Virtualized RAN as key enabler for ICT19 trials – vertical-oriented 5G solution from IS-Wireless

Dr Slawomir Pietrzyk, IS-Wireless CEO

5G-PPP Information Day for ICT-19 proposers
14th September 2018

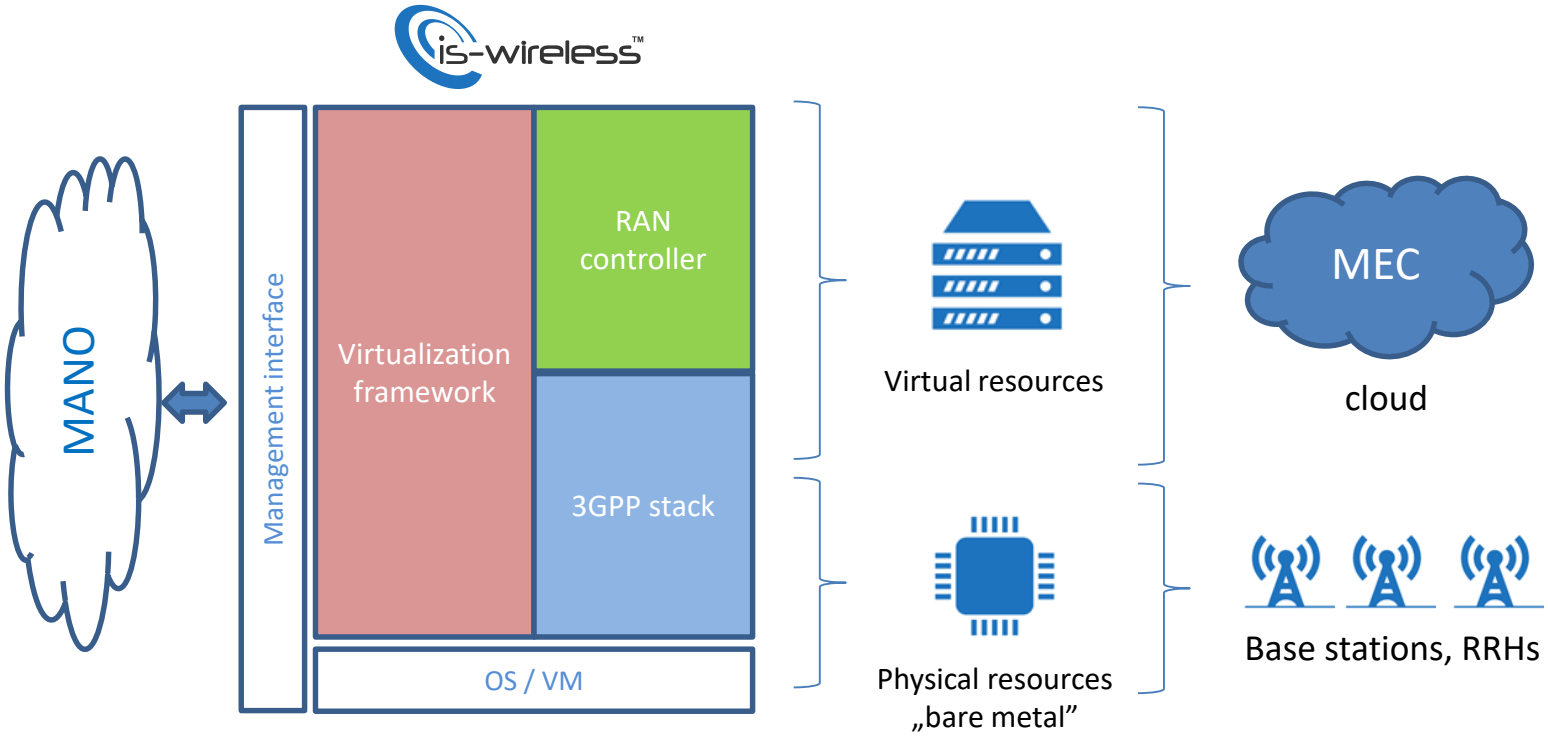
Company purpose

To become a global primary provider of:

- NFV-compliant RAN (Radio Access Network) and CORE for networking revolution
- affordable experimental solutions supporting research and education

on 4G and 5G mobile networks

Software-defined RAN



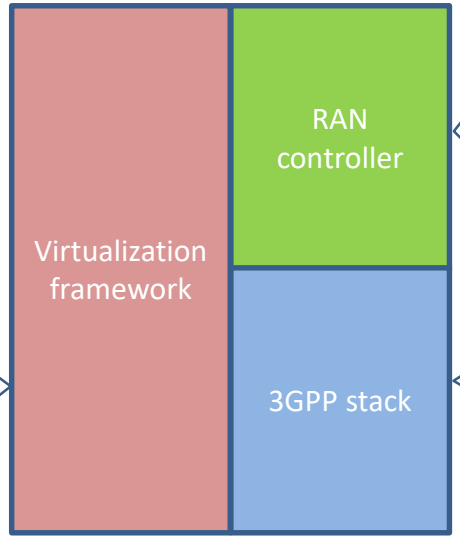
Fully software-defined and NFV-compatible RAN functionality ready to be deployed on physical (base station) or virtual (MEC servers) resources using proprietary technology

IS-Wireless core technologies

PROPRIETARY

RAN controller
- Controls whole RAN
- Manages 3D radio resurces
- Enables support of various traffic types (e.g., IoT)
- Enables QoS guarantees
- Optimizes latency

Virtualization framework
- Enables virtual operation and RAN slicing – key technical change in 5G
- Allows for execution on any infrastructure
- Enables easy extensions and customizations
- Allows for various functionality mappings



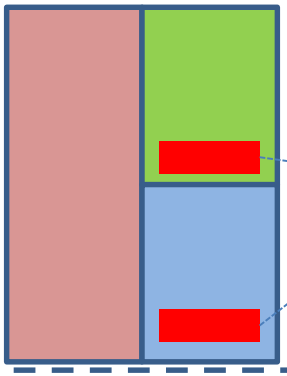
3GPP stack
- Realizes standard base station protocol stack functions

PROPRIETARY

STANDARD

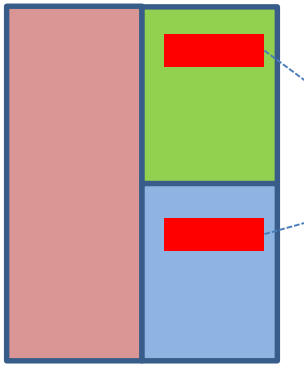
Our proprietary core technical assets:
virtualization framework and **RAN controller**
ensure that our solution is future-proof and outperforms competition

Customization for verticals

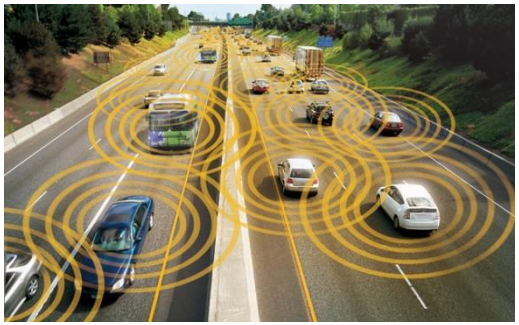


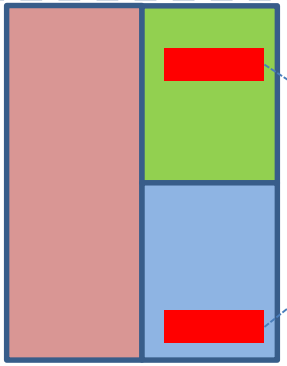
Public safety VNF add-ons:
- D2D mode
- Extra protection

