NATIONAL 911 PROGRAM
FEBRUARY 14, 2017

State of 911 Webinar Series

- Designed to provide useful information about Federal and State participation in the planning, design, and implementation of Next Generation 911 (NG911) coupled with real experiences from leaders overseeing these transitions throughout the country

- Webinars are held every other month and typically include presentations from a Federal-level 911 stakeholder and State-level 911 stakeholder, each followed by a 10-minute Q&A period

- For more information on future webinars, access to archived recordings and to learn more about the National 911 Program, please visit 911.gov

- Feedback or questions can be sent to: National911Team@mcp911.com
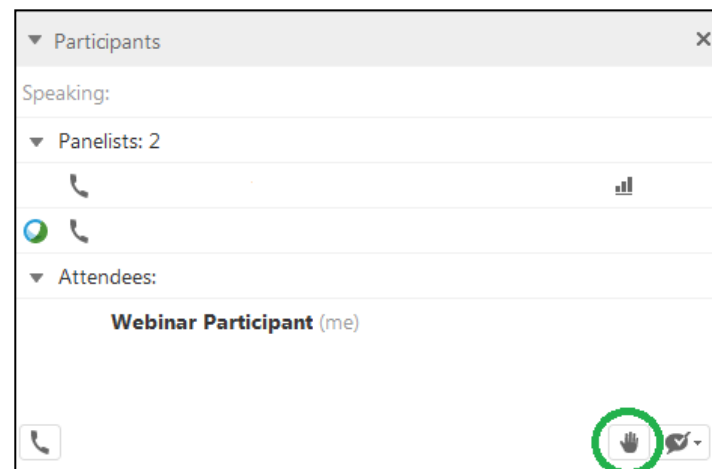
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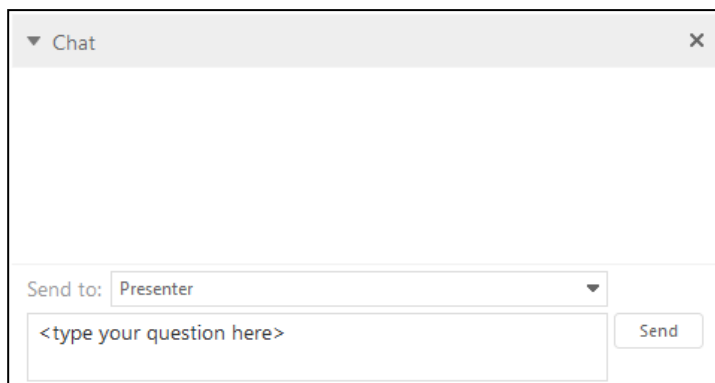
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Federal Communications Commission
Public Safety and Homeland Security Bureau

Is Your PSAP NG911 Ready?
Recommendations of the FCC's Task Force on Optimal PSAP Architecture

State of 911 Webinar Series

National 911 Program

February 14, 2017

Steve Souder
Chair, TFOPA
stevesouder@atlamnticbb.net

Tim May
Public Safety and Homeland Security Bureau, FCC
timothy.may@fcc.gov
(202) 418-1463

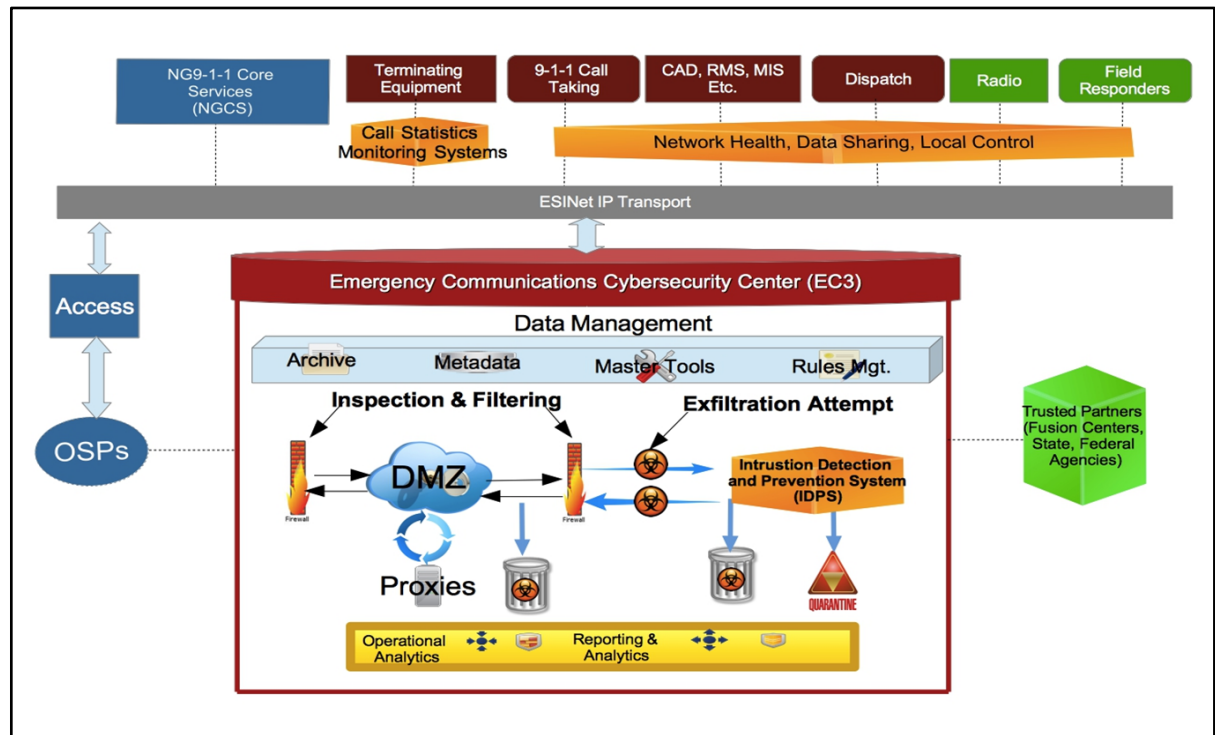# Task Force on Optimal PSAP Architecture (TFOPA)

