

MAKING CONNECTED CARS SAFE AND SECURE.
FOR EVERYONE.



Upstream

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Upstream

MAKING SMART MOBILITY SAFE AND SECURE. FOR EVERYONE.



USA

UK

Germany

Israel

Japan

SoftBank

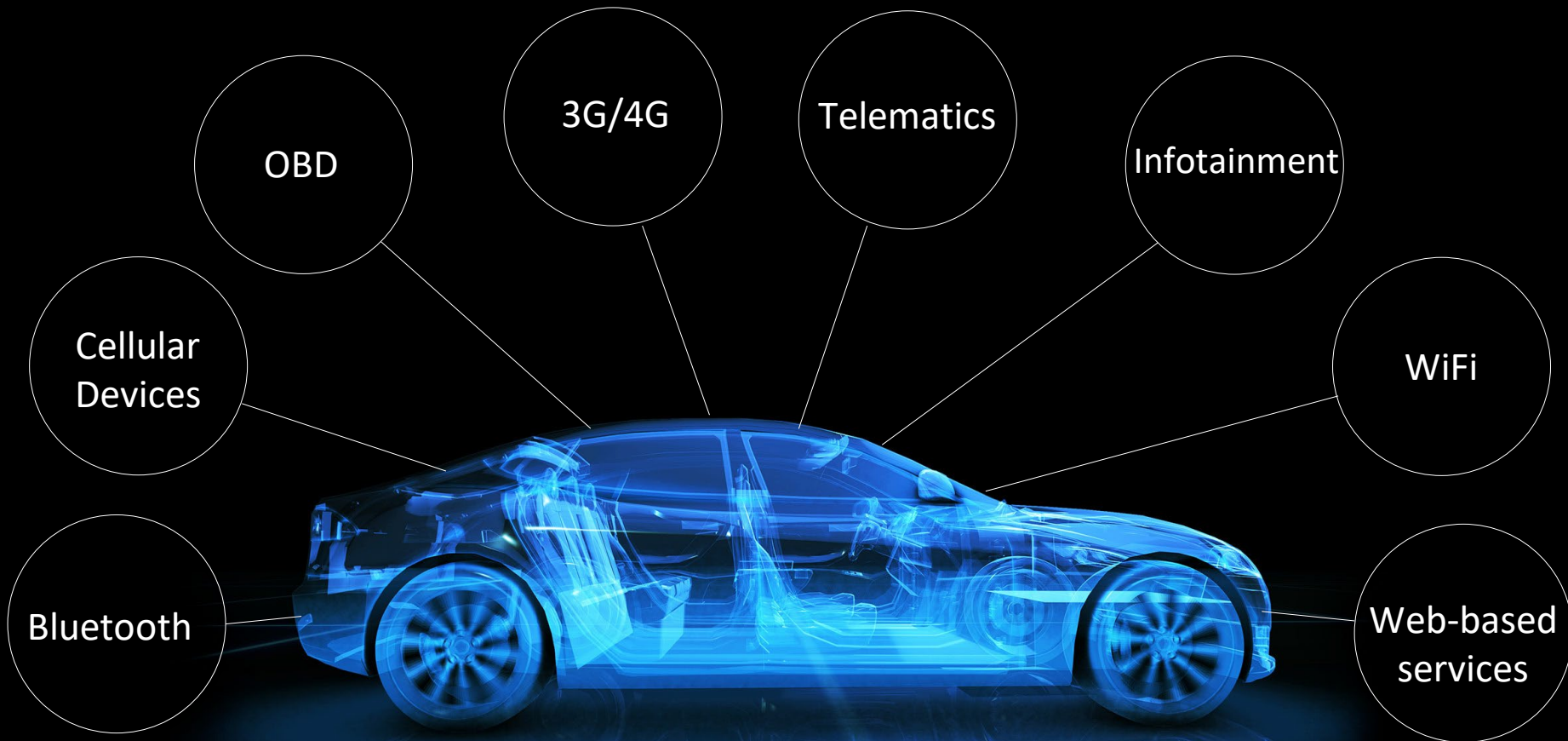


\$41M

FINANCING

OFFICES

VEHICLES CONNECTIVITY



330M CONNECTED VEHICLES ON THE ROAD TODAY



775M CONNECTED VEHICLES ON THE ROAD BY 2023

CONNECTED VEHICLES: CUTTING-EDGE TECHNOLOGY

Millions of lines of code

160

60

50

40

30

20

10

0



Space Shuttle



Hubble Telescope



Android



Boeing 787



F-35 Fighter



FACEBOOK



Windows 7



Ford F-150 (2016)

