RAIN ALLIANCE

RAIN Alliance Tyres Masterclass

RAIN Tags in Tyres: Driving Innovation and Sustainability

This comprehensive two-day masterclass will equip you with the practical knowledge to embed RAIN tags into tyres on an industrial scale. This course covers the physical, environmental, and technical challenges of embedding RAIN technology into Tyres for full lifecycle traceability enabling new business models and sustainability.

Who Should Attend

- This course is designed for Heads of Engineering, IT, Product Development, and Product Management.

IN-PERSON TRAINING: 15-16 October 2026, Korea **REGISTER NOW**

Course Outline

1 RAIN Technology in the tyre market

- Why use RAIN for full lifecycle identification of tyres
- Key supporting standards for embedding RAIN Tags tyres
- GDSO, an industry solution for data access and exchange

2 Performance characteristics of embedded tags

- Impact of Tyre architecture and materials on RF wave propagation
- Designing solutions from a systems perspective
- Critical measurement methods

3 Advanced concepts for embedding tags into tyres

- Impact of Tyre lifecycle on tag design
- Understanding the physical and thermal environment
- Optimal RF communication
- Design guidelines

4 RAIN Tyre Tag and the manufacturing process

- RF quality control
- Tyre tag and the manufacturing process
- Effective laminating process
- The pick-and-place process
- TAG data encoding

Host Sponsor

muRata
INNOVATOR IN ELECTRONICS

Why Attend this Course?

RAIN Technology is enabling new business models in the tyre market The tyre industry is adopting item level traceability using RAIN Tags to create new service opportunities, connecting their partners and consumers to their brand. These services include:

- Correct first-time shipments
- Accurate inventory management
- Quality assurance – right tyre, right wheel, right vehicle
- Improve recall efficiency
- Fleet services and maintenance
- Predictive maintenance
- Theft protection and brand authentication
- Safe retreading, retreading history
- Consumer advice, repair and replacement services
- Tyres recycling classification
- Introduction to use cases supporting corporate sustainability goals

This course provides guidelines to help you unlock this potential for your company.

Benefits of RAIN Technology

RAIN tags are contactless, passive RFID devices that operate in the 860–930Mhz range. They have unique characteristics that make them ideal for item level identification and traceability in the tyre market:

Readability & Efficiency

- RAIN tags can be read without direct line of sight.
- RAIN tags can be read simultaneously and from a distance.

Robust Data Exchange

- With GDSO, partners can share and access data online, and in real time.

Durability

- RAIN tags are very robust, withstanding harsh environments, such as heat, moisture, chemicals and shock.
- Supports cradle-to-grave traceability.
- Enables retreading and accurate recycling.

Battery Free

- RAIN TAGS are powered by radio signals from the reader and do not need an independent power supply.

Item level traceability: A prerequisite for sustainability and recycling

The tyre recycling process is currently inefficient, relying on trailer volumes rather than accurately assessing the specific contents of each tyre. This outdated approach leads to suboptimal recycling outcomes. Embedded RAIN tags revolutionize this process by enabling individual tyres to be identified and routed to the correct recycling method, improving efficiency and sustainability.

Many countries are now developing regulations to mandate recyclability and the circular economy where recycled materials are fed back into the value chain as raw materials.

Europe is at the forefront of this transformation with its Digital Product Passport (DPP), a cutting-edge digital data set linked to each product via a unique identifier embedded in a RAIN tag. This ensures every tyre is tracked at the item level throughout its lifecycle.

Through the GDSO platform, stakeholders gain access to standardized, up-to-date information about each tyre, including details on retreading and recycling. This system ensures tyres are processed correctly, reducing waste and supporting environmental goals.

Demonstrators for the Tyre DPP are currently underway under CIRPASS 2. Soon every tyre sold in the EU will be required to have a unique Digital Product Passport (DPP). This will enable real-time tracking throughout its lifecycle, from production to recycling.

Certified RAIN Alliance Training: The Industry Standard

The RAIN Alliance offers courses designed by industry experts, ensuring that participants gain cutting-edge skills and real-world insights. Quality Training is critical to enabling 10X growth in the industry for our members. Our courses equip you with the knowledge to successfully deploy RAIN technology solutions, no matter what market you are in.

For more detailed course information and to begin your learning journey, visit our website.

About the RAIN Alliance

The RAIN Alliance is a consortium of companies that together want to create a smarter and more sustainable world by using RAIN technology to connect trillions of everyday items across their entire lifecycle, simply and inexpensively. The RAIN Alliance enables organizations to improve traceability, effectiveness, and sustainability by simplifying, standardizing, and accelerating the adoption of RAIN technology through global collaboration and innovation.

The RAIN Alliance has a Sustainability & Circularity Community and a dedicated Tyres Workgroup that focus on advancing innovations and fostering collaboration to drive progress in sustainability, circularity, and effective tyre lifecycle management.

For more information, please visit therainalliance.org.