Last 3 Years' Hacks- focus on ECU

BMW 2018 - Series, 3, 5, 7	Infotainment	Telematics	Gateway
TESLA 2016 & 2017	Infotainment	Telematics	
Audi 2018 - Audi A3	Infotainment		
FCA 2015 - Jeep	Infotainment		
VW 2018 - VW Golf	Infotainment		
Mazda 2017 - Mazda (USB)	USB		
Toyota 2017 - OBD	Insurance dongle		
GM 2015 - OnStar	Telematics		

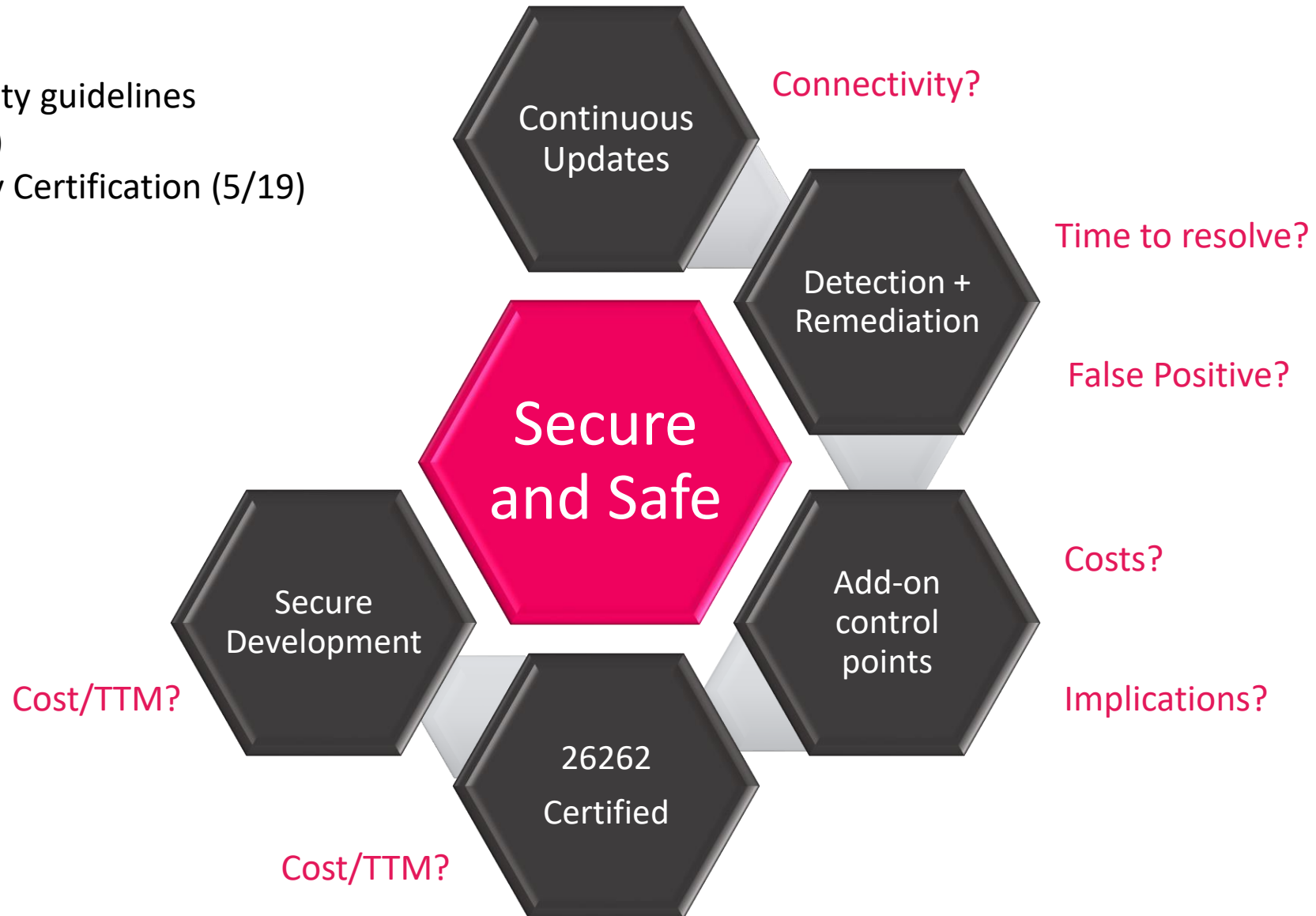# Safety and Security; built-in contradictions

ISO 26262 V2
NIST Cybersecurity guidelines
ISO 21434 (4/19)
EU Cybersecurity Certification (5/19)

Continuous Updates

Connectivity?

Detection + Remediation

Time to resolve?

False Positive?

Secure and Safe

Costs?

Secure Development

Add-on control points

Implications?

Cost/TTM?

26262 Certified

Cost/TTM?

ThreatHive - A Live View of Real ECUs On The Internet

Karamba Security

Karamba

LIVE ATTACK FEED

TIMESTAMP	TYPE	TARGET	COUNTRY	ATTACKER	COUNTRY
13:02:11.634	VOIP Sipvicious User-Agent detected	TCU 3.3 VA	Virginia, USA	37.49.231.28	Netherlands
13:02:14.316	MQTT TCP Scan	IVI 3.5 IL	Israel	185.94.111.1	Russia
13:02:16.238	SCAN SSH brute force login attempt	IVI 3.5 IL	Israel	147.135.76.93	United States
13:02:17.207	TFTP HP Intelligent Management Center TFTP server MODE remote c...	TCU 3.3 US	California, USA	184.105.139.98	United States
13:02:19.868	DNS DNS query amplification attempt	IVI 3.5 MI	Michigan, USA	193.112.76.58	China
13:02:21.150	MQTT TCP Scan	IVI 3.5 IL	Israel	147.135.76.93	United States
13:02:22.591	Data Memory Execution	IVI 3.5 IL	Israel	211.23.29.83	Taiwan
13:02:23.718	TFTP HP Intelligent Management Center TFTP server MODE remote c...	TCU 3.3 US	California, USA	184.105.139.98	United States
13:02:27.303	MQTT TCP Scan	IVI 3.5 IL	Israel	185.53.91.30	Netherlands
13:02:29.690	SCAN SSH brute force login attempt	V2X 1.2 DE	Germany	116.31.116.38	China