

# **IR Presentation**

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## Agenda

- 1. Autoneum at a glance
- 2. Business year and financial results 2017
- 3. Outlook 2018 and financial targets 2020
- 4. New mobility trends

Appendix



# Who we are Autoneum in a nutshell





# Who we are Key facts & figures





Stock listed company (**SIX** Swiss Exchange)



**55** production facilities worldwide



Revenue 2017: CHF 2,203.0 million



Represented in **25** countries



EBIT margin 2017: 8.1%



Over 12,000 employees



# **Strategic priorities** Clear profile as automotive supplier



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# Autoneum 2025 Strategic focus areas







# **Organization** Group Executive Board



Martin Hirzel CEO 20 years of automotive experience



Dr Martin Zwyssig CFO 14 years of automotive experience

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Matthias Holzammer Head BG Europe 27 years of automotive experience



John T. Lenga Head BG North America 22 years of automotive experience



Andreas Kolf Head BG Asia 23 years of automotive experience

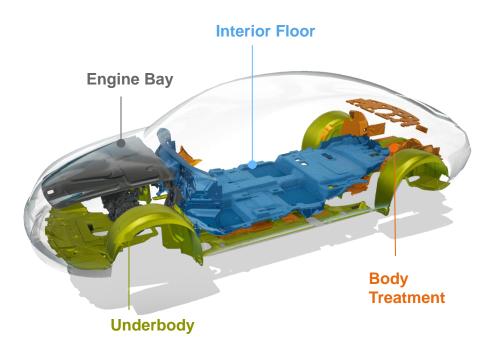


Fausto Bigi Head BG SAMEA 22 years of automotive experience

# Leading in acoustic and thermal management Four product lines

- Broad range of technologies
- Innovative materials and processes
- Customized systems and components
- Cost effective and lightweight solutions
- Total vehicle optimization
- Measurement systems and simulation tools

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### **Global presence**

#### **Europe**



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Autoneum Locations with minority shareholders Associated companies and investments Licensees

#### **North America**

#### Canada

· London, Ontario · Tillsonburg, Ontario

#### Mexico

- · Hermosillo
- · Mexico City
- · San Luis Potosí Silao
- · Monroe. Ohio

USA

#### · Valparaiso, Indiana

· Aiken, South Carolina

· Jeffersonville, Indiana

· Oregon-Lallendorf, Ohio

· Novi, Michigan

· Bloomsburg, Pennsylvania

#### · Oregon-Wynn, Ohio · Sunnyvale, California · Jackson. Tennessee · Somerset, Kentucky · Tinley Park, Illinois

#### SAMEA

Belgium

· Choceň

· Hnátnice

· Genk

· Bor



#### China India · Changsha · Behror · Chongqing Chennai · Shanghai · Shenyang Indonesia · Taicang · Jakarta Yantai · Guangzhou Japan · Tianjin · Tokyo

· Wuhan

· Fuzhou

#### Malaysia · Shah Alam South Korea

Asia

#### Seoul

Taiwan · Taoyuan

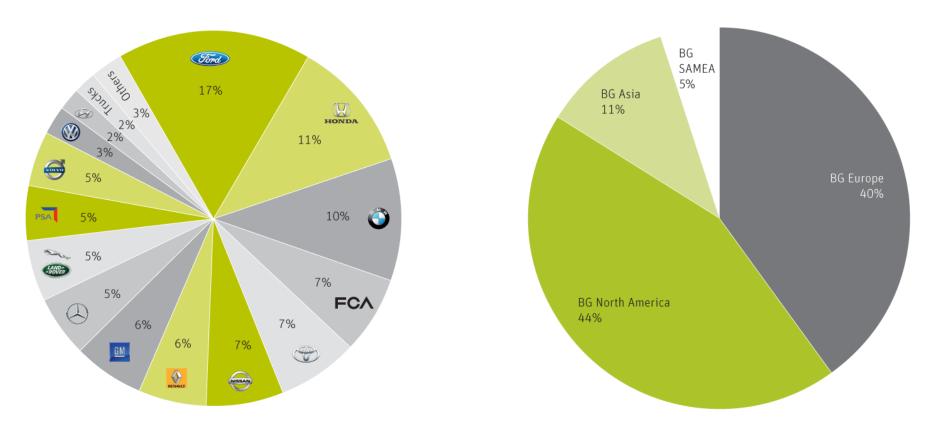
#### Thailand

· Laem Chabang · Chonburi

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# **Profitable growth in all regions** Well-diversified global customer base

Share in revenue 2017





# **Corporate Responsibility** Key commitments

- Corporate Responsibility is at the heart of our business and defines everything we do
- Commitment to become the Corporate Responsibility benchmark among our industry peers
- Commitment to transparency and accountability by reporting according to the leading GRI standards on an annual basis
- Commitment to proactively shape the environmental and social regulatory agenda

#### Living a Culture of Responsibility

Interview with Martin Hirzel, Chief Executive Officer

Responsibility is at the heart of our business and defines everything we do.

Let's talk about the future. We see a variety of new mobility trends emerging. What is their significance for Autoneum?

