



# MNO network sharing as a service for research community

Dr. Sławomir Pietrzyk, CEO at IS-Wireless  
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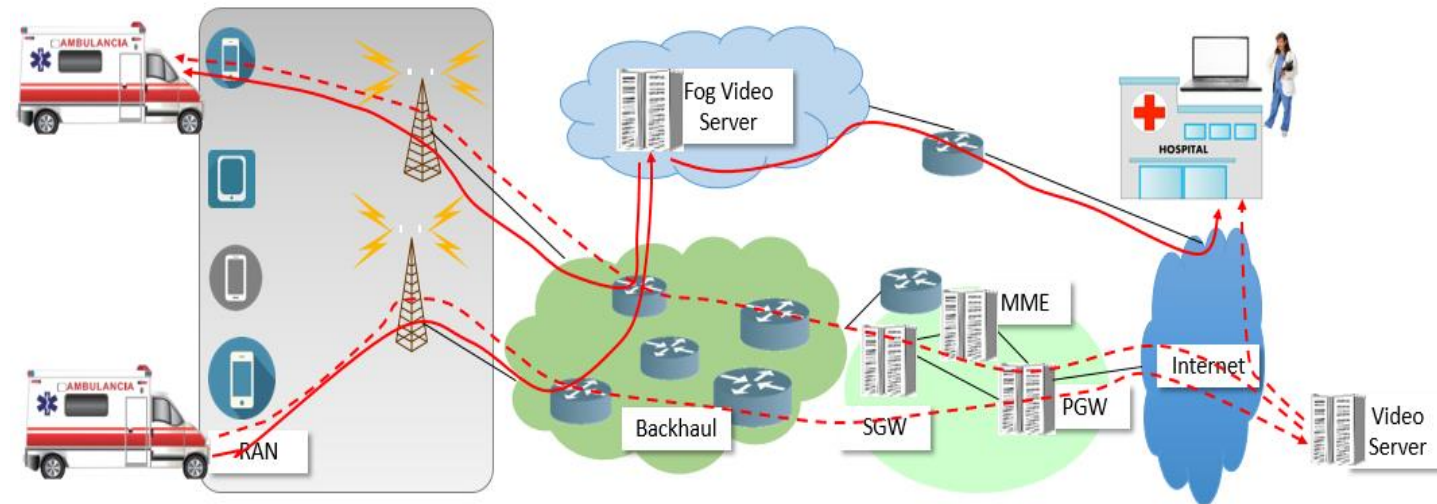


**Dr. Sławomir Pietrzyk**  
*Founder/CEO*

At IS-Wireless responsible for defining the long-term technical vision. Expert in wireless technologies and passionate entrepreneur. PhD in wireless from Delft University of Technology, pioneer work on OFDMA.

