



PAWR Project Office

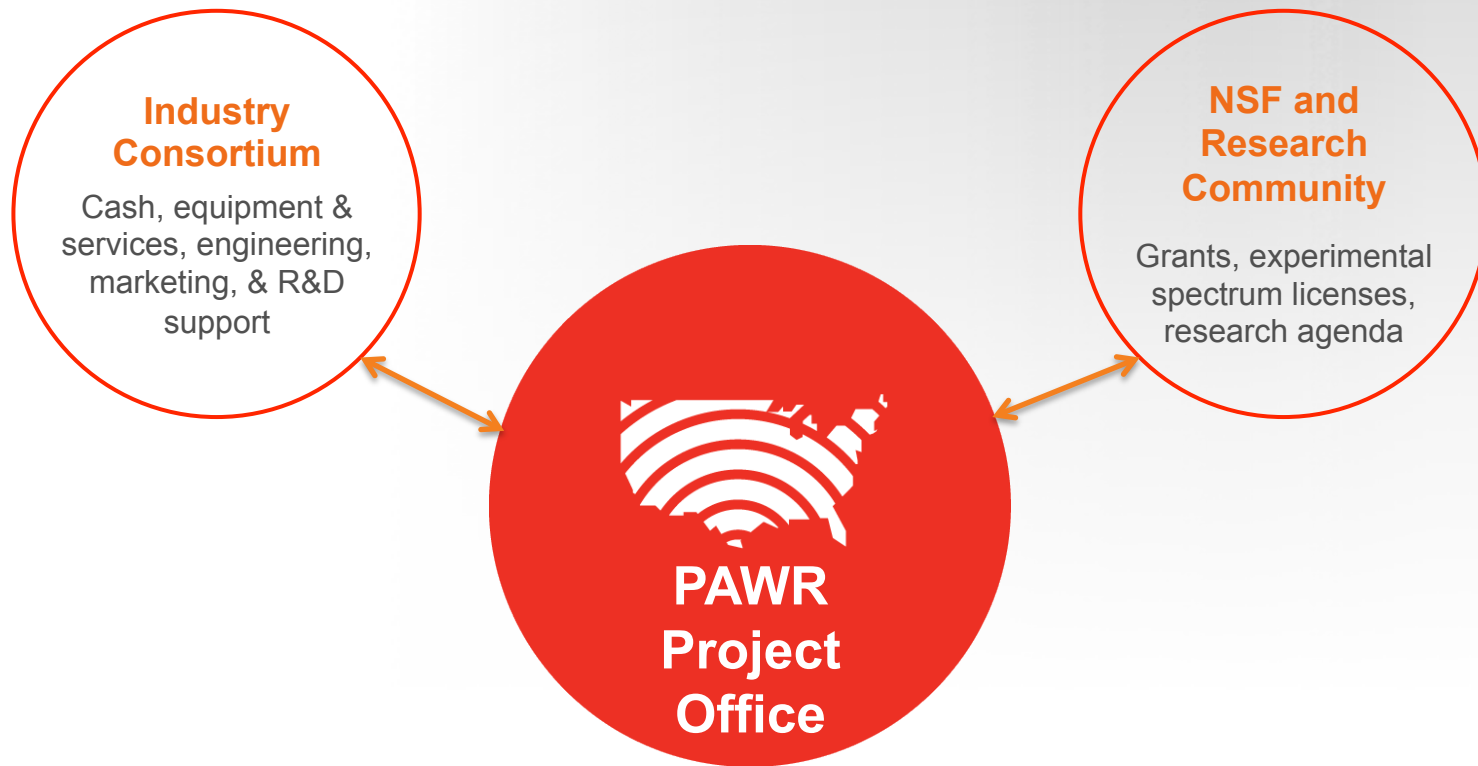
# Platforms for Advanced Wireless Research (PAWR)

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<https://www.advancedwireless.org/>

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# What is PAWR Project Office?



