

V O L V O

Safety

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Safety

At Volvo Cars, we believe safety is all about people.

To help protect people in and around cars, their lives and the life they are living.

Volvo Cars is a legend for its safety reputation.



Safety is all about people

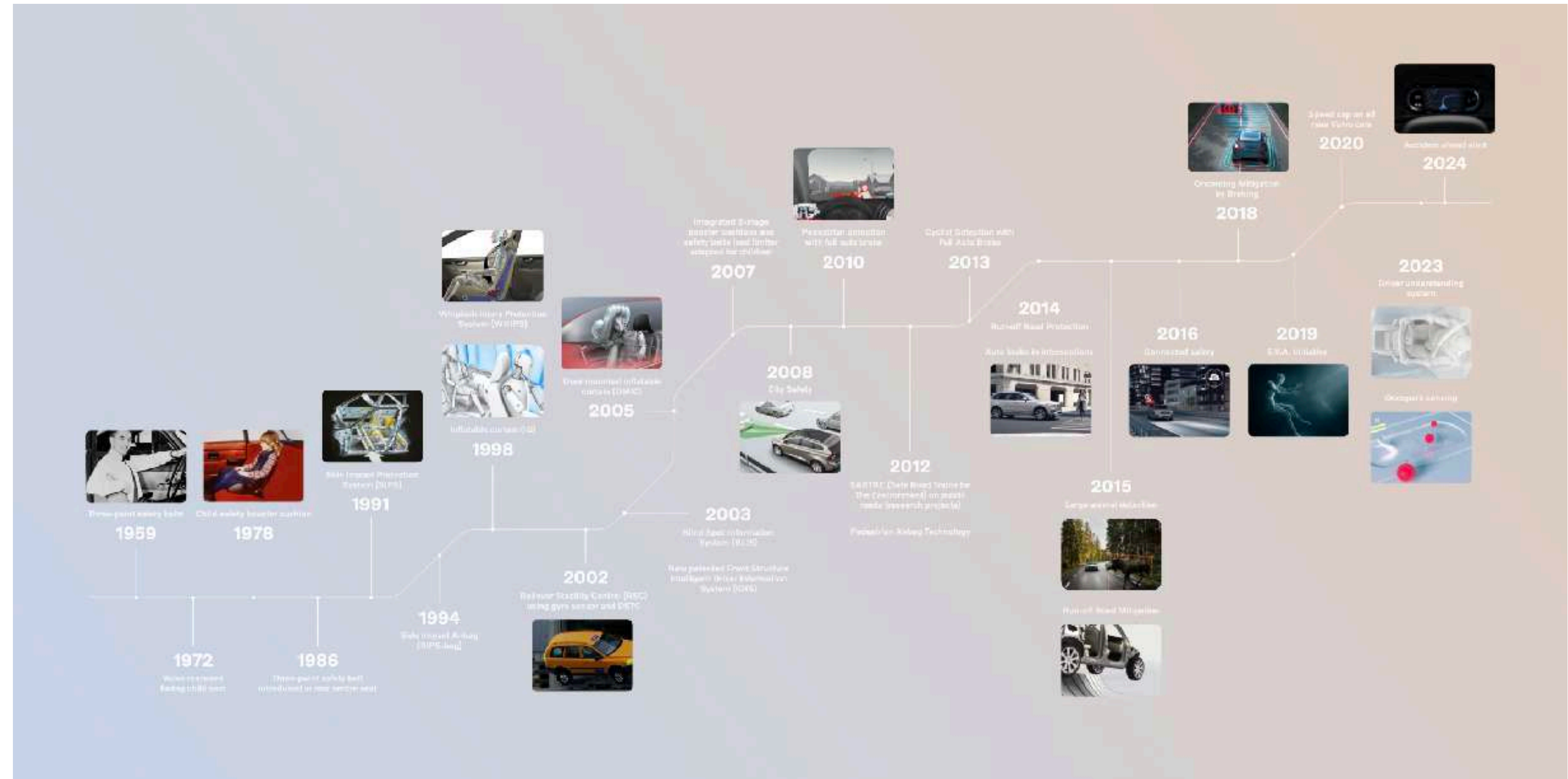
Safety

By sharing our patent for the three-point safety belt with the industry, we have contributed to saving over a million lives.

