

ST.GALLEN SYMPOSIUM

Next Generation Conference Mobility

Project & Impact Report 2021



in collaboration with



University of St.Gallen

Imprint

The **Next Generation Conference Mobility** is a project of the St. Gallen Symposium together with several strategic partners. It aims to make transportation surrounding the annual conference more sustainable and innovative. The project was officially launched at the 50th St. Gallen Symposium in May 2021. It incorporates the comprehensive use of electric vehicles, the installation of new charging infrastructure at the University of St. Gallen, and the inclusion of rail services as an alternative mode of transportation. By engaging with the new mobility ecosystem, the symposium endeavours to simultaneously reduce its carbon footprint and offer a convenient alternative to traditional, individual automotive transportation.

While efforts to make transportation more ecological are widespread, the actual ability to do so is only beginning to emerge. The **Next Generation Conference Mobility** project by the St. Gallen Symposium is at the centre of this transition and represents important milestones in practical applicability and innovative realisation of new mobility concepts.

The following sections detail how the project was conceptualised, set up, and implemented during the 50th St. Gallen Symposium. The data collected throughout the conference and presented in this report provides insights into the impact of the **Next Generation Conference Mobility** on the mobility operations and carbon footprint of the symposium. Finally, the report outlines how the mobility concept of the St. Gallen Symposium might develop in the future.

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Background

The idea for the **Next Generation Conference Mobility** project was born in 2019 when the St. Gallen Symposium identified the potential of reducing its carbon footprint through reforming its conference mobility infrastructure. The three-day symposium requires a large-scale, executive transportation service. Until 2019, a fleet of 90 limousines, all running on internal combustion engines (ICE), provided this service. While this ensured maximum comfort and convenience for the participants, it also maximised carbon dioxide (CO₂) emissions. Throughout the symposium, the transport service produced more than 9.5 tons of CO₂, making up 19.7% of the conference's overall operating emissions for 2019. By integrating low-carbon automotive technologies and multiple transport modes into one comprehensive mobility concept, the symposium intended to reduce its CO₂ emissions without sacrificing comfort and convenience.

To achieve its objective of improving sustainability while maintaining comfort, the project was organised in two dimensions: (1) the application of new vehicle technologies and infrastructure, and (2) the utilisation of multiple modes of transportation to meet the participant's mobility demand. As a result of this structure, the key components of the Next Generation Conference Mobility project became: (1) replacement of fossil-fuel-powered ICE vehicles by electric vehicles, (2) replacement of limousine rides by rail service, and (3) digitalisation of booking process and data management. Please see Figure 1 for more details.

The launch of the new mobility concept was planned for the 50th St. Gallen Symposium, originally scheduled for 2020. However, due to the COVID-19 pandemic, the conference and implementation of the new mobility concept had to be postponed to 2021.

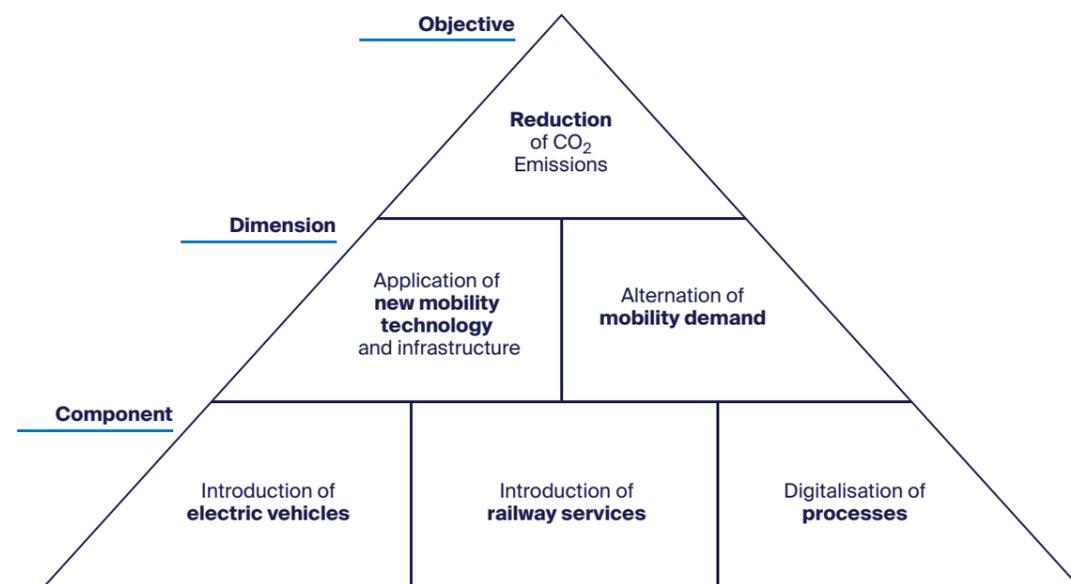


Figure 1. Visual representation of the Next Generation Conference Mobility project.

