KASPERSKY AUTOMOTIVE SECURITY

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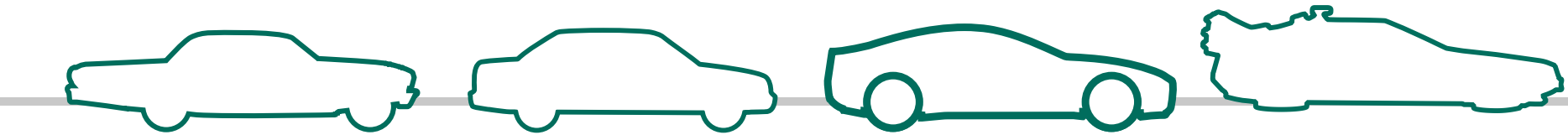
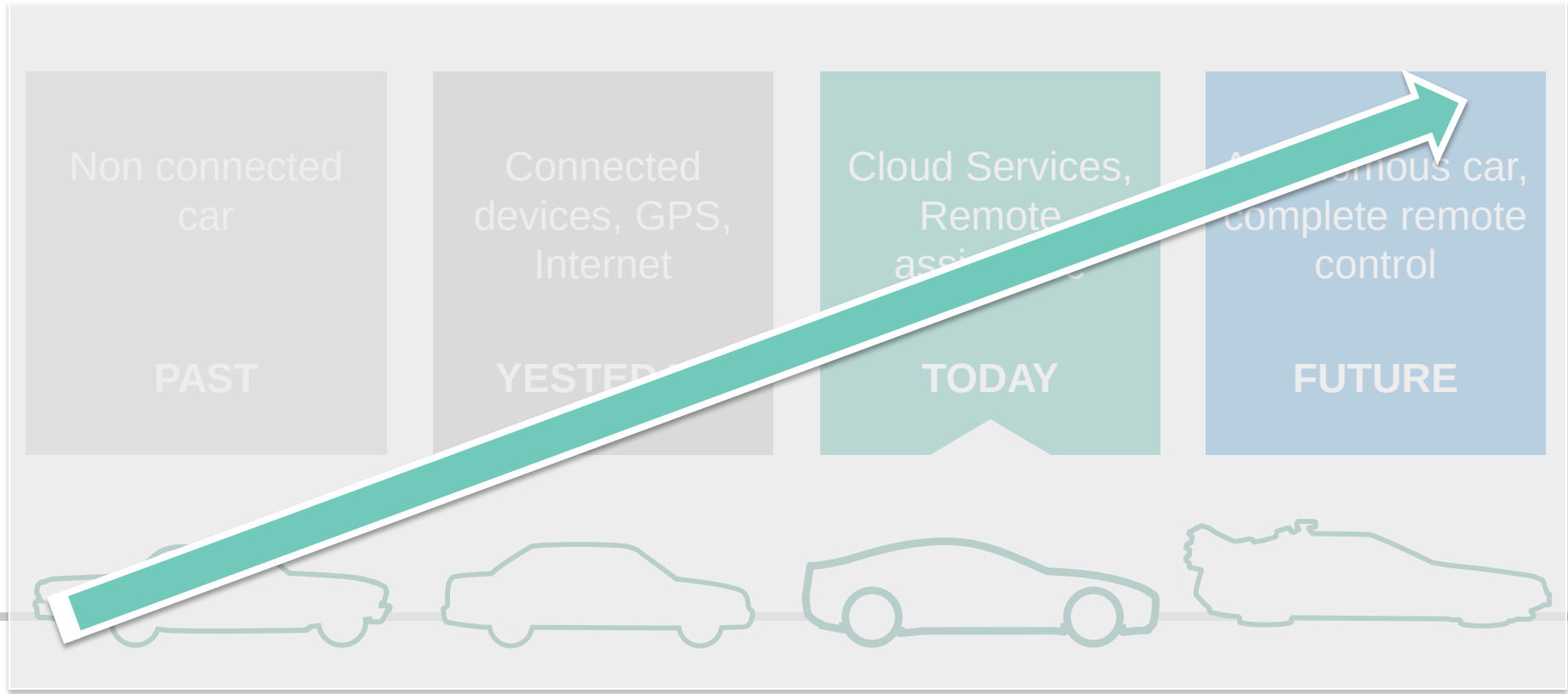
KASPERSKY

