



wirmeMobile

Platform for E2E telemetry

CS DEVELOPMENT

Presentation outline

- What is wirme ?
- History project
- Technology
 - Feature & Benefits
 - Architecture
- News
- Mobile app
- WirmeControl
- Contacts

What is wirme ?

- *One of the most significant problems that mobile phone operators are trying to resolve in relation to the increasing interest in data services is the discrepancy between the quality determined within the framework of the control system and the operator's statistics and the quality as viewed subjectively by the user when using data services in real life.*
- **The wirme - Wireless e2e Measurement system is aimed specifically at measuring the quality of services from the customer's perspective.**

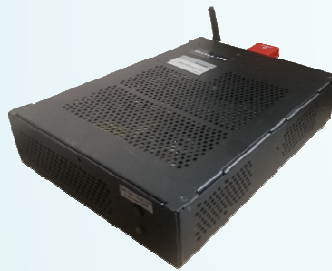
History project

- Start project 2005
- In operation for over 250 units, covering CZ / SK
- Evolution from 2G / GPRS / SMS over 3G / 4G / LTE / HSDPA / UMTS



Unit I 2G

2005



Unit II 2G/3G

2008



Unit III 3G/4G

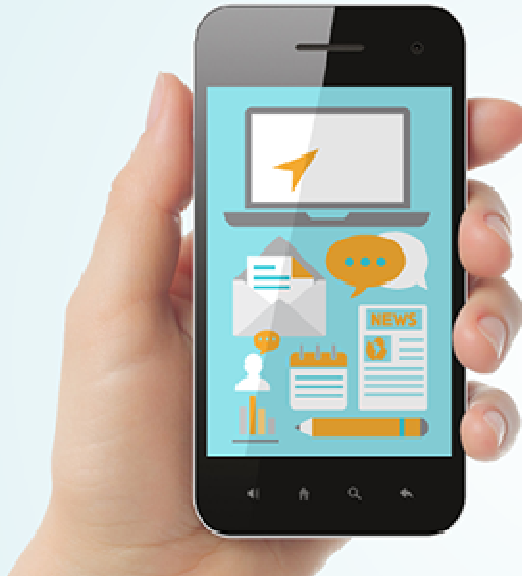
2013



wirmeMobile

Q4 2015

CS DEVELOPMENT



TECHNOLOGY

CS DEVELOPMENT

Feature & Benefits (1/3)

- E2E type measurements using customer applications (Internet browsing, FTP, POP3, SMTP, etc.)
 - Obtaining actual data from actual operations
 - Focus on user applications
 - Determining what adjustments within the network settings impact the operation of user applications
- Flexible testing scenarios
 - Simulation of user behavior in relation to specific times of day, days of the week, or location
 - Testing with the assistance of stress and load tests at selected locations
- Alarms - notification of critical conditions
 - Immediate notification of critical situations, primarily inaccessibility to data services
 - Integration with the control system

Feature & Benefits (2/3)

- Data analysis and problem reporting
 - Ability to detect compound errors as well as isolated errors occurring in relation to a specific location or area
 - Ability to define the conditions to be evaluated based on requirements
- Self-correcting and detecting mechanisms of the measuring unit including a HW Watchdog and modem power down/up
 - Minimal expenses for the maintenance of the measuring units
 - Operational stability without the need for service intervention
- Remote administration and upgrades
 - Ability to administer the measuring units remotely
 - Ability to upgrade the unit's software components remotely, ranging from the operating system through the applications
 - Remote system upgrade with a „System Rollback“ feature

Feature & Benefits (3/3)