Time

RAPID GROWTH OF CYBER-ATTACKS ON THE CONNECTED AUTOMOTIVE INDUSTRY 2010-2019

Reported automotive cyber-attacks by year



** October 2019*

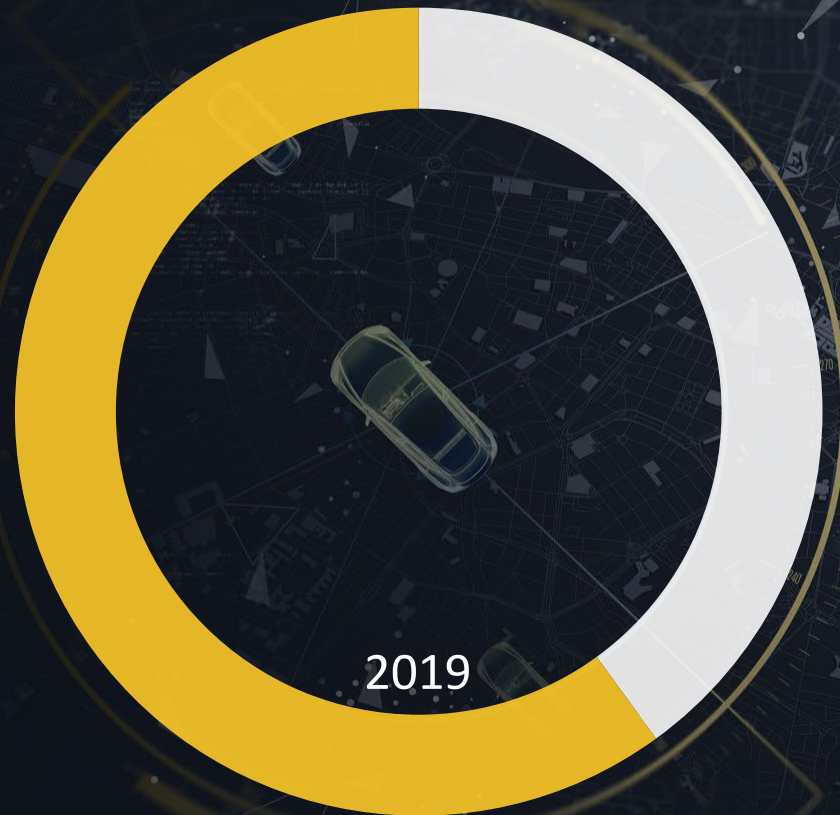
Source: Upstream Security AutoThreat Intelligence

THE TABLES HAVE TURNED BLACKHAT ATTACKS SURPASS WHITEHAT

60%



BLACK HAT



2019

40%



WHITE HAT

**Up to October 2019*

AFTER MARKET/OEM: All | ATTACK VECTOR: All | INDUSTRY: All | BRAND: Companies impacted

[Clear all filters](#)

332
Incidents

Type

151 Black hat | **171** White hat | **9** Privacy

Access

262 Remote | **83** Physical

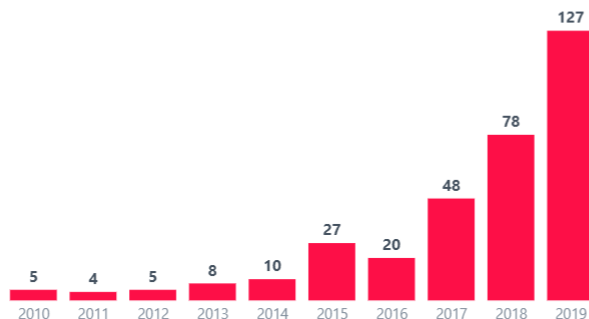
*Incidents may include both physical and remote

