



Challenges, current solutions and research directions regarding safety and security of intelligent vehicles

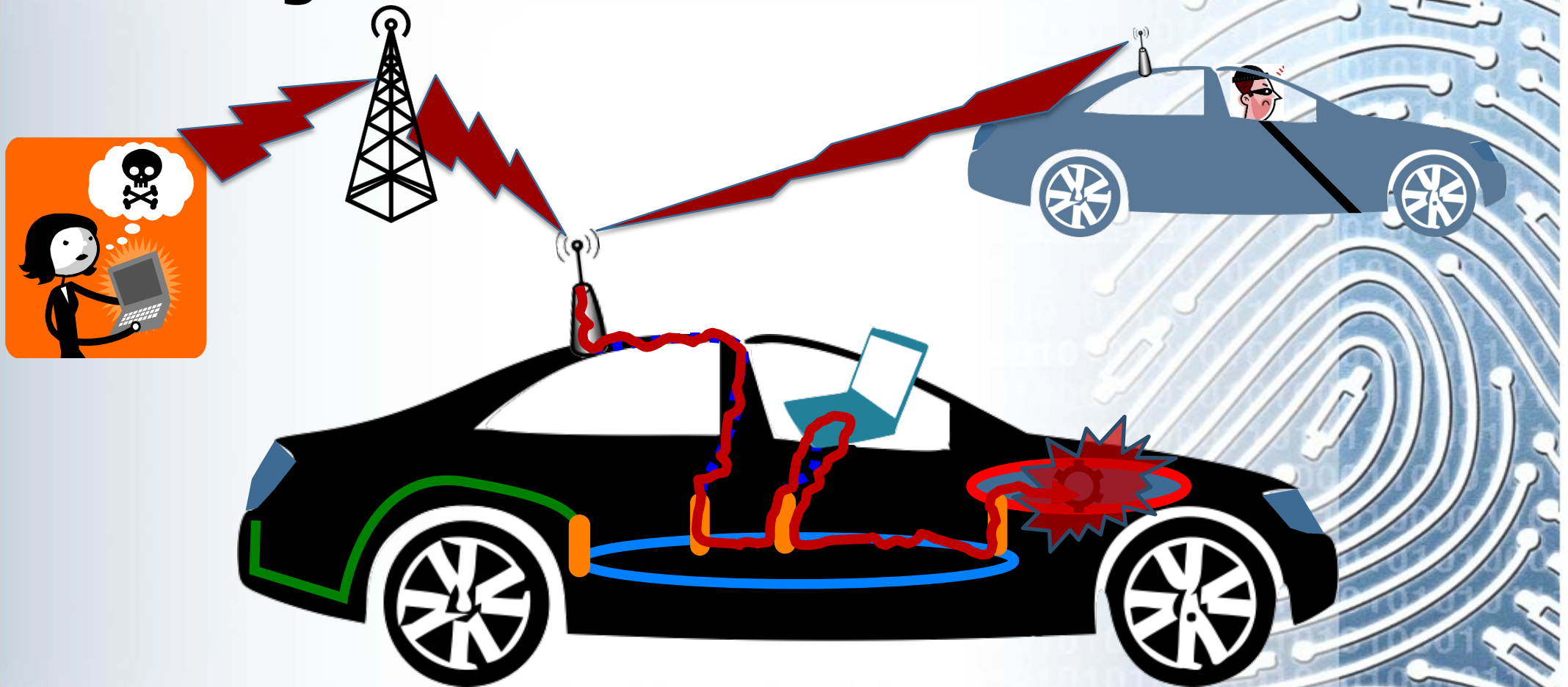
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CritiX Lab (Critical and Extreme Security and Dependability)

Panel at SSIV @DSN 2017 .

X-by-wire Networked Vehicles: no longer mechanical and isolated



[Lima et al.,
ACM CPS-SP@CCS'16]

AMPLIFIED THREAT SURFACE!

