

■ OnBoard Security Research

CONNECTED AND AUTOMATED VEHICLES

OnBoard Security has made a name for itself as a leading provider to the Vehicle-to-Vehicle (V2V) security, trusted computing, and advanced cryptography markets. As a newly independent company, OnBoard Security plans to accelerate new research and development needed to continue delivering innovation and thought leadership.

RESEARCH AREAS

ONBOARD SECURITY RESEARCH AREAS

Our goal is to optimize consumer security and privacy when it comes to Automated Vehicles and V2X communication. As we enter a more connected world, technology vulnerabilities increase dramatically, as does the lack of human safety. The risk that Autonomous and Connected Vehicles pose is that of being hacked, spoofed, or controlled remotely by a malicious force. In order to prevent this from happening, the OnBoard Security team is conducting research in the following areas: V2X security and privacy, automated vehicle security, PKI, and cryptography. This research translates into the following projects -

- **Context Adaptive Pseudonym Management for V2X** - allows for reduced costs and increased flexibility, while maintaining privacy
- **V2X and Automation-aware Misbehavior Protection System** - prevents, detects, and reacts to malicious signals to improve V2X data and ensure mission success
- **Automated Vehicle Sensors Security** - assess resilience against malicious input and propose countermeasures to improve decision-making

Our Research Team has extensive experience in computer, network, and system security. Our goal is to continue to bring you the latest in security research and innovation.

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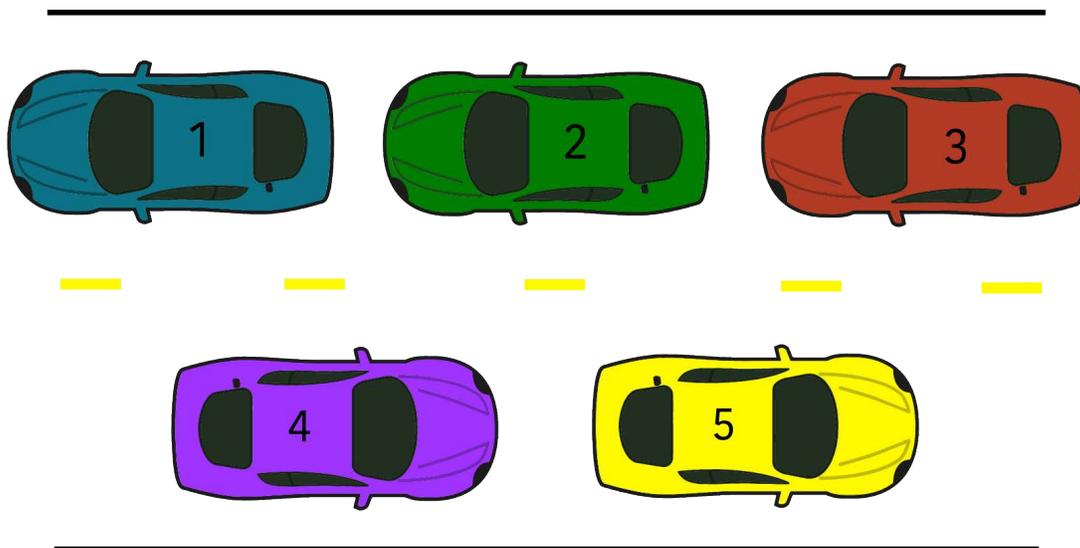
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ONBOARD SECURITY RESEARCH

Here at OnBoard Security, we take pride in our ability to conduct cutting-edge research typically only done by companies several times our size. We do this through a two-pronged approach; applied research and thought leadership. The former allows us to identify market needs, and engineer and patent products to meet those needs. The latter allows us to present and publish papers on our findings. Combining these two methods allows us to stay ahead of the curve and create successful embedded technologies for a more secure future.

MISBEHAVIOR PROTECTION SYSTEM

Let's take a deeper look into one aspect of the automotive security research we are conducting: V2X misbehavior protection. Without proper protection, Connected Vehicles can be fooled by false data. This can spell danger for all on the road. Take a look below -- if you are vehicle 3, you cannot physically see vehicle 1. To determine whether or not a signal coming from vehicle 1 is legitimate, you can communicate with adjacent vehicles. To paint the most accurate picture of your surroundings, you must gather information not just from vehicle 2, but from vehicles 4 and 5 as well. Using this method, you can determine what is real and what is not, and avoid any deception via malicious signals.



WE WANT TO COLLABORATE!

When it comes to research, we believe that collaboration is key. Our goal is to find and fill any gaps that might exist in the security world, and we count on our external partnerships to ensure that we cover everything. We welcome input and collaboration from all fronts, including academia, industry, and investor. In the past we have partnered with universities (undergraduate, graduate, PhD students), researchers from other leading technology firms, and more. If you have concepts that you want to explore, don't hesitate to contact us at sales@onboardsecurity.com -- we're always looking for more ways to stay ahead of the curve.