Industry Day

August 27, 2015

Agenda

- Introduction and Ground Rules – Terrie Callahan
- Remarks - Mike Poth
- The FirstNet Opportunity – TJ Kennedy
- Review of the Results of the Q&A and Comments Process – James Mitchell
- Operational Architecture Update – Zachary Smith
- FirstNet Cyber Security Concepts – Glenn Zimmerman
- Device and Applications Ecosystem – Mark Golaszewski
- Instructions and Evaluation in the RFP – Terrie Callahan
- Q&A Panel

Introduction and Ground Rules

Terrie Callahan
Contracting Officer

Industry Day Logistics & Ground Rules

- Ensure you have signed in at the registration desk
- Hold all questions until the end of the presentation
  - Answer as many as possible time allowing
  - May defer to a formal written response
  - Please come to the microphone when asking questions and introduce yourself
- Place cell phones/devices on silent

Disclaimer

The following presentation contains a brief overview of the draft request for proposals and FirstNet's potential acquisition strategy. Any discussion of requirements or potential future procurements does not constitute a commitment by FirstNet and should not be relied upon in planning future courses of action.

The Government will provide public notice of any procurements using the Federal Business Opportunities website (https://www.fbo.gov/) in accordance with applicable laws and regulations.

In the event that there is a conflict between any future request for proposals' terms and conditions and the information contained herein or disseminated during today's meeting, the request for proposals' terms and conditions shall control. The request for proposals and any formal amendments are the only documents that should be relied upon in determining the Government's requirements and ultimate acquisition approach.

Remarks

Mike Poth
CEO

Mission

The First Responder Network Authority shall hold the single public safety wireless license and take all actions necessary to ensure the building, deployment, and operation of the interoperable nationwide public safety broadband network (NPSBN)

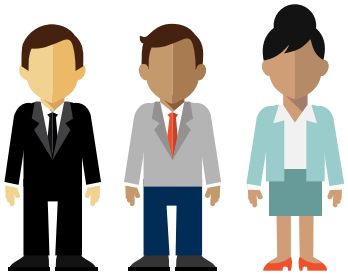
The FirstNet Opportunity

TJ Kennedy
President

FirstNet will be a Win-Win-Win

PUBLIC SAFETY

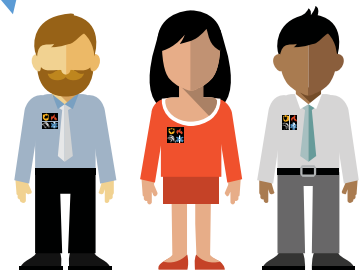
- Additional capabilities to support mission
- Increase safety for personnel and the public
- Receive resilient broadband communications



OFFEROR(s)

- Lead Public Safety communications growth
- Gain access to valuable low-band spectrum
- Leverage up to $6.5 billion in cash to meet public safety objectives

FirstNet needs to be **'win-win-win'** for all parties



FIRSTNET

- Achieve mission of national importance
- Promote public safety broadband adoption to save lives
- Become financially sustainable

The FirstNet Business Opportunity

FirstNet brings up to $6.5B of cash and 20 MHz of spectrum

Partner with FirstNet to Serve Public Safety

All facts, figures and information provided for illustrative purposes only. No information contained herein should be relied on as the basis for a proposal to FirstNet or for any other purpose. Information about the sources of facts, figures and information herein is located at www.firstnet.gov/resources

The FirstNet Business Opportunity

Modernize public safety communications

FirstNet brings up to $6.5B of cash and 20 MHz of spectrum

Partner with FirstNet to Serve Public Safety

Millions of potential users,
Capture share of multi-billion $ U.S. public safety communications market

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The FirstNet Business Opportunity

Modernize public safety communications

FirstNet brings up to $6.5B of cash and 20 MHz of spectrum

Partner with FirstNet to Serve Public Safety

Tens of billions $ from commercial use of excess capacity

Expand the mobile broadband market

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Third Party Market Research

Scope

- FirstNet contracted with a 3rd party global advisory services firm to provide a perspective of the Public Safety mobile data market

Methodology

- Primary and secondary market research approach utilized
  - Interviews with high-level Public Safety officials to obtain detailed thoughts and opinions on the current state of telecommunication capabilities and issues facing Public Safety
  - Web based survey of First Responder mobile data user and decision makers
  - Secondary research from a broad variety of sources to obtain relevant data and provide additional context

Outcome

- Key survey findings validated major themes of the Special Notice and Draft RFP documents
- Validation of assumptions in business model, including potential addressable market size

Lead Public Safety Adoption of Mobile Broadband

Increase Adoption + **Unify Public Safety Communications** + **Drive Interoperability and Save Lives** + **Create Value with Priority & Preemption** = **Lead Public Safety Adoption of Mobile Broadband**

60% use data on frequent basis

Thousands of public safety networks nationally

45% of first responders face challenges in sharing mission critical data today

50% of first responders are concerned that existing networks cannot always support mission success

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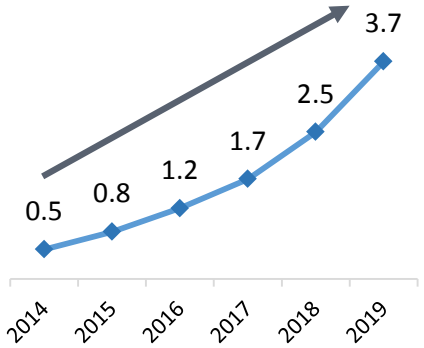
FirstNet Business Case Drivers

Innovative Solution to Meet Exploding Demand

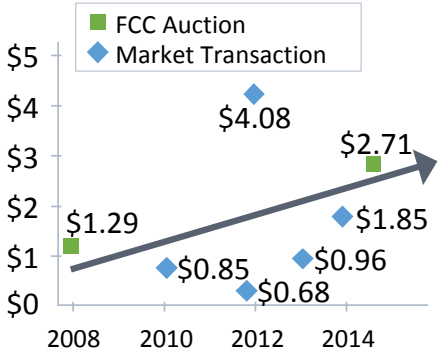
U.S. Mobile Data Traffic (exabyte/month)



Excess network capacity will provide additional options for meeting rising data demand.

Alternative Approach to Traditional Spectrum Acquisition

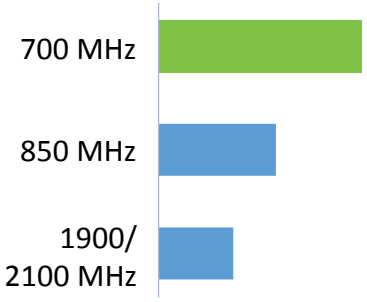
Comparable Transactions 700 MHz/AWS Spectrum ($/MHz-PoP)



The RFP offers an alternative to increasingly expensive spectrum transactions.

"Beachfront Property" that Promotes Efficient Coverage & Capacity

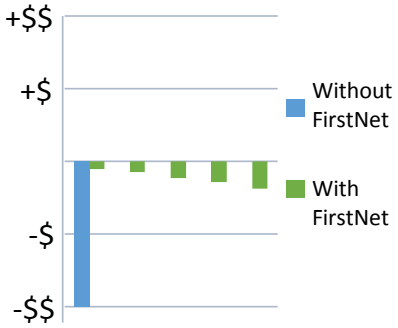
Propogation Range



Efficient 700 MHz band spectrum allowing signals to penetrate buildings and to cover larger geographic areas with less infrastructure.

Superior Working Capital Profile

Cash Outlay



Acquiring spectrum typically requires significant upfront cash. Relationship with FirstNet enables more favorable outflows.

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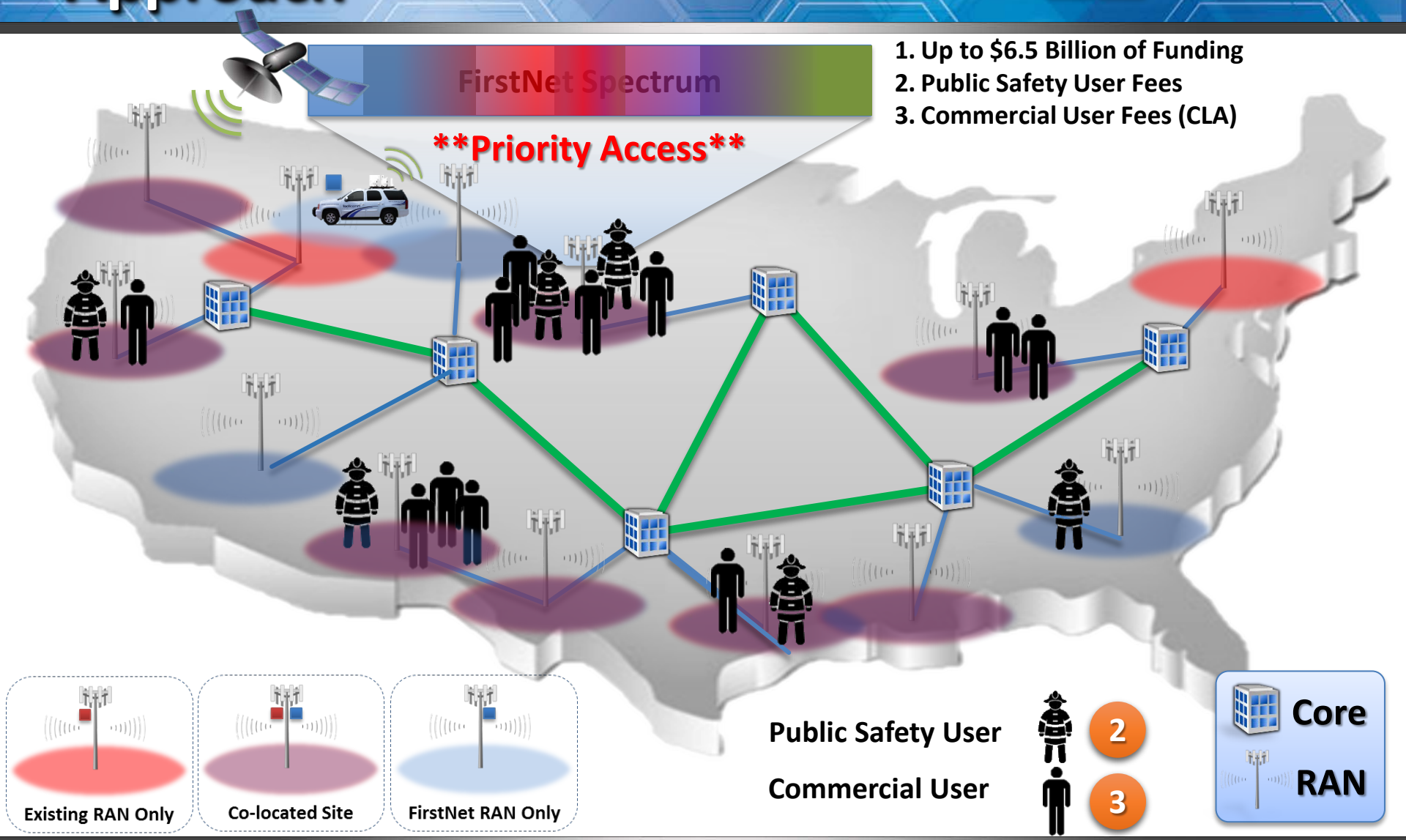
Notional Deployment Approach



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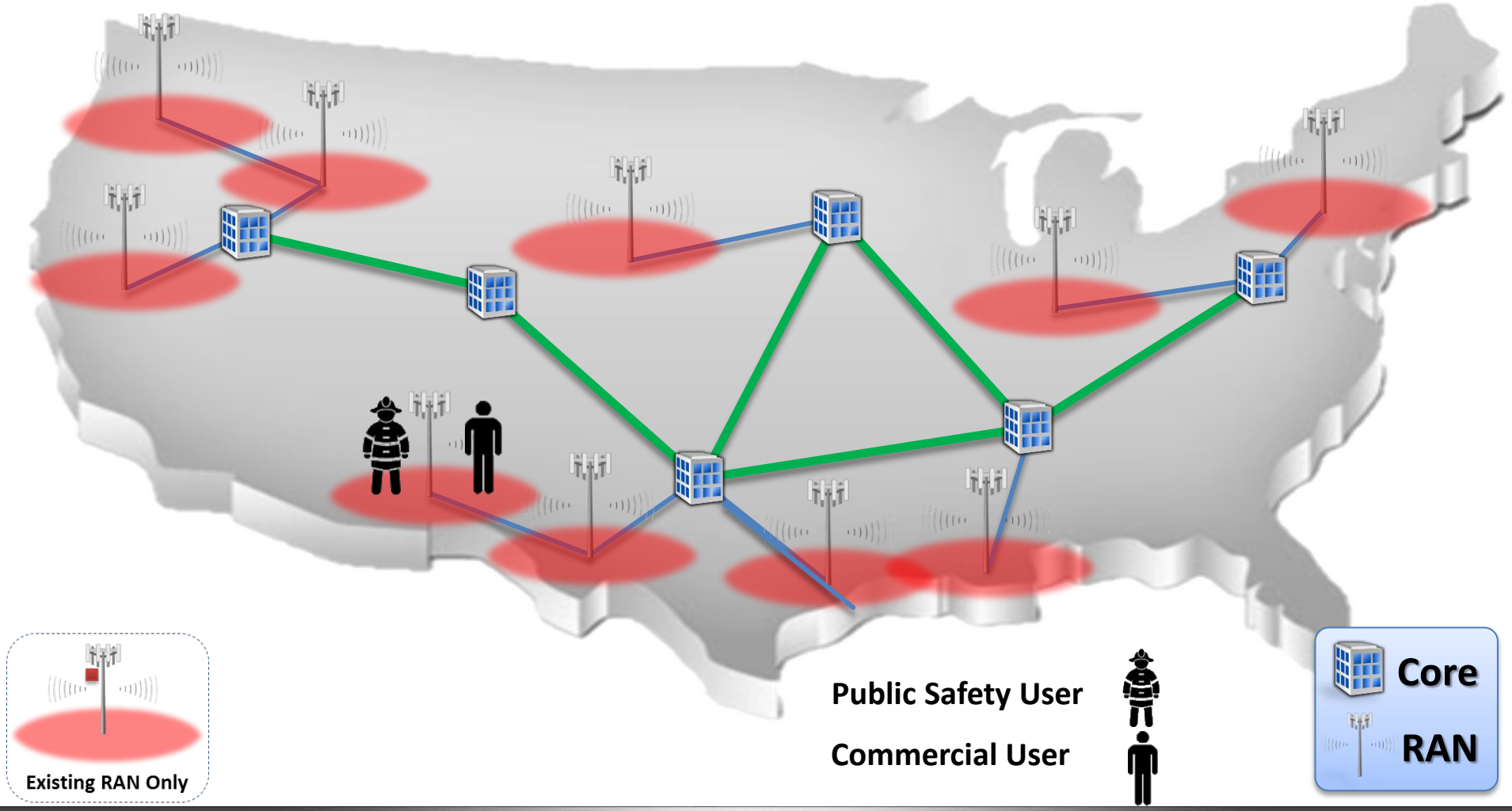