The safety-security gap in vehicle ecosystems

Faults in a well designed car lead to an **infinitesimal** and **acceptable** probability of catastrophic failure;



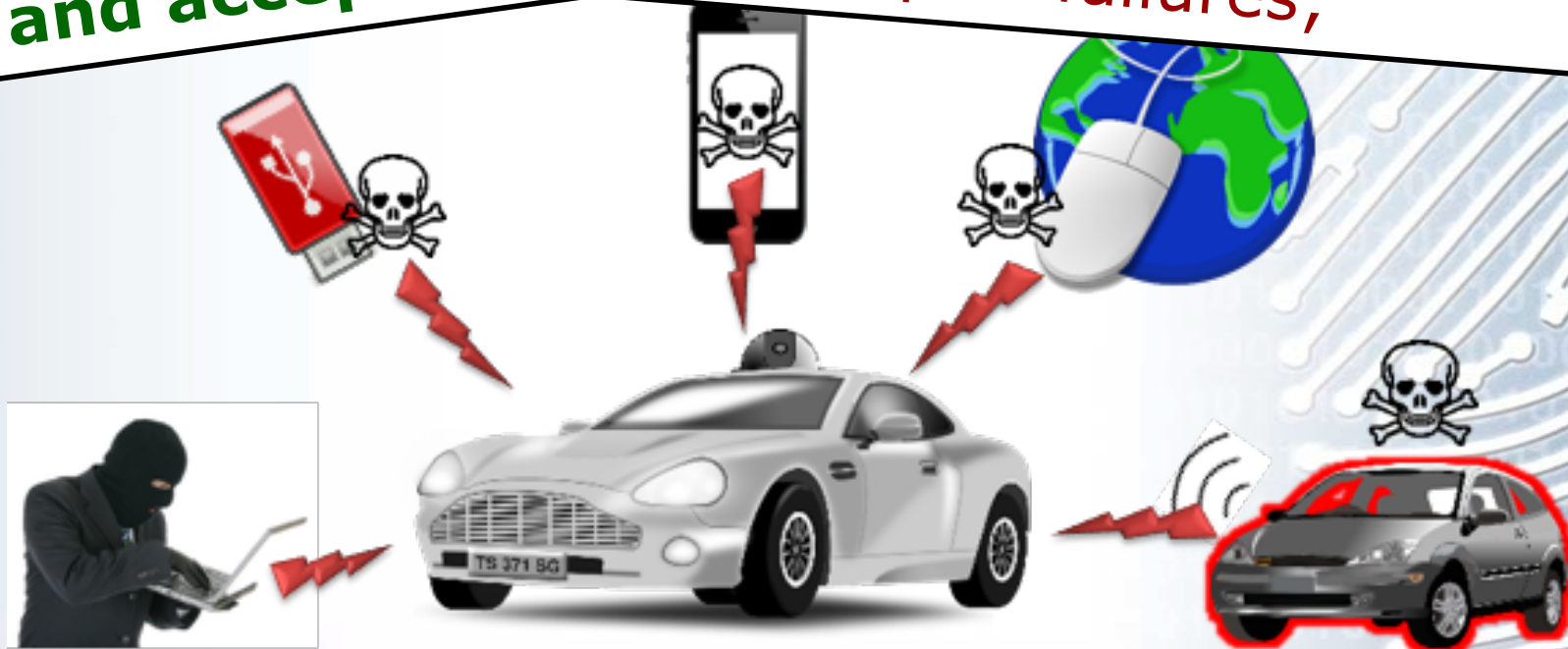
Towards Safe and Secure Autonomous and Cooperative Vehicle Ecosystems. Lima, A; Rocha, F; Volp, M; Verissimo, P. in Proc's 2nd ACM Workshop on Cyber-Physical Systems Security and Privacy (2016, October) @CCS, Vienna-Austria

The safety-security gap in vehicle ecosystems

Vulnerabilities in a car **will** lead, rather sooner than later, to catastrophic failures;

or lead to an **infinitesimal** catastrophic failure;

