



# Oscar Salgado

Monitoring - Team Leader

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**IKERLAN.**  
WHERE TECHNOLOGY  
IS AN ATTITUDE

Arrasate-Mondragon, Basque Country, Spain

<http://ikerlan.es/en/>

IK4  IKERLAN

## USEFUL TECHNOLOGY

## MORE THAN 30 YEARS TRANSFERING TECHNOLOGY TO THE INDUSTRY

AT IKERLAN WE  
APPLY TECHNOLOGY  
BY CONCEPT,  
CULTURE AND  
ATTITUDE

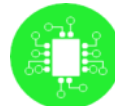


REAL TECHNOLOGY FOR  
REAL CHALLENGES

### TECHNOLOGY



UNIVERSITY



IK4-IKERLAN



INDUSTRY

### PEOPLE

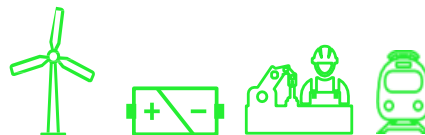
HIGHER EDUCATION



TECNOLOGICAL SPECIALISATION



INDUSTRY



WE COLLABORATE WITH COMPANIES TO DEVELOP  
PRODUCTS YOU CAN USE EVERY DAY.

## APPLIED TECHNOLOGY 3 BUSINESS RESEARCH UNITS



### ELECTRONIC, INFORMATION AND COMMUNICATION TECHNOLOGIES

#### Dependable embedded systems

- Real time systems
- Dependable SW
- Industrial Security

#### ICT

- Cybersecure IoT
- Big Data architectures

#### Smart Systems

- Communication systems
- HW Platforms
- Microsystems



### ENERGY AND POWER ELECTRONICS

#### Energy storage and management

- Electrical energy storage
- Electrical and thermal energy management

#### Power electronics

- Electromagnetism and electric machines
- Power converters



### ADVANCED MANUFACTURING

#### Mechanics

- Structural reliability
- Robust Design

#### Operation and Maintenance Technologies

- Smart maintenance and manufacturing services

#### Control and Monitoring

- Monitoring
- Advanced control

## **S2R-OC-IP5-01-2019:** Condition-based and preventive maintenance for locomotive bogie Research and Innovation Action, **TRL 5-6**, Budget **1.5 M€**

### **Project description:**

- Decision-support system that guides bogie's proactive maintenance decisions
- Freight-specific use cases monitoring critical components (i.e. wheel, axle-box bearing or gearbox)
- Overall approach of CBM, diagnosis and prognosis, early fault detection
- Life cycle assessment for enhancing RAMS and cost competitiveness of freight services
- From time-based and mileage-based maintenance to reliability and RUL-based maintenance
- Identification of context impact (extreme weather, tracks wear, etc.) on RAMS

### **Consortium:**

- LCC, TCO assessment
- Maintenance expert(s), planning
- Condition monitoring expert(s)
- Sensor
- ICT developer
- Use case owner(s)
- RTD, SME, Industry

### **Impact:**

- Significant reduction of the life-cycle cost of the railway transport system
- Improved operations
- Suppression of unplanned maintenance activities
- Freight transportation assets' life cycle extension
- Longer maintenance intervals while ensuring RAMS indicators

- **S2R-OC-IP1-01-2019** Advanced Car body shells for railways and light material and innovative doors and train modularity
- **S2R-OC-IP1-02-2019** Tools, methodologies and technological development of next generation of Running Gear
- **S2R-OC-IP1-03-2019** Support to the development of technical demonstrators for the next generation of brake systems
- **S2R-OC-IP2-02-2019** Support to development of demonstrator platform for Traffic Management
- **S2R-OC-IPX-01-2019** Artificial Intelligence (A.I.) for the railway sector