- Chartered December 2014 – December 2016
- Three Working Groups
  - Cybersecurity
  - Optimal NG911 Architecture Implementation
  - Funding/Optimal Resource Allocation
- Membership
  - PSAPs; Federal, state, Tribal, and local authorities; wireline and wireless carriers; 911 system service providers; technology vendor community
- Key Deliverables
  - January 2016: Consolidated Report and Recommendations
  - December 2016: Three Supplemental Reports and Recommendations
    1. Securing PSAPs During NG911 Transition: (EC3) Concept
    2. NG911 Funding Sustainment Model
    3. NG911 Readiness Scorecard
       - Practical guide to ESInet deployment
       - Guidance regarding NG911 workforce and education challenges

TFOPA Recommendation:
Emergency Communications Cybersecurity Center (EC3)

- **EC3 Concept**

- **Cost Models**

- **Information Sharing Environment (ISE)**

  - The people, projects, systems, and agencies that enable responsible information sharing for national security

  - Sensitive But Unclassified (SBU) information is a cornerstone for decision making across ISE communities

  - Goal is to enable Federal, State, Local, and Tribal ISE communities to share SBU information regardless of who owns the underlying systems or information

TFOPA Recommendations to Secure PSAPs During NG911 Transition

Timing	Recommendations
Near Term	Develop and fund pilot demonstrations of an EC3 including Network and Wireless/Wireline sensors and Intrusion Detection and Prevention System (IDPS) functionality
	Encourage participation in Information Sharing Environments Appendices A and B in WG1 Supplemental Report - https://transition.fcc.gov/pshs/911/TFOPA/TFOPA_WG1_Supplemental_Report-120216.pdf
	Support research into additional capabilities for integration with the EC3 model
	Investigate additional network and wireless carrier sensor implementations for alternate technologies, best practices, and lessons learned
	911 Authorities should inventory their systems and participate in Critical Infrastructure Cyber Community Voluntary Program - https://www.us-cert.gov/ccubedvp
	Encourage 911 Authorities to investigate and discover programs mentioned in this and the original TFOPA reports within their regions
Mid-Term	Develop a comprehensive plan or a roadmap, for build out of EC3 and/or cybersecurity core to protect NG911 core services
	Provide a gap analysis on the currently available capabilities and the ideal state of deployment at a national level (supportive of local control and enabled through state-level coordination)
	Require carriers, vendors and application developers to participate in cybersecurity best practices when interfacing with NG911and other PSAP/PSCC systems
Long Term	Complete build out and deployment of EC3s on national level and interconnect all PSAPs, PSCCs, EOCs, and potentially FirstNet

TFOPA Recommendation:
Funding Sustainment Model

- Common Costs of 911 Systems
  - The Nature of 911 Costs and Cost Recovery
  - Components/Elements of 911 Cost
- Funding Mechanisms and Revenue Sources
- Potential New Mechanisms: Federal Grants, State Grants, and Network Connection Fee
- Appendices
  - Statewide Procurement of 911 and NG911 Services and Systems
  - PSAP & 911 Authority Equipment
  - 911 Fees on Communication Services (by State)
  - Federal Financial Assistance Programs Funding for Emergency Communications
  - Commercial Communications Services Market Data
  - 911 Grant Program

# TFOPA Recommendation: Funding Sustainment Model

911 / NG911 Costs	
Cost Category	**Cost Amount**
Business Domain:	
Planning	
Governance	
Policy	
Procurement	
Implementation	
Data Domain:	
MSAG & ALI	
GIS	
Additional Data	
Applications/Systems & Infrastructure Domains:	
Physical Facilities	
Network Infrastructure	
Call Routing	
Call Handling	
Recording and Logging	
Dispatch Solutions	
CAD Systems	
Mapping	
Other PSAP Equipment	
Security Domain:	
Physical Security	
Systems Security	
Data Security	

Operational/Performance Domain:	
Training	
Contingency Plans	
Other Services	
Personnel	
Total Costs =	
911 / NG911 Funds	
Funding Source	**Funding Amount**
General Revenue Tax Funds:	
City & County Taxes	
State Taxes	
Fees on Communications Services:	
Wireline Service Fees	
Post-paid Wireless Service Fees	
Pre-paid Wireless Service Fees	
VoIP Service Fees	
Broadband Service Fees (if applicable)	
Grant Funds:	
Federal Grants	
State Grants	
Other Sources: (list; e.g., dedicated tax funds)	
Total Available Funds =	
Total Costs =	
Funding Surplus or Shortfall =	