Range

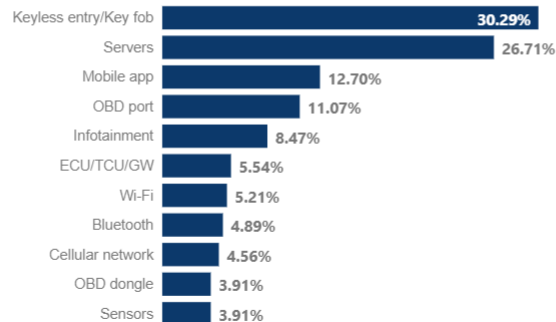
135 Long | **202** Short

*Incidents may include both short and long range

Incidents by year



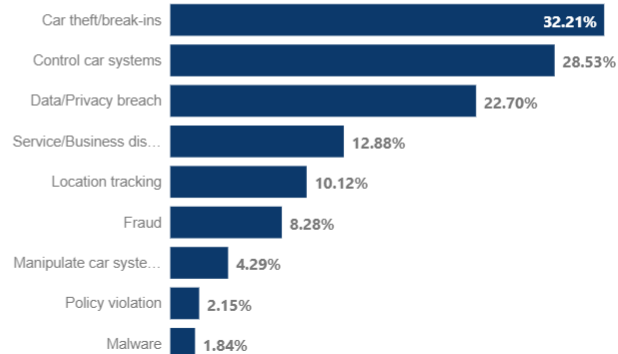
Attack vectors (% of cases)



Latest incidents

Date	Title	Ref.	Details
October 2019	Thieves learn to steal cars on YouTube, arrested	Ref.	Details
October 2019	Zendesk security breach may impact Uber	Ref.	Details
October 2019	Electronic road signs hacked with anti-driver messages	Ref.	Details
September 2019	Auto parts factory hit by cyber attack	Ref.	Details
September 2019	Jeep Wrangler key fob hacked to remotely unlock doors and start the engine	Ref.	Details
September 2019	Malware infection discovered at German car parts manufacturer	Ref.	Details
September 2019	Subaru hacked into a simulator	Ref.	Details

Impact (% of cases)





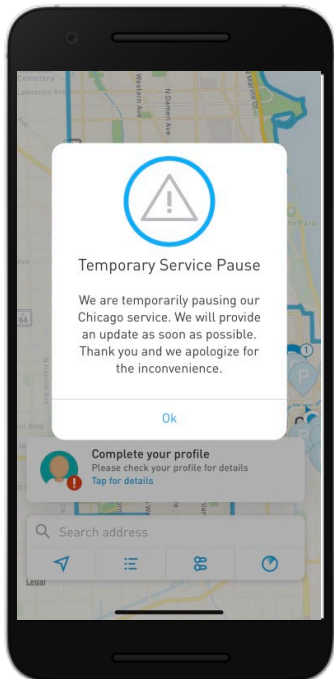
1.4M CARS' RECALL, LAWSUITS



BREAKING

Chicago Car2Go app reportedly hacked, some 100 cars missing

Stolen cars used to commit crimes, says CBS Chicago



ANTTI KAUTONEN

Apr 17th 2019 at 4:20PM

1

comments



FBI says hackers are targeting US auto industry



By [Josh Campbell](#)