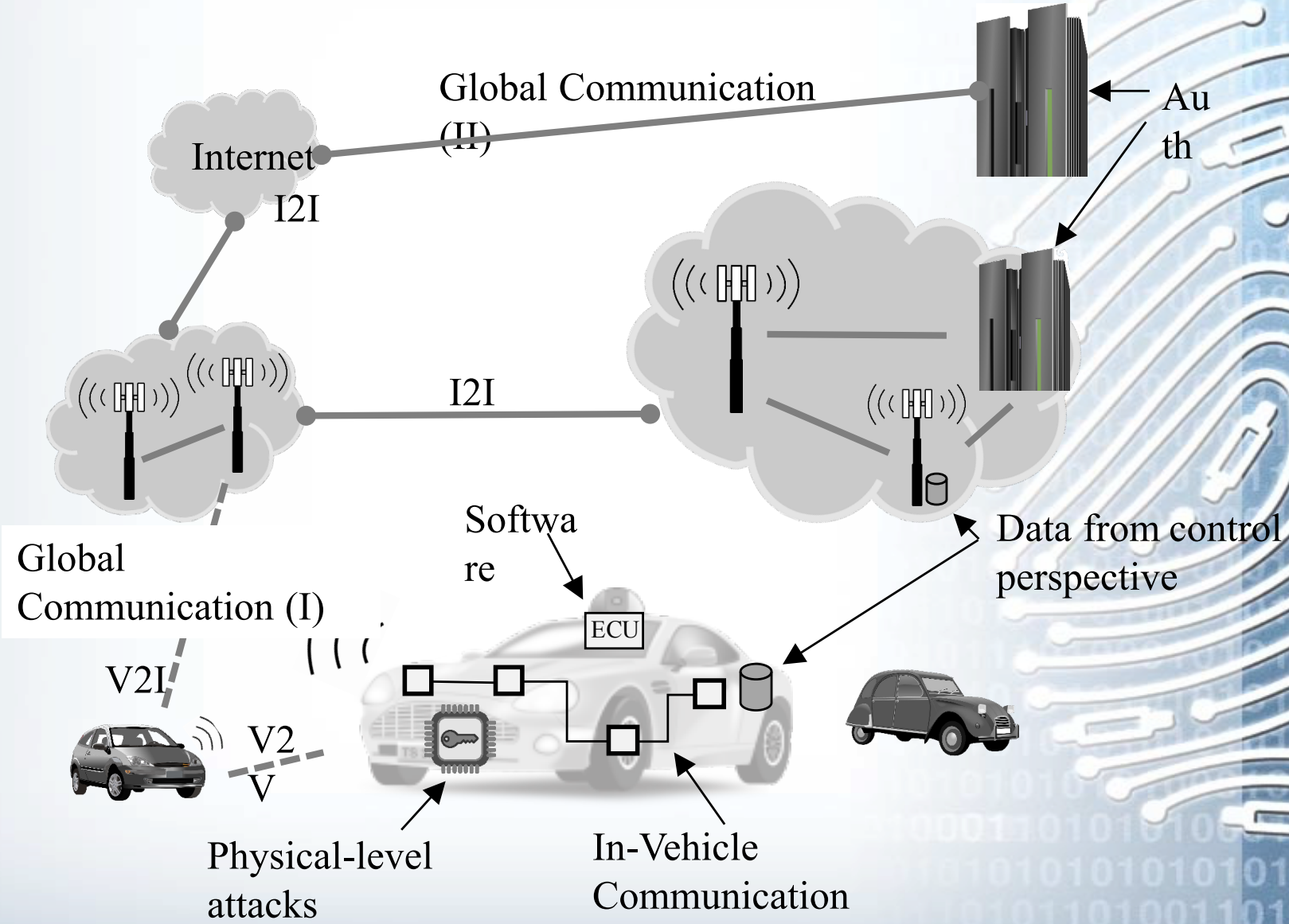
and **acceptance**



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Several point vulner/attack papers published

Ecosystem view helps understand problems



Autonomous vehicle ecosystem threat plane perhaps wider than many think