When we talk about mobility trends, we need to recognize that they largely result from a combination of the social megatrends and environmental regulations as mentioned. For instance, electric mobility is growing because vehicle manufacturers have to simultaneously fulfill the requirements of emission and noise regulations and the growing demand of consumers for thermal management, Autoneum wants Responsibility 5 to be at the forefront of these developments. As a key step, we have established an entrievy new a Competence Center for New Mobility in Sunnyvale, California. At this Silicon Valley site, we will be profiting from the proximity to other innovation leaders and will be better suited to evaluate the potential of current and upcoming Responsibility 5

Responsibility benchmark in our field. In line with this commitment, we will set up an entriely new Corporate Responsibility governance structure. We have established a Group Corporate Responsibility function that will oversee and advance all relevant activities in this area. Furthermore, we will implement a Corporate Responsibility Steering Committee, with

#### We have never seen such transformation of the industry since the invention of series-produced automobiles.



2017 will be a decisive year for us. We have defined as our strategic commitment to become the Corporate Responsibility benchmark in our field.

environmentally friendly cars – making it a very good business case. At the same time, the breathtaking pace of technological development – along with its constantly decreasing cost – play in favor of various other trends such as autonomous driving or connectivity. To me, this unique mix makes it the most interesting time in the history of the automotive industry. I would even say: Since the invention of series-produced automobiles we have never seen such a transformation as its taking place right now. Of course, as innovation leader in acoustic and automotive trends. What we would like to see is how these trends can be translated into new technologies and products – that is, business opportunities – for vehicle acoustic and thermal management, both for traditional as well as new vehicle manufacturers.

#### What is the outlook for Corporate Responsibility at Autoneum in 2017and beyond?

2017 will be a decisive year for us. We have defined as our strategic commitment to become the Corporate

the membership of key Function Heads of Autoneum and myself. We will conduct an internal screening of all our activities related to Corporate Responsibility in order to define where we stand and to see where our key challenges, and strengths, lie. Based on the results, we will launch Autoneum's first Corporate Responsibility strategy with defined key fields of action, quantitative and qualitative targets and a detailed implementation plan. Simultaneously, we will launch an internal communication campaign to sensitize employees and further deepen their knowledge about the key topics, opportunities and risks entailed in the various dimensions of Corporate Responsibility at Autoneum. It is vital for us that all employees at our more than 50 locations worldwide understand the scope of their personal responsibility, act in a compliant manner and make a contribution to good corporate citizenship.



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Appendix

# **Highlights 2017**





- Organic revenue growth of 2.4% in line with market
- EBIT margin at 8.1% again ٠ exceeds 8% mark
- EBIT margin of BG Europe ٠ improved significantly to 8.4%
- Net profit of CHF 118.5 million ٠ exceeds prior-year level\*
- Equity ratio further raised to 39.6%
- Dividend payout of CHF 6.50 ٠ proposed



- New production facility in ٠ Komárom, Hungary
- Set-up of four plants in China
- Capacity expansion in San Luis Potosí, Mexico
- Ultra-Silent development and • production sites in Germany and Switzerland
- Implementation of new carpet lines in North America
- Launch of Hybrid-Acoustics ٠ ECO+ for e-cars

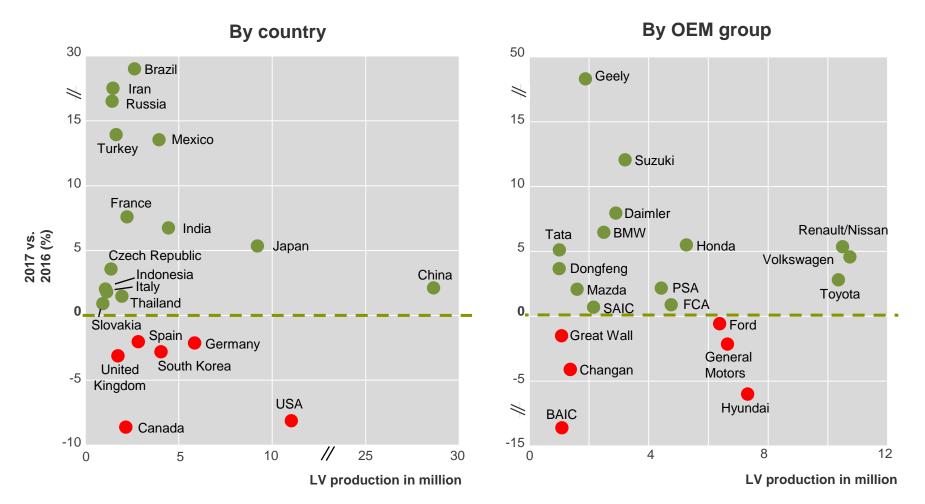


- Strategy
- **Operational excellence** thanks to further developed production processes at **BG** Europe
- Start of business at "Competence Center New Mobility" in California, USA
- Strategy-driven expansion in Asia
- Successful turnaround of **BG SAMEA**
- High investments in global production footprint and innovation roll-out

\*Before special effects.

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# Light vehicle (LV) production 2017 Notable market decline in USA and Canada



#### Source: IHS 2018.

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# Business year 2017 Highlights Q1

# **Opening of «Competence Center New Mobility»**

- New mobility hub in Silicon Valley (CA), USA
- Establishment of relationships and business with new OEMs
- Development of components for new drives such as e-cars

# Launch of carpet innovation Di-Light

- Lightweight technology for needlepunch carpets
- Di-Light contributes to lower fuel consumption and emissions
- Eco-friendly: consists of up to 97% of recycled PET

# **Annual General Meeting raises dividend**

Dividend payout of CHF 6.50 per share

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 Norbert Indlekofer elected as 7<sup>th</sup> member of Board of Directors of Autoneum Holding Ltd









# Business year 2017 Highlights Q2

#### 5-year anniversary of Katowice Development Center

- Founded in 2012 as one of six Development Centers
- Polish Development Center focuses on engine bay and interior floor components (e.g. Theta-Cell)

## New North America HQ opens in Novi (MI), USA

- New Administrative and Technical Center of BG North America
- Development for North American market including predevelopment studies for local customers

#### Hybrid-Acoustics ECO+ for e-cars

- Provides both sound protection and thermal insulation
- · For use in carpets, inner dashes and floor insulators
- Contributes to increased driving range of e-models







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# **Business year 2017 Highlights Q3**

