Customer: Europa-Park GmbH & Co Mack KG

DETECTION OF PHYSICAL STRESSES ON THE HUMAN BODY IN AMUSEMENT RIDES

Foto: © Europa-Park GmbH & Co Mack KG

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i4M technologies GmbH
intelligence for mechanical systems

nemione
made by i4M technologies

EUROPA PARK
FREIZEITPARK & ERLEBNIS-RESORT

Use Case Detection of physical stresses on the human body in amusement rides

Customer: Europa-Park GmbH & Co Mack KG

OBJECTIVE

- Determination of forces and accelerations acting on the human body on amusement rides in order to be able to offer visitors with disabilities an extended and improved experience
- Adhoc measurements at attractions to detect possible changes in ride behavior at an early stage

PROJECT PERIOD

- In operation since 2021

CHALLENGES

- Short-term and safe measurements during active operation of the amusement ride
- Risk-free attachment of the sensor to the human body
- High robustness against dynamic loads, magnetic fields, splash water and weather influences

REALIZATION

- Wireless nemione measurement system based on the compact accelerometer nemi G+ and data logger nemi Log
- Temporary fixed mounting of the data logger to the vehicle
- Flexible mounting of the acceleration sensor at various measuring points on the vehicle or at different positions in the seat area and on the human body employing a chest strap
- Sensor and data logger battery-operated and rechargeable via USB interface
- Transmission of the measurement data via radio technology nemi Link 2400 (2.4 GHz frequency band) from the sensor to the data logger
- Data storage via SD card (inside logger)

ADVANTAGES

- Simple, fast and flexible assembly / disassembly of the measurement setup with compact and lightweight components
- Uncomplicated handling thanks to completely wireless measurement technology
- Long battery life: Execution of longer measurement series to record changes in driving behavior over the operating time
- Reliable recording of all relevant data and uncomplicated file transfer; thus fast evaluation of the data already on site and possibility to adjust the measurement procedures
- Versatile further processing of the measurement data through storage in standard format (csv)

DEPLOYED nemione® PRODUCTS

- nemi G+
- nemi Log

„In i4M technologies GmbH we found a competent partner offering a functional and diverse product portfolio. During the development period, i4M supported us with their comprehensive Know-How in selecting a suitable measurement system meeting our demands.
The small dimensions enabled us to perform test measurements quickly and flexibly, even during normal operation. In addition, the system has its strength in its ability to be used for acceleration measurements on the human body."

Gregor Engelmann
Operation & Service
Europa-Park GmbH & Co Mack KG

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Use Case **Detection of physical stresses on the human body in amusement rides**

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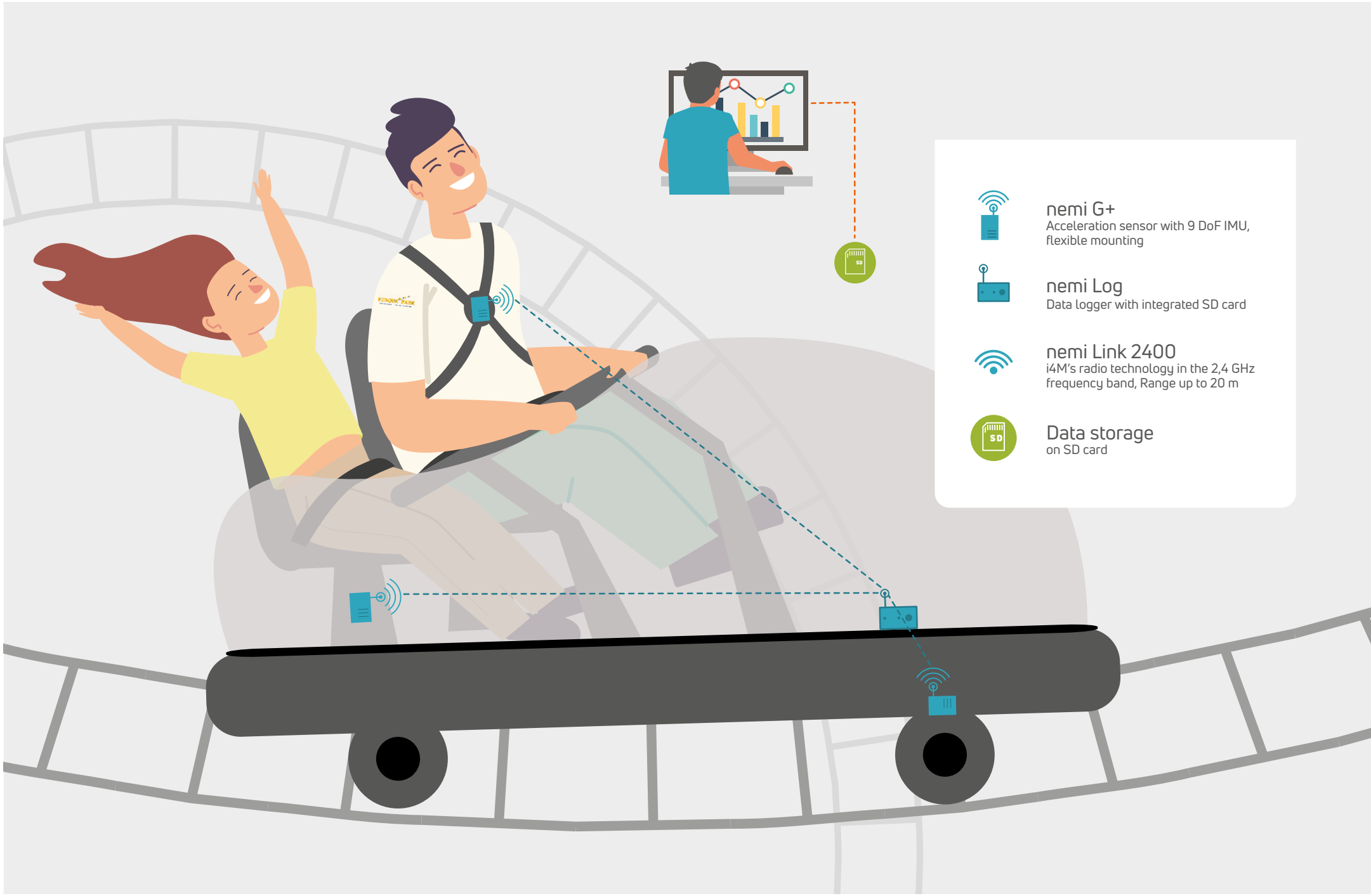

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