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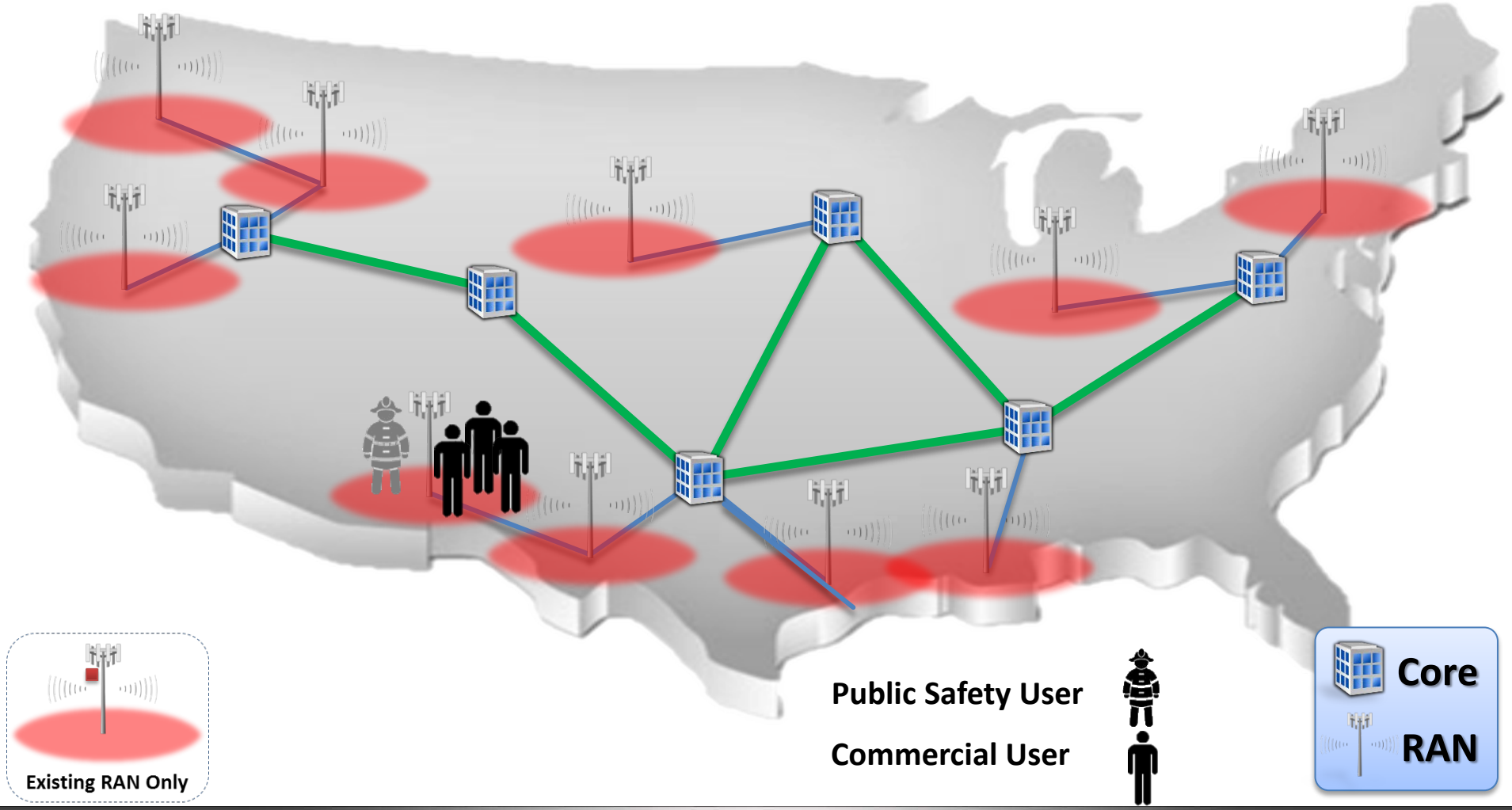

Notional Deployment Approach

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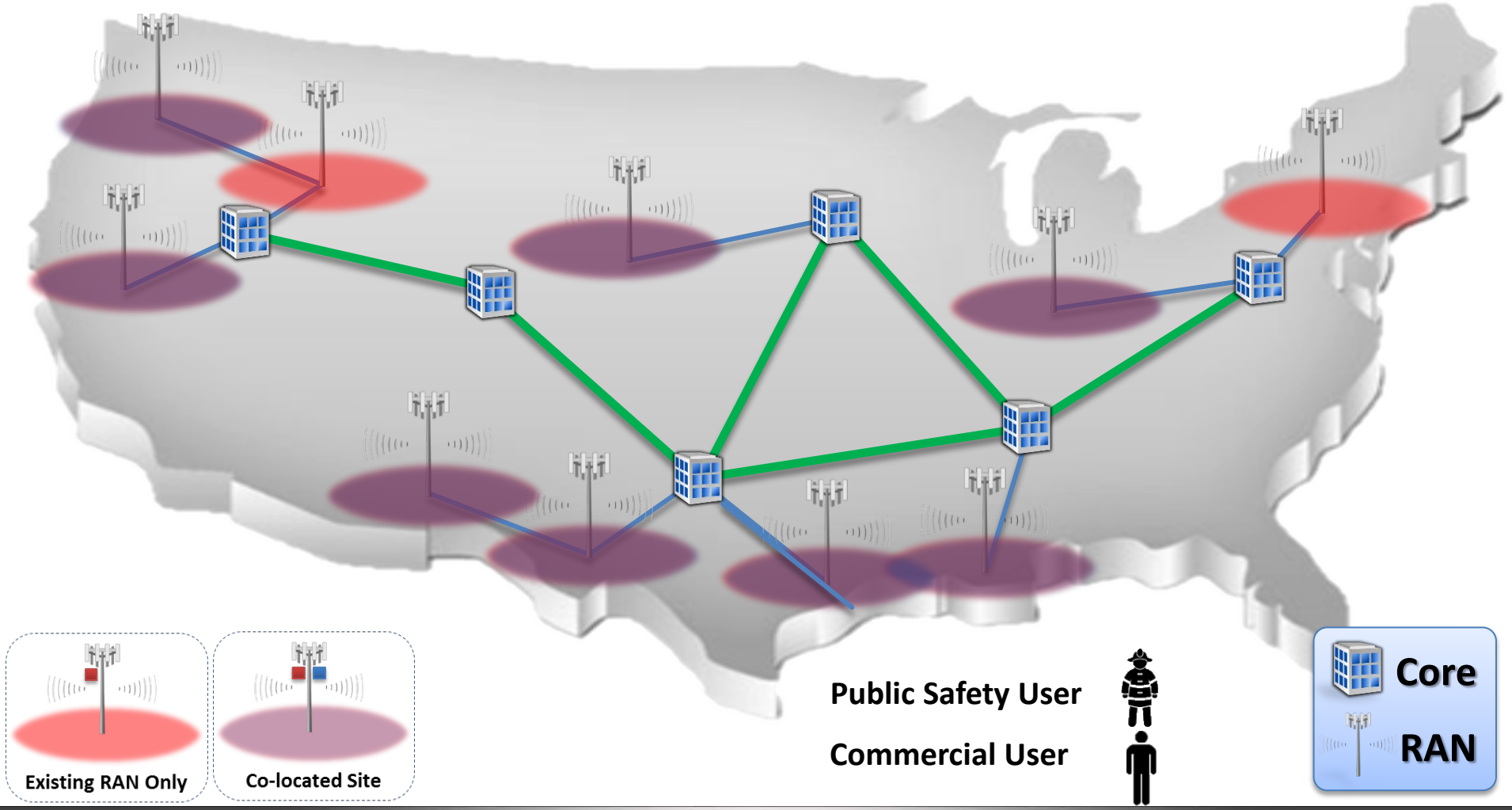

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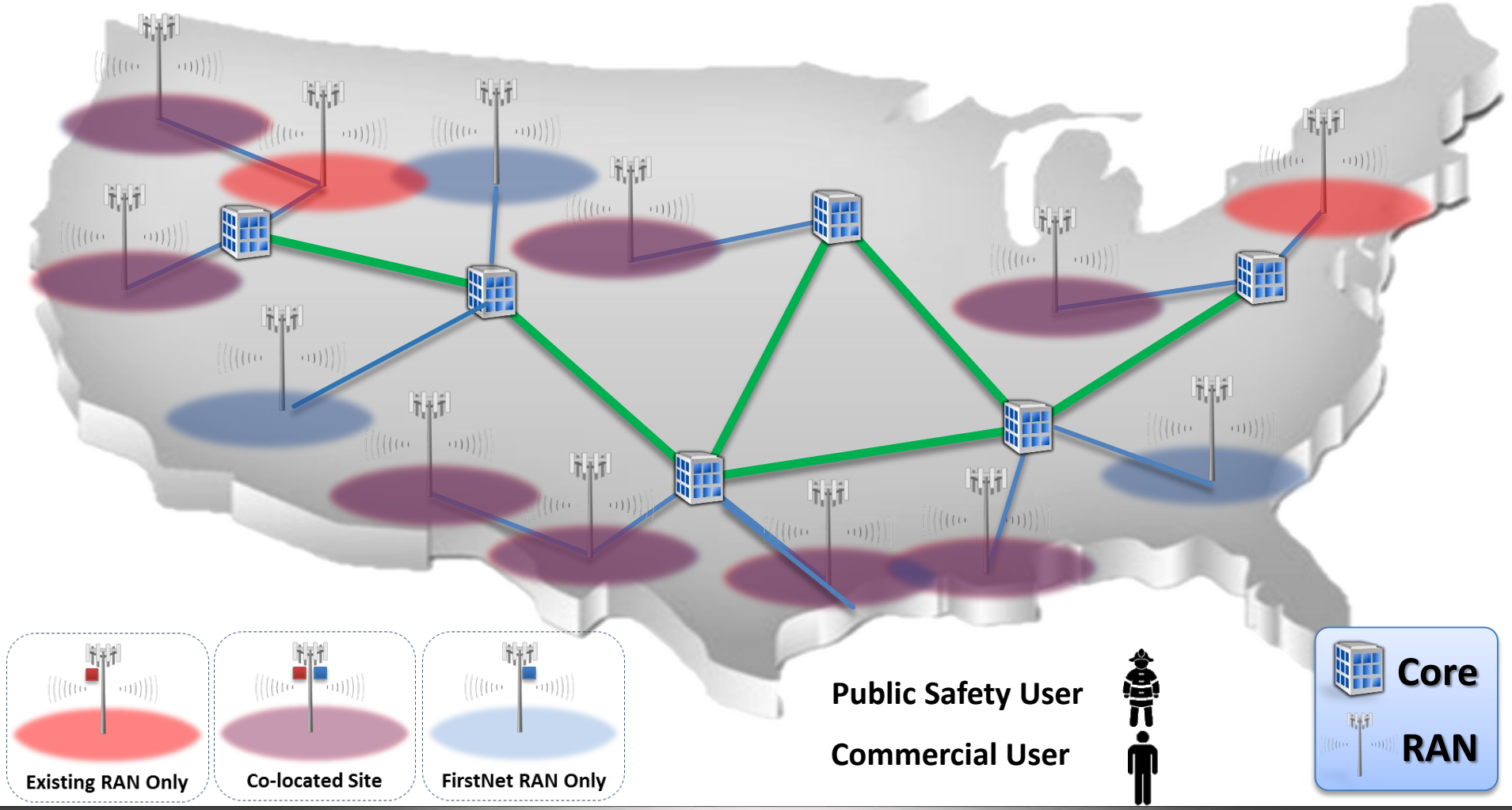
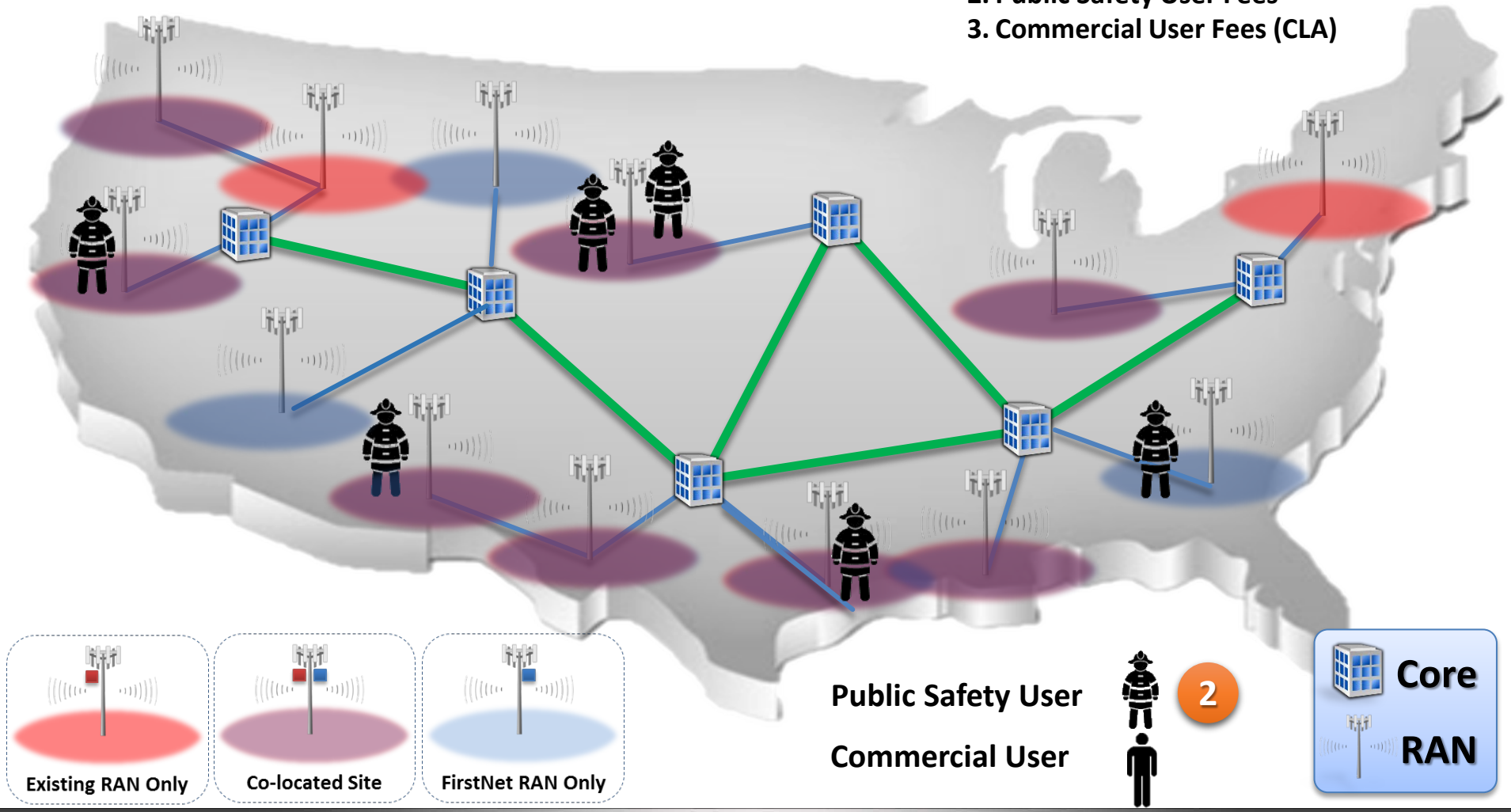


