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**Autor:** Leutwiler, Ernst  
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# TSCHUGGEN EXPRESS

Ernst Leutwiler reports on a high-tech alpine transport system




The cabins pass the hotel with the glass 'wings' over the new spa - architect Mario Botta.

What does a five-star alpine hotel do to enhance the service and luxury it supplies to its customers? A shuttle to the skiing grounds would be ideal, but instead of an ordinary link it should be something a little more extravagant! This was the aim of the Tschuggen Grand Hotel in Arosa when it commissioned its 'Tschuggen Express', a 21st Century rack-monorail link that lifts its guests some 150m on a 1/2km journey direct to the skiing area above the hotel.

Originally the project was conceived some six years ago and was based upon the 'Coaster' system of personal transport developed by an Austrian company. This involved small individual vehicles moving on a raised triangular-girder track with a 'Locher-type' gearwheel drive powered by high-grade batteries carried in each unit. Sadly the innovative design failed due to problems with the batteries and the control mechanism, along with faults with the track welding, resulting in both the production company and its construction sub-contractor going bankrupt. The hotel then brought-in the Liechtenstein-based company Intamin Transportation, who specialise in monorails, roller coaster

rides, etc. to undertake a technical review of the uncompleted system in order to bring it into service.

The two individual cabins are now coupled together and run on the tubular tracks on plastic slides instead of wheels. This measure increased the localised weight loading, which meant that the track and transitions to the supports needed reinforcing. The control system was simplified, and the drive is now based on a hydraulic system powered through a three-phase electricity supply, derived from a shielded conductor rail on one side of the track. The twin cars now successfully carry 12 passengers, at a speed of 15 kph up a maximum gradient of 52%, the trip taking some 2-minutes. The futuristic looking system finally cost some CHF7m and was opened to carry the hotel's guests up to the magnificent skiers paradise above Arosa on the 20th February 2009. Sadly, it is a private operation that is not available for public use, but it can be seen operating by visitors to the area. 

LEFT: Near the top station with a cabin of the Hoernli cable car.

MIDDLE: On the way to the top station.

RIGHT: The cabins with the three-phase power supply from a power rail on the side.

All photos: Ernst Leutwiler taken on January 16, 2012

