Datapath's control room solutions

Key cybersecurity considerations for critical control rooms



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Mitigating risks in the control room

Control rooms are the nerve centers of critical sectors like energy, defense, transportation, and government, where every decision relies on the integrity, confidentiality, and availability of data. As the demands on these environments grow, so do the risks. A holistic approach to data security, access control, and system redundancy is essential to prevent hidden threats from compromising your infrastructure. **This guide explores key cybersecurity considerations and practical measures to help you safeguard operations, manage vulnerabilities, and ensure a resilient and secure control room performance.**

SECURE DATA DELIVERY

Getting data to the right people at the right time is critical in any control room, but ensuring it's done securely, particularly over AV-over-IP networks, presents significant challenges. Without the necessary cybersecurity and networking expertise, control rooms risk compromising both performance and security, opening the door to operational inefficiencies and potential data breaches:

- *Latency and lag from poor network configuration can slow response times.*
- *Mis-configured or weak encryption leaves systems vulnerable to cyber threats.*
- *The cost and complexity of managing encryption keys can overwhelm IT teams and operators alike.*

With Aetria from Datapath, operators can securely access, view, and interact with multiple data sources, without managing encryption keys or compromising on speed or security. Aetria handles the complexity behind the scenes, letting your team stay focused on mission-critical tasks.



Mitigating risks in the control room

NO ROOM FOR DOWNTIME

In critical environments, even a split-second delay in visual data can have major consequences. Control rooms must be built to keep operations running, no matter what. Without built-in failover, maintaining uptime requires complex setup and constant oversight:

- *A hardware failure or cyberattack can shut down operations if there's no backup system in place.*
- *Network outages without redundancy can delay decisions when every second counts.*
- *High latency in video delivery compromises situational awareness and operator response.*

To avoid these risks, teams need to build a strong IT setup that includes backups at every level. This means using high-availability systems that automatically switch to backup servers or network parts if something fails, so everything keeps running without interruption. Aetria simplifies resilience. Its Network Manager and VSN Wall Controllers are built to operate in redundant pairs, automatically detecting failures and switching over without user intervention. No complicated setup.. No downtime. Just continuous operation.

SEE THE THREATS BEFORE THEY SEE YOU

Without robust monitoring in place, vulnerabilities stay hidden until it's too late —raising the risk of cyberattacks and system failures. In a control room environment, poor visibility into system activity leads to immediate operational challenges and delays in responding to threats:

- *Poorly integrated multi-factor authentication (MFA) slows down access to critical systems.*
- *Excessive false alerts create fatigue, making it harder to detect real threats.*
- *Inadequate logging and visibility can lead to regulatory fines and legal exposure.*

Aetria delivers enterprise-grade monitoring with simplicity. It gives IT teams full visibility into system health and security, while minimizing noise from false positives. With intuitive interfaces, real-time alerts, and smart logging, Aetria helps you stay ahead of threats without overwhelming your team.



RIGHT ACCESS, RIGHT TIME

In fast-paced control room environments, managing who can access what, isn't just an IT task—it's critical to both security and performance. The challenge grows in large facilities like airports or power plants, where multiple teams need tailored access.
Striking the right balance for access in control rooms is a necessity:

- *Strict permissions that limit timely access to critical systems can slow response times.*
- *Unclear permissions structure make it difficult to assign access based on specific roles and security clearance.*
- *Traditional systems often lack the flexibility to scale and adapt to evolving security needs and roles.*

Aetria gives control rooms precise access management tools tailored to real-world roles. Whether it's an airport, power plant, or military facility, Aetria restricts system access based on job function. With built-in encryption and role-based permissions, you get the right balance between operational efficiency and airtight security.

AN INTELLIGENT SYSTEM TO ENHANCE PERFORMANCE

Protecting the control room from cyber threats is essential, especially when handling sensitive data transmitted across networks. In high-risk environments, strong, reliable security isn't optional; it's crucial.

With increasing demands on security, uptime, and operational efficiency, control rooms must be equipped with intelligent systems that reduce complexity while enhancing performance. Every connection between devices must be secured with enterprise-grade encryption to ensure that critical information stays protected and accessible only to authorized personnel.

Aetria addresses these challenges head-on; offering secure data delivery, built-in redundancy, real-time monitoring, and scalable user access control. By simplifying critical infrastructure and ensuring continuous, secure operations, Aetria empowers control room teams to respond faster, work smarter, and stay protected in any scenario.

To learn more about control room solutions, visit datapath.co.uk

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WP-AET-SECURITY-EN2-V1.0

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