Notional Deployment Approach

1. Up to $6.5 Billion of Funding
2. Public Safety User Fees
3. Commercial User Fees (CLA)



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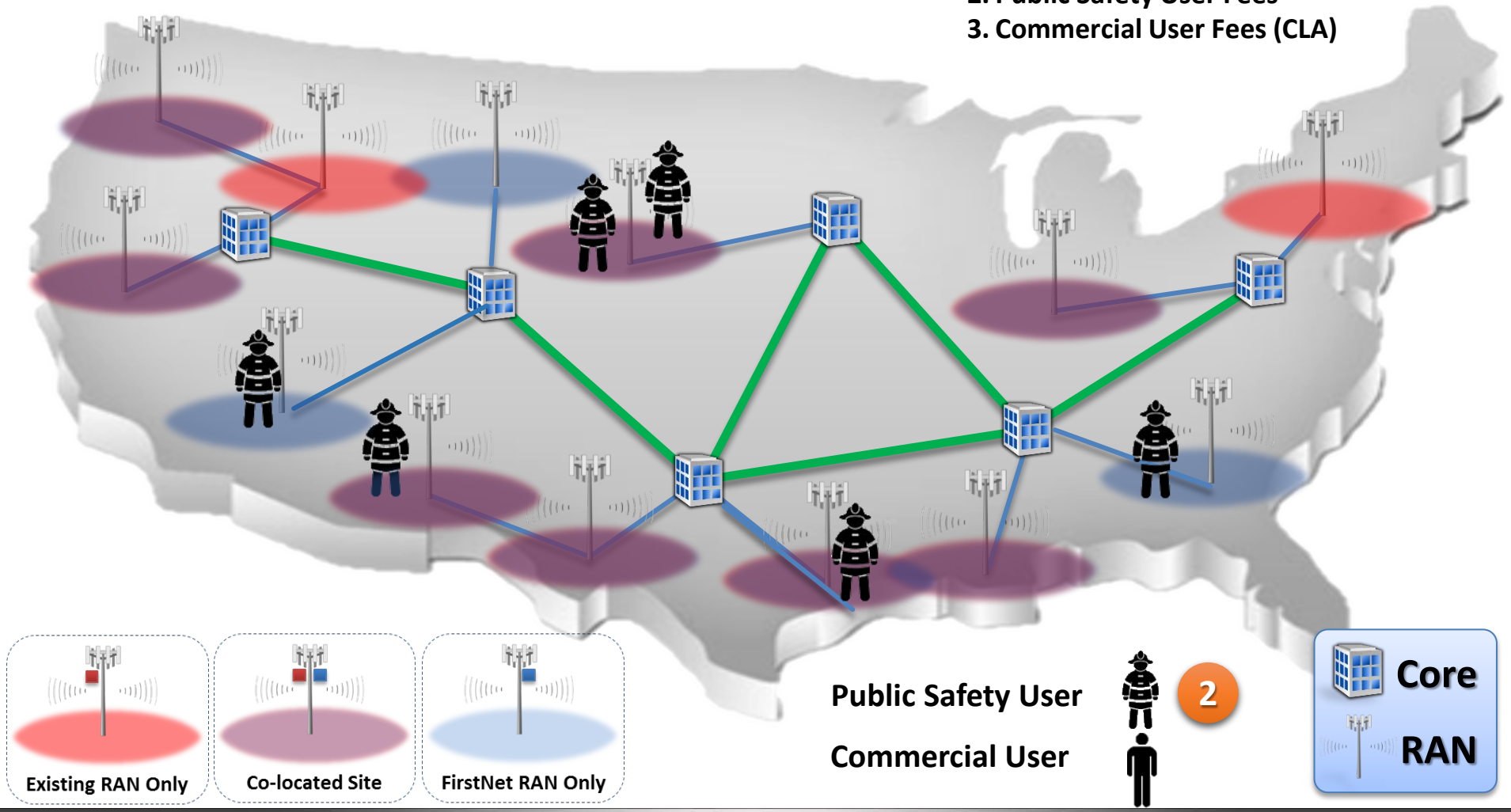

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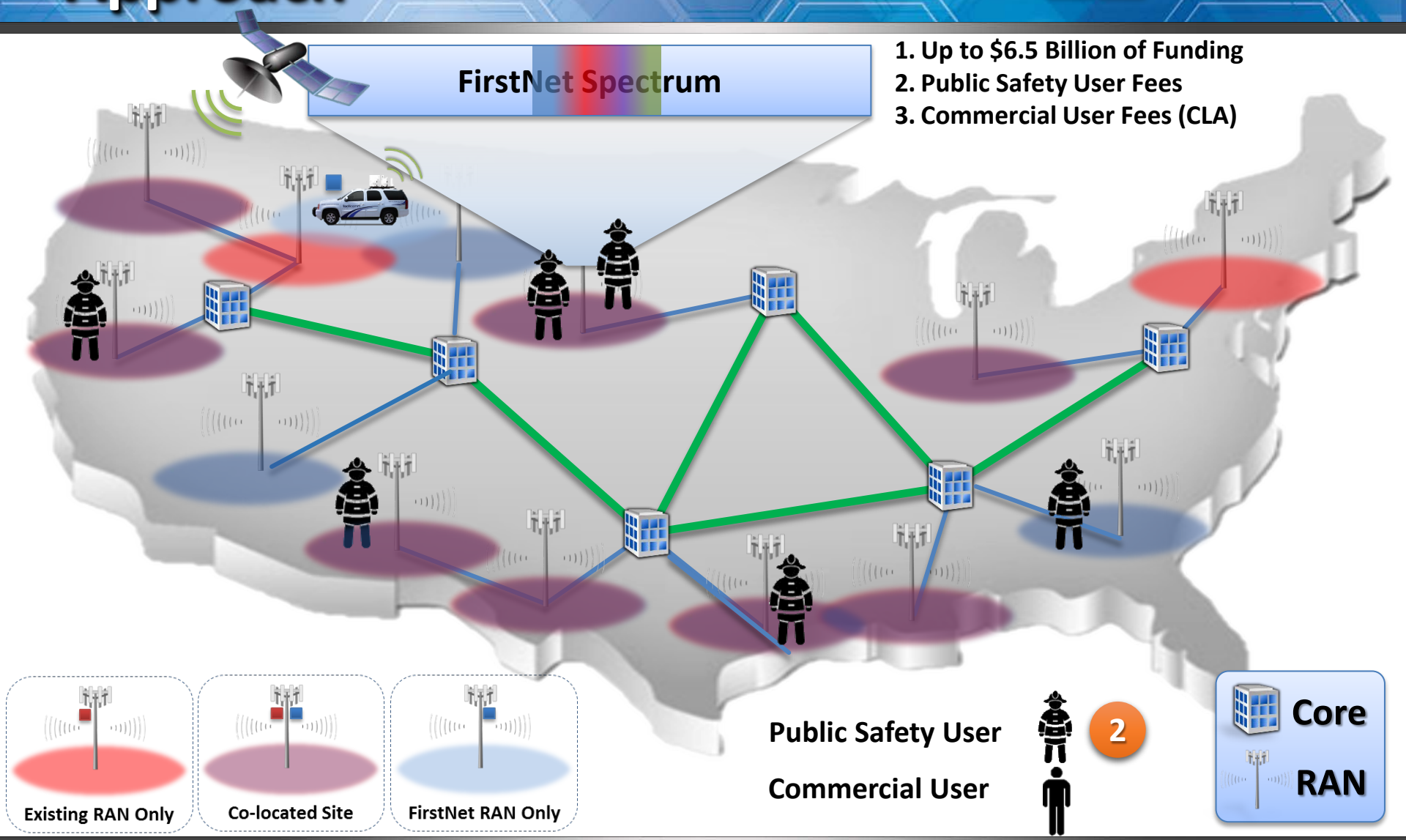

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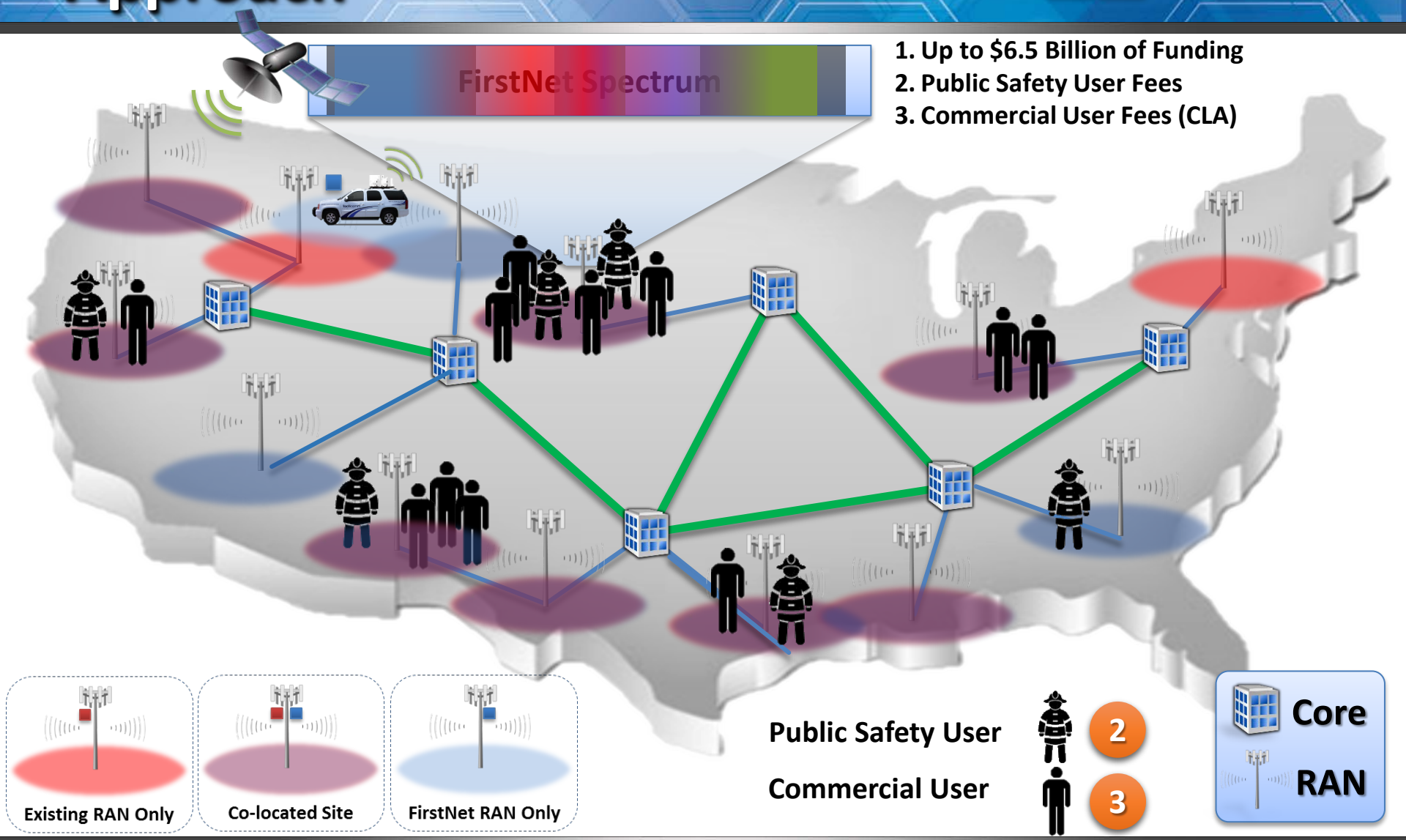

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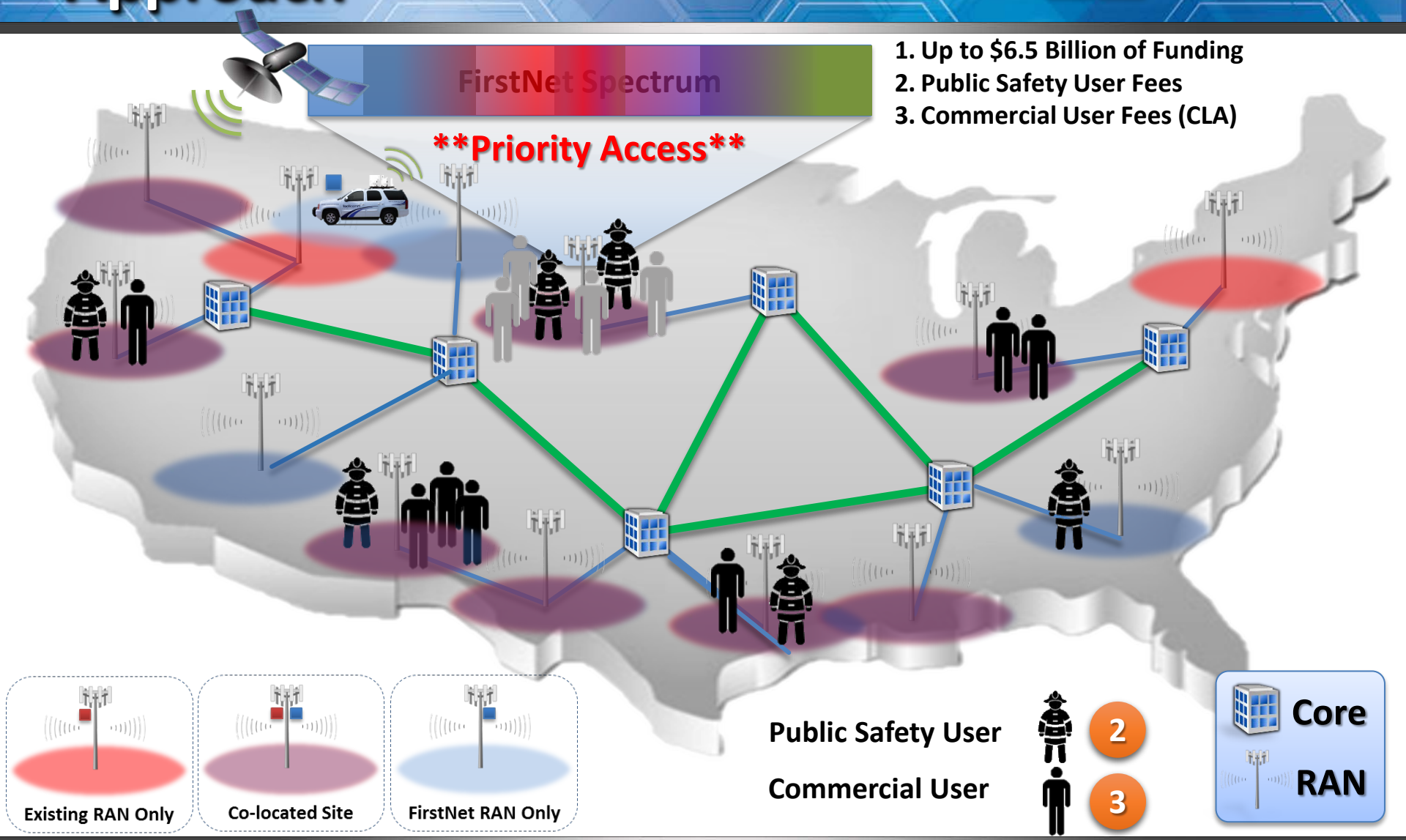


Ability to Monetize Full 20 MHz of Spectrum

20 MHz of 700 MHz Low Band Spectrum

Commercial Value (CLA)

Public Safety Value

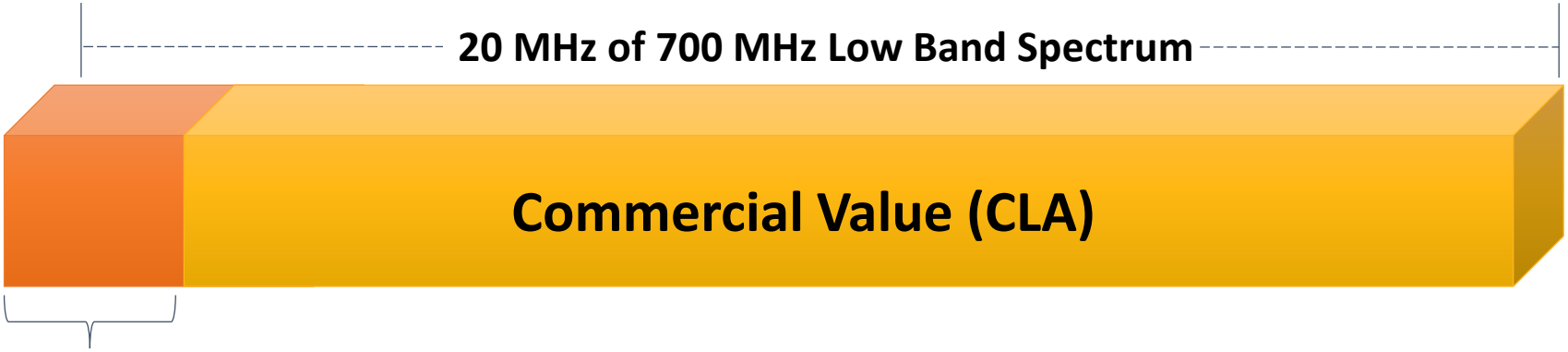
Offeror Receives Public Safety User Fees

Offeror Receives Commercial User Fees

Total User Fee Revenue to Offeror

*not to scale; for illustrative purposes only.