Updated 2227 GMT (0627 HKT) November 20, 2019



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VALUE PROPOSITION



TO PROTECT



CONNECTED CARS



DATA

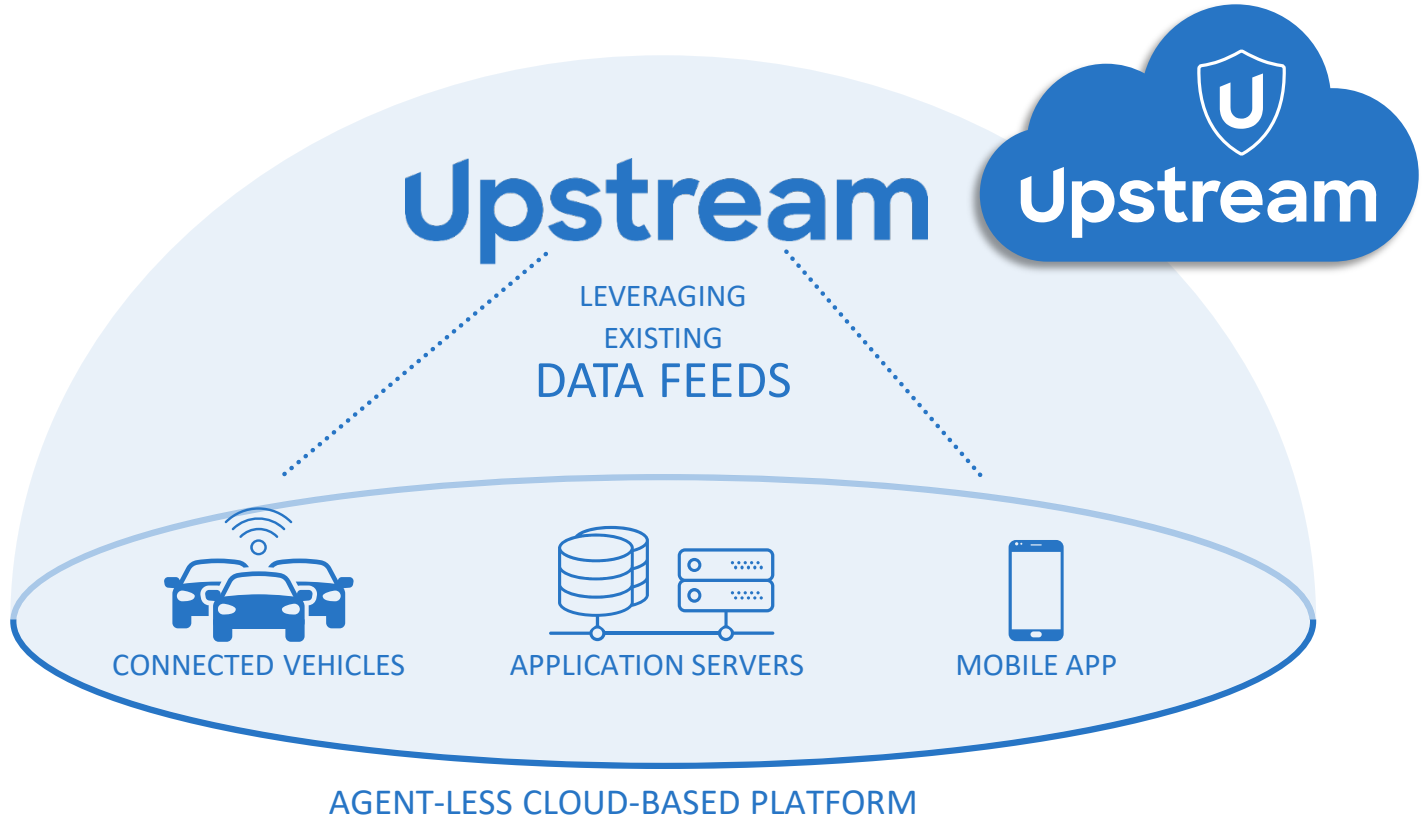


SMART MOBILITY SERVICES

FROM CYBER-THREATS ,MISUSE, FRAUD

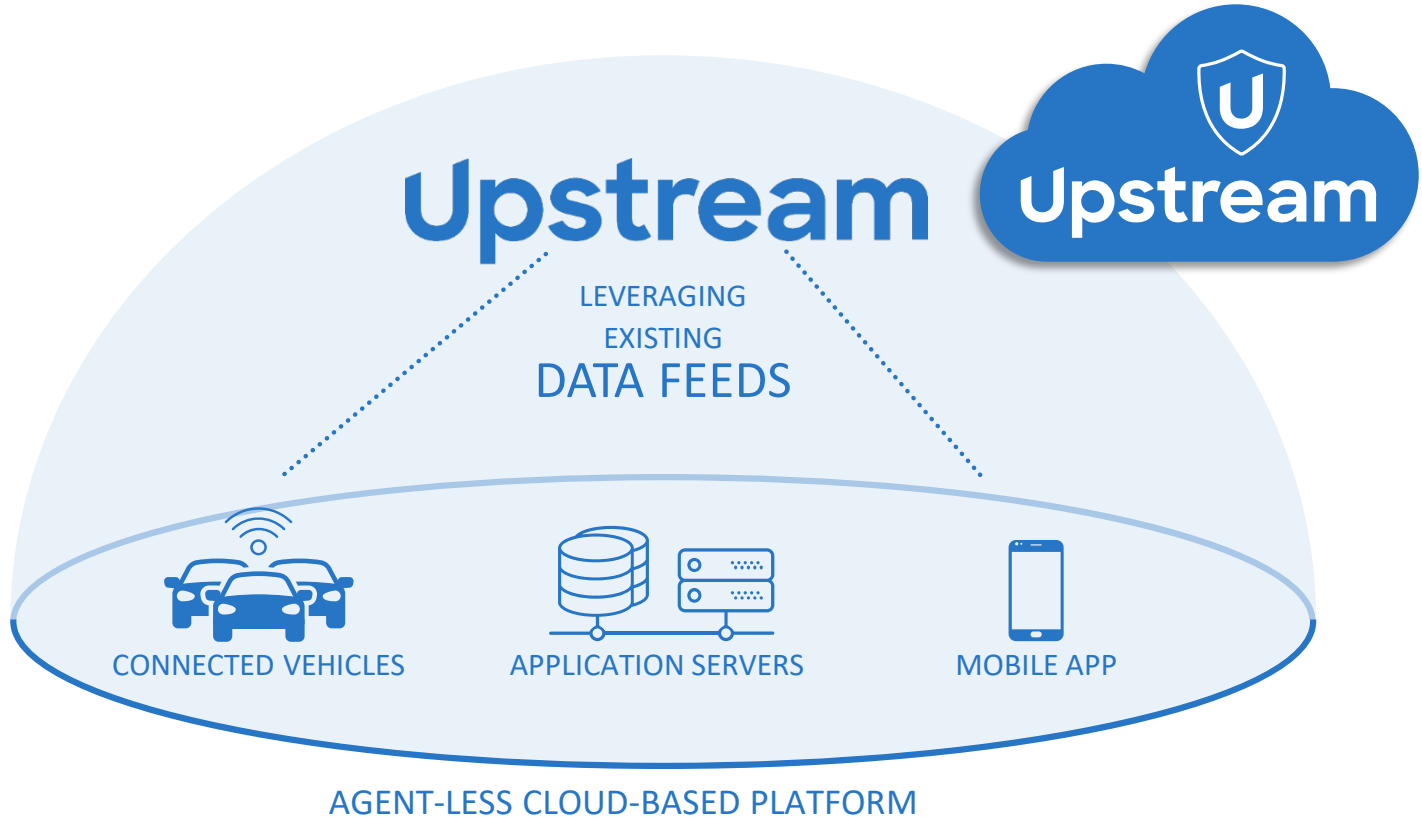
UPSTREAM C4™

