

Sicurezza sul lavoro e Industria 4.0: Innovazione e adempimenti

SMART TRACK.IO

Soluzione IoT per la Safety del Lavoratore 4.0

Speaker

Fabrizio Cardinali, Saverio Pagano. Smarttrack

Milano, 22 marzo 2018



Smart Track™

IoT Platform for Industry 4.0 Workers Safety

CSMO – Fabrizio Cardinali
CEO – Saverio Pagano

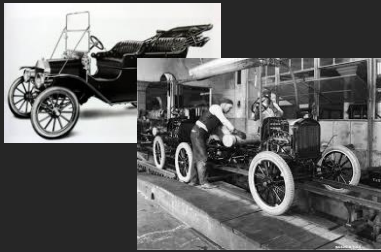
www.smarttrack.io

The 4th Industrial revolution

WHICH IS THE NEXT MAIN SOCIAL CHALLENGE FOR INDUSTRY 4.0?



Urbanization



Massification



Globalization

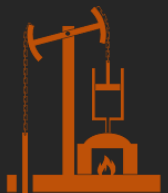


SAFETY:

The next BIG INDUSTRIAL CHALLENGE

Key Enabling Technologies & Resources

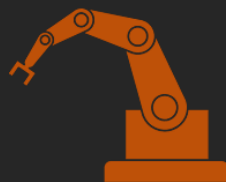
Steam Engine
COAL



Assembly Line
ELECTRICITY



Automation
INFORMATION



IIoT/AI/Robotics
BIG DATA FLOWS



How to
Make
the Next
Thing

Time to make safety OUR industrial priority

- every 15 seconds 1 worker dies
- every 15 seconds 153 workers are injured as a result of occupational accidents or diseases
- every day more than 5.750 deaths and 880.000 accidents are recorded
- every year more than 2.1 Million deaths and more than 320 Million accidents

Decent work is safe work!

source ILO (International Labour Organization)





The hidden cost of safety

- ④ 4% of global Gross Domestic Product each year (source ILO)
- ④ 225,8 Billion in lost productivity in US (source CDC)
- ④ Every euro spent in worker safety grants 2,2 times a Return on Prevention (source ISSA)

IN ITALY:

- ④ **11 Million lost working days** (source INAIL)
- ④ 30% reduction of insurance costs (source INAIL)
- ④ **250% IPER amortization** of investment costs (source MISE)





Industry 4.0
READY

Working shareholders

The Smart Track™ Team



Saverio Pagano
(CEO)



Simone Peirani
(CTO)



Fabrizio Cardinali
(CSMO)



SMART
TRACK



Università degli Studi di Genova

SMART TRACK

SmartTrack technology is based on a 3 level multiband network:

Level 1 is a **BLE/UWB Safety BAN (Body Area Network)** generated by a wearable device named **Smart Track WeTAG™** monitoring the safety devices and tools of each connected worker.



Smart Track WeTAG™ Connected Worker Wearable Device

Wearable
(wrist, neck, belt,..)

Web Independent
(gesture, buzzer, self diagnostic)




Multiband
(BLE 4, BLE 5, UWB, NFC, Rfid,..)