PRC2090 HF/SSB manpack

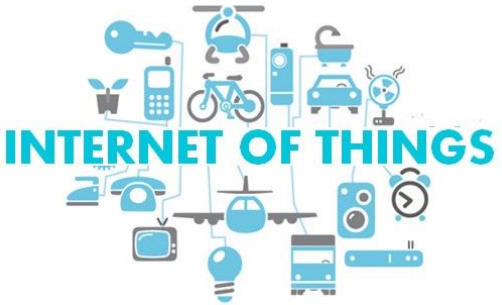


Automotive VNF add-ons:
- Latency reduction
- D2D mode

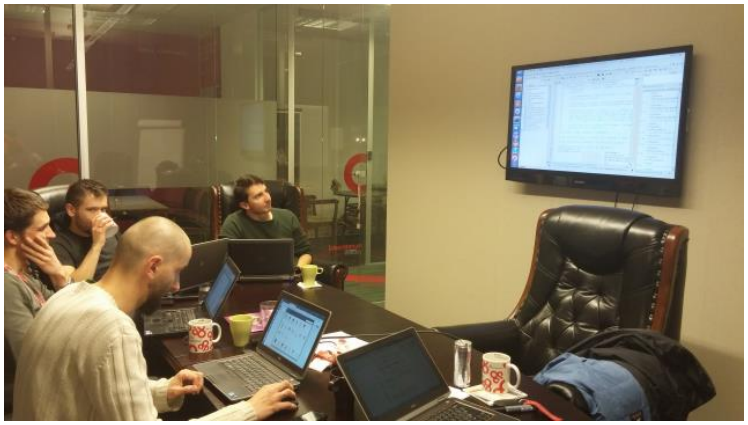


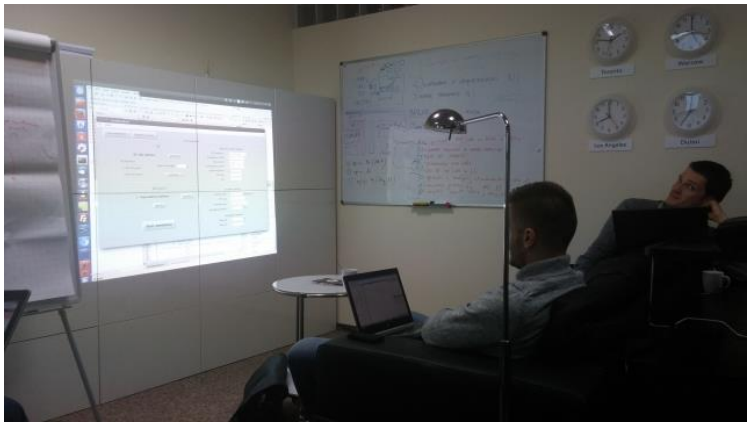


IoT VNF add-ons:
- PHY signaling reduction
- NB IoT support



Team: skills and expertise





- The team consists of experienced engineers and researchers with expertize and skills in:
  - Baseband PHY waveforms and algorithms for LTE, LTE-A and 5G
  - eNB and UE L2-L3 protocols
  - SDN and NFV in RAN
  - Radio resource management for LTE, LTE-A and 5G
  - Link-level and system-level simulations of wireless systems
  - Design and development of wireless systems
  - Embedded implementation (FPGA, DSP, GPP)

- We co-authored a book on 5G „Towards 5G, Applications, Requirements & Candidate Technologies” published by Wiley in 2017

Example partners

Example customers

EU-funded projects

EU Wireless

Development and long-term sustainability of new pan-European research infrastructures
01.2018-12.2019, H2020, budget: 2M EUR

5G Essence

Architectural Approach for the Provision of Enhanced 5G Network Facilities
06.2017-12.2019, H2020 5G-PPP, budget: 7.9M EUR

eWINE

Elastic WIreless Networking Experimentation
01.2016-12.2017, H2020, budget: 2.6M EUR

