

By: Xavier Guiler

Date: 3/16/24

Mitigating Vulnerabilities in Critical Infrastructure with SCADA Applications

Critical infrastructure systems are vulnerable to many different threats such as cyber-attacks, natural disasters, and physical attacks. SCADA systems or Supervisory control and data acquisition systems are set in place to help mitigate these risks by monitoring a variety of systems. However, this article has proven that even these systems aren't immune to vulnerabilities, and many argue that they shouldn't be used.

Vulnerabilities in the Critical Infrastructure Systems:

Critical Infrastructures systems such as power grids and water treatment systems are essential for the functionality of this society. However, many of these systems are vulnerable to malicious activities such as cyber-attacks or physical sabotage. According to a recent article on SCADA security by SCADA (2024), cyber-attacks on critical infrastructure systems are becoming increasingly common, with hackers targeting SCADA applications as a means to disrupt or disable these systems. SCADA systems are very useful in these attacks with real-time monitoring. However, SCADA systems aren't immune to these attacks Aswell, as these systems grew, they became internet-based which became more vulnerable for cyber-attacks. Many hackers target these vulnerabilities with hopes of gaining unauthorized access or being able to disrupt these critical infrastructure systems which poses a significant threat to these systems.

Role of SCADA Applications in Mitigating Risks

SCADA applications are very essential in mitigating risks within these critical infrastructure systems, using different applications such as remote terminal units(RTUs) and programmable logic controllers(PLCs). These applications are able to detect malicious behavior and even respond to different emergency situations. While these vulnerabilities and malicious activities have become more common, SCADA vendors are working on solutions for these vulnerabilities and creating security features that will ensure a more reliable system for the future.

Conclusion

In conclusion, critical infrastructures that are vital to society have only become bigger targets to cyber attacks and physical attacks. SCADA systems have played a huge role in mitigating these risks and ensuring a more protected infrastructure by providing real-time monitoring. Even if these systems have risks of their own as they continue to grow, they are essential in protecting critical infrastructures.

References

Background and risks associated with various SCADA systems. Envista Forensics. (n.d.).
<https://www.envistaforensics.com/knowledge-center/insights/articles/background-and-risks-associated-with-various-scada-systems/>

SCADA systems. SCADA Systems. (n.d.). <https://www.scadasystems.net/>