



When Disaster Strikes

What We Learned from Hurricane Irene

Agenda

- 1 Dispatching Overview
- 2 Disaster Recovery Scenarios
- 3 Vermont EM Overview
- 4 Hurricane Irene
- 5 Questions

Agenda

1 Dispatching Overview

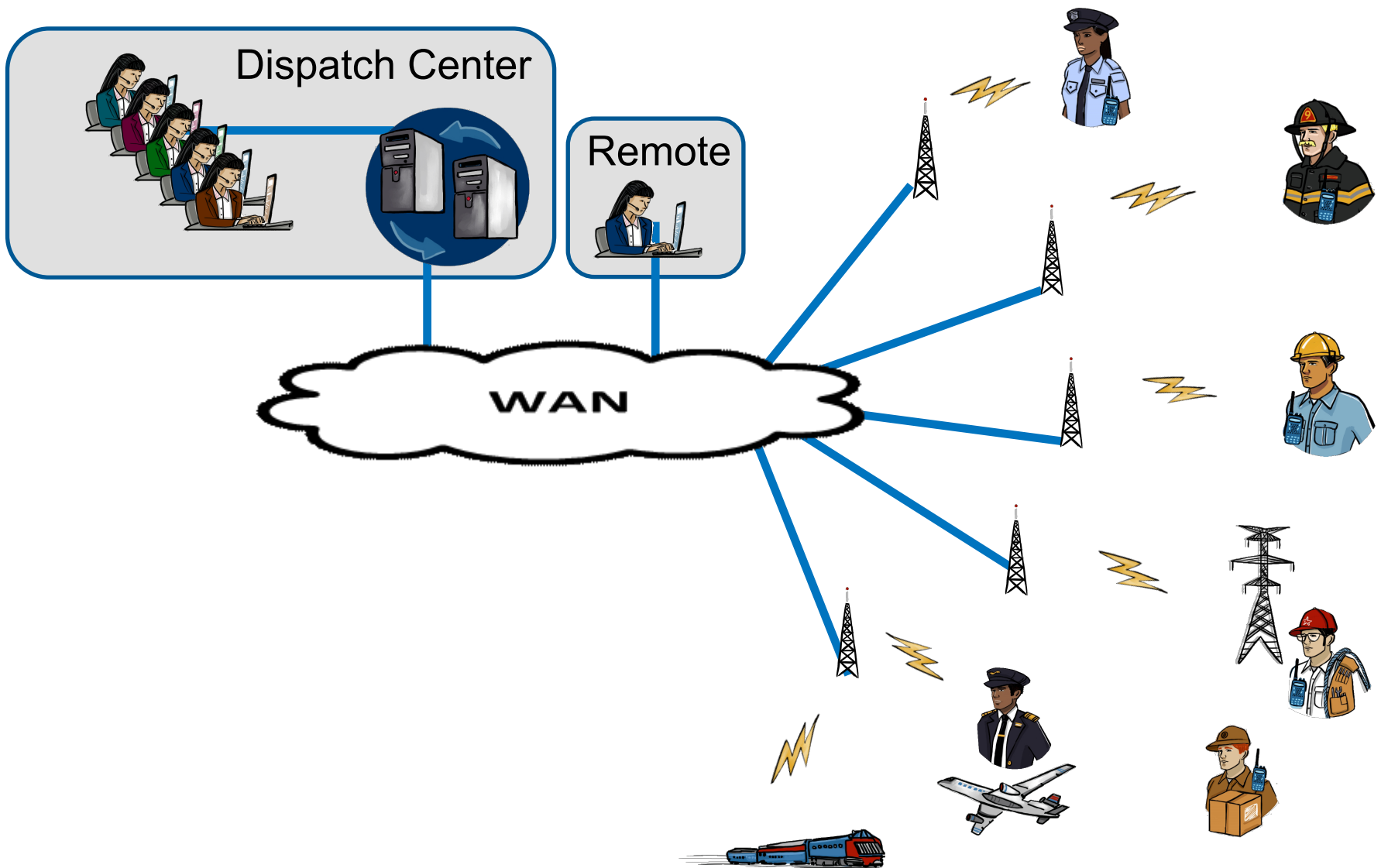
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5 Questions