Many of our innovations are widely adopted by the industry: from rearward-facing child seats, the inflatable curtains, to the auto brake and the blind spot information system, just to name a few.

Let's take a step back to look at how we've achieved it – because that is key to our ambition in the future.

We believe the secret behind our safety innovations is our unique approach to building our safety knowledge through research in the real world.

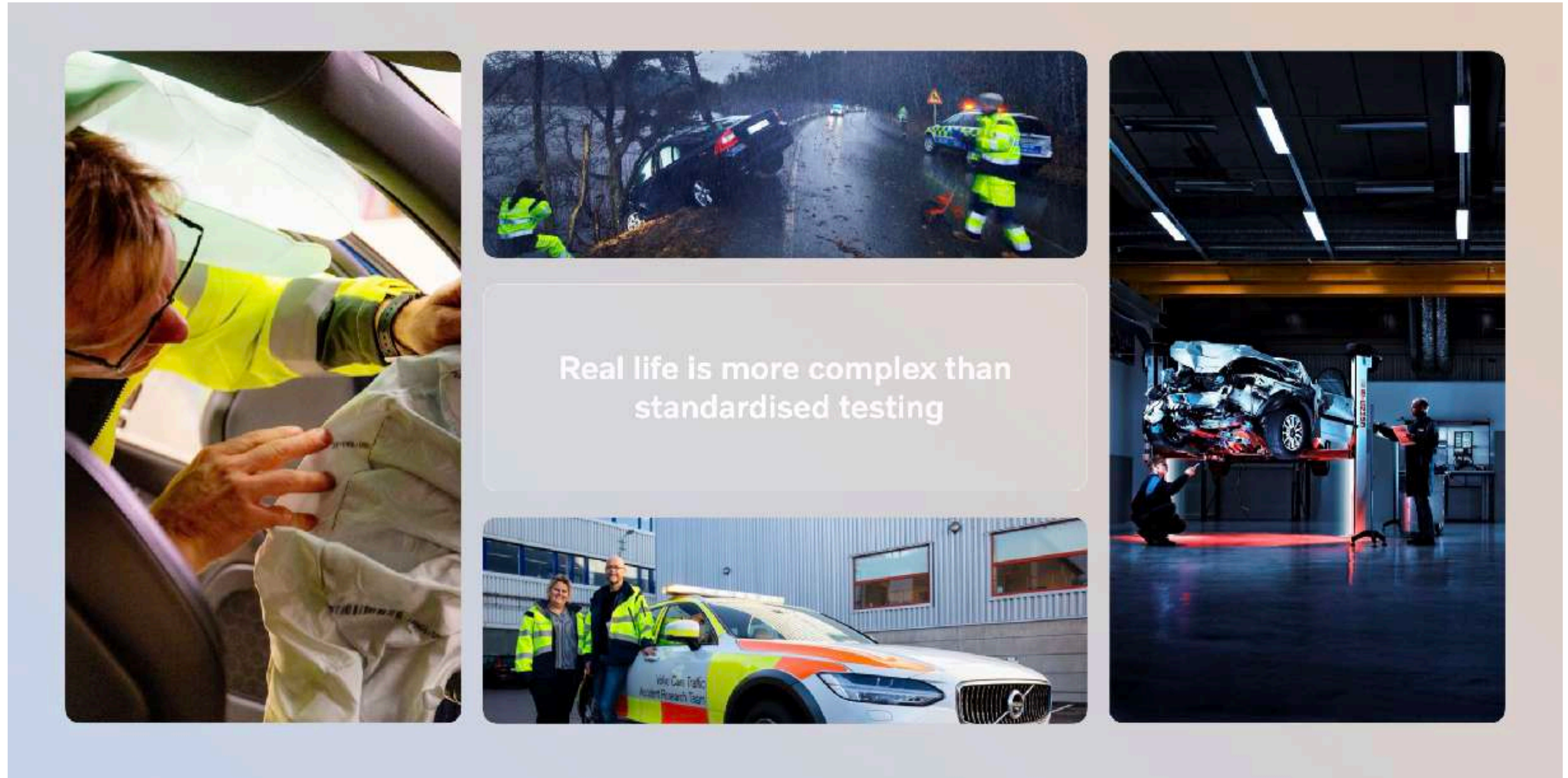


Safety

Since the 1970s, we have been collecting and analysing data from over 50,000 real-world traffic accidents, involving over 80,000 people.

This helps us understand real-world exposure and accidents, because in the real world there are no agreed impact angles or crash speeds.

Real-world situations are far more complex than standardised testing.



Real life is more complex than standardised testing

Safety

Initially, we collected data with measuring tapes, hand calculations, and assessing the scene.

As technologies evolve, so do we and now we're learning even more by pulling data from the vehicles and using computer simulations including human body models, to reconstruct and analyse the accidents.

Today, when everyone else starts to talk about data collection on the road, we've been doing exactly that for more than half a century.

And most importantly, we've been analysing the data and applying the insights to our safety development, to continue improving safety in every generation of Volvo cars.

This is unique in the industry.

All with the aim to make our cars equally safe for everyone in real life, regardless of their gender, height, body shape and where they sit in the car.



Safety

Based on our knowledge from real-world accidents, we managed to set our very own safety standard – we call it the Volvo Cars safety standard.

We test and validate our cars in a wider spectrum of crash test scenarios – aiming above and beyond rating and standardised testing.

Not only by impact energy but also by considering variation in scenarios, conditions, people.

Basically, to cover the complexity of the real world.