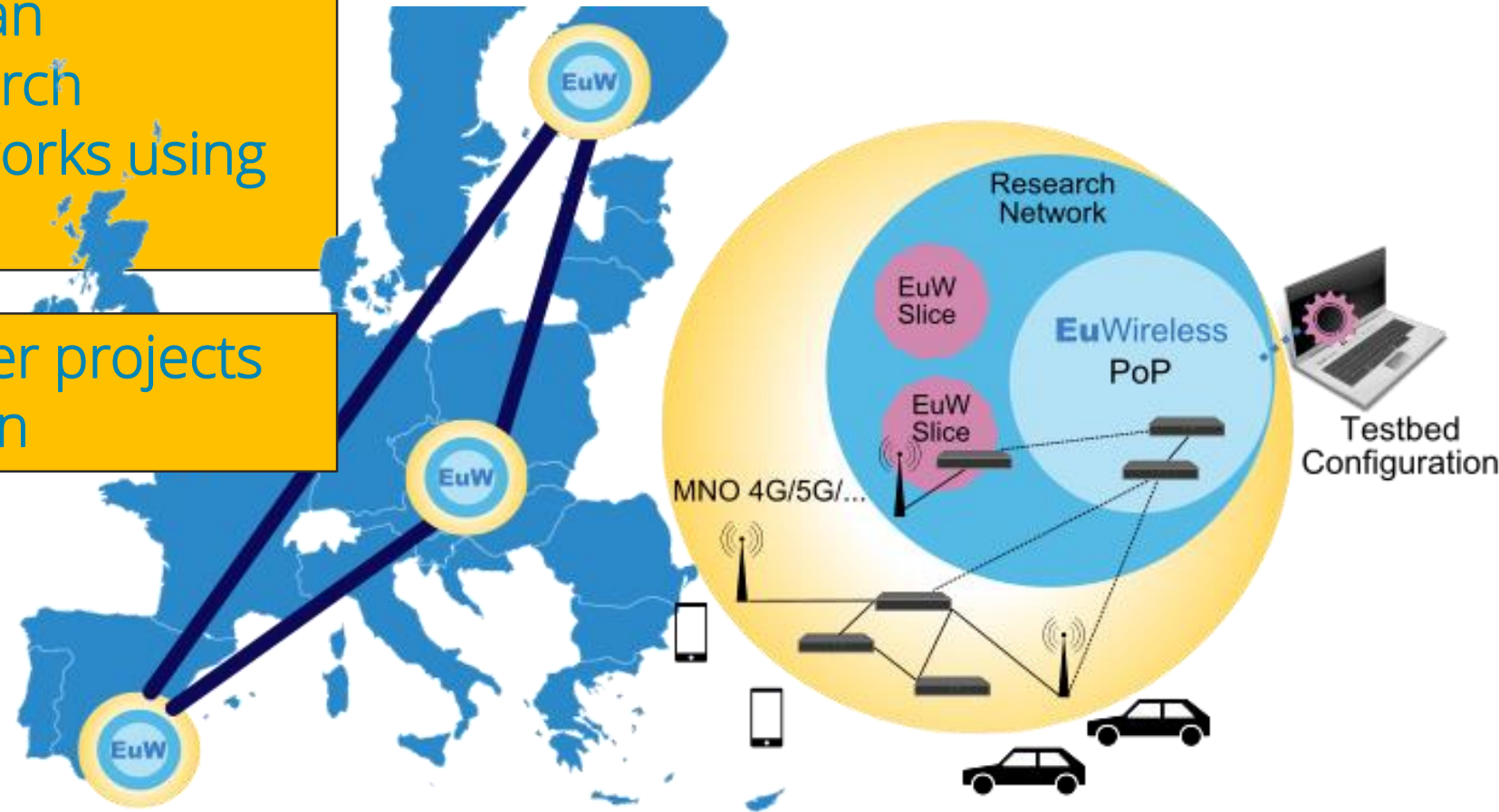
## Researchers and SMEs require field testing on controlled mobile networks

- Realistic field coverage
- Real users on real spectrum
- Commercial devices & spectrum
- APIs to control, monitor, deploy ...
- Controlled real or virtual resources
- .....
- only for a limited time for trials (days/weeks)



Design of the first pan-European infrastructure to support research in mobile communication networks using licensed spectrum

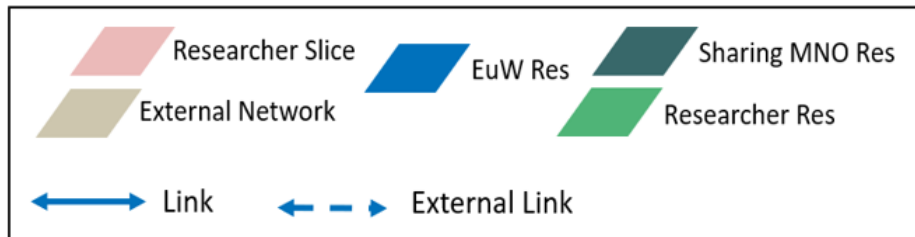
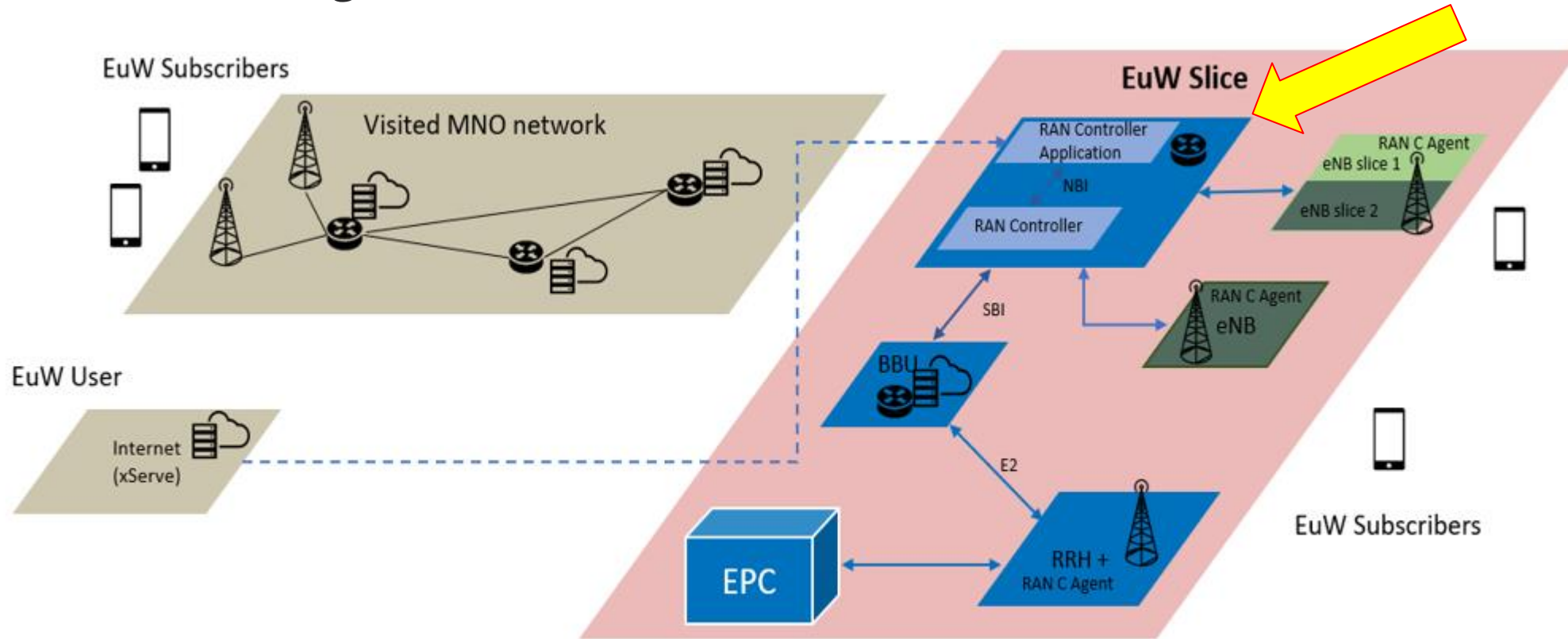
This is a Design Study → Further projects will address the implementation



