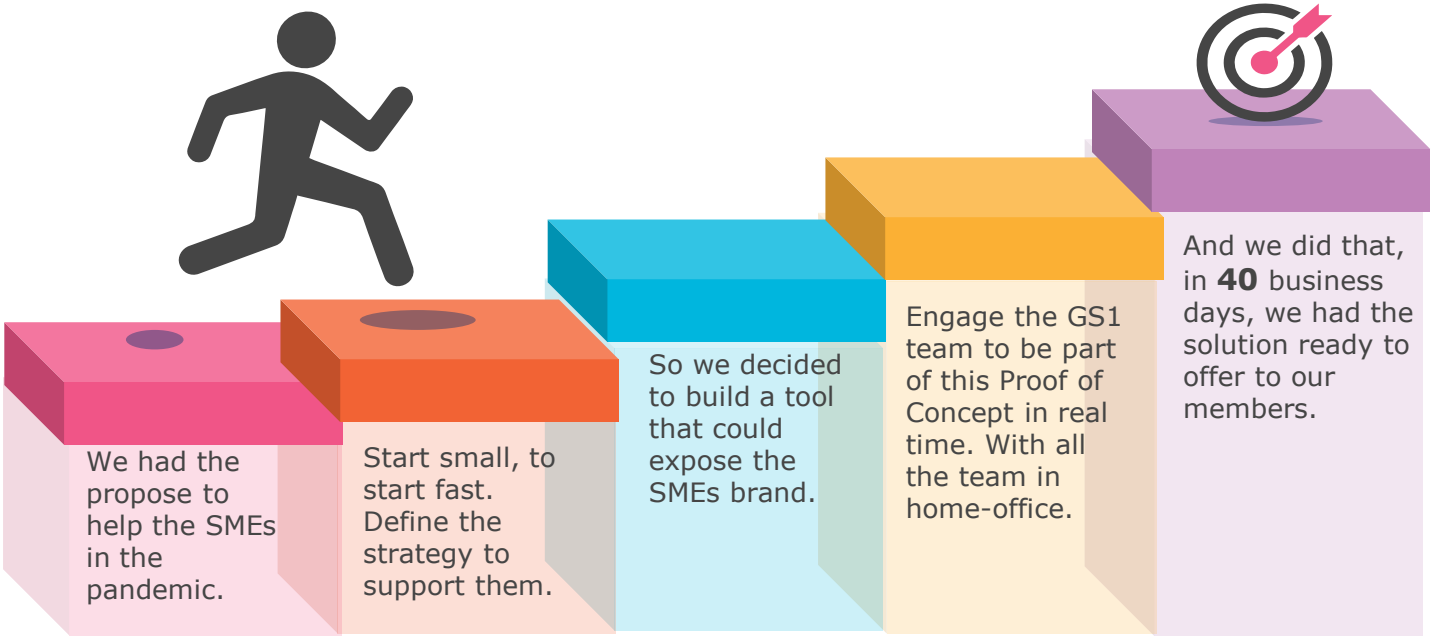
Business Platform Implementation



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What is the GS1 Brasil Business Platform?

- The Business Platform is a virtual showcase for GS1 Brasil associates with a focus on SMEs where they can expose their brand and publicize their business, products and solutions.
- In this tool, industries expose their brand and their portfolio so that retail, e-commerce, and other interested parties consult this data openly.
- It is a way of bringing together Industry and the most diverse sales channels so that they generate business.

