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WiSHFUL

PROJECT OVERVIEW

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The research leading to these results has received funding from the European Horizon 2020 Programme under grant agreement n°645274 (WiSHFUL project).



- **W**ireless **S**oftware and **H**ardware platforms for **F**lexible and **U**nified radio and network control
- Call: H2020-ICT-2014-1
- Topic: ICT-11-2014 (FIRE+)
- Type of action: RIA
- Budget: 5.171 M€
- Duration: 36 M

□ Partners



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Universidade Federal do Rio de Janeiro



SEOUL NATIONAL UNIVERSITY

Objectives (1)

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- to reduce threshold for experimentation in view of stimulating wireless innovation
 - ▣ by building open, flexible & adaptive **software platforms** with unified programming **interfaces** for **intelligent radio and network control**
 - ▣ by offering these software platforms in wireless **test facilities** that follow the de facto standards for testbed interoperability set by the FED4FIRE project
- to increase the realism of experimentation
 - ▣ to offer **portable testbeds** that can be deployed at any location allowing validation in the real world and involving real users

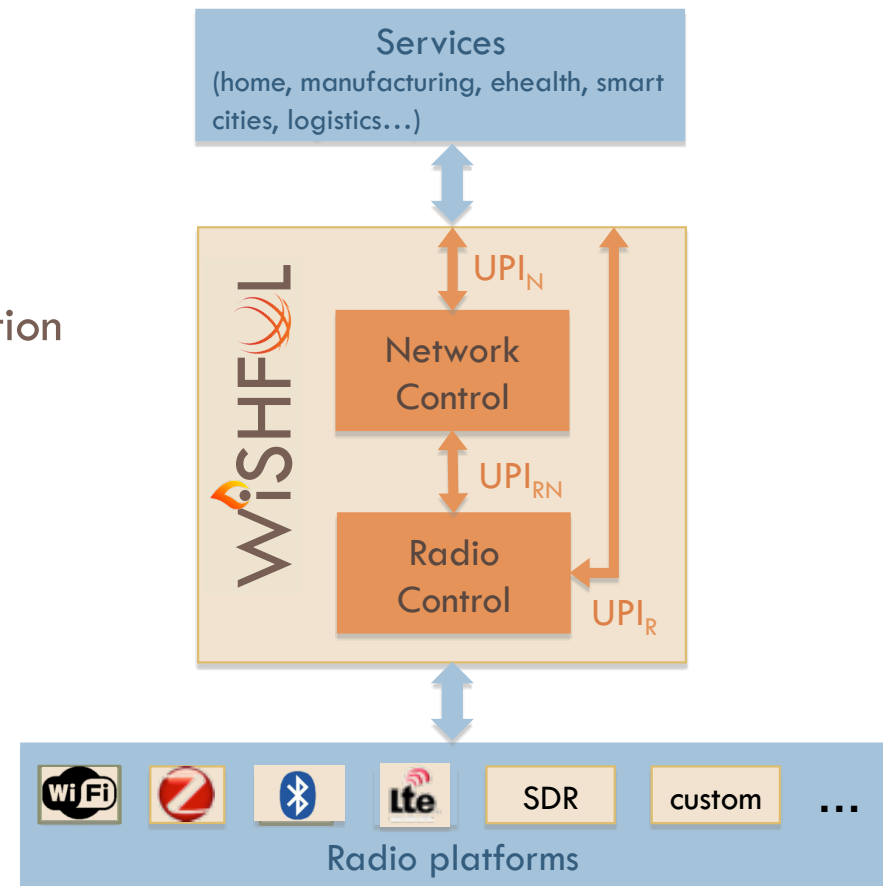
Objectives (2)

- to attract third parties for extending WiSFHUL with
 - ▣ new **software** functionality for the WiSHFUL software platforms
 - ▣ new **hardware** (e.g. mmWave, full duplex radio, smart antennas...)
 - compliant with WiSHUL software platforms, at least supporting the WiSHFUL unified programming interfaces
 - ▣ new **testbeds** (e.g. IoT, 5G...)
 - compliant with FED4FIRE tools and interfaces for testbed access and experiment control
- to attract third partners for experimentation
 - ▣ validating innovative wireless solutions
 - ▣ using WiSHUL software platforms and interfaces
 - ▣ using (portable) facilities and hardware supported by WiSHFUL

