



Federated ONS : a professional perspective for the IoT

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The global language of business

www.gs1.org



What is GS1 ?

- Former EAN and UCC (merged in 2005)
- International and private standard body
- Non for profit
- A federation of national member organisations with regional cooperation fora (ex : GS1 in Europe)
- User-driven.
- Governance equally shared between retailers and manufacturers.



GS1 : overview

- 30 years of experience
- 108 member organisations
- Over one million companies doing business
- Over 90% are SMEs
- Over 20 industry sectors
- Over 5 billion transactions every day



The GS1 System



An integrated system of global standards that provides for accurate identification and communication of information regarding products, assets, services and locations.



Our 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 environment 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



Global standards for traceability

Standardised, reliable data for effective traceability



The environment for global mobile -commerce

Standardised, reliable data for effective customer information



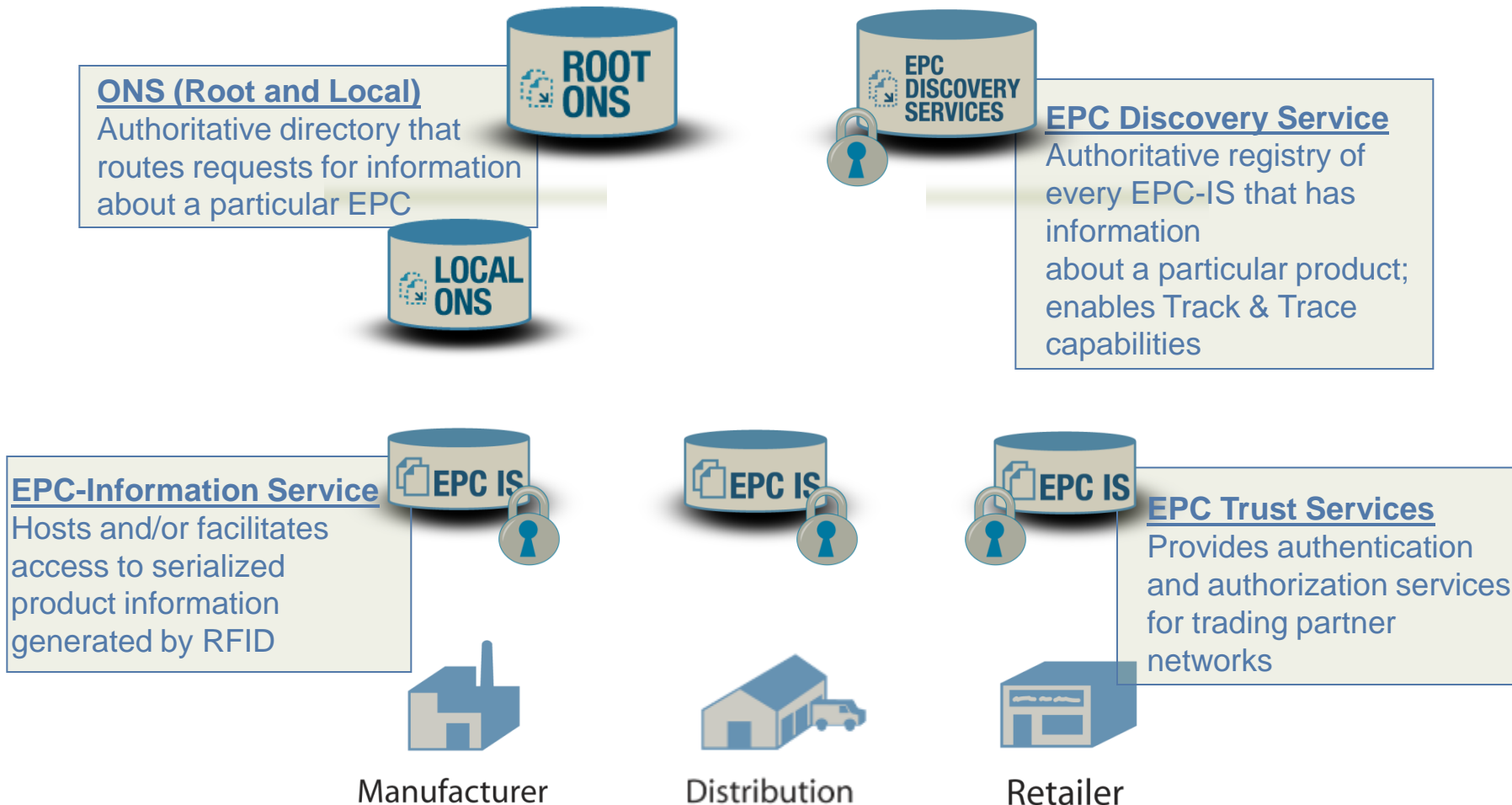
- Founded as GENCOD in 1972
 - EAN founding members
 - Equally managed by :
 - Manufacturers : GENFA, 29 500 companies
 - Retailers : GENDI, 1 500 companies.
 - 90 % of SMEs.
 - 200 solution providers in the « GS1 partner's program».
 - 70 collaborators.
- 31 000 members**