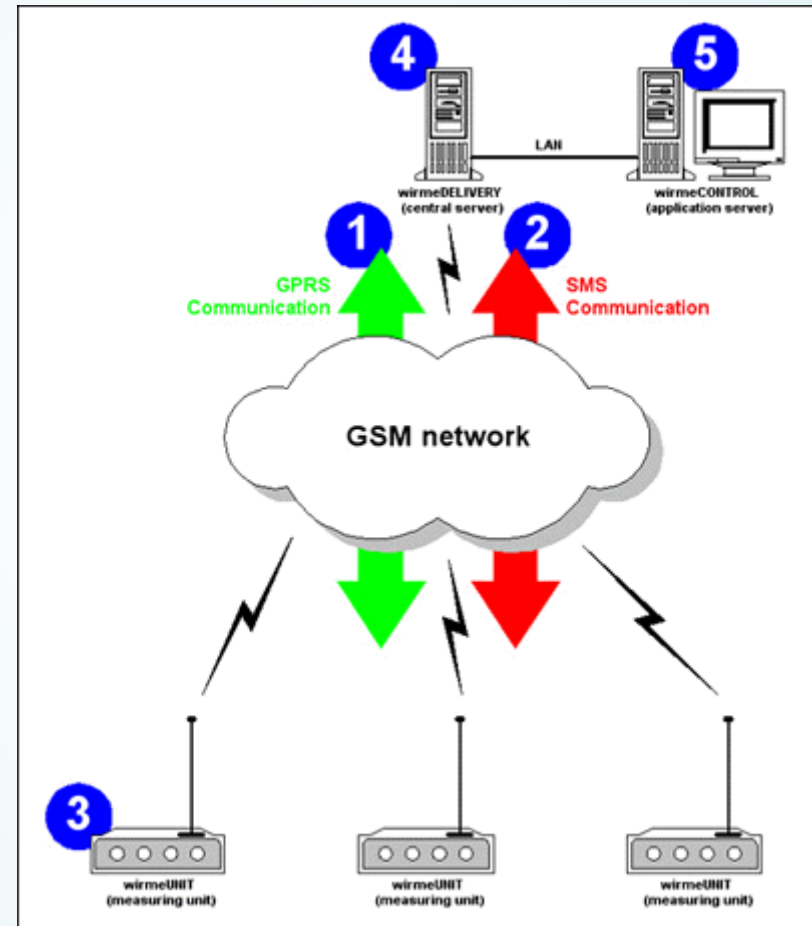
- Central Application (wirmeCONTROL)
 - Internet user interfaces
 - Central logging
 - User friendly and less servicing errors
 - Performing block operations
 - Summary view of the actual status of the measuring system
 - Measurement simulation with regard to regional and time distribution (an alternative to measuring vehicles)

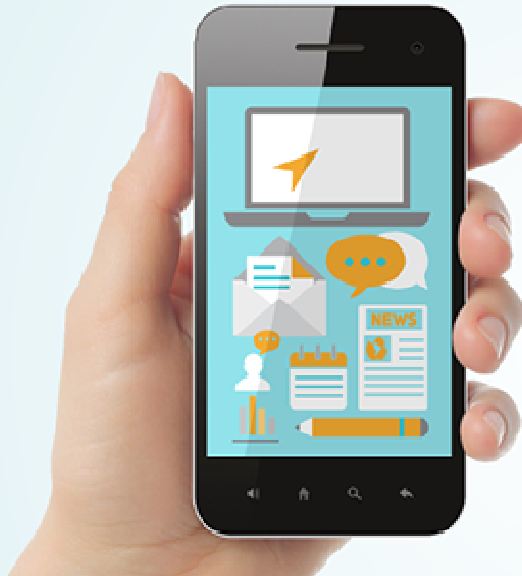
Architecture (1/2)

- Network measuring units used for the purpose of carrying out individual measurements in specific locations required by the customer (eg. in connecting the customer's premises - pumping station, station hall, hotel lobby etc.) or in designated areas of telecommunication networks (eg. in the scope of one BSC, SGSN, etc.). This network communicates with a central server via wirmeCONTROL two communication channels.
- **DATA** - primary channel
 - The main communication channel is a data connection that uses a point- to- point protocol and DATA services. This communication channel is mainly used to distribute test scenarios, remote administration units (including the upgrade of software components), download measurement data (log logs) and for the measurement and testing DATA services.