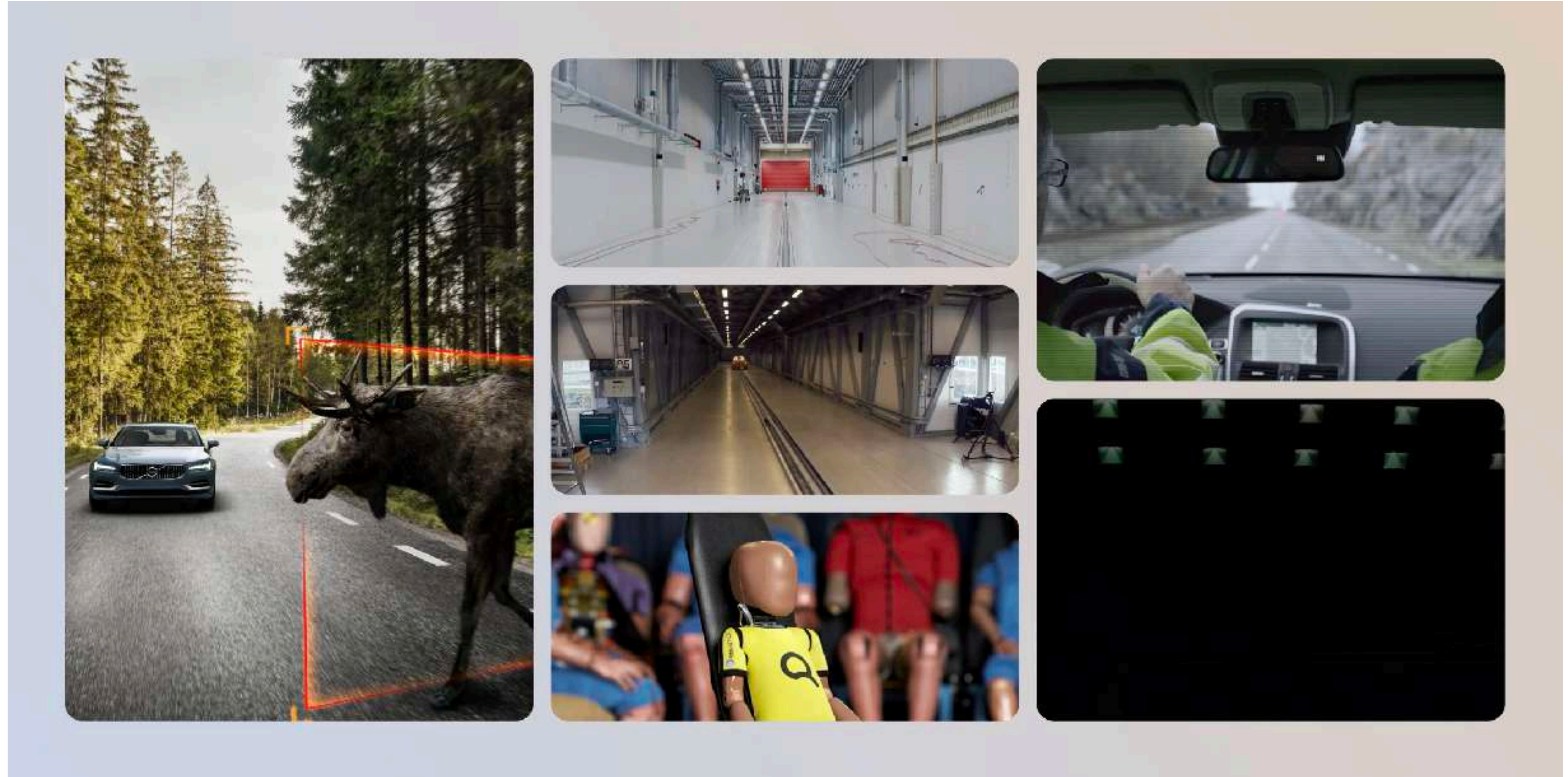


Safety

For example, we perform the frontal crash test against a full-width barrier at 30% higher impact energy than what's required in standardised testing.

Following our own standard, we also pioneered in introducing more types of crashes into our own tests, for instance, run-off-road, roll-over, large animal crashes and multiple collisions.

We have also introduced some of the world-first crash test dummies to represent people of different genders and body shapes.



Safety

To reach our stringent safety standard for occupant protection, every component in the car – whether it's part of the safety cage, deformation zone or restraint systems – is designed to contribute to the robust performance of the car, with the aim to help avoid and reduce injuries for everyone in the car.

This is the art our safety experts have been mastering for decades, and yet we continue evolving it with each generation of Volvo cars.