CONNECTED CAR EVOLUTION

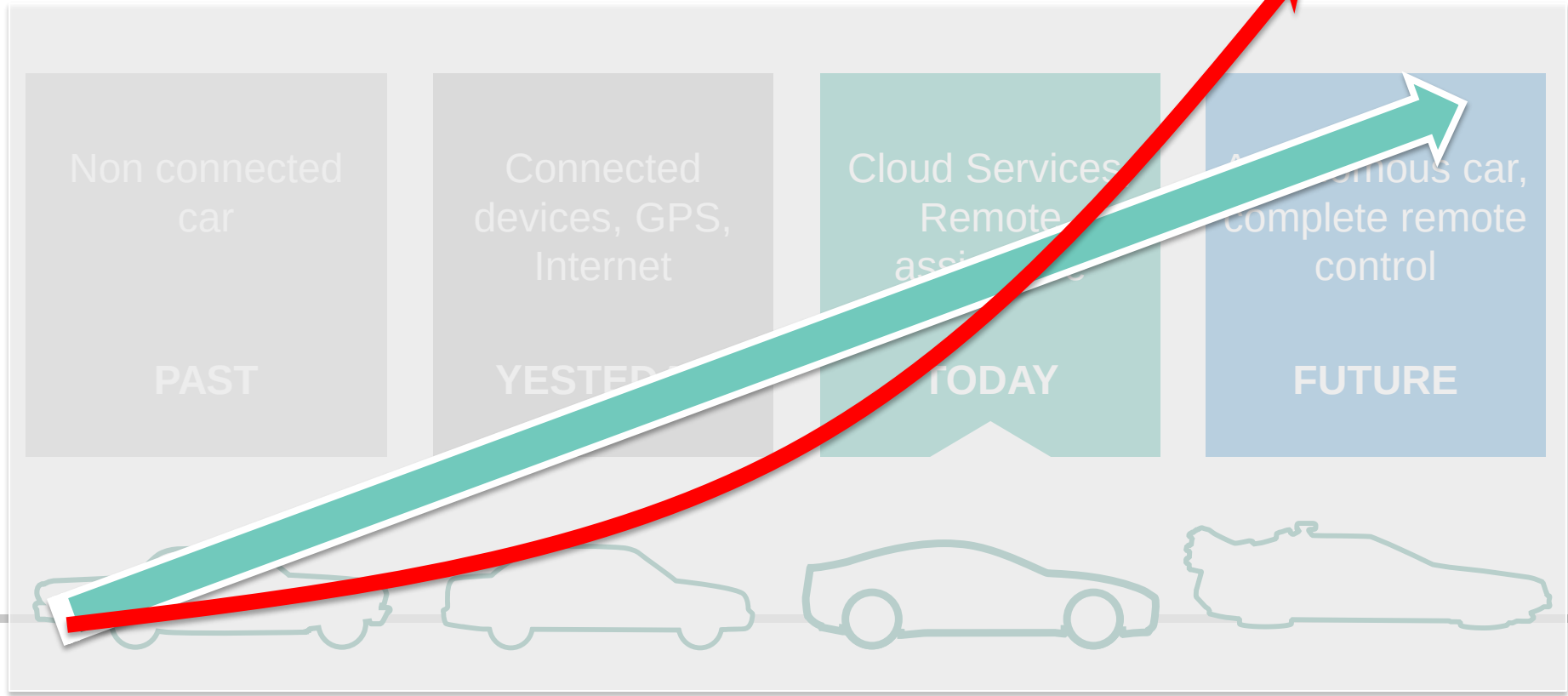
Non connected car	Connected devices, GPS, Internet	Cloud Services, Remote assistance	Autonomous car, complete remote control
PAST	**YESTEDAY**	**TODAY**	**FUTURE**



CONNECTED CAR EVOLUTION. Benefits



CONNECTED CAR EVOLUTION. Benefits and Cyber Risks



CONNECTED CAR TODAY

Cloud Services

Internet

Mobile apps and stealing a connected car

By Mikhail Kuzin, Victor Chebyshev on February 16, 2017. 10:27 pm

PUBLICATIONS

CONNECTED CAR | INTERNET OF THINGS | MOBILE ATTACKS | SMS TROJAN | SOCIAL ENGINEERING

CONTENTS

The concept of a connected car, or a car equipped with Internet access, has been gaining popularity for the last several years. The case in point is not only multimedia systems (music, maps, and films are available on-board in modern luxury cars) but also car key systems in both literal and figurative senses. By using proprietary mobile apps, it is possible to get the GPS coordinates of a car, trace its route, open its doors, start its engine, and turn on its auxiliary devices. On the one hand, these are absolutely useful features used by millions of people, but on the other hand, if a car thief were to gain access to the mobile device that belongs to a victim that has the app installed, then would car theft not become a mere trifle?

In pursuing the answer to this question, we decided to figure out what an evildoer can do and how car owners can avoid possible predicaments related to this issue.

