

TrackOne

NGS solutions for Smart Logistics

New Generation Sensors
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NGSsrl 
New Generation Sensors



Funded in 2015

Spin-off company della Scuola
Superiore Sant'Anna.

Solutions:

Smart Logistics

- Cargo

- Last mile

Smart Factory

- Predictive maintenance

- Industrial monitoring



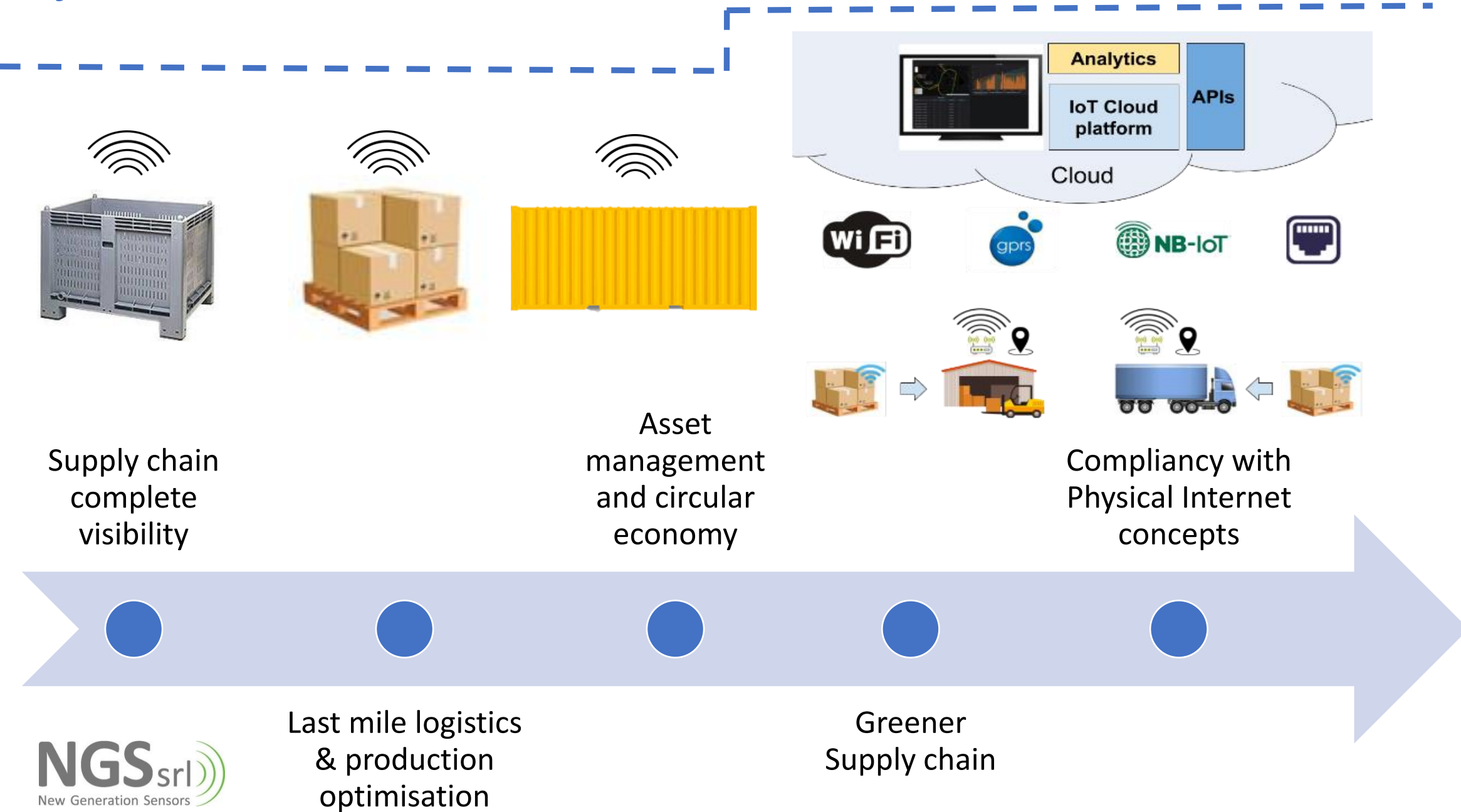
Scalable IoT systems and solutions

Hardware and Software

IoT Cloud platform and analytics

Consulting and customization

Objectives



IoT vs. Logistics 4.0

Track&Trace&Monitoring to enable the supply chain complete visibility.
Answering the following 4 questions:

What?

Where?

When?

How?

**Goods&Assets
identification** using
standardised coding.

**Where and when are
the goods.** T&T
services for Cargo and
Last Mile Logistics.
**Specialised goods
monitoring.**

Improved granularity,
tracking the
encapsulation
consolidation.