Ability to Monetize Full 20 MHz of Spectrum



Public Safety Value

Offeror Receives Public Safety User Fees

Offeror Receives Commercial User Fees

Total User Fee Revenue to Offeror

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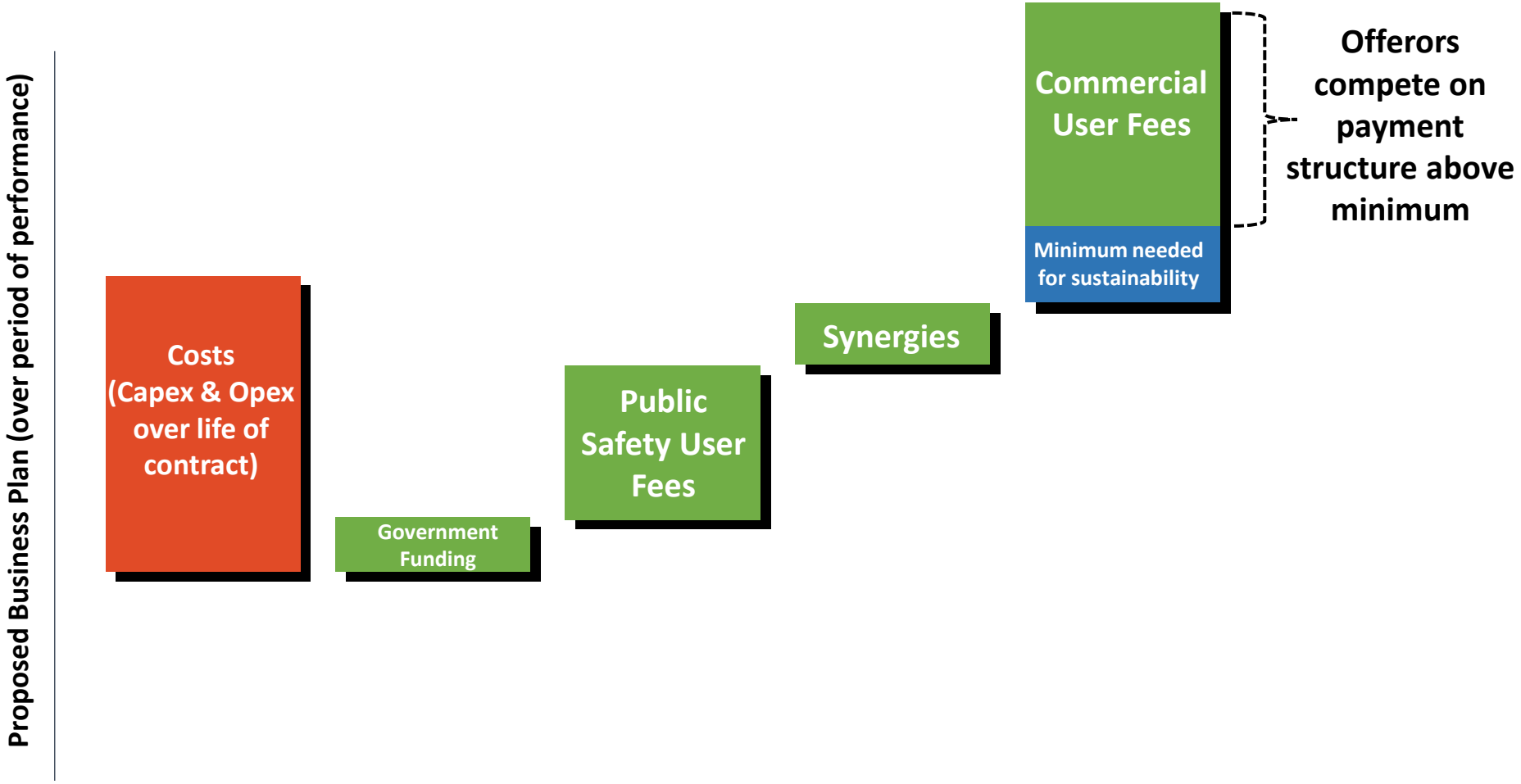
Evaluating Offeror's Pricing



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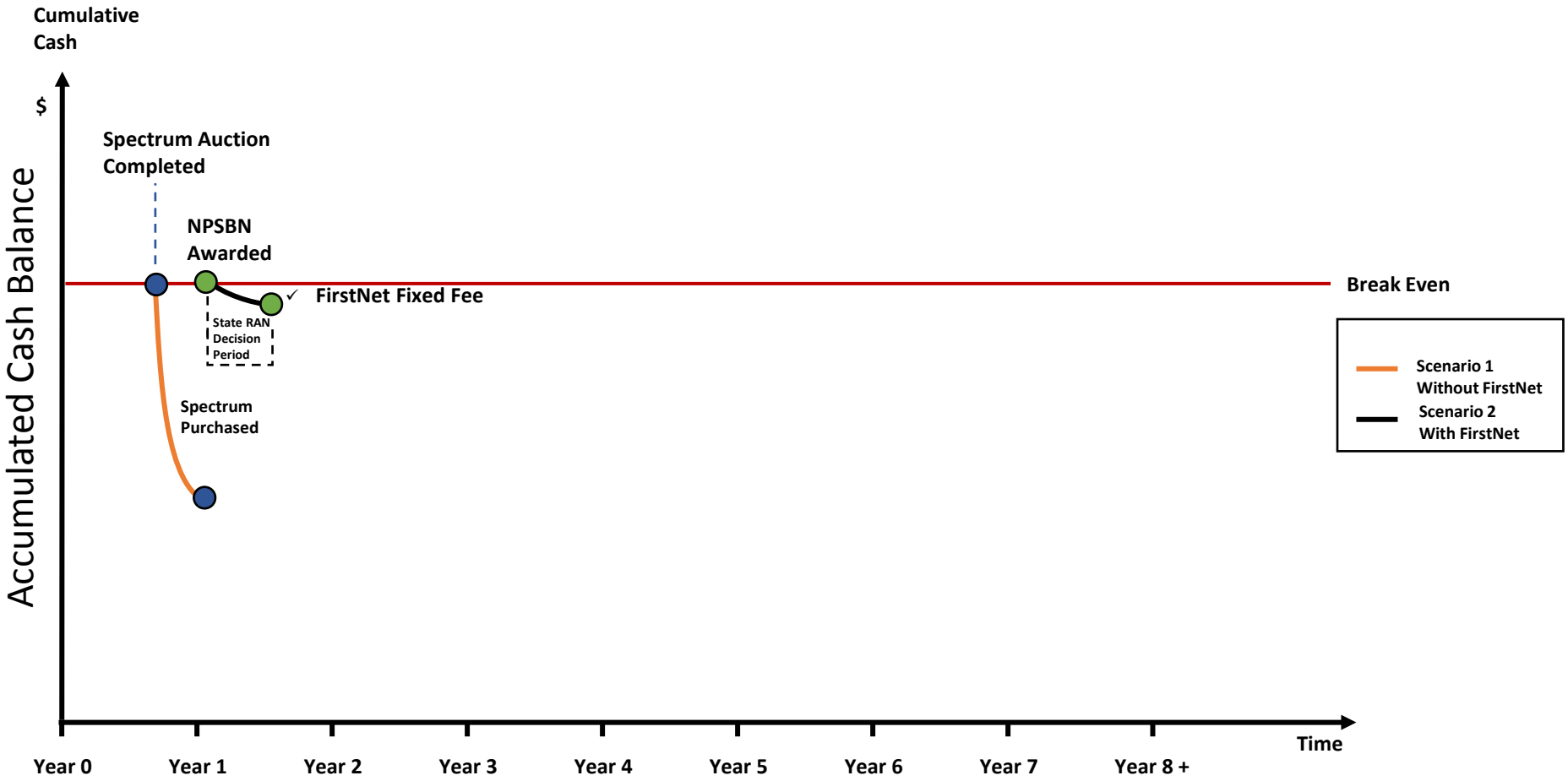
Case Study: Wireless Economics With and Without FirstNet



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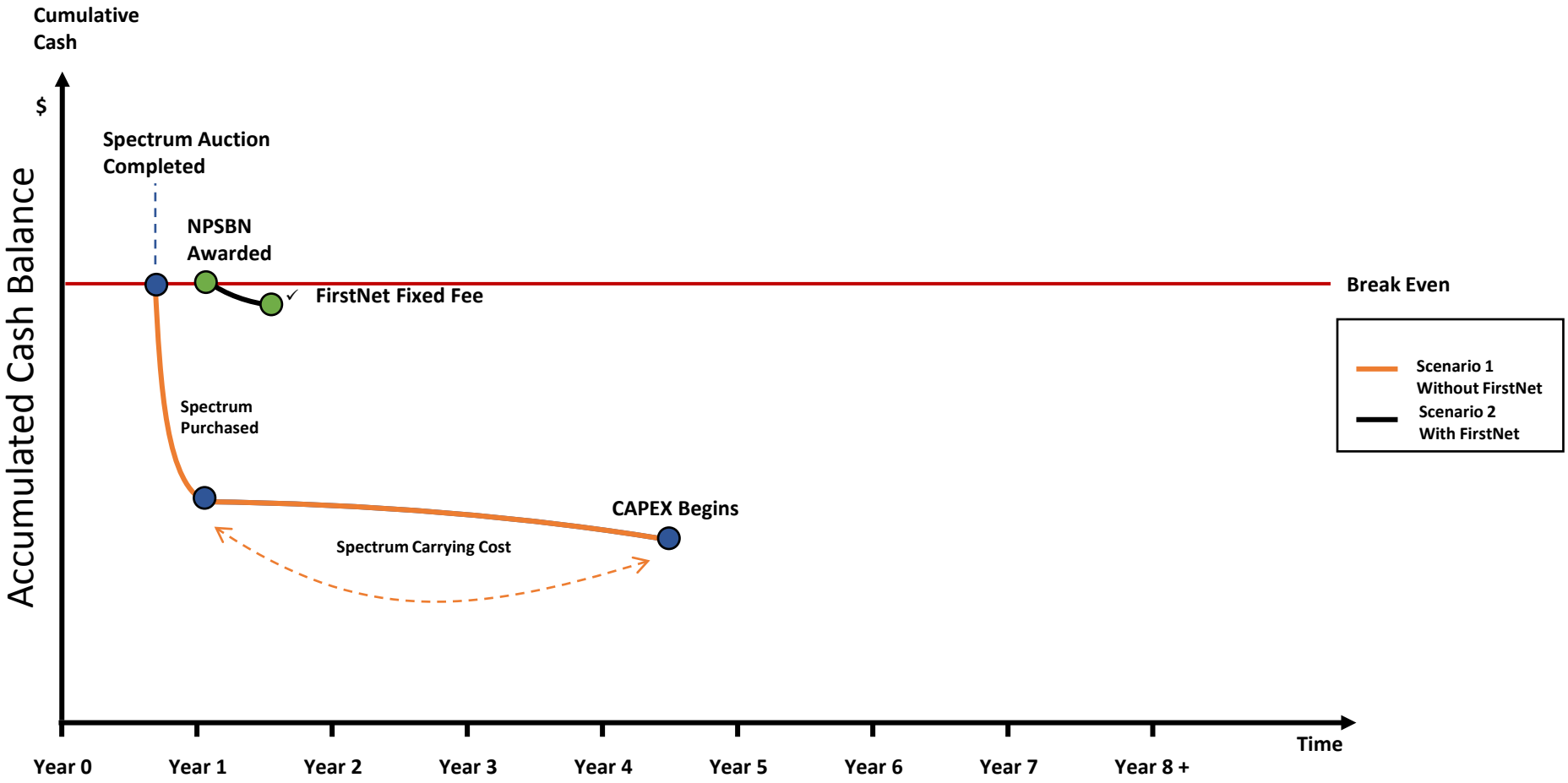

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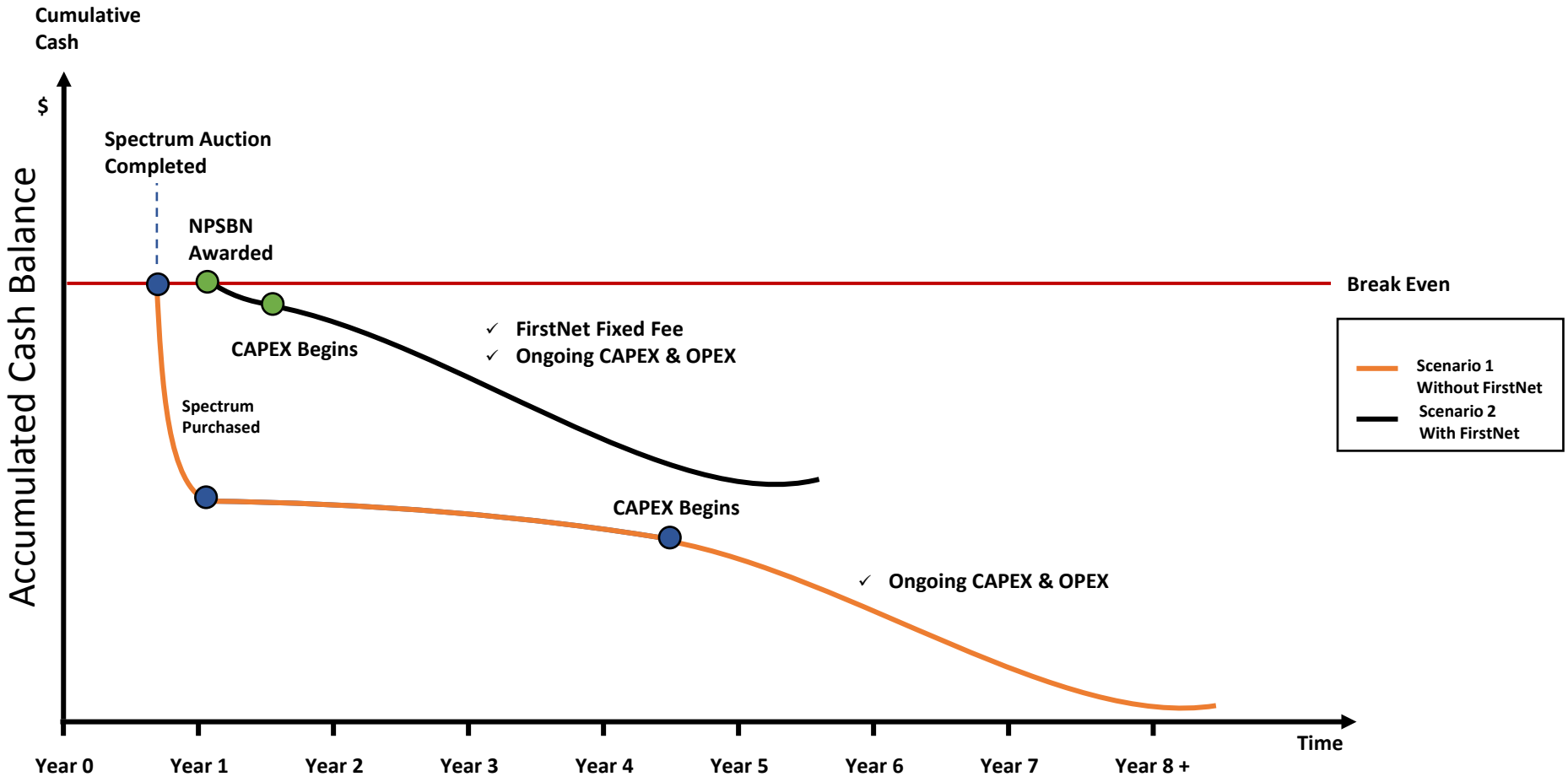