The NG911 Ecosystem End State: How to Get There?
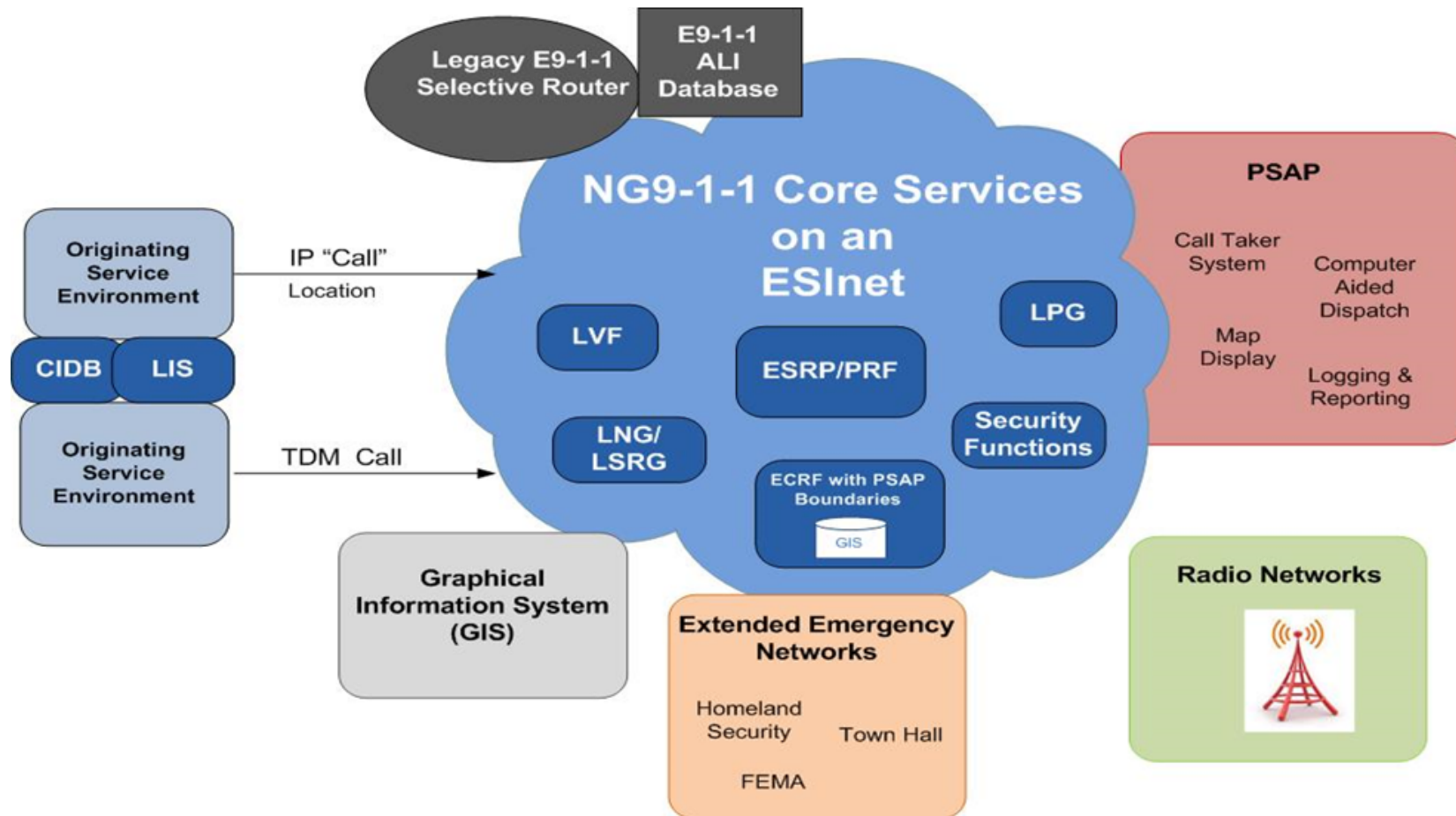
TFOPA Recommendation: NG911 Readiness Scorecard

- ## Framework for NG911 Planning
  - ### NG911 Self-Assessment Matrix

Next Generation 9-1-1 Self-Assessment			
	NG9-1-1 Maturity State Self-Assessment		
Category	**Status**	**Maintained/Provided by**	**Notes**
Governance			
Governance Structure Design & Framework			
Strategic Planning			
Coordination			
Funding & Resources			
Routing & Location			
Selective (ESN) Routing			
IP Selective (ESN) Routing			
Geospatial Routing (utilizing best available location)			
ALI DBMS			
LIS			
National Forest Guide contains Jurisdictional ESInet Authoritative Boundary			
If applicable, Hierarchical Forest Guides Populated			

NG911 Implementation Continuum

- Scorecard utilizes a multi-step implementation model consisting of the following implementation maturity states:

    - Legacy

    - Foundational

    - Transitional

    - Intermediate

    - Jurisdictional End State

    - National End State

TFOPA Recommendation:
NG911 Readiness Scorecard

NG911 Essential Elements

- Scorecard identifies essential elements which are necessary to be present within each NG911 Implementation Maturity State

- Essential elements are categorized into the following areas of interest:

  - Governance

  - Routing & Location

  - GIS Data

  - NG Core Service Elements

  - Network

  - PSAP Call Handling System and Applications

  - Security

  - Operations

  - Optimal Interfaces

TFOPA Recommendation: NG911 Readiness Scorecard - GIS Breakout

Next Generation 911 Readiness Scorecard						
	NG911 Implementation Maturity State					
Requirement	**Legacy**	**Foundational**	**Transitional**	**Intermediate**	**i3 End State - Jurisdictional**	**i3 End State - National**
Governance						-
Routing & Location	-	-	-	-	-	-
GIS Data						-
NG911 Dataset Creation Project Planned		X				-
NG911 Dataset Creation Project in-Progress		X	Optional			-
NG911 Dataset Complete				X	X	X
Data formatted for Location Verification Function (LVF)			Optional	Optional	X	X
Data formatted for Emergency Call Routing Function (ECRF)			Optional	X	X	X
Data formatted for Policy Routing Function (PRF)			Optional	X	X	X
Jurisdictional Boundaries exported to neighboring ESInets					Optional	X
NG Core Service Elements	-	-	-	-	-	-
Network						-
PSAP Call Handling System & Applications	-	-	-	-	-	-
Security						-
Operations						
Optional Interfaces						

Next Steps

- **Educate and Engage**
  - State and local 911 authorities, elected officials, and must be educated and engaged to better understand and plan for the challenges they have ahead of them through the evolution of steps to NG911 End State

- **Plan**
  - Start planning today – technology transition is well underway

- **Coordinate**
  - Seek out and exploit common ground among stakeholders for areas of shared effort and economies of scale