CLOUD BASED CYBERSECURITY FOR CONNECTED CARS

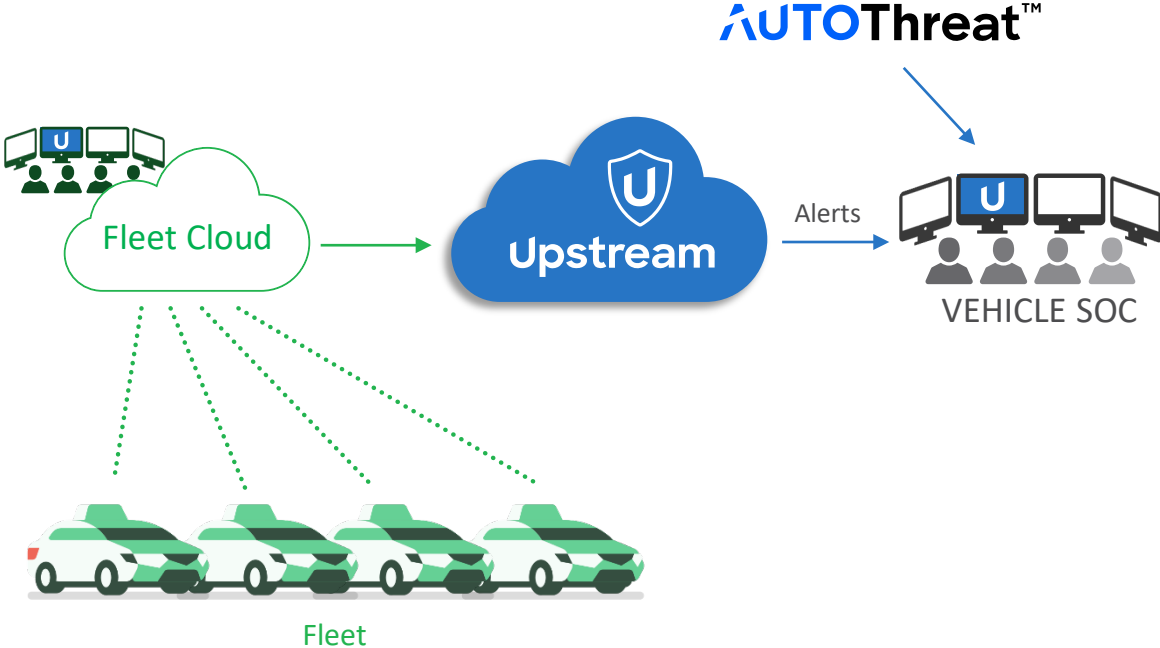


UPSTREAM C4™

NO IN-VEHICLE SOFTWARE OR HARDWARE INSTALLATION



EXAMPLE: UPSTREAM FLEET MONITORING INTEGRATED THREAT FEED



UPSTREAM VEHICLE SOC

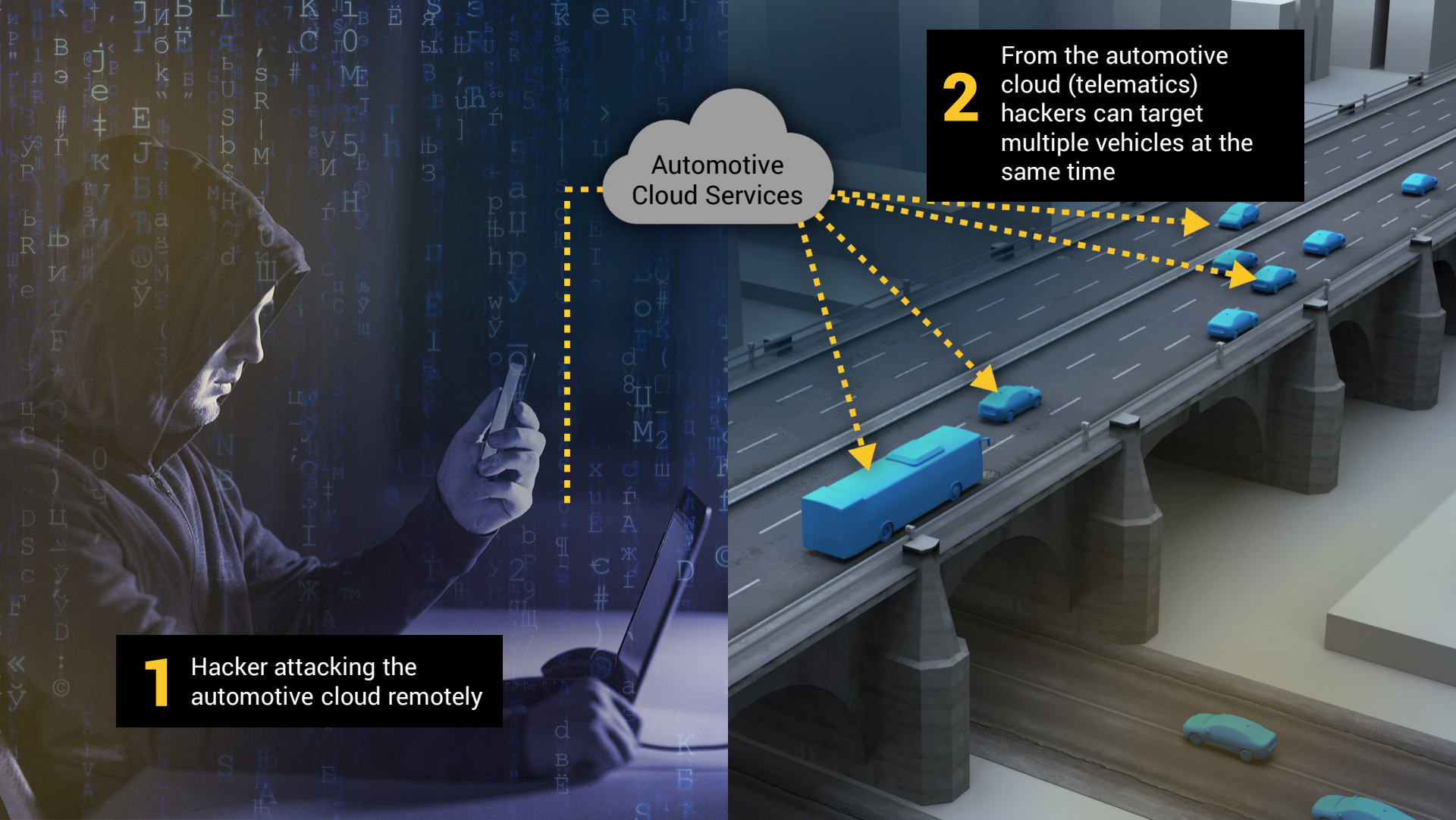
Incident Detection and Response



1 Hacker attacking the automotive cloud remotely

Automotive
Cloud Services

2 From the automotive cloud (telematics) hackers can target multiple vehicles at the same time





1 Hacker attacking the automotive cloud remotely

2 Upstream detects the attack on the automotive cloud



3 Alert sent to Security Operations Center

4 Attack is blocked

