

RFID JOURNAL VIRTUAL EVENTS

RFID IN MANUFACTURING



RFID FOR TIRES

LET'S GET INTO THE HEART OF THE IOT

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Michelin
Jun 30th, 2020



AGENDA

- WHY RFID FOR TIRES?***
- KEYS TO GLOBAL
TIRE INDUSTRY ADOPTION***
- STANDARDS APPROACH FOCUS***

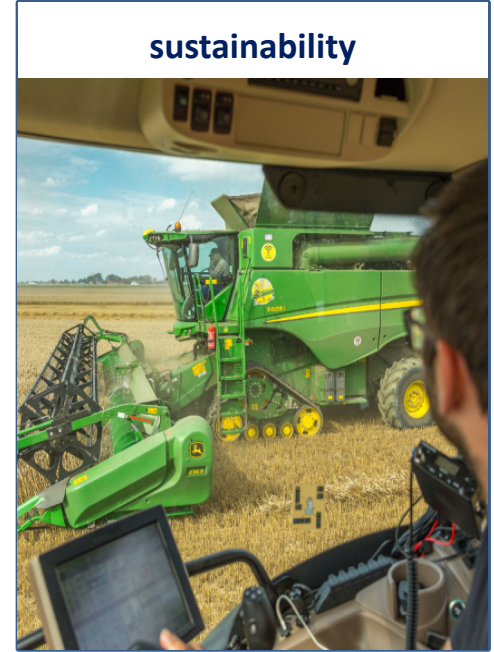
AIMING AT BRINGING OUR CUSTOMERS A GLOBAL MOBILITY EXPERIENCE



SAFETY & reliability



Productivity & effectiveness



sustainability

WHY RFID FOR TIRES ?



***« Every Michelin tire will have to be connectable »
Florent Menegaux, Vivatech 2018***

A COMPLEX PRODUCT LIFE CYCLE & MANY VALUE POINTS

Manufacturing



1st Mounting - OEM



Events while in Service



Logistic & Customs



1st Mounting - Dealer



Retreading



Retrofitting



Recycling



Embedded



RFID patch possible

Sticker

Patch

WHY IS RFID THE MOST ADAPTED SOLUTION?



Universal technology

- Universal enabler responding to all use cases
- Billions of things are already tagged by RFID



Permanently readable

- Tag is protected by rubber and no battery needed



Can operate during the entire lifecycle

- Tag is a part of the tire (cured in), and not an accessory
- Robust against damages, ageing, weather conditions



Secure

- Tag is locked after encoding by the tire manufacturer
- Robust traceability technology against robbery and counterfeiting

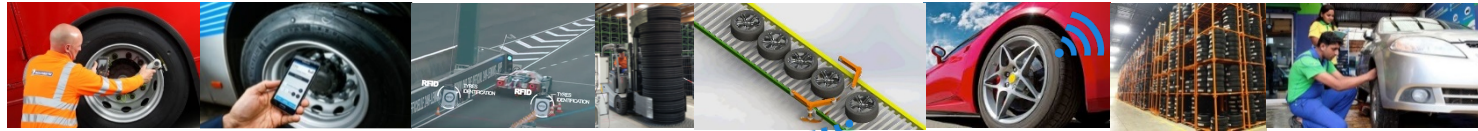


Normed

- Described by four international standards, promoted by ETRTO and Chinese SAC/TC19



“THE TIRE” ON ITS WAY TO THE HEART OF THE IOT



TRIVIALIZATION

DEMONSTRATION

ADOPTION

WW Industry Standards

Business Cases Multiplication

Closed Loop Use Cases

Tire Information Service

Deployment Capability

Open Loop Solutions Growth

Tire Tag

Key Multi Brand Business Cases

Regulations

RFID TECHNOLOGY IN TIRES ENABLES TO:

Improve internal processes
 COST DECREASE & QUALITY IMPROVEMENT
 Gain efficiency and optimize operations of tire management throughout the tire lifecycle

Improve customer experience
 CUSTOMER SATISFACTION & REVENUE
 Enable to offer personalized services for OEMs, customers and retailers to maximize revenue and tire performance

Internal Process Benefits:
 - Optimize routes / Delivery / Orders
 - Better stock / Inventory management
 - Reduce waste / Improve recycling / Reusing
 - Better cycle management / Recycling
 - Better compliance management / TSP / RLT / RLT

**Customer Experience Benefits:
 - Better class / model recognition / KPI's
 - More safety / More trace
 - Proof of origin / Real-time data
 - Better maintenance & performance
 - TSP customer / regulatory
 - Where used / Tire fleet management
 - Proactive maintenance and performance**

INDUSTRY STANDARDS

FROM LOCAL STANDARD INITIATIVES TO ISO

SUPPORTIVE TIRE RFID STANDARDS INITIATION

- JAIF , AIAG, VDA
- TMC , RMA, ETRTO, USTMA, SAC/TC-19



4 ISO STANDARDS PUBLISHED FROM MID 2019 TO MID 2020



- Kickoff: 2016
- Conveners : China & France
- Active participant countries : Austria, China, Finland, France, Germany, Italy, Japan, Korea, USA
- Participants : tire manufacturers , RFID tech

FROM LOCAL STANDARD INITIATIVES TO ISO

2019

■ ISO 20909 – Radio Frequency IDentification (RFID) tire tags

- UHF RFID technology (~ RAIN)
- Basic requirements for “Embedded”, “Patch” , “Sticker”
- 15 cm minimum read distance



■ ISO 20910 – Coding for Radio Frequency IDentification (RFID) tire tags

- SGTIN96 / EPC coding permalocked by tire manufacturer. Optional User Memory



2020

■ ISO 20911 – Tagging technology classification for RFID tire tags

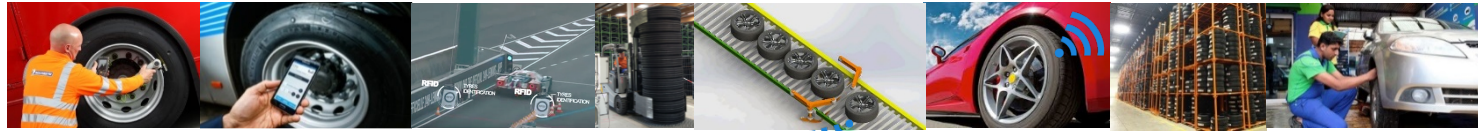
- Basic technology definition for “Embedded”, “Patch”, “Sticker”
- Sidewall marking



■ ISO 20912 – Conformance test methods for RFID enabled tires

- Open Space Method
- Semi Anechoic Method

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**Customer Experience Benefits:
 - Better class / model recognition / KPI's
 - More safety / More trace
 - Proof of origin / Real-time data
 - Better maintenance & performance
 - TIRI customer loyalty
 - Where used / Tire fleet management
 - Predictive maintenance and performance**

THANK YOU

More Michelin Tires RFID videos on Youtube, search: [gB9J4PC3](#)