Set-Up

The new mobility concept of the symposium demanded the inclusion of a broad range of actors from many different fields. Therefore, a multi-model solution was developed to implement the project and fulfil its objectives. The three components of the project outlined in Figure 1 were collaboratively addressed by a group of distinct strategic mobility partners who were able to deliver on their specificities. As a result of this process, the St. Gallen Symposium created an ecosystem of stakeholders by bringing together original equipment manufacturers, infrastructure companies, and railroad service providers. The partners did not only contribute to the success of the project but also benefited from cross-sectoral collaboration and new partnerships arising from the conference.

The first component – the transition from fossil-fuel to electric vehicles – required integrating electric vehicles into the fleet and the installing and using the necessary charging infrastructure. For the former, the symposium partnered with Audi Schweiz AG. The company provided 11 Audi e-tron models to complement fossil-fuel limousines for the shuttle service during the days of the conference. For the latter, a partnership with ABB AG was launched to install the latest charging infrastructure. Additionally, the symposium was able to use the existing charging network of the City of St. Gallen and the University of St. Gallen to meet the new electricity demand. To calculate the travel demand and available vehicle range, a comprehensive data analysis tool was developed. To fuel both types of vehicles, Shell Germany AG joined the project and became the official fuel and charge partner of the St. Gallen Symposium.

To realise the second component of the new mobility concept, the symposium partnered with SBB, one of the world's most advanced railway operators, to provide a reliable and comfortable alternative to ICE limousines. Together, the partners developed a transfer schedule to facilitate comfortable transit. The SBB rail network and transfer schedule allowed conference participants to travel from Zurich to St. Gallen at designated times in symposium-dedicated first-class coaches.

The third component – the digitalisation of booking processes and data management – was horizontally integrated into all areas of the project. The symposium altered the booking website to facilitate the user experience and introduced a new dispatch system to manage the vehicle fleet during the three-day conference. Furthermore, the dispatch system was able to process and analyse energy consumption data from the charging stations of ABB and the city of St. Gallen.

With assistance from a strong network of partners (see Figure 2 for an overview), the symposium student team was able to prepare the **Next Generation Conference Mobility** project. While the concept was ready in 2020, implementation had to be postponed until 2021 due to the COVID-19 pandemic. In the interim, the symposium adapted the internal processes of the organising committee and discussed the necessary operative steps with project partners in order to successfully launch the new mobility concept during the 50th St. Gallen Symposium.

Institution	Contribution
 SBB CFF FFS	<ul style="list-style-type: none"> Provision of railway services and designated first-class coaches
 	<ul style="list-style-type: none"> Provision of electric and ICE vehicle fleet
	<ul style="list-style-type: none"> Provision and installation of the charging infrastructure
	<ul style="list-style-type: none"> Provision of spaces to install the charging infrastructure Scientific support and analysis of the project's results together with the Institute for Economy and the Environment
	<ul style="list-style-type: none"> Provision of charging infrastructure within the city of St. Gallen

Figure 2. Strategic Partners involved in the Next Generation Conference Mobility Project.

Implementation

The **Next Generation Conference Mobility** project was successfully implemented at the 50th St. Gallen Symposium in May 2021. The public health measures implemented in response to the COVID-19 pandemic compelled the symposium towards a more digital format. As a result, the overall physical attendance was reduced to approximately 100 participants. Smaller demand for transportation allowed the symposium to integrate a relatively larger share of electric vehicles than originally planned. Consequently, the symposium operated a vehicle fleet where more than 50% were electric vehicles. This was a substantially larger share than the originally planned 30%. The large share of electric vehicles in the fleet attracted the attention of participants and student-drivers alike, who frequently discussed the vehicles and the concept. The electric fleet proved to be reliable for both short and long-distance rides; approximately 60% of all rides were conducted by e-tron models. The data showed that even with the daily demand of a regular symposium, the Audi e-tron could transfer participants within St. Gallen with no more than one battery charge per day. Provided that enough time would be calculated to enable pre-scheduled charging intervals, long-distance transport by electric vehicles also proved to be a viable option since the charging network between St. Gallen and Zurich is sufficiently developed. The symposium also made use of the public charging network in times when symposium-owned chargers were in use.

Additionally, the first-class train ride from Zurich to St. Gallen was very appreciated. It offered a convenient service and private space for participants to work while en route to the conference. Overall, 15% of all trips made between the 50th St. Gallen Symposium and Zurich were conducted by train. The decreased vehicle demand helped in facilitating electric vehicle charging and limited the overall transport emissions. These findings show the appeal and value of this mode of transportation and highlight the benefits of the mobility project. Finally, the findings demonstrate the potential for public and shared methods of transportation in providing conference mobility.

