NGN Priority Services Testing and Evaluation
OEC2014

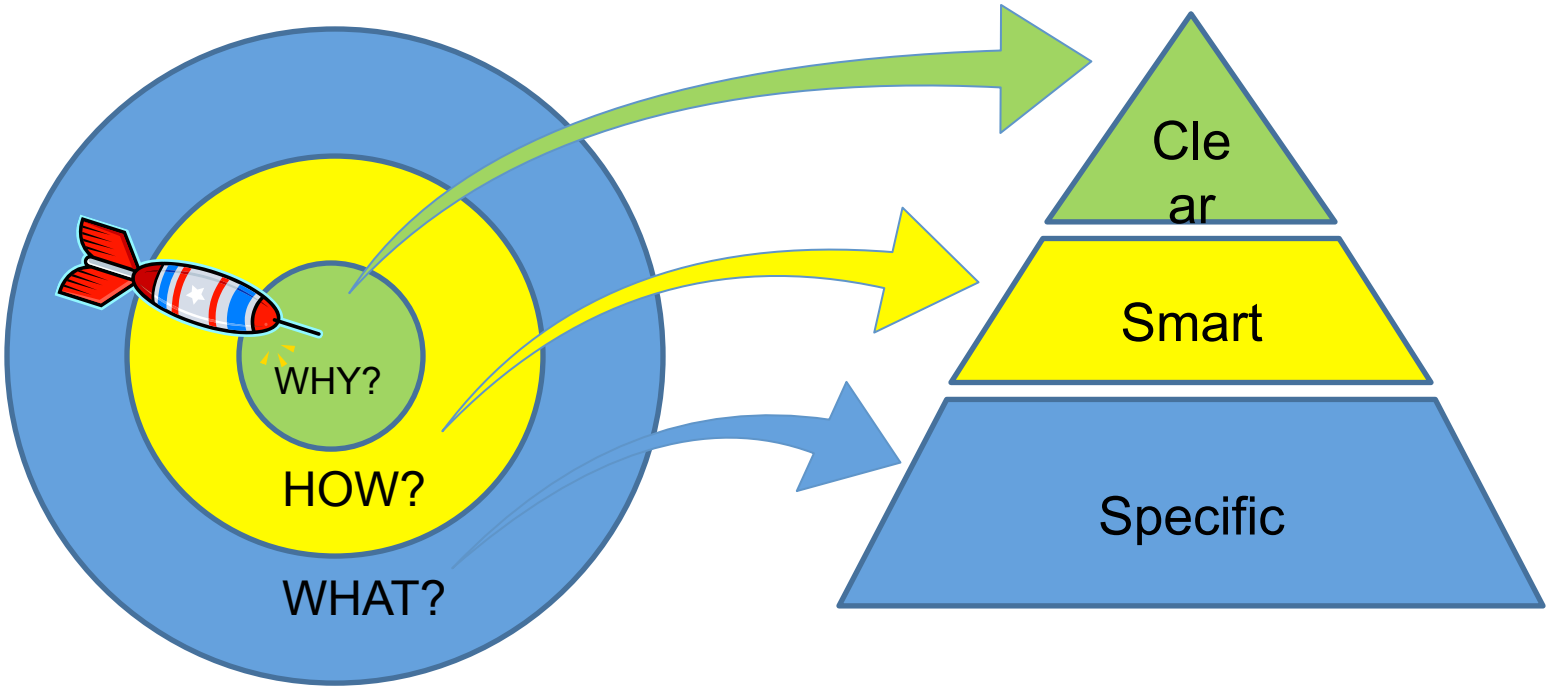
PSCR

Public Safety Communications Research

Tracy McElvaney
Electronics Engineer– NIST

Anna Paulson
Electronics Engineer– ITS

Secret to Success?



To hit the mark with testing and evaluation, we must be clear on **WHY** we are doing it, we must be smart in **HOW** we do it and we must be specific about **WHAT** we are doing!

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Start with Why…

National Security, Emergency Preparedness and Public Safety are inextricably linked.