IP Dispatching – Network Topology



Types of Interfaces

Modern communications systems are often a mix of technologies

Radio

- Conventional and Trunked Systems
- Ethernet connectivity

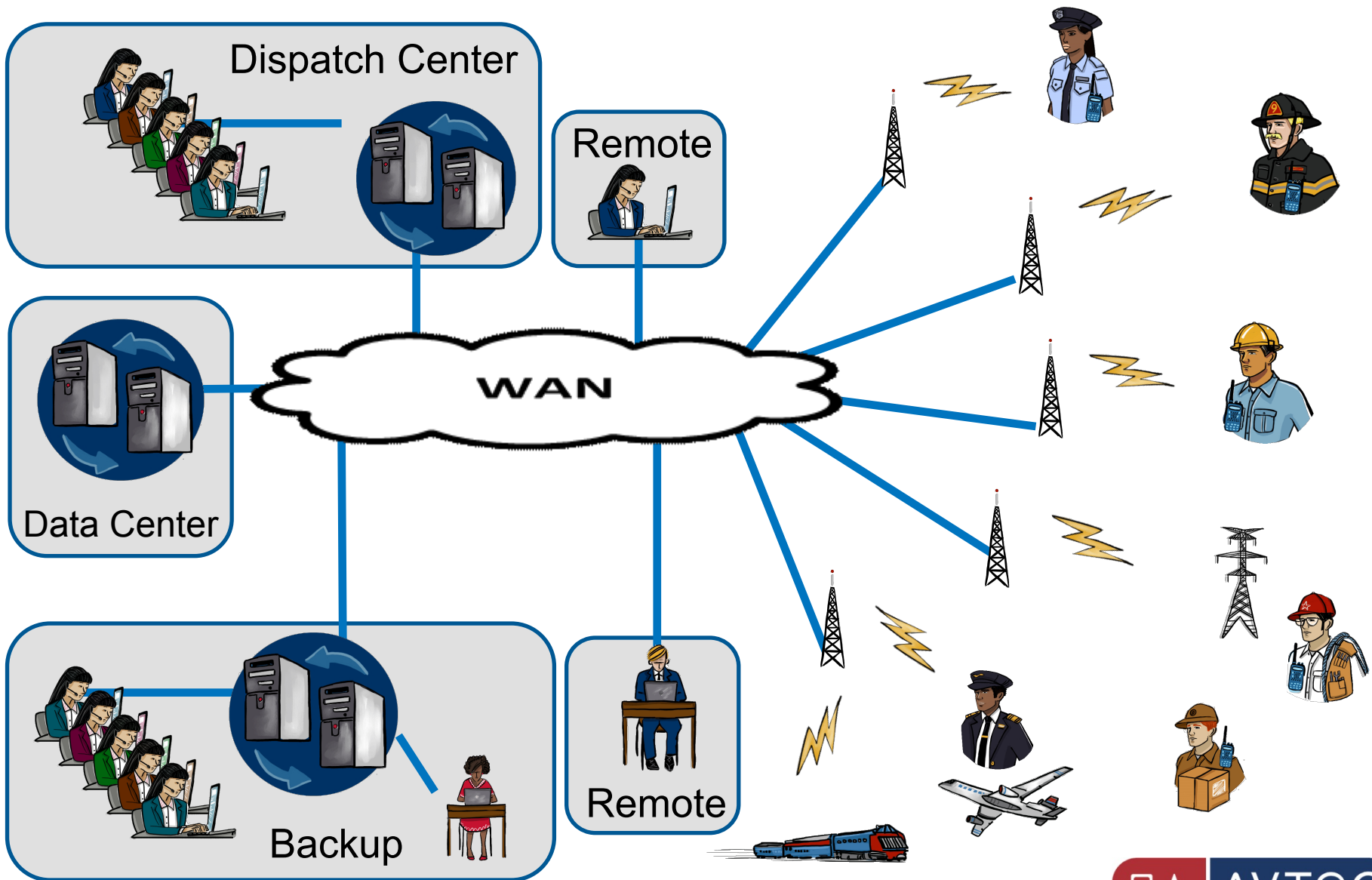
Telephony

- VoIP or POTS Phones
- Cellular PTT

Open Standards

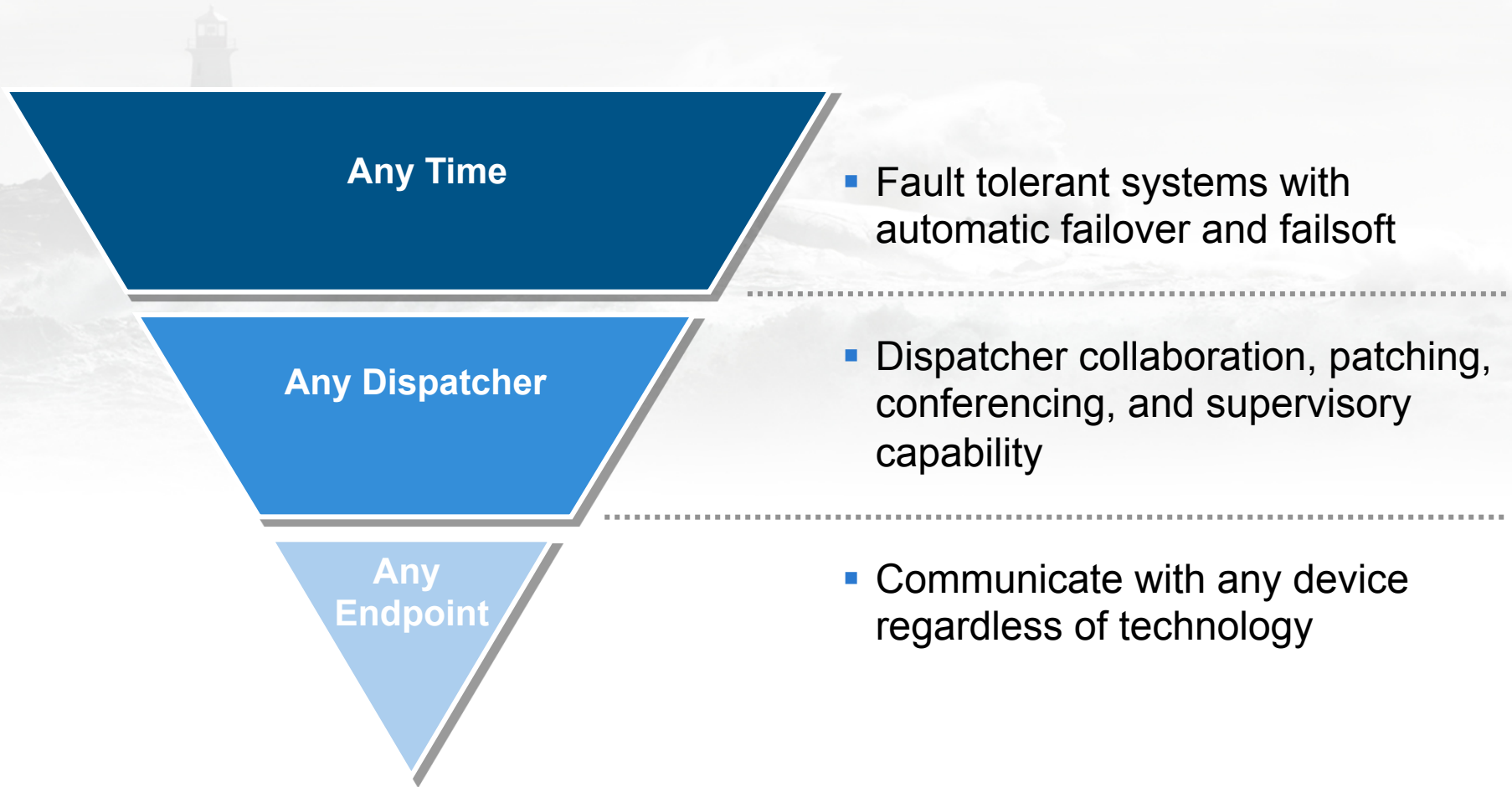
- P25, MPT27, NXDN, DMR
- Logging Recorders, 3rd Parties

