Innovation and Research for a Sustainable Railway System

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UNIFE

RAIL INDUSTRY

EU Standardisation & Harmonisation

IRIS

Public Affairs

European Rail Research

EUROPEAN UNION

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SHIFT²RAIL AT A GLANCE

INCREASED CAPACITY, CONSOLIDATED RELIABILITY
FOR EFFECTIVE AND SUSTAINABLE RAIL TRANSPORT
AND A COMPETITIVE EUROPEAN RAIL INDUSTRY

IP1
ENERGY & MASS EFFICIENT TECHNOLOGIES
FOR HIGH CAPACITY GREEN TRAINS

IP2
ADVANCED TRAFFIC MANAGEMENT & CONTROL SYSTEMS

IP3
COST EFFICIENT HIGH CAPACITY GREEN INFRASTRUCTURE

IP4
IT SOLUTIONS FOR A SEAMLESS ATTRACTIVE RAILWAY

IP5
TECHNOLOGIES FOR SUSTAINABLE & ATTRACTIVE EUROPEAN FREIGHT
Emission

Vibration

Direct Noise

Air-borne noise

Vibration induced noise
Operation    Infrastructure        Components         Traction

Energy efficient driving
Energy efficient timetabling

Reversible DC substations
Recover losses from the network

Onboard energy storage systems
Use of waste heat

Superconducting transformer
Medium frequency transformer