Achievements

In its first year, the concept considerably reduced the mobility emissions of the St. Gallen Symposium. While the vehicle fleet produced approximately 9.5 tons of CO₂ emissions over the three conference days in 2019, in 2021 it was only 0.4 tons of CO₂. It is important to point out that much of the reduction was a result of the limited physical scope of the conference. Still, when controlling for the number of participants, the new mobility concept led to significant reductions from 2019 to 2021. Namely, while the average emissions per passenger in 2019 amounted to 17.3 kg of CO₂, in 2021, this amount was only 4.5 kg. This results in an average emission decrease per participant by 73.8%. Figure 3 illustrates these numbers visually.

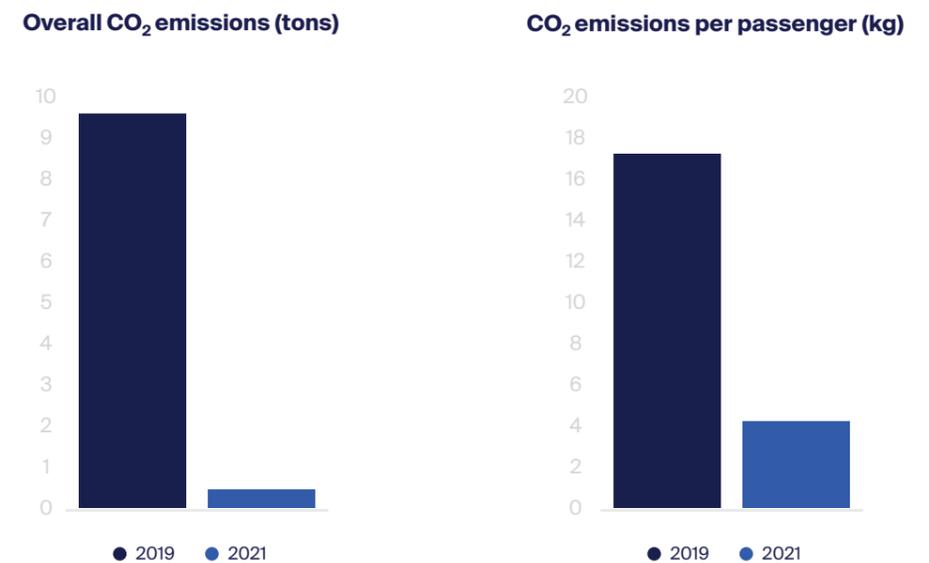


Figure 3. CO₂ emissions of St. Gallen Symposium's mobility in 2019 and 2021, overall (left chart) and per passenger (right chart).

In its first year, the **Next Generation Conference Mobility** was a success. Besides promoting electric mobility, showcasing alternative modes of transport, and demonstrating that innovative conference mobility concepts are possible, the project substantially limited the environmental impact of the St. Gallen Symposium. Through its success, the project can serve as an important benchmark for other conferences to reference when building their own eco-friendly transportation fleets. Additionally, through its endeavours and collaborations, the symposium has identified further opportunities for improving sustainability and hopes to capitalise on them in the years to come.

Conclusion & Future Development

The implementation of the **Next Generation Conference Mobility** project at the 50th St. Gallen Symposium has led to several achievements that encourage further development. This report has outlined the significant role mobility reform plays in reducing a conference's environmental footprint. The traditional transportation service accounted for 19.7% of the symposium's operating emissions and was thus a crucial target. Our concept has shown that CO₂ emissions can be significantly decreased by introducing an innovative mobility concept, including electric vehicles and shared mobility services. The observed reduction of average emissions per passenger by 73.8% supports this conclusion. The project also showed that multi-sector partnerships are necessary to implement innovative mobility concepts. The symposium's organising committee also made relevant experiences with new technology and developed a tool to calculate transportation capacities. Finally, the customer response to alternative transport services, such as the railway, was very positive. It is certain that alternative mobility concepts will become even more prominent in the years to come - not only for the St. Gallen Symposium but other conferences as well. Having generated a positive impact and with these lessons learned, the symposium team is optimistic about the future development of the Next Generation Conference Mobility.

Over the coming ten months, the symposium team will further elaborate on the mobility concept to ensure its continued positive impact. Most of all, it will be important to adjust it to a larger number of participants. This will require an extension of the railway service, a larger share of electric vehicles in the fleet, an expansion of the charging network, a more scalable booking system, and an early investigation of transportation demand to adjust charging-time requirements for the drivers. Electric and railway-based transportation are the cornerstones of the **Next Generation Conference Mobility**. Their importance will further grow in the next development stage of the mobility concept of the St. Gallen Symposium.

This year's implementation of the **Next Generation Conference Mobility** at the 50th St. Gallen Symposium in 2021 was a great success. It generated a real-life and measurable impact, showed the value of innovative mobility concepts, and provided inspiration for other conferences.