IP Dispatching – Network Topology



Any – Any Connectivity

Ultimate Goal



Agenda

1 Dispatching Overview

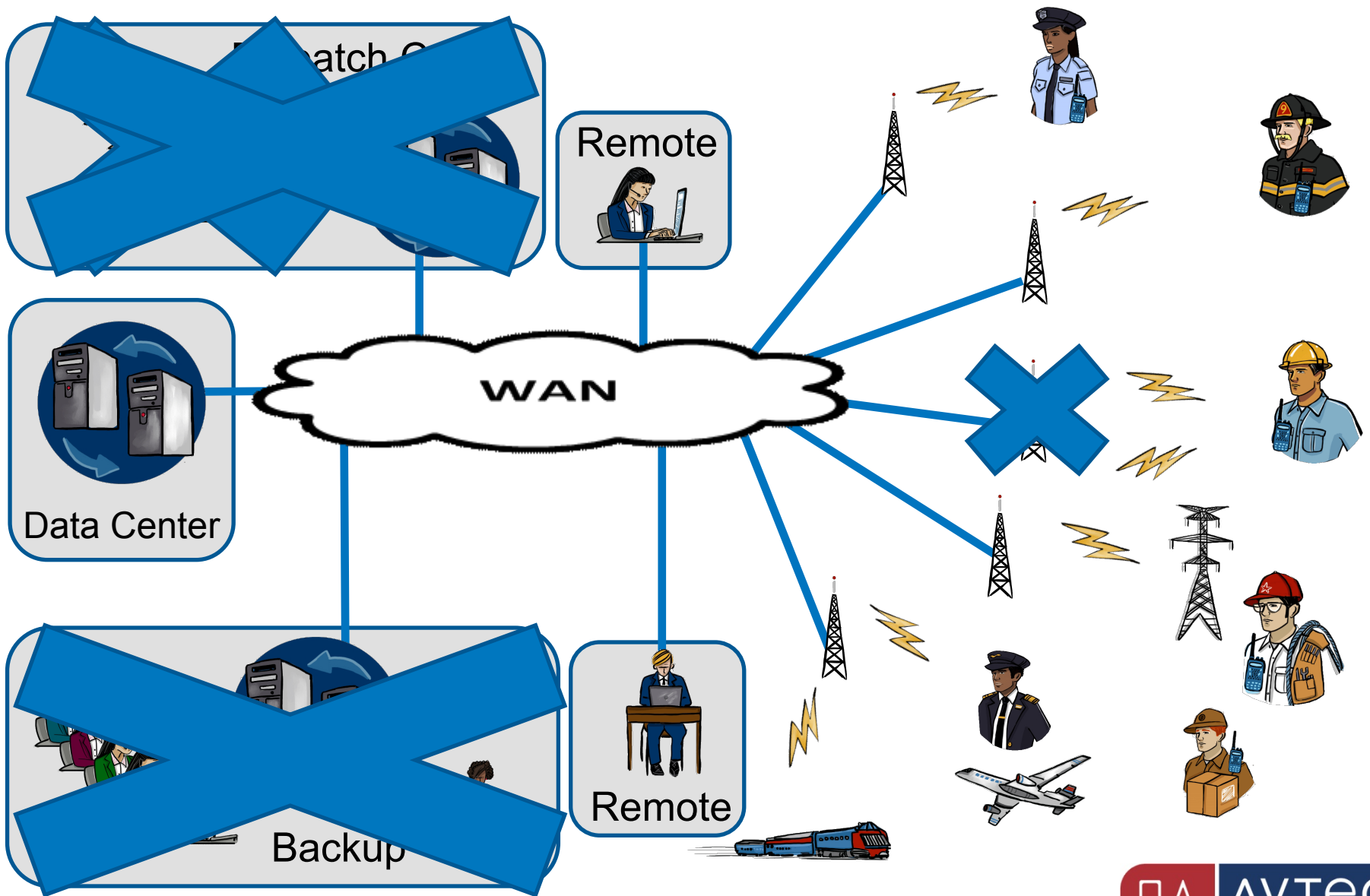
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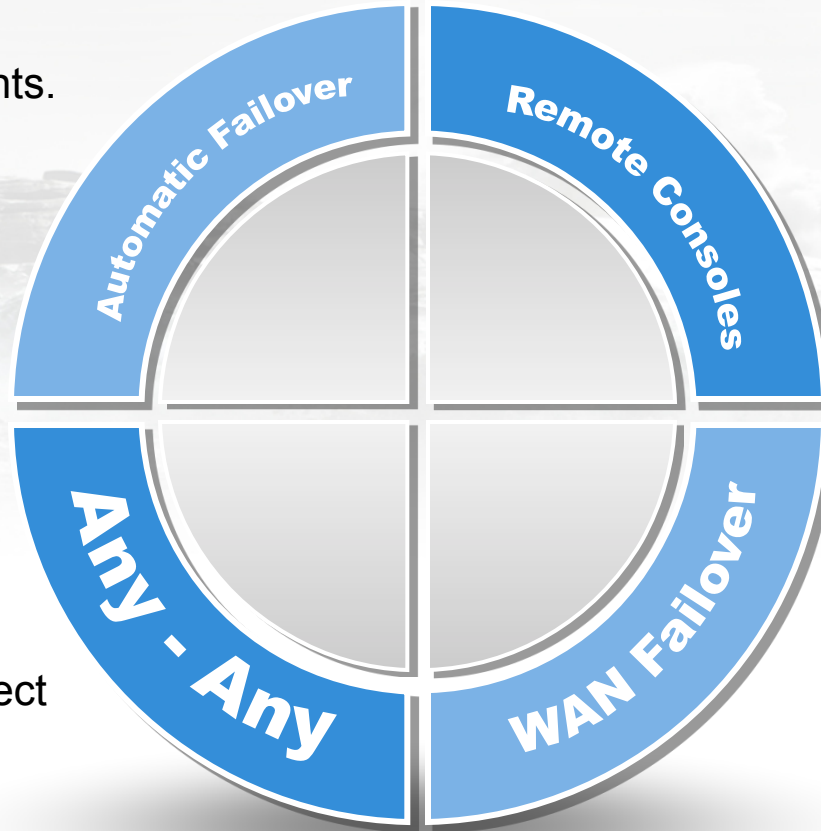
IP Dispatching – Network Topology