Personal
Safety Devices

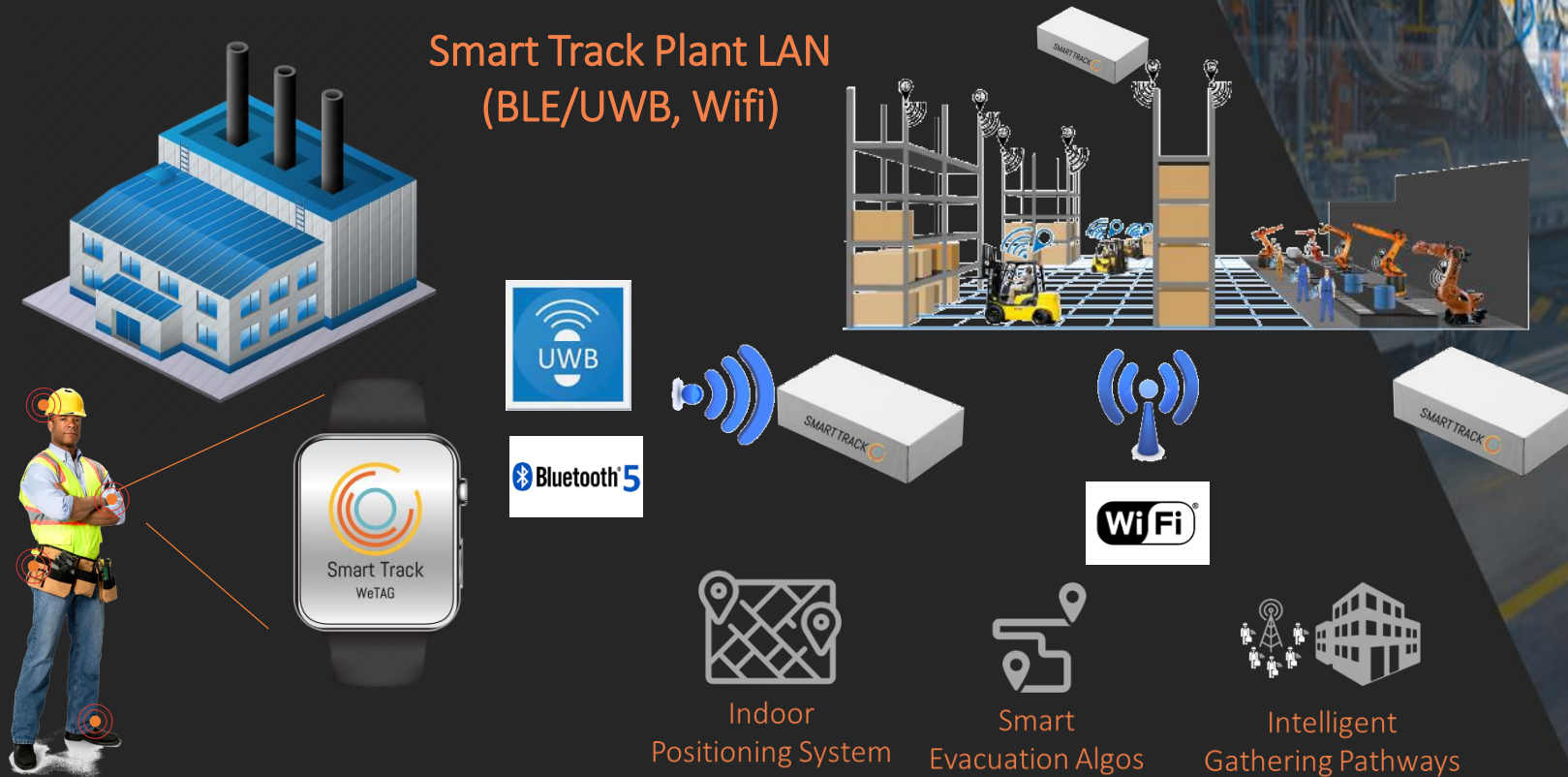

Man Down
Man High Detection

Extensible
(inertial, ambient, location sensors)


Gesture
Control

SMART TRACK

Level 2 is a Safety LAN (Local Area Network) generated by a set of BLE and/or UWB anchors set in up in the factory floor enabling indoor location detection, geofencing, smart routing and escape algos.



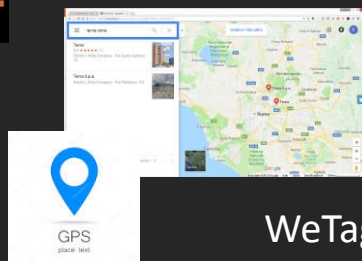
SMART TRACK

Level 3 is **Safety WAN (Wide Area Network)** to reach lone/remote workers on the field adding NBloT/LTE connectivity and GPS to geo locate the worker in trouble.