- **Demonstrate**
  - Commit to pilot projects – EC3 Concept

TFOPA Resources

Task Force on Optimal PSAP Architecture	https://www.fcc.gov/about-fcc/advisory-committees/general/task-force-optimal-public-safety-answering-point
Consolidated Report and Recommendations (January 2016)	https://transition.fcc.gov/pshs/911/TFOPA/ TFOPA_FINALReport_012916.pdf
Working Group 1 Supplemental Report – Optimal Cybersecurity Approach for PSAPs (December 2016) Chair: **Gerald "Jay" English, ENP**	https://transition.fcc.gov/pshs/911/TFOPA/ TFOPA_WG1_Supplemental_Report-120216.pdf
Working Group 2 Supplemental Report – NG911 Readiness Scorecard (December 2016) Chair: **David L. Holl, ENP**	https://transition.fcc.gov/pshs/911/TFOPA/ TFOPA_WG2_Supplemental_Report-120216.pdf
Working Group 3 Supplemental Report – Funding Sustainment Model (December 2016) Chair: **James D. Goerke**	https://transition.fcc.gov/pshs/911/TFOPA/ TFOPA_WG3_Supplemental_Report-120216.pdf

Q&A Period

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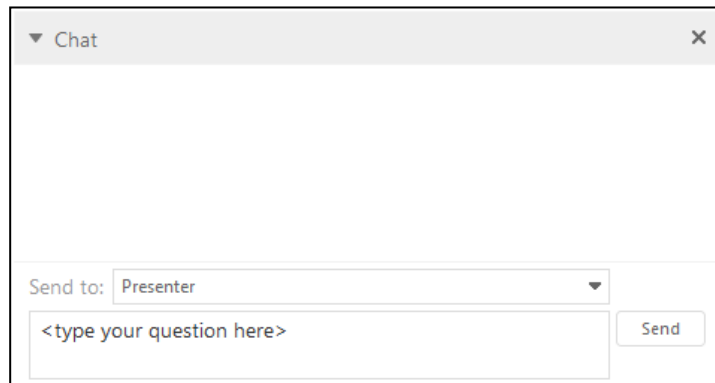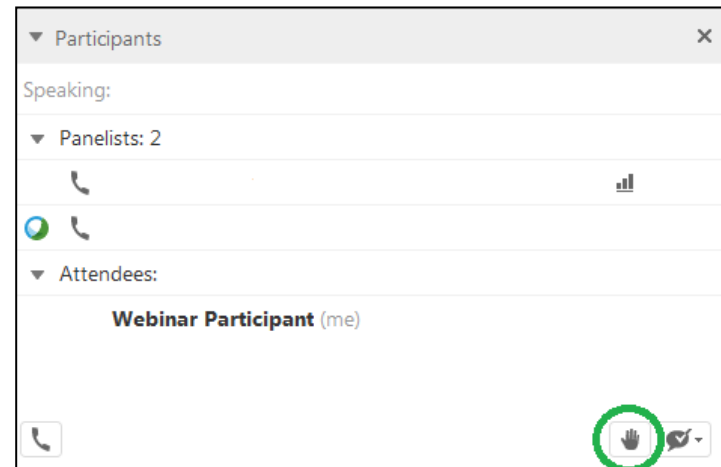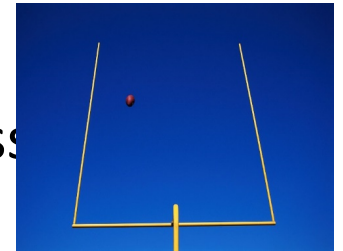
NG911 Interstate Playbook
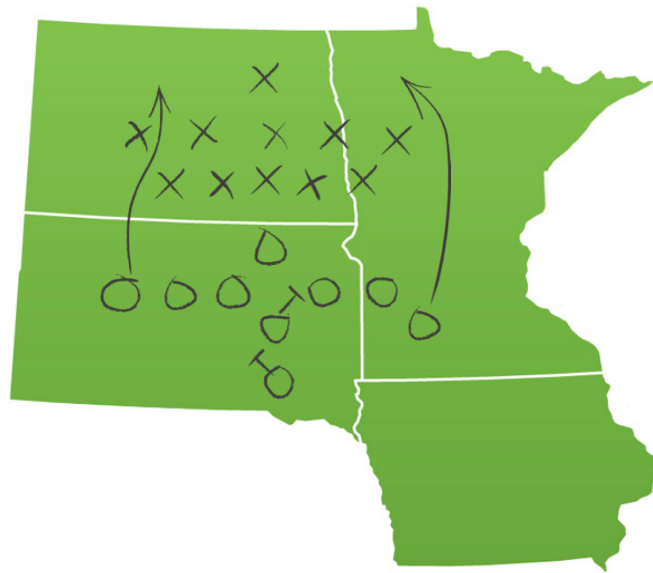
NG911 Interstate Playbook

❑ Facilitated by the National 911 Program, 4 Midwest states are working the issues to develop an "NG911 Interstate Playbook"

❑ The "Team"

- Minnesota
- North Dakota
- South Dakota
- Iowa
- National 911 Program
  ➢ Mission Critical Partners as technical SMEs and Playbook documenters

NG911 Interstate Playbook

The "Goal"

❑ Internet Protocol (IP)-to-IP, 911 call transfers across state boundaries, using multiple network and database vendors, for all types of calls, with call data

- o Interim transitional approach (IP Selective Router [IPSR] to IPSR) and a long-term roadmap to full i3 end state following standards and anticipated timeframes

❑ Identify, document and mitigate the issues, challenges and opportunities of interconnecting state-to-state Emergency Services IP Networks (ESInets) to improve 911 interoperability, leveraging the experiences gained for other states

- o Chapter 1: MN and ND 911 wireless transfers across state boundaries with ALI

NG911 Interstate Playbook
Chapter 1: Connecting Minnesota and North Dakota ESInets for Improved 911 Service

❑ Interoperability is a baseline to NENA i3

❑ Implementation of interfaces is not as simple as establishing connectivity and flipping a switch

❑ Operational, technical and policy issues require collaboration from multiple parties, including 911 support vendors

- CenturyLink - Service Provider

- Intrado/West - Database support coordination

- Independent Emergency Services - Database support coordination (MN)

NG911 Interstate Playbook

Chapter 1: Connecting Minnesota and North Dakota ESInets for Improved 911 Service

First Things First

- ❏ Formal Agreement – Interstate Agreement Executed
  - What's wrong with a handshake?
  - What should be included?

