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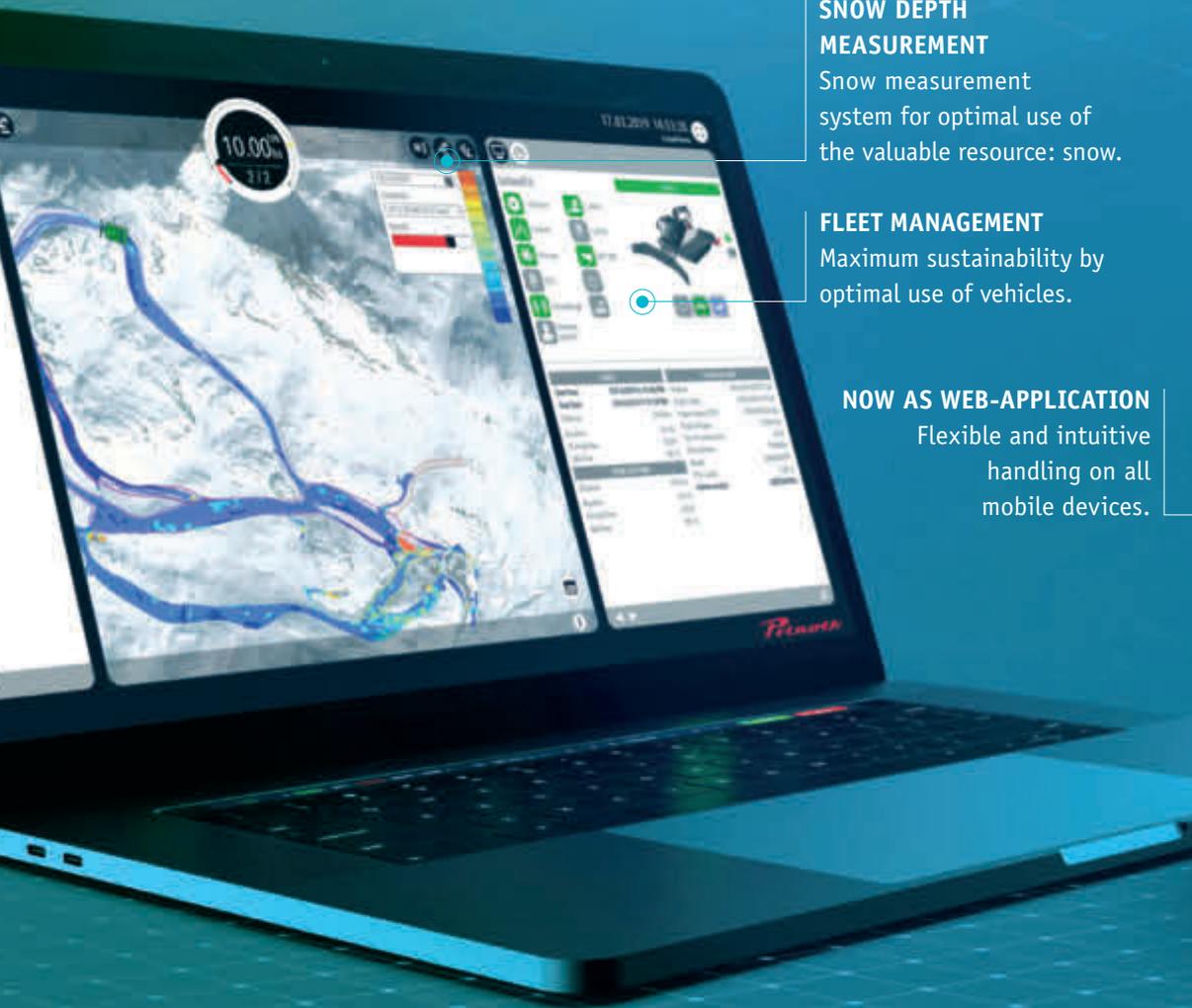
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MAG. CLAUDIA MANTONA

Editor-in-chief

EDITORIAL

DEAR READERS,

Following the public health measures taken to contain the coronavirus and their drastic effects on social life and the economy in the Czech Republic, Slovakia, Bulgaria, Romania and Poland, our work on this year's edition of the ISR 5-Country Special has been accompanied by the first signs of hope for the region's ski resorts, which were obliged to prematurely terminate the 2019/20 winter season. This resulted in significant financial losses, for the ski resorts and ropeway operators as well as for the various companies that do business with this key tourism driver. The operators are now ready to go at the upcoming start of the summer season, and the supply industry has taken every conceivable measure to guarantee normal deliveries. The decisive factor for 2020 will be the extent to which the mountain destinations can get back to business as usual in the summer in spite of the current health-related restrictions. The opportunities and prospects for the resorts for this summer season and beyond are explained by tourism analyst Arnold Oberacher in an ISR interview (p. 16).

In addition, our highly experienced international correspondent Roman Gric has again been on tour for ISR and in this issue reports on the improvements made in the Czech ski resort Klínovec (p. 6). In Poiana Braşov, too, the second stage of a long-term upgrade project is now taking shape with the 2019 master plan for the Romanian resort (p. 14).

For 62 years now, ISR has been the trusted communication platform for the entire global ropeway industry, and in this issue we again take pleasure in providing information on a range of exciting new products and services for winter sports destinations, from ropeway installations and snowmaking systems to efficient snow grooming tools.

I would like to close by thanking everyone who has contributed to this ISR 5-Country Special, and I wish you, dear readers, an enjoyable read.