CONNECTED CAR MAIN SECURITY OBJECTIVES

Protect Communications

Physical and remote connections

Protect Cloud Services

OTA updates and Management

Safety

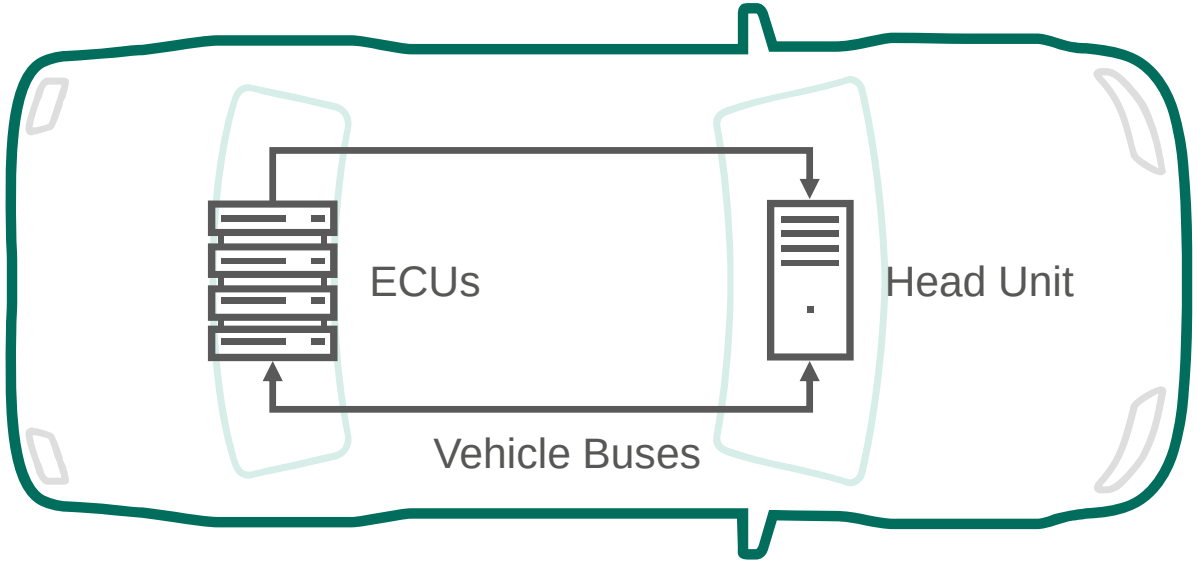
Protect Each Module

All ECU, Sensors, BCU

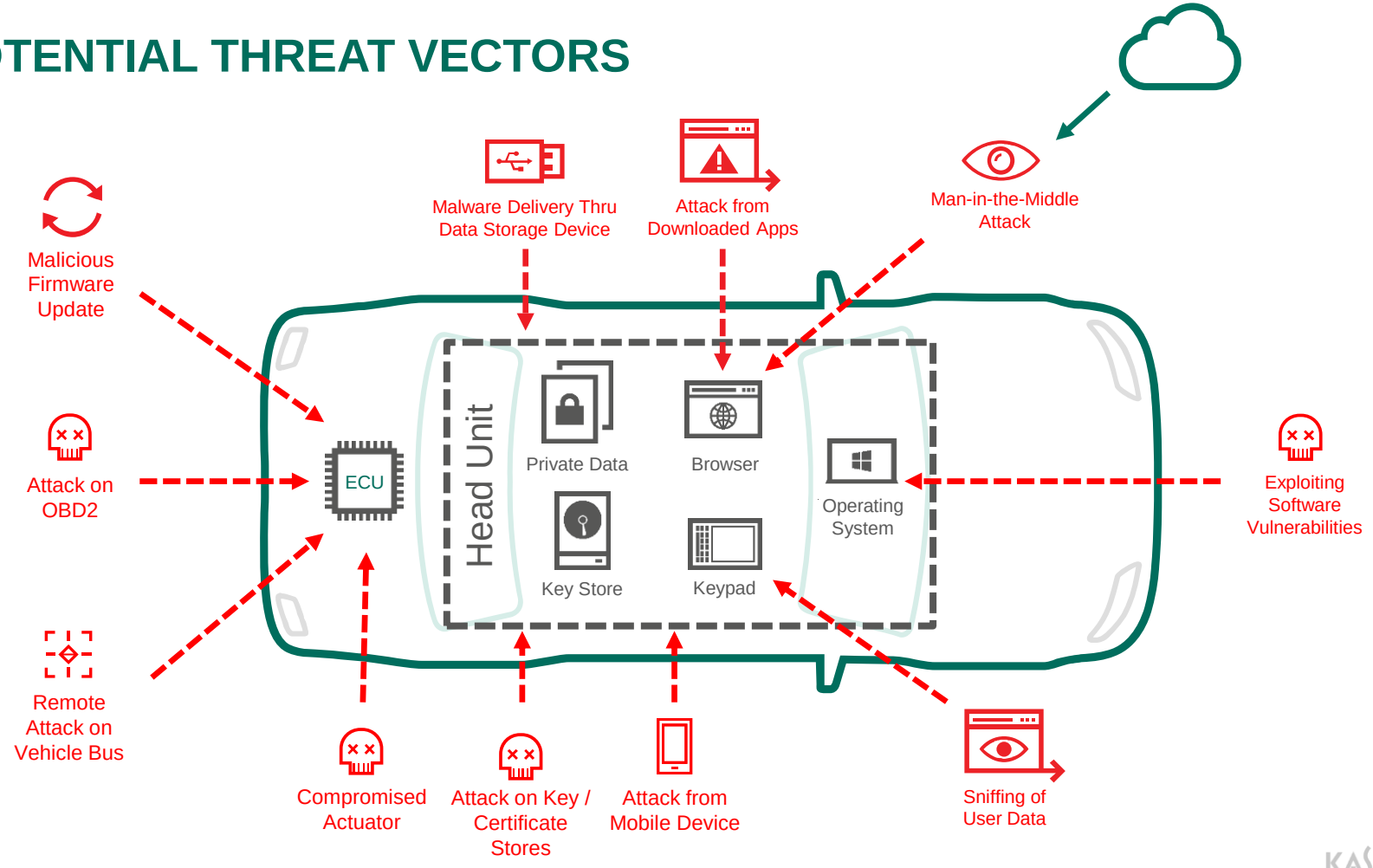
Persist Advanced Threats

Analytics and Analysis

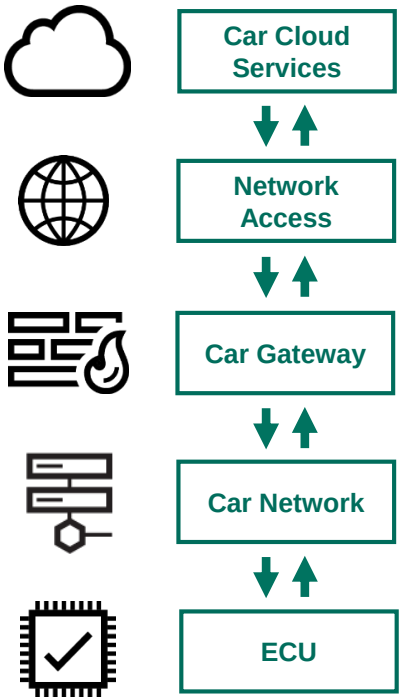
CONNECTED CAR MAIN INTERNAL VULNERABLE POINTS



POTENTIAL THREAT VECTORS



CONNECTED CAR SECURITY LAYERS



Layers	Threat vectors
Car Cloud Services	• Man in-The-Middle-Attack • Attack From Downloaded Apps
NW Access	• Sniffing of User Data • Attack From Downloaded Apps • Exploiting Software Vulnerabilities
Car Gateway	• Attack from Apps in Mobile Device • Exploiting SW Vulnerabilities • Malicious Firmware Update • Malware Delivery Thru Data Storage Devices
Car Network	• Compromised Engine Actuator • Attack on Vehicle Bus
Car ECU, IVI, OBD2	• Attack on Key, • Malicious Firmware Update • Attack on Vehicle Bus

CONNECTED CAR SAFETY THRU SECURITY

Cloud Services

Security for Data Centers
Kaspersky Security Network
Fraud Prevention
DDoS Protection
Anti Targeted Attack

Mobile

Mobile Security SDK
Mobile Device Management
Mobile App Management
Mobile Security

Internet

In Car Security

KasperskyOS
Kaspersky Secure Hypervisor
Kaspersky Security System
Security Expertise

Vehicle-to-Vehicle

Vehicle-to-Infrastructure

HOW WE WORK

- Define security objectives
- Create detailed description of scenarios, with results of misuse/abuse cases identification
- Threat modelling
- Define high-level security requirements
- Create a security-focused system architectural concept
- Refine threat model and security requirements

- Specify system requirements for the security features
- Create test plans and test cases for the security features
- Design architecture
- Create low-level design

- Development and testing
- Residual risks assessment
- Integration with HW and testing
- Creation of instrumentation
- Final testing and residual risk assessment
- Penetration testing (separate dedicated team)

Security for Safety

KASPERSKY LAB
AUTOMOTIVE SECURITY TECHNOLOGIES

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