Disaster Recovery Scenarios

Best Practices for dispatch consoles

Automatic Failover for all mission critical components.



Adjust to dynamic environments.

Any dispatcher can connect to any endpoint for seamless recovery when facilities are uninhabitable.

Account for disaster scenarios where facilities cease to function or exist.

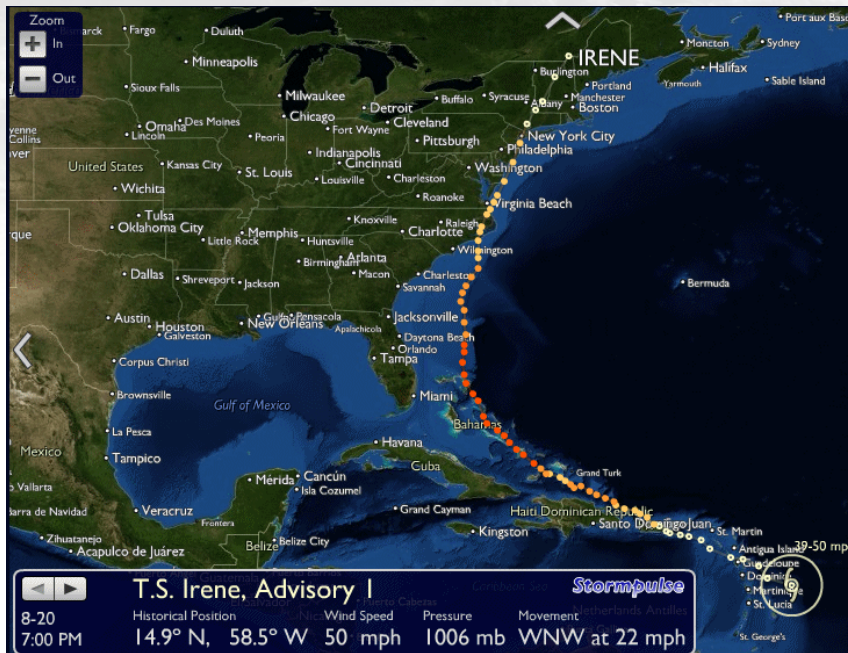


State of Vermont Tropical Storm Irene Response & Recovery

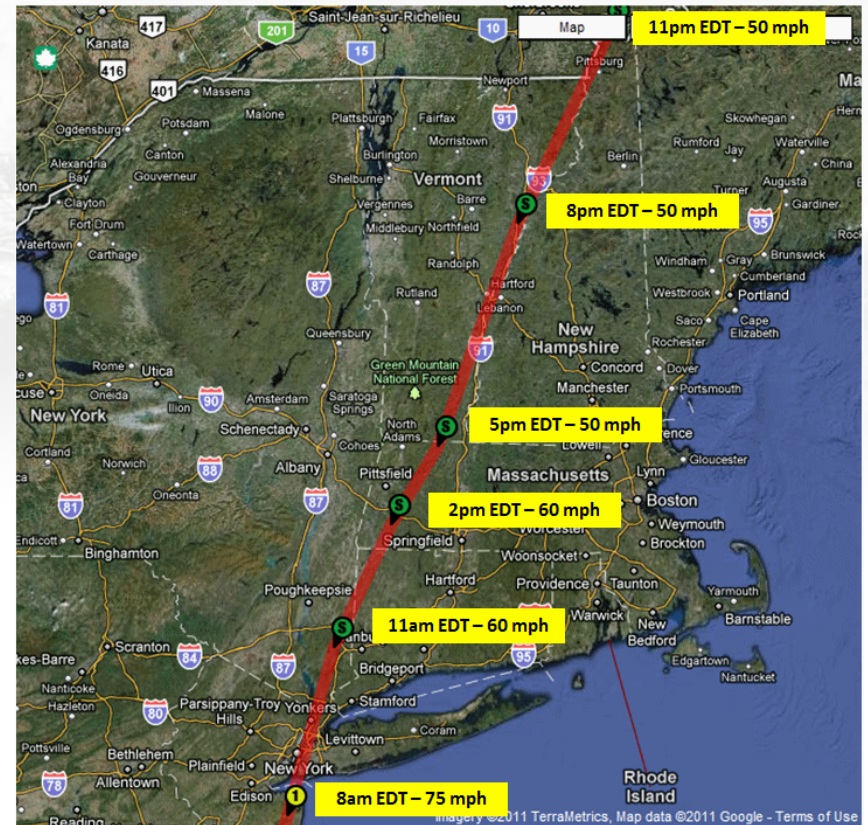


TS Irene- Storm Tracks

Irene's Track – August 20th to August 28th, 2011



Irene's Track across New England – August 28, 2011

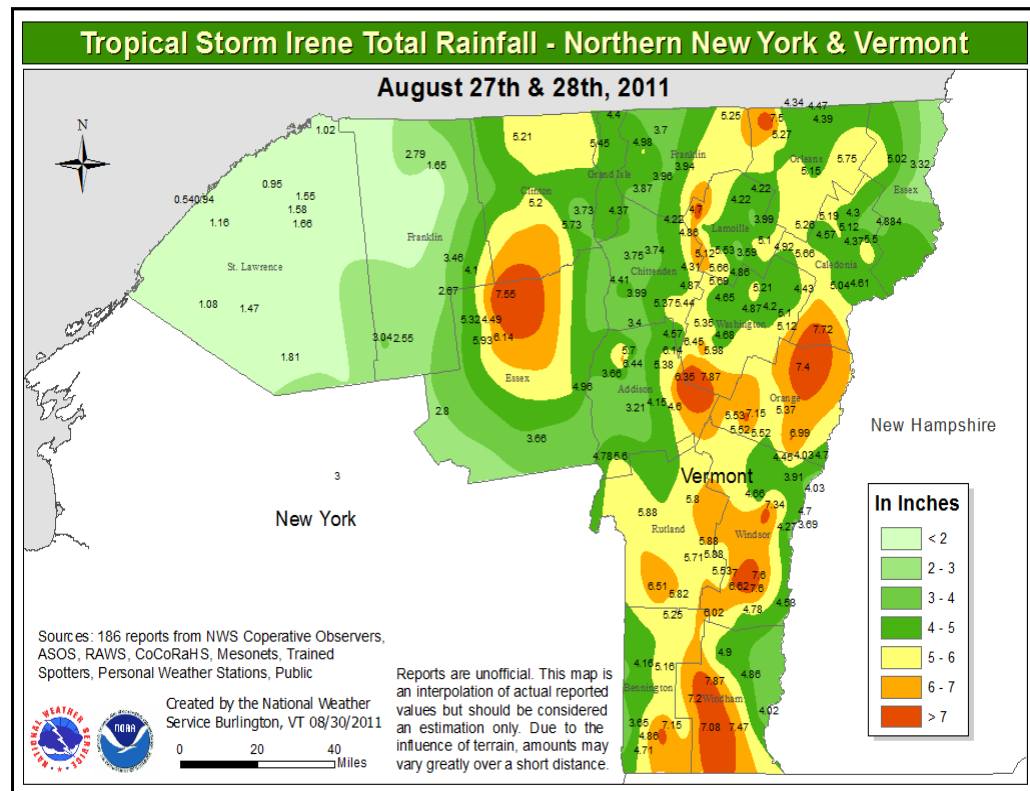


Preparedness Activities

- 8.26 - State EOC initiates situation update briefing for agencies involved in response
- 8.27- State EOC Level IV Activation
- 8.27- State of Emergency declared by Vt. Governor Shumlin
- 8.28, 1700 hrs- TS Irene eye located just south of Halifax, VT with sustained 50 mph winds
- 8.28, 2000 hrs- TS Irene tracks along the Connecticut River Valley and exits the state in Canaan, VT

Weather Summary

- Rainfall rates were generally .5-1.0 inches per hour, totals statewide were 4-7 inches with higher local amounts (<10 inches)