Basic concept: Flexible & Open SW architectures

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- Reconfigurable & reprogrammable at runtime
- Clean separation between...
 - ▣ radio control functions and protocol logic
 - ▣ data/control/management plane
- Flexible radio control
 - ▣ time-critical execution of HW commands
 - ▣ fine-grained extraction of radio information for monitoring purposes, localization...
 - ▣ unified interface towards network control
- Flexible network control
 - ▣ on the fly deployment/composition of protocol stacks
 - ▣ library of protocols
 - ▣ unified interface towards services
- Intelligent control
 - ▣ node-level/network-level/cross-network decisions on radio and network operation



Basic concept: Testbed on the move

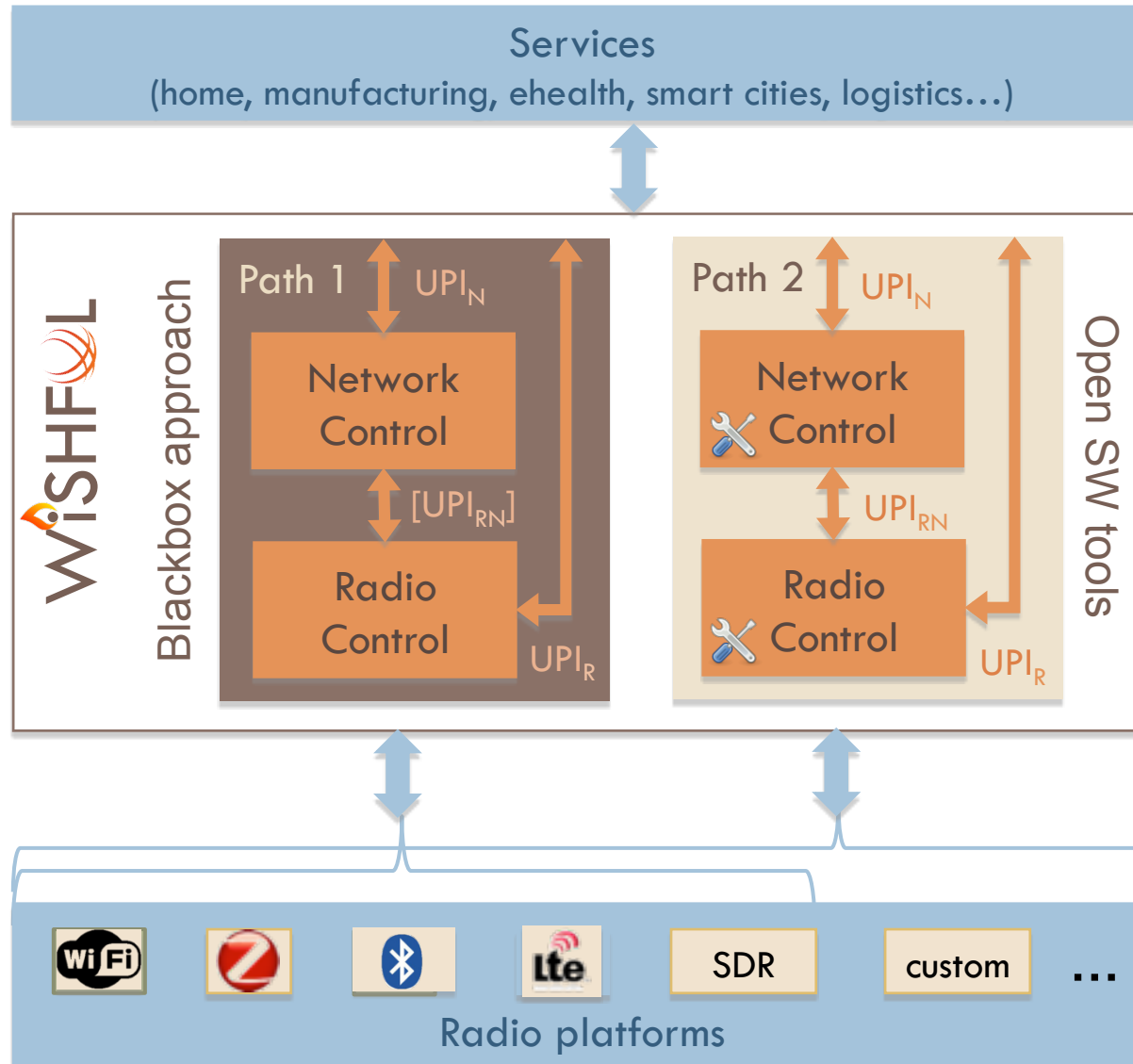
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WiSHFUL