Kind regards,

Claudia Mantona
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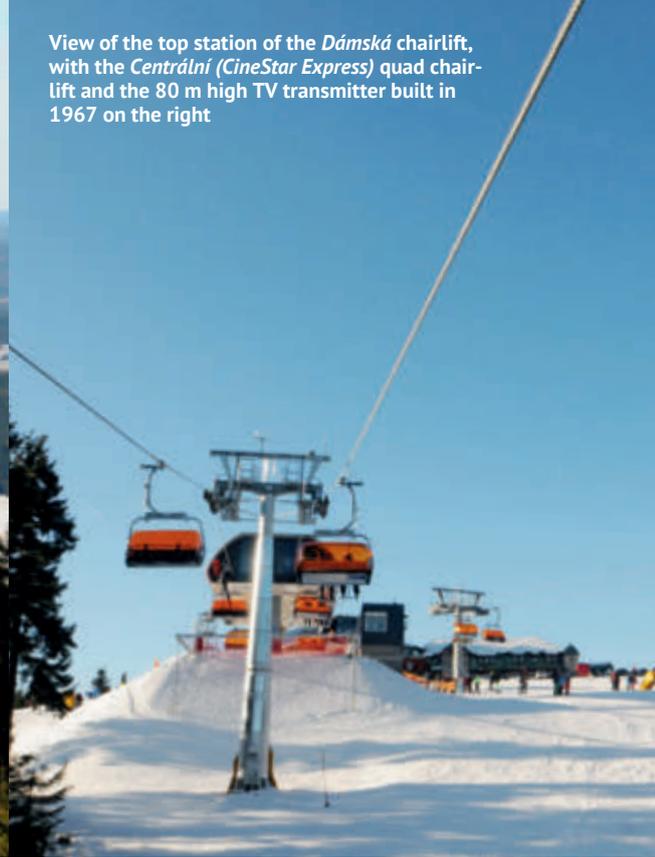
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The latest quad chairlift, called *Dámská*, is the ski area's third installation with orange bubbles.

View of the top station of the *Dámská* chairlift, with the *Centrální (CineStar Express)* quad chairlift and the 80 m high TV transmitter built in 1967 on the right



Klínovec – ski area in the orange look

ISR REPORT A further upgrade for the biggest ski area in the Ore Mountains – with a chairlift with orange bubbles.

The slopes of *Klínovec* (1,244 m above sea level), the highest peak in the *Ore Mountains* on the border between Germany and the Czech Republic, offer ideal conditions for winter sports and attracted the first individual skiers at the beginning of the 20th century already. In the interwar period, earthworks were carried out to create natural ski jumps and a toboggan run. And organized skiing was not long in coming, either. Following tree felling to harvest the timber, the first local ski slopes were made available and, in addition to recreational skiing, downhill ski races were also held. After the 2nd world war the area was included in the restricted zone on the border with Germany, and public access was not permitted again until the 1960s. In 1965 the first ropeway was built: a single chairlift serving *Klínovec* from the southwest. Then, starting in 1968, surface lifts began

to mushroom in the area. In the 1980s the first snow groomers went into service, and one of the trails was illuminated for evening skiing.

TAKING OFF AFTER PRIVATIZATION

In 1991, that is soon after the transition to democracy in the former Czechoslovakia, the ski area was privatized. Since then, the operating company has made a consistent effort to modernize and gradually upgrade the area. The construction in 2011 of the first quad chairlift with orange-tinted bubbles by the name of *Centrální (CineStar Express)* – the first chairlift with weather covers in the Czech Republic – was the subject of a report in *ISR* 3/2012 (p. 26-27). This was followed in 2014 by a second, identical quad chairlift with orange bubbles, namely the *Jáchymov – Klínovec (Prima Express)*, which

was built as a replacement for the old single chairlift. A 400 m extension of the line in the direction of the valley to a car park for 600 cars and thus closer to the spa town of *Jáchymov* also created a second entry point to the ski area and significantly reduced travel time for visitors from the Czech Republic (see *ISR*'s 5 Country Special 2015, p. 14-16). This ropeway operates all year round, providing access to the 3 km long slope with 480 m of vertical in winter and 67 km of mountain bike trails in summer. Four downhill trails, from the easy 10.3 km *Azur* trail to the difficult 5.2 km trail, start at the top and end at the bottom station of the chairlift.

PRE-OWNED INSTALLATION FOR THE INTERIM

The most popular blue slope, the *Dámská*, on the north side of the ski area was originally served by a surface lift, but that was replaced



Thirty chairs are parked on the bottom station turn-around of the *Dámská* chairlift and the remaining 50 on the parking rail on the right.

by a pre-owned Graffer Seggiovie fixed-grip triple chairlift, which opened in the winter of 2005/2006. The lift was acquired from the Italian *Marilleva* ski area (*Malga Panciana – Orso Bruno*). At its new location, the installation was additionally equipped with a loading carpet, and the old mechanical haul rope tensioning system in the top station was replaced by a hydraulic system.

THIRD IDENTICAL TYPE OF CHAIRLIFT

Following an upgrade to the popular blue trail, the fixed-grip triple chairlift was no longer equal to requirements in terms of transport capacity and the quality of the ride. Although consideration was initially given to replacing the chair-

lift with a more efficient pre-owned installation, it was finally decided to build a completely new ropeway. And since the two orange chairlifts had already become iconic for the *Klínovec* ski area, it was only natural that the third detachable chairlift should also be designed with orange-tinted bubbles. The stations in the classic Uni-G look also match those of the lift's two elder sisters. There is parking for all 80 chairs at the bottom station, with 30 on the turnaround and 50 on a parking rail located next to the station. The new ropeway, which has chairs with heated seats, reduces transit time by half, and transport capacity has been increased by 800 pph.

Construction work began in July 2019, and the ropeway went into



A helicopter was used to install the towers in difficult terrain.