Public Switched and Cellular Networks

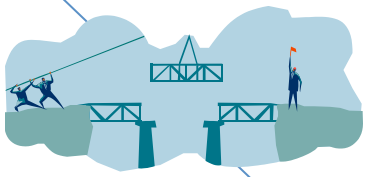
Private Public Safety Networks

GETS

WPS

PSCR

NGN-PS



PSCR is a natural place for NGN-PS and Public Safety to come together

FirstNet

National Public Safety Broadband Network

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Now the How

Leverage

- PSCR is QoS Ready
- GIR and 3GPP are compatible
- Multi-PLMN and Band-Class Support
- RAN Load Testing Capable

Evolve

- Virtual EPC/IMS implementations
- IMS based telephony services
- Simulated EPC/IMS for prototyping
- Commercial Devices and Apps

Collaborate

Sponsors

- Gov't Industry Req.
- Test Tasks
- Standards/Modelling

Operators

- Network Req.
- Test Strategy
- Lessons Learned

Vendors

- Roadmaps
- Implementation
- Standards Gaps

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Finally….What?

Test and Evaluate of course!

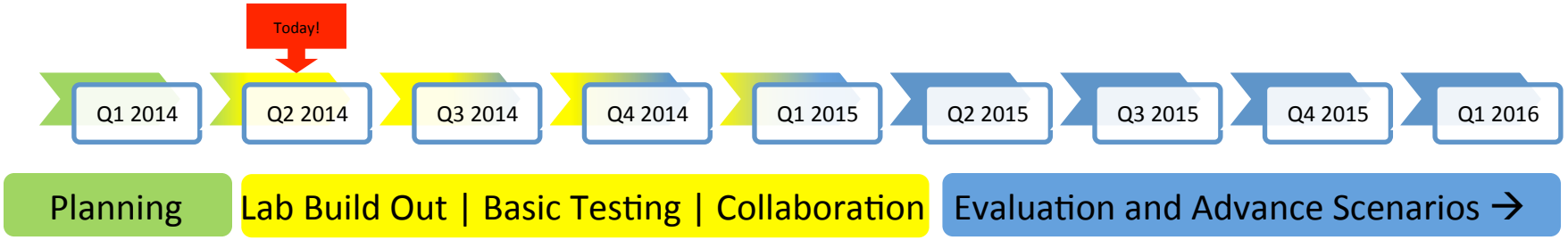
Identify

- Standards GAPS
- New Standards Work
- Modelling Needs

Evaluate

- Priority Mechanisms
- Implementation nuances
- Use Case Scenarios
- Data/Voice/Video Capabilities

Goal: Our goal is to partner with and help enable OEC in the successful deployment of NGN Priority Services in North America. This ultimately helps the GETS/WPS users who want and need broadband capabilities.



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Show me some detail…

- Question: How does NGN-PS differ from the QoS/Priority and Pre-Emption you've been hearing about in Public Safety talks?

- Answer: QoS is very customizable.
  - NGN-PS has taken great steps in defining how it should be customized for NS/EP NGN-PS users. (Government Industry Requirements)
  - NGN-PS uses standard 3GPP Priority Mechanisms, referred to as Multimedia Priority Services (MPS) in 3GPP standards, with some new network management capabilities not defined in standards. The new network management functionality is related to configuration (CM) and performance management (KPI) of the NGN-PS services.[1]
  - NGN-PS allows a user to subscribe to priority service, or activate it via dialed code like *272).

Let's take a quick look!