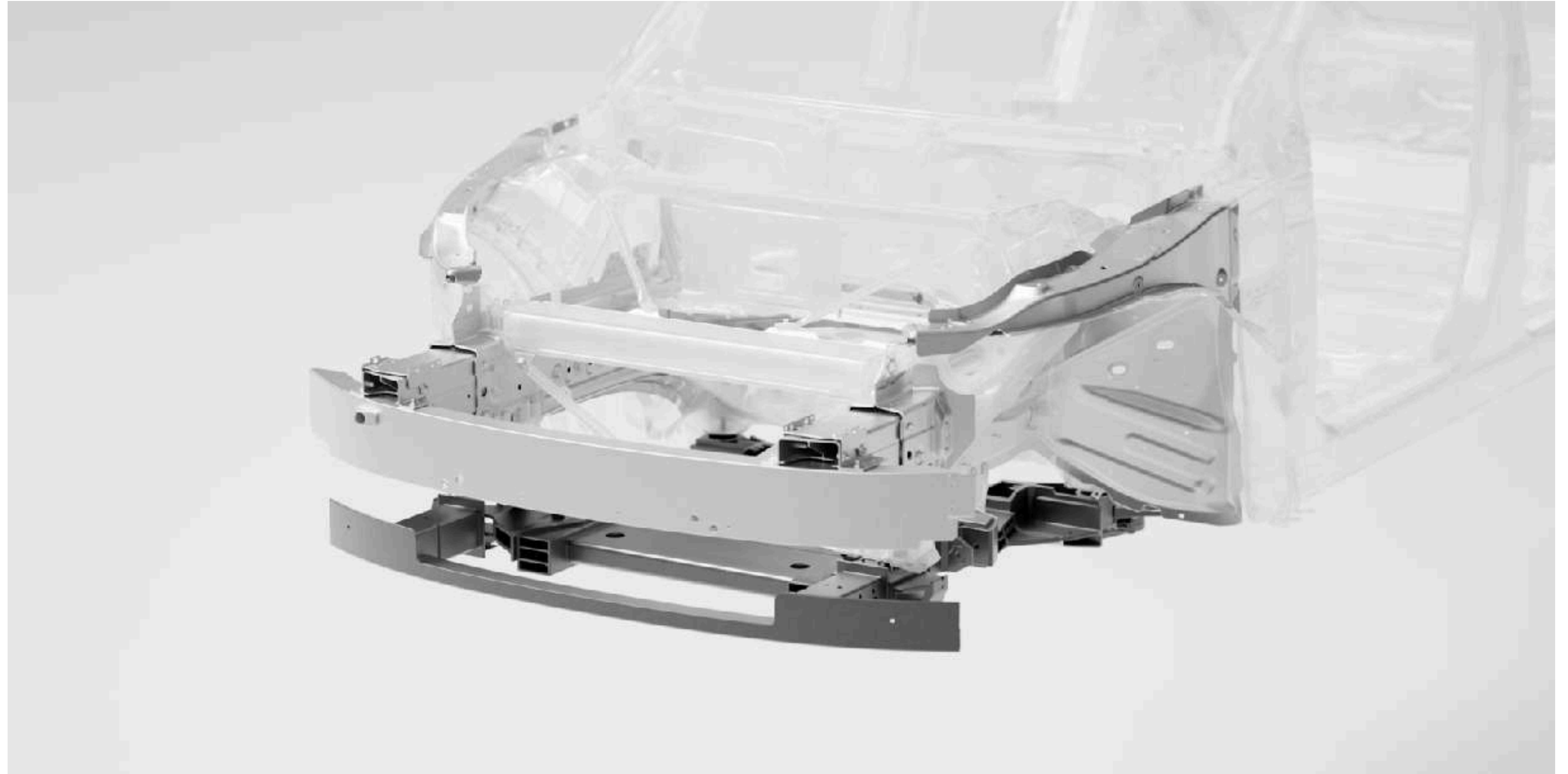
Based on our new tech stack, we will be able to build our high level of safety even more efficiently into a wider range of cars on SPA2 and SPA3. Adopting technologies with maximum efficiency in protecting people, while being optimised for their everyday use of the car.



Safety

For instance, the battery pack is not only an efficient energy storage,

it can also help protect people and secure battery integrity by reinforcing the structure of the car, allowing it to absorb even more energy while improving robustness and compatibility. Building on our expertise in protecting people – to help avoid and reduce injuries in case of collisions



Safety

We're now accelerating towards the ambition of zero collisions.

Because, sometimes the moments that never happen matter the most. With our EX90 reaching customers later this month and the ES90 soon to be revealed, we are embarking on a new era of safety. I'd like to invite Anders back on stage to talk more about it.



Towards zero collisions

Safety

With Safe Space Technology, our next-generation cars are designed to not only help protect people in case of accidents, but also to look out for people and help them prevent it from happening.

In the new era of safety, we aim to make everyone feel safe and cared for in their everyday journey so they can live their life to the fullest.

To that end, we develop our technologies around the people – embracing the fact that we're all human beings and can be tired or distracted at times.