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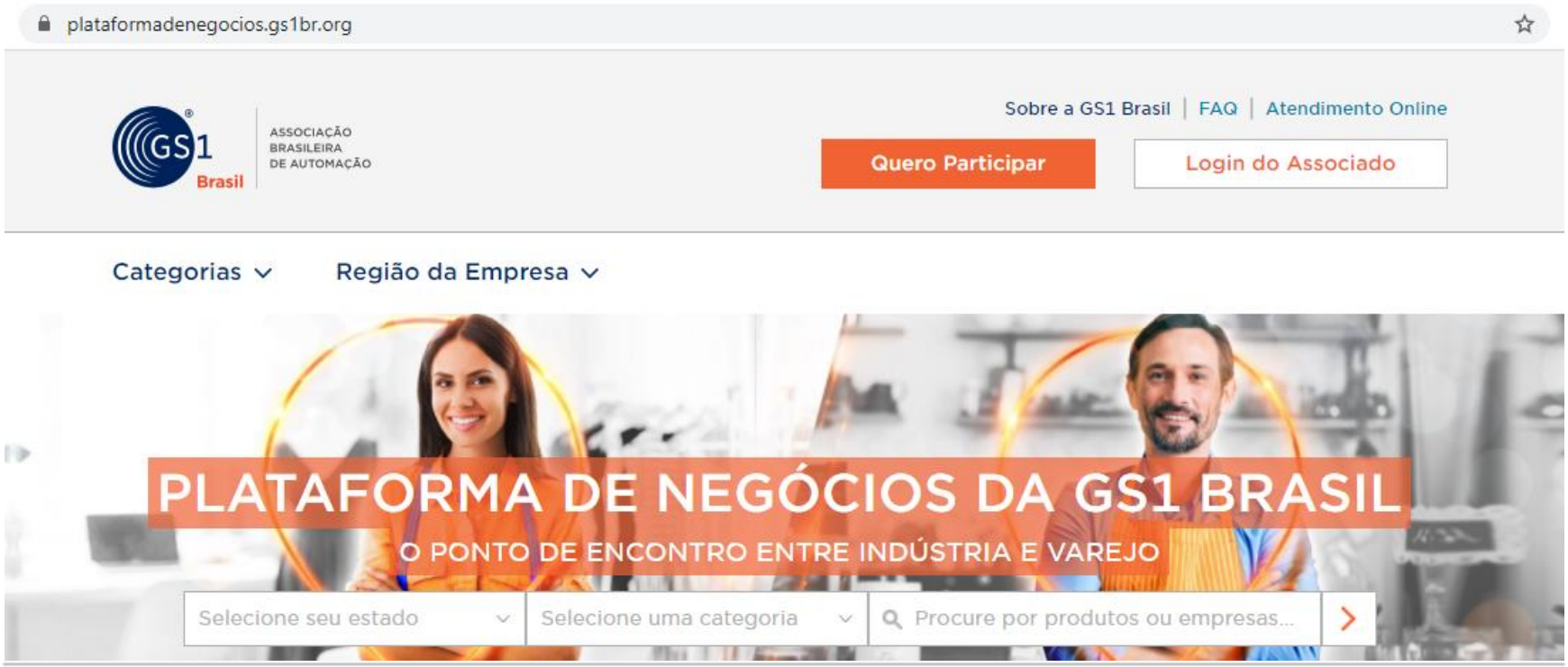
Easy access – Open search



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GS1 Brasil Business Plataform

Do you want to find a Brazilian product and import to your country?

Visit our website
and help the SMEs:

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Cases

Luiz Renato Martins Costa
luiz.costa@gs1br.org

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Carnival 4.0

1. Application of EPC RFID tags for costume traceability at Carnival 2020.
   - First project in the world with this type of application using RFID with EPC
   - Full traceability of costumes at Carnival 2020

2. RFID in the parade evolution

RFID tags were applied to the fantasies of the approximately two thousand members of the school. At the Sambadrome, eight portals with RFID antennas were installed to read the tags.

With this, it was possible to monitor the evolution of all wings, measuring the time and movements of the revelers during the parade. The data could be tracked in real time.

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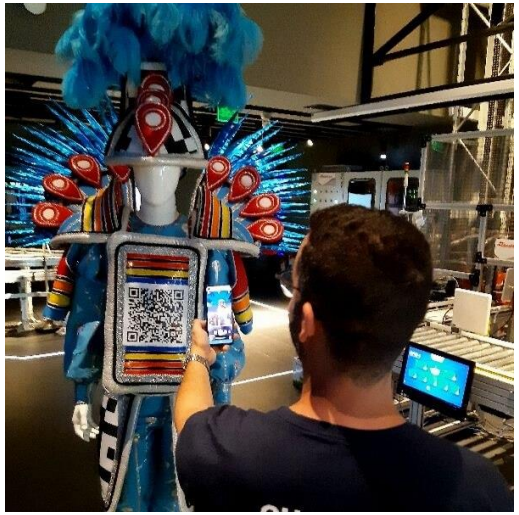
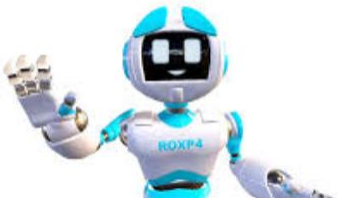
Carnival 4.0

3. Other emerging trends / technologies:

The code printed on the costume can be scanned with a smartphone and, through an augmented reality feature integrated with Instagram, anyone can “dress” the costume - a game with the face of Carnival.