- ❏ Lessons Learned
  - Execution takes time
  - Create a template that works now and into the future
  - Agree on the terms
  - Understandings should be formalized
  - Lays out responsibilities of the parties
  - Provides a framework for reviewing agreements and understandings going forward

NG911 Interstate Playbook
Chapter 1: Connecting Minnesota and North Dakota ESInets for Improved 911 Service

Testing

- ❏ Test Plan Developed
    - Confirm capabilities of each wireless carrier
    - Test all cross border county combinations
- ❏ Notice to PSAP
    - Inform of activities leading to this point
    - Inform preparation tasks (cell phones and star codes)
- ❏ Schedule & Coordination
    - Coordination meetings
    - Target to test/turn-up during a few day period of time

ND / MN 911 ESInets
Pre Implementation
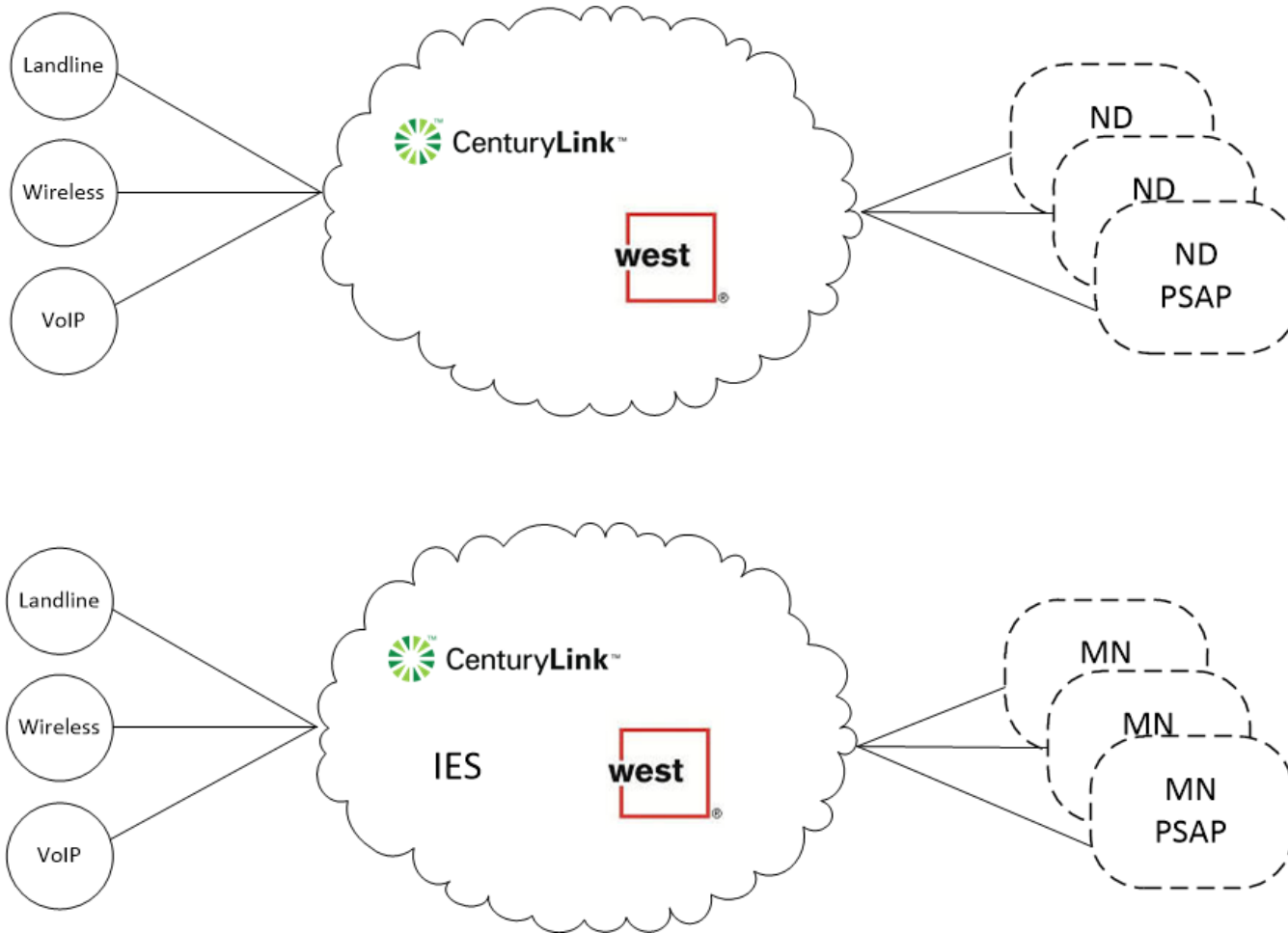
ND / MN 911 ESInets
Post Implementation
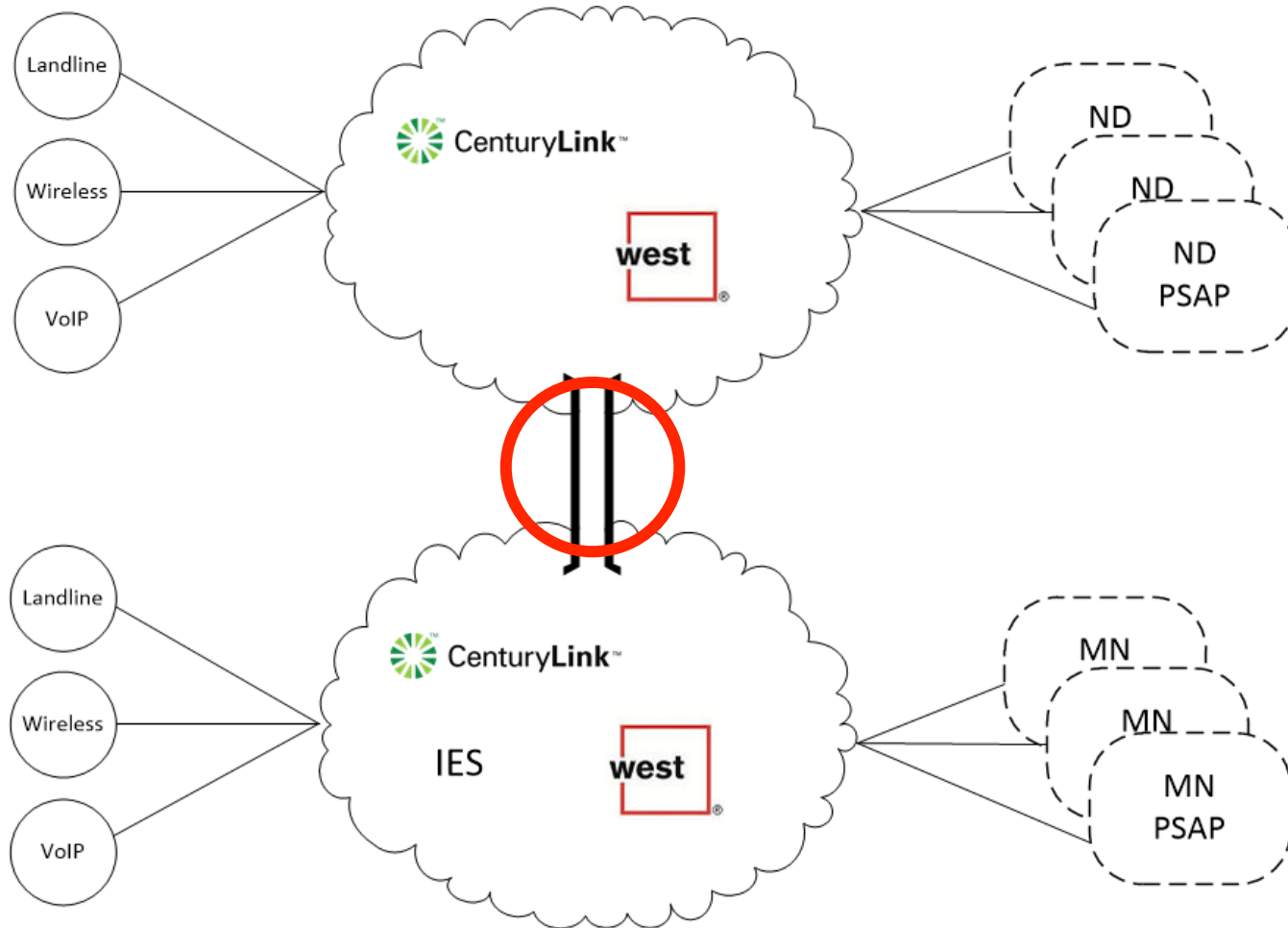
Benefits

