



Saving More Lives

Citi's 2016 Car of the Future Symposium

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Autoliv

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Our Guiding Principles

OUR VISION

**Saving
More
Lives**

OUR MISSION

To be the
leading supplier
of Safety Systems
for the Future Car,
well integrated
with Autonomous
Driving

OUR VALUES

**One Autoliv
Transparent
Innovative
Agile**

Real Life Safety

The Road to Saving More Lives

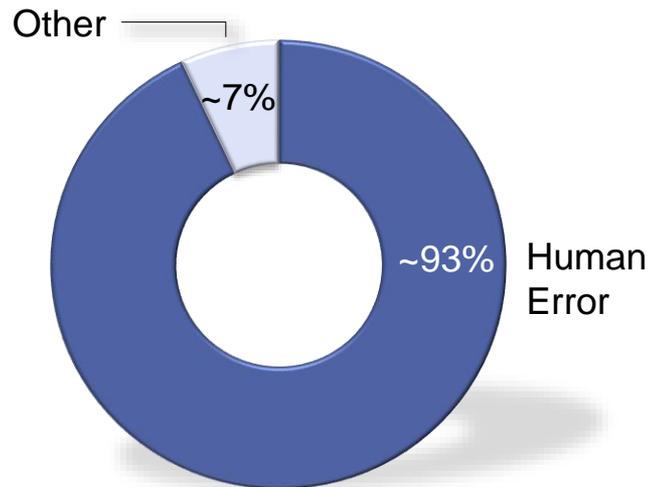


Beyond Standardized Test Scenarios... ...Towards Real Life Situations and Benefit

Eliminating human error by Autonomous Driving can prevent millions of crashes...

...while adding convenience

Traffic fatalities



Autonomous Driving:

- Prevents millions of crashes
- Reduces the severity of injuries and property damage

Additional Benefits:

- Increases driver comfort and productivity
- Uses infrastructure more efficiently
- Improves mobility



Automated Driving Roadmap



Automated driving today

- Video E-class features

Mercedes E-Class

**AUTO
EXPRESS**

“A highlight is the Driving Assistance Plus, which includes the clever Drive Pilot. This neat piece of kit combines with the adaptive cruise to allow virtually hands-free progress on the motorway. It will even brake and accelerate the car in traffic”.



Mercedes E-Class

COMPONENTS AUTOLIV

- Camera – Mono and Stereo
- Rear Radar
- Front Corner Radar
- Active Safety Control Unit (IDC)



Mercedes E-Class

FEATURES AUTOLIV & DAIMLER

- Pre-Safe Impuls Side
- Lane Departure Protect
- Active Lane Keeping
- Active Lane Change Assist
- Traffic Sign Recognition
- Collision Mitigation System Rear
- Blind Spot Monitoring
- Brake Assist
- 360-degree Pre-Safe
- Rear Cross Traffic Alert
- Adaptive Cruise Control
- Drive Pilot up to 130 mph



Active Safety – Autoliv Today

TODAY AUTOLIV

1. is amongst the top 3 active safety suppliers
2. has a broad sensor portfolio with system integration capabilities
3. has key customers with strong partnerships

TRENDS FOR AUTONOMOUS DRIVING (AD)

MARKET

Strong sensor growth
well beyond 2025+

Not a mass market before
2025 – 2035

Fragmented market
with many competitors

POTENTIAL TECHNOLOGIES

Laser scanning (LIDAR)

Far infrared as a sensor

Highly accurate
positioning

Connectivity

PRODUCT

Centralized computing
power (ADAS ECU)

Sensors with
decentralized computing
capabilities

Software as a product

Autoliv is well prepared and aware of the fast dynamic environment
fast growing – fast technology cycles – attractive and competitive

Active Safety Products - Radar

RELEVANCE FOR AD

1. Must for automated driving
2. Very cost efficient sensor
3. Robust performance in wide range of environmental situations

AUTOLIV POSITIONING

- Number 1 Radar manufacturer
- Broadest technology portfolio

STRATEGIC IMPACT

- Fast changing technology and product requirements
- Future developments brings higher functionality

Active Safety Products – Vision (Cameras)

RELEVANCE FOR AD

1. Must sensor for automated driving
2. Very broad application range at higher cost
3. Close to human sensing, key for Human Machine Interface

AUTOLIV POSITIONING

- Focus on front vision systems based on in-house algorithms
- Proven technological capabilities

STRATEGIC IMPACT

- Combinations of Vision, Radar and other technologies key for future AD
- Scalability of increasing importance

Active Safety Products – Roadscope (acquired 2015)

Electronic horizon and maps

RELEVANCE FOR AD

1. Accurate positioning is key functionality
2. GPS and highly-accurate maps are used as sensor
3. Cost saving and conserving resources are consumer benefits

AUTOLIV POSITIONING

- Niche position with advantages in cost, map size and updating
- Utilizing advantages to attract mass market

STRATEGIC IMPACT

- Necessary for AD as complement to “on-vehicle” sensing technologies

Active Safety Products – Central Computing

ADAS ECU

RELEVANCE FOR AD

1. Hardware Platform for the main Software features
2. Interface to all sensors, sensor fusion
3. Key component for electronic architecture

AUTOLIV POSITIONING

- Leading ADAS ECU supplier
- Leading development partner
- Key capabilities in security architecture and integration

STRATEGIC IMPACT

- Key component for autonomous driving

Active Safety Product Strategy and Positioning

TOMORROW AUTOLIV

1. is the active safety supplier
2. is shaping the technology for autonomous driving
3. Together with our established customers we bring **Real-Life Safety** to consumers

AUTONOMOUS DRIVING (AD)

MARKET

Strong growth
Mobility concepts drive new market segments
Game changers are changing markets

TECHNOLOGY

Will materialize:

- accurate positioning
- connectivity
- further sensors

Faster technology cycles

- technology screening

PRODUCT

Standardization
Dominant role of software
Fast product cycles

The autonomous car is the new “mobile phone”

Thank You!

Every year, Autoliv's products
save over 30,000 lives

and prevent ten times
as many severe injuries