The Carnaval 4.0 project team was made up of academics, technology specialists from different organizations and managers and artists from Rosas de Ouro who sought to contribute to the transformation of the country into a 4.0 Brazil. The team was organized into three groups: academic, technological partners and management committee.





SOCIEDADE ROSAS DE OURO
18/10/71

Watch!!: https://www.youtube.com/watch?v=2PCzfCKXVpI&t=17s

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NuRótulo

NuRÓTULO

CADASTRO NACIONAL DE PRODUTOS

APP that identifies allergic components in industrialized products in real time using the **GTIN**

DISPONÍVEL NO Google Play

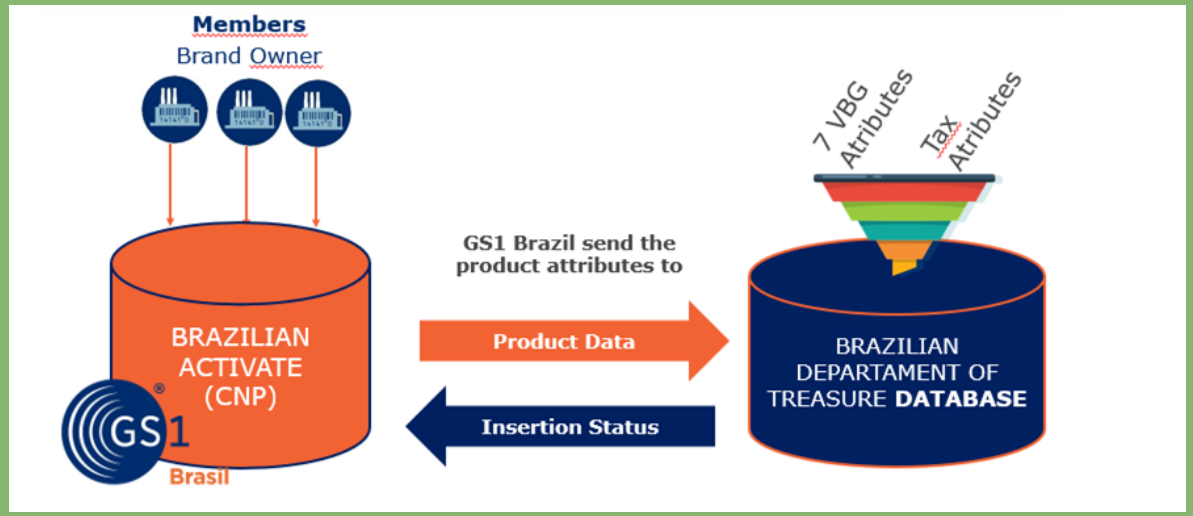
Disponível na App Store

© GS1 2020

Brazilian Treasury Department and GS1 Brazil

Brazilian treasure makes the issuance of the **GTIN mandatory** in electronic invoices used in B2B and B2C transactions and **integrates its database with GS1 Brazil.**

They started to validate GTIN in terms of structure and product attributes.