**Feature extraction, to
simplify the supply
chain understanding**

The Cloud view

Scalable data ingestion

Real-time reporting

Pdf reporting

Analytics

- Feature extraction - Aggregated data
- Human-understandable representation - Fact-based real time decision making





Cargo Logistics

Smart Container toward Physical Internet

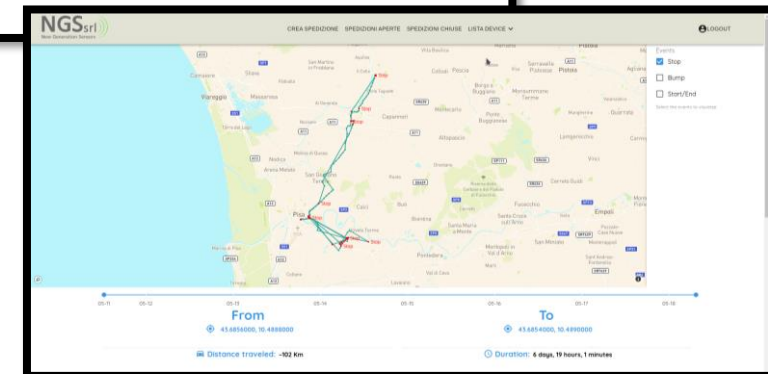
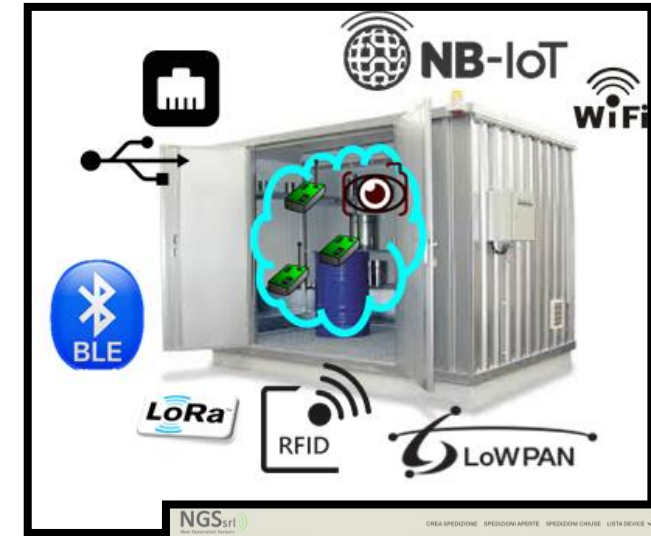
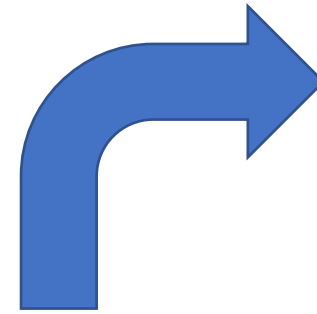
The Smart Container

Smart Container is:

A
container...

... that
install
inside it
several IoT
sensor
nodes of
different
types...

... enabling
its remote
monitoring
connecting
it with a
remote
control
room



The Smart Container

Container tracking



Container tracking & monitoring



The Smart Container

The Smart Container solution allows to track and control goods during shipments

- The sensors and the NGS tracker allow:
 - Real-time tracking
 - Real-time inventory (Smart Pallet)
 - Monitoring of environmental parameters
 - Shock and theft detection
 - Seal management (?)
- Data from sensors and trackers are stored in the cloud and processed to generate reports
- Customizable reporting



The Smart Pallet

Connected reusable pallet

Unique identification (e.g., GS1 GRAI code)