PHOTOS: DOOPPELMAYR (1), SKIAREÁL KLÍNOVEC (1)



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The *Klínovec* single chairlift was the first ropeway to be built in the ski area.



The *Dámská* triple chairlift built by Graffer served the blue slopes between 2005 and 2019.



On the *Dámská* triple chairlift (2005 – 2019) the original counterweight system was replaced by two hydraulic cylinders for tensioning the deflection sheave.

service on December 14. In difficult terrain the towers were lifted into place by helicopter. The load and brake tests were not performed with canisters filled with water or sand as ballast, as is usual in the Alps; a total of 200 barrels of beer were used instead, as that is the tradition for ropeway testing in the Czech Republic. The author of this report was unfortunately not able to check whether all the beer barrels were still full when they arrived back at the brewery, as the ski area operator claims.

CAPITAL SPEND IN THE SKI AREA

Prior to the 2019/2020 winter season the operator, *Skiareál Klínovec*, spent 150 million Czech crowns of its own money and of bank loans (about 5.8 million euros) on the ski area, without any subsidies. The

chairlift alone cost 110 million Czech crowns, while the rest was spent on the snowmaking system, mainly to increase the capacity of the reservoir by 65,000 m³. Even though the plan for a ropeway linking the *Klínovec* ski area with the

neighboring *Fichtelberg* in Germany has still not been implemented, there is cross-border cooperation between the two areas in the form of ski passes valid for 1.5 days and more.

Roman Gric

TECHNICAL DATA

Quad chairlift *Klínovec, Dámská* with orange-tinted bubbles and heated seats

Elevation of bottom station	1,003 m
Elevation of top station	1,235 m
Line length	1,210 m
Vertical difference	232 m
Haul rope diameter	38 mm
Drive	bottom station
Rated output (starting/continuous)	321/236 kW
Tensioning system	bottom station
Number of chairs	80
Transit time	4.4 min
Max. line speed	5.0 m/s
Rated capacity	2,175 pph
Manufacturer, year of construction	Doppelmayr/Garaventa-Group, 2019
Haul rope manufacturer	Fatzer



The second quad chairlift with orange bubbles, the *Jáchymov – Klínovec (Prima Express)*, serves a number of mountain bike and downhill trails in summer.



The *Centrální (CineStar Express)* quad chairlift was the first installation with orange bubbles.



WHO DECIDES ABOUT NEW INVESTMENTS?

We say it is our readers who decide.

In Cortina d'Ampezzo (Italy), in preparation for the 2021 Alpine Ski World Championships, Leitner ropeways are getting ready to install the new gondola lift *Son dei Prade – Bai de Dones* – here the bottom station in winter (rendering).



From the Tofane to the Cinque Torri by ropeway

LEITNER ROPEWAYS In preparation for the 2021 Alpine Ski World Championships, Leitner ropeways is getting ready to install a new gondola lift in Cortina d'Ampezzo (Italy).

The impressive Tofane mountain range in the Ampezzo Dolomites Nature Park stands to the west of Cortina d'Ampezzo in the Italian Province of Belluno and is one of the best known mountain ranges in the Dolomites. Following the cancellation of this year's Ski World Cham-

pionship finals in Cortina due to the coronavirus pandemic, the resort is now looking to the next winter season with a new optimism. The Alpine Ski World Championships will be held in Cortina d'Ampezzo in February 2021, and preparations are already fully underway: A new gondola lift will link the Tofane trails with the Cinque Torri Ski Resort.

highlights. As a result, in Italy, which has been hit particularly hard by the corona pandemic, good news is coming from Cortina. In the framework of the Italian government's development plan for the infrastructure needed for the 2021 Ski World Championships, the Belluno provincial authority has awarded the contract to build a gondola lift from *Son dei Prade to Bai de Dones* to Leitner ropeways, and the ropeway linking the Tofane and Cinque Torri on the Passo di Falzarego will be completed in the course of this year. Only a few months ago, Leitner ropeways completed the *Col Druscié* gondola lift in Cortina as a replacement for the first stage of the historical *Freccia nel Cielo* ropeway from Cortina to Col Druscié. Along with Prinoth (snow groomers) and Demac-

TECHNICAL DATA

GD10 *Son dei Prade – Bai de Dones*

Line length 1st section	2,078 m
Line length 2nd section	2,441 m
Vertical difference	242 m
Number of towers	28
Number of cabins	54
Line speed	6 m/s
Rated capacity:	1,100 pph
	(final stage: 1,800 pph)

ROPEWAY TO PASSO FALZAREGO

The Ski World Cup finals in March 2020 would have been a dress rehearsal in Cortina for the Alpine Ski World Cup in 2021 and the Winter Olympics in 2026. Following the great disappointment felt over the cancellation of the event, the famous winter sports resort is now preparing for the upcoming



The new installation is expected to be in service by the end of this year or the beginning of January 2021 – here the middle station in summer (rendering).

lenko (snowmaking systems), Leitner ropeways is also the technical supplier and partner of the Cortina 2021 Foundation.

STRATEGIC LINK

At a cost of approximately 15 million euros, the new gondola lift will have a total line length of 4.5 km and will operate with 54 cabins with a capacity of ten persons each and will connect the ropeways of Pocol with Cinque Torri in two stages via a mid-station in Cianzo-pè. The new link is not only significant in relation to the 2021 Ski World Championships; in the long term it is also important for the development of tourism in Cortina in general. As a result of this project, the Tofane region will be linked to the Sellaronda. In addition, the gondola lift will take some of the

pressure off the very busy road between Cortina and the Passo di Falzarego.

