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A flagship project for Vorarlberg
World first as innovative transport link –
The "Wälderbahn" of the future

"Innovative, intelligent and joined-up initiatives" are, according to an industry strategy presented at the beginning of the year, the recipe for success when it comes to ensuring a competitive and livable Vorarlberg. There is a world first with the potential to communicate this very message inwardly and outwardly as a shining flagship project for the region: An idea for an innovative transport link that exists nowhere else to date.

Vorarlberg is marked out by its combination of being a very attractive region to live in and having a high concentration of successful large, small and medium-sized businesses in a wide range of sectors. "We need to focus all our efforts on retaining and connecting these two aspects. Businesses, employees, the local population and also our guests profit equally from a growing, successful, sustainable and safe living environment," says Martin Ohneberg, President of IV-Vorarlberg, the local section of the Federation of Austrian Industry.

A flagship project for Vorarlberg

At the beginning of the year, the Federation of Industry outlined a strategy and proposals for the further development of Vorarlberg's competitiveness and its sustainable living environment. All the suggested solutions can be implemented in Vorarlberg and the region. The three areas of strategic focus are innovation, intelligence and connectivity. A flagship project that leads the way has also been put forward. "We understand a flagship project as an initiative where technology, know-how and creativity from Vorarlberg are utilized for Vorarlberg, connect inwardly and radiate outwards. We set out to look for precisely this type of project and have succeeded in finding it," says Ohneberg.

City Cable Car – a curve-going ropeway system for the city

Hanno Ulmer, board member of Doppelmayr Holding, presented the latest innovation from the Wolfurt-based world market leader, which represents a revolution in ropeway construction and opens up entirely new possibilities: "The City Cable Car ('CCC') is an aerial ropeway system for urban areas, which has been developed by Doppelmayr as an eco-friendly, low-noise and above all curve-going alternative for public transit applications." The starting point was the tricable gondola system known as the "3S", which is used in combination with the newly developed self-propelled system to form the City Cable Car. The 3S lift consists of two fixed track ropes along which the carriers travel and a circulating haul rope to which the eight-wheel carriages are attached. As a result, this detachable continuous movement system offers top capacity and reliability. A 3S lift can carry up to 5,500 passengers per hour in each direction.

The key feature of the Doppelmayr innovation is explained by Ulmer as follows: "On the one hand, the cabins travel along ropes and have no problem with differences in terrain height; on the other hand, they can switch from the rope to a guideway and vice versa. As yet, this combination exists nowhere in the world." Another special feature is that the guideway follows the routes of existing roads and consequently incorporates bends with virtually any curve radius. "The essential requirement for this novel system was to develop a new carriage, a guideway and the cabins," says Ulmer.

Doppelmayr foresees significant potential in this innovation and its further development along with the company's technological edge in the curve-going capability of the ropeway carriages and cabins as well as in the newly developed self-propelled system: "The City Cable Car combines the classic aerial ropeway with a novel self-propelled carriage. This development from Doppelmayr makes it possible for ropeway cabins to travel along routes with many bends and brings significant benefits, particularly in urban areas," says Ulmer.

What this means in detail is that the self-propelled carriages – referred to as "taxi" units – take over the cabins from the classic ropeway in the transfer stations. The trip then continues in comfort along an overhead rail system. The guideway is elevated, leaving the infrastructure below it available for a wide range of uses. "The CCC can be perfectly integrated into the transport network and brings passengers conveniently to their destinations without any interference from traffic congestion and other modes of transport. The City Cable Car harmoniously blends in with its urban surroundings and meets all the requirements of a modern mobility system," explains Doppelmayr's Hanno Ulmer.

Innovative transport link in the Vorarlberg context

Martin Strele, managing director of the impact research and development organization Kairos, who worked on the project development, envisions a ropeway installation of this kind as an innovative transport link between the Rhine Valley and the Bregenzerwald (Bregenz Forest) area and a key part of Vorarlberg's public transport network: "This Doppelmayr innovation paves the way for the development and discussion of new transport concepts because it represents a huge expansion of the possibilities for ropeways as a means of public transport." Kairos has also developed a concept as a basis for discussion. The ropeway, which currently goes under the working title of the "Wälderbahn" (Bregenz Forest Cable Car) would connect Dornbirn's main rail station with a Sägerbrücke station and the bottom station of the Karren lift. From there, the route would continue up to the Hochälpele, the highest point in the Bödele ski area, and then on to the heart of the Bregenzerwald in the Bersbuch area in Andelsbuch. "Overall, this would actually create significant potential for shifting the emphasis away from automobile traffic and onto public transport," says Strele. "A cabin carrying 28 passengers would depart at one-minute intervals. The new system would provide a 20-minute connection over the eleven kilometers from the Rhine Valley to the Bregenzerwald." A travel speed of up to 31 km/h could be achieved. During off-peak times, the cabins could also be used to transport small cargo loads.

Further development of public transport

The Kairos managing director goes on to explain his motivation behind the initiative: "Public transport is the backbone of eco-friendly and affordable mobility for human beings. Between rural areas and conurbations, we need high-capacity arterial connections that can serve future demand and at the same time maintain the purchasing power in the countryside." There were several aspects that shaped the thinking behind the concept. First, a system with high transport capacity; second, an electric drive to avoid reliance on imported sources of energy. It also had to be a transport system that can handle day-to-day as well as leisure-time passenger flows. And finally, the system had to lend itself to optimal integration into the top-class rail network in the Rhine Valley, so that passengers can transfer to the S-Bahn, Regional Express, Railjet and regional bus services.

Excellent future-oriented technology on the doorstep

For IV-Vorarlberg President Martin Ohneberg, the Wälderbahn of the future developed by Doppelmayr and proposed by Kairos would be a great opportunity to have a bright shining flagship project on the doorstep. "A combination of aerial ropeway and urban suspension railway incorporating all conceivable curve radii, as outlined here today, exists nowhere in the world at the present time. The opportunities that would be created by a project of this kind are huge, quite apart from the added value and the promotional impact that would be created for Vorarlberg. We should take an active role in driving forward the discussion and work towards achieving a result," said Ohneberg.

As well as making innovation visible and putting Vorarlberg on the map as a technology center, Ohneberg also sees comfortable, eco-friendly, low-noise transport as an opportunity, adding: "The electromobility strategy for the province states that electromobility is to focus above all on areas where large numbers of people are to be carried and where the applications for electrically powered vehicles are particularly spectacular." Today's ropeways are already electrically operated. The new technology of the City Cable Car with electrically powered "taxis" that "pick up" the ropeway cabins represents a huge opportunity for an innovative, intelligent and joined-up initiative that could also further expand Vorarlberg's pioneering role in the field of electromobility – a true flagship project!

Facts at a glance: the Wälderbahn of the future

20-minute trip from Bersbuch to the Karren bottom station in Dornbirn

28 passengers per cabin or 2.5 tons of freight

11-kilometer total length from Bersbuch to Dornbirn rail station

Electrically operated

CCC: Dornbirn rail station to the Karren bottom station in Dornbirn

- Length 3,280 m
- Max. speed 6.5 m/s (23.4 km/h)
- Capacity 2,000 PPH (every 50.4 sec / 28 passengers)

3S Lift: Dornbirn Karren to Bersbuch

- Length 7,711 m
- Max. speed 8.5 m/s (30.6 km/h)
- Capacity 2,000 PPH (every 50.4 sec / 28 passengers)

www.waelderbahn.at

Photos and videos: Kairos/Doppelmayr

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