# Why Now ?

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## Technology Policy

Program Experimental Licenses; opening up of new frequency bands both licensed/unlicensed

## Industry Opportunity

Critical gap between demand pattern and supply; move away from legacy infrastructure; rapid development

## Research Integration Need

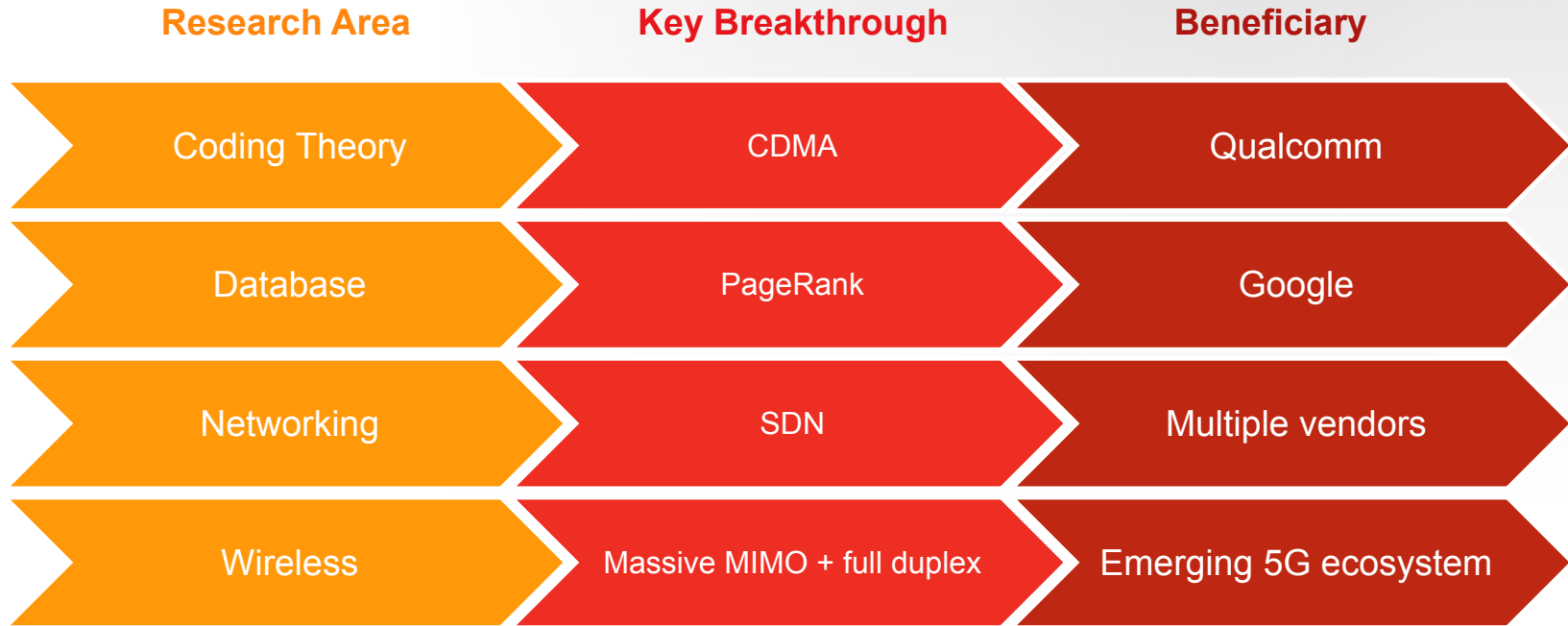
Explosive growth in traffic (IoT, Multimedia, M2M) needs radical new solutions; Multiple research areas need to work together

