



SOUTHWEST RESEARCH INSTITUTE

Embedded Systems Security

An independent, risk-based approach to embedded security testing

Expanded functionality and access to valuable data are reinforcing the importance of verifying the security of your embedded systems.

Southwest Research Institute® (SwRI®) can help you maintain your security posture as your system evolves. Functionality is expanding as a result of demands for capabilities, interoperability, and mobility – dramatically increasing the attack surface that can be exploited. Data transmitted and utilized by embedded systems is valuable and needs to be protected to prevent costly data breaches.

Penetration Testing

SwRI will help you *immediately identify and remediate vulnerabilities* in your embedded systems before they impact your business.

We provide a timely and cost-effective system of security and risk management by using a proven *security methodology* that employs a risk-based approach to vulnerability and penetration testing.

Black-Box Testing

This approach is designed to model how an adversary would target a system without any insider information about how the system operates, providing realistic results of how your system may be exploited. Additionally, this approach independently verifies security and provides a metric on how easily a system can be exploited.

White-Box Testing

This approach is performed to provide an *in-depth evaluation* of a system from a security perspective, revealing vulnerabilities that are nearly impossible to find with the black-box approach. Security reviews of internal system designs, software implementation, and architecture result in a thorough evaluation of the system – making it very secure.

Ask us about our hybrid approach – an effective combination of black-box and white-box testing, often referred to as grey-box testing.



SwRI works with transmission and distribution customers, and offers NERC-CIP* services.

*North American Electric Reliability Corporation – Critical Infrastructure Protection

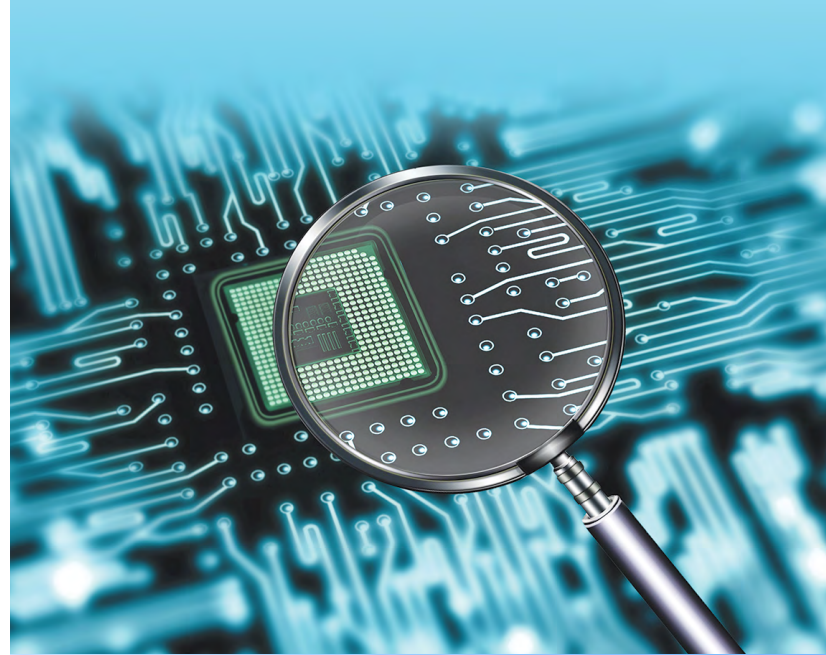
Unique Capabilities

Security engineers at SwRI have a large pool of state-of-the-art test equipment for **reverse engineering** of embedded hardware systems and proprietary communication protocols. In addition, we have a selection of commercially available **security software tools** used to evaluate networks, servers, software programs, and firmware binaries. Finally, SwRI takes the additional step to develop **custom security testing tools** to find vulnerabilities that cannot be found with any commercially available tool.

SwRI actively performs **applied research** in a number of cyber security areas such as wireless protocol fuzzing, insider threat, malware detection, secure software development, and hardware-based roots-of-trust. This research ensures that SwRI is at the forefront of both offensive and defensive capabilities as they relate to penetration testing and secure system development.

Benefits

SwRI is an independent, unbiased, nonprofit organization founded in 1947. We conduct applied research, development, testing, and evaluation for commercial and government clients, both domestic and foreign. We have extensive laboratory and test space that allows us to provide secure facilities as well as protecting our clients' privacy and intellectual property. As part of a long-held tradition, patent rights arising from sponsored research at the Institute are often assigned to the client. SwRI generally retains the rights to Institute-funded advancements.



Contact us to learn more about how SwRI can help:

Cameron Mott

Program Manager–R&D

210.522.2583

cameron.mott@swri.org

Donald Green

Lead Engineer

210.522.6770

donald.green@swri.org

Cyber Physical Systems Section

High Reliability Systems Department

Intelligent Systems Division

systemsecurity.swri.org

SOUTHWEST RESEARCH INSTITUTE

Southwest Research Institute® is a premier independent, nonprofit research and development organization. With eleven technical divisions, we offer multidisciplinary services leveraging advanced science and applied technologies. Since 1947, we have provided solutions for some of the world's most challenging scientific and engineering problems.

An Equal Employment Opportunity/Affirmative Action Employer
Race/Color/Religion/Sex/Sexual Orientation/Gender Identity/National Origin/Disabled/Veteran
Committed to Diversity in the Workplace

210.522.2122

ask@swri.org

Like. Share. Follow. Listen.



swri.org

©2023 Southwest Research Institute.
All rights reserved.