



*The Department of the Air Force continues to leverage the Mission Thread Analysis (MTA) approach to examine end-to-end Air Force level functions and capabilities while identifying critical nodes and vulnerabilities through the evaluation of denial of service events. The MTA is part of a larger effort to ensure and enhance lethal force by targeting investments in enabling systems that are most effective in supporting mission needs.*

## Did You Know...

Since missions take place over numerous installations and geographic locations, a siloed focus on one installation means only a portion of the mission is captured and key criticalities and dependencies may be overlooked.

# Mission Thread Analysis

## Why it Matters

Amid greater reliance on energy, increased networked capabilities, more prevalent asymmetric threats, and unprecedented changes in the natural operating environment, the Department of the Air Force (DAF) must adapt its approach to mission assurance to identify and prioritize areas of new and increasing vulnerability. The Mission Thread Analysis (MTA) perspective provides a strategic look at ways to mitigate potential impacts to mission from systems like energy and water, which enable mission success. It also supports looking both internally across the Air Force enterprise and externally with other governmental agencies and industry partners for key interdependencies.

## Key Components of the MTA Perspective

### Focus on the Mission – Not Just its Parts

Every DAF mission that enables a key capability is like a thread that runs from a mission's beginning to its end. Viewing a mission through an MTA lens recognizes that the delivery of a capability relies on many nodes dispersed around the world and is not confined to a single installation; this is shown in Figure 1. Key assets supporting dispersed capabilities are often viewed in functional or geographic silos, making it difficult to recognize the extent to which other missions demand their use and how an impact to one asset may impact the larger enterprise. DAF analyses must account for the dispersion of capabilities and assets across installations and the potential for this tethering effect to introduce vulnerabilities to mission assurance.



Figure 1. DAF capabilities are dispersed around the world.



# Mission Thread Analysis

## Key Components Continued...

### **Distinguishing between Mission Continuity of Operations and Business Continuity of Operations**

It is important that limited resources be allocated to efforts that prioritize mission continuity of operations (MCO) over business continuity of operations (BCO). BCO is often a bottom-up look at how to keep everyday functions at a localized site operating through unanticipated events or, if they are disrupted, restoring them quickly. Resilience investments for BCO are driven by where the economics and financing prove advantageous. In contrast, MCO represents operations that cannot fail and focuses on ensuring the continuity of critical capabilities through any unexpected circumstances. In these instances, the DAF relies on a strategic top-down perspective to best understand where military priorities should drive resilience investments.

### **Removes Probability in Assessing Future Resilience Needs**

Many current evaluations of resilience are based on a determination of the likelihood that a given threat or hazard may take place. However, concentrating resilience efforts on high-probability events makes inherent assumptions about future states that may be incorrect. Instead of relying on probability as a basis for resilience planning, assessments should be based on a probability-agnostic approach that evaluates how to reduce the impact of a denial of service on mission success, regardless of what causes the denial of service. Once solutions are in place, the system can be tested against - rather than designed to - various scenarios to assess its resilience performance. In this way, the DAF becomes better prepared to execute under all eventualities, whether they are high-probability, low-impact or low-probability, high-impact events.

### **Incorporates the 5Rs of Resilience**

Resilience cannot be treated as a singular metric, but must be recognized as a concept consisting of distinct attributes that, when considered together, provide the DAF with a more complete picture of where it can enhance enterprise-wide resilience. To streamline the approach to resilience across the DAF, all of its resilience efforts should be aligned to the 5Rs of Resilience: Robustness, Redundancy, Resourcefulness, Response, and Recovery.

### **Recognizes Vulnerabilities from External Partners**

The DAF does not achieve its mission objectives alone. It relies on a complex network of external partners, including industry, utilities, and suppliers. In this way, many DAF missions and weapon systems are “tethered” to external entities, and commercial sector risks suddenly become DAF risks. The MTA perspective helps the enterprise better recognize where it is unknowingly accepting risk or vulnerabilities introduced by external partners. Doing so expands the DAF’s understanding of the mission beyond the fence-line and identifies opportunities to ensure interdependencies between the DAF and external partners are employed in a way that enhances, rather than inhibits, mission success.

## Integration Across the Enterprise

The DAF tackles enterprise mission assurance by integrating the MTA perspective throughout its activities. Tools like the Crown Jewels Analysis, and the Decomposition for Energy Assurance and Electrical Power Resilience Analysis allow SAF/IEE to ensure mission-centered data is included in various planning and exercising efforts, while also factoring in regional climate impacts.

The Department of the Air Force is taking a resilience-focused approach to future energy and water projects concentrated on providing strategic agility for missions and installations.

### **For more information:**

 [safie.hq.af.mil/InstallationEnergy](https://safie.hq.af.mil/InstallationEnergy)

 AirForceEnergy  @AFEnergy