- Flash flooding occurred at headwaters of White, Ottaquechee, Otter Creek, New Haven, Mad, Winooski, Missisquoi and Walloomsac rivers.
- Some of Vermont's larger rivers witnessed NEW record crests equal or greater to Vermont's greatest November 1927 flood.
- Winds - 20 to 30 mph with gusts up to 50 mph.



Response Highlights

- ⦿ **State EOC evacuation and relocation**
- ⦿ **State EOC relocated to FEMA JFO in Burlington**
 - EOC Internet, phone and radio connectivity lost
- ⦿ **American Red Cross opened 8 regional shelters**
 - 5 remained open overnight with 262 clients
 - Over 30 community-based shelters opened
- ⦿ **Approximately 50,000 customers lost power**
- ⦿ **13 towns were isolated due to road loss**
- ⦿ **Initial estimates showed approx 250 local roads closed**
- ⦿ **6 total Irene-related deaths**
- ⦿ **8.29 - President Obama signs Emergency Declaration
FEMA-3338-VT**



Response Highlights - Cont'd

⦿ Almost every state road impacted

- 133 State roads closed, 30 state bridges closed
- Est. <250 local road segments closed, over 330 culverts washed out, <100 local bridges closed

⦿ 6 state swift-water assets deployed

⦿ 16 FEMA commodity trailers

delivered to the state and distributed
by VTNG

