

NSA and Minority Serving Institutions: Improving Vehicle Cybersecurity with Morgan State University

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The National Security Agency (NSA) established a Cooperative Research and Development Agreement (CRADA) with Morgan State University (MSU) to use [Ghidra](#), a reverse-engineering tool created by Agency researchers, to improve the cybersecurity of vehicles. This agreement with MSU, a Historically Black College and University (HBCU), is the inaugural partnership of the Agency's Minority Serving Institutions (MSI) CRADA.



Morgan St. MSI CRADA graphic
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This collaboration enabled MSU students and faculty to conduct research alongside NSA's Vehicle Systems Software Analysis team – a team that focuses on conducting research of electronic control units (ECUs) and the vulnerabilities they create for modern vehicles.

The MSI CRADA, established in December 2019 by NSA's Office of Research and Technology Applications (ORTA), enables the NSA workforce to engage with a variety of MSIs to conduct research and development focused on Internet of Things (IoT), national cybersecurity posture and cyber analysis, and secure composition and system science. Due to technological advancements in the realm of modern vehicles, the IoT category now includes vehicles (like smart cars).

Karen Presley, ORTA's Deputy Director, said that the creation of this CRADA has given partnership and research opportunities to faculty and MSI students who have the knowledge and valuable skills, but who may not have been initially recognized. This CRADA has also allowed MSIs to engage in a more expedited technology transfer process with NSA. "The establishment of the CRADA gives MSIs the

opportunity to engage in a streamlined way, which allows the Agency to partner with more MSIs, get them exposure and potentially increase the recruitment pool,” said Ms. Presley.

Dr. Eric Clemons, an NSA Cybersecurity Senior Strategist and academic liaison with the university, led this research project. Ghidra is an award-winning intellectual property that was initially released to the public via open-source in March 2019 and has been used externally in a variety of ways to enhance users’ cybersecurity.

About NSA ORTA

The NSA ORTA technology transfer program establishes partnerships between industry, academia, and other government agencies to help accelerate mission, advance science, foster innovation, and promote the growth and commercialization of technology originally created for Agency mission.

Questions? Contact NSA’s Technology Transfer Program

Office of Research & Technology Applications, NSA Research Directorate

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