Survey on Autonomous Driving in Germany
April 2019
Summary of Results

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Vehicle Models: **25**

Federal States: **16**

Age

- 50 to 59 years
- 40 to 49 years
- 50 to 59 years   1
- 40 to 49 years
- 30 to 39 years

18%
14%
19%
17%
15%
18%

0% 2% 4% 6% 8% 10% 12% 14% 16% 18% 20%

Gender

- Male

49%   51%

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Time of Last Car Purchase

- Never, I don't own a car
- More than 7 years ago
- More than 3 years and up to 7 years ago
- More than one and up to 3 years ago
- In the past 12 months

13%
21%
29%
25%
12%

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0% 5% 10% 15% 20% 25% 30% 35%

Length of Commute

- More than 60 minutes
- More than 30 and up to 60 minutes
- More than 10 and up to 30 minutes
- Up to 10 minutes

1%
11%
32%
11%
46%

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0% 10% 20% 30% 40% 50%

April 2019 survey carried out by: Statista GmbH

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Question 7

Before today, how familiar were you with the concept of Autonomous Vehicles?

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- ■ Extremely familiar (5)
- ■ Moderately familiar (4)
- ■ Somewhat familiar (3)
- ■ Slightly familiar (2)
- ■ Not at all familiar (1)

Total: 7% | 23% | 24% | 23% | 23%

0%   20%   40%   60%   80%   100%
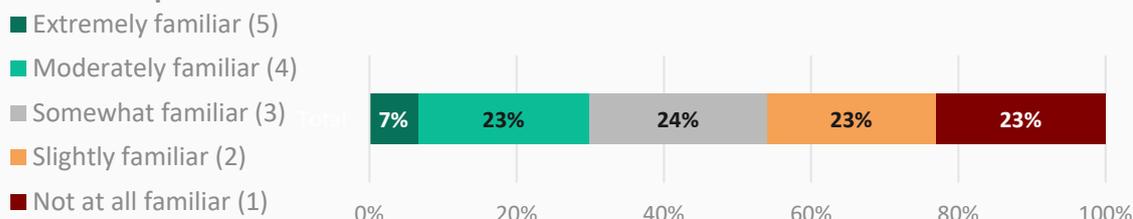
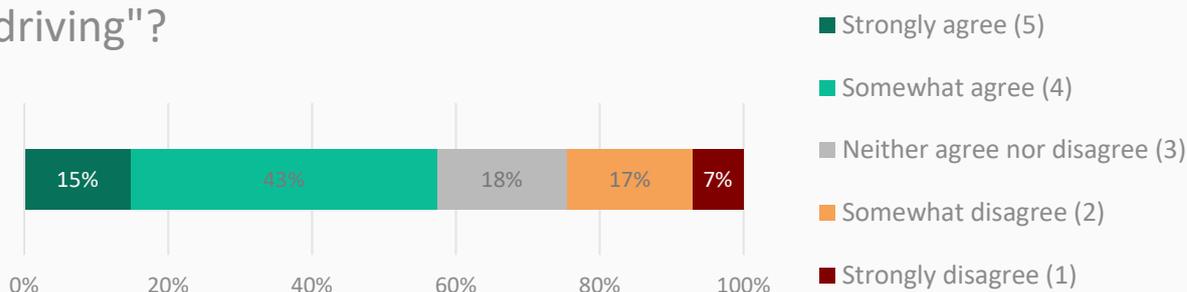## Question 8

What is your reaction to this statement: "Autonomous vehicles will be the future of driving"?

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15% | 43% | 18% | 17% | 7%

0%   20%   40%   60%   80%   100%

- ■ Strongly agree (5)
- ■ Somewhat agree (4)
- ■ Neither agree nor disagree (3)
- ■ Somewhat disagree (2)
- ■ Strongly disagree (1)