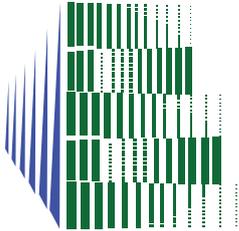
In spite of the current difficult times the Mayor of Cortina, Gianpietro Ghedina, is confident: “The contract for the work on the new gondola lift, which will link the Tofane region with Cinque Torri, comes at a very critical point in our history. But that makes it a stimulus to venture something and think about our future. We have waited a long time for this link between our ski resorts. Soon the strategic project will become reality. Now and in the future, great challenges await us, together with some major goals such as the 2021

Alpine Ski World Championships.” The new installation is expected to be in service by the end of this year or the beginning of January 2021, and Cortina will be able to present itself as modern venue for the 2021 Ski World Championships.



The bottom station of the new gondola lift *Son dei Prade – Bai de Dones* in summer (rendering)

PHOTOS: LEITNER ROPEWAYS



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The new *Bergjet* gondola lift from Bartholet takes only 10 minutes to cover the distance from Tannenboden to the Maschgenkamm.

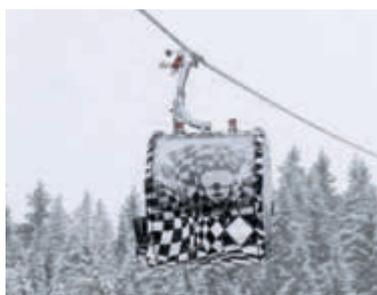


In ten minutes to the Maschgenkamm

BARTHOLET The new 8-seater panoramic gondola lift supplied by Bartholet Maschinenbau AG sets a new benchmark in the Flumserberg region in Switzerland. Equipped with 96 gondolas, the modern installation transports around 2,200 people per hour to the Maschgenkamm.



Within only two days, components with a total weight of around 340 tons were airlifted by the TH06 Super Puma transport helicopter.



The artist collective *RatAess* from Vorarlberg (Austria) designed a special cabin with multiple mirror elements.

The ride from Tannenboden to Maschgenkamm on the new *BergJet* 8-seater gondola lift built by the ropeway manufacturer Bartholet of Flums takes about ten minutes. The installation replaces the former 4-seater gondola lift and triples the transport capacity on the line. Particularly noteworthy is the design of the gondolas. Panorama windows

offer a unique view over the Walensee, Lake Zurich and the Churfirsten mountain chain. The artificial leather seats have a generous seat width of 490 millimeters. A smooth ride is ensured by Bartholet's innovative Dual Spring Suspension. The ventilation system consists of windows in both directions of travel and ventilation slits in the floor area. This guarantees optimum air circulation in the cabin even when it is hot outside.

340 TONS TRANSPORTED IN TWO DAYS

Construction work on the entire installation proceeded according to plan. After a very short construction period of only nine months, the gondola lift was inaugurated at the end of December 2019. A particularly challenging construction phase included airlifting and installation of various line components. The TH06 trans-



The panorama windows of the gondolas make it possible to admire the view over Walensee, Lake Zurich and the Churfirten mountain chain.



Equipped with 96 gondolas, the new BergJet can carry around 2,200 passengers per hour to the Maschgenkamm. It offers convenient and barrier-free all-year access to the mountain peak for a variety of excursions.

port helicopter known as the Super Puma airlifted components weighing around 340 tons in just two days, flying a total of about 130 trips. The line has an inclined length of 3,223 meters and crosses three chairlifts. The line works include 20 towers, with the tallest tower – 36 meters high and more than 2 meters in diameter – in the middle of the line.

A particular highlight at Flumserberg is an artistically decorated cabin designed by two artists who participated at Swissartexpo. The

artist collective *RatAess* from Vorarlberg (Austria) took advantage of the unique shape of the panoramic gondola and created a completely new perspective through the use of multiple mirror elements. In addition, a new colorful restaurant and bar called *Colors* has been built next to the valley station. The new building also includes parking for the gondolas as well as an underground car park and workshop with parking spaces for the snow groomers and company vehicles.

TECHNICAL DATA

BergJet

Type of lift	detachable 8-seater gondola
Bottom station	1,397 m.a.s.l.
Top station	2,015 m.a.s.l.
Vertical difference	618 m
Line length	3,223 m
Number of towers	20
Number of carriers	96
Line speed	6 m/s
Transit time	10 min 26 sec.
Rated capacity	2,200 pph
Drive, rated output	791 kW
Rope diameter	53 mm

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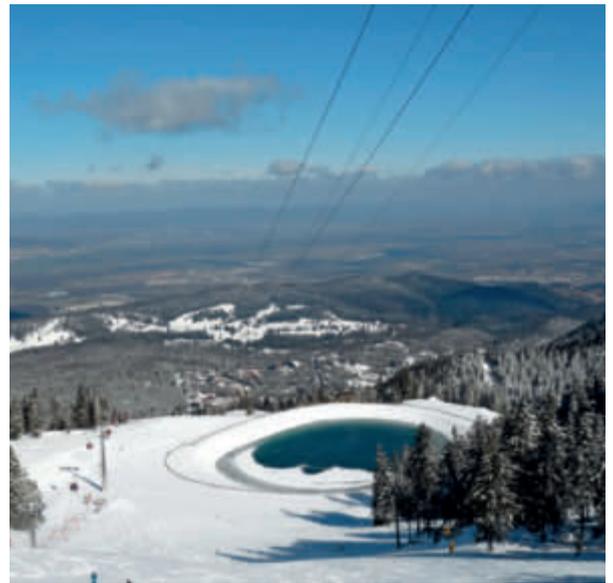
Safety without Compromise

Master plan 2019 for ski area in the Carpathians

KLENKHART & PARTNER In 2007 the Alpine engineering company from Absam, Tyrol, drew up the first master plan for an upgrade of the Romanian winter resort of Poiana Braşov. This first stage of expansion was completed in 2011, and the second stage is now taking on concrete shape with the 2019 master plan.