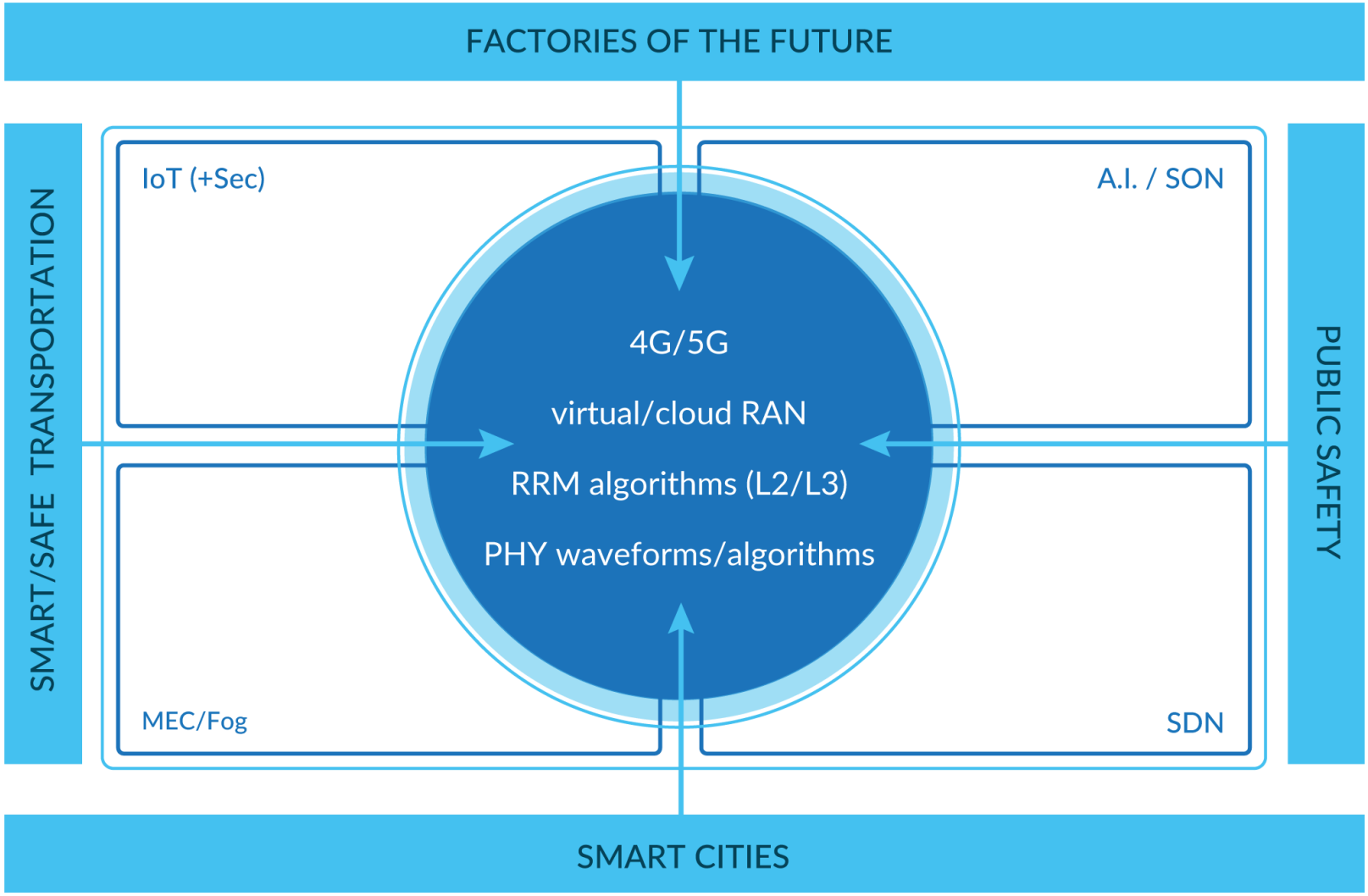
SOLDER

Spectrum OverLay through aggregation of heterogeneous DispERsed Bands
11.2013-10.2016, FP7, budget: 3.3M EUR

5NOW

5th Generation Non-Orthogonal Waveforms for Asynchronous Signalling
09.2012-02.2015, FP7, budget: 3.5M EUR

Research interests



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