Architecture (2/2)

- **SMS** - secondary (control and signaling) channel
 - A second communication channel that is used is Short Message Service (SMS), which is primarily used for remote management modules via SMS commands and the sending of alarms and reports critical situations units - especially in those cases when a DATA connection is not available.





NEWS

CS DEVELOPMENT

New generation

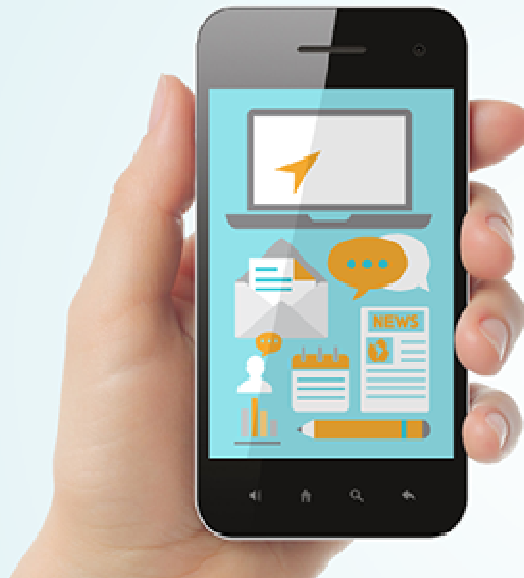
- New functionality
 - Extension measurement services
 - New mobile technologies
- Porting solutions for mobile devices
 - Mobile Applications
- A new generation of measuring units
 - Universal case for the installation of mobile phone (including watchdog and an external antenna)

New functionality

- Integration Asterisk server
- Voice testing
- Greater configuration tests
- Expansion of testing tools
 - TCPDump, Traceroute, IPerf
 - PING, FTP, HTTP, UDP, SMTP, POP3
 - SMS, MMS
- Better logging
- Localization Services – GPS
- Connect background services
 - SMSCB
 - Oracle DB
- Asynchronous tcpdump analysis