❑ Calls transferred to neighboring state on a 911 circuit with ALI

  • Optimized call taker's workflow

    ▪ Received as a 911 call through CPE interface vs. admin line

  • Reduced response time

    ▪ Location provided in ALI vs. no location previously

❑ 3-digit star codes in ND became available to MN PSAPs and vice versa

❑ Opens up some interesting future possibilities to partner / coordinate / regionalize / backup

Challenges

❑ CPE interface / hardware buttons needed to be reprogrammed with star codes

❑ Local ALI databases in MN needed to be updated w/ pANI records to query ND ALI records after transfer to MN for PSAPs using IES as database provider

❑ Found the importance of having two onsite project technicians to assist PSAPs and confirm expected behaviors

❑ What happens if one state chooses to bring in a new NG911 SSP?

Reflection on Chapter 1

❑ Highlighted some of the real benefits associated with the long-term goal of nationwide 911 interconnectivity (network of networks)

❑ Breaks down some of the technical & operational limitations associated with state borders

❑ No need to wait for an end-state NG911 "system", there is value in working with your neighbors to improve systems as they move through their respective transitions

However, the Interstate Playbook is not complete yet.......

❑ Planning is underway for Chapter 2 and Chapter 3

- Iowa and Minnesota wireless call transfer initiative with ALI

- Minnesota and North Dakota SMS message transfer between ESInets

Interstate Playbook Chapter 2
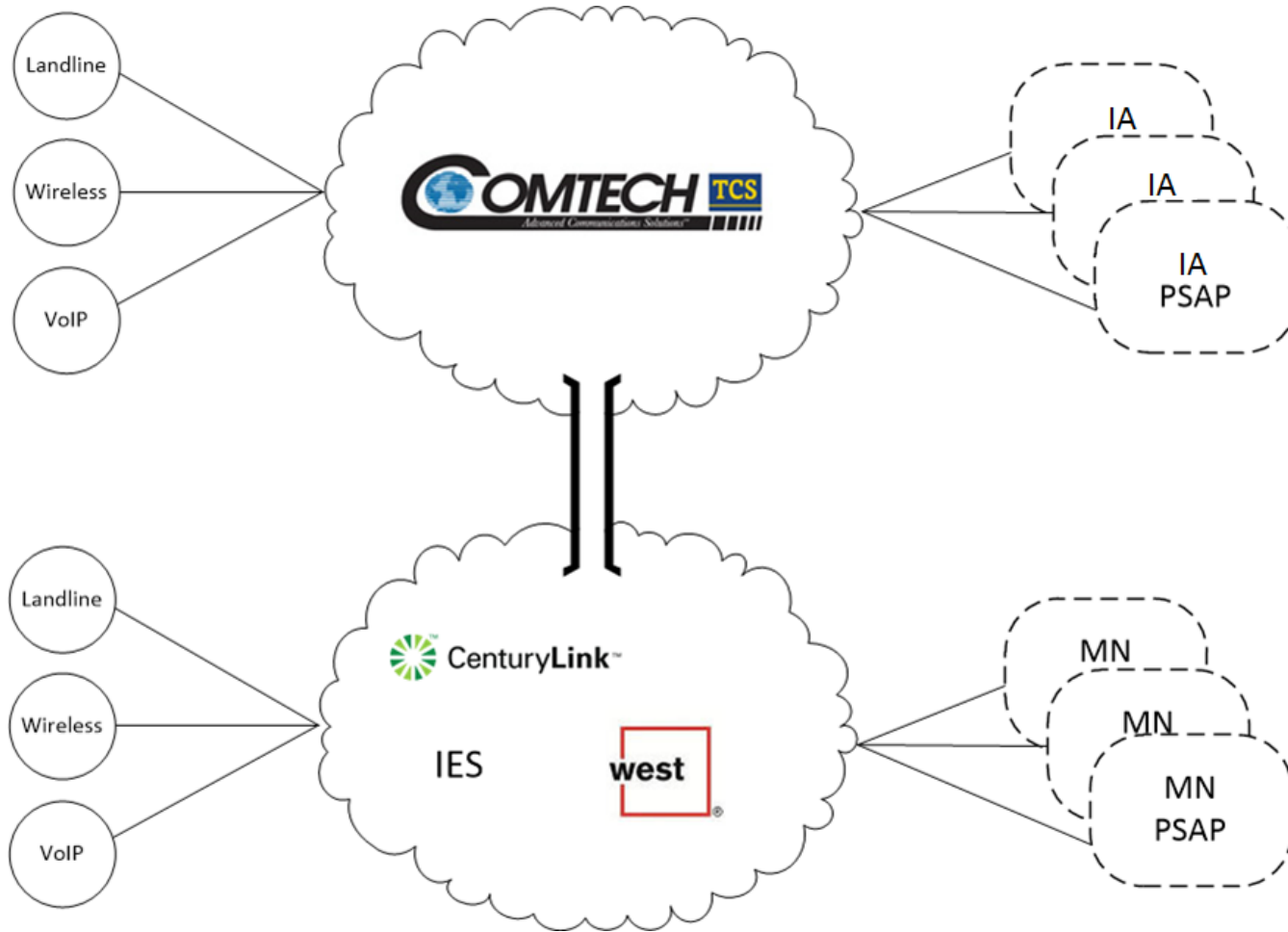
Interstate Playbook
Chapter 3
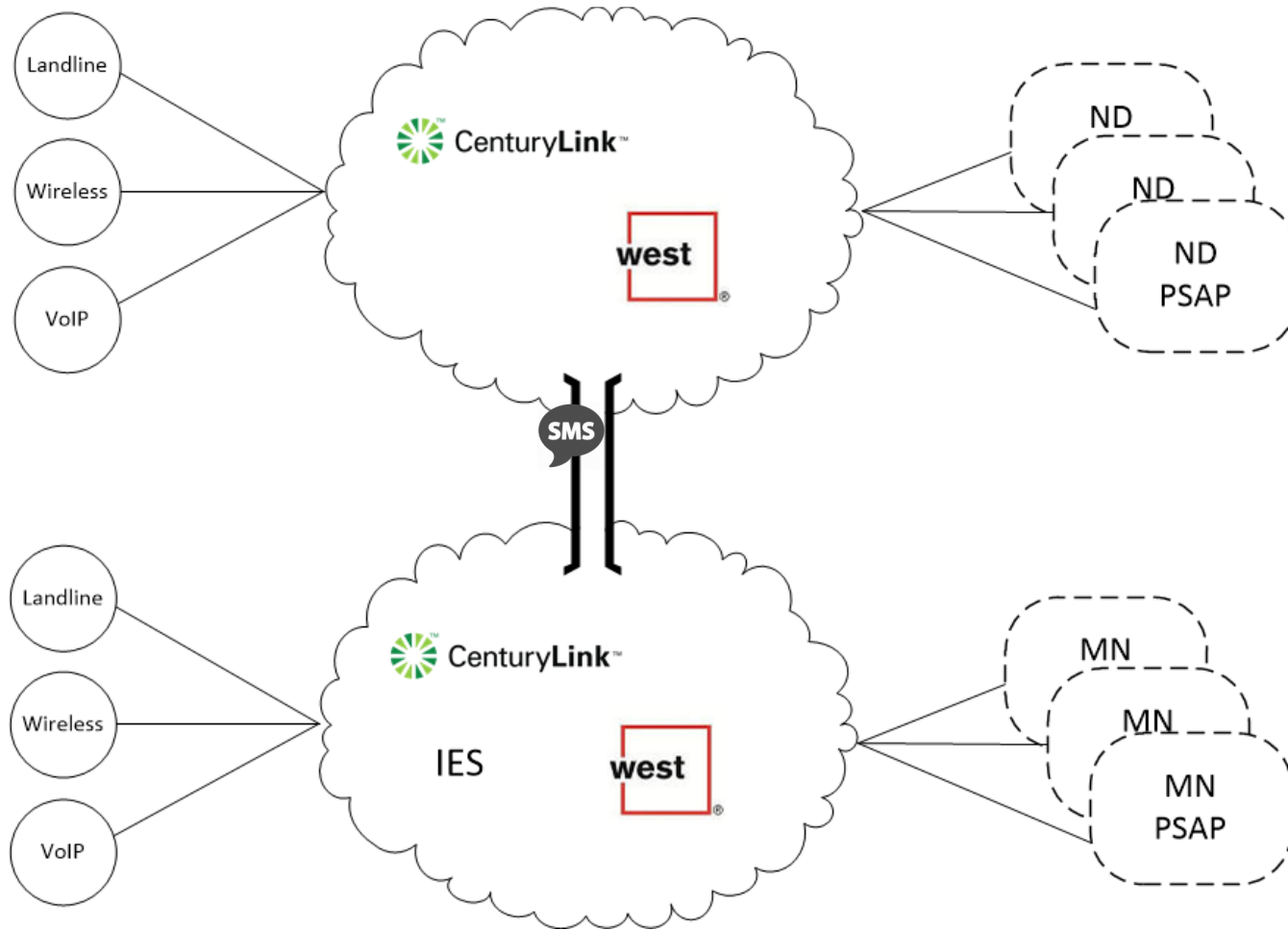
NG911 Interstate Playbook
Connecting Minnesota and North Dakota ESInets for Improved 911 Service

