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# **BASIC INFORMATION**

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#### Audi at the Dakar Rally

# Audi to compete in the Dakar Rally

Audi is facing one of the greatest challenges in motorsport: The brand with the four rings will be competing in the famous Dakar Rally for the first time with an innovative prototype in 2022. The alternative drive concept combines an electric drivetrain with a high-voltage battery and a highly efficient energy converter for the first time. Rally raids will be the spearhead of the factory motorsport commitment in the future.

"A multifaceted commitment to motorsport is and will remain an integral part of Audi's strategy," says Markus Duesmann, Chairman of the Board of Management at AUDI AG. "We want to continue demonstrating the brand's slogan 'Vorsprung durch Technik' in international top-level motorsport in the future and develop innovative technologies for our road cars. The toughest rally in the world is the perfect stage for this."

After many international successes in a wide range of categories, Audi is thus returning to rallying, which marked the beginning of the brand's successful history in motorsport. From 1981, the Audi quattro revolutionized rallying. Today, permanent four-wheel drive is the standard, not only for rally cars. It also guarantees maximum safety in the sportiest Audi production models, and now also electrically in the e-tron models.

With the use of an alternative drive concept in the Dakar Rally, Audi is now facing up to the most extreme conditions. The vehicle will be driven by a powerful electric drivetrain. The energy required for this comes from a high-voltage battery, which can be charged as required while driving via an energy converter in the form of a highly efficient TFSI engine. The aim is to continuously improve the performance of the electric drivetrain and the battery in the years to come. The experience gained during this process should then be incorporated into the further development of future electrified production models.

Audi is the first car manufacturer that has committed to develop a viable alternative drive concept for the Dakar Rally, making it a pioneer in motorsport once again. In 2012, Audi achieved the first victory with a hybrid racing car in the Le Mans 24 Hours. The Audi R18 e-tron quattro remained unbeaten in the world's most important endurance race three times in a row.

Since 2014, Audi has also been successful in fully-electric racing with Formula E. First in a supporting role for the team of its longstanding partner ABT Sportsline, and then with full factory involvement from 2017 onwards. After six years, the Audi Sport ABT



Schaeffler team is the most successful entry in the history of Formula E with a total of 43 podium finishes, including twelve victories. Special highlights include winning the drivers' title in 2017 and the teams' title in the first season on a factory level in 2018.

"Formula E has accompanied the transformation phase at Audi," says Markus Duesmann. "Today, electromobility at the four rings is no longer a dream of the future, but the present." The Audi e-tron is a bestseller in many markets. With the RS e-tron GT, Audi has brought its sporty spearhead onto the road. And as early as 2025, around 40 percent of sales are expected to be achieved with purely-electric vehicles and plug-in hybrids. "This is why we are taking the next step in electrified motorsport by facing the most extreme conditions. The many technical freedoms offered by the Dakar Rally provide a perfect test laboratory for us in this respect."



The Audi RS Q e-tron

# Test laboratory for possible future technologies

Clear the stage for an electrifying high-tech test laboratory: just under a year after the initial concept idea, Audi Sport has started testing the new Audi RS Q e-tron, with which Audi will take on one of the greatest challenges there is in international racing in January 2022: the Dakar Rally.

Unique: Audi wants to be the first car manufacturer to use an electrified drivetrain in combination with an efficient energy converter to compete for overall victory against conventionally-powered competitors in the world's toughest rally. "The quattro was a gamechanger for the World Rally Championship. Audi was the first brand to win the Le Mans 24 Hours with an electrified drivetrain. Now, we want to usher in a new era at the Dakar Rally, while testing and further developing our e-tron technology under extreme conditions," says Julius Seebach, Managing Director of Audi Sport GmbH and responsible for motorsport at Audi. "Our RS Q e-tron was created on a blank sheet of paper in record time and stands for Vorsprung durch Technik."

The characteristics of the Dakar Rally present the engineers with special challenges. The marathon event lasts two weeks and the daily stages are up to 800 kilometers in length. This makes this competition the ultimate challenge for an electric drive.

Because there are no charging opportunities in the desert, Audi has chosen an innovative charging concept: On board of the Audi RS Q e-tron, there is the highly efficient TFSI engine from the DTM. It is part of an energy converter that charges the high-voltage battery while driving. Since the combustion engine is operated in the particularly efficient range of between 4,500 and 6,000 rpm, the specific consumption is well below 200 grams per kWh.

The drivetrain of the Audi RS Q e-tron is electric. The front and rear axles are both fitted with a motor-generator unit (MGU) from the current Audi e-tron FE07 Formula E car which has been developed by Audi Sport for the 2021 season.

A third MGU is part of the energy converter and serves to recharge the high-voltage battery while driving. In addition, energy is recuperated during braking. The battery weighs about 370 kilograms and has a capacity of 52 kWh.

"The battery is also a proprietary development that we have realized together with a partner," says Stefan Dreyer, Head of Development at Audi Sport for motorsport projects. "As engineers, we basically see development potential in every component. But in terms of the drivetrain system, we have already achieved a system efficiency of



over 97 percent in Formula E. There's not much more room for improvement. The situation is quite different with the battery and energy management. This is where the greatest development potential lies in electromobility in general. What we learn from the extremely challenging Dakar project will flow into future production models. As always, we are also working closely with our colleagues from road car development on this project."

The organizer of the Dakar Rally allows a maximum drive power of 288 kW. The electric drivetain offers many advantages. The electric motors can be controlled extremely precisely and can thus ensure good drivability. In addition, braking energy can be recovered.

The Audi RS Q e-tron only needs one forward gear. The front and rear axles are not mechanically connected, as is also common in electric vehicles. The software developed by Audi takes over the torque distribution between the axles and thus creates a virtual and freely configurable center differential, which has the positive side effect of being able to save the weight and space that woud have been required by propshafts and a mechanical differential.

Visually, the Audi RS Q e-tron also differs significantly from conventionally-powered Dakar prototypes. "The vehicle looks futuristic and has many design elements that are typical of Audi," says Juan Manuel Diaz, Team Leader of Motorsport Design at Audi. "Our aim was to symbolize Vorsprung durch Technik and the future of our brand."

The Dakar Rally entry is being run in conjunction with Q Motorsport. "Audi has always chosen new and bold paths in racing, but I think this is one of the most complex cars that I have ever seen," says team principal Sven Quandt. "The electric drivetrain means that a lot of different systems have to communicate with each other. Besides reliability, which is paramount in the Dakar Rally, that's our biggest challenge in the coming months."

Quandt compares Audi's Dakar project to the first moon landing: "Back then, the engineers didn't really know what was coming. It's similar with us. If we finish the first Dakar event, that's already a success."

The prototype of the Audi RS Q e-tron had its first roll-out in Neuburg at the beginning of July. An intensive test program was scheduled until the end of the year.

Project planning is extremely challenging. Little more than a year has passed since the official project launch. Audi even had to start development when the regulations for alternatively powered vehicles had not yet been finalized.

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### Technical Data

Model	Audi RS Q e-tron (Dakar 2022)
Vehicle	
Vehicle type	Rally Raid Vehicle (Category T1U – alternative drivetrains)
Chassis	Steel tube frame in combination with structural components in carbon/cylon
	fiber composite
Drive train/transmission	
Type	All-wheel drive with electrically driven axles
E-drivetrains on the axles	One Audi MGU05 from Formula E per axle
Output	Total system power under 288 kW
Transmission	One single-speed racing gearbox per axle, including limited-slip differential (software-based), virtual center differential with freely selectable torque distribution on front and rear axle
Battery	High Voltage Battery System (HVBS), approx. 370 kg (wet), lithium-ion cells, usable battery capacity approx. 52 kWh, charging with max. 220 kW while driven through energy converter
Energy converter	2.0 liter four-cylinder turbo engine from the DTM coupled via a shaft with a generator (Audi MGU05 from Formula E)
	Speed- and torque-controlled generator operation at the energy converter's maximum efficiency with intelligent battery charging and energy management
Electrics	, and the second
On-board voltages	12V/48V/800V
System control units	Bosch ECU MS 7.4, Bosch VCU MS 50.4P
Power management	Motec PDM32
Data Logger	4 x Bosch C 80
Driver/Co-driver Display	2 x Bosch DDU 10
Lights	LED head lights and tail lights
Suspension/steering/brake	
Steering	Electro-hydraulically assisted rack and pinion steering system
Suspension	Independent front and rear suspension,
	double wishbone suspension, spring/damper unit,
D 1 /D 11	adjustable gas pressure shock absorbers
Brakes/Recuperation	Hydraulic dual-circuit braking system with one "brake-by-wire" system, each on the front and rear axles with brake force distribution freely selectable by the driver and electronically controlled recuperation performance,  Light-alloy brake calipers,  internally ventilated steel brake discs front and rear
Wheels	Forged aluminum rims, front/rear: 8.51 x 17 inch
Tires	BF Goodrich front/rear 37x12,5 R17
Dimensions/weight	
Length	4,500 mm
Width	2,300 mm
Height	1,950 mm
Minimum weight	2,000 kg without drivers
Fuel tank capacity	max. 300 liters
Performance	
0–100 kph	less than 4.5 seconds (on loose surface)

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#### The Dakar project

# From circuit racing to the desert

Audi Sport has its roots in rallying. The Audi quattro revolutionized the World Rally Championship in the early 1980s. Posters, photos and stickers on display at Audi Sport in Neuburg still recall this time.

