

Our **experience** is  
our **greatest**  
asset

## Overview

Phoenix Systems is a software development company, founded in 2011, part of **Atende Software Capital Group**. The company is focused on development of the **Phoenix-RTOS** real-time operating system and **PLC communication stacks**.

Phoenix Systems' business model is **selling licenses** for Phoenix-RTOS and software stacks and providing embedded software engineering services. The company offices are located in Warsaw (PL) and Bristol (UK).

## Products

### Phoenix-PRIME

Phoenix-PRIME, **certified by PRIME Alliance**, is a software modem stack designed for low cost microcontrollers. No DSP extension nor specific hardware required. Choice of analog part (integrated, utilizing internal ADC and DAC) can be adjusted on deployment-basis.

### Phoenix-RTOS

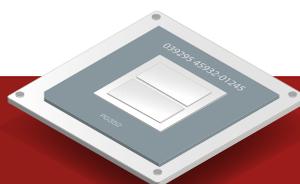
Phoenix-RTOS is a real time operating system for modern embedded systems including **Smart Grid and Internet of Things** appliances. This is fully proprietary, written from scratch system based on modular portable kernel. The first mass deployment of Phoenix-RTOS is going to be an intelligent energy meter.

## Real-Time Operating System for ...



### Smart Grid

The combination of **Phoenix-RTOS**, Smart Grid software stacks and low-power processors will give customers a distinct commercial advantage in the upcoming Smart Grid market by allowing them to prepare fully integrated solutions.



### Configurable Cores

We believe that configurable cores are the future of the embedded systems industry. Due to a modular and advanced architecture, small code footprint, portability and multiplatform support, **Phoenix-RTOS** ideally integrates with these solutions.



### Mission Critical Systems

Dependability evaluation using the **SWIFI** (SoftWare Implemented Fault Injection) technique is the crucial part of the development process. This allows for estimating the system behavior in case of persistent or transient hardware faults.

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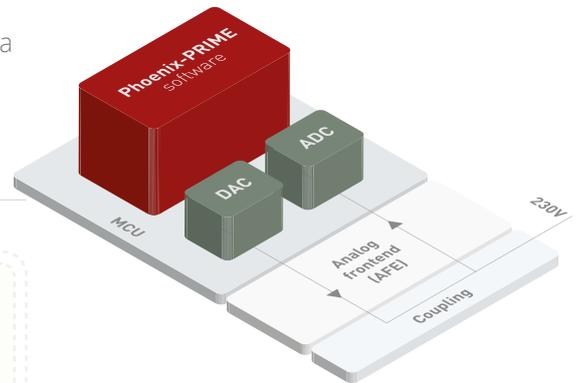
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# Phoenix-PRIME

certified by



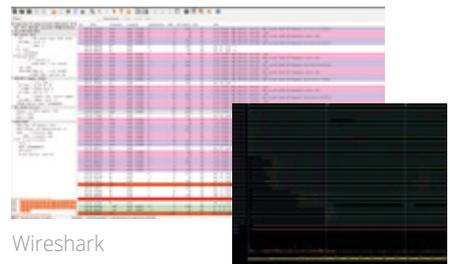
**PRIME** (PowerLine Intelligent Metering Evolution) is a worldwide PLC standard for Advanced Metering applications based on OFDM modulation. Phoenix-PRIME is a **pure software solution**, offering a complete features set of the PRIME standard. This software-based approach is **unique on the market** giving it a distinct edge.



## Architecture

**Phoenix-PRIME** contains implementations of PHY, MAC and DLMS/COSEM CL. The full stack runs on ARM® Cortex™-M4 120MHz, 128kB FLASH, 128kB RAM and is easily portable to other architectures. This unique implementation of PRIME can be deployed on dedicated MCU or incorporated as a software component sharing the CPU with other tasks.

Highly optimized implementations of FFT and Viterbi decoding imposes low computing power requirements and hence low cost.

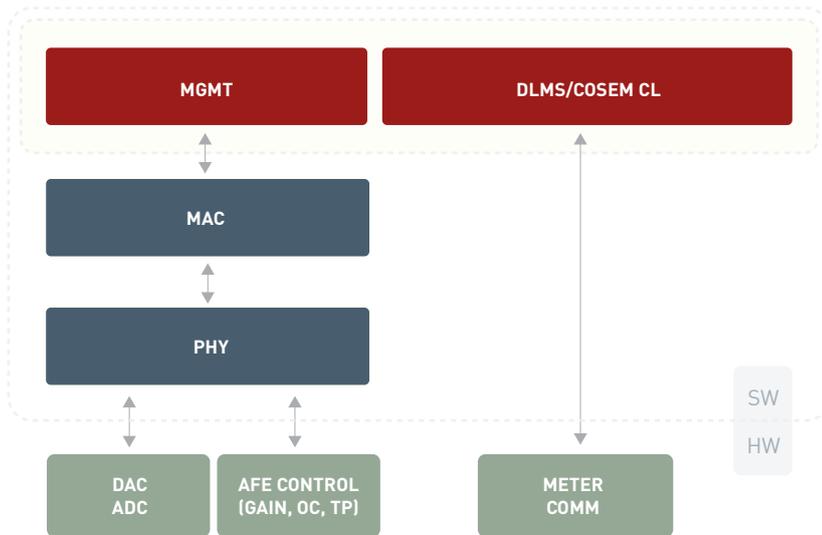


Wireshark

Network activity chart

## Tools

Phoenix Systems developed unique tools for PRIME network debugging and deployment. Phoenix-PRIME can be used to dump traffic from a network. Dedicated plugins for Wireshark allow traffic analysis. There is also a specialized tool to plot the activity of an entire network activity on a single chart.



## Certified reference design - Phoenix-PRIME board

Phoenix-PRIME board has been created as a demonstration/evaluation kit. It can work as a **traffic sniffer** or a **full PRIME modem** with an electricity meter emulator. Phoenix-PRIME board is available on request.



Company is a member of:



See Phoenix-PRIME on PRIME Alliance certified chipsets list.