#### Automotive Acoustics Conference: participant record

- 250 participants discuss trends-related acoustic challenges
- E-mobility and acoustic management innovations in focus
- Conference under scientific leadership of Autoneum

## New Corporate Responsibility (CR) governance

- Commitment to become benchmark among industry peers
- Implementation of Group-wide CR function
- Launch of first global philanthropy project «Bookbridge»

#### Measurement systems' sales record

100<sup>th</sup> Alpha Cabin sold

- Measurement systems set industry benchmark
- Systems developed at Swiss research center in Winterthur







# Business year 2017 Highlights Q4

#### New JV for R&D in vehicle acoustics in Japan

- New Autoneum, Nittoku and Toyota Boshoku joint venture
- Predevelopment studies for Toyota as first customer
- 2017: 50 years of successful Autoneum-Nittoku collaboration

#### **Expansion in growth market China**

- Extension of production capacities: 4 new plants
- SOP in Yantai and Changsha plants at end of 2017
- Plants in Pinghu and Shenyang Tiexi to open in 2018

#### Autoneum enters Iran market

- License agreement with Iranian supplier Ayegh Khodro Toos
- Carpet systems and inner dashes for French customers
- SOP of first Autoneum-equipped vehicle (SUV) in early 2019







# Key figures Overview

CHF million	2017	2016
Revenue	2'203.0	2'152.6
EBITDA*	255.9	245.0
in % of revenue	11.6%	11.4%
EBIT*	178.0	175.6
in % of revenue	8.1%	8.2%
Net profit*	118.5	117.0
Investments in tangible assets	-173.6	-137.5
Free cash flow	-50.5	101.3
Net debt at December 31	183.3	57.4
RONA*	16.2%	19.6%
Market capitalization at December 31	1'306.6	1'243.4
Basic earnings per share (EPS) in CHF*	19.6	19.2

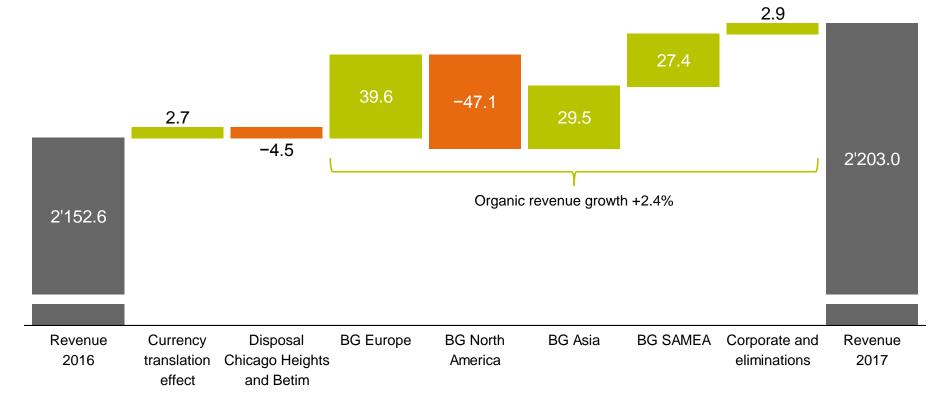
\*Before special effects 2016: Gain from disposal of the UGN business in Chicago Heights in the amount of CHF 33.2 Million (CHF 21.1 million after income taxes) and impairment loss due to the adaptation of the South American production capacity in the amount of CHF 4.3 million.



# **Revenue development**

# Organic revenue growth in line with market





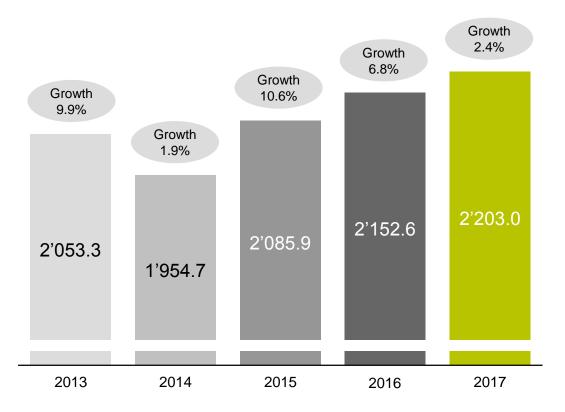


# **Revenue 2013 – 2017**



# **Continuous organic revenue growth\***

CHF million



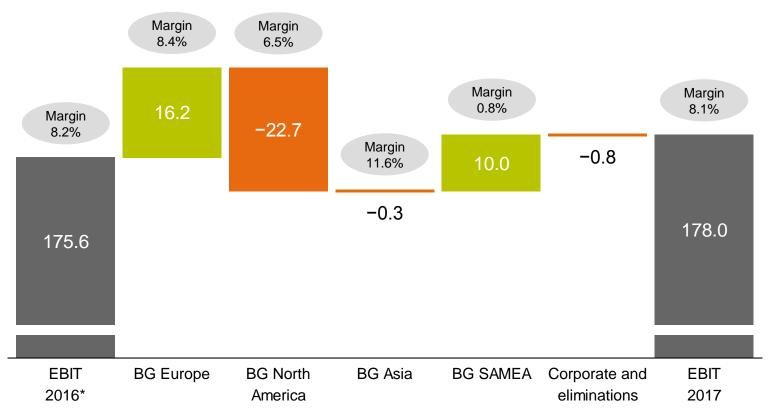
- Global automobile production lost considerable momentum in 2017
- Number of light vehicles produced worldwide increased by 2.1%
- Autoneum increased revenue by 2.4% despite the cyclical and demandrelated decline in the USA

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\*Revenue growth adjusted for currency and divestment effects.