However, none of the team from that time is still active today and rally raids are new territory for Audi Sport.

The only off-road experience comes from the rallycross project with Mattias Ekström's team in the 2017/18 seasons, where there was up to 50 percent gravel, but rally raids in the desert are a different dimension.

Initially, a small core team at Audi Sport worked on a feasibility study for the alternative drivetrain concept. The design and concept phase began in June 2020. Things really got underway in August.

Audi Sport has been developing new race cars for more than four decades. The diverse expertise also helped in the development of the Audi RS Q e-tron. The process is always the same, only the goals were different this time. Reliability is particularly important at the Dakar Rally. Every component has to last in the desert for 14 days under the toughest conditions."

Reliability is Audi Sport's top priority for its first outing in the Dakar Rally in January 2022. In the desert, Audi has to be prepared for sand, boulders, rough gravel roads as well as mud, rain and extreme heat. These conditions are particularly tough for the electric drive.

In addition, the Audi RS Q e-tron was built during the time of pandemic conditions. Because of COVID-19, much of the development took place in home office circumstances. Virtual meetings replaced real meetings. Planning trips and testing is also more complicated than in normal times.

All of the relevant departments were involved in the development of the Audi RS Q etron at Audi Sport. Whereas the engineers always had a certain basis for the circuit racing projects, they started from scratch for the RS Q e-tron. Audi Sport defined all parameters on a blank sheet of paper. In Q Motorsport, the brand had a strong partner at its side from the very beginning who has a lot of experience in rally raids.

In general, weight is a big issue with electric vehicles. In the case of the Audi RS Q etron, this is compounded by the energy converter – a combination of the TFSI engine



from the DTM with an MGU. The prototype for the desert is full of technology. It was therefore an advantage that existing components were already weight-optimized. Because, it is also the case in the Dakar Rally that lighter means faster.

Until January 2022, Audi has reeled off as many test kilometers as possible and coordinated the systems to make the car fast and reliable. Unlike circuit racing, there is no crew to repair the car during the daily stages. Only the drivers and other participants can work on the car. The more reliably the car works in the rough terrain, the less risk there is of losing time. Only in the evening can the service team take care of the RS Q e-tron in the bivouac.



#### The drivetrain concept

# Maximizing efficiency

The future is electric. This applies to Audi as a whole and also to Audi Sport. When the vision was born to tackle the world's toughest rally with an electrified powertrain, a pioneering spirit was required.

The drivetrain of the Audi RS Q e-tron is electric. The front and rear axles are not mechanically connected and are each powered by a motor-generator unit (MGU) from the current Audi e-tron FE07. Because there are no charging opportunities in the desert, Audi has chosen an innovative charging concept: There is an energy converter on board of the Audi RS Q e-tron that charges the high-voltage battery while driving. The energy converter consists of the highly-efficient TFSI engine from the DTM, coupled to a generator (another drivetrain unit from Formula E).

"Even before the Dakar project, we asked ourselves what a future drivetrain system in motorsport could look like," says Stefan Dreyer, Head of Development at Audi Sport racing. "We wanted a drivetrain that is efficient and performs well, while at the same time and can also handle long distances. That's how the energy converter concept came about. It's great that we can do our part in motorsport to develop sustainable drivetrains that will keep the world moving forward."

It is quite important for Audi that the battery is not a standardized part in the Dakar Rally. "As engineers, we basically see development potential in every component," says Dreyer. "The MGU and the inverter were both developed completely in-house by Audi Sport for competing in Formula E and they already achieve a system efficiency of about 97 percent. There's not much more leeway there. The situation is completely different with the battery and energy management. That's where the greatest development potential lies in electromobility in general. As always, we are working closely with our colleagues from production car development on this project."

The high-voltage battery of the Audi RS Q e-tron was designed from scratch by Audi Sport and manufactured together with an external partner in less than a year. "Because of the short time, we had to make a few compromises, so there is still more potential," says Dreyer. "But, it's a great achievement to already have a battery that meets all our requirements."

At around 370 kilograms, the high-voltage battery is comparable in size to the one in the current Formula E vehicle. It has a capacity of 52 kWh. It is charged by the energy converter while the car is being driven. In principle, the process runs automatically so that the driver and co-driver can concentrate on driving and navigating.



Energy management is much more complex than on the circuit. "On the circuit, you have a good idea of all of the parameters," says Dreyer. "The track. The race format. The competitors. You spend a lot of time in the simulator to prepare as optimally as possible. In the Dakar Rally, we have to deal with a lot of unpredictable situations. The software is therefore our biggest task."

But, the extreme stresses on the hardware should not be underestimated either. "In the Dakar Rally, there are jumps, you sink into the sand, you hit obstacles. The components of the drivetrain were basically not developed for this particular application," says Dreyer. "It's a big challenge to make sure that those components can hold up to these loads."

The electric drivetrain is identical on the front and rear axles. All of the components (MGU, inverter, 1-speed transmission, differential and slip clutch) are housed in an aluminum enclosure. The inner workings of the MGU and inverter have been reinforced, and cooling has been optimized. The front and rear axles are not connected to each other. The function of the center differential is taken over by the software.

The two-liter TFSI engine from the Audi RS 5 DTM has been optimized for use in the desert. "The DTM engine is a perfect fit," says Dreyer. "But, it obviously operates under different conditions at the Dakar Rally. We reduced the output from 450 to about 200 kW. It operates within the narrow optimized rpm range of between 4,500 and 6,000, instead of 9,000 rpm. The engine has to run as efficiently as possible in the heat, cold and at altitude. We optimized the pistons, injectors and turbocharger for this and spent a lot of time on the test bench. We are proud of the specific consumption that is well under 200 grams per kWh."

The fuel tank holds a maximum of 300 liters. "But, of course, we are trying to carry the lowest amount fuel as possible, in order to save weight," says Dreyer.

The advantages of the electric drivetrain in the Dakar Rally are obvious to the head of development: "The drivetrain is extremely efficient. There is hardly any power loss. You don't have to expect temperature problems while you're driving slowly in the sand. But, above all, the electric drivetrain is much easier to control in all of the given situations. The maximum torque is available from zero revolutions. You can regulate the drivetrain very precisely, whether the car is going over jumps or driving in the desert. The electric drivetrain does not react to external influences such as air pressure, temperature and humidity. And you can use it at full power throughout the rally. It's all much more consistent than with a combustion engine."

For Stefan Dreyer, the reliability of the Audi RS Q e-tron is also more important than performance initially. "Reliability is the first priority," he says. "There is actually no



single component that particularly gives me a headache. It's more the fact that we are developing such a complex project under pandemic conditions in just twelve months. Our dream is to become the first manufacturer to win the Dakar Rally with an alternative powertrain."



#### The design

# Vorsprung through design

The Audi RS Q e-tron is technically a quantum leap. And visually, the futuristic-looking prototype is also clearly different from typical Dakar vehicles. It is the result of an internal competition in the Audi Design department.

"There were many great designs," says Juan Manuel Diaz, who is responsible for the design of the racing vehicles at Audi. "We liked Dario Tomorad's proposal the best. Together with him and the whole team, we have put together a fascinating car in an extremely short period of time that is completely different, but is still recognizable as an Audi at first glance."

"Most of the cars in the Dakar Rally are rather boxy," says Dario Tomorad. "Audi is known for doing things differently. We are incorporating the dynamics of our production models to the race car. We have a coupe-like silhouette, similar to the etron Sportback and we've taken inspiration from our unique motorsport history."

Audi Sport is returning to its roots with its involvement in the Dakar Rally. The Audi quattro revolutionized rallying in the early 1980s. The distinctive angular body panel shapes of the original quattro can also be found on the Audi RS Q e-tron.

The vertical fin on the rear decklid and the air intake on the roof, which supplies sufficient cooling air to the electric motors, the high-voltage battery and the energy converter, are reminiscent of Audi's successful era in the Le Mans 24 Hours.

The protrusions behind the doors are based on the side blades of the Audi R8. They have a completely different purpose on the Audi RS Q e-tron: they house the two spare wheels that are typically carried on board during the Dakar Rally.