IoT and ONS

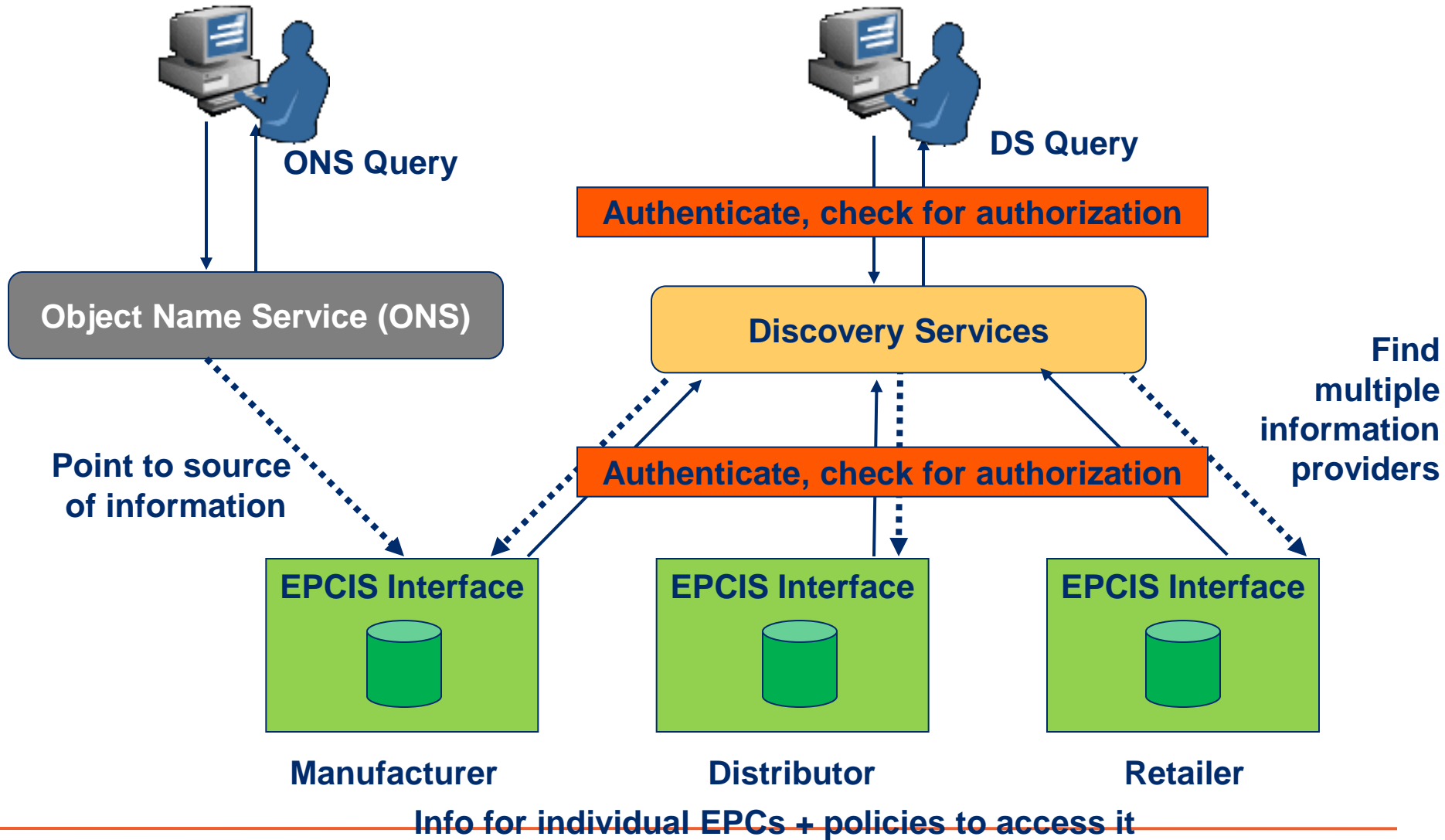