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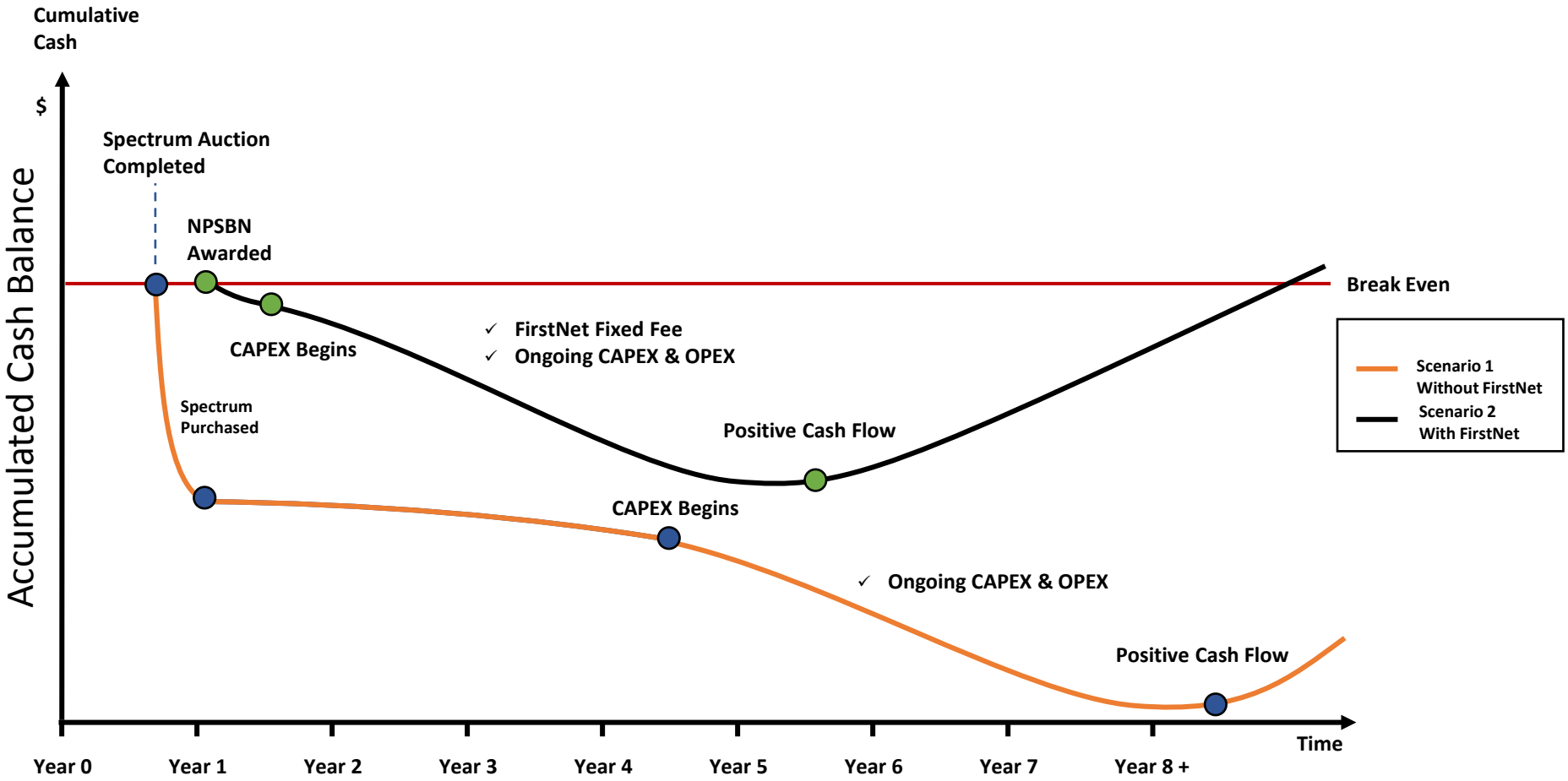

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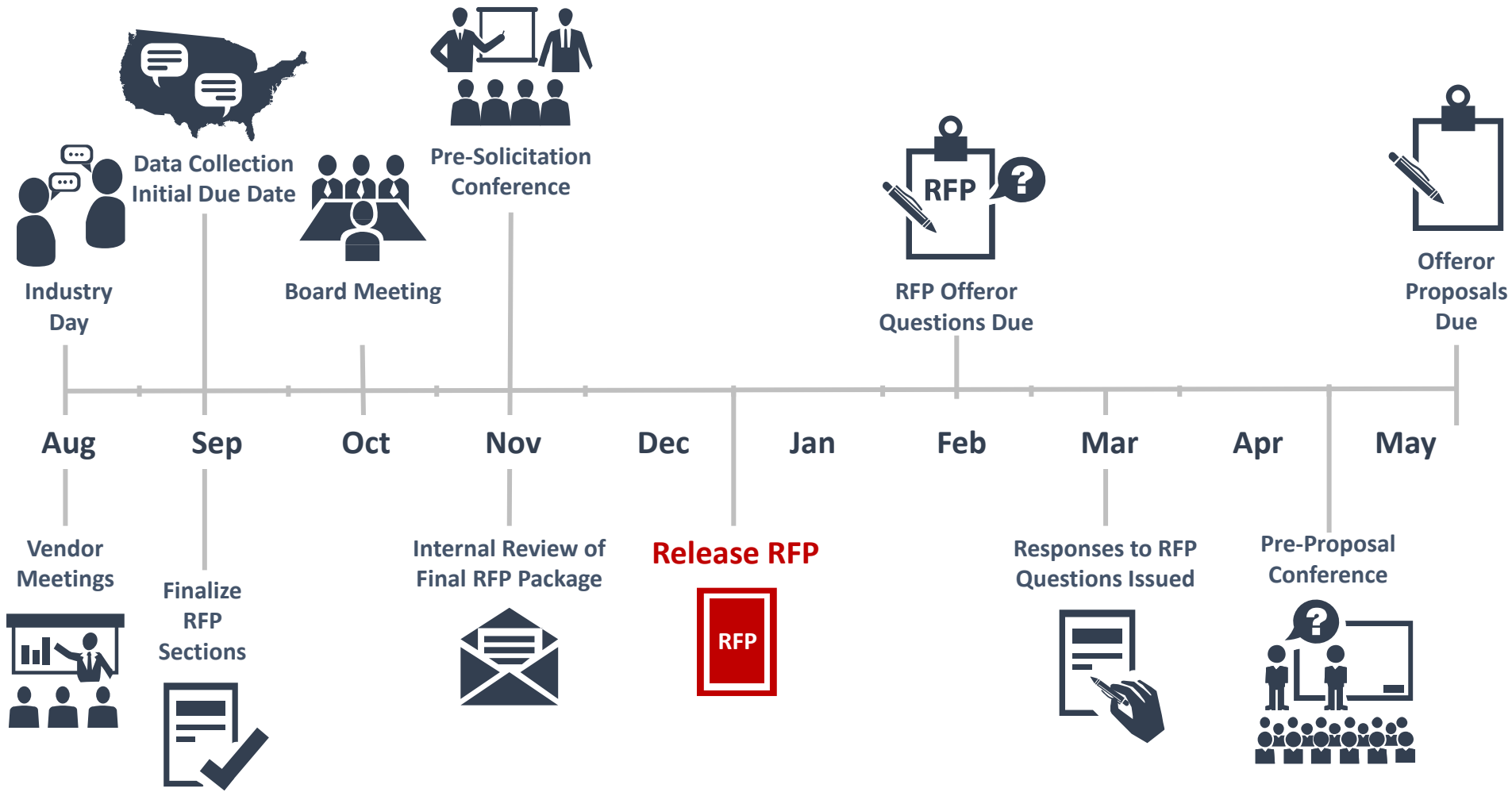
Review of the Results of the Q&A and Comments Process

James Mitchell
Senior Program Manager for Operations

FirstNet is On Schedule

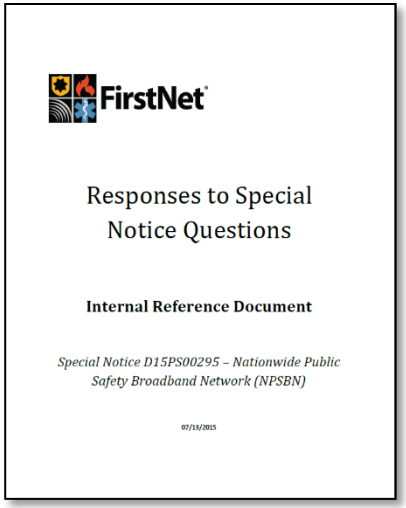


* Events and dates subject to change

Play

Questions & Answer Process and Outcomes

- 650+ questions submitted to FirstNet
- Responses posted by 1 July at www.fbo.gov
- FirstNet continues to analyze for lessons learned, outcomes, and key metrics



What did you ask us about?

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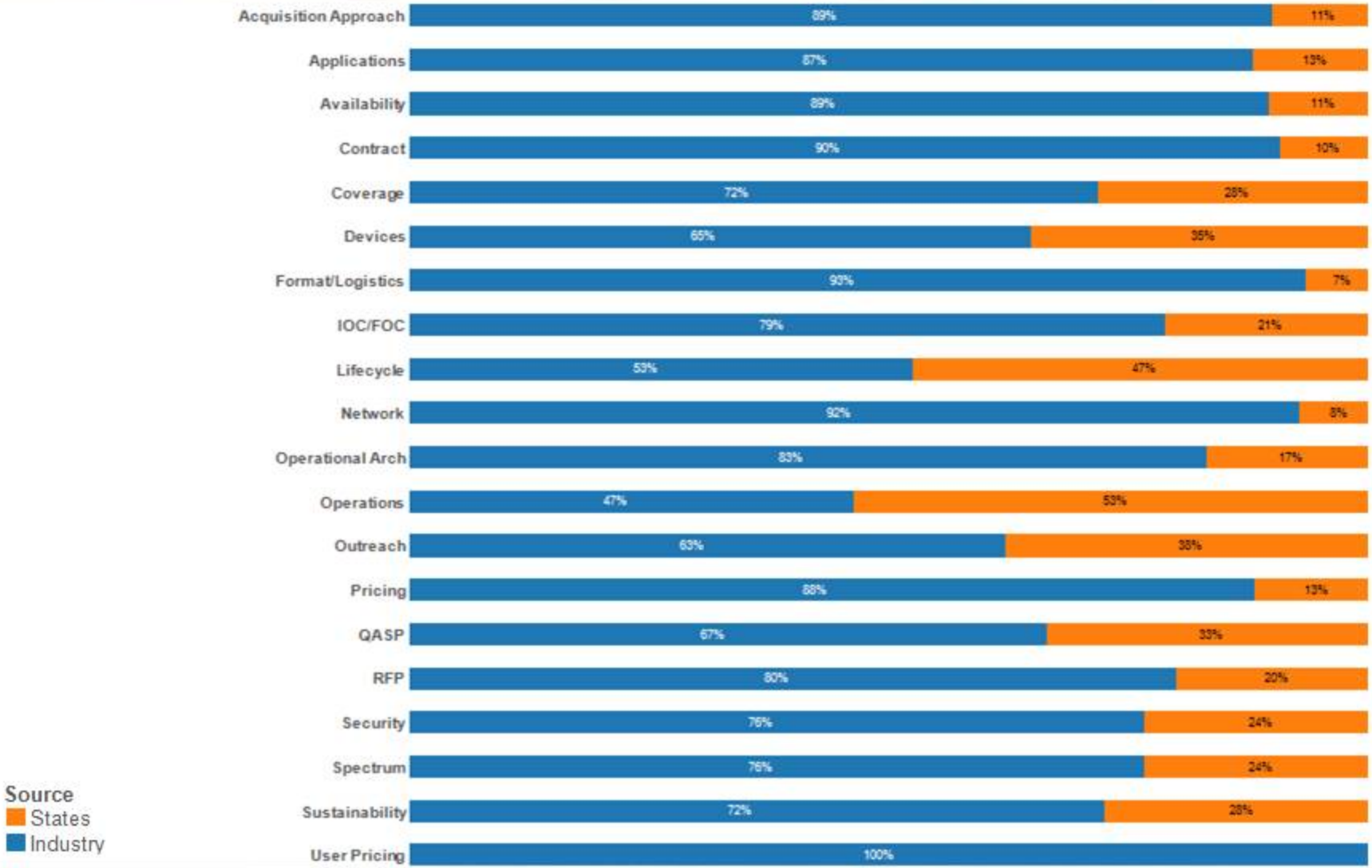
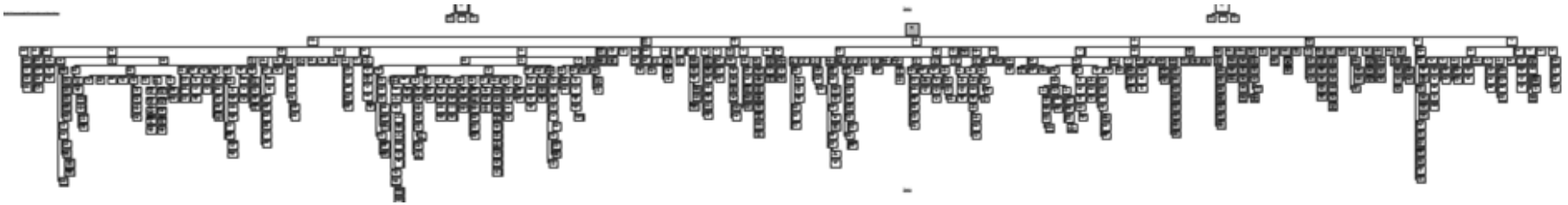
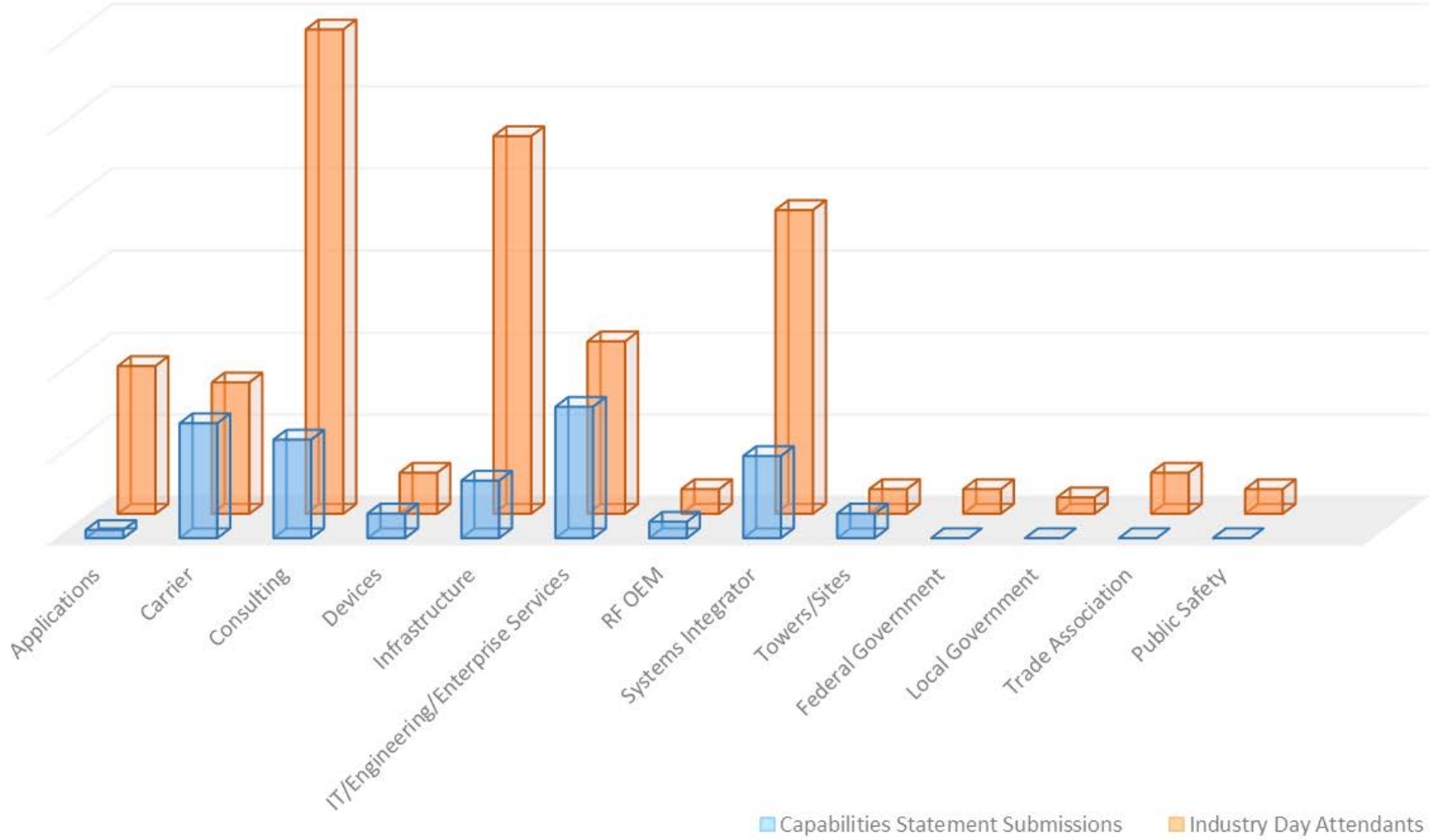
Special Notice Questions by Topic and Source