- 28 towns by air / 64 towns by ground





The Scope of Recovery

- SEOC reconfigured to recovery operations on 9.12.11

- 225 of 251 VT towns impacted

- 9.1- Major Disaster Declaration

FEMA-4022-VT issued

- PA – All counties
- IA – Declared for 12 counties: Addison, Bennington, Caledonia, Chittenden, Franklin, Lamoille, Orange, Orleans, Rutland, Washington, Windsor, Windham
- 11 FEMA DRCs were opened
- Historical and Cultural Sites** ~ 629 historical and cultural sites are reporting damage as a result of Tropical Storm Irene; of these sites, 79 are commercial, 270 are residential, 21 are non-profit, 49 are government/educational, and 26 are fine arts.
- 84 ARFs executed, 19 EMAC missions executed



Vermont's Recovery

- Over 220 businesses reported damage

FEMA PDA results:



FEMA

PDA Data					
County	Primary	Owner - Major	Owner - Destroyed	Rental - Major	Rental - Destroyed
Addison	41	38	3	0	0
Bennington	32	23	5	4	0
Caledonia	35	30	3	2	0
Chittenden	9	0	9	0	0
Orange	43	23	3	1	0
Rutland	85	36	32	6	11
Washington	214	152	16	40	6
Windham	146	56	11	79	0
Windsor	104	65	19	14	6
Grand Total	709	423	101	146	23



Damage Estimates

⦿ Infrastructure

- ~ \$500-700 million in Federal-Aid Highways
- ~ \$120 million Public Assistance