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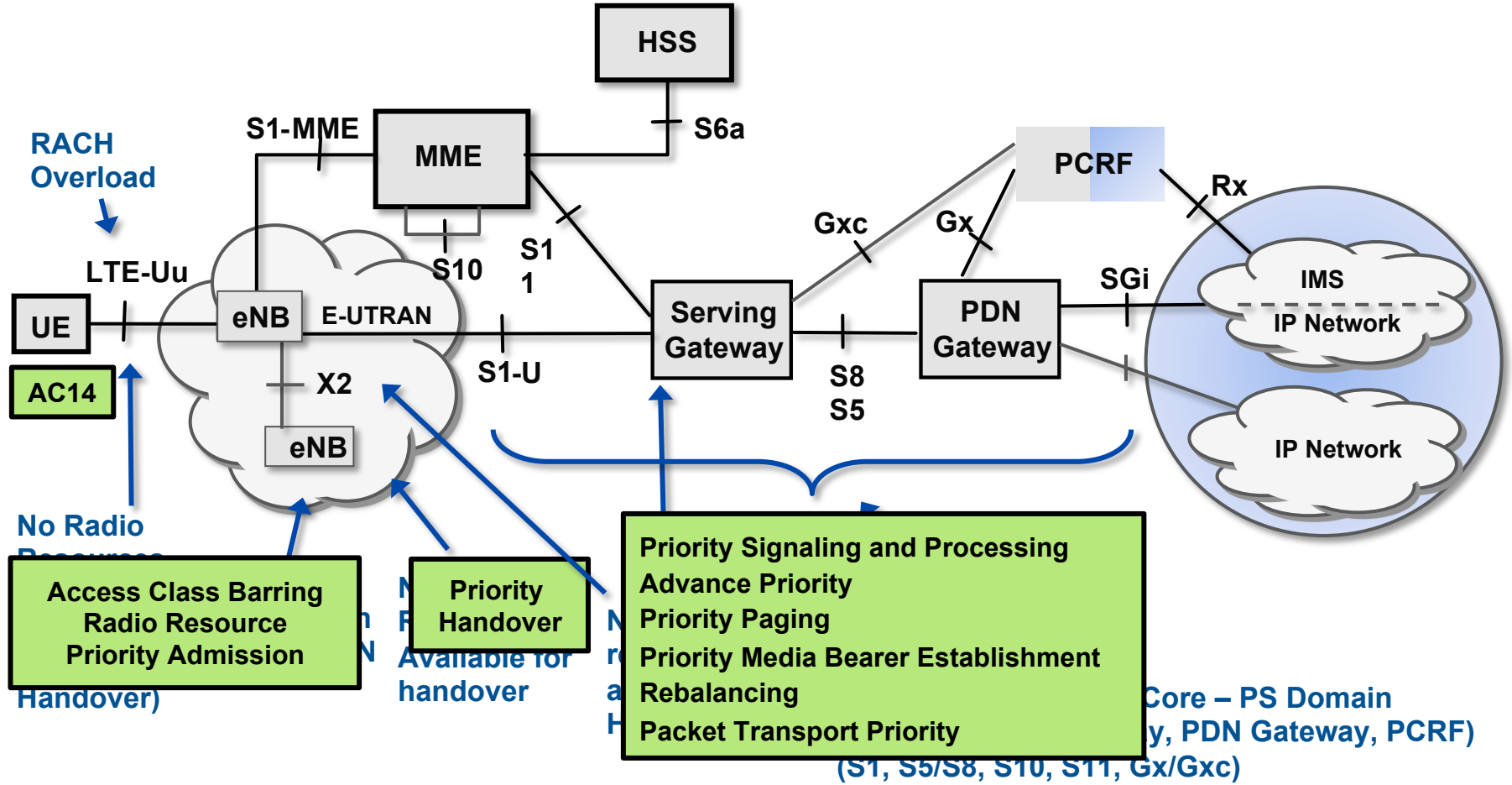
What does NGN-PS intend to do?



Common Problem: Networks get congested when bad things happen, or people get excited.

- First Responders, National Security and Emergency Preparedness personnel need priority access and priority services to better serve the public interest when the network is congested.
- NGN-PS leverages the 3GPP standards to define a set of requirements (LTE-AN and IMS Core Network GIR) that ensure priority access during times of network congestion.

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How will we evaluate?

Start with an LTE testbed which utilizes…

- a simulated Evolved Packet Core (EPC) and IP Multimedia Subsystem (IMS)
- both commercial and public safety band-class RANs

… for the evaluation of…

- state-of-the-industry priority mechanisms
- vendor/operator implementations
- use case scenarios
- the capabilities of data/voice/video applications.

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Why a simulated EPC + IMS?

