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Velaro Novo

Expert interview with Tom Kutscher on the Velaro Novo

Responsible for the sales and marketing of high-speed and intercity trains at Siemens, Tom Kutscher was involved in the development of the new Velaro Novo train concept from the beginning. He has concentrated mainly on the cost-effectiveness of the Velaro Novo – after all, he needs to be able to convince potential operators of the benefits offered by the new high-speed train. In this interview he explains why that won't be hard.

Tom Kutscher is the head of sales for high-speed and intercity trains, and has been monitoring the development of the Velaro Novo in terms of its cost-effectiveness and customer benefit.

What's different about the Velaro Novo? What will surprise customers about the new train?

Customers often say that, "Siemens is outstanding at a technical level – but also expensive." This preconceived notion is strongly entrenched among many customers. And it's something we're now addressing with the Velaro Novo. We've made substantial improvements to the cost situation to counter it. Now, we're not only the leader on the technical side but also highly attractive as far as the price is concerned. That goes for operation costs too, not just the cost of procurement.

How did you achieve that?

We adapted the vehicle design for the Velaro Novo and reduced the number of cars for a 200-meter train from eight to seven. The components for that car do not need to be procured. So we reduce for example one set of doors or one complete air-conditioning unit based on the same train length. And the number of bogies is down by two as well. That means substantial savings when it comes to the cost of investment. The same also goes for maintenance where bogies account for roughly 40 percent of all maintenance costs. Thus, taking two of those out of the equation really makes a big difference.

We also found out, through various ongoing projects, that steps can be taken to extend the maintenance intervals. With the Velaro, the first inspection was due after 4,000 kilometers. This interval was later extended to 8,000 kilometers. With the Velaro Novo, the service interval is now almost 17,000 kilometers. That saves a lot of money, especially when it comes to the cost of maintenance personnel.

What's your personal highlight with the Velaro Novo?

We are also closing a gap in our portfolio with the Velaro Novo. We previously had no simple solution for products in the 250 km/h+ speed range – especially outside of Germany. The Velaro Novo is scalable: which means we can provide a vehicle at a competitive price for speeds of 250 km/h+ and have a lot more room to respond to customer requests.

How do you develop a design like this?

You have to put history behind you. The Velaro and its improved versions are part of an evolutionary process in which many elements have been optimized.

For example: dealing with ballast pick-up in the bogies proved to be a challenge in the Velaro Spain project. To deal with that, we developed a solution to protect the bogie. This solution was then worked into series production and subsequent projects. The same applies to air-conditioning systems and doors. The innovations developed for the Velaro were mostly related to operational robustness and thus, improved its reliability.

Was there anything that made it clear, that this was the right time to start developing the Velaro Novo?

I think Siemens Mobility realized that the marketing life of the Velaro concept, despite its great success, was reaching its limits. Of course, it would still be possible to optimize it further – though more on the technical side, rather than the commercial side. We have had difficulties keeping the Velaro below a particular price level, not only in terms of investment, but also in terms of operating costs. And we also have to be prepared for low cost competition from Asia.

As the person responsible for sales and marketing of high-speed trains, what do you consider the key advantages of the Velaro Novo?

When I give a presentation on the Velaro Novo, I divide it into two parts. The first looks at what the passengers get out of the Velaro Novo. I tell them how many more people it can accommodate in comfort and I refer to the Velaro on this aspect – since we are already well ahead with that model in terms of passenger comfort, and have gotten very good feedback from both passengers and operators. The Velaro runs well: the passengers feel comfortable, the interior is quiet, and it's basically an excellent environment for them. I can tell customers that we are carrying all of these aspects over to the Velaro Novo.

The second part then deals with the improvements we have made in terms of lifecycle costs. We have taken a radical approach in this area, which will enable us to make them available on much better terms. For this part, I put myself in the operator's shoes and consider the question of procurement from their perspective. This is the part I enjoy the most.

Is the Velaro Novo still the same as it was initially conceived of a few years ago? How much of the original idea is still there?

This vehicle was originally planned to be used on a point-to-point connection somewhere on a green field, with a single voltage system. The intention was not to overload the Velaro Novo with every possible imaginable customer requirement, which would have made it heavy, expensive, and inflexible. As the time has passed, we've actually done a pretty good job of adhering to that principle. Although the concept has grown a little broader, it has developed in a positive direction. I am extremely pleased that its application is a little more flexible now, and that we will be able to continue refining the concept and adapting it to a range of voltage systems. For cross-border transportation in Europe, for example.

Did you occasionally have doubts about its feasibility?

Fundamentally, I'm an optimistic person. I was already convinced by early 2014 that the concept would take off. But during that initial stage, there was always the sword of Damocles hanging over us in the form of "technical feasibility."

In other words: whether we really could build a scalable, seven-car-train capable of traveling between 230 and 360 kilometers an hour. Brakes were also a crucial issue. Fewer bogies mean less braking equipment. Would it even be possible to stop the vehicle? That's why we started thinking about a reliable electric brake design. There were also challenges in the way the systems interacted with each other. If I'm working with limited installed traction power, for example, the aerodynamics have to be right to reach the specified speed. Otherwise, you would need to install more power.

More traction power means more weight and more weight means higher power consumption. This quickly turns into a vicious circle. That's why we tried to create a positive circle instead.

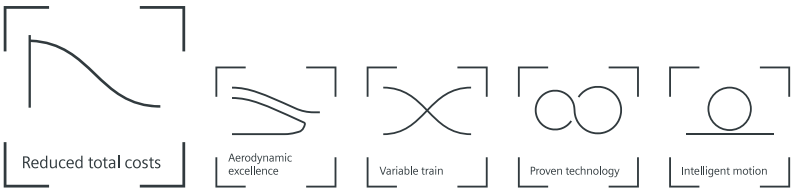
I'm very pleased to say that we succeeded and that we were able to prove that the overall concept is technically feasible – meaning that we can now make the vehicle available on that exact basis.

How would you summarize the Velaro Novo project?

We are now about halfway through the project, which is an achievement on its own, but we still have a way to go. As we noted, we have to find an initial customer for the Velaro Novo and ensure a smooth start to operations – that's the other 50 percent. We'll need about five years from receipt of the first order to have the vehicle operational. There are still a few challenges ahead of us, but we will make it. We can be very proud of what we have achieved so far. I think some people are even a little in awe of us as a result. You hear the competition saying, "We need to stay on our toes." We've gained a measure of respect with the Velaro Novo, but that will only last for so long. We now need to keep up our game.

Tom Kutscher, thank you for talking to us today.

This interview is part of our series of expert interviews about the Velaro Novo. Read the remaining interviews and learn from our Velaro Novo experts what inspired them to look at their field from a whole new perspective.



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Published by
Siemens Mobility GmbH

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HL 18013536 WS 0119