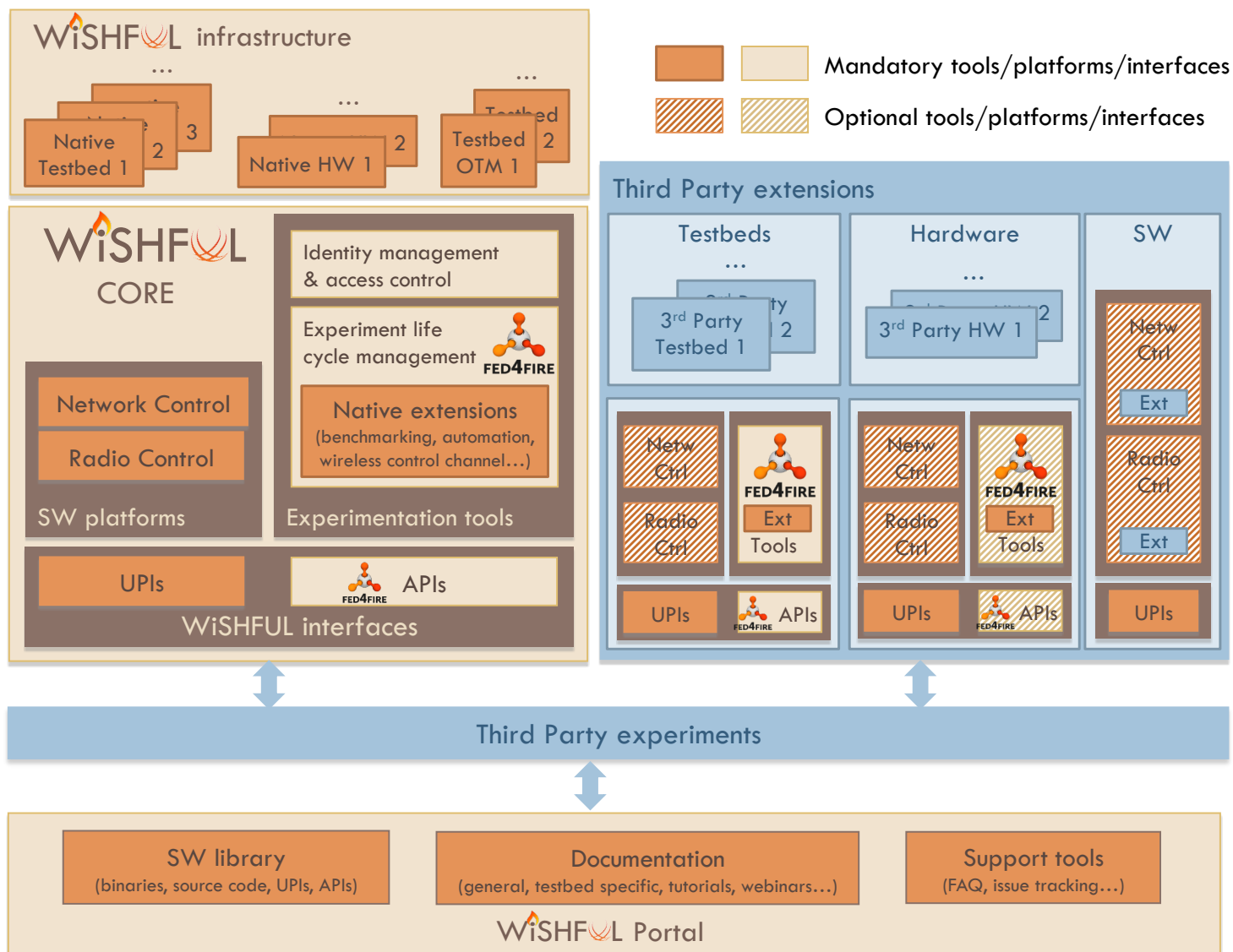
- **Hardware equipment portability**
 - ▣ plug-and-play deployment
 - ▣ robust equipment
- **Wireless control channel**
 - ▣ self-organizing wireless ad-hoc mesh network
 - ▣ mobility support
- **Remote management and support**