Future

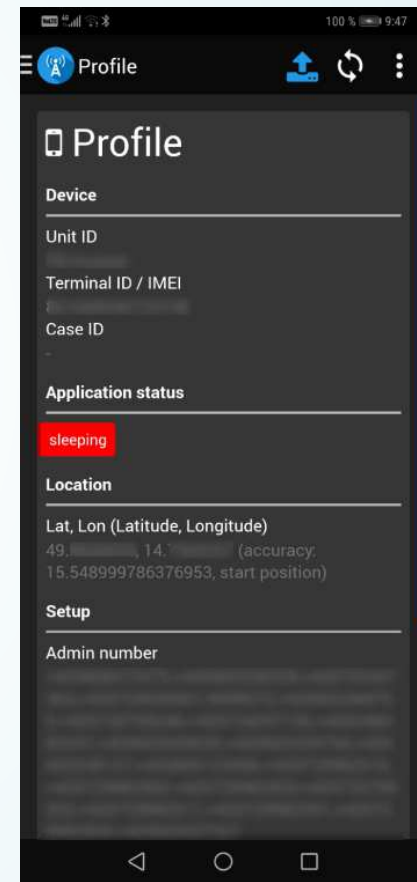
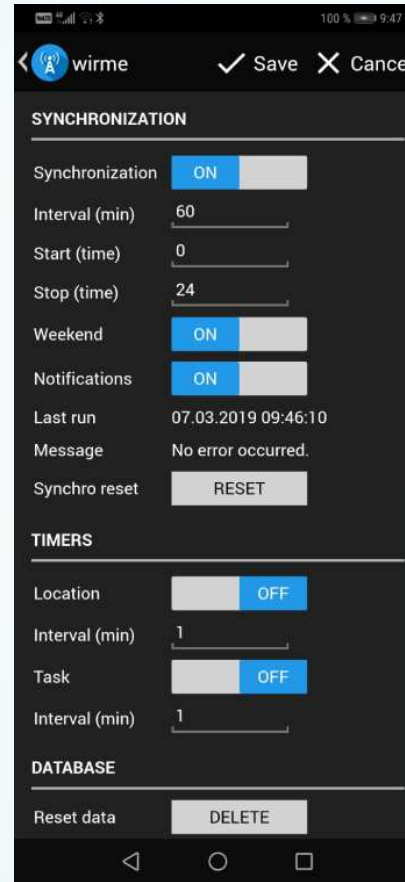
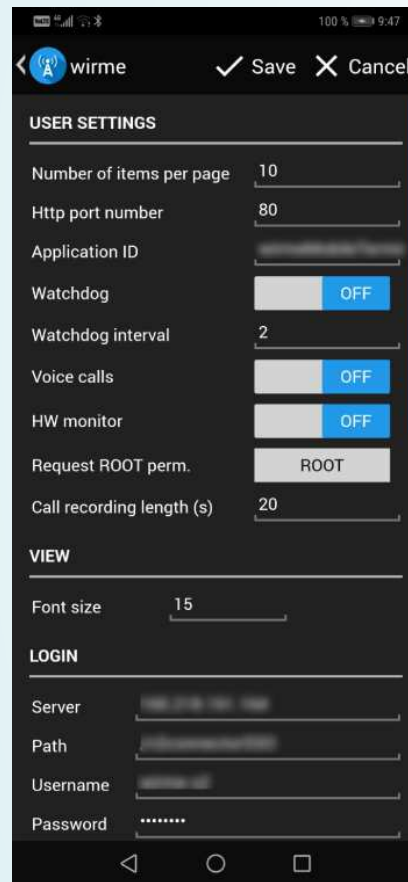
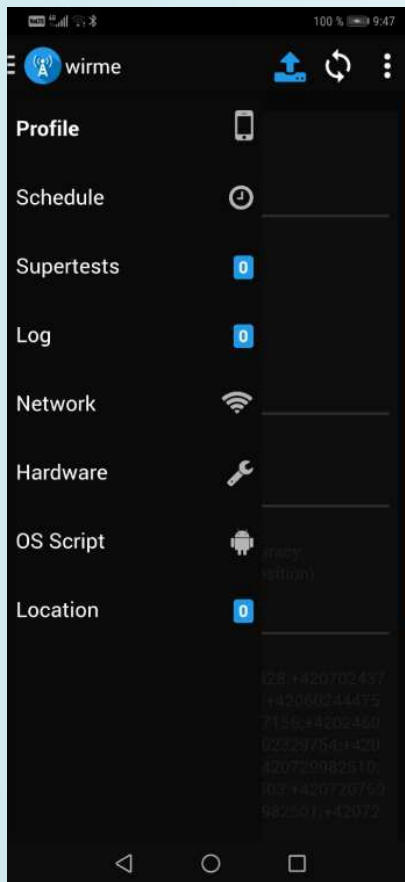
- VOIP (VoLTE, SIP)
- Stream
- IPv6