The first measures of the master plan completed in 2011 gave an enormous boost to the Romanian ski resort of Poiana Braşov. For this reason, the second stage of the upgrade project has been finalized in the form of the 2019 master plan. It includes new trails as well as a direct link between the Rîşnov catchment and the Poiana Braşov Ski Area.



The first stage of the upgrade included a reservoir with a capacity of approximately 120,000 m³. There are now plans for a second reservoir with a capacity of about 100,000 m³.

Poiana Braşov is one of the most famous winter sports resorts in Romania. It is located about 180 km north of Bucharest and is due to be served by a motorway in the near future. Braşov Airport is also scheduled to open within the next few years. This will enlarge the catchment for Braşov and the area around Dracula Castle to include the capital Bucharest. Poiana Braşov, which lies at the foot of the Postăvarul mountain on the border between the Southern and Eastern Carpathians, now has several hotels with a current capacity of 4,000 beds. However, the ski resort created in the 1950s was showing its years, and a new concept was urgently needed to further develop the area to a modern standard.

The first stage of the upgrade was completed at the end of 2011, almost exactly in accordance with the

master plan. The project included two chairlifts from the Doppelmayr/Garaventa Group, significantly more width for the ski trails and about 25 hectares of completely new slopes, a snowmaking system covering most of the trails and a new reservoir with a capacity of around 120,000 m³. The plans for the new trails, trail modifications and snowmaking installations were supplied by Klenkhart & Partner, while the work on the mountain was handled by a general contractor from Braşov, and the snowmaking system was supplied by TechnoAlpin. Together with the two new chairlifts, the result is a greatly enhanced ski area with a modern standard of winter sports amenities. With the help of the perfect results achieved with the snowmaking system, the ski area attracted more than 5,000 visitors in the 2012 Christmas season

already, and the ski resort was also ideally equipped to host the 2013 European Youth Olympic Winter Festival. Since then, Poiana Braşov has seen an enormous increase in visitor totals, which made it time to think about the second stage of the upgrade project.

CLEARLY FORMULATED GOALS FOR THE SECOND STAGE OF THE UPGRADE

For novice to intermediate skiers in particular, the pisted area needs to be enlarged in order to guarantee a relaxed family skiing experience. The ski area extensions to the west, which were already considered in the first master plan, are now to be implemented. Around Rîşnov there is a large catchment area, which justifies a direct link to the Poiana Braşov Ski Area. With the new trails, the lower, flatter part of the existing

area will also be better utilized. After completion of the relevant studies and extensive site inspections, an ideal location was found for the bottom station and new attractive piste configurations for the link to the west. The line of the new ropeway installation has been chosen for optimum protection from the wind, and a more wind-resistant cabin design has also been proposed. In general, the highest standards of safety have been applied in all respects. In addition, a new ropeway proposed for the upper area of the Postăvarul will make it possible to open the season earlier in autumn and continue well into the spring.

IMPROVEMENTS TO THE INFRASTRUCTURE

The project also includes improvements to the infrastructure, for example with regard to the water supply for the snowmaking system. The springs and intakes currently used

do not deliver the required volume of water, so that additional water has to be taken from Poiana Braşov’s drinking water supply network, which greatly increases the costs. Plans have therefore been drawn up for a second reservoir with a capacity of about 100,000 m³, which is to be landscaped in order to create a summer attraction. Improvements must also be made to the existing 2.5 km long access road, which is partly a dirt track running through a gorge, so as to provide a modern standard of access to the new section of the ski area. Car parks are also needed for future visitors, and that includes the relevant water supply and wastewater disposal networks. The planned bottom station is convenient for motorists arriving from Braşov and Rîşnov, and there are no major gradients on the road to the car parks, which means that they can be reached easily in winter even after a snowfall or in icy conditions. Day visitors from Bu-



Since 2007, the operating company Ana Teleferic has placed its trust in the know-how of Klenkhart & Partner: (from left to right) Christian Klenkhart (Managing Partner Klenkhart & Partner), and Ion Rufa (Director General of Ana Teleferic) with a member of the ski patrol.

charest will thus benefit from shorter travel times to this entry point to the Poiana Braşov Ski Area. As the area is very popular with groups and ski clubs, there are also plans for a number of training and racing trails.

PHOTO: KLENKHART



10-seater gondola lift Gstaad | Switzerland | 2019
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 **BARTHOLET**

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The corona crisis as a trend amplifier in mountain and winter tourism

ISR INTERVIEW Of all industries, tourism is the one most affected by the coronavirus crisis worldwide. In many winter sport and mountain destinations the question now being asked is: What happens now?



Mag. Arnold Oberacher, founder, managing director and partner of conos gmbh

In mid-May 2020, ISR spoke with tourism analyst Arnold Oberacher about the options and prospects for this summer season and beyond.

ISR: Mr. Oberacher, the consequences of the corona crisis are to be felt everywhere. A great deal currently depends on factors over which businesses have no control – starting with the question of opening the borders for

tourists. What can mountain and winter sport destinations do at this point in time?

Arnold Oberacher: In the current situation, the protection of liquidity should be the key issue. Fortunately, the 2019/2020 winter season was not completely ruined for most destinations. The worst thing they can do now is to wait and see how the summer season develops – and if things go badly, wait until September or October before taking action. With regard to the next winter season, tourism businesses are advised to perform thorough scenario planning and calculations now. And the exercise should include not only best-case and realistic-case scenarios but also a worst-case scenario.

ISR: What tourism marketing measures would you recommend for the current summer season?