# **Operating result (EBIT)** BG Europe and BG SAMEA compensate BG North America

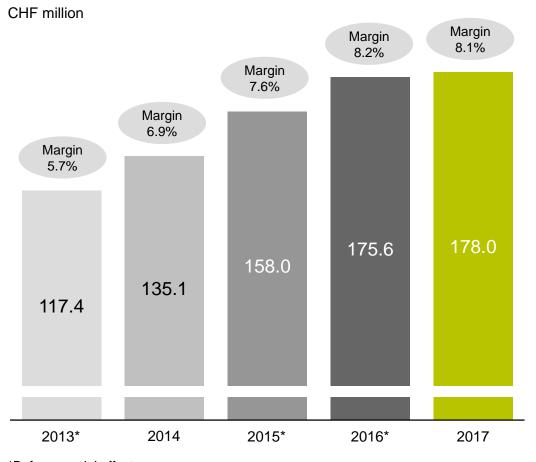
CHF million



\*Before special effects.

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# **Operating result (EBIT) 2013 – 2017** Margin well above industry average



- 2017 EBIT margin again surpasses 8%
- The impact of volume decline in BG North America was compensated by BG Europe and BG SAMEA

#### \*Before special effects.

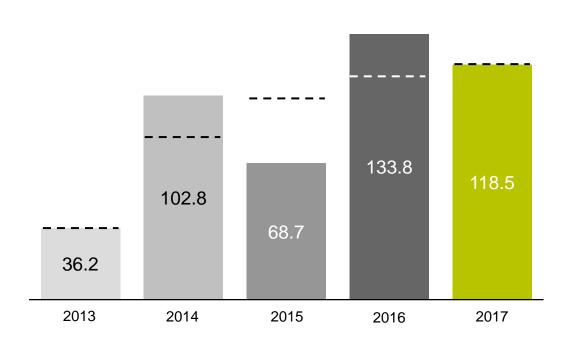
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# Net profit 2013 – 2017 Another year of sound net profit

CHF million



 2014 net profit excluding a first-time recognition of deferred income tax assets was at CHF 86.1 million

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- 2015 net profit without the settlement with the German Federal Cartel Office was at CHF 100.2 million
- 2016 net profit before special effects was at CHF 117.0 million
- 2017 net profit at a new high

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# **Balance sheet** Strong balance sheet

CHF million	31.12.2017	31.12.2016
Total assets	1,484.3	1,297.8
Non-current assets	791.8	648.0
Current assets	692.5	649.8
Total equity and liabilities	1,484.3	1,297.8
Non-current liabilities	352.5	220.7
Current liabilities	544.6	578.1
Shareholders' equity	587.2	499.0
in % of total assets	39.6%	38.4%

- Investments in tangible assets such as technology roll-outs, vertical integration and capacity expansion led to higher non-current assets
- Further increased equity ratio

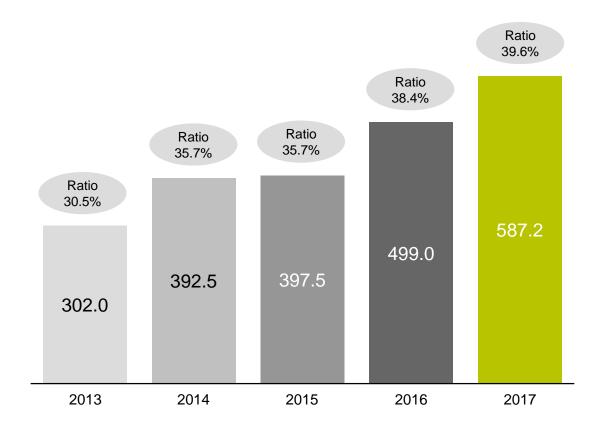




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# Equity 2013 – 2017 Equity ratio close to 2020 target

CHF million



- Equity and equity ratio have been steadily increased since 2013
- 2017 equity ratio is close to the 2020 target of >40%

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# **Free cash flow**



# High investments for future profitable growth

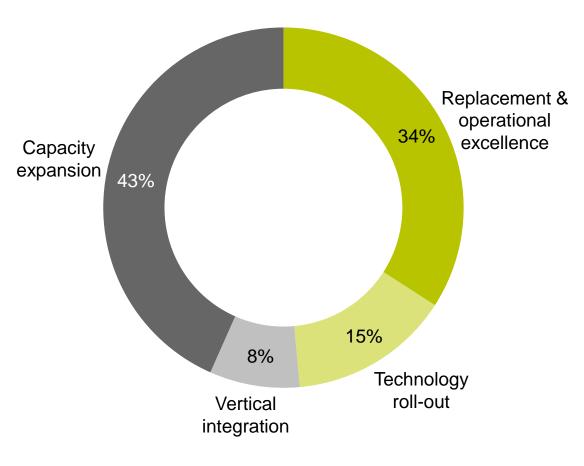
CHF million	2017	2016
Cash flows from operating activities	145.2	194.1
Cash flows used in investing activities*	-195.7	-92.8
Free cash flow	-50.5	101.3
Cash flows from/(used in) financing activities	5.4	-28.6
Cash and cash equivalents at December 31	103.8	149.8

- In 2017 cash flows from operating activities decreased because of higher net working capital
- Cash flows used in investing activities increased due to high investments in tangible assets of CHF 173.6 million

\*2016 cash flows used in investing activities included the proceeds from disposal of the UGN business in Chicago Heights of CHF 42.4 million.