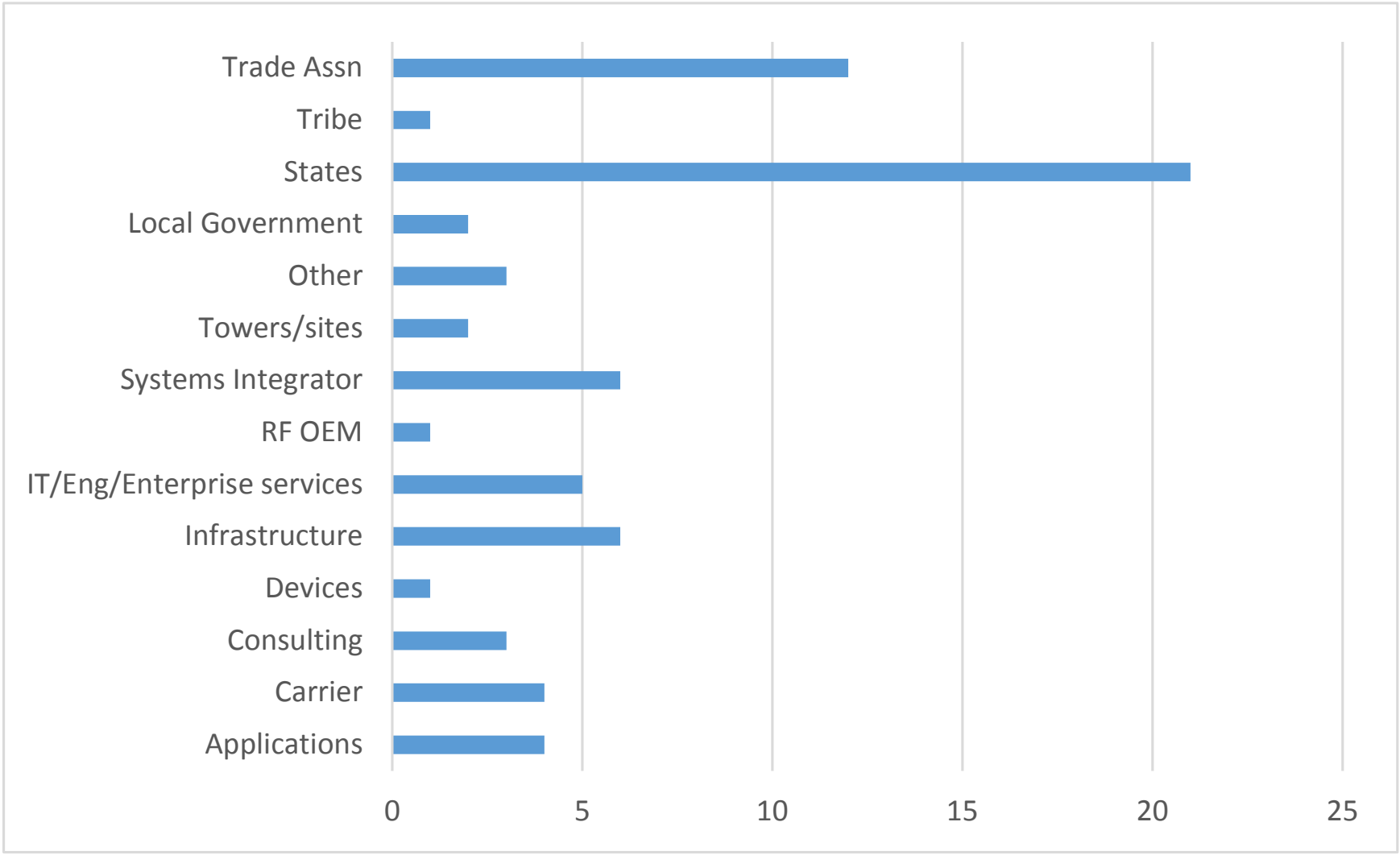
Managing Inputs into the Special Notice and Draft RFP documents



Capabilities Statement Submissions and Industry Day Attendants



Comments Received by Type of Respondent



FirstNet's Statement of Objectives Envisions a World Class Public Safety Network

Build, Deploy, Operate & Maintain the NPSBN

Financial Sustainability

Compelling & Competitively Priced Services

Device Ecosystem

Application Ecosystem

Accelerate Speed to Market

User Service Availability

Service Capacity

Cyber Security

Priority Services

Integration Of Opt-out State RANs

Integrate Existing State/Local/ Commercial/ Federal Infrastructure To Support NPSBN Services

Lifecycle Innovation

Program and Business Management

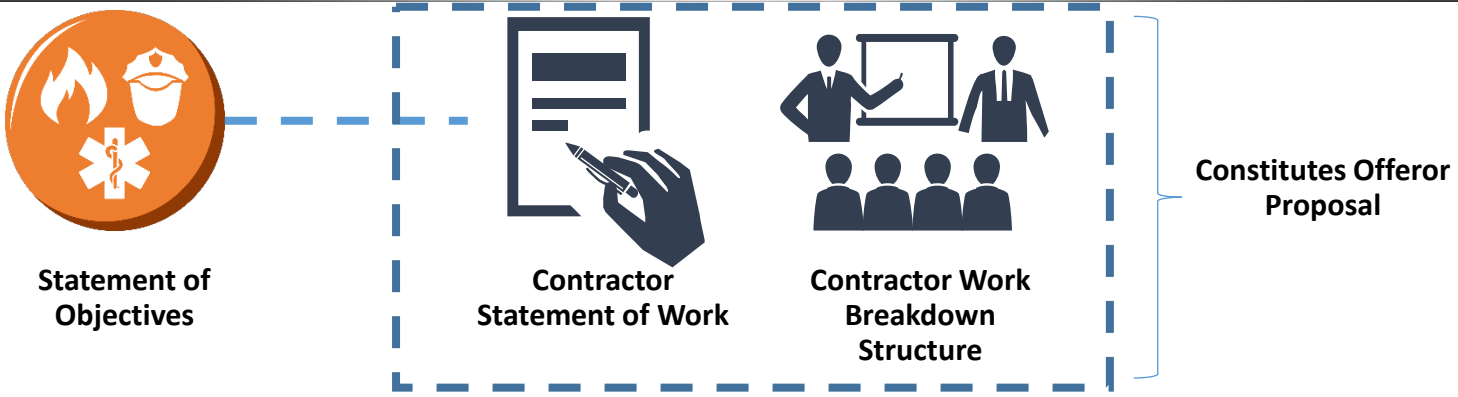
Customer Care and Marketing

Facilitate FirstNet's Compliance With The Act & Other Laws

Multiple Objectives Provide Opportunities to Team

Contractor Capabilities

Objectives Translate into Offeror Authored Requirements



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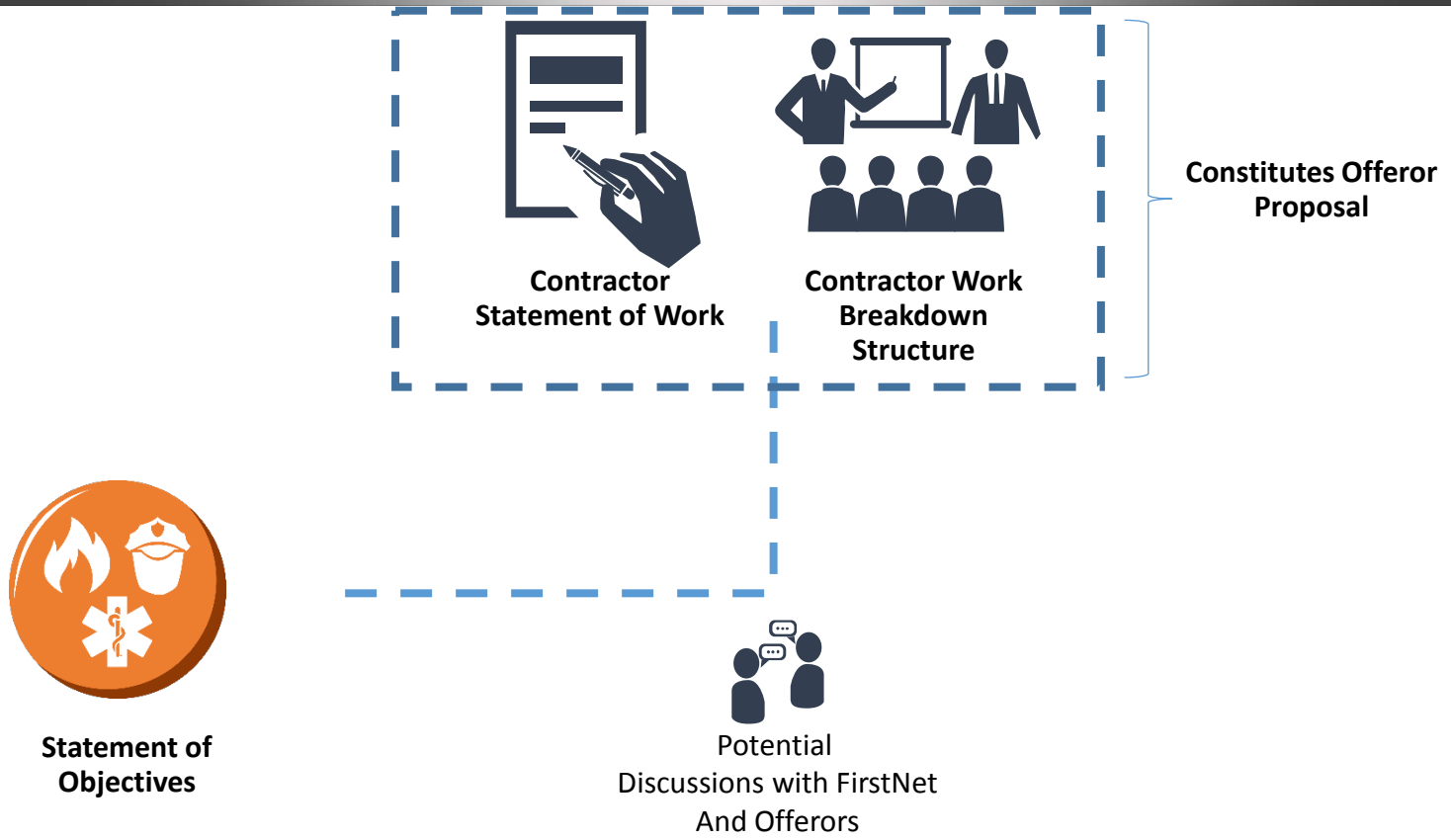
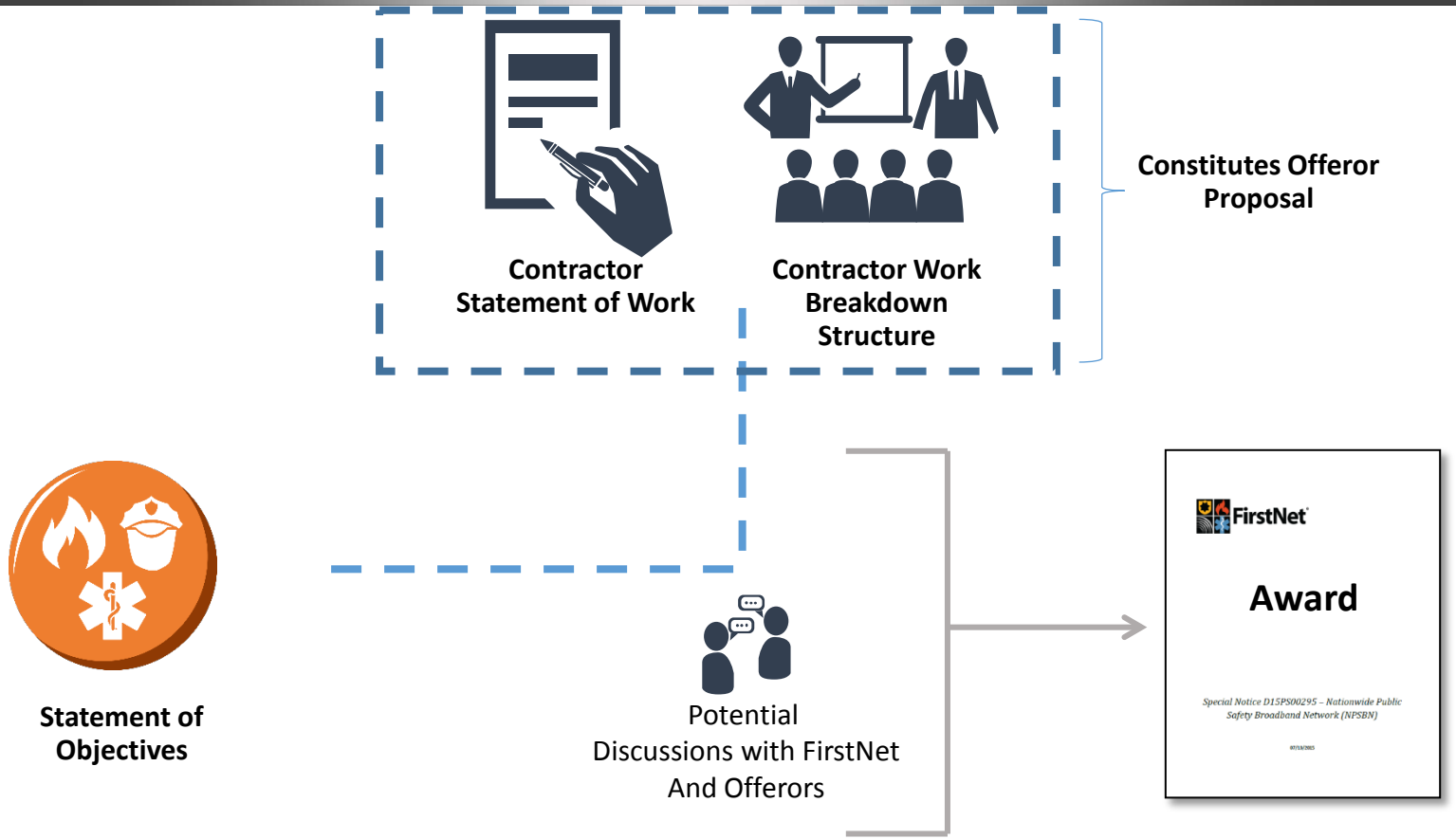
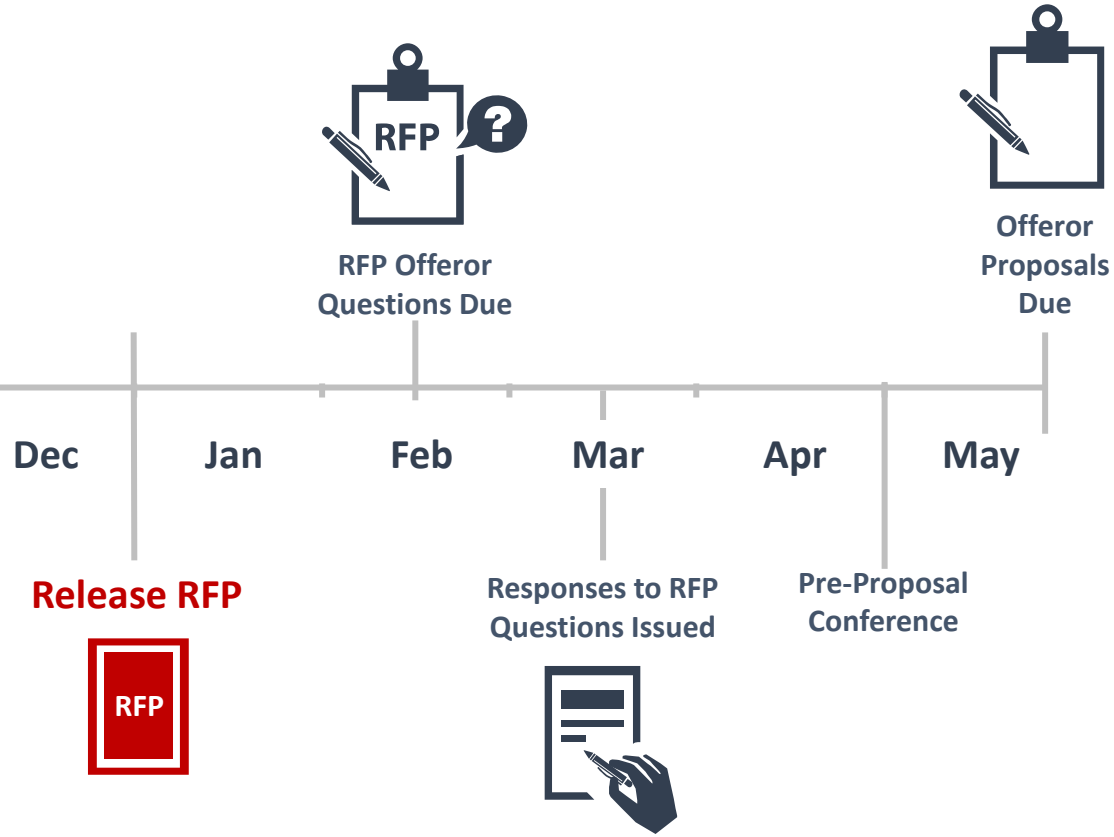


