



Nationwide Integration of Time Resiliency for Operations (NITRO)

Information Briefing

June 2023

Phase II, V1.0



Agenda

- Situation
- NITRO Capability
- NITRO Current Laydown
- NITRO Current Status and Way Forward



Situation

Problem: The country lacks synchronized resilient time to protect the interconnected State and U.S. critical infrastructure providing public services.

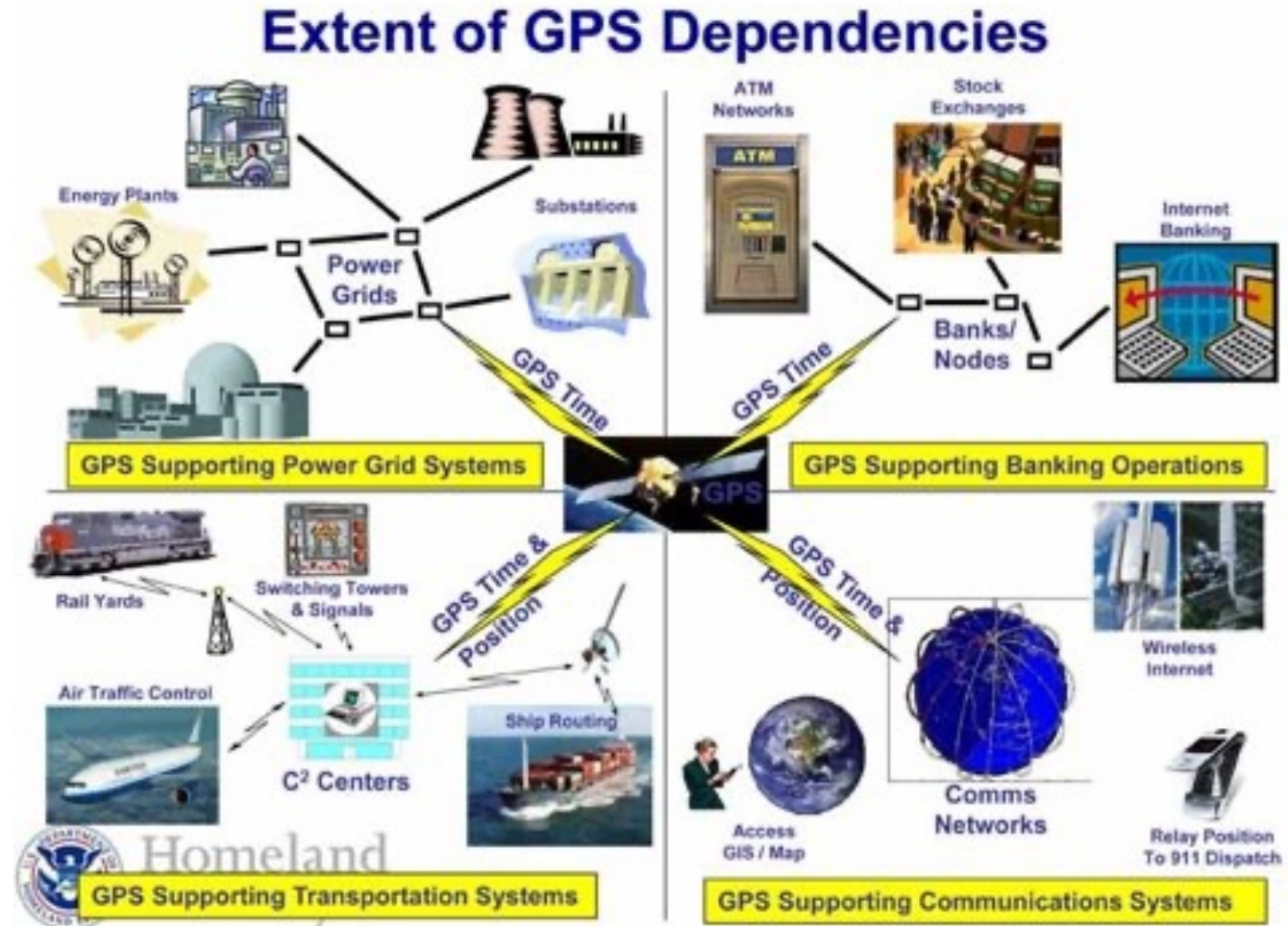
Why?

- Dependent on GPS as single point of failure.
- Active, persisting and increasing threat.

What happens?