The rear of the 'desert ship', which the designers are particularly excited about in the dark, looks particularly futuristic: the rear edge of the fin consists of LEDs that function as brake lights. The shape of the headlights and tail lights are also typically Audi.

The Audi RS Q e-tron looks like a UFO from the front. Because the vehicles jump a lot during the Dakar Rally and usually land with their front suspension compressed and frontends pointing downwards, the front section of the car begins practically above the huge front wheels.

"Every designer dreams of big wheels, short overhangs and a slim cabin," says Juan Manuel Diaz. "We had the chance to create something completely new with this



fascinating project. We took many elements from our production models: the sloping rear end like a coupé. The quattro side body panels. The single-frame grille. The signature lights. You can immediately tell that it's an Audi. A unique and futuristic Audi. The widest car Audi has ever built. There were many challenges, like the massive suspension travel. But, the whole team can be proud of the result. When you see the car, you just think: Wow! What is that?"

The futuristic appearance of the Audi RS Q e-tron is emphasized by a camouflage design developed by Marco dos Santos, which combines different shades of grey. Bright red stripes and colored sections represent the Audi-e-tron technology. Motorsport fans are already familiar with this striking color scheme from Audi in Formula E.

"Most of our competitors use very colorful vehicles," says Marco dos Santos. "We clearly stand out from them with our dark, very technology-focused design. The spectators will have an easy time distinguishing our cars from the others."

Also through the four rings in XXL size on the air scoop, an idea that came about during the 2021 Dakar Rally. "We noticed that the cars on TV are mostly shown from a helicopter's perspective," says Dario Tomorad.



#### The team

# **Q** Motorsport

Audi will compete in the Dakar Rally for the first time with an innovative prototype in 2022. The race in the world's toughest rally raid event will be carried out in cooperation with the newly-founded Q Motorsport GmbH based in Trebur (Germany).

"By cooperating with Q Motorsport, we are sticking to our philosophy that has proven itself at Audi over many years," says Julius Seebach, Managing Director of Audi Sport GmbH and responsible for motorsport at Audi. "The development of the Dakar prototype with its innovative drivetrain concept is being carried out in-house. We are contesting the race together with an experienced partner. The Q Motorsport team contributes an enormous amount of specific experience from rally raids."

Q Motorsport GmbH was founded by Sven Quandt and his two sons Thomas and Tobias Quandt. As a driver, Sven Quandt won the T1 Marathon Cup in 1998. In the same year, his team GECO Raid celebrated a 1-2-3 victory in the T1 classification of the Paris–Dakar Rally. From November 2002 to the end of 2004, Quandt was the head of motorsport at Mitsubishi Motors. At the same time, he began to build up the X-raid Team, which has celebrated six victories in the Dakar Rally and also won the FIA World Cup for cross-country rallies eleven times.

"With Q Motorsport, we want to break new ground in rally raid motorsport independently of and parallel to the X-raid Team," says Sven Quandt. "The world is changing and the Dakar Rally must also prove that it can be sustainable and continue to point the way forward. This is exactly what Q Motorsport wants to demonstrate together with Audi."

"Audi has always chosen new, bold paths in racing, but I think this is one of the most complex cars that I have ever seen," says Quandt. "The electric drivetrain means that a lot of different systems have to communicate with each other. Besides reliability, which is paramount in the Dakar Rally, that's our biggest challenge in the coming months."

Quandt compares Audi's Dakar project to the first moon landing: "Back then, the engineers didn't really know what was coming. It is similar for us. If we finish the first Dakar event, that's already a success."

For Sven Quandt, the Dakar Rally is one of the biggest challenges there are in motorsport – and it is the best test for technologies that are suitable for everyday use. "You have all of the things that also matter in a production vehicle: different terrains, tough conditions, high and low temperatures, rain, sun and many kilometres driven per



day. The Dakar is the best test: if the technology can survive the Dakar, it will be successful everywhere."

Audi Sport has brought a lot of expertise from circuit racing and Le Mans to the partnership with Q Motorsport. "In some areas, the Audi RS Q e-tron is more a car for circuit racing," says Quandt. "The question is: what can you bring from circuit racing into a rally raid car? What is the best compromise? We are both learning from each other."

The biggest unknown for the successful Dakar team principal is the electronics. "Everyone knows how often you have to restart a computer," says Quandt. "The car is very complex with all of its components. They all have to communicate with each other. It's like putting twelve people in a room, each speaking a different language, but all of them are supposed to be working on the same task. There are incredibly large amounts of data exchanged between the individual components. From MGU to MGU, from the battery to the motors and also from the energy converter. That makes it very difficult. We can change and repair components. If there is a software problem, the drivers have no chance. That's why we are building as much redundancy into the car as possible."

The drivers and co-drivers will be prepared for the special features of the electric drivetrain during special training camps, just like the mechanics and technicians. During the rally itself in January, additional engineers will be on site to take special care of the electric drivetrain and software.

Quandt knows: "You can have the fastest car, but you still won't win the Dakar if the reliability is not there. To win, you first have to finish. In our project, it's all about getting there first. We have to ignore the rest for the time being."

"The whole team is extremely motivated," says Quandt. "They can hardly wait for it to begin. They are looking forward to it just like children look forward to their new toys. Everyone wants to do their part to make this project successful."

Quandt himself is also looking forward to working with Audi. "I am 65," he says. "Not many dare to take on a challenge again at this age. I think it's cool to be part of something completely new. With this project, we have the chance to change the technology for future production vehicles. We want to prove what is possible with this technology in the Dakar Rally."



#### The driver teams

# Audi with "Dream Team" at the Dakar Rally

Audi is the first car manufacturer to fight for overall victory in the famous Dakar Rally with an electrified powertrain, thus also heralding an energy revolution in rally raids. Audi Sport has succeeded in recruiting three illustrious driver teams for the ambitious project.

Mattias Ekström/Emil Bergkvist (Sweden), Stéphane Peterhansel/Edouard Boulanger (France) and Carlos Sainz/Lucas Cruz (Spain) will compete for Audi in the world's toughest rally from January 1 to 14, 2022. "It's no exaggeration to speak of a 'dream team'," says Julius Seebach, Managing Director of Audi Sport GmbH and responsible for motorsport. "Stéphane is the most successful Dakar driver of all time. Carlos is a multiple Dakar winner and World Rally champion. With Mattias, we already celebrated many Audi successes in the past. He is one of the world's most versatile drivers. In addition to a lot of speed, they are all adding an extreme amount of expertise and motivation to our team. The same goes for their co-drivers, who play an increasingly important role in the Dakar Rally."

"At the Dakar Rally, teamwork and reliabilty are crucial," says Sven Quandt, team principal of Q Motorsport. "You need a well-bonded team, a super reliable car and reliable driver teams. You can't permanently drive at the limit in the Dakar Rally. The right strategy is crucial. I'm very happy that we will have three renowned and strong teams competing for us. We know their qualities very well."

Mattias Ekström (42) has spent almost his entire career under the banner of the four rings, particularly in the DTM, where he won the title twice with Audi (2004 and 2007). The Swede underlined his versatility by winning the World Rallycross Championship in 2016, as well as successful stints in the World Rally Championship, NASCAR and in Australian Supercars. In 2021, he is competing for CUPRA in the new Extreme E electric off-road series. Earlier this year, he also made his debut in the Dakar Rally.

"The Dakar will definitely be one of the most exciting adventures of my career," says Ekström. "To be able to tackle this exciting project together with the team, with which I celebrated my greatest successes, is fantastic. Although I've turned 43 this year, I feel like a junior compared to Carlos and Stéphane. In this sport, you need a lot of experience in all areas. I still have a lot to learn, but I'm really looking forward to it."

Mattias Ekström's co-driver is his compatriot Emil Bergkvist (27), who used to be a



rally driver himself. "I come from the same region as Mattias. He has always been an idol for me, every motorsport enthusiast in Sweden knows him," says Bergkvist. "When I stopped driving, I called him and asked if I could work for his team. Now, I am his co-driver. It's an honor for me to be able to work with Mattias and be part of this great project at Audi."

Stéphane Peterhansel (56) is "Mister Dakar" and a living legend in his sport. The Frenchman has won the world's toughest rally raid 14 times, which includes six victories on a motorcycle and eight more in the car category. "I love nature and beautiful landscapes," says Peterhansel. "At the Dakar Rally, we travel to fascinating places that you would never see otherwise. The Dakar is one of the last adventures in this world. And it is on the verge of a radical change: the future is electric. In ten years, everyone will be driving electric cars. The Dakar is an extreme test for this technology. We want to be the first team to win the Dakar Rally with an electric powertrain. I'm looking forward to tackling this very ambitious project with Audi."