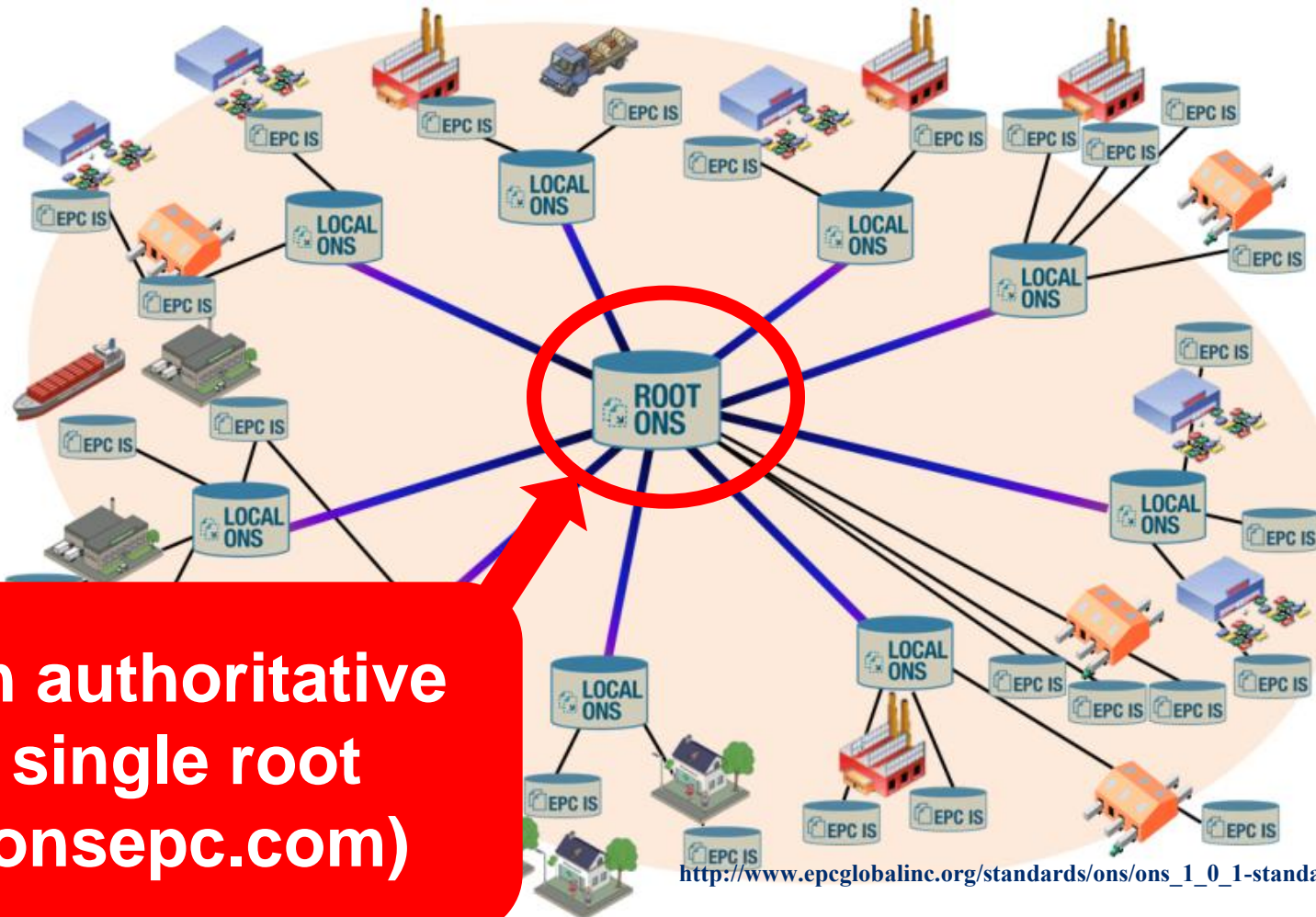
What are the components of the EPCglobal network ?





