**Project A4**

**Resource efficient and distributed platforms for integrative data analysis**

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**Providing Methods for Development of Resource-aware Applications in Distributed Cyber-physical Systems**

- Development & Simulation of Resource Models
  - Energy harvesting, consumption & radio resources
  - Provide resource information for offline simulations and online applications

- Creation of PhyNetLab Platform
  - Energy-neutral PhyNode
  - Extensible hierarchical communication system validation in environment

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**Resource-efficient Wireless Networking**

*by learning from the real network behavior*

- Passive Data Rate Prediction
- Offline and Online Transmission Power Prediction
- Extensions of CoPoMo
- Support Offloading Decisions

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**Automated Hardware Energy Models**

- Embedded Device Driver Models
- Energy-aware Device Driver Synthesis

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**Indoor PV Harvesting Income Prediction**

- Automated Data Collection in Dedicated Lab Environment

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**PhyNetLab Testbed**

- Scalability Evaluations and Simulations
- Resource-constrained Data Analysis in Real-life Environment

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**Automatic Space Scanning**

- ANN-based Converter Modelling

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**ATLAS – TDOA-based UWB Localization**

- Precise positioning enabling indoor UAV navigation

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**Methodology & Results**

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**Problem**

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**Resource-efficient Wireless Networking**

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**PhyNetLab Testbed**

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**Automatic Space Scanning**

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**ANN-based Converter Modelling**

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