Extended Smart Track Anchor

- Bluetooth/UWB
- WIFI
- LTE/NBLoT
- Extended Power Bank
- GPS



WeTag™
Wearable



Smart Track
Safety Box

(Lone Worker/Team Gateway)



Connected Worker



Smart Track™

Safety Team Server & Client Apps

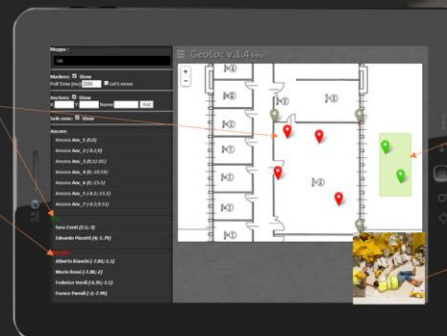
All levels are empowered by a set of Software Applications supporting:

- 🌀 User friendly location set up
- 🌀 visual geo-fencing & alerts management
- 🌀 Safety Manager Chatbot
- 🌀 Video Surveillance PiP
- 🌀 Intelligent Escape roots
- 🌀 Real time escape monitoring & analytics
- 🌀 Much more



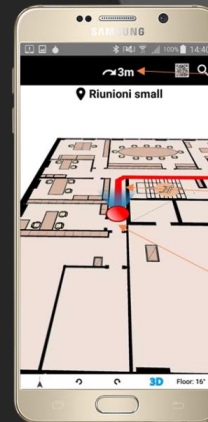
Man Down
Positioning

List of
People in
Safety
Zone
List of
People
to
Rescue



People in
Safety Zone

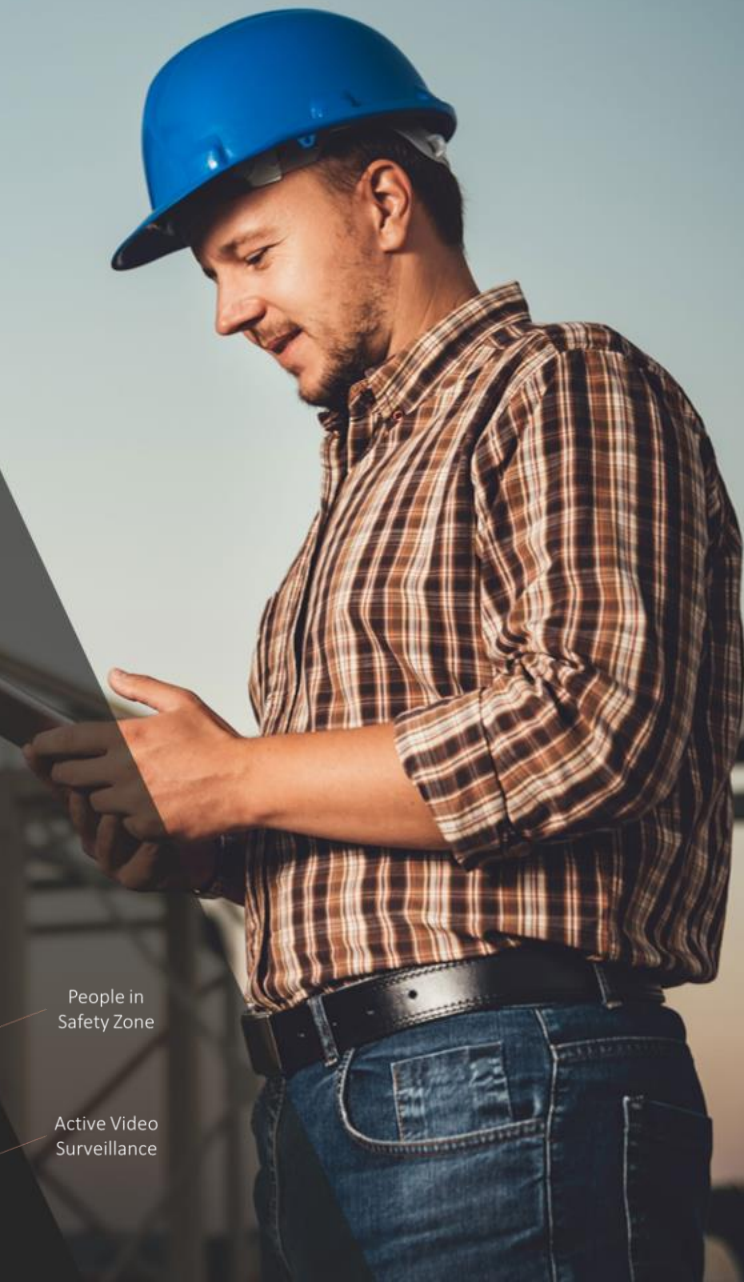
Active Video
Surveillance



Turning points

Fastest Route

Safety team
positioning



3rd party extension sample

Badgeless Access Control

Smart Track is opened to 3° party integration by means of Restful Web Services.