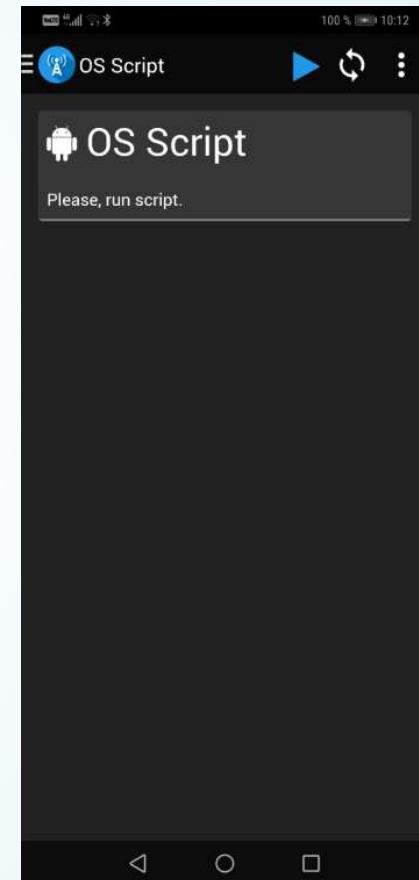
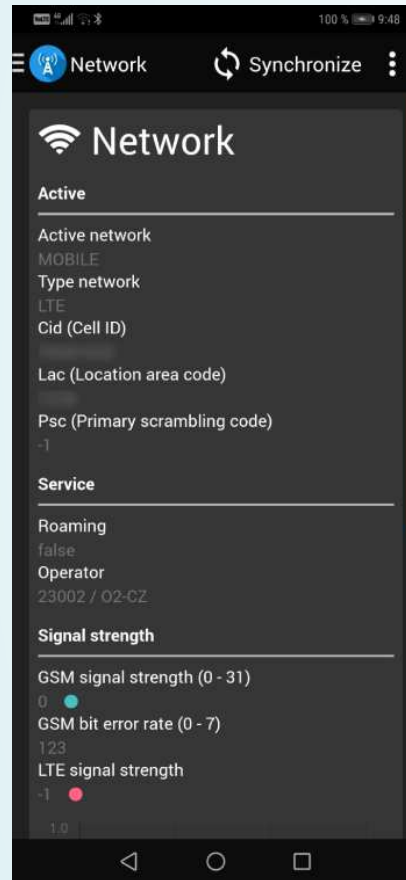
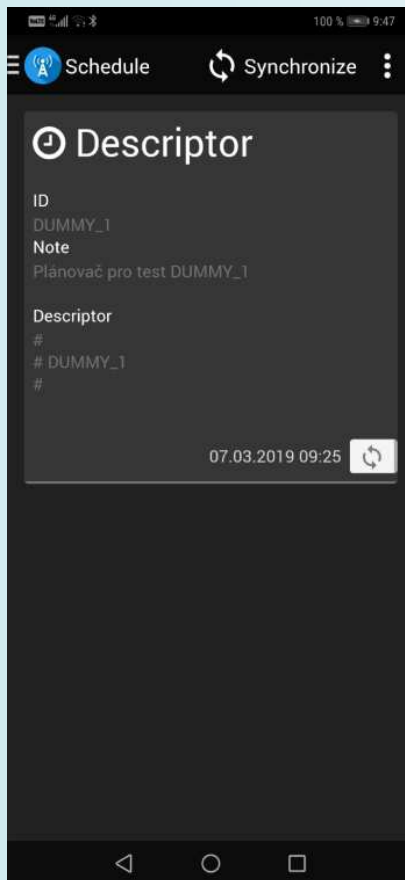
MOBILE APP