Arnold Oberacher: I would advise a two-pronged strategy. In times like these, people look first and foremost for security and reliability. Mountain tourism destinations should provide a credible response to this need and do everything possible to offer their guests protection and safety, and they should communicate this position accordingly – starting with practical measures to help visitors respect the social distancing rules in the cable cars without stressing themselves in any way or measures to prevent physical contact when they are waiting in lines or enjoying some local attraction. In this context, now more than ever, visitors should be encouraged

to avoid queues at ticket offices by buying their tickets and passes online in advance, and contactless and cashless payment should finally become the norm.

ISR: That is one aspect. What is the other element of your dual strategy?

Arnold Oberacher: Mountain tourism destinations must continue to appeal to and cater for people's longings; they must offer the magic! After the lockdown in particular, many people simply want to get out and escape what are often relatively dull everyday lives. The yearnings of so many people for a few hours of freedom, perspective and vision are something that mountain tourism destinations are ideally equipped to satisfy.

In this situation, tourism destinations should stand for both freedom and security. Of course, it requires a degree of sensitivity to combine the two in a single message.

ISR: Which destinations do you think will recover fastest?

Arnold Oberacher: As long as certain travel restrictions remain in place, locations that traditionally attract a high proportion of domestic visitors or visitors arriving by road or rail will naturally be at an advantage. The same applies to local leisure destinations at a short (day-trip) distance from the big cities, i.e. which can be reached within two to two and a half hours, such as destinations on the eastern margin

of the Alps or the Bulgarian ski resorts near Sofia. At present the situation is naturally more difficult for those destinations that are popular with visitors from abroad, especially if they travel by air.

ISR: To what extent can their absence be compensated by domestic visitors and day trippers?

Arnold Oberacher: In small countries with a strong focus on tourism like Switzerland or Austria, for example, the situation is of course much more challenging than in countries like Germany, France or Italy with their large populations – and a correspondingly large reservoir of domestic visitors. In many leading destinations in Eastern Central Europe, too, foreign tourists account for a high proportion of the total. For most destinations in small countries, it is of existential importance that the borders with neighboring countries at least should be opened for tourists in the foreseeable future. This is now also clear to many governments, and it is to be hoped that the free movement of persons will be restored before the summer season, at least in certain regions.

ISR: Some people say that after the corona pandemic nothing will be the same again in tourism. What do you think about that?

Arnold Oberacher: Much of this is often wishful thinking on the part of people who are not otherwise familiar with the subject. Certainly the corona crisis is set to reinforce trends that were already emerging or present before. This applies, for example, to digitization and especially to online ticket sales and contactless payment. In my estimation, these effects will be felt relatively soon, above all because such measures help to reduce unnecessary contact and thus make the processes safer for visitors.

ISR: What other trends are likely to be reinforced?

Arnold Oberacher: Another trend is a growing demand for destina-

tions that embody a certain regional typicity, a relaxed atmosphere and authenticity, for example through attractive town or village centers, and restaurants and shops with a regional character, in other words the exact opposite of the anonymous and interchangeable establishments that visitors are familiar with at home. With regard to winter tourism, the visitor potential is still there, but the number of skiers who want (or are able) to spend seven days on the slopes from 9.00 am to 4.30 pm was already decreasing before corona. Even enthusiastic skiers need alternatives for the odd (half) day of their holidays!

ISR: What opportunities do you see in all this for the destinations in Eastern Central Europe and South-Eastern Europe?

Arnold Oberacher: From a Western European perspective, there is still a discrepancy between image and reality regarding many of these destinations. If you make a fair comparison between resorts of the same size in East Central and South-Eastern Europe and their Western European counterparts, you will often be surprised by the standards of quality and professionalism offered by the former – sometimes even superior to Western European destinations. But many potential Western European visitors are not yet aware of that.

A key distinguishing feature between many winter sport resorts in the Alps and in Eastern Central or South-Eastern Europe is above all their size. In the current situation, however, that is not a disadvantage. What counts at the moment is security, “small is beautiful” and a relaxed atmosphere, and with the right marketing, these trends can work to the advantage of compact resorts.

ISR: Looking back briefly, what can mountain and winter tourism destinations learn from the events witnessed in the first few days of the corona crisis?

Arnold Oberacher: A key point is that the people in charge should

have effective contingency plans in place to ensure active crisis management and avoid a state of paralysis through shock. Most cable car operators have greatly improved their crisis management in recent years, but many destination managers still have a few improvements to make. It is true that nobody was expecting anything like the coronavirus, but good contingency plans are designed to cover all eventualities and not just developments that are easily imagined like accidents, avalanches or terrorist attacks.

ISR: What measures should governments now consider with specific regard to the cableway industry?

Arnold Oberacher: With regard to the cableway industry, policy makers must recognize its special role within regional and national economies. Without tourism, most mountain regions in Europe would be underdeveloped, with weak social and economic structures.

The cableways have always been the driving force for tourism and the foundation for related business activity: Without cable cars, there would be no hotels and restaurants, which in turn provide essential business for many local tradesmen and suppliers, including regional financial and creative service providers. This is one of the reasons why public authorities have played a strong supportive role in the establishment of many cable car companies – either providing financial grants or becoming involved as (co-)owners. With government bailouts now on the agenda for the rescue of “critical infrastructures” such as airlines, it should be borne in mind that in many regions the cableways are also of existential importance as a critical part of the tourism infrastructure.

ISR: Thank you for the interview!

Dieter Krestel

New Titan 4.0 snow gun

DEMACLENKO With the new *Titan 4.0*, the South Tyrolean snowmaking expert presents a snow gun that meets all requirements in terms of performance, technology, design and efficiency.