## Some enabling technologies to support the sharing architecture

- Virtualization technologies (vEPC, 5G Core, ..)
- Network slicing
- Spectrum sharing (LSA, CBRS..)
- Network sharing (MOCN, MORAN, DECOR, ..)
- Orchestration technologies (MANO, ..)
- Technologies for security and authentication (Eduroam+SIM)
- **Software Defined RAN**

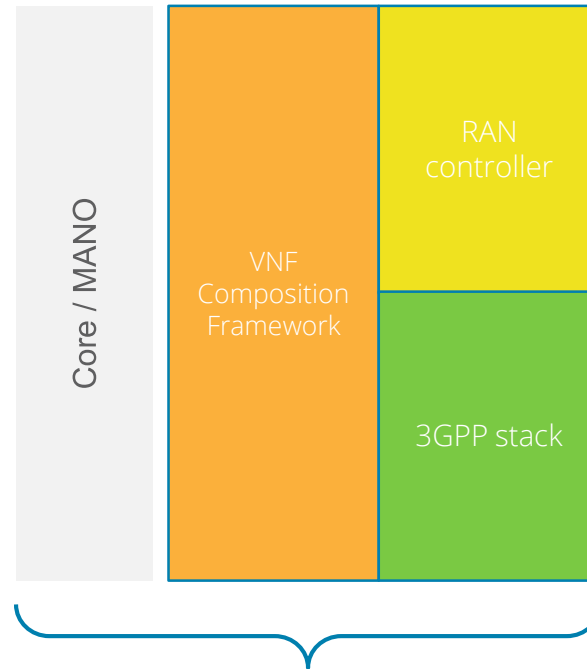
# EuWireless – slicing based on RAN-controller (IS-Wireless UC)



- Slice based approach (network is divided in logical subsets)
- O-RAN compliant
- RAN-controller enables programmability
- Machine learning can easily be introduced into RRM

# Solution: EuW Slice based on SD-RAN

- ✓ RAN / Core / MANO running on off-the-shelf Edge server
- ✓ Hardware provider independent from functionality
- ✓ High level of portability



- ✓ Aggressive frequency reuse - very high spectra efficiency
- ✓ Interference solved by RAN controller
- ✓ High capacity, high number of users served
- ✓ Low power Radio Heads