Playbook Content – The "Plays"

1. Planning
2. Implementation
3. Financial
4. Technical
5. Operational
6. Other - GIS, Ongoing Processes, Annual true-up and Agreement review
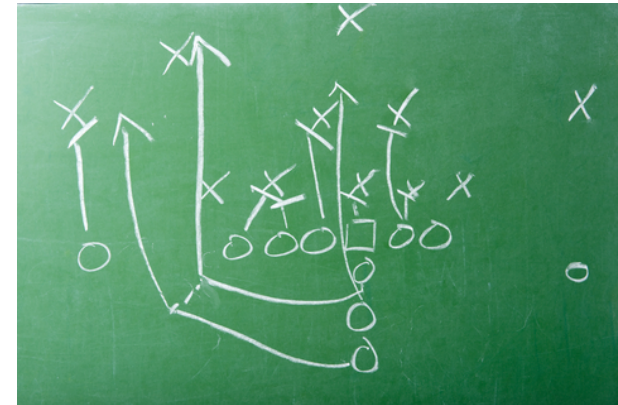
https://www.911.gov/docs/NG911-Interstate-Playbook-FINAL-111516.pdf

NG911 Interstate Playbook
Connecting Minnesota and North Dakota ESInets for Improved 911 Service

Dana Wahlberg
911 Program Manager
State of Minnesota Department of Public Safety, Emergency Communication Networks
dana.wahlberg@state.mn.us

Jason Horning, ENP
NG911 Program Manager
North Dakota Association of Counties (NDACo)
Jason.horning@ndaco.org

Shawnie Rechtenbaugh
State of South Dakota 911 Coordinator
Shawnie.Rechtenbaugh@state.sd.us

Blake DeRouchey
E911 Program Manager, State of Iowa Department of Emergency Management
Blake.DeRouchey@iowa.gov

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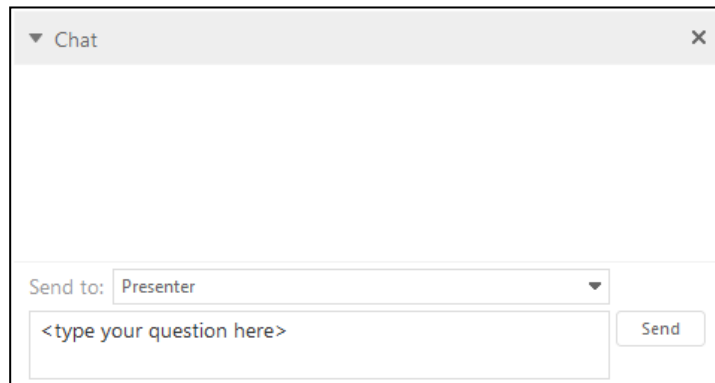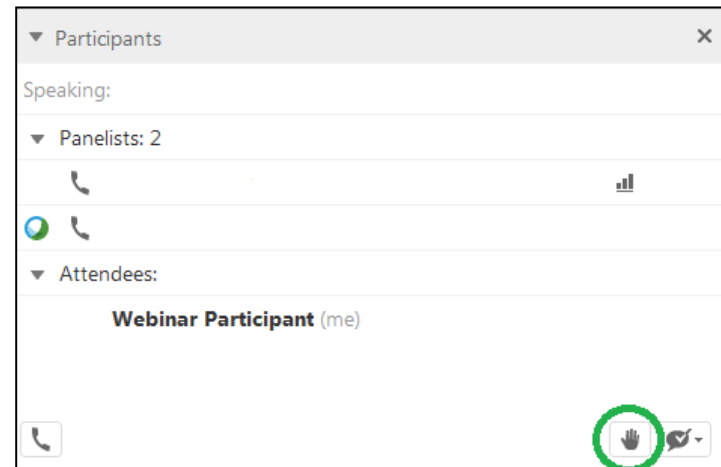
Future Webinars

2017 Scheduled Webinars:

- Tuesday, April 11, 2017 at 12 noon ET

- Tuesday, June 13, 2017 at 12 noon ET

- Tuesday, August 8, 2017 at 12 noon ET

- Tuesday, October 10, 2017 at 12 noon ET

- Tuesday, December 12, 2017 at 12 noon ET

- To register, visit: https://tinyurl.com/2017Stateof911

- Previous State of 911 webinars are available at: www.911.gov/webinars.html

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National 911 Program

- Laurie Flaherty

  Program Coordinator

  202-366-2705

  laurie.flaherty@dot.gov

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  National911Team@mcp911.com

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