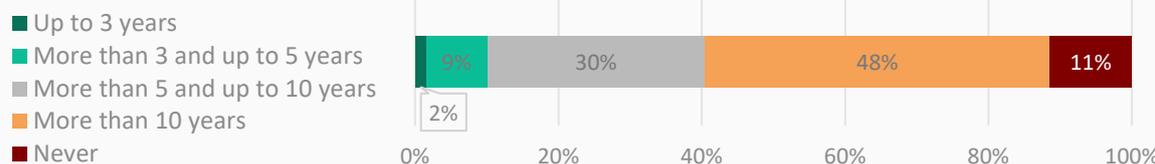## Question 9

Do you believe that Autonomous vehicles, driving you to your destination without a need for driver input, will be the standard within the next:
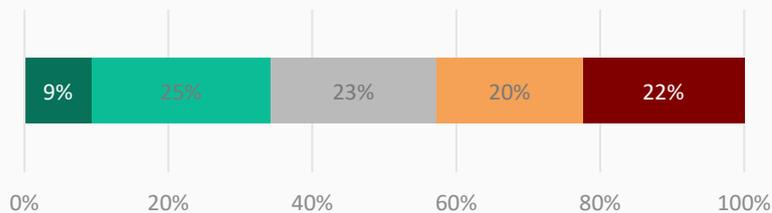
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- ■ Up to 3 years
- ■ More than 3 and up to 5 years
- ■ More than 5 and up to 10 years
- ■ More than 10 years
- ■ Never

9% | 30% | 48% | 11%
2%

0%   20%   40%   60%   80%   100%

*Of the 110 respondents who do not believe autonomous driving will ever become a reality, **a significant majority – 75% – are either moderately concerned or extremely concerned** about connected cars or autonomous vehicles getting attacked by cyber criminals/hackers.*

Question 10

"I see the value for me when riding an autonomous vehicle without an override or backup driver"

■ Strongly agree (5)
■ Somewhat agree (4)
■ Neither agree nor disagree (3)
■ Somewhat disagree (2)
■ Strongly disagree (1)

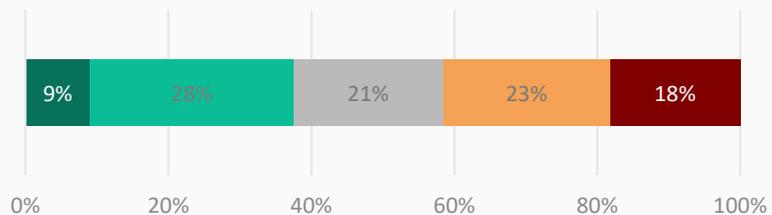|				
9%	25%	23%	20%	22%

0% 20% 40% 60% 80% 100%

Question 11

10 years from now, would you let your child/grandchild ride in an autonomous vehicle without an override or backup driver?

■ Strongly agree (5)
■ Somewhat agree (4)
■ Neither agree nor disagree (3)
■ Somewhat disagree (2)
■ Strongly disagree (1)

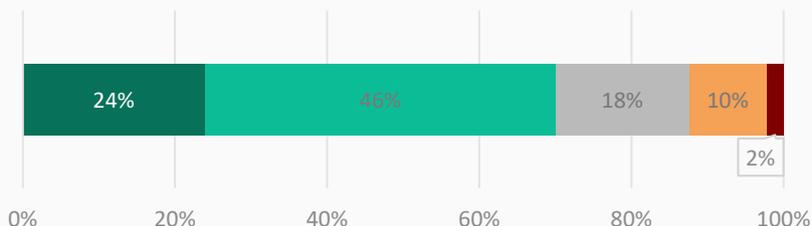|				
9%	28%	21%	23%	18%

0% 20% 40% 60% 80% 100%

Question 12

Are you worried about connected cars or autonomous vehicles getting attacked by cyber criminals/hackers?

■ Extremely concerned (5)
■ Moderately concerned (4)
■ Somewhat concerned (3)
■ Slightly concerned (2)
■ Not at all concerned (1)

24%	46%	18%	10%	2%

0% 20% 40% 60% 80% 100%

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Question 13

When thinking of a connected car being hacked · What are your biggest concerns?