Smart Track services have been used by Selesta, a leading security provider, to integrate 3° party gate access control, empowering:

- 📶 NFC opening by Smart Tags
- 📶 Integration with 3° party Security dashboard (VAM)
- 📶 Geofencing



3rd party Smart Track extensions samples

Active Video Surveillance Integration

Smart Track is opened to 3° party integration by means of Restful Web Services.

Smart Track services have been used by AITEK, a leading video surveillance and digital signage systems provider, to integrate 3° party video surveillance empowering:

- Context sensitive video point trigger in case of man down
- Accident story recording
- Picture in picture video surveillance integration in Smart Track safety control dashboard

**SMART
TRACK** 

aitek
ENHANCED SOLUTIONS



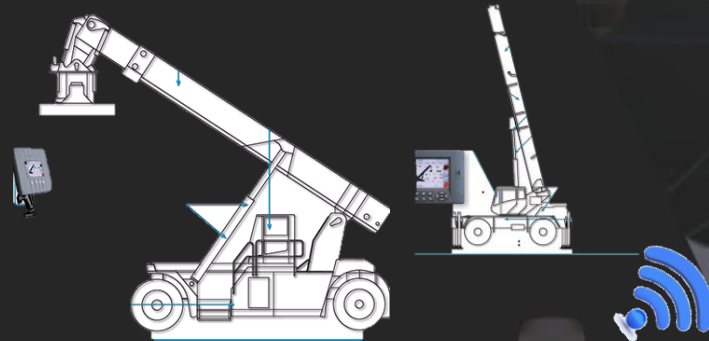
3rd party extension sample

Logistic Trucks Active Geo fencing

Smart Track is opened to 3° party integration by means of Restful Web Services.

Smart Track web services have been used by 3BMUST, a leading automotive engineering company, to integrate 3° party truck control systems empowering:

- ⦿ Circular Geofencing
- ⦿ CAN based automotive interface
- ⦿ On board device integration



**SMART
TRACK** 

3Bmust
international



Offer Model



3rd party
integration api

Advanced



Badgeless
Access Control



Active
Video Surveillance



Man-Machine
Collision Alert
& Prevention

Basic



Personal
Safety Devices

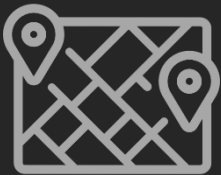


Man Down
Man High Detection



Gesture
Control

Location Based



Indoor
Positioning System



Smart
Evacuation Algos



Intelligent
Gathering Pathways

SMART
TRACK 





Case 1 – Leonardo

Global engineering company using Smart Track technology to regulate access and safety in highly qualified rooms such as:

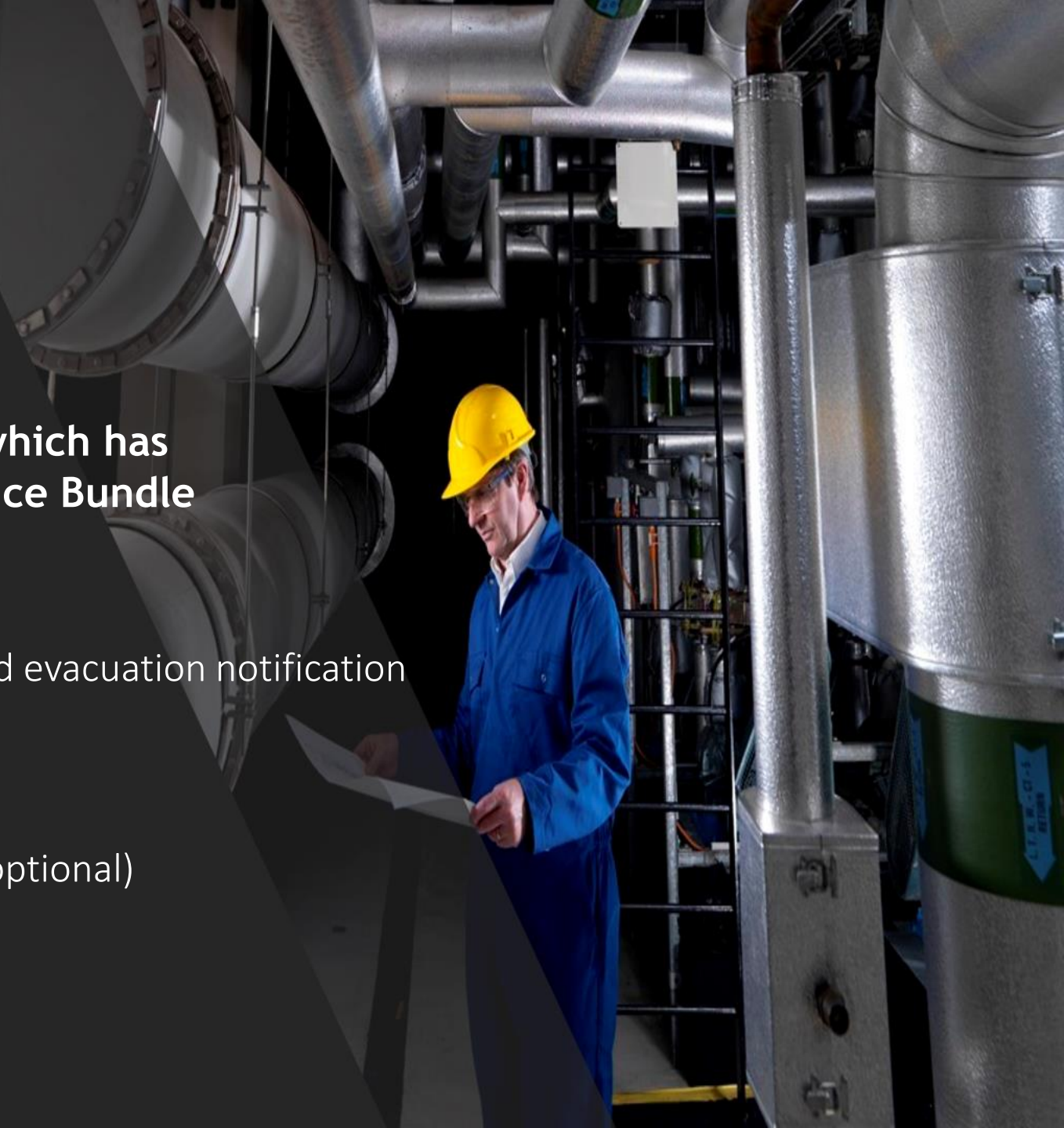
- ⦿ Classified Rooms
- ⦿ Computer Rooms
- ⦿ Control Rooms



Case 2 – Generali

International leader for **industrial insurance** which has chosen **Smart Track** for a **Industry 4 Insurance Bundle** offering to **Manufacturing SMBs**:

- ⦿ Safety alerts for man down, hazardous areas and evacuation notification
- ⦿ Man/Machine-Robots collision detection
- ⦿ Personal Safety devices detection
- ⦿ Indoor tracking
- ⦿ Entry gates and video surveillance integration (optional)



Case 3 – Ansaldo Energia

- Overall winner of SMARTcup Liguria
- Winner of innovative startup development program and innovative PMI of the Research & Entrepreneurship Foundation (members: Leonardo, Fincantieri, Telecom, Siemens, Intesa SanPaolo, IIT)
- Finalist of Industry 4 startup initiative 2017 by Banca Intesa and CISCO
- Winner of DIGITAL X FACTORY 2017 (call for a Industry 4 LightHouse Plant set up by the Italian Ministry of Economical Development, MISE at Ansaldo Energia).



If your workers safety is your main concern...

Modular
(Basic, Advanced, Location)

Affordable
(Insurance Prize Deduction)

Interoperable
(API for 3^o party integrations)



MultiBand
(Bluetooth 4,5 & UWB based)

Intelligent
(Context Aware,)

Secure
(Gesture Control, Web Independent)



...then Smart Track is THE answer!

By making **safety** your **Industry 4.0**
nr 1 Priority not only you will **save lives**

...

...you will also increase Your Company's:



WE CANNOT SOLVE OUR PROBLEMS
WITH THE SAME THINKING
WE USED WHEN WE
CREATED THEM

- Albert Einstein

SMART
TRACK 

CMO – Ing. Fabrizio Cardinali
CEO – Ing. Saverio Pagano



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