# **Investments in tangible assets in 2017** Total spend of CHF 174 million



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#### **Capacity expansion**

- China: Changsha, Yantai, Pinghu, Shenyang Tiexi
- Mexico: San Luis Potosí 1&2
- Hungary: Komárom

#### **Technology roll-out**

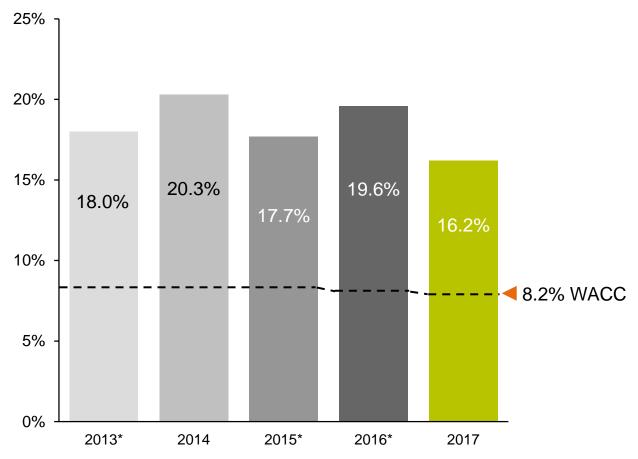
 New technologies for underbody systems, carpet insulators, inner dashes and wheelhouse outer liners

#### **Vertical integration**

 Basic lines such as felt and carpet lines



# Return on net assets (RONA) 2013 – 2017 Substantial economic value creation



- Since 2013 substantial economic value has been created
- RONA almost twice as high as cost of capital (WACC) in 2017
- 2017 RONA decreased due to investments in tangible assets

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\*Before special effects.

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Appendix



# **Key focus areas for profitable growth** Action plan 2018

<ul> <li>Expand Eastern European footprint</li> <li>Pursue vertical integration</li> <li>Excel in program execution</li> </ul>	BG Europe		BG Asia	
		<ul> <li>European footprint</li> <li>Pursue vertical integration</li> <li>Excel in program</li> </ul>		<ul> <li>in China</li> <li>Gain market shares with Chinese OEMs</li> <li>Develop organization</li> </ul>

#### **BG North America**



- Master numerous launches
- Flexibly adapt to market cool-down
- Continuously improve workplace safety



- Customize Brazilian
   production footprint
- Gain new business in South America

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 Support customer projects in Iran



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# Guidance 2018

Global environment	<ul> <li>Rise in global automobile production to around 97 million light vehicles (growth rate of 2%)*</li> </ul>
Revenue	<ul> <li>Autoneum expects organic revenue growth of around 3%</li> </ul>
Profitability	<ul> <li>In 2018, the Group's EBIT margin will be at around 8%</li> </ul>

#### \*According to IHS estimates.

# **Financial targets 2020** Accelerate profitable growth

- Net sales of CHF 2'600 million
- Emerging markets >20% share in Group's net sales
- EBITDA margin of 12%
- Equity ratio >40%
- RONA >20%
- Target dividend payout of at least 30% of net profit attributable to shareholders of Autoneum Holding Ltd



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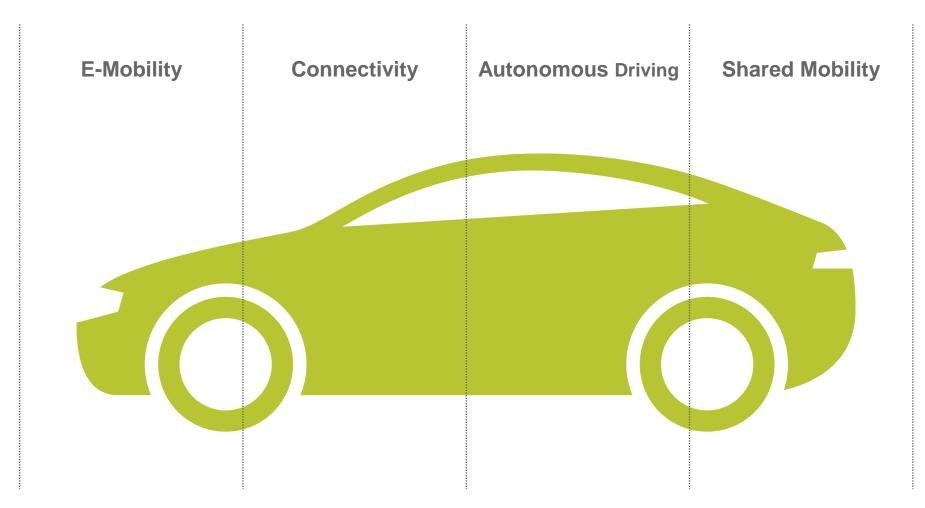
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# **New mobility trends**

# Impacting the automotive industry beyond 2020





# Market development of electric vehicles Outlook on Autoneum offering development

	2018	2022	2027
Scenario	<ul> <li>Few BEV models on the market</li> <li>Pioneering OEMs</li> <li>Low production volume</li> </ul>	<ul> <li>More BEV models on the market</li> <li>All OEMs</li> <li>Growing production volume</li> </ul>	<ul> <li>Many BEV models on the market</li> <li>All OEMs – autonomous/shared driving</li> <li>High production volume</li> </ul>
Players	<ul> <li>Few pioneer OEMs</li> <li>Automotive start-ups and digital giants moving into Automotive</li> </ul>	<ul> <li>New OEMs successful in scaling up</li> <li>Traditional OEMs</li> </ul>	<ul> <li>New OEMs successful in scaling up</li> <li>Traditional OEMs</li> </ul>
Technical focus	<ul> <li>Implement disruptive product contents</li> <li>Acoustics has to be just right</li> </ul>	<ul> <li>Consolidate and improve disruptive product contents</li> <li>Acoustics as differentiator in premium segments</li> </ul>	<ul> <li>Acoustics as differentiator in all segments</li> </ul>
Autoneum actions	<ul> <li>Engineering services (simulation in particular)</li> <li>Lightweight technologies adapted to BEVs</li> <li>Develop innovative products</li> </ul>	<ul> <li>Engineering services (simulation in particular)</li> <li>Joint developments with OEMs to identify consumer needs in new mobility</li> <li>Adjust product portfolio</li> </ul>	<ul> <li>Provide engineering services (simulation in particular)</li> <li>Offer disruptive specific products for new mobility</li> </ul>