Request more info:
alessandra.parisi@gs1br.org

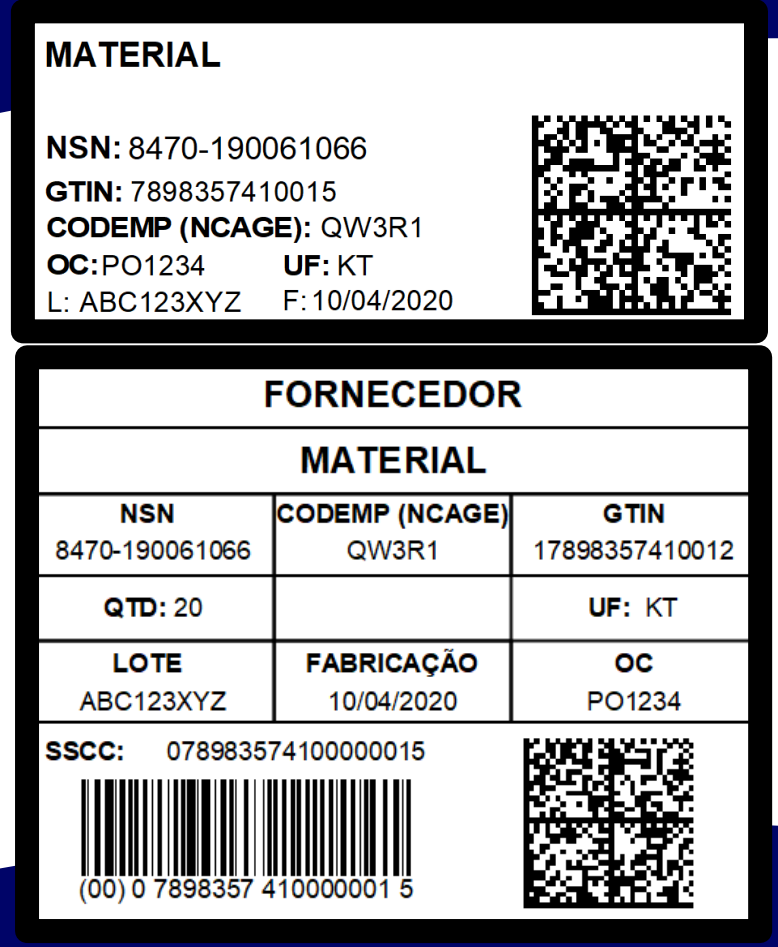
+53 millions products already registered

Brazilian Navy

Logistic Management Improvement

The management team of the **Brazilian Navy** Uniform Deposit, in view of the increase in volume and the need to offer better quality of service, sought to update and evolve the logistics operation processes, from the receipt of the distribution of materials.

- **Improvements brought by the project:**
  - New WMS implemented;
  - New infrastructure assets: automatic shelf extraction systems, conveyor belts, handheld computers;
  - Better logistic processes;
  - Standardized labels for products and logistic units;
  - Data encoded: NSN (GTIN, Nato Stock Number (NSN), Batch, Production Date, SSCC, and others

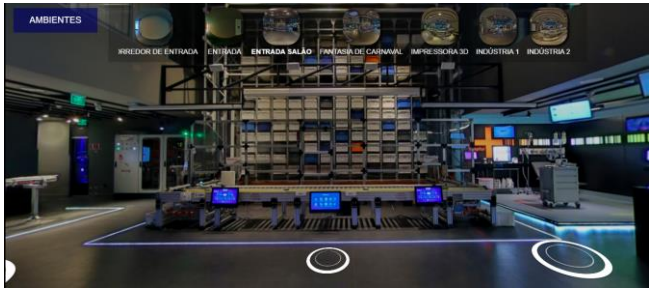


More info: ricardo.melo@gs1br.org

CIT 360o

1. CIT 360o.

- Create a virtual environment, in 360 degrees, of the Brazilian GS1 Innovation and Technology Center.
- The Project l have interactive areas which can be accessed according to the real (physical) CIT (industry, distribution, health and retail).
- According to the current market scenario, and the global pandemic, it became necessary to create a virtual CIT environment so that it can add so much knowledge to GS1 Brasil's virtual visitors and associates.
- The digitization of the CIT will also serve to be able to present the Center to visitors outside the physical location, who would not be able to visit the CIT in person.
- **Access: www.gs1br.org/citvirtual**



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Thank you!

GS1 Brazil

GS1 Brasil – Associação Brasileira de Automação

A Linguagem Global dos Negócios

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Wrap-up

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Thanks to our speakers!

Digital Receipts
Staffan & Klaus

ProductChain
Magali Granger

3D Models to support cashierless retail
Nus Sharif

Business Platform, Carnival 4.0 and more!
Carolina, Luiz & Marina

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GS1 Trend Research

The Global Language of Business

Trend Research 2020-2021

Navigating the next normal

Authored by the Innovation Board

https://www.gs1.org/docs/innovation/GS1-Trend-Research-2nd-edition-101320.pdf

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Thank you!

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