"A new era is coming. The whole world is moving towards electric mobility and motorsport has to do the same," says Peterhansel's co-driver Edouard Boulanger (42). "Audi brings a lot of experience from Le Mans and Formula E and is not starting from zero. History has shown: When Audi does something in motorsport, it does it right. Being allowed to be a part of the Audi squad is another important step in my career and a big responsibility. I don't want to disappoint expectations."

The trained engineer has become familiar with the Dakar Rally over many years in various functions. In 2021, he started together with Stéphane Peterhansel for the first time and won the rally outright. "I've admired Stéphane since I was a kid," says Boulanger. "We've known each other personally for 13 years and more recently we've been working together in the cockpit. He is the best in the sport."

Carlos Sainz (59) is also a living legend. The Spaniard is a two-time World Rally champion (1990, 1992) and has celebrated three Dakar Rally victories to date: in 2010, 2018 and most recently in 2020 at the premiere in Saudi Arabia. "Even at 59, I'm still hungry, otherwise I wouldn't have taken on this new challenge," says Sainz. "Even as a child, it was my dream to become a rally driver. My passion is unchanged."

The Audi brand has always been something very special for "El Matador". "The Audi quattro changed the World Rally Championship forever," says Sainz. "Now we are trying something similar at the Dakar Rally. The engineers have much more freedom in the Dakar Rally than in other racing series. I have full confidence in the Audi engineers and will try to help them with my experience to develop a fast and successful car. The Dakar is the ultimate challenge for an electric powertrain. It is a fantastic, extreme project."



Sainz will share the cockpit with Lucas Cruz (46), who was part of one of his countryman's junior rally teams at the start of his career, before discovering rally raids for himself. "2021 is my 20th year in the sport," says Cruz. "I have competed in the Dakar Rally with different drivers before Carlos asked me to work with him at Volkswagen in 2009. I would never have dreamed of doing that. A year later, we won the Dakar together for the first time and three times since then."

"Carlos is super professional," says Cruz. "He only has one goal: to win. He demands that everyone else is as focused as he is: the mechanics, the engineers, the co-driver. We have a good connection. I'm the calming influence in the car. Working with him is a great pleasure."

Cruz is also intrigued by the idea of tackling the Dakar Rally with an electrified powertrain. "Audi is the first manufacturer to enter such a car," says the Spaniard. "It's important and positive for our sport to take this step and rely on new energies in the world's toughest motorsport event. It's very complicated in the Dakar Rally. Audi is daring to do something that no one has done before. It's the future."



#### Mattias Ekström

#### The all-rounder

Mattias Ekström is a racing driver for all occasions. The Swede is a former World Rallycross champion, two-time DTM champion and the winner of four Race of Champions titles. He is now the "junior" in Audi Sport's Dakar driver trio.

"Go hard or go home" is Mattias Ekström's motto and trademark. In his first Dakar Rally appearance for Audi Sport, however, the Swede is starting according to a new motto: "Be the smartest of the fastest drivers."

Ekström will take part in the world's longest and toughest rally raid for the second time in 2022. In 2021, the Swede drove a buggy prototype. His most important insight after the almost 8,000-kilometer marathon through the deserts of Saudi Arabia: "The key factor at the Dakar Rally is that as a driver you must manage the relationship between performance and risk as well as possible."

Another decisive factor on the part of the driver paring for Mattias Ekström is correct navigation on the individual daily stages. The details of their routes are only communicated to the participants by the organizer shortly before the start in each case. "In addition, in a rally raid like the Dakar, you can never predict the track and landscape exactly. You have to constantly feel out the conditions while driving as fast as possible. With all the sand and dust, it's like flying blind on some stretches. That's why you have to pay even more attention to the notes and commands of your codriver sitting to your right."

For the circuit specialist Ekström, this is unfamiliar territory, but not entirely new. After sporadic rally events during his long career, he is taking part in all of the rounds of the Extreme E off-road racing series for CUPRA in 2021, which is being held for the first time this year. It is open to purely electrically powered spec-SUVs. Although the new off-road competition is also taking place on circuits, the wind and weather are also constantly changing the loose road surface there. That's why this offers Ekström welcome opportunities to practice.

For the 43-year-old Swede, new motorsport opportunities continue to thrill him. "I still love finding out how good I can really become as a driver," says Ekström. "When I challenge myself in the cockpit in a new way, I get absolutely excited by all the training and learning required for that, in addition to the competition."

His tireless spirit of discovery took Mattias Ekström from Sweden's province of Falun to the very top of the international motorsport stage, where he immediately impressed. For 17 years, Ekström was a regular DTM title contender. This was always



for Audi as an Audi factory driver for 14 years. He won two DTM titles with the brand with the four rings. With his own team and the Audi S1 EKS RX quattro, the Swede also became the World Rallycross champion. And in 2021, he became the first motorsport athlete to win a title in an all-electric touring car – in the Pure ETCR racing series.

"That's why it's great that I can now tackle this new challenge with Audi Sport after our many successful years together," says Ekström. He is also looking forward to the electric drivetrain: "With the e-drive, power and torque are instantly available at the slightest touch of the accelerator pedal. Another advantage, especially when driving in the dunes, is the single-speed transmission, which saves constant up and down shifts."

The heat will also be a very special challenge for Mattias Ekström at the Dakar Rally. "Since an illness when I was 22, I tend to sweat quickly. That means losing a lot of fluids, especially in the desert. So in order not to lose performance physically and mentally as a result, you have to drink more. But then you weigh more, because of getting additional ballast packed into your car and that costs you speed," says Ekström as he explains his special personal challenge.

Despite almost 30 years as an active racing driver and his Dakar debut last year, Mattias Ekström feels "like a junior" in the new Audi project. He explains this with an appreciative glance at his teammates Stéphane Peterhansel (56) and Carlos Sainz (59): "The two of them show that you need a huge amount of experience for rally raids like the Dakar. In driving, in navigating and, in an emergency, also in repairing the car. Whenever I see Carlos, I say to myself: Mattias, you're only halfway through your racing career."

Quitting or retiring, these are not topics for Mattias Ekström. "I don't think that I'll ever stop. I'll always be involved in motorsport in some way, whether as a driver, a team principal, or a race engineer," he says. And then adds bluntly: "As long as I have the fitness necessary to drive, together with my mental prerequisites for it also still being there and my eyes still working, I'll will continue trying to enjoy racing. Because, I love it and am also a bit addicted to it!"

#### MediaCenter



#### **Biography**

### Mattias Ekström (S)

Date of birth: July 14, 1978 Place of birth: Falun (S)

Place of residence: Munich (D)

Marital status: single (partner Heidi), one son (Mats), one daughter (Hanna)

Height/weight: 1,83 m/77 kg

Motorsport since: 1993 (Audi driver 1999–2017 and again since 2021)

#### Career as a driver:

**1993** Kart

1994 Kart, Swedish Renault 5 Cup

1995 2nd place Swedish Renault-5-Cup

1996 1st place Swedish Renault-5-Cup, "Young Driver of the Year"

1997 2nd place Swedish Touring Car Championship, "Rookie of the Year"

1998 8th place Swedish Touring Car Championship

1999 1st place Swedish Touring Car Championship (Audi A4 quattro)

2000 3rd place Swedish Touring Car Championship

**2001** 8th place DTM (Abt-Audi TT-R), 6th place 24 hours Nürburgring

2002 3rd place DTM (Abt-Audi TT-R)

2003 4th place DTM (Abt-Audi TT-R), 3rd place Group N Rally Sweden

2004 1st place DTM (Audi A4 DTM), 1st place Group N Rally Sweden and Catalunya

2005 2nd place DTM (Audi A4 DTM), 1st place Nations Cup Race of Champions

**2006** 8th place DTM (Audi A4 DTM), 1st place Race of Champions

2007 1st place DTM (Audi A4 DTM), 1st place Race of Champions

2008 3rd place DTM (Audi A4 DTM)

2009 5th place DTM (Audi A4 DTM), 1st place Race of Champions

2010 5th place DTM (Audi A4 DTM)

**2011** 2nd place DTM (Audi A4 DTM), 1st place Spa 24 Hours (Audi R8 LMS)

**2012** 6th place DTM (Audi A5 DTM)

2013 7th place DTM (Audi RS 5 DTM)

**2014** 2nd place DTM (Audi RS 5 DTM), 10th place World Rallycross Championship (Audi S1 EKS RX quattro)

**2015** 3rd place DTM (Audi RS 5 DTM), 6th place World Rallycross Championship (Audi S1 EKS RX quattro)

**2016** 7th place DTM (Audi RS 5 DTM), 1st place World Rallycross Championship (Audi S1 EKS RX quattro)

**2017** 2nd place DTM (Audi RS 5 DTM), 2nd place World Rallycross Championship (Audi S1 EKS RX quattro)

**2018** 2nd place World Rallycross Championship (Audi S1 EKS RX quattro)

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2019 World Rallycross Championship (Audi S1 EKS RX quattro)2020 2nd place World Rallycross Championship (Audi S1 EKS JC RX quattro)2021 1st place Pure ETCR, Extreme E, Audi Dakar project

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#### **Emil Bergkvist**

# The changeover

Emil Bergkvist was a rally driver himself for ten years. The Swede even became the Junior World Rally champion. In 2021, he switched to the co-driver's seat and became the co-driver of Mattias Ekström, his idol when he was young.