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### Autoneum's current e-car supply Broad range equipped by Autoneum

Product family	BMW i3	Chevrolet Bolt	Nissan Leaf	Renault Zoe X10	Daimler B-Class
Volumes 2017	32,000	30,000	35,000	31,000	4,500
Carpet systems	0	0	o		0
Inner dashes / interior insulators	o	1	1	1	0
Dampers and stiffners	o	o	1	1	0
Underbody shields	o	0			
Wheelhouse outer liners	o	0	$\checkmark$	o	o
Engine encapsulations		Ι		1	1
Hoodliner / Outer dashes	0	0	$\checkmark$	$\checkmark$	0
NVH development		I	1	1	0

✓: Part supplied by Autoneum o: Part supplied by competitors /: Part not required

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### Autoneum's e-car supply 2018 – 2020 Delivery of two new players

Product fami	ly	2018 OEM	2018 OEM	2018 New OEM	2019 OEM	2019 New OEM	2019 OEM	2019 OEM	2020 OEM	New OEMs
Carpet systems	Ś		0	ο	ο	0	ο		$\checkmark$	
Inner dashes / interior insulators	Carton Carton	$\checkmark$	$\checkmark$	ο	ο	$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$	
Dampers and stiffners		ο	о	ο	ο	1	ο	ο	ο	
Underbody shields		ο	О	$\checkmark$	$\checkmark$	$\checkmark$	1	ο	ο	
Wheelhouse outer liners		ο	1	ο	ο	$\checkmark$	0		ο	
Engine encapsulations		ο	1	ο	ο	RFQ ongoing	1	1	ο	
Hoodliner / Outer dashes	¢\$	o	1	ο	ο	$\checkmark$	1	RFQ ongoing	1	
NVH development		1	1	RFQ ongoing	1	1	RFQ ongoing	1	1	$\checkmark$

✓: Part supplied by Autoneum o: Part supplied by competitors /: Part not required

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### **Self-driving cars and shared mobility** High sales potential

Self-driving cars						
Wellness, work, communication and entertainment: passengers will expect absolute silence and a healthy interior environment	Sustainability: Sustainability of products and production processes will be a key element in all future vehicles, independent of the powertrain and the degree of autonomous driving	Interior architectures: the instrument panel will shrink and leave more room for comfortable surfaces with acoustic absorption to compensate sound reflecting glass roof	New materials and function integration: development of novel attractive surfaces and work on the integration of acoustic and thermal functions in new materials			

#### Shared mobility

resistance to dirt, find the cleanability and wear to the cleanability and wear the cleanability	Fleet customization: fleet operators will demand technologies to personalize the interiors of their vehicles	Aftermarket: replacing of worn out interior parts in shared cars with high utilization might offer opportunities for new business	<b>Design to cost</b> : Autoneum's leading simulation tools help to design the best compromise between performance and cost
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 Image: Open state of the s

### **Competence Center New Mobility (CCNM)** The mission

- Actively monitor ideas in the start-up ecosystem and feed innovation in R&T
- Establish mutual beneficial relations with new OEMs
- Leverage on digital transformation
- Support the global organization with facts and data on new mobility





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## New mobility OEMs and start-ups in California, USA Short list ranking by Venture Capital

New O	EM	Founding	Employees	EV*	AD*	SM*	Product Description	Production Capacity	Production Timing	Capital
NIO		2014	2000	x	x		Luxury Electric Car	8 prototypes produced	Planned for 2020	\$1 billion
Zoox	ZMX	2014	500	x	x	x	Autonomous electric car	Prototype	Unknown	\$300 million
Tesla	TISLA	2003	33,000	x	x		Luxury electric car	Over 200k vehicles sold	First produced in 2008	\$226 million (IPO)
Lucid Motors	LUCID	2007	500	x	х		Luxury electric car	Prototype	Planned for 2019	\$200 million
Faraday Future	Faraday Future	2014	1400	x	x		Luxury electric car	Prototype	Planned for 2018	\$13.75 million
Dubuc Motors		2013	50	x			Performance electric car	Prototype	Planned for 2018	\$2 million
NEXT	ne <mark>x</mark> t	2015	10	x	x		Modular electric bus	Prototype	Unknown	\$160K
Hummingbird EV		2016	50	x			Hybrid/electric truck	Prototype	Unknown	N/A
Karma	<b>О</b> КАРМА	2015	700	x			Performance hybrid/electric car	900 Reveros sold	First produced in 2017	N/A
SF Motors	SF MOTORS INC.	2016	500	x	x		Autonomous electric Car	Prototype	Planned for 2019	N/A

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Source: Web.

\*EV: Electric Vehicle, AD: Autonomous Driving, SM: Shared Mobility.

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### **New mobility** Excel at trend analysis to unlock potential