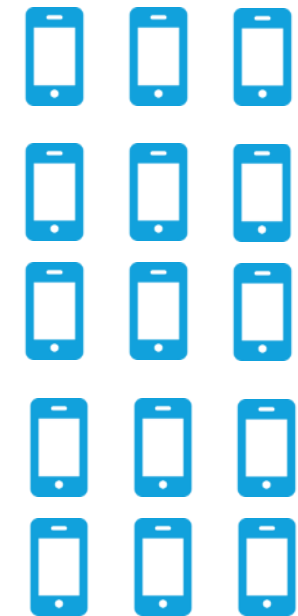
Internet / OTT

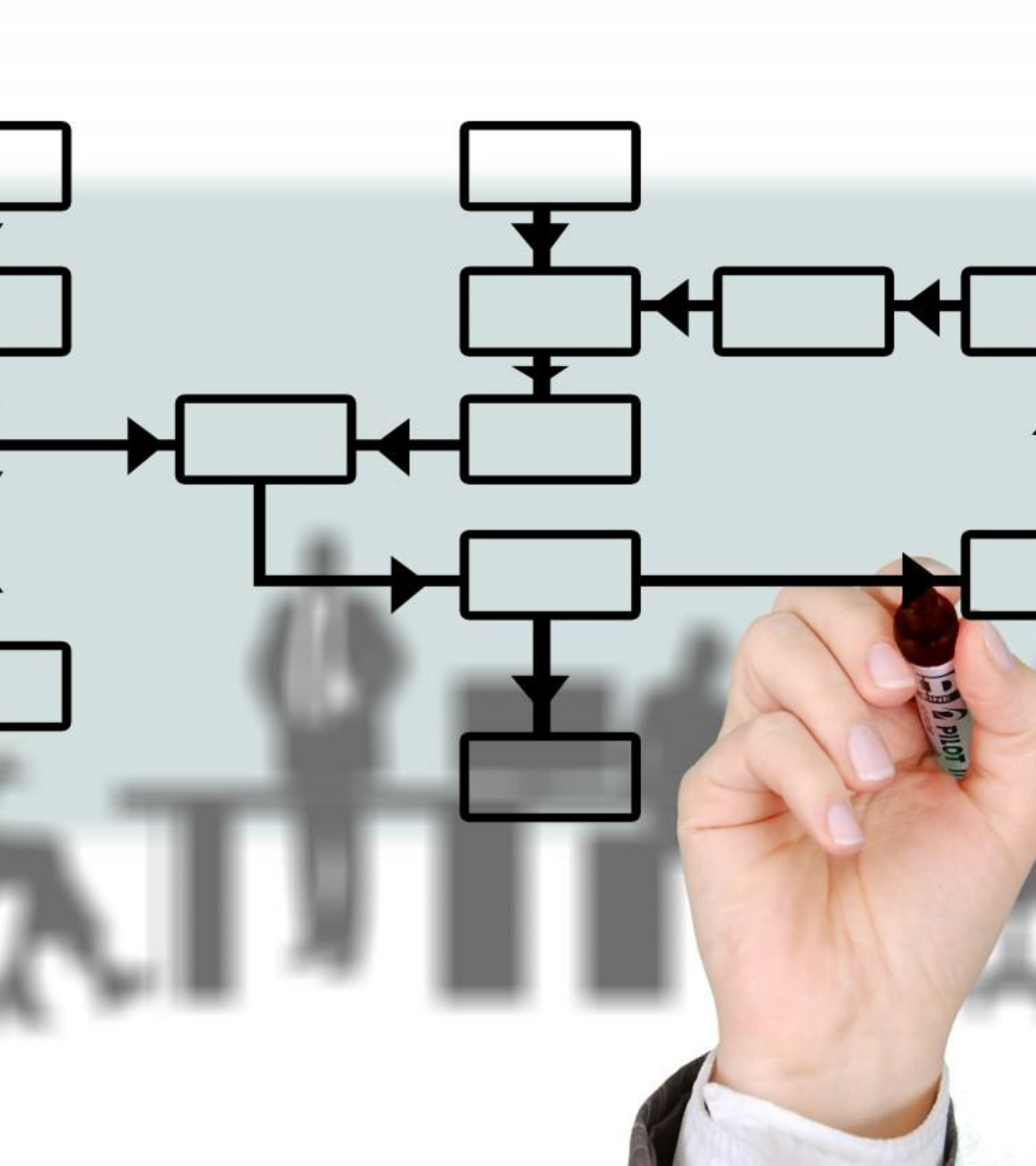


Edge Server



Radio Heads





## Summary

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EuWireless paves the way but SD-RAN already takes a walk..



## Conclusions

- The ambition of EuWireless is a long-term infrastructure
- Planning, building and operation for the next 10-15 years require the support from GEANT and NRENs, already involved in the project
- Relevant technical contributions
  - Multi-domain with distributed peer-to-peer orchestration
  - Recursive definition and implementation of slices to create the EuWireless slice on demand
  - Uniform approach to expose resources from MNOs (spectrum, ..)
  - Uniform approach to double authentication of users with SIM+Euroam credentials
  - SD-RAN allows great flexibility of sharing infrastructure



## Contact us

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