Switching roles from driver to co-driver was not an easy decision for Emil Bergkvist: "I went back and forth for a long time." When no new rally driving opportunity could be found for him, he signed on with EKS in the summer of 2020. This is the company with which Mattias Ekström conducts his off-road motorsport activities, among other things.

"At first, I operated machines and drove trucks at EKS, because I also have a driver's license for that. I also know a lot about technology and helped out in the workshop," says Bergkvist, explaining how is relationship with Ekström started. "I worked my way up the ladder to get even better jobs, step by step."

More and more often, this included conversations between racing drivers Emil Bergkvist and Mattias Ekström. "First once a week, then twice then three times. We realized that we had a very good connection," says Bergkvist. Eventually, Ekström suggested to him, "Why don't you give your driving career a rest and become my codriver?" So, the new Swedish duo first competed in the Dakar Rally in 2021 and then in some classic rallies such as the Artic Rally Finland, a world championship round.

"For many former drivers, it's a problem when they no longer have the steering wheel in their own hands and can control the rally car themselves," reports Emil Bergkvist. "Being Mattias' co-driver is no problem for me," he adds. Because: "Mattias is clever and prudent. He knows exactly what he is doing in the car. And he has been doing it for almost all of his life."

However, the driver's absolute trust in the co-driver is just as important in rallying. Bergkvist explains: "From my own experience as a driver, I know that if you don't fully trust the guy sitting next to you, you can't perform at the wheel. That's why it's so important for him to talk a lot with Mattias Ekström, not only during a rally, but also before and after it.

Like for many girls and boys in Sweden, Mattias Ekström used to be the idol for Emil Bergkvist. "In the last 20 years, there has not been such a successful racing driver in our country as Mattias. Even today, I think very many young people look up to him, not only in Sweden."



As a colleague at work, Bergkvist has come to know and appreciate another side to the energetic, always combative Ekström: "Mattias also has a really warm-hearted side. He cares about everyone around him. That's exactly what you need when you work very hard and with a lot of commitment for someone."

What impresses Emil Bergkvist most is Mattias Ekström's extreme passion for motorsport. "That's a very decisive reason why I work with him. It's not like I'm doing this just for fun. I also want to win."

Bergkvist is upbeat about the new Dakar project with Audi. "We have a really good team around us with very, very experienced people," he says. "I trust that every one of them wants to and will do their absolute best."

For Emil Bergkvist, the Dakar Rally is a very special challenge that can hardly be compared. From his debut with Mattias Ekström in the rally raid classic in 2021, he learned this above all: "You always have to be prepared for the unknown. You don't know what to expect on any given day – and that for two weeks. Without a doubt, it's the toughest of all motorsport competitions."

Despite the latest navigation technology, one factor remains difficult for Emil Bergkvist to calculate in the deserts of Saudi Arabia in 2022: "When you're driving at high speed through the swirling sand and dust and there are rocks and stones lurking everywhere on the track that are barely visible, it's tricky as hell."

If there are ever any breakdowns or slips in the process, Emil Bergkvist is not least a skilled mechanic. In this respect, too, he complements his driver perfectly: "Mattias knows a lot about technology. And he learns new things very quickly and is very good at passing them on to others. In any case, he is always very helpful to me when there are new things that I don't understand right away."

As the youngest of Audi Sport's three Dakar crews, Emil Bergkvist sees this advantage for himself: "If you're young and motivated, you have a good chance of a good result at the Dakar Rally. Of course, you have to have prepared yourself and everything properly. Even though Audi's electrified powertrain will be completely new, we should have good chances."

#### MediaCenter



#### **Biography**

# Emil Bergkvist (S)

**Date of birth:** June 17, 1994 **Place of birth:** Gävle (S)

Place of residence: Sandviken (S)

Marital status: single

Height/weight: 1.81 m/74 kg

Motorsport since: 1998 (Audi co-driver since 2021)

Career as a driver:

**1998–2010** Motocross **2010–2013** Volvo Cup

2015 1st place European Rally Championship Juniors
2016 35th place World Rally Championship (WRC 2)
2017 17th place World Rally Championship (WRC 2)
2018 1st place World Rally Championship Juniors (WRC 3)

2019 27th place World Rally Championship

#### Career as a co-driver:

2021 Dakar Rally debut, Audi Dakar project

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#### Stéphane Peterhansel

#### Mister Dakar

Stéphane Peterhansel has won the Dakar Rally a total of 14 times. The Frenchman has won six times in the saddle of a motorcycle and eight times at the wheel of a car. And he continues to burn with passion for the rally raid classic.

Becoming the first Dakar winner with an electrified powertrain: That and nothing less is what appeals to Stéphane Peterhansel about his first collaboration with Audi to date. "This is probably the last step I can take as a professional driver. That would be perfect for me," says the 56-year-old Frenchman. For him, it's about the next big challenge.

Challenges have been the linchpin for Stéphane Peterhansel since he was a child. At the age of eight, his father, a motocross racer, gave him his first motorcycle. At the age of 18, the top talent competes in his first championship with an enduro machine and becomes the champion straight away. In 1988, when Peterhansel was 22, he made his Dakar debut as a factory driver. Although 18th place is not at all to his standard, he now knows for certain: "This is my race. And now I want to win it!"

He managed that a total of 14 times between 1991 and 2021. Since then, many things have changed at the Dakar Rally. After its beginnings in Europe and Africa in 1979, it was staged in South America from 2009 until 2019 and has had its third stage in Saudi Arabia since 2020. Even for record winner Peterhansel, time has never stood still. Since 1999, after his sixth Dakar victory on a motorcycle, he has been taking part in the mother of all rally raids in cars. His Dakar record so far includes eight victories on four wheels.

But one thing has remained the same for Stéphane Peterhansel after his 33 starts in the marathon classic, which has been held 42 times so far: "The adventure. The permanent fight. Against the terrain, the dunes, the rocks, the sand, the dust. And of course, fighting against the clock and against the competition." In every Dakar Rally, he has found all the feelings that were and are vital for him: adrenaline, speed and fascination for the spectacular landscapes.

In addition, Mister Dakar is certain without any discussion: "Whoever tackles this race should not be crazy at all. Otherwise you won't make it to the finish." Therefore, "I try to calculate every risk at the Dakar Rally." But even for Stéphane Peterhansel, the incalculable is always palpable there: "Every Dakar kilometer can become a trap. You can always make a mistake."



For the Frenchman, Audi's first Dakar project comes at exactly the right time. "We are on the threshold of a new generation of cars. That's why I'm really very proud and happy to be part of the entry of the first electrified vehicles at the Dakar Rally," stresses Peterhansel. "Audi has already achieved and won so much in motorsport. Forever unforgettable for me are the rally successes of the Audi quattro in the early 1980s and the equally incredible Audi dominance in the Le Mans 24 Hours and in the World Endurance Championship in the 2000s."

"The Dakar is really a good test for Audi and its new technology," says Stéphane Peterhansel. Because: "If you can make it in the Dakar Rally with an electrified car, you can make it around the world with it." With all the knowledge and experience of Audi's technicians and the personnel of the Q Motorsport team, which is operationally running the Dakar entry for Audi Sport, Peterhansel says the best conditions have been created for the joint project. As a driver, he has cooperated with the Q Motorsport managers for most of the time since 2009.

Stéphane Peterhansel is particularly looking forward to Audi's electrified powertrain. "The electric drive responds directly to the accelerator pedal and gives a great driving experience," says the Dakar record holder. "Especially in the dunes, this should provide advantages over the more indirectly responsive combustion engines."

Peterhansel will work ten to twelve hours a day in the closed Audi cockpit for two weeks during the 43rd edition of the Dakar Rally in early January 2022." If at 55 or 56, I want to perform at the same level as I did 30 years ago, I'll have to train twice as much as I used to," the veteran notes regarding his age. His motivation, on the other hand, needs no extra effort: "For me, this is still the best job. More than that, it's my total passion."