E-motors / Batteries / Vehicle architectures       Femotors / Batteries / Vehicle architectures       Femotors / Batteries / Vehicle architectures       Powertrain tonal noise       Specific treatments, diagnostics and simulation         Image: Burght Powertrain tonal noise       Specific treatments, diagnostics and simulation       Specific treatments, diagnostics and simulation         Image: Burght Powertrain tonal noise       Leverage lightweight portfolio         Image: Burght Powertrain tonal noise       Extended underbody coverage         Image: Burght Powertrain tonal noise       Image: Burght Powertrain tonal noise         Image: Burght Powertrain tonal noise       Image: Burght Powertrain tonal noise         Image: Burght Powertrain tonal noise       Image: Burght Powertrain tonal noise         Image: Burght Powertrain tonal noise       Image: Burght Powertrain tonal noise         Image: Burght Powertrain tonal noise       Image: Burght Powertrain tonal noise         Image: Burght Powertrain tonal noise       Image: Burght Powertrain tonal noise         Image: Burght Powertrain tonal noise       Image: Burght Powertrain tonal noise         Image: Burght Powertrain tonal noise       Image: Burght Powertrain tonal noise         Image: Burght Powertrain tonal noise       Image: Burght Powertrain tonal noise         Image: Burght Powertrain tonal noise       Image: Burght Powertrain tonal noise         Image: Burght Powertrain tonal noise       Image			Lie for the Torman	Topics	Opportunities
BEV/HEV       Image: Customer synchronic       Image: Customer sy		Batteries / Vehicle		Powertrain tonal noise	
Customer       Customer       Dominant road noise       Textile exterior treatments         Lutonomous Driving       Leverage recycled fiber       Sustainable technologies       Leverage recycled fiber         Verticitie       Lack of heat sources       Use sound package for thermal         Comfort in autonomous       Style of interior       Innovation in new materials         New levels of quietness       Style of interior       New levels of quietness	BEV/HEV	alcintectures		Weight down	Leverage lightweight portfolio
Customer expectation       Sustainable technologies       Leverage recycled fiber technologies         Autonomous Driving       New sound package for thermal comfort         Ownership       Ownership       Style of interior       Innovation in new materials         Comfort in autonomous driving       New levels of quietness       Style of interior				Aerodynamics	Extended underbody coverage
Autonomous Driving       Ownership       Sustainable technologies       Leckof heat sources       Use sound package for thermal comfort         Ownership       Ownership       Style of interior       Innovation in new materials         Comfort in autonomous driving       New levels of quietness	Â	Customer		Dominant road noise	Textile exterior treatments
Image: Constraint of the state of the s		expectation		Sustainable technologies	
Ownership         Ownership         Comfort in autonomous driving         New levels of quietness	Autonomous Driving	ous Driving		Lack of heat sources	
driving New levels of quietness				Style of interior	Innovation in new materials
		Ownership			New levels of quietness
Shared Mobility         Shared use         Durability, cleanability	Shared Mobility			Shared use	Durability, cleanability

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### **Innovating for new mobility** Selected carpet technologies

			Торіс	Opportunity
	Tune-It	Improved control of AFR on main floor carpet	Weight down	Leverage lightweight portfolio
Tune-It		<ul> <li>Improved control of APR of main hoor carpet to optimize carpet acoustic performance</li> <li>Up to 25% lighter versus conventional latex/LDPE constructions</li> </ul>	Sustainable technologies	Leverage recycled fiber technologies
		<ul> <li>PET mono-material construction allows to re-spin fibers or filaments. Fibers can be looped back into the carpet substrate</li> </ul>	Comfort in autonomous driving	New levels of quietness
			Торіс	Opportunity
Di-Light		<ul> <li>Improved durability and better aesthetics</li> <li>Carpet is produced with recycled bottle</li> </ul>	<b>Topic</b> Shared mobility	<b>Opportunity</b> Durability

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### Innovating for new mobility

### Selected exterior acoustics technologies

			Торіс	Opportunity
		"Shtweight acoustics structural ecoway	Weight down	Leverage lightweight portfolio
Ultra-	1 7	<ul> <li>100% porous product covering large areas under the vehicle -&gt; reduces interior and</li> </ul>	Aerodynamics	Extended underbody coverage
Silent		<ul><li>exterior noise</li><li>Benchmark fixation point strength and</li></ul>	Dominant road noise	Textile exterior treatments
		<ul><li>excellent stone impact performance for a high quality and durable product</li><li>100% polyester composition ensures zero</li></ul>	Sustainable technologies	Leverage recycled fiber technologies
		carbon emissions (VOC) as well as a full end-of-life recyclability	Comfort in autonomous driving	New levels of quietness
			Торіс	Opportunity
		ishtweight ecoustics refred quality ecoway	Topic Weight down	Opportunity Leverage lightweight portfolio
Era-Light		<ul> <li>Benchmark in acoustic performance relevant to underbody</li> </ul>		Leverage lightweight
Era-Light		Benchmark in acoustic performance relevant	Weight down	Leverage lightweight portfolio Textile exterior

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 Image: Constraint of the second seco

### **Innovating for new mobility**

### Selected motor noise attenuation technologies

		Торіс	Opportunity
Theta-	<ul> <li>Combination of Theta-Fiber and Theta-Cell provides outstanding acoustic absorption at tracks.</li> </ul>	Powertrain tonal noise	Specific treatments, diagnostics and simulation
FiberCell	light weight	Weight down	Leverage lightweight portfolio
		Comfort in autonomous driving	New levels of quietness
		Торіс	Opportunity
Hybrid-	ishtweish coustics	Topic Weight down	Opportunity Leverage lightweight portfolio
Hybrid- Acoustics	<ul> <li>Benchmark in acoustic performance relevant to underbody</li> </ul>		Leverage lightweight
· · · · · · · · · · · · · · · · · · ·	Benchmark in acoustic performance relevant	Weight down	Leverage lightweight portfolio Textile exterior

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### Conclusion

### New mobility trends: impact on product portfolio

Product families	BEV including private autonomous	Private autonomous ICE	Shared ICE including autonomous	Shared BEV including autonomous
Carpets				
Floor insulators	<b>↓</b>			
Inner dashes	$\checkmark$			
Wheelhouse liners				
Underbody panels	$\checkmark$			
Engine bay				
Heatshields				





### Conclusion

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### New mobility trends support future profitable growth

- New mobility trends such as e-mobility and autonomous/shared driving provide business opportunities for Autoneum
- Autoneum benefits from its proven long-standing NVH and thermal expertise
- Trends are early anticipated in the innovation pipeline
- New OEMs offer potential for outsourcing of NVH development
- For Autoneum digitalization is all about operational excellence