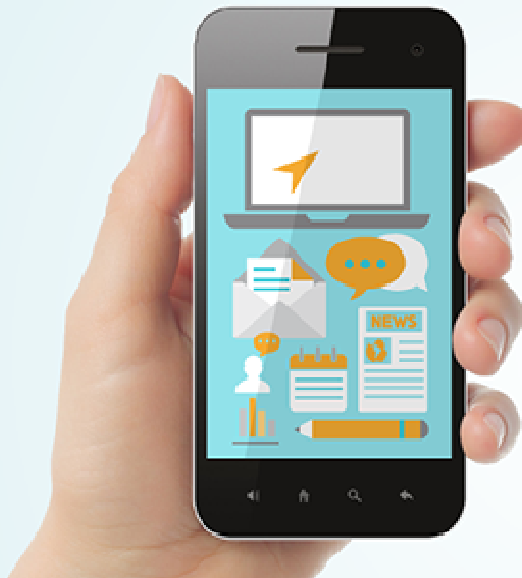
CS DEVELOPMENT

Mobile app



Mobile app



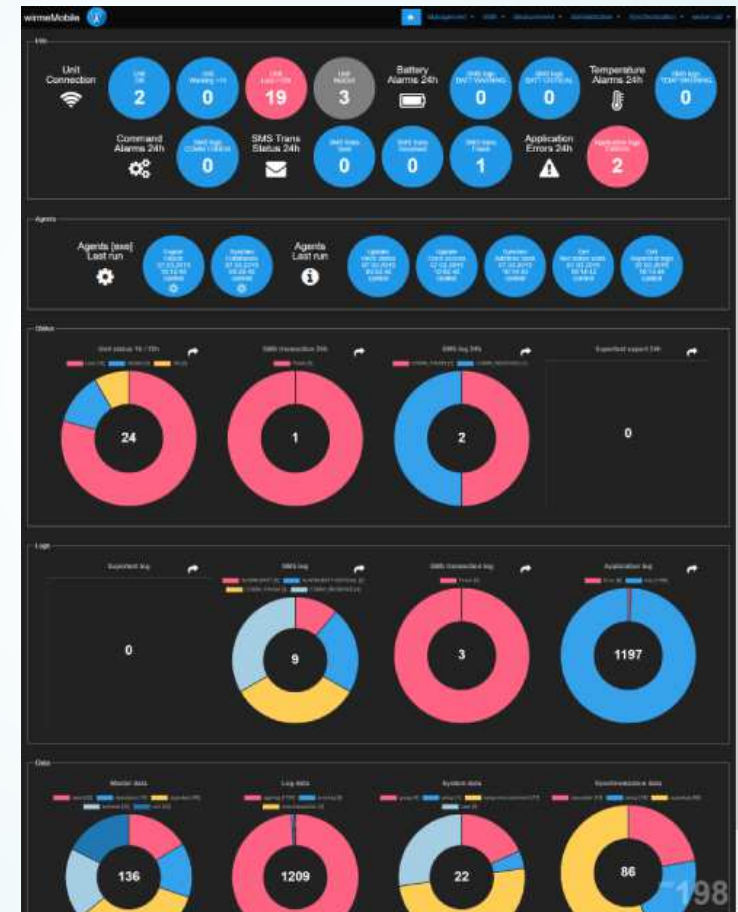


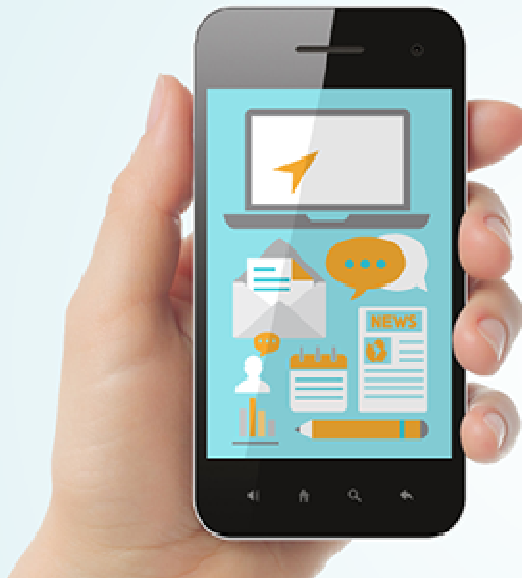
WIRMECONTROL

CS DEVELOPMENT

WirmeControl

- Central monitoring
 - Alerts from traffic
 - Log records
 - Synchronization of data
- Data management
 - Units
 - Mobile devices
 - Descriptors
 - Supertests
- Control units with sms





CONTACTS

Contacts

- Business contact:
 - Martin Vlček
 - vlcek@csdevelopment.cz
- Technical contact:
 - František Bašta
 - basta@csdevelopment.cz
- Web (czech version):
 - <http://www.csdevelopment.cz/wirme>