[CNN War In Space - What would happen to America if GPS was attacked?](#)

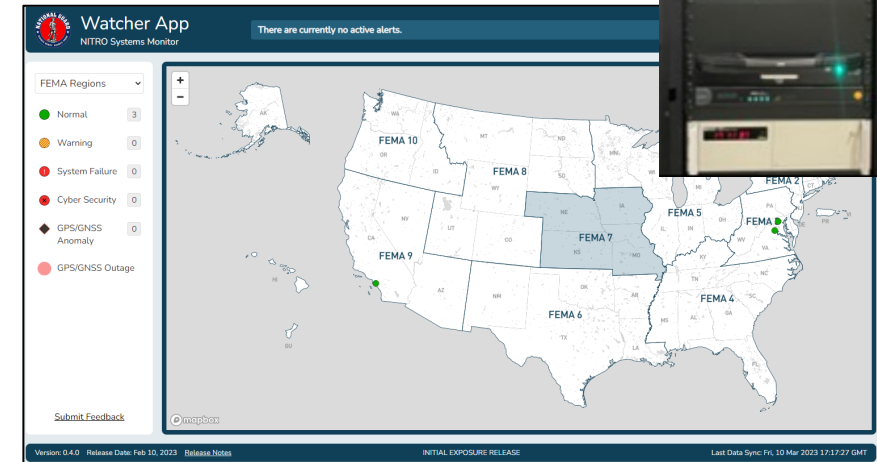
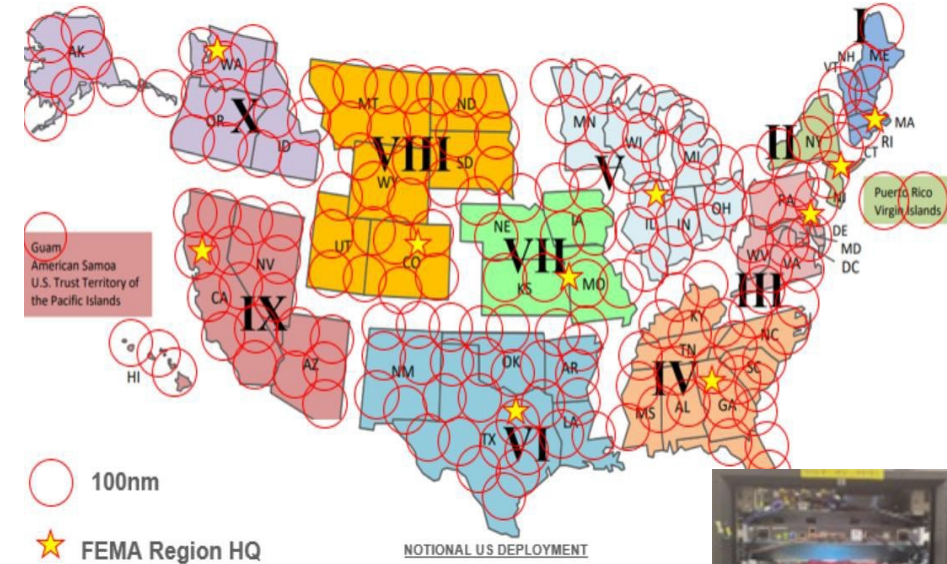
How to prevent chaos: Fully operationalize NITRO capability.





NITRO Capability

- Operational prototype which provides resilient time to State and U.S. critical infrastructure to prevent disruptions to public services people depend upon.
- Survivable and mitigates jamming, spoofing, and cyber-related vulnerabilities.
- Receives data from multiple space and terrestrial PNT services and does not require changes to end-user equipment.
- Creates a fully meshed nationwide “sensor grid” and common operating picture of the underlying timing infrastructure. Current roles:
 - Operations center personnel (IOC, EOC, JOC, etc.)
 - Cyber defenders
 - IT/System administrators
- Allows National Guard and civil authorities to work behind the scenes to resolve the situation – essentially making any disruption “invisible” to the general population.





NITRO Current Laydown

- Operational prototype is in use by VA, CA, MD, IL, WV, WA and providing resilient time to First Responders and State Agencies (165 organizations).
- MN, LA, CO, KY, SC are in the process of getting connected to the centralized "time client" as an interim measure to reduce immediate operational risk until local NITRO sensor(s) becomes available.
- Planning is underway to connect PA, WY, NJ, UT, IN, NY, TX, NC, MI, NH, KS, FL, CT, ID, GU and HI.
- Will be fully operational once the complete mesh network of 150+ sites in all 54 are deployed and reporting data to the nationwide common operating picture, known as Watcher, enabling the National Guard and SLTT civil authorities to “see” and respond to anomalies in the domestic timing infrastructure.