Stéphane Peterhansel has shared this passion with his German wife Andrea (née Mayer) for 17 years. Like her husband, she has been active on two and four wheels in off-road marathons, including the Dakar Rally. "Our big dream was to contest the Dakar Rally together in one car and to win it as the first married couple in the world," says Stéphane Peterhansel. They finally gave up on that plan in 2020. "Andrea's motion sickness affects her too much as a co-driver on such long distances as in the Dakar Rally," says Peterhansel.

The most successful Dakar driver of all time prefers to spend his free time in nature. "We live in Switzerland in the middle of the forest with a view of the Matterhorn and Mont Blanc, two of the most famous and beautiful mountains in Europe," says Stéphane Peterhansel. "From there, we very much enjoy extensive trips by mountain bike and on skis."

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#### **Biography**

# Stéphane Peterhansel (F)

Date of birth: August 6, 1965

Place of birth: Échenoz-la-Méline (F) Place of residence: Aminona (CH)

Marital status: married to Andrea, one son (Nicolas) and one daughter (Melanie)

Height/weight: 1.77 m/68 kg

**Motorsport since:** 1988 (Audi driver since 2021)

#### Career as a driver:

1983-1987 Motocross

1988 18th place Dakar Rally (motorcycle)

1989 4th place Dakar Rally (motorcycle)

1990 Dakar Rally (motorcycle)

1991 1st place Dakar Rally (motorcycle)

1992 1st place Dakar Rally (motorcycle)

1993 1st place Dakar Rally (motorcycle)

1995 1st place Dakar Rally (motorcycle)

**1996** Dakar Rally (motorcycle)

1997 1st place Dakar Rally (motorcycle), 1st Enduro World Championship

1998 1st place Dakar Rally (motorcycle)

1999 7th place Dakar Rally (automobile)

2000 2nd place Dakar Rally (automobile)

2001 12th place Dakar Rally, 1st Enduro World Championship

2002 Dakar Rally (Automobile)

**2003** 3rd place Dakar Rally (automobile)

2004 1st place Dakar Rally (automobile)

2005 1st place Dakar Rally (automobile)

2006 4th place Dakar Rally (automobile)

**2007** 1st place Dakar Rally (automobile)

2009 Dakar Rally (Automobile)

2010 4th place Dakar Rally (automobile)

**2011** 4th place Dakar Rally (automobile), 1st Abu Dhabi Desert Challenge

2012 1st place Dakar Rally (automobile)

**2013** 1st place Dakar Rally (automobile)

2014 2nd place Dakar Rally (automobile)

2015 11th place Dakar Rally (automobile), 1st Gran China Rally

2016 1st place Dakar Rally (automobile)

2017 1st place Dakar Rally (automobile)

2018 4th place Dakar Rally (automobile), 2nd place Baja Portalegre 500

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2019 Dakar Rally (Automobile), 1st place FIA World Cup Cross Country Rallies2020 3rd place Dakar Rally (automobile), 1st place Baja Hail 1 and 2, 4th place Rally Andalusia

2021 1st place Dakar Rally (automobile), Audi Dakar Project



#### **Edouard Boulanger**

# The lightning starter

It wasn't until 2014 that off-road motorcyclist Edouard Boulanger became a copilot after a career of his own as a rider. The Frenchman took over this role alongside Stéphane Peterhansel from his wife Andrea. The new driver pairing won the 2021 Dakar Rally on their first attempt.

The Dakar victory was the second unexpected big surprise for Edouard Boulanger: "To be able to drive alongside Stéphane and assist him was already a dream. But to win the Dakar with him in their first year together was something I never dared to dream of."

A third dream has meanwhile also become reality for Edouard Boulanger: "Not only do I get to continue working with Stéphane, but I'm now also a team member of Audi with its great motorsport history." The Frenchman sees this as another important career step. After all, "If Audi enters motorsport anywhere, it's never to finish second. They use every ounce of energy and all of their resources and expertise to beat everyone else."

That's why he feels a huge responsibility. For Boulanger, this means: "I'm here in a team with huge expectations. So, I have a lot to learn, because the first use of electric drivetrain technology in the Dakar Rally, this transformation process, is probably one of the most important moments in the world of motorsport." That's the experienced and enthusiastic mechanical engineer talking.

Likewise, when Edouard Boulanger says "the first Dakar year is always the most difficult. You can't plan real racing conditions in advance on the computer or in the meeting room, you have to experience them." He sees reliability as the biggest challenge for Audi's Dakar debut.

"We as a crew in the cockpit have to learn first and foremost to manage all the new technologies associated with the electric drivetrain, the battery system and so on." This statement by Edouard Boulanger makes it clear: a co-driver is much more than just the navigator, especially at the Dakar Rally.

"We co-drivers are multi-skilled people," the Frenchman says in summary. "We have to help our driver in every situation. Not only do we have to give him the latest information about the course of the route and the condition of the track briefly, accurately and clearly, but we also have to describe our impressions of the car's current condition as precisely as possible."



In the event of breakdowns, mostly punctures, quick and correct repairs are required from the co-driver. "That's why I train with the mechanical and safety equipment and with the new e-drive technology even more than with the navigation systems," Boulanger reports.

On a motorcycle, he was drawn out onto the world's great rally raid tracks. "But I never had the talent and skills that Stéphane has," admits Edouard Boulanger frankly. Nevertheless, the two got along particularly well when they were still competitors on two wheels. Like Peterhansel, Boulanger is fascinated not only by driving and technology, but also by what nature has to offer along the marathon routes. "No matter where the Dakar Rally takes place, it takes you to fascinating places that you don't get to see with your own eyes as a tourist and usually not as a local either."

Edouard Boulanger earned a good reputation in the marathon industry, particularly as a coach for young motorcycle riders in the service of a factory team. "I taught them how to use a wide variety of navigation systems, but also how to use a roadbook correctly and effectively." Background: the route information distributed by the organizers at rally raids must be read selectively, according to Boulanger. "Especially as a motorcyclist, who is after all completely on his own in such a rally, you don't have any time at all to study the information."

In 2021, the Dakar Rally was run for the first time with a digital roadbook instead of an analog one, i.e. printed on paper. "Unlike in the past, you now receive detailed information about the upcoming stage via an upload just fifteen minutes before the beginning of the new day of rallying," explains Boulanger.

And what's it like working with the racer who has left his mark on the Dakar Rally like no other? "It's really easy with Stéphane," answers Edouard Boulanger. "I have zero doubts about his abilities. What makes our collaboration so much easier is our common mother tongue. This also applies to Audi's other two Dakar crews. In the race, decisions often have to be made within milliseconds. All it takes is one misunderstood word, a mistake happens and you lose time."

"But, even if that happens, Stéphane never gets stressed out, doesn't start yelling. He always remains relaxed and tries to help me. I appreciate this character trait in him even more than all of his skills and successes as a racing driver."



#### **Biography**

# **Edouard Boulanger (F)**

Date of birth: May 4, 1979 Place of birth: Nancy (F)

Place of residence: Jongny (CH)

Marital status: married to Constanza, two daughters (Aude and Claire)

Height/weight: 1.77 m/68 kg

Motorsport since: 1997 (Audi co-driver since 2021)

Career as a driver:

1998-2010 Enduro

**2005** 9th place Rally Morocco, 13th place Pharaohs Rally (motorcycle)

2009 Final Erzberg Rodeo

2011 1st place Dakar Challenge (motorcycle), 5th place Pharaoh Rally (motorcycle)

**2012** Dakar Rally (motorcycle)

#### Career as a co-driver:

**2014** Baja Spain (driver Peter Jerie), Baja Poland (driver Taddy Blasuziak), Morocco Rally (driver Peter Jerie)

2015 Dakar Rally (driver Geof Ohlom), Baja Spain (driver Khalid Al Qassimi)

**2020** 1st place Baja Poland, 3rd place Baja Hail 1 and 2, 4th place Rally Andalusia (driver in each case Stéphane Peterhansel)

2021 1st place Dakar Rally (driver Stéphane Peterhansel), Audi Dakar Project

Facebook: @EdouardBoulangerCodriver

Instagram: @edouard\_boulanger



#### Carlos Sainz

#### El Matador

Carlos Sainz is the 'grand seigneur' of international rallying. The Spaniard has been active at the wheel for over 40 years. Sainz has won the Dakar Rally three times, is a two-time World Rally champion and also won the World Cup of cross-country rallies once.

Standing still is not an option for Carlos Sainz. "Even right after a Dakar Rally, I already need to get moving again after a few days of rest." Then he is off again on the bike at home in Madrid. And always flat out. "Despite my matured age, I still race and do everything else I enjoy with passion."

Carlos Sainz is 59 years old. Asked about this, he grins and says, "I'm still hungry". And adds emphatically: "If I wasn't, I wouldn't accept this challenge that is very important to me: To try to win the Dakar Rally with Audi. It's a new, fantastic and very challenging project."

