# NATIONAL RISK MANAGEMENT CENTER

DHS Position Navigation and Timing Update CGSIC September 2021

**"DEFEND TODAY, SECURE TOMORROW."** 



James Platt September 17, 2021

# We are the Nation's Risk Advisor

The Cybersecurity and Infrastructure Security Agency (CISA) is the pinnacle of national risk management for cyber and physical infrastructure.





CYBERSECURITY & INFRASTRUCTURE SECURITY AGENCY

# Cybersecurity and Infrastructure Security Agency (CISA)



### OVERALL GOALS

GOAL 1

#### **DEFEND TODAY**

Defend against urgent threats and hazards

seconds | days | weeks

GOAL 2

#### **SECURE TOMORROW**

vears

months

Strengthen critical infrastructure and address long-term risks

decades

3

VISION

Secure and resilient infrastructure for the American people. **NOISSING** CISA partners with industry and government to understand and manage risk to our Nation's critical infrastructure.



## National Risk Management Center

The NRMC is a planning, analysis, and collaboration center. CISA coordinates with the critical infrastructure community to identify; analyze; prioritize; and manage risks to National Critical Functions, which are vital to the United States.

#### **MISSION PRIORITIES:**



Analyzes most strategic risks to our Nation's critical infrastructure



Leads public/private partnership initiatives to manage priority areas of national risk



Collaborates with the private sector and other stakeholders to better understand future threats.

## **NRMC's Top Initiatives**

**5G** 

Securing the next generation of wireless technology which transforms U.S. telecommunication networks and empowers critical services.



### **Election Security**

Ensuring America's election infrastructure is resilient as we #Protect2020.



### **Electromagnetic Pulse & Geomagnetic Disturbance**

Mitigating potential nuclear and space weather events that can affect large areas of our Nation.



## **NRMC's Top Initiatives Cont'd**



### **ICT Supply Chain Risk Management**

Reducing risk of vulnerabilities in the ICT supply chain, that if exploited, can affect all users of that technology.



### **Pipeline Cybersecurity**

In-depth review and evaluation of the control system's network design, configuration, and interdependencies for more than 2.7 million miles of pipelines.



### **Positioning, Navigation, and Timing**

Understanding how positioning, navigation, and timing services is used across all NCFs.



## **Critical Infrastructure Risks**

In today's rapidly evolving threat environment, sources of strategic risk are widespread and include:



CYBER AND PHYSICAL SECURITY THREATS



CONVERGENCE OF PREVIOUSLY SILOED THREAT VECTORS



MISINFORMATION AND DISINFORMATION



NATION-STATE AGGRESSION



PANDEMICS AND NATURAL DISASTERS



MALICIOUS EXPLOITS OF EMERGING TECHNOLOGY

**INSIDER THREATS** 



SUPPLY CHAIN VULNERABILITIES



### **National Critical Functions Set**

#### CONNECT

#### DISTRIBUTE

It's less about who you are and more about the functions you

NCFs better capture cross-cutting risks and associated

#### MANAGE





- Operate Core Network
- Provide Cable Access Network Services
- Provide Internet Based Content, Information, and Communication Services
- Provide Internet Routing, Access and Connection Services
- Provide Positioning, Navigation, and Timing Services
- Provide Radio Broadcast Access Network Services
- Provide Satellite Access Network Services
- Provide Wireless Access Network Services
- Provide Wireline Access Network Services

produce or enable.

dependencies.