ONS vs. Discovery Services



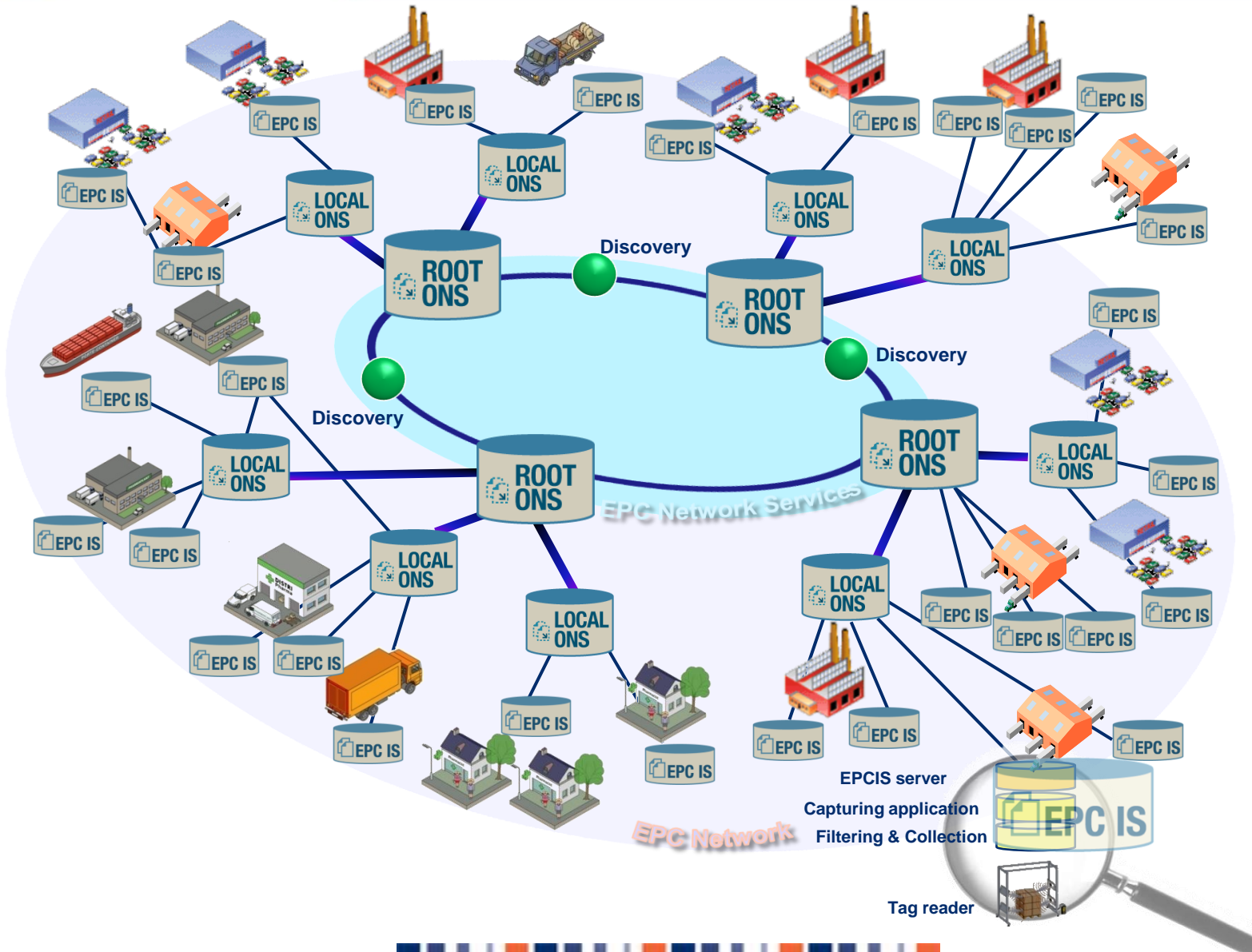


**An authoritative
single root
(onsepc.com)**

http://www.epcglobalinc.org/standards/ons/ons_1_0_1-standard-20080529.pdf



A new perspective : an even more distributed model of the EPCglobal network





GS1 France initiatives to support the FONS development

- **WINGS** : (**W**idening **I**nteroperability for **N**etworking **G**lobal **S**upply Chains) A french R&D project founded by ANR to develop the technical specifications of F-ONS and test them.
- « **Killer aps** » GS1 France is developing and promoting different applications based on FONS.
 - **Proxi-Produit** is a mobile commerce application dedicated to provide consumers with trusted information on the product (extended packaging applied to « added-value » information) : « *The Barcode power given to manufacturers* »
 - **IsThisGenuine** is a mobile application that allows to check if a product is counterfited : as a mutualized and interoperable platform it is the only way to provide SMEs with affordable and efficient solutions for anticounterfiting.

Business cases and user's involmment are even more important that technology's proof of concept.