Those Requirements are Negotiated to Become an Award



The State Plans and Award are Developed Together



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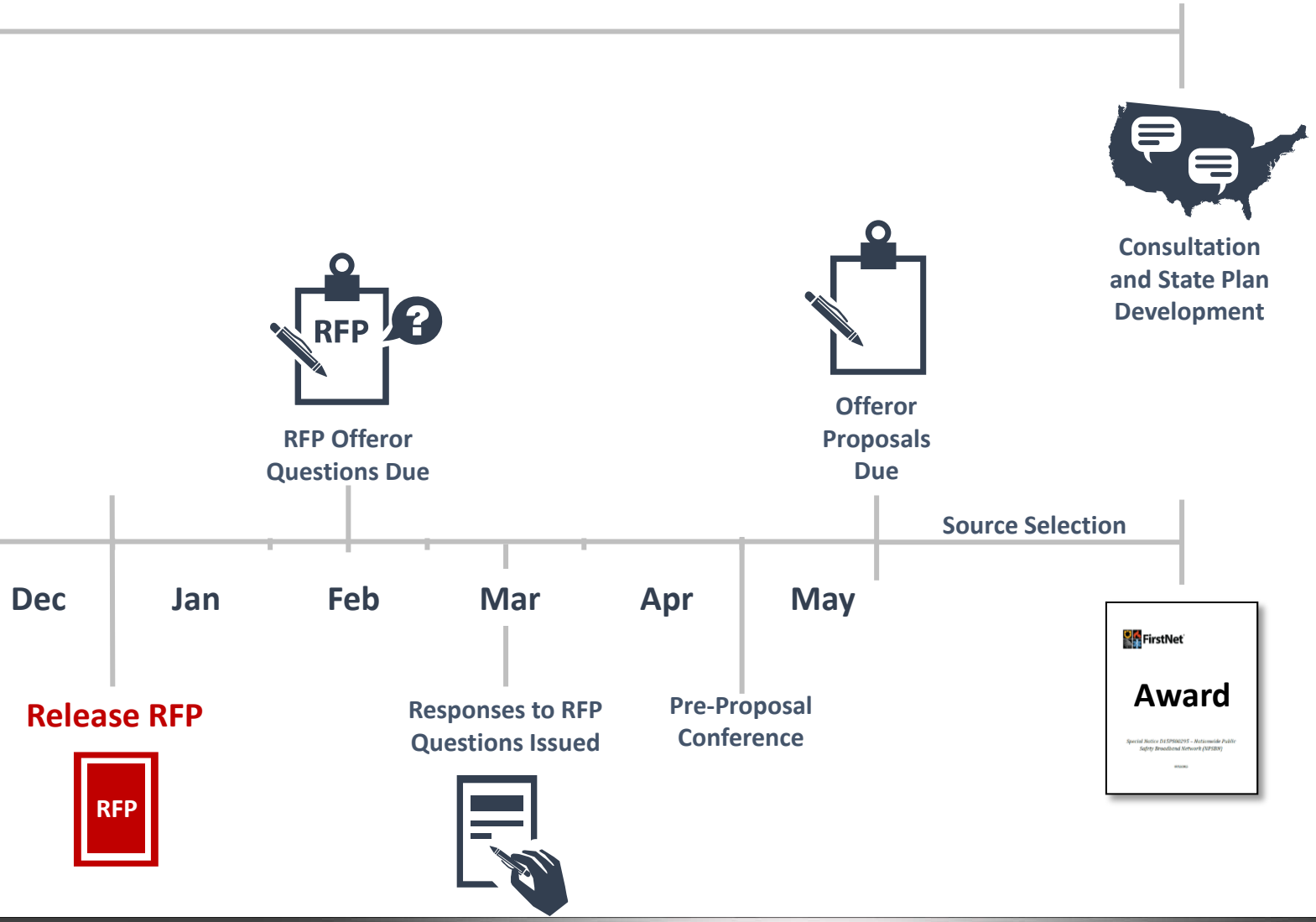

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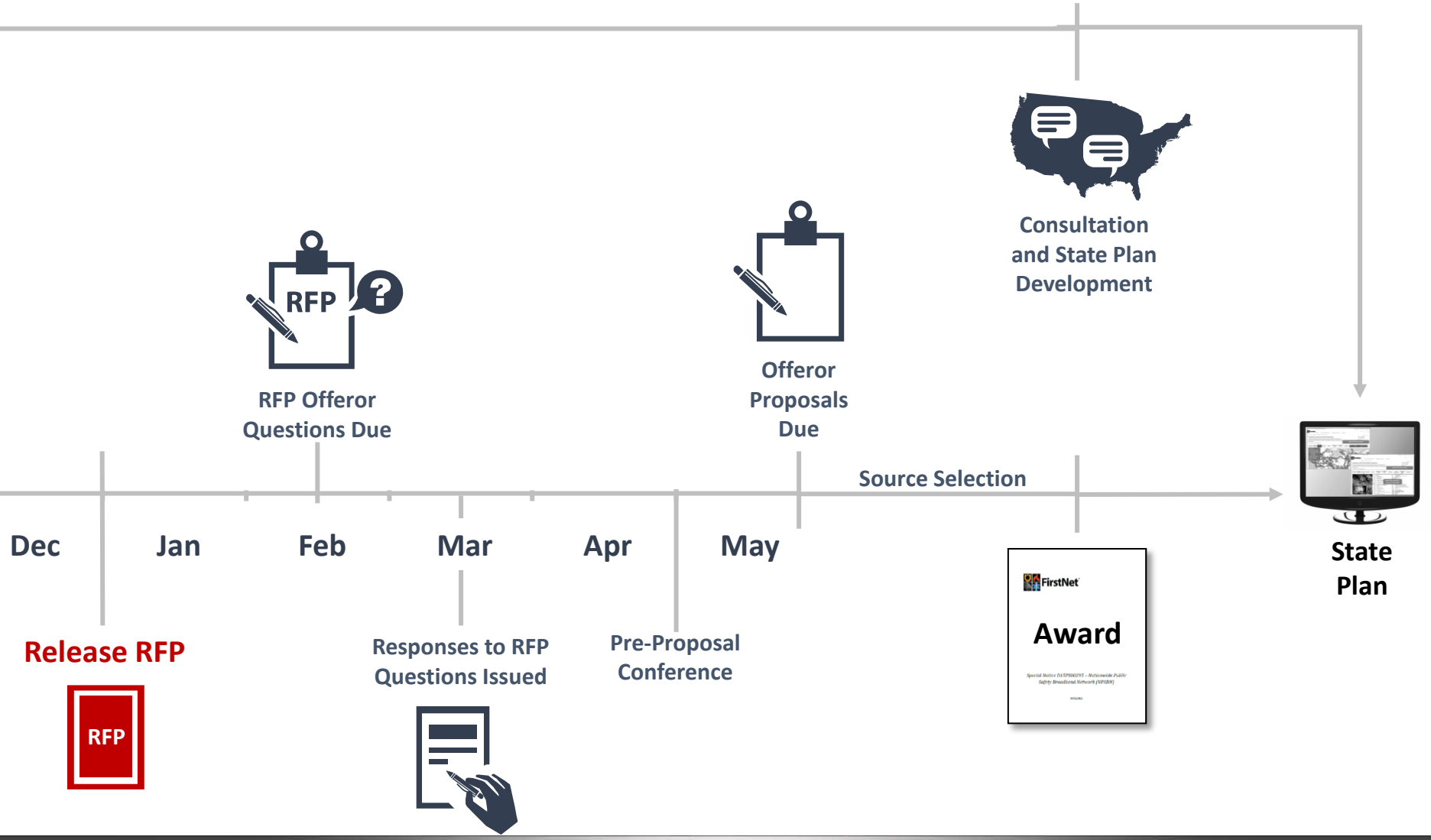
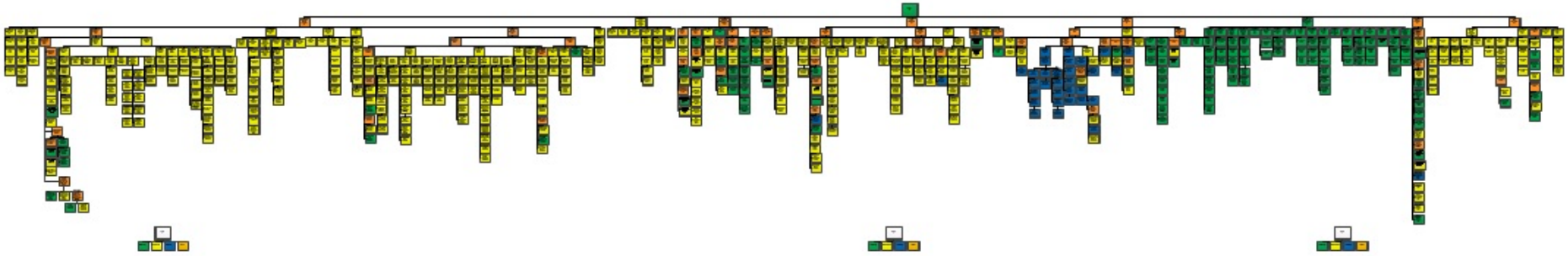
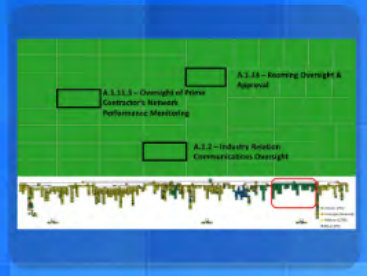


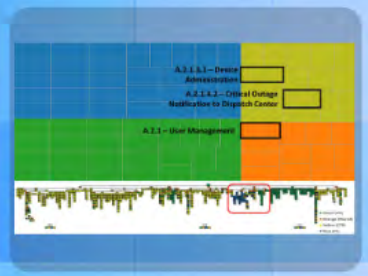
Operational Architecture

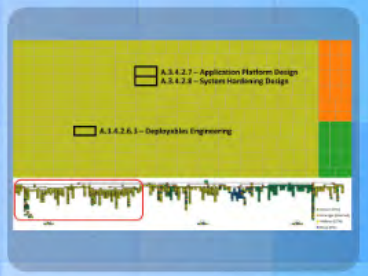
Zachary Smith
Emergency Management Specialist

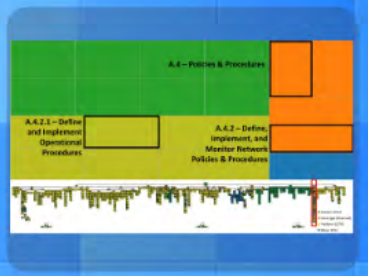
Operational Architecture Inputs and Analysis

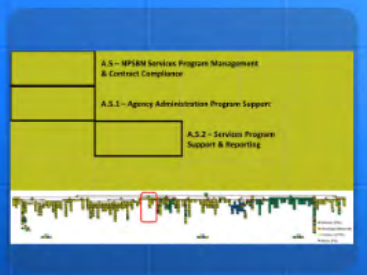


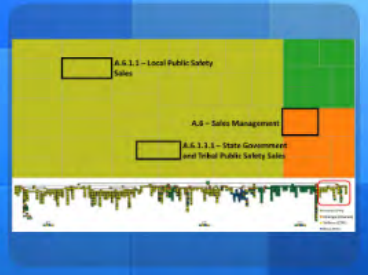


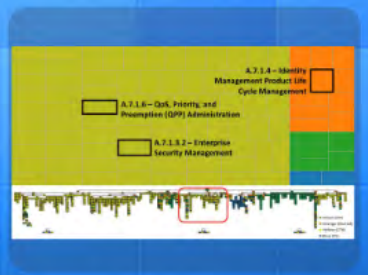


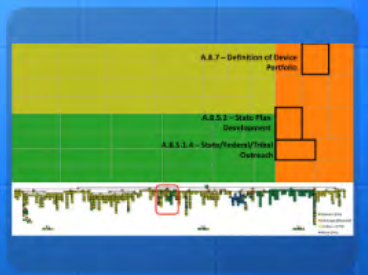












FirstNet®
Operational Architecture

OA Response Metrics

- 10,000+ Responses
- 9,000+ Comments
- 60% Respondents provided input to over half the OA