## Enabling Innovations

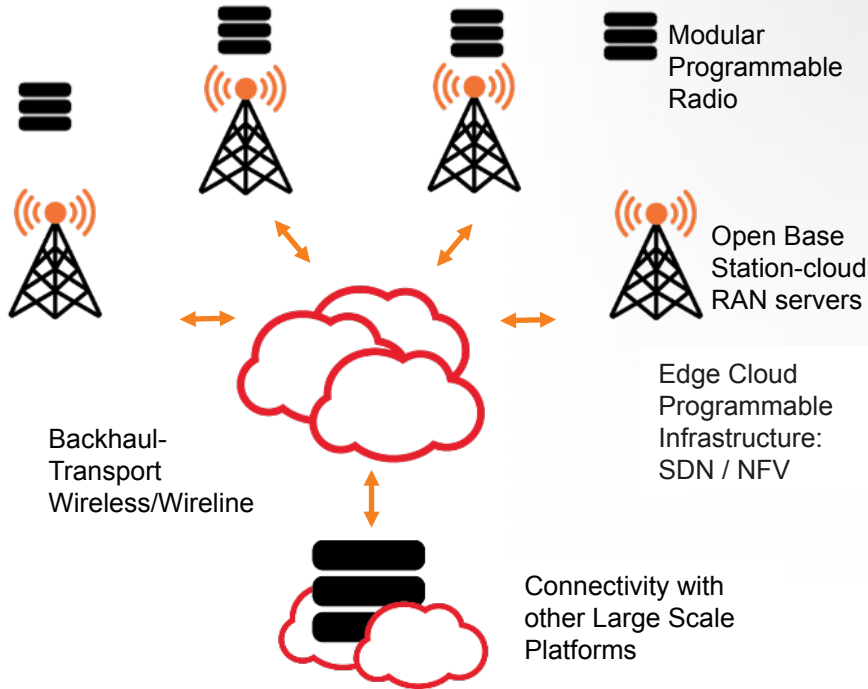
Dynamic spectrum sharing; tunable filters; programmable wireless substrate

# Industry-Research Collaboration Works !!

Achieve fundamental research breakthroughs similar to past/recent successes



# Architecture Elements



## ARCHITECTURE

### Infrastructure Elements:

- Programmable Wireless Substrate
- Wireless-Fiber backhaul
- Software configurable infrastructure (SDN, NFV)
- Modular Hardware; ability to add components
- Time or geographical sharing of environment

### Flexible enough to support multiple research areas:

- Spectrum Sensing
- Flexible spectrum usage
- SDN, NFV, MEC architectures
- Security
- Cellular, WiFi, 802.X wireless technology
- Network performance and analytics

# SAMPLE TOPIC AREAS TO BE ENABLED BY RESEARCH PLATFORMS



**mmWave** to enable R&D and systems testing at the millimeter-wave bands that are about 26GHz, with a target of 100 Gbps in data rates for small-cell networks that cover a few city blocks.



**Wide-area Whitespace** to utilize novel whitespace-based wireless networks to design, build and demonstrate 16Gbps connectivity to remove locations via long-range wireless mesh connections.



**Dynamic Spectrum** to focus on the spectral bands that are sub-6GHz, and aim to identify spectral opportunities in existing networks and establish usage models for novel spectrum driven applications, while also studying co-existence and protection issues.



**Network Metrology** to advance capabilities to measure and monitor wireless network performance and support research on methods to improve the security, reliability and performance of wireless networks.