Industry trends such as e-mobility and autonomous/shared driving as well as Industry 4.0 support Autoneum's target of profitable growth

### Appendix

### **Broad product portfolio** Our product lines

#### **Engine Bay**

- Engine Encapsulations
- Hoodliners
- Outer dashes
- Engine top covers
- Battery covers

#### **Interior Floor**

- Inner dashes
- Tufted carpets
- Non-woven carpets
- Floor mats
- Floor insulators
- Spacers and crash pads

#### Underbody

- Underbody systems
- Wheelhouse
   outer liners
- Floor pans
- Battery boxes
- Heatshields

#### **Body Treatment**

- Dampers
- Stiffeners









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### **Sales split**

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	Interior floor	Underbody	Engine	e bay	Body treatment	Other
	<ul> <li>Inner dashes</li> <li>Non-woven carpets</li> <li>Tufted carpets</li> <li>Floor insulator</li> <li>Floor mats</li> <li>Spacers/crash pads</li> </ul>	<ul> <li>Underbody shields</li> <li>Floor pans</li> <li>Heat shields</li> <li>Wheelhouse outer liners</li> </ul>	<ul> <li>Engine mo</li> <li>Body mour</li> <li>Engine top</li> <li>Hoodliners</li> <li>Outer dash</li> <li>Water box</li> </ul>	cover	<ul> <li>Dampers/stiffeners</li> <li>Sealants</li> <li>Other acoustic parts</li> </ul>	<ul> <li>Trunk parts</li> <li>Interior trim parts</li> <li>Truck parts</li> </ul>
BG Europe	15%	11%	59	%	1%	7%
BG North America	29%	5%	49	%	-	7%
BG Asia	5%	2%	29	%	1%	2%
BG SAMEA	2%	1%	19	%	-	1%
Sales split 2017 by product line	50%	19%	119	%	2%	17%

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### Theta-FiberCell - an engine bay innovation Lightweight structural parts at best acoustic



Lightweight technologies allow implementation of

innovative engine encapsulations for  $CO_2$ reduction and acoustic benefit.



Carrier in Theta-Fiber ensures resistance to engine

vibration and best-in-class mechanical properties even after long-term aging at 160°C.



100% porous product allows high acoustics acoustic performance. Combination of Theta-Fiber and Theta-Cell provides outstanding acoustic absorption at light weight.



Theta-FiberCell brings thermal insulation.

temperature resistance up to 200°C in peak conditions, low flammability and high self-ignition temperature.



Engine top cover

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### Hybrid-Acoustics – an interior floor innovation Local tuning of insulation and absorption



According to the material variant up to 70% of recycled

material is used (mostly post-industrial cotton fibers).

Product delivering high acoustic insulation and ecowal absorption.



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Lightweight product based on porous materials like felt or

foam. The parts are easy to handle and to mount in the vehicle.



Thanks to the control of the dynamic stiffness, the acoustic can be tuned locally to meet each car's NVH requirements.

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Inner dash

52

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### **Di-Light** – an interior floor innovation **Better durability and perceived quality**



Needlepunch carpets have until now been seen as

cost-effective textile surfaces but prone to flattening and wear over lifetime. Di-Light is a more durable needlepunch carpet.



Durability of a carpet is not strictly correlated to its weight; Di-Light proves that with its more resilient fibrous web layer, it out-performs heavier standard needlepunch carpets.



Needlepunch carpet

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Carpet is produced with recycled bottle flakes (up to 97%) recycled content).



Better coverage with more uniform surface appearance gives better aesthetics to floor carpets.

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### **Ultra-Silent** – an underbody innovation Light, durable and acoustic



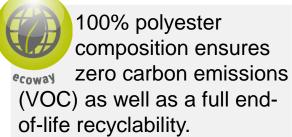
Lightest product on the market helps the customers achieving the  $CO_2$  targets.



No use of glass fibers ensures benchmark fixation point strength and excellent stone impact performance for a high quality and durable product.



Underfloor shield



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100% porous product covering large areas under the vehicle reduces interior and exterior noise.

### Nero-Acoustics – a body treatment innovation Core competence "acoustic" at low weight



Up to 50% weight reduction compared to conventional

dampers – still achieving 20% weight saving compared to previous generation of lightweight dampers.



to-mass performance allowing to reduce the area weight of the part without altering its damping effect.

Improved damping-



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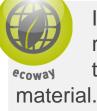
Damper

55



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Good conformability and easy usage in trim or paint shop.



Improved process recyclability due to the change of filler al.

### Measurement systems Product portfolio

- Core competencies in acoustic and thermal management applied in specialized measurement systems
- Innovative systems to measure components and material properties
- Developed by experts resulting in industry standards
- Measurement systems set the industry standard and are in use by OEMs, suppliers and laboratories

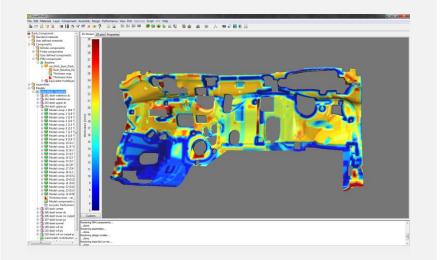






### Simulation tools Product portfolio

- Acoustic and Thermal Simulation tools for full system or component optimization
- Scientific analysis combined with understanding of operational boundary in the automotive industry
- Best-in-class solutions in concept and development phase and for VA/VE during serial production



VisualSISAB: visualization of material thickness of inner dash



### **Contacts and event calendar**

### autoneum

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#### **Important Dates 2018**

Annual General Meeting 2018	
2018 Semi-Annual Results	

March 28, 2018 July 26, 2018

#### Autoneum listed on SIX Swiss Exchange

Ticker Symbol	AUTN
Valor Number	12748036
ISIN	CH0127480363

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### Mastering sound and heat.