Simply put, a simulated EPC and IMS environment allows us to leverage:

- cost-effective test development techniques
- past/present/future 3GPP LTE standards
- the native extensibility and configurability of software
- new developments in Software Defined Networking (SDN) and Network Functions Virtualization (NFV)

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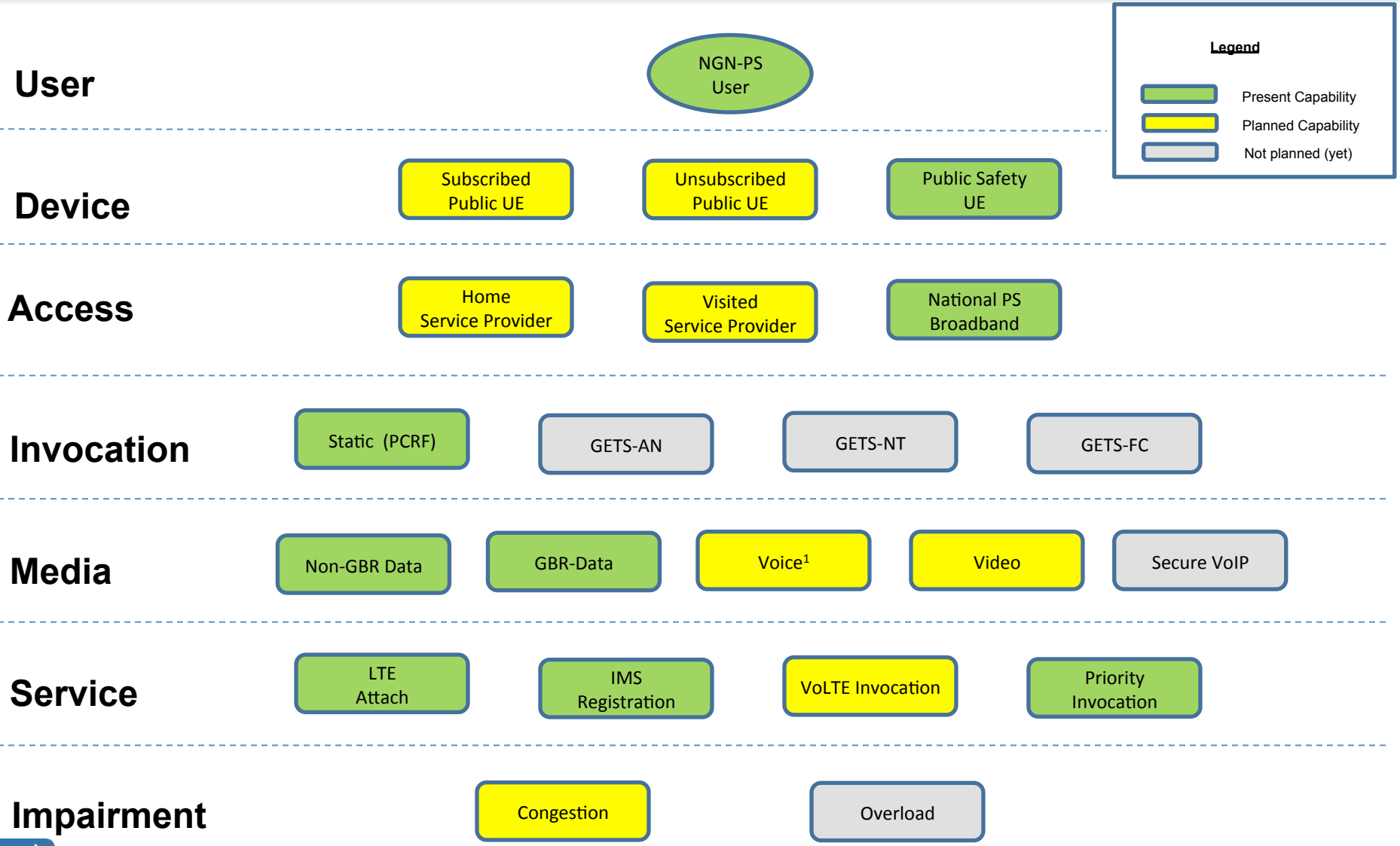
Use Case Development



[1] Currently support VoIP, no UE with native VoLTE client.

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Questions

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For Additional Information:

http://www.pscr.gov

Tracy McElvaney
Electronics Engineer– NIST
tracy.mcelvaney@nist.gov

Anna Paulson
Electronics Engineer– ITS
apaulson@its.bldrdoc.gov