**Architecture** to test data network architectures for next-generation networks that operate with a wireless edge.

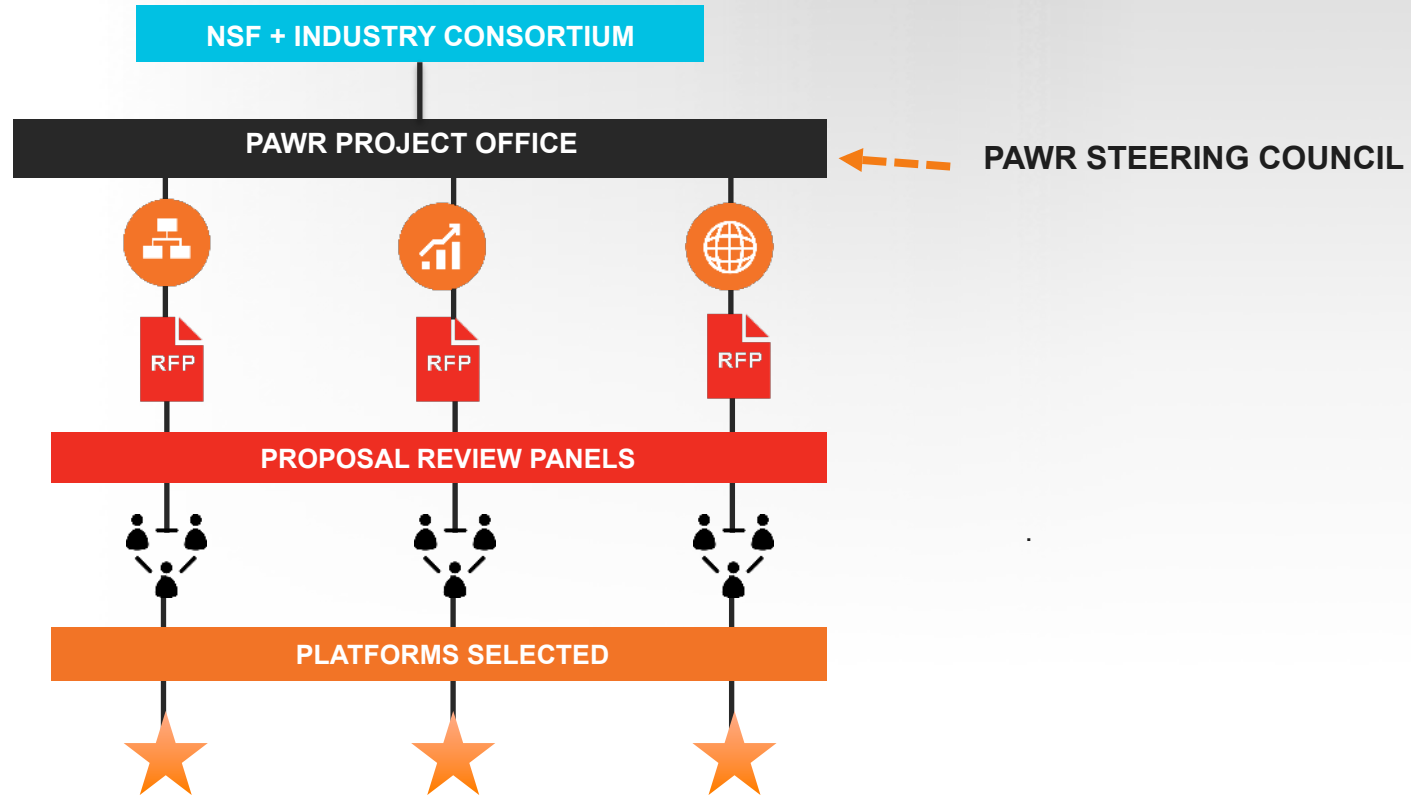


**Applications/Services in later years** – Platforms will serve as examples of Smart and Connected Community networks that demonstrate potential applications/services including Cyber-Physical Systems, Cyber-Security, Internet of Things, Robotics, Smart and Connected Health, and Big Data.



**Mobility-at-Scale** to address larger issues with network-mobility from the transport to MAC layers, including evaluation of large-scale, dense, heterogeneous wireless networks, including issues such as connection management, load balancing, and mobility management.

# Governance Structure



# RFP (Request for Proposals) Process

- Within **4 Months** PPO plans to announce RFP
- Follow NSF Process and Guidelines
- Expert External Review Panels
- Strategic guidance from PAWR Steering Council

Continuations



# Value Propositions

## Research Community

Guide researchers' efforts with industry trends and topic areas of interest

Collaboration across technical areas

Speeding up transfer rate from university research to industry end users

## Cities

Building core wireless capabilities through creative university partnerships

Attracting government and company research funding and local wireless jobs

Utilizing advanced wireless capabilities to enhance city services

# Anticipated Timeline

2016

2017

2018

2019

2020

2021

2022

PAWR RFP



PAWR 1

PAWR 2

PAWR 3

PAWR 4

# Charter Members



PPO is Looking for more Industry Partners....

# Upcoming Event

**April 27 2017: Arlington, VA**

- Day Long Event
- Learn more about PAWR
- Meet the PPO Team
- Learn about Industry, City participation
- Mark your Calendars
- Details to Follow.....



PAWR Project Office

**Thank You**  
**Contact us <fill>**

*<https://www.advancedwireless.org/>*