Titan 4.0: Maximum snow production of 120 m³/h for a mere 23 kW total power consumption



Having caused a stir in the snowmaking industry in 2017 with the *Ventus 4.0*, Demaclenko is once again setting a new benchmark on the snowmaking market with the *Titan 4.0*. As with the *Ventus 4.0*, the design was developed in collaboration with the famous Pininfarina design studio. The mandate: a perfect symbiosis of uncompromising functionality and user friendliness with the best possible product design. This principle has been perfected with the new *Titan 4.0*.

EXCELLENT PERFORMANCE

According to Demacelenko, the *Titan 4.0* boasts a maximum snow production of 157 yd³/h (120 m³/h), a water flow of 25.4 cfm (12 l/s) and a throw of over 262' (80 m). That makes it one of the most efficient snow guns on the market. In particular, it has been possible to reduce total power consumption to a



The *Titan 4.0* is equipped with the latest DLC 4.0 power electronics and touch screen controls for operation with all types of gloves.

mere 23 kW. The many improvements made have resulted in an exciting overall increase in efficiency of at least 10%.

FORWARD-LOOKING TECHNOLOGY

The increase in efficiency also brings about better performance at

marginal temperatures. With the new geometry of the fan blades and a quieter compressor, the noise level has also been reduced. The *Titan 4.0* is equipped with the latest DLC 4.0 power electronics, which guarantees the availability of all operating data and predictive maintenance plans and diagnostics.



The new geometry of the fan blades and a quiet compressor are the keys to reduced noise emissions.

OPTIMUM TRANSPORT CAPACITY

Another advantage of the *Titan 4.0* is its relatively light weight. Together with the compact design, this is decisive above all for safe and convenient transport by snow groomer and also makes it suitable for transport by helicopter even at high altitudes. The new chassis design makes for improved adjustment of the extendable stabilizer legs for simple and reliable positioning of the snow gun on the slopes.

The design of the *Titan 4.0* is the work of the prestigious Pininfarina design studio.

FUNCTIONAL DESIGN

With clear and consistent project management, it has been possible not only to improve the product but also to simplify it and make it more user-friendly than the previous version. Quick couplings make

the machine easy to open for fast access to the components. All parts that may need servicing are grouped centrally and thus easily checked. Projecting parts and openings have been reduced to a minimum.

PHOTOS: DEMACLENKO



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Snow depth measurement as performed by *Snow How* helps with the careful handling of snow as a precious resource.



High-tech solution for convincing results on the piste

PRINOTH *Snow How* is a tried and tested solution that includes both fleet management and snow depth measurement. Slope grooming can be optimized with the help of this user-friendly digital technology.



Different modules can be purchased individually or as a package.

Modern technologies promote the efficient use of snow as a precious resource in piste preparation. Thanks to precise assignment control and the intelligent and highly effective software solutions, individual jobs can be significantly optimized and performed faster, more economically and with less impact on the climate. With *Snow How*, Prinoth offers a solution that includes both fleet management and snow depth measurement.

The modules can be purchased and used as individual solutions or as a package. The unrestricted functionality of snow depth measurement over the entire speed range and particularly precise calcula-



The software solution has a user-friendly display on various devices.

tion of the snow cover thanks to triangular meshing guarantee significant improvements in performance.

The snow depth is determined by means of three measuring points under the blade and a further one under the vehicle. This makes it possible to generate especially accurate data in real time.

In practice, *Snow How* is popular not only for the high quality of the system but also for its particularly user-friendly design and intuitive operation. The digital solutions were developed in close cooperation with customers and with a focus on essentials: Only data that is critical for the job is retrieved on the slope. The absence of unnecessary additional information and software programs means that, in addition to clear presentation, processing power remains as unrestricted as possible and data can be loaded quickly.

All information can be accessed via

a single user interface. The resulting elimination of the need to switch between different programs ensures a continuous workflow and makes Prinoth a hands-on companion that takes piste manage-

ment into a new digital age – especially when combined with software solutions from Demacenko and the Skadii ski area management platform offered by the HTI Group.



The necessary data for the work is captured on the slope.

PHOTOS: PRINOTH AG

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The new PistenBully 600 E+ combines efficient slope grooming with an especially clean and quiet engine, making it one of the most environmentally friendly snow groomers in the world.



The PistenBully 600 E+ is pure sustainability

KÄSSBOHRER The new PistenBully 600 E+ is setting standards for sustainable slope operation. Thanks to its diesel-electric drive, the green PistenBully 600 E+ combines minimum emissions with even less engine noise.

The consistent operation of the diesel engine in its optimum speed range makes the new



The intelligent energy management of the diesel-electric drive takes some of the load off the engine and reduces fuel consumption by up to 20%.



The PistenBully 600 E+ – for a sustainable future in the snow

PistenBully 600 E+ extremely efficient, economical and 20% quieter than the PistenBully 600 Polar. In uphill operation, the engine drives the generators and hydraulic pumps by means of a splitter box. Intelligent energy management ensures that in downhill operation, the electric motors function as generators and support the hydraulic pumps using the splitter box. This takes some of the burden off the engine, and fuel consumption is reduced by up to 20% as well.

ULTRA-HIGH POWER AT VERY LOW ENGINE SPEED

The electric drive operates with excellent efficiency while ensuring consistently high torque. The power is available instantly, even when the engine is running at low speed. This results in up to 16% more thrust on the slope.

CLEAN FLEET

The new PistenBully 600 E+ is based on the PistenBully 600 Polar with its Cummins X 12, the quietest and cleanest engine in its class. According to Kässbohrer this engine, along with the diesel particle filter, made the PistenBully 600 Polar the

first snow groomer to meet the requirements of the EU-V emissions standard in 2018. The PistenBully 100 also has an engine that complies with the EU-V emissions level, which means that PistenBully offers one of the cleanest fleets on the market. This fleet uses resources more efficiently and is more environmentally friendly than other snow groomers. The overhauled diesel-electric model is the capstone of Kässbohrer's efforts to make its slope operations environmentally friendly: The PistenBully 600 E+ boasts a CO₂ emission level that has been reduced by yet another 20%.