Published Papers

- Multipolarity for the Object Naming Service, Humboldt University of Berlin, Mars 2008
- Distributed ONS, a Proposal from GS1 Canada, Avril 2008
- Finding your Way in the Internet of Things, an Afilias White paper, Sept. 2008

Events

- Event participation ifrom the WINGS project (<http://www.wings-project.fr/index.php/PmWiki/Events>)
- The Internet of things : how to reach the first billion of objects”, Sophie Le Pallec, co-organiser of the Internet of Things workshop, IGF 2008, Hyderhabad
- Second Internet of things workshop, IGF 2010, Vilnius, founding member of the Internet of Things Dynamic Coalition (IGF)
- IoT for business, Xavier Barras, Council for the Internet of Things, December 2010

Proxima mobile

The first portal of public services
on mobile :

Free

Available everywhere

Challenges

Political, economical,
technological

PROXIMA Mobile, key figures:

Launch in 2010

Budget: 10 millions of Euros

50 services of proximity

1 million users in 2010



Proxi Produit :

Public utility service for
product information

To create a new way to
engage with customers,
through confidence and
personalized services





What is *IsThatGenuine* ?



- *IsThatGenuine* is a trusted platform for the verification of product authenticity
- *IsThatGenuine* connects verification agents with verification services offered by right-holders



EstCeAuthentique

Codes :
GTIN: 3 4553120 201005
Série: 4790354

Entreprise :
GS1 FRANCE
GLN: 302700001001
2 rue Maurice Harman
F 92137 Issy les Moulinaux Cedex
Tel: 01 40955423 - Fax: 01 40955449
info@gs1.fr

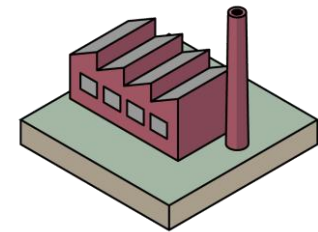
Validation Unitaire :
Alerte : numéro de série
fréquemment utilisé

Cereal's muesli
Profondeur : 4,4cm
Hauteur : 22cm
Largeur : 12cm
Poids Net : 750g

Méthode d'authentification :

1. Vérifier l'impression code barre
2. Vérifier encres Ultra-Rouge du point sur i
3. Appeler +33 40 95 54 23

CORRECT **SUSPECT**



A verification agent wants to check the authenticity of a product

By scanning the GS1 key, he verifies the product identifier and any information published by the right-holder that could lead to fraud detection

Entering into a relation with the verification agent, regarding their product protection policy, and regarding the authentication solution(s) he chose to select.



International cooperation

- **FONS** : Participation to the GS1 standardisation to support the evolution of the ONS 1.0 standard towards a federated model.
- **Strong cooperation** and knowledge sharing with GS1 Canada and GS1 Sweden
- **GS1 Sweden** has developed a testing platform in cooperation with the .SE (it has just been connected to the WINGS platform)
- GS1 sweden is also developing mobile commerce applications based on FONS.
- **GS1 Canada** is considering having their own platform and are currently discussing with different partners
- **ONS in Europe development project** : launch of a european working group within GS1 in Europe to share knowledge and study the benefits of applications based on FONS.



FONS Requirements Summary

Requirement	Type	Description
Neutral technology	Required	Designed to limit the ability of one nation to disrupt accessibility to services governed and operated in other nations.
Granularity of federation	Required	The highest level at which federation can occur is at the GS1 Member Organization level through the three-digit GS1 MO Prefixes assigned by GS1 Global.
Granularity of identification	Required	The lowest level at which queries can be made shall be at minimum one level above the serial number in the identifier.
GS1 MO selection of peer	Required	Each GS1 Member Organization shall be responsible for the selection of its peer.
Operator credentials/service level	Required	Every peer in the federation shall meet minimum service level requirements for participation in the federation.
Interconnection/transparency	Required	Every peer in the federation shall provide the necessary connections to all other approved peers to support a seamless resolution of ONS queries.
Identification key carrier agnosticism	Required	ONS shall be agnostic as to the identification key carrier (e.g. bar code label, RFID tag) used to encode the identification key.
Accommodation of non-GS1 identifiers	Recommended	The ONS standard should not inhibit future possibilities of collaboration or the inclusion of other identification schemas.
Uniqueness	Required	An identifier shall be unique within the federation of ONS instances in which it participates.
Security and information integrity	Recommended	The recommended architecture and design of the Federated ONS should have provisions against anticipated threats.
Peer transparency	Required	The Federated ONS shall not require updates to the DNS resolver code on the client side when a new peer comes online or an existing peer shuts down unless the peer being shut down is the default starting point for the client.
Transition transparency	Required	Federated ONS shall continue to support legacy ONS services and clients until a defined sunset date.
Dynamic service definition	Required	ONS shall support a dynamic service definition model wherein any service may be defined by GS1 Global, a GS1 Member Organization, an industry group, a member, a service provider, or in fact any entity that wishes to publish services based on GS1 identification keys in ONS.



Coordonnées

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