Challenges, that's what Carlos Sainz's life has been about from the start: "Challenges drive you. They make your brain work. To think about what you need to do to achieve your dreams."

That's why Sainz stopped studying law after two years. Driving a rally with all his might, that was and remained his big thing. He's been doing that now since 1980, when he turned 18. "And it's still a dream come true that I can still do what I love most professionally: drive a car," he assures.

Carlos Sainz was a champion even before he won his first title on four wheels. "In 1979, I became the first Spanish champion in squash," he notes. "If there is one sport that's good for motorsport athletes, it's squash: you have to be very fit, have fast reflexes, good coordination, good all-round vision and be quick in your thinking." He still swings a racket regularly today. Sainz also enjoys playing tennis and golf very much and very well.

Carlos Sainz has worked and won for many car manufacturers. "But, being part of Audi today really means a lot to me," he says. His road to the collaboration with the brand with the four rings, which started in 2021, was a long one. "I was a young rally driver and a total fan when Audi entered with its quattro in the early 1980s and became World Rally champions very quickly with this new technology of permanent all-wheel drive, setting new standards."



Carlos Sainz sees Audi's new Dakar project as a similar pioneering act: "Back then, they were the first with quattro, now they're the first with an electric powertrain." The three-time Dakar winner describes the prospects of Audi's completely new involvement as follows: "Audi's engineers have a lot of technical freedom at the Dakar Rally. There, they can design their car much more freely in many areas when compared to many other, significantly more restrictive motorsport championships."

Sainz was and is a driver with a special understanding of refining newly designed race cars. "I have full confidence in the Audi engineers and try to help them with my experience to develop a fast and successful car."

Carlos Sainz considers his additional new driving task in the Extreme E off-road racing series, introduced in 2021, to be little comparable with the Dakar stages: "In Extreme E, you drive for about 80 kilometers during a weekend, at the Dakar Rally it is almost 800 kilometers a day for two weeks."

"You should never underestimate the Dakar Rally," says Carlos Sainz. "It is very, very tough." For man and machine, as the Spaniard emphasizes: "You have to be prepared to the maximum in every respect. And you definitely have to stay patient. Because the smallest of mistakes, whether in driving or mechanically, will results in lost time, usually a lot of time. In any case, it's very, very difficult to make up for lost time in the Dakar Rally." Sainz has experienced this himself in many Dakar events.

"My father impresses me a lot. He is still very active." That's what Carlos Sainz jr says. The son of the Spanish rally legend is a motorsport enthusiast himself and has been racing in Formula 1 since 2015. "What you see of me there today is in many ways what I learned from my father," he admits. Sainz junior offers another interesting insight into family life: "As a child, I wasn't even aware of how successful and how big my father is in motorsport."

The senior only wants to decide for himself whether to stop racing. Wife Reyes, who met Carlos Sainz at 18 and married him at 30, also accepts his big new challenge with Audi. "It makes me very proud to help Audi win the Dakar for the first time," says Carlos Sainz. "And if I even manage to do that as a driver, then that will be my ultimate goal."

#### MediaCenter



#### **Biography**

### Carlos Sainz (E)

Date of birth: April 12, 1962 Place of birth: Madrid (E) Place of residence: Madrid (E)

Marital status: married to Reyes Vázquez de Castro Rincón, two daughters (Blanca

and Ana), one son (Carlos) **Height/weight:** 1.77 m/ 84 kg

Motorsport since: 1980 (Audi driver since 2021)

#### Career as a driver:

1980-1986 Rallies in Spain and Europe

1987 35th place World Rally Championship

1988 11th place World Rally Championship

1989 8th place World Rally Championship

1990 1st place World Rally Championship

1991 2nd place World Rally Championship

1992 1st place World Rally Championship

1994 2nd place World Rally Championship

**1995** 2nd place World Rally Championship

1996 3rd place World Rally Championship

1997 3rd place World Rally Championship, 1st place Race of Champions

1998 2nd place World Rally Championship

2000 3rd place World Rally Championship

2002 3rd place World Rally Championship

2003 3rd place World Rally Championship

2005 3rd place Baja Portalegre 500

2006 Dakar Rally

**2007** 1st place FIA World Cup Cross Country Rallies

2008 1st place Central Europe Rally, 14th place 24 hours Nürburgring

2009 Dakar Rally, 1st place Silk Way Rally, 1st place Rally dos Sertoes

2010 1st place Dakar Rally, 1st place Silk Way Rally

**2011** 3rd place Dakar Rally

2013 Dakar Rally

**2014** Dakar Rally

2015 Dakar Rally

2016 Dakar Rally

2017 Dakar Rally

2018 1st place Dakar Rally

2019 13th place Dakar Rally, 2nd place Morocco Rally, 2nd place Baja Sharqiyah



2020 1st place Dakar Rally, 2nd place Baja Hail 1, 1st place Baja Hail 22021 3rd place Dakar Rally, Extreme E, Audi Dakar Project

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#### Lucas Cruz

#### The veteran

Lucas Cruz has won the Dakar Rally as a co-driver three times so far. Each time, the Spaniard worked alongside Carlos Sainz. The Spanish duo has been contesting rally raids together for twelve years now.

For Lucas Cruz, understanding and trust are crucial to the success of a driver and codriver in rally raids. "There is always high tension in the cockpit at these marathons, because just a small mistake by either of us can lead to major damage," explains Lucas Cruz. This high tension sometimes leads to friction between the driver and codriver: "We often have to decide within milliseconds which route to take. Sometimes things go wrong and that naturally causes stress. But, fundamentally, we have a good balance with each other and always find our way back to each other."

Carlos Sainz confirms to his co-driver: "Outsiders can't imagine what it's like in a rally car on some stages. That makes it all the more important for the driver and co-driver to maintain their relationship outside the cockpit." Mistakes are part of life everywhere, adds Sainz. "When mistakes happen, we have to be able to quickly turn a new page afterwards, especially in a rally car. We always have to keep on working and fighting to the end."

Despite some stressful moments: "Working with Carlos is a pleasure." At least for Lucas Cruz, since he took over the job of navigator alongside Sainz in mid-2009. "Carlos is more of a friend than a colleague to me," says Cruz. He compares their relationship, which has grown over so many years, to that of an old married couple: "You usually know exactly what's going on in the other person's head at any given moment."

During a rally like the Dakar, the driver and co-driver do their job for long stretches as if they were one person. "The co-driver looks at the screen and explains the route and track to the driver. The driver looks ahead and literally follows these instructions blindly in the usually dense dust," says Lucas Cruz, describing their day-to-day work.

And how does he experience Carlos Sainz next to him in the cockpit? "Inspiring, because he is always full of passion at the wheel, but nevertheless always remains very calm and relaxed," Cruz answers. Particularly important for him: "If I need time to analyze and figure out the best solution, Carlos understands that and trusts me."

Cruz says there is another thing that particularly distinguishes his helmsman: "Carlos is a super-professional motorsport participant. His goal is always excellence. At all times, he tries to get the best out of himself, his co-driver, his car, his team,



everything." Carlos Sainz, he says, always demands that everyone involved gives their best, everywhere. Always with one focus: to win.

Lucas Cruz is also excited about winning rally marathons, especially the Dakar classic. But, he's also enormously excited about the technology: "It's great that Audi is the first manufacturer to use the electric drivetrain at the Dakar Really, the world's toughest car event, Because electric technology is the future of mobility."

Lucas Cruz is particularly looking forward to getting to know this new technology for himself. "The co-drivers will train intensively at Audi during the preparation for the 2022 Dakar Rally, learning to fix possible problems with the electric drivetrain in or on the car ourselves during the race. If you have to wait for repairs until a service truck comes to the rescue, you will rapidly be losing time." In an emergency, the co-driver is the first and often the most important mechanic.

In terms of fitness, the person in the right-hand seat of a Dakar rally car has to be just as up to speed as the one in the driver's seat. "To cope with the heat, the dust and, above all, the vibrations on the tough tracks, you need to be in excellent shape," says 46-year-old Cruz.

That's why the Spaniard will continue to travel from his home near Barcelona to Madrid to train with Carlos Sainz before the upcoming Dakar Rally. Because, Lucas Cruz is convinced: "Even at the age of 59, Carlos is a benchmark worldwide in terms of motivation and passion."

The two met in 1994, when Carlos was in charge of a project to promote young Spanish rally drivers. "I was one of the participants," Lucas Cruz reports. It was the time when 'El Matador' was one of the leading drivers in the World Rally Championship. Carlos Sainz has long since also called his co-driver a "friend". Because: "I really trust Lucas and like him a lot."