- Distribute Electricity
- Maintain Supply Chains
- Transmit Electricity
- Transport Cargo and Passengers by Air
- Transport Cargo and Passengers by Rail
- Transport Cargo and Passengers by Road
- Transport Cargo and Passengers by Vessel
- Transport Materials by Pipeline
- Transport Passengers by Mass
   Transit

- Conduct Elections
- Develop and Maintain Public Works and Services
- Educate and Train
- Enforce Law
- Maintain Access to Medical Records
- Manage Hazardous Materials
- Manage Wastewater
- Operate Government
- Perform Cyber Incident Management Capabilities
- Prepare For and Manage Emergencies
- Preserve Constitutional Rights
- Protect Sensitive Information
- Provide and Maintain Infrastructure
- Provide Capital Markets and Investment Activities
- Provide Consumer and Commercial Banking Services
- Provide Funding and Liquidity Services
- Provide Identity Management and Associated Trust Support Services
- Provide Insurance Services
- Provide Medical Care
- Provide Payment, Clearing, and Settlement Services
- Provide Public Safety
- Provide Wholesale Funding
- Store Fuel and Maintain Reserves
- Support Community Health

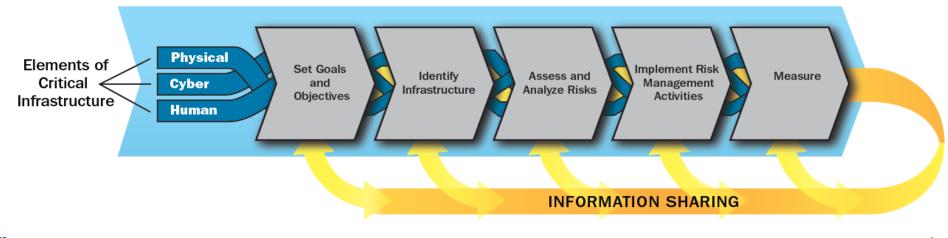
- Exploration and Extraction Of Fuels
- Fuel Refining and Processing Fuels
- Generate Electricity
- Manufacture Equipment
- Produce and Provide Agricultural Products and Services
- Produce and Provide Human and Animal Food Products and Services
- Produce Chemicals
- Provide Metals and Materials
- Provide Housing
- Provide Information Technology Products and Services
- Provide Materiel and Operational Support to Defense
- Research and Development
- Supply Water



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## **Considering PNT in Risk Management**

Responsible use of PNT services" means the deliberate, risk-informed use of PNT services, including their acquisition, integration, and deployment, such that disruption or manipulation of PNT services minimally affects national security, the economy, public health, and the critical functions of the Federal Government.



Critical Infrastructure Risk Management Framework



#### CYBERSECURITY & INFRASTRUCTURE SECURITY AGENCY

# **PNT EO**

EO 13905: ...the Secretary of Homeland Security, in coordination with the heads of SSAs, shall develop a plan to test the vulnerabilities of critical infrastructure systems, networks, and assets in the event of disruption and manipulation of PNT services.

#### **Engineering Considerations**

What are your critical Systems, Networks and Assets?

#### Do they use, or are they dependent, on external PNT sources?

What level of precision do I need?

Can you identify the disruption or manipulation of PNT services?

How do you maintain critical functions if external PNT is impaired?

#### CYBERSECURITY & INFRASTRUCTURE SECURITY AGENCY

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#### **PNT SME Considerations**

What sources of PNT are available?

What are their performance characteristics?

Can you identify the disruption or manipulation of PNT services?

How can you make the PNT services more resilient?

## DHS Risk Management & Program Strategy

Increasingly Resilient

Complementary PNT         Mitigation via Diversity       • Alternate PNT Services         • Relative vs absolute         Mitigation via Improved       • Conformance Framework / IEEE	
Relative vs absolute     Mitigations	
Mitigation via Improved Conformance Framework / IEEE	
Equipment	
Engage & Educate	٦
<ul> <li>Mitigation via Awareness</li> <li>Best Practices</li> <li>Need for resilient PNT equipment</li> <li>End-User's down-stream impacts</li> </ul>	
Vulnerability Assessment	
Mitigation via Vulnerability & Impact AssessmentSystem Impacts assessment• System Impacts assessment • Receiver characterization	

## **NRMC** Resources



### Visit us online:

### www.cisa.gov/national-risk-management

Download outreach products/resources: www.cisa.gov/nrmc-resources

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## For more information: cisa.gov