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(Multiple answers are possible)

■ Critical car functional systems getting manipulated leading to accidents

■ Car getting stolen

■ Personal data getting stolen (privacy)

■ Ransomware (request to pay in order to continue driving)

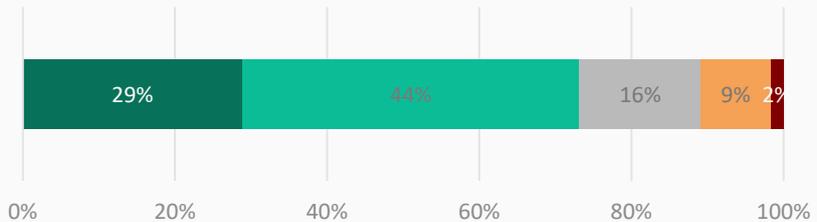■ No concerns, attacking cars is not interesting for hackers

- 80%
- 43%
- 37%
- 34%
- 4%

0% 20% 40% 60% 80% 100%
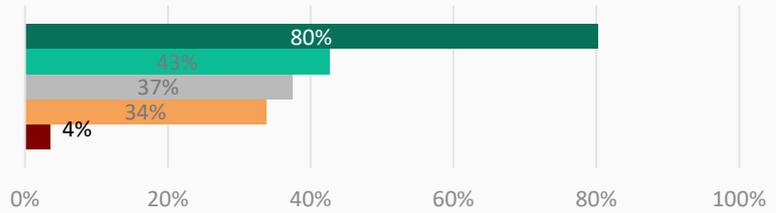
Question 14

Are you worried about the critical functions of the connected car (i.e. breaks) being hacked while driving?

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■ Extremely concerned (5)
■ Moderately concerned (4)
■ Somewhat concerned (3)
■ Slightly concerned (2)
■ Not at all concerned (1)

29% 44% 16% 9% 2%

0% 20% 40% 60% 80% 100%

Question 15

Are you worried a hacker can steal your car?

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■ Extremely concerned (5)
■ Moderately concerned (4)
■ Somewhat concerned (3)
■ Slightly concerned (2)
■ Not at all concerned (1)
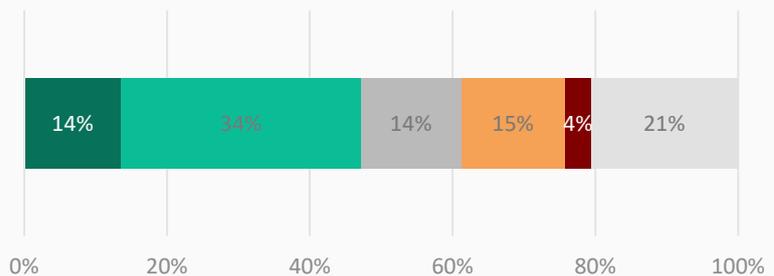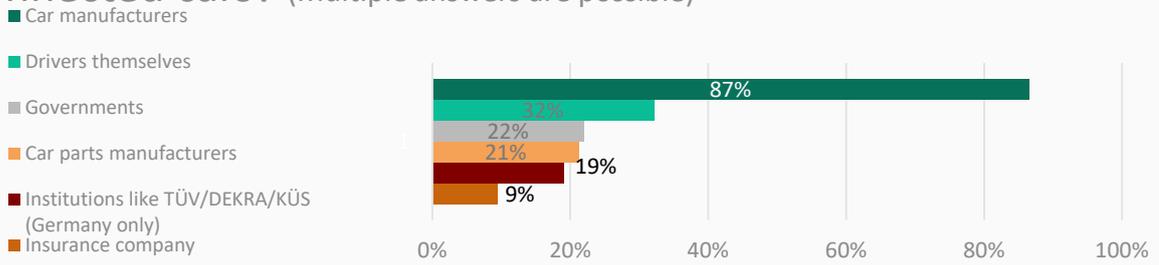■ I don't know because I don't own a car

14% 34% 14% 15% 4% 21%

0% 20% 40% 60% 80% 100%

Question 16

Who do you think is responsible to secure connected cars? (Multiple answers are possible)

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- Car manufacturers
- Drivers themselves
- Governments
- Car parts manufacturers
- Institutions like TÜV/DEKRA/KÜS (Germany only)
- Insurance company
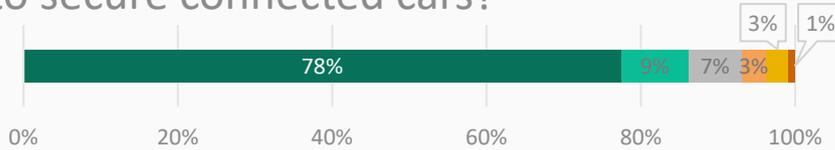
87%
32%
22%
21%
19%
9%

0% 20% 40% 60% 80% 100%

Question 17

Who do you think is <u>most</u> responsible to secure connected cars?