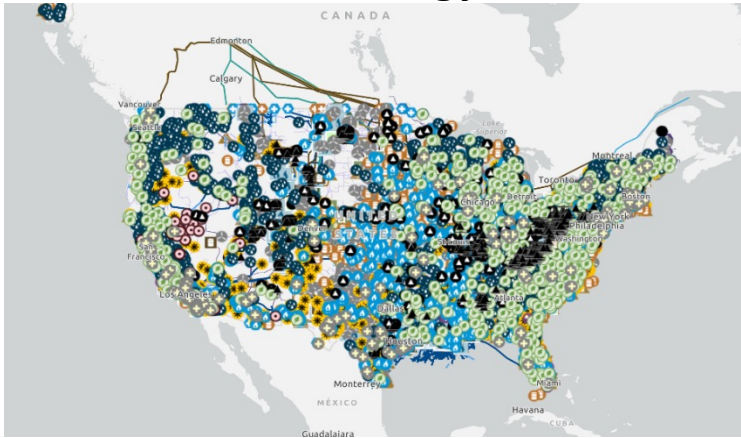
Questions

NITRO PM Team: MAJ Shannon Bass, 703-607-2872, shannon.d.bass6.mil@army.mil
MSgt Mylin Jarrett, 703-607-8890, mylin.d.jarrett.mil@army.mil

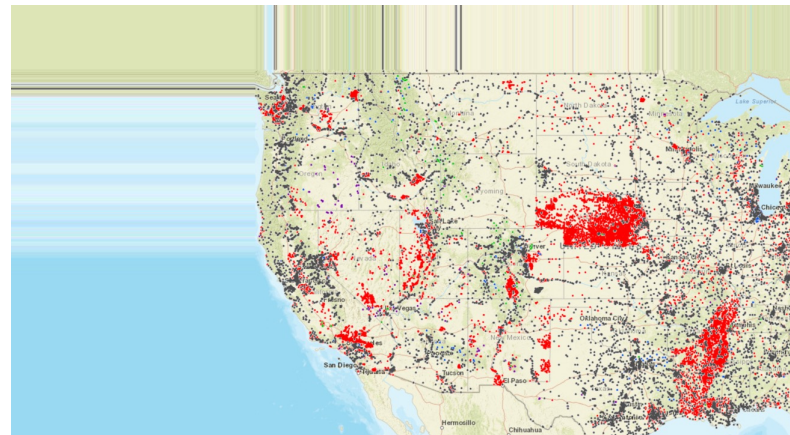


Critical Infrastructure Examples

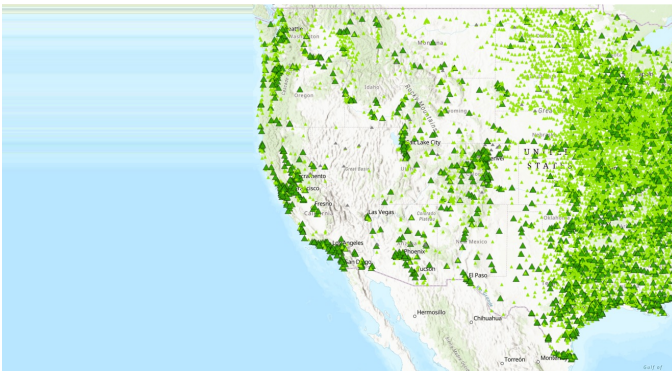
U.S. Energy



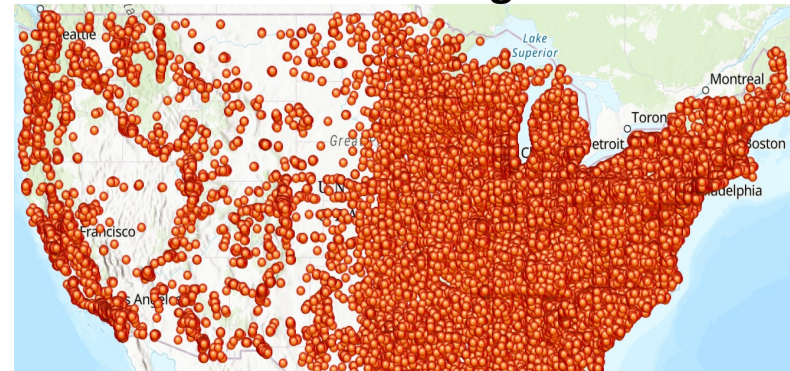
U.S. Water Locations



U.S. Dams



U.S. Manufacturing facilities



- Civil authority infrastructures are interconnected with various segments of U.S. critical infrastructure to provide public services.
 - Transportation uses 64 Communications frequencies
 - Hydroelectric dams generate power
 - Billing and financial systems connected throughout at various levels
- Accurate time is required by and flows throughout this interconnected operational environment.
- Domestic emergencies caused by lack of accurate time, due to a GPS outage or otherwise, are not bound by “system ownership” because the indiscriminate impact traverses across the interconnected operational ecosystem.

Public Information Available to All