Concept for Wireless Innovation

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Overall concept

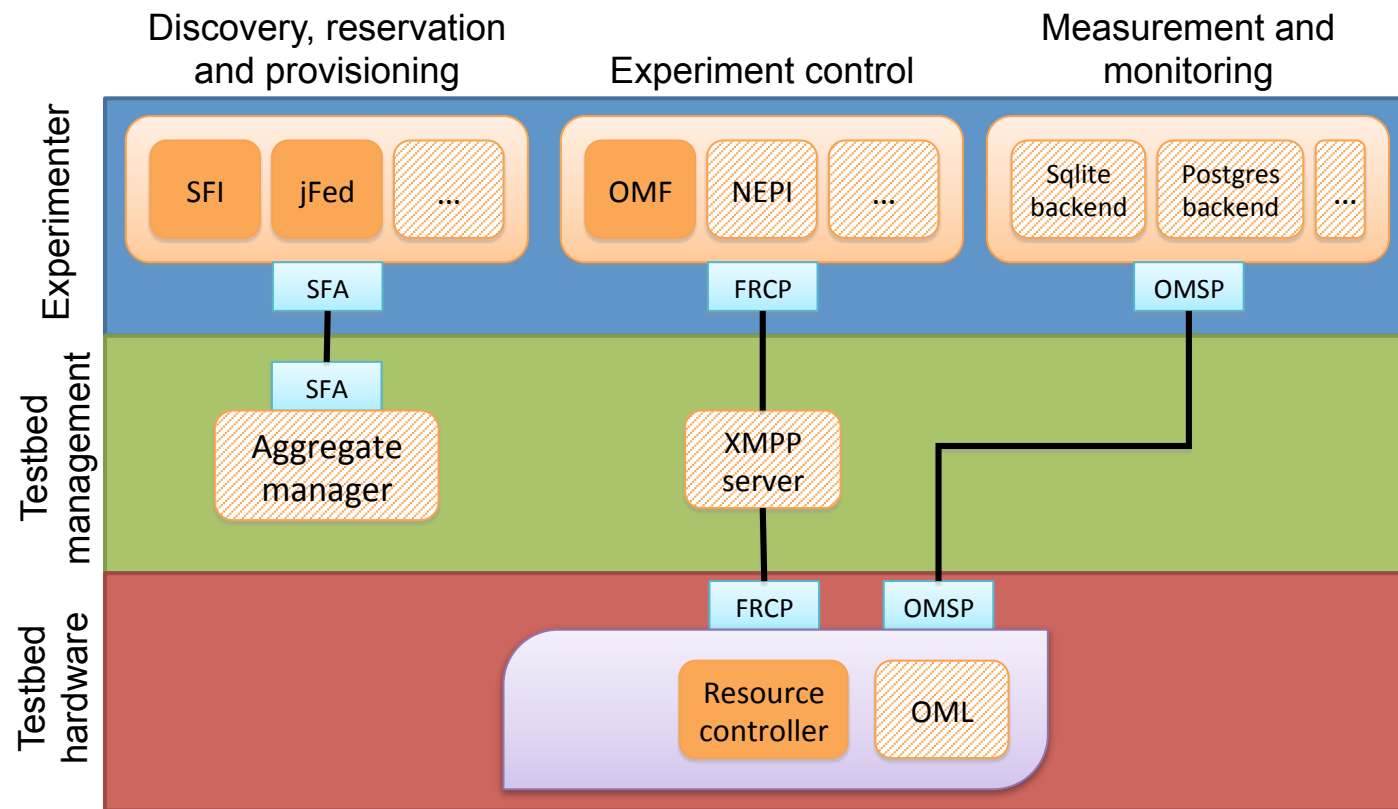


Overall concept

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- **WiSHFUL core**
 - ▣ software platforms for radio & network control
 - ▣ Fed4FIRE compliant experimentation tools
 - ▣ interfaces (WiSHFUL UPIs and Fed4FIRE APIs)
- **WiSHFUL portal**
 - ▣ software library
 - ▣ documentation
 - ▣ support tools
- **Third parties**
 - ▣ experiments
 - ▣ extensions

Use of Fed4FIRE standardized tools



More info on WiSHFUL

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□ Website

- www.wishful-project.eu

□ Open calls

- First open call will be launched in December 2015
- More info will be posted on the website

□ Visit us at our booth at Net Futures 2015

- More info: see <http://netfutures2015.eu>