Safe Space Technology

Safety

Our EX90 is designed to help the driver avoid collisions – using automatic emergency steering or braking for instance, as you can see on the screen from our testing.

Going forward, we will be able to continuously improve and grow safety features in our cars, by leveraging cutting-edge sensing technologies, artificial intelligence and real-time data.

Let's take a look at how these technologies work to help make people's journeys safer and more enjoyable.



Safety

With state-of-the-art sensing technologies, our cars are designed to understand the driver's state, the environment and the cabin inside.

With the driver understanding in EX90, the car can identify if the driver is in a challenging state, for example due to distraction, drowsiness or intoxication.

The occupant sensing technologies can help figure out the number of occupants, whether the safety belt is used, and if a child or a pet is left behind in the car.

The advanced exterior sensor setup is designed to build a precise understanding of the surroundings in various conditions and detect potential threats that the driver may have missed.

By integrating data from multiple sensors, the car will be able to build more accurate information and handle more complex situations.

So, the car can nudge the driver with a gentle reminder or step in to support if needed – to help prevent accidents or unpleasant surprises.

And now, let's dive into how real-time data and AI can help improve safety.



Safety

The safety performance and capabilities of the car can be further improved by learning more from what happens in the real world.



Safety

It would not be wrong to say that data is a new safety belt, to us and to everyone.

By moving from a single patent of the three-point safety belt to billions of data points,

we see the potential to save a million more lives.