OA Common Understanding

Blue, Green, Yellow, Orange

Functions represent Scope

Color = Ownership ≠ Participation

Function ≠ Employees

Viewed from multiple perspectives

OA Common Understanding

Blue, Green, Yellow, Orange

Functions represent Scope

Color = Ownership ≠ Participation

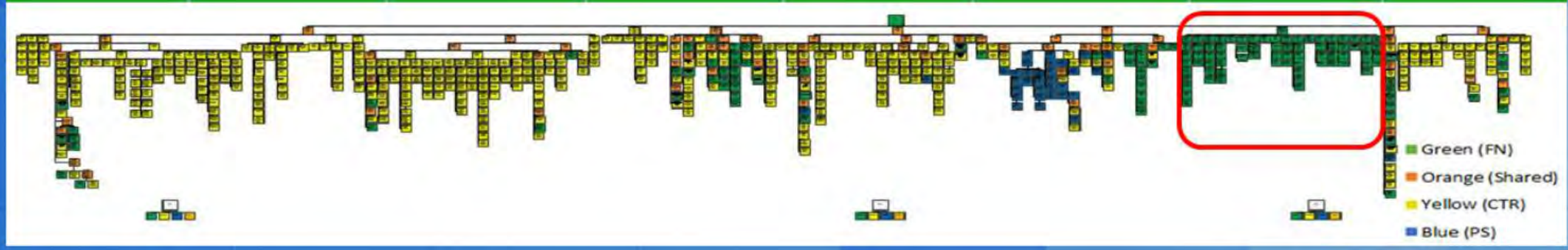
Function ≠ Employees

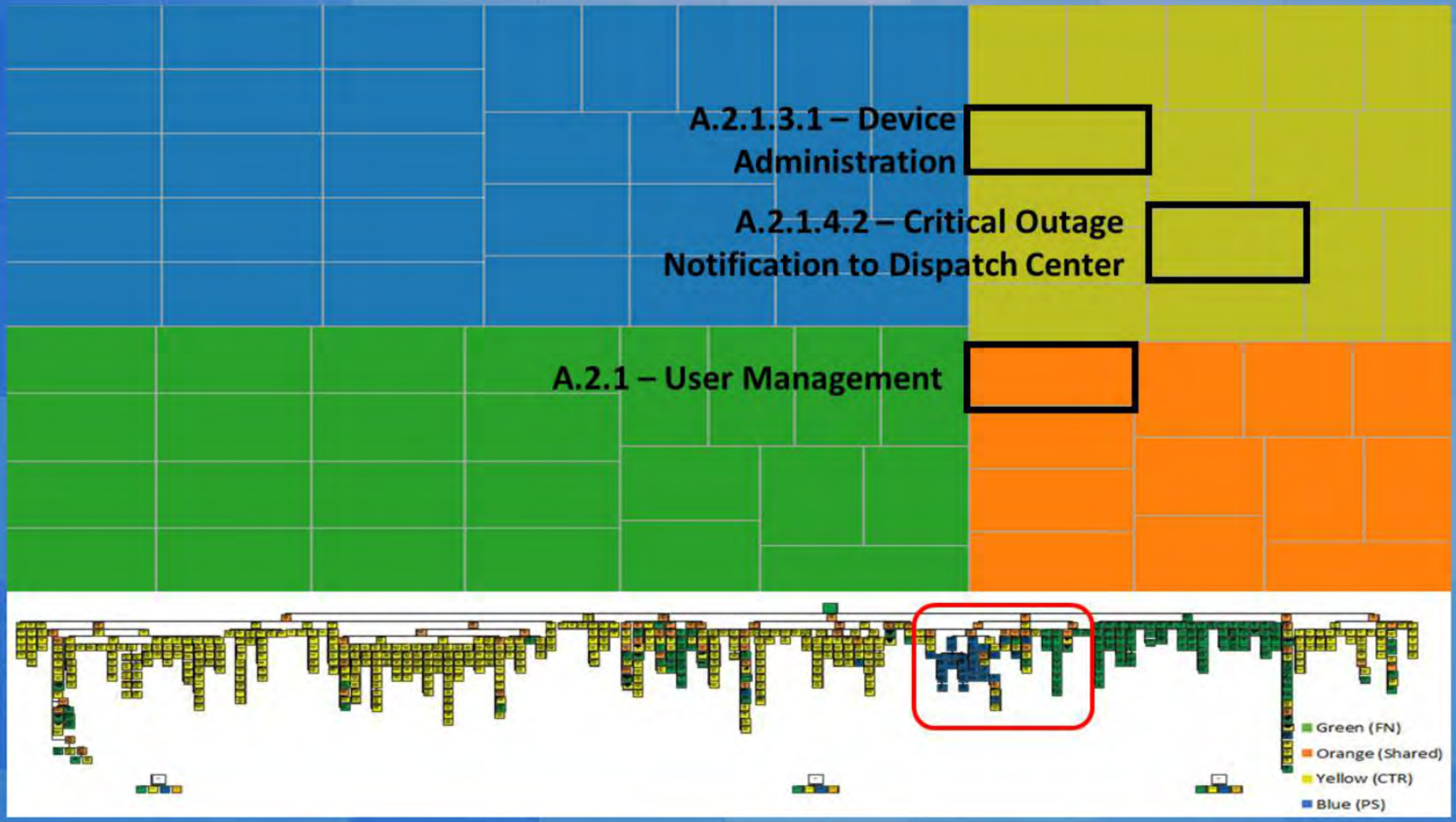
Viewed from multiple perspectives

A.1.14 – Roaming Oversight & Approval

A.1.11.3 – Oversight of Prime Contractor's Network Performance Monitoring

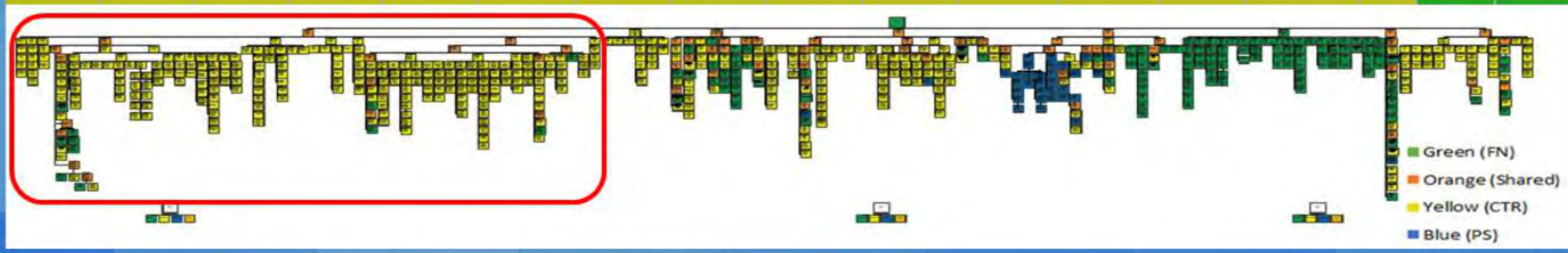
A.1.2 – Industry Relation Communications Oversight




A.2.1.3.1 – Device Administration
A.2.1.4.2 – Critical Outage Notification to Dispatch Center
A.2.1 – User Management
Green (FN)
Orange (Shared)
Yellow (CTR)
Blue (PS)

A.3.4.2.7 – Application Platform Design
A.3.4.2.8 – System Hardening Design

A.3.4.2.6.3 – Deployables Engineering



A.4 – Policies & Procedures

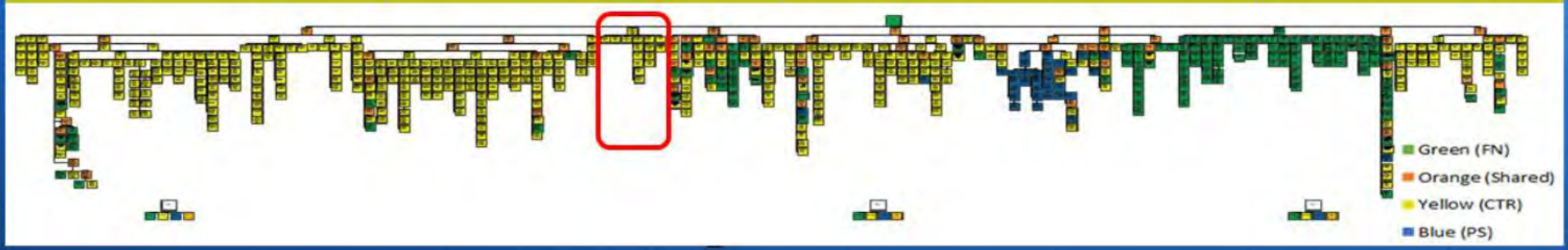
A.4.2.1 – Define and Implement Operational Procedures

A.4.2 – Define, Implement, and Monitor Network Policies & Procedures

A.5 – NPSBN Services Program Management & Contract Compliance

A.5.1 – Agency Administration Program Support

A.5.2 – Services Program Support & Reporting



A.6.1.1 – Local Public Safety Sales

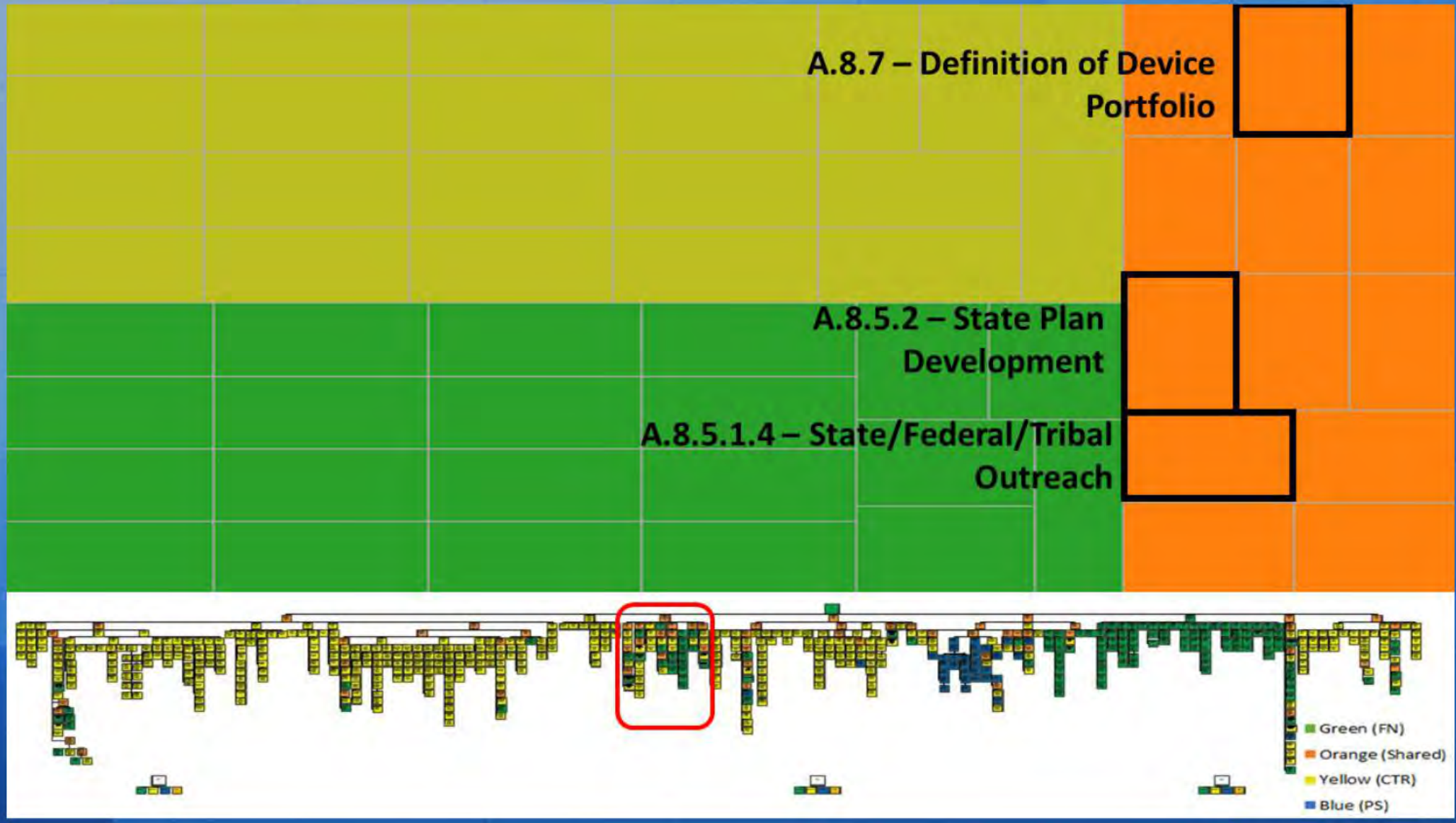
A.6 – Sales Management

A.6.1.3.1 – State Government and Tribal Public Safety Sales

A.7.1.4 – Identity Management Product Life Cycle Management

A.7.1.6 – QoS, Priority, and Preemption (QPP) Administration

A.7.1.3.2 – Enterprise Security Management


A.8.7 – Definition of Device Portfolio
A.8.5.2 – State Plan Development
A.8.5.1.4 – State/Federal/Tribal Outreach
Green (FN)
Orange (Shared)
Yellow (CTR)
Blue (PS)

FirstNet Cyber Security Concepts

Glenn Zimmerman
Senior Security Specialist

Special Notice: Cyber Security with Appendix C-10

- The Cyber Security challenges inherent in the NPSBN require a paradigm shift in how a network of this type is protected. FirstNet seeks input to effect this paradigm shift.

- FirstNet will release:
  - A Special Notice on Cyber Security
  - Draft Appendix C-10: Cyber Security Objectives

- FirstNet seeks from Industry and Stakeholders:
  - Feedback on our proposed cyber security objectives
  - Feedback on our proposed documents required to demonstrate an offeror's ability to meet the FirstNet cyber security objectives

Cyber Security Objectives

- Our initial list of documents that would demonstrate how an offeror would realize FirstNet's cyber security objectives:
  - Cyber Security Architecture
  - Cyber Security Lifecycle
  - Cyber Security Methodology
  - Cyber Security Engineering Plan
  - Risk Analysis and Mitigation Plan
  - Cyber Security Incident Response Plan
  - Continuous Monitoring and Mitigation Methodology
  - Cyber Security Testing and Certification Plan
  - Network Management and Configuration Management Policy

Device and Application Ecosystems

Mark Golaszewski
Director of Applications

Executive Summary

Strategy

- Create devices and apps that enable public safety user adoption
- Leverage scale and technologies of the commercial market

Vision

- Needs of public safety to drive continuous innovation
- Support for a vibrant public safety developer community
- Secure coexistence of FirstNet and commercial apps on devices

Offer Expectations

- Proposals for all components of the ecosystems
- Best-of-breed solutions
- Growing portfolio of public safety devices and apps

Device Portfolio Vision

All inclusive, building on much larger economies of scale to drive lower cost

	Portables	Mobile Data	M2M & Specialized	Accessories
Device Types				
Functions	• Smartphones (standard & low cost) • Tablets • Rugged	• In-Vehicle Routers • Mobile Coms Unit (MCU) • Modems (USB, mPCIe) • Hotspots/MDTs • High Power	• M2M • Rugged • Unmanned • Cameras • Sensors	• Wearables • Smart devices • Rugged cases • Battery packs • Chargers
Connectivity	• LTE, 3G, 2G • Wi-Fi, Wi-Gig • Bluetooth • NFC • Tethering	• LTE, 3G, 2G • Wi-Fi, Wi-Gig • Satellite Fallback • Ethernet • USB	• LTE, 3G, 2G • Wi-Fi, Wi-Gig • Range Extension • Satellite Fallback	• Bluetooth • Wi-Fi, Wi-Gig • NFC • Miracast • PAN Connectivity

Applications Strategy

Enable Unique PS Applications

- Resilient, reliable, and easy-to-use mission-critical capabilities

App Development Driven by Public Safety Needs

- Expand and support a vibrant PS app developer community

Provide Lifecycle Management of Applications

- Ecosystem including an applications platform, local control, and security

Applications Vision

Users

RAN

EPC

Network Service Platforms

Applications Ecosystem

Applications

Developers

Devices

Applications Ecosystem Vision

FirstNet®

ICAM

ICAM
Identity, Credential, & Access Management

Federated ICAM

App Dev Env

Platform for developers

Test & Cert

Certify as public safety grade

App Store

Coexist with commercial apps

SDP

Application Layer

Open APIs

Service Delivery Platform

Network Services

Cloud Services

Cost-effective agency options

Local Control

Agency controls

Mobility Mgmt

App and device management

Offer Expectations

Proposals for Devices and Apps

- Solutions for all components of devices and apps ecosystems
- Plan for an expanding portfolio of devices
- Roadmap for a thriving, innovative app developer community

Best-of-breed solutions, partners

- Evolving ecosystems on par or surpassing commercial market
- Partnering where necessary to develop world class solutions

Public safety user success plans

- Device and apps plans that enable public safety user adoption
- Positive user experience: ease-of-use, training, rich set of devices, services, and apps

Instructions and Evaluation in the RFP

Terrie Callahan
Contracting Officer

Instructions to Offerors (Section L)

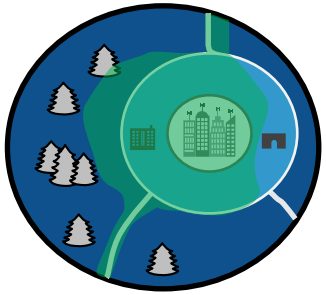
- The RFP will ensure an impartial and consistent evaluation

- Section L includes instructions, conditions, and any notices that are particular to the FirstNet acquisition and process.
  - Provides submission instructions and logistics regarding:
    - Technical and Price considerations
    - Pre-proposal conference logistics and dates
    - Due dates for questions on the RFP
    - Proposal due date
    - Oral presentations
    - Technical demonstrations

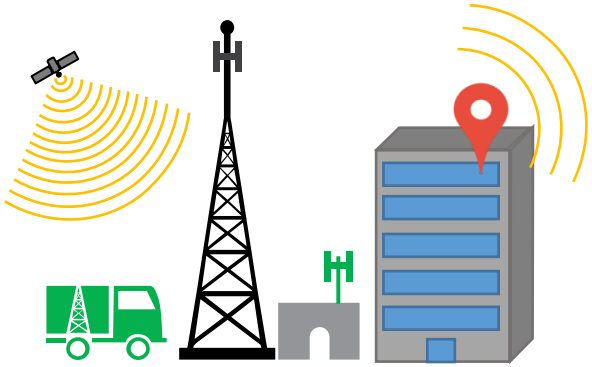
Evaluation (Section M)

- Contains the evaluation factors, and any sub-factors, that proposals will be evaluated against
  - Identifies evaluation factor order of importance
  - Can include “go, no-go” phase
- Identifies the basis for award
  - Best value: obtain the highest technical quality considered necessary to achieve the objectives
- Identifies the evaluation process
  - Multiphase approach
  - Oral Presentations/Technical Demonstrations
  - Competitive Range Determination

Evaluation Tied to Objectives



Coverage and Capacity



Technical Solution, including Products and Architecture

Business Management

Past Performance

Value Proposition

Thank You

Q&A