⦿ Individuals

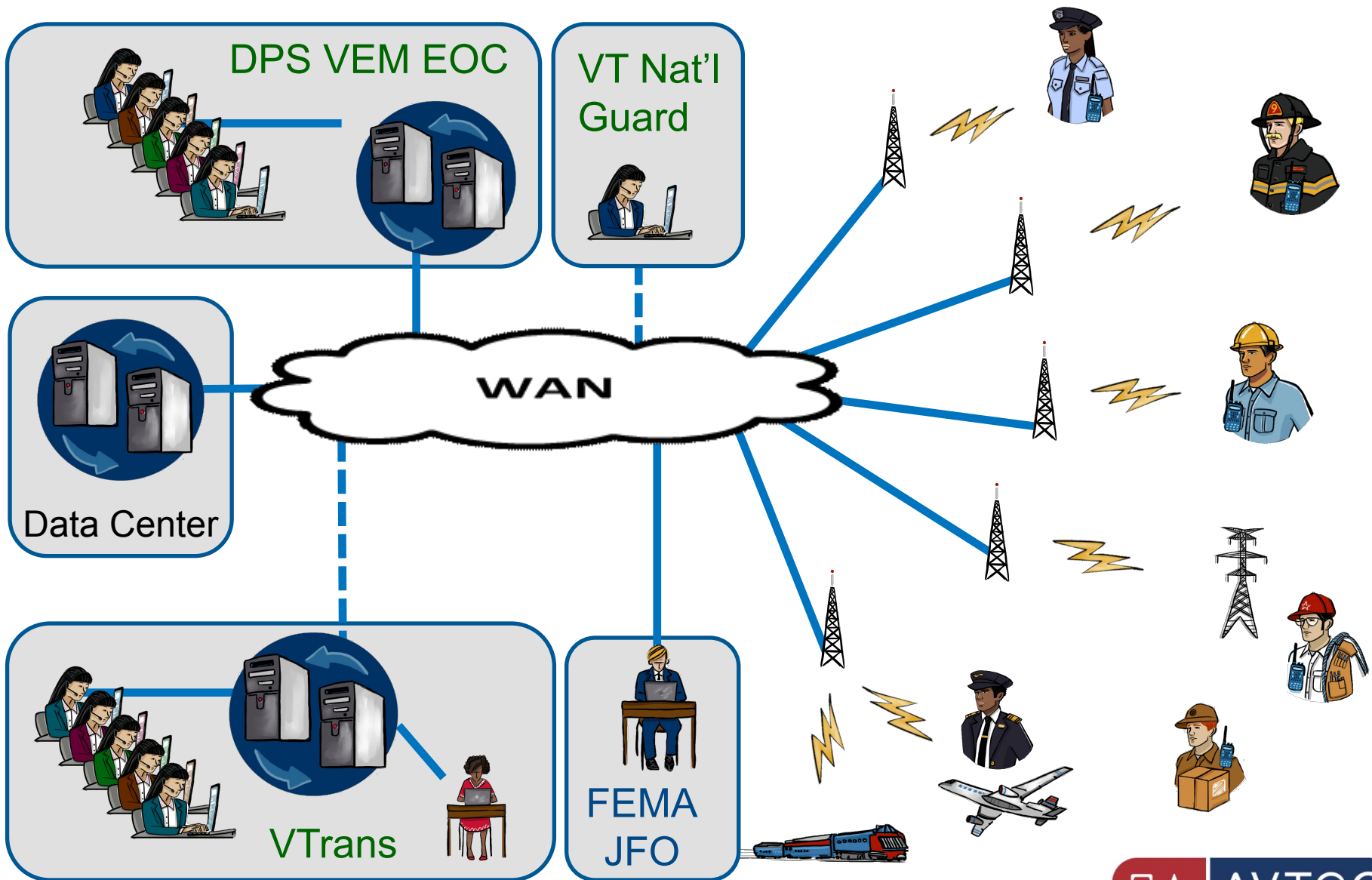
- \$18 million distributed for Individual Assistance
 - Approx. 6,500 registrations
- \$13.5 million in SBA loans

⦿ Response Assistance

- EMAC - \$14.3 million
- Federal - >\$5 million



State of Vermont Communications Network



Questions?





Thank you