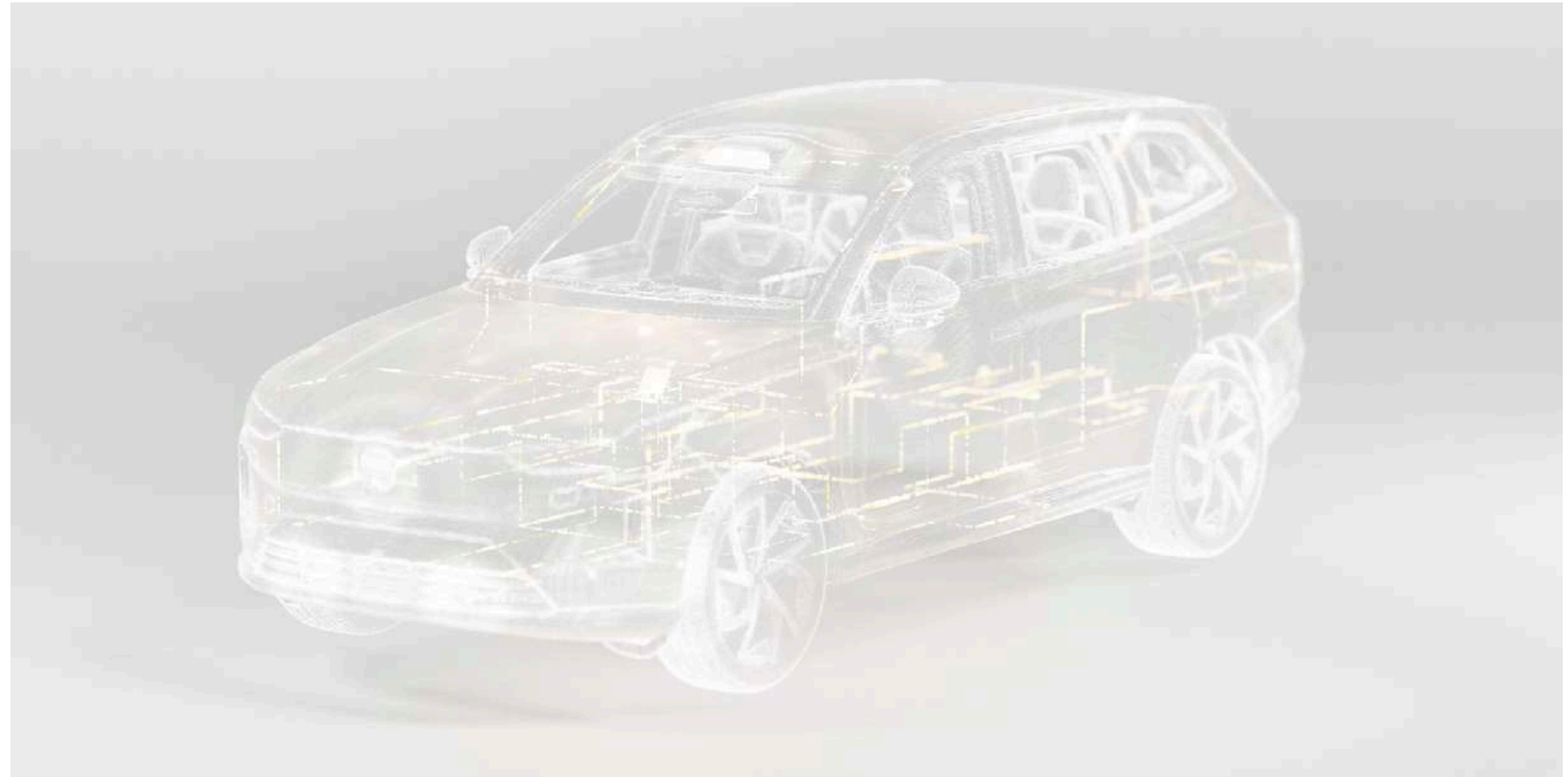
Data, a new safety belt

Safety

Because with deep insights from real-time data, we will be able to take another leap in safety performance.

That will give us superpower – all building on our expertise to comprehend real-world safety.

With our EX90 capable of collecting real-time data points on the road, we will be able to validate and continuously improve the active safety systems faster than ever before.



Safety

Thanks to AI and machine learning, our engineers can better analyse how the active safety systems are engaged in real-life use cases, and identify potential areas to train and optimise the systems.



**Mindful technology
thoughtfully made**

Safety

For example, to learn and differentiate the intention of other road users around the car, in order to prevent and mitigate accidents.

The restraint systems in the cabin can also be prepared to better protect the occupants in more active and individualised ways, based on the prediction of potential collisions.

All the insights gained from the real-time data will be built into the superset tech stack, which will benefit all our future cars on SPA2 and SPA3.

And it will also accelerate our capabilities dramatically to apply the learning from the real world to our cars.

Not only to new cars, but also to those already on the road, thanks to over-the-air updates.

So our customers can enjoy continuously improved cars with the latest safety features and better performance over time.



Safety

As the pioneer in automotive safety, we've never stopped pushing the boundaries – not only for ourselves but also for the industry.

With the aim to make the roads safer for all, we are proud to be sharing our 50 years of research from the real world.

We have made hundreds of our research papers available online, giving free access to everyone, including other carmakers, road authorities and researchers.

We are committed to continue sharing our safety knowledge and insights from real-world data – because as proud and confident as we are in leading the industry in safety innovations, we believe that in the competition for safety, everyone should be a winner.

And most importantly because every life matters.