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#### **Biography**

# Lucas Cruz (E)

Date of birth: December 26, 1974

Place of birth: Barcelona (E)

Place of residence: Caldes de Montbui (E)
Marital status: single, one daughter (Edurne)

Height/weight: 1.79 m/78 kg

Motorsport since: 1994 (Audi co-driver since 2021)

#### Career as a co-driver:

**1994–2000** Rally co-driver

**2001** Dakar Rally (driver José-Luis Monterde)

2006 Dakar Rally (driver Jean Pujol – Truck category)

2007 Dakar Rally (driver Nani Roma)

**2009** Dakar Rally (driver Nani Roma), 1st place Silk Way Rally, 1st place Rally dos

Sertoes (driver Carlos Sainz each time)

2010 1st place Dakar Rally, 1st Silk Way Rally (driver in each case Carlos Sainz)

2011 3rd place Dakar Rally (driver Carlos Sainz)

2012 Dakar Rally (driver Nasser Al-Attiyah)

2013 Dakar Rally (driver Nasser Al-Attiyah)

2014 3rd place Dakar Rally (driver Nasser Al-Attiyah)

2015 Dakar Rally (driver Carlos Sainz)

2016 Dakar Rally (driver Carlos Sainz)

2017 Dakar Rally (driver Carlos Sainz)

2018 1st place Dakar Rally (driver Carlos Sainz)

**2019** 13th place Dakar Rally, 2nd place Morocco Rally, 2nd place Baja Sharqiyah

(driver Carlos Sainz in each case).

**2020** 1st place Dakar Rally, 2nd place Baja Hail 1, 1st place Baja Hail 2 (driver Carlos

Sainz in each case)

2021 3rd place Dakar Rally (driver Carlos Sainz), Audi Dakar Project

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### **Statistics**

# The Audi drivers at the Dakar Rally

	Mattias Ekström	Stéphane Peterhansel	Carlos Sainz
Starts	1	33	13
		(10 Moto, 23 Car)	
Wins	0	14	3
		(6 Moto, 8 Car)	
Podiums	0	18	5
		(6 Moto, 12 Car)	

# The Audi co-drivers at the Dakar Rally

	Emil Bergkvist	Edouard Boulanger	Lucas Cruz
Starts	1	2	16
Wins	0	1	3
Podiums	0	1	6

<sup>\*</sup> As of: 12/01/2021



#### Audi motorsport history

### From quattro to e-tron

Audi positions itself as the sportiest manufacturer in the premium segment and has a perfect basis to do so: motorsport. Sportiness, advanced technology and emotive design are the basis for the success of the Audi brand. The genes for this have their origin in racing, since 1980.

#### The success story began with the Audi quattro

Excluding the era before the Second World War that included the legendary Auto Union Grand Prix race cars in the 1930s, the motorsport history of AUDI AG began with the Audi quattro. The dominant victories and two manufacturers' and two drivers' titles achieved with the "original quattro" in the World Rally Championship between 1982 and 1984 were an important factor in the market success of the quattro drivetrain.

#### quattro also victorious in circuit racing

After Audi had turned rally racing upside down and stormed up Pikes Peak (USA) with the Sport quattro in record time on three successive occasions, Audi also made the quattro drivetrain fit for circuit racing: initially with the Audi 200 quattro and the Audi 90 quattro IMSA GTO in the United States, in 1990 and 1991 with two championship titles for the Audi V8 quattro in the German Touring Car Championship (DTM), and ultimately also with the A4 in the production-based super touring cars. In 1996, the Audi A4 quattro won the championship titles in seven countries. Between 2012 and 2016, the all-wheel drive system returned to the race track as the e-tron quattro.

#### Audi R8 most successful Le Mans sports car in present-day racing

After the dominant quattro drivetrain was banned from touring car racing, Audi switched to sports prototypes and also underpinned its slogan "Vorsprung durch Technik" in this motorsport category for 18 years. Audi, on making its debut at Le Mans in 1999, the toughest endurance race in the world, immediately managed the leap onto the podium, finishing third overall. In the following years, the Audi R8 was in a class of its own. From 2000 to 2002, Audi achieved a historic hat-trick, not least thanks to the TFSI technology that debuted in 2001 and then also subsequently made its way into production. In 2004 and 2005, customer teams clinched two further overall victories for Audi. The R8 secured its spot in motorsport history with a total of 63 victories in 80 sports car races.

#### Title wins following the return to DTM



Following Laurent Aiello's victory with the Abt-Audi TT-R in 2002, Audi returned to the DTM with a factory-backed commitment in 2004 and instantly won the title with Mattias Ekström. In 2007, the Swede triumphed again, followed by Timo Scheider in 2008 and 2009, making Audi the first and so far only automobile manufacturer in DTM history to have managed a title hat-trick. In the 2011 season, Martin Tomczyk completed the success story of the Audi A4 DTM with another title, the fifth in total for the Audi A4 DTM. In 2013, Mike Rockenfeller, diving the Audi RS 5 DTM, clinched the ninth DTM title for Audi. René Rast caused a sensation in 2017 when he clinched another title for Audi in his rookie year. Audi took home the manufacturer's championship crown in the same year. In 2019 and 2020, Rast won the prestigious title two more times. Audi drivers have thus already won the DTM drivers' title twelve times. Added to this are six manufacturers' and eight teams' titles. Technologically, Audi has mastered one of the biggest upheavals in the history of the racing series with flying colors: In the two years of the DTM turbocharged engine era, the Audi RS 5 DTM, with its highly efficient two-liter turbo engine, was the benchmark with 28 victories, 95 podium finishes, 29 pole positions and 28 fastest race laps, as well as all six of the championship titles. Since 2021, the DTM has been exclusively held for GT3 sportscars. Audi Sport customer racing is in charge of the entries.

#### Pioneering achievements with TDI technology

With TDI technology, Audi achieved a pioneering feat and, at the same time, demonstrated "Vorsprung durch Technik" once again. In 2006, the Audi R10 TDI featuring a new concept was the first sports car with a diesel engine to triumph in the legendary Le Mans 24 Hours. In total, TDI technology came out winning eight times at Le Mans. In 2007 and 2008, Audi was again victorious with the R10 TDI at La Sarthe. In addition, Audi won the American Le Mans Series with the diesel-powered racing sports car three times in succession and, in 2008, the European Le Mans Series as well. With the R15 TDI in 2010, Audi celebrated a one-two-three result in the fastest Le Mans race of all time and set a new distance record that has not been broken to date. In 2011, 2012, 2013 and 2014, Audi TDI power was again victorious at Le Mans. In 2014, the brand celebrated its 13th victory in just 16 participations. Audi also demonstrates "Vorsprung durch Technik" in terms of energy efficiency. During the entire TDI era, Audi reduced diesel consumption by a total of 46 percent within the space of one decade.

#### First hybrid winner at Le Mans

On clinching the first victory with a hybrid race car in the 2021 Le Mans 24 Hours, Audi achieved another pioneering feat in the world's most important endurance race. The Audi R18 e-tron quattro remained unbeaten at Le Mans for three consecutive years (2012, 2013 und 2014). Many other innovations such as Audi Laser Light have



been added to these pioneering feats in technology. The drivers' and manufacturers' titles won with the hybrid sports car in the 2012 and 2013 FIA World Endurance Championship (WEC) complete the track record in Audi's sports car era that ended in 2016.

#### Audi Sport customer racing for the brand's customers

Since 2009, Audi has been using its most competitive products to chase trophies worldwide in customer racing with production-based technology. The Audi R8 LMS is available in its second generation in variants for the GT2, GT3 and GT4 categories. The Audi RS 3 LMS is a TCR touring car that also already exists in a second generation for racing and competes on five continents. By the end of 2021, all of the models in customer hands have clinched a total of 322 racing titles worldwide. Outstanding individual successes include two class victories for the GT3 sports car at the Daytona 24 Hours, three overall victories at the Bathurst 12 Hour, four triumphs on the Macau road race, as well as in the Spa 24 Hours and already five victories in the Nürburgring 24 Hours.

#### Vorsprung durch Technik to continue

The company is systematically continuing the electrification process of its motorsport program, which began in endurance racing in 2012. Following the LMP program with the R18 hybrid sports car, Audi was the first German car manufacturer to compete in the all-electric Formula E racing series in the 2017/2018 season. With four victories and a total of eleven podium places, Audi Sport ABT Schaeffler clinched the teams' championship title after twelve races. The brand with the four rings will be competing in the famous Dakar Rally with an innovative prototype from 2022. For the first time, the alternative drivetrain concept combines an electric powertrain with a high-voltage battery and a highly efficient energy converter. In the future, rally raids will form the spearhead of the factory's motorsport commitment. In addition, the brand is preparing its return to the international sports car category, in which the Le Mans 24 Hours and Daytona 24 Hours are among the highlight races. There, Audi is also relying on an electric drivetrain in the LMDh category.

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