- Car manufacturers
- Drivers themselves
- Governments
- Institutions like TÜV/DEKRA/KÜS (Germany only)
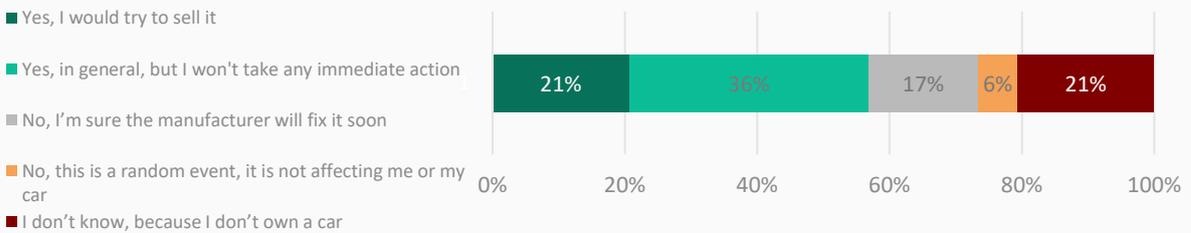- Car parts manufacturers
- Insurance company

78%   9%   7%   3%   3%   1%

0% 20% 40% 60% 80% 100%

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Question 18

If you hear about a cyber hack (such as 2015 Jeep SUV research leading to recall in USA) on the car model you drive, will it change your perception of this car?

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- Yes, I would try to sell it
- Yes, in general, but I won't take any immediate action
- No, I'm sure the manufacturer will fix it soon
- No, this is a random event, it is not affecting me or my car
- I don't know, because I don't own a car

21%   36%   17%   6%   21%

0% 20% 40% 60% 80% 100%

Question 19

Do you agree that security relevant software should be tested within the "Hauptuntersuchung" every two years?
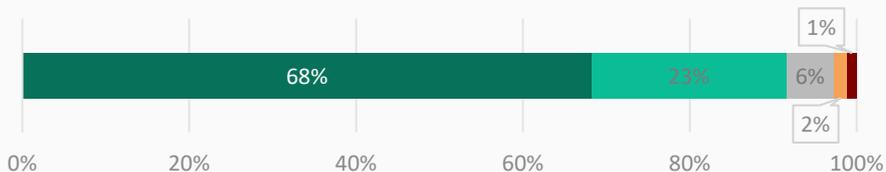(Germany only)

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- ■ Strongly agree (5)
- ■ Somewhat agree (4)
- ■ Neither agree nor disagree (3)
- ■ Somewhat disagree (2)
- ■ Strongly disagree (1)

			1%
68%	23%	6%	
		2%	

0%   20%   40%   60%   80%   100%

Conclusions

Among the biggest concerns of what hackers could do to a connected vehicle is the possibility of critical safety functions being hacked causing malfunction or an accident (80%). The fear of car theft is far behind and ranks at 44% followed by the fear of private data being stolen (37%).

Almost all respondents (92%) in Germany think that security relevant software should be checked in the TÜV main inspection every two years.

A bit more than half of the respondents anticipate the future of autonomous driving optimistic. In total 57 % see autonomous vehicles as the future of driving. In this context the survey has shown that the owners of the four German brands BMW, Audi, VW and Mercedes are expecting completely autonomous vehicles to be on the streets within 3-5 years (14%), much faster than the owners of other European and International brands (8%).

However, when it comes to entrusting the autonomous vehicle with lives, the opinions are divided. Thinking ten years ahead, only 38% would let their child or grandchild ride in an autonomous vehicle without an override or backup driver.

Feel that Autonomous Vehicles are the Future of Driving?

		Yes	No
Concerned about Cyber Attacks on Autonomous Vehicles?	Yes	**38%** Looking forward, but concerned	**32%** Doubt it will happen, but concerned
	No	**19%** Looking forward, less concerned	**11%** Not interested, not worried

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