Every life matters

Safety

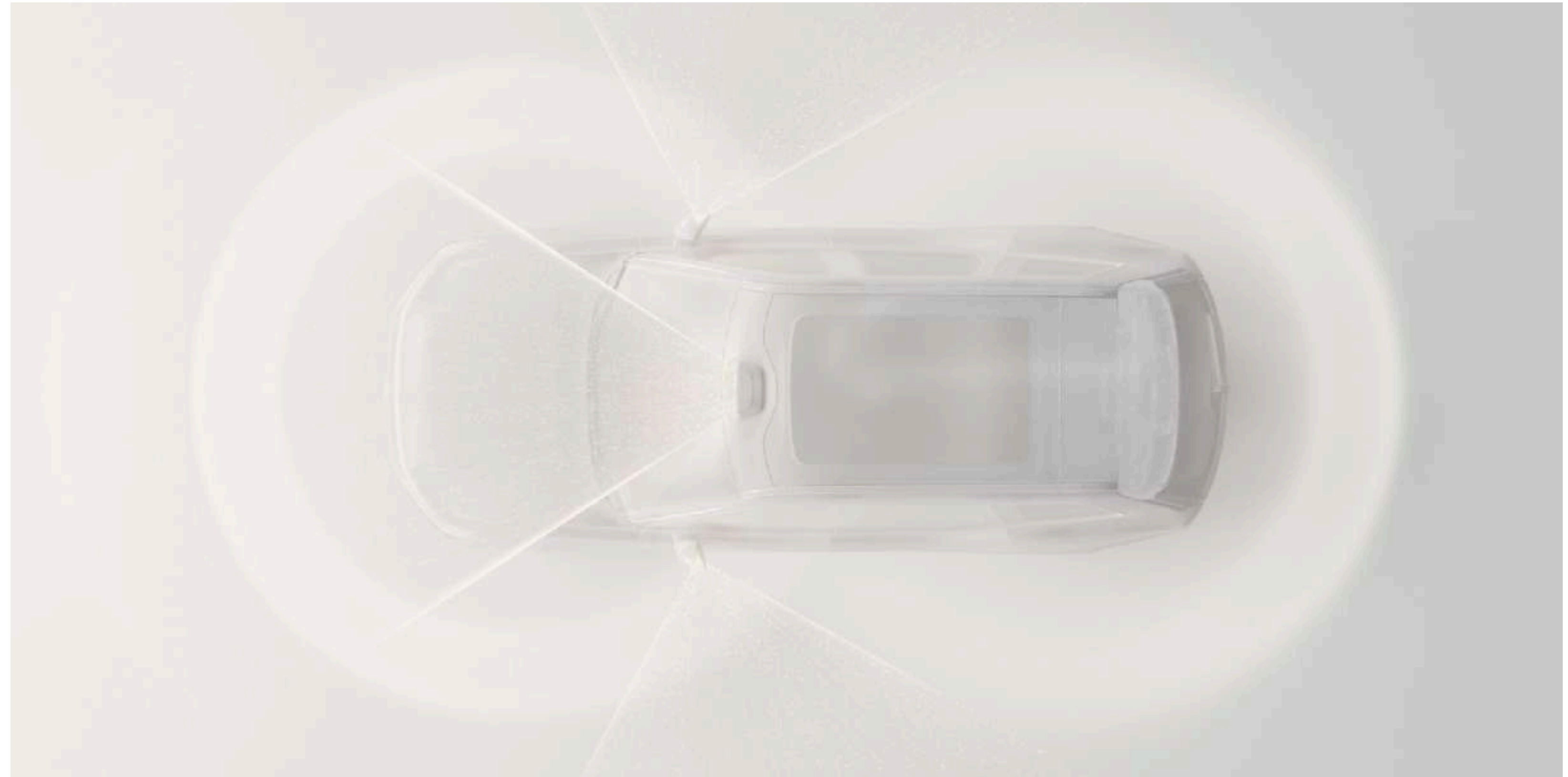
Our unique safety approach in real-world accidents and our stringent safety standard are the foundations of our safety leadership.

Building on our strong heritage of protecting people, we're now accelerating towards the ambition of zero collisions.

With our tech stack approach and Safe Space Technology – powered by intelligent algorithms,

AI and insights from real-time data – we're moving faster than ever in our safety development.

We're on our way to saving another million lives, and helping everyone feel safe in their everyday journeys.



Safety

Just as outlined by our founders almost 100 years ago, the care for people is at the centre of everything we do.

It will continue guiding Volvo Cars to lead in automotive safety in the 100 years to come.

“Cars are driven by people.
The guiding principle behind
everything we make is,
and must remain, *safety*.”

Gustaf Larson
Co-founder of Volvo





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