Encapsulation tracking & Presence notification

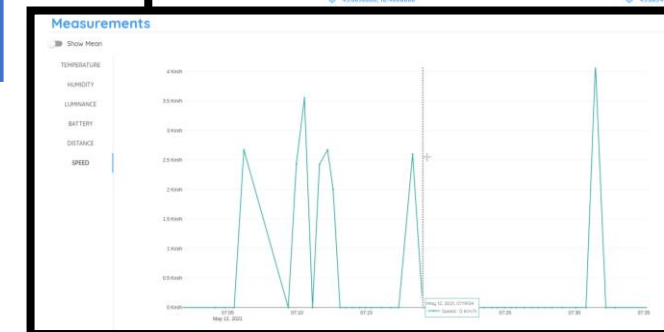
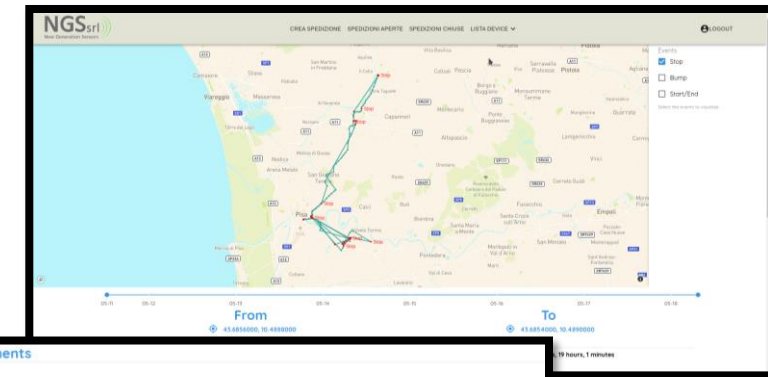
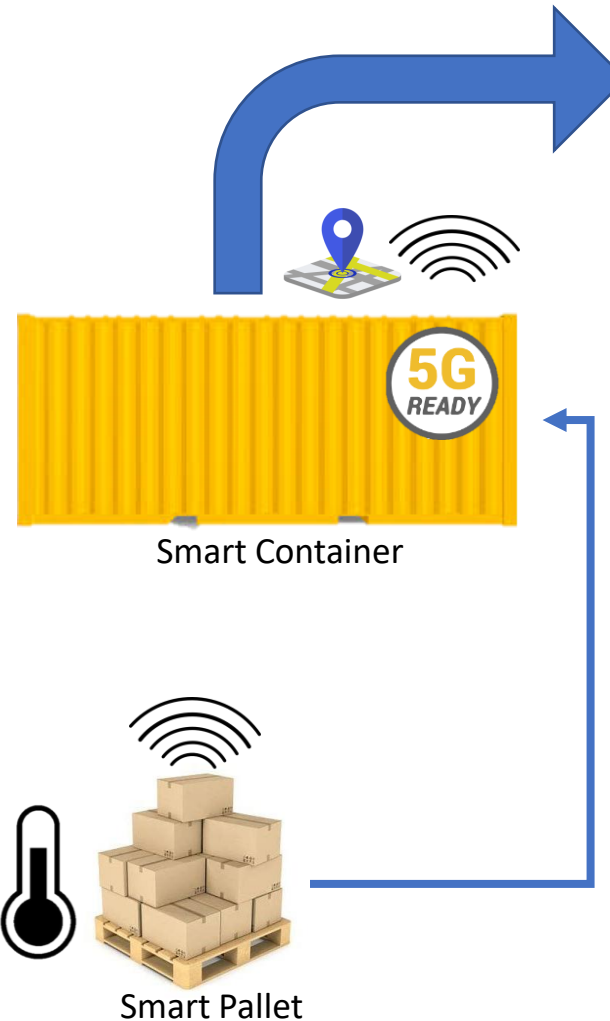
Added values sensors

Improved granularity monitoring

Specialised monitoring functionalities

Asset management support

Pallet as a service



The Smart Container application

Fruit transport



What?



Where?
When?



How?



Last-mile Logistics

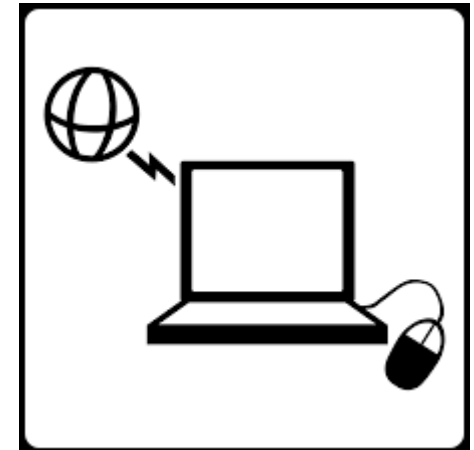
Serialisation, Track&Trace and
Monitoring

Smart & connected Basket/Pallet

Equip a re-usable baskets/pallets with an active IoT device

Serialise and associate goods to smart-baskets/pallet

Locate and monitor goods and assets



Serialisation, Track&Trace, Monitoring: all in one



Serialisation

- Follow the production, evaluate production time
- The supply chain as distributed warehouse



Track&Trace&Monitoring

- Where is located the goods?
- When these will arrive?



Analysis

- Provide human understandable aggregated information
- Event, metadata and statistics to support fact-based decision making



Standardised, secure and ad-hoc access

- All the supply chain must have the access to the data
- Privacy and encryption

Serialisation: the supply management enter inside the facilities



Track in line the production

- Follow the production
- Assign to each smart basket SN



Understand the amount of semi-finished product

- Distributed warehouse



Visualise the whole sub-contractors' supply chain

- Secure and ad-hoc access

Pallets/baskets as a service... plus services!

Re-usable vs. disposable containers

Circular economy & asset management

Reduction of waste

Greener supply-chain

Pallet/basket as a service (as for cargo containers)

Services for logistics

T&T with improved granularity

- At the pallet/basket level
- At the lower levels (serialided goods)

Specialised monitoring

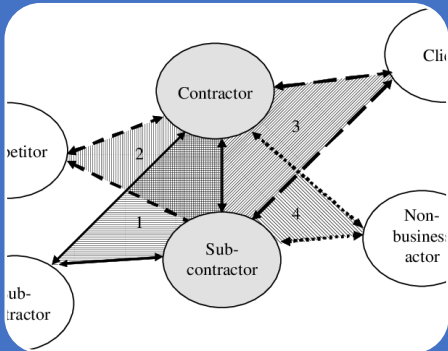
- Trucks and container can provide general purpose connectivity and information!!!

Connected goods: some motivating examples



Expensive wine

- Serialisation to avoid counterfeiting and providing “made in” information
- Supply chain complete monitoring
 - Level of product available in the supply chain
 - Quality monitoring of each SN (e.g., bumps or exceeding temperature)



Subcontractor supply chain

- Position of the goods
 - Level of product already done
- Statistical characterisation

Contact
Details



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