

## Join or generate a project: Real Time Ethernet and Combined Data & Power Transfer in Automation and Automotive

We have ongoing projects on combined energy and data transfer as well as in Real-Time Ethernet for automation and automotive applications. We would like to carry on with such work in a European context.

### Current work on Ethernet:

#### Automotive

- Real time stack
- Physical layer

#### Automation

- Application and adaption of automotive Ethernet in vehicle technologies. E.g. unshielded twisted pair cabling in automation AVB/TSN Stacks for Automation

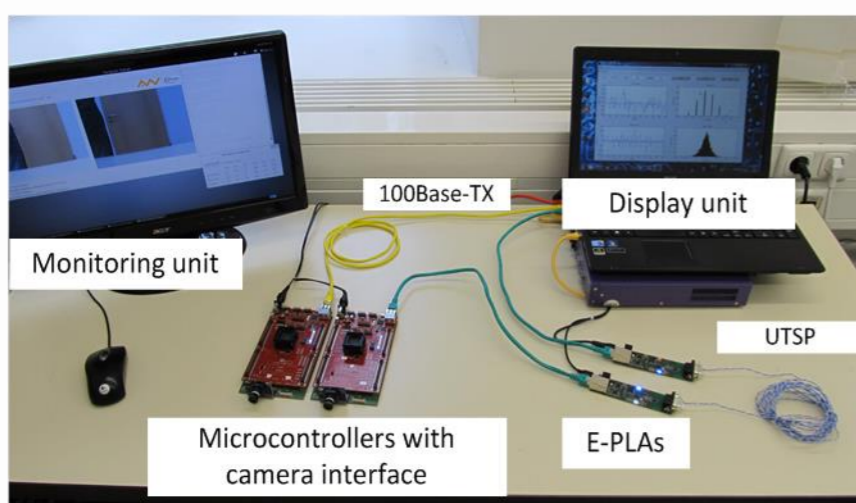
### Current work on Power & Data Transfer:

#### Automotive (E-Mobility wire less charging)

- Coupler Design
- System layout for charging multiple vehicles

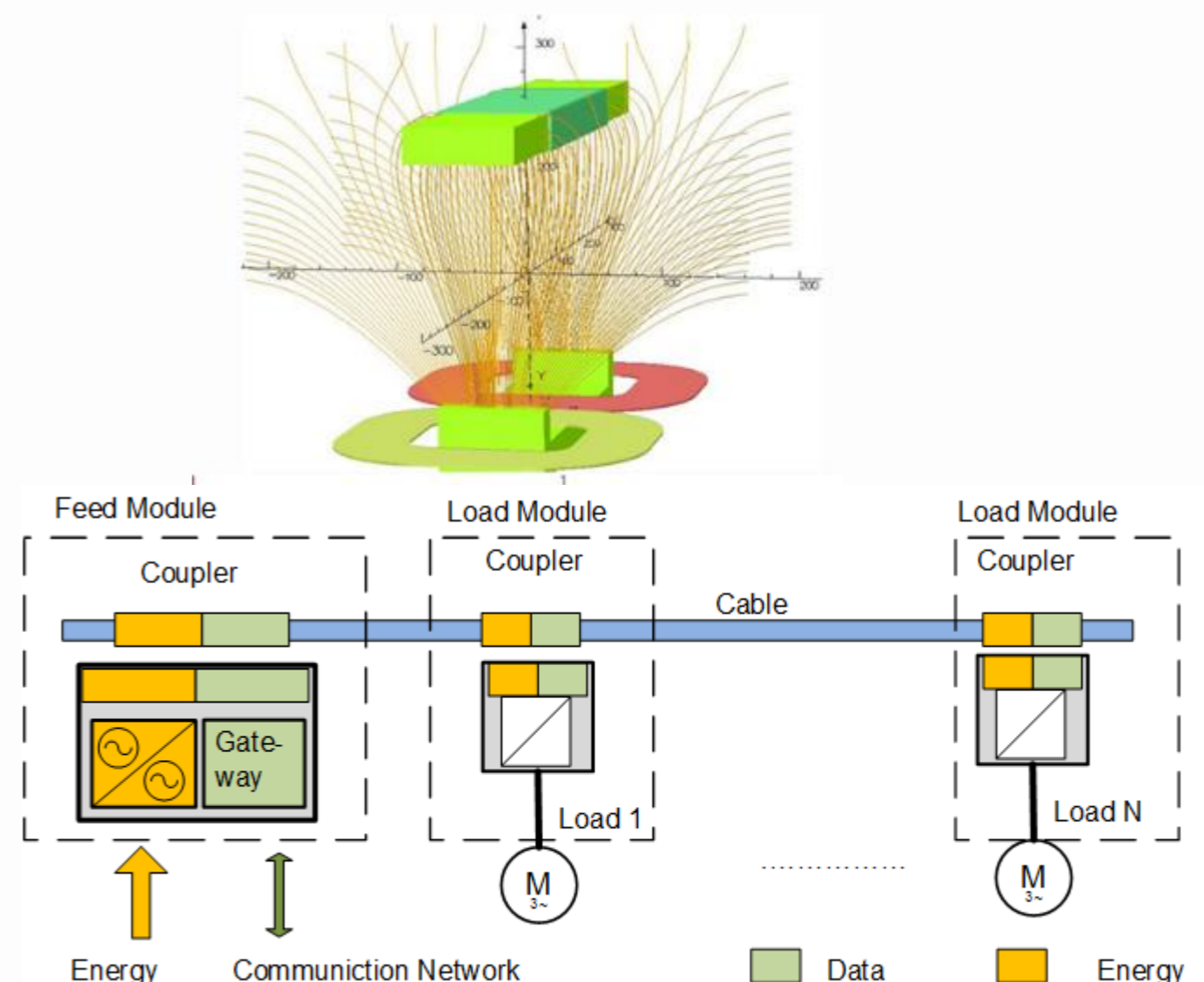
#### Automation

- Coupler Design for Energy and Data transfer
- System layout, design and simulation



Electrical testsetup for real-time via one-wire connection

Application Layer	TCP/IP, UDP/IP Application		Ethernet AVB Application
Administration Layer	Mailbox		
Service Layer	TCP, UDP		Ethernet AVB
	IPv4	PTP (1588)	MRP
Administration Layer	RX Mailbox System and TX Message Queues		
Abstraction Layer	RX Handler	Ethernet If	TX Handler
Hardware Layer	Ethernet		



- We would like to join or to develop a project comprising such topics as given below.
- The project should aim at applications in Automotive and/or Automation.
- Scope: Duration 2-4 years; Staff 2 full time; Start in 2016

- Real-Time Ethernet (AVB, TSN, ...)
- Adapted modulation techniques (e.g. OFDM)
- Reduced Twisted Pair Gigabit Ethernet RTPGE
- Data integrity (SW + EMC)
- E-Mobility wireless charging of multiple loads
- Inductive power & Data transfer