SUSTAINABLE ACTION MADE EASY

Sustainable action does more than just protect the environment; it also makes you feel better. A train ride is more relaxing than a trip in your car; less sugar is better for your health; an organic detergent reduces allergies. The PistenBully 600 E+ provides a similar advantage. It embodies sustainability thanks to its clean engine and reduced noise – for efficient slope grooming and a clear conscience.

Time savings with SNOWsat ToDo

KÄSSBOHRER *SNOWsat ToDo* software digitizes daily slope grooming in France.

Since last winter, the French ski resort Courchevel has been relying on digital solutions for slope management. Romain Hazucka, manager of the ski resort, equipped his entire vehicle fleet with *SNOWsat ToDo*. In an interview with Kässbohrer, he explains how the digital solution for task management revolutionizes daily work. This interview has been made available to ISR.

Kässbohrer: Mr. Hazucka, how do you use *SNOWsat ToDo* at your ski resort?

Romain Hazucka: We use *SNOWsat ToDo* in all the snow groomers at Courchevel. We work in two shifts, and this solution gives us support for preparing slope grooming and planning all the tasks for both shifts.

Kässbohrer: How does *SNOWsat ToDo* support you in coordinating the work?

Romain Hazucka: The slope manager creates the plan for slope grooming. He uses *SNOWsat ToDo* to assign certain jobs to each operator. Then the operator sees them on his vehicle display and can take care of them right there on the slope. In addition, the operator can add comments or instructions for the next shift or the next day. Before the shift begins, the team manager of the second shift sees what has been completed and which jobs still have to be done. This lets the manager quickly adapt the grooming plan. Another advantage: With *SNOWsat ToDo* we can enter tasks on the computer — even when the snow groomers have already entered the ski area. Time-consuming documentation and co-

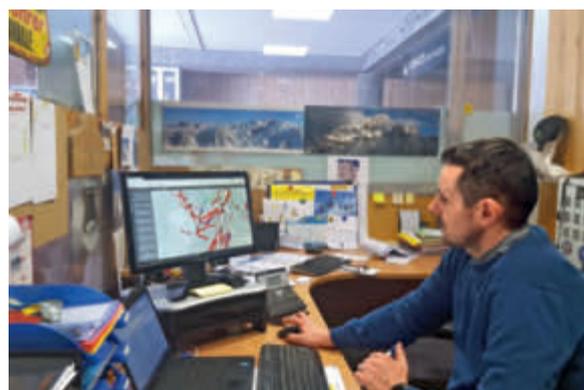
ordination, which used to be done in the form of reports, is now completely digitized thanks to *SNOWsat ToDo*. This makes communication fast, efficient and error-free.

Kässbohrer: To what extent has *SNOWsat ToDo* changed how the daily grooming plan is created?

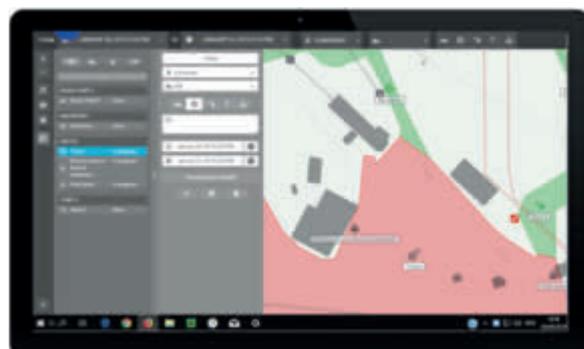
Romain Hazucka: The creation of customized grooming plans provides us with major advantages. Every night, we adapt our planning based on the weather conditions and the work that was done the night before. With *SNOWsat ToDo* we can combine the grooming plans with the snow depth maps from the last three days. This lets us see up-to-date changes on and next to the slope. Using *SNOWsat ToDo*, we can adapt the allotted tasks and plans as needed. As a result, slope grooming is even more efficient, and even more resources are conserved.

Kässbohrer: What is your conclusion about *SNOWsat ToDo*?

Romain Hazucka: We save a lot of time with *SNOWsat ToDo*. This solution improves communication across areas. The slope manager, team manager and operators always know the current status of the last shift and what has to be done. We used to have to print out documents and make handwritten notes. *SNOWsat ToDo* enables us to enter, process and manage up to 140 tasks every night. The digital solution is highly convenient, reliable and efficient. The operators greatly appreciate this new tool. In combination with the information provided by *SNOWsat ToDo*, they can put their expertise and experience to use even more efficiently.



Whether in the office or on the slope – *SNOWsat ToDo* supports the team at Courchevel in all areas.



Task assignment on the map – The slope manager assigns jobs in several ways: Tasks for all drivers are shown on the left of the screen (including completion status). The job of adding snow on slope “Access Thuit 4” (add snow) is displayed to the slope manager as completed (Done – area marked in green on the map). Individual tasks for drivers can be added in this area, including details such as comments and the date.



Display in the vehicle – The driver sees the tasks assigned to him directly on the vehicle display. He can edit them on the slope and mark them as completed.

Gaining time at the start gate

NEVEPLAST The Italian company had a chat with Swiss champion Carlo Janka after the easing of the coronavirus lockdown restrictions on May 4, 2020. He confessed he is looking forward to being back skiing on snow soon. Meanwhile he is busy training, alternating dry workouts with intensive training at the start gate on the Neveplast ramp located in Obersaxen in Canton Grisons, which for the last four years has been part of the regular training program for the Swiss Ski Team and local ski clubs. Neveplast provided this interview for ISR.



For improving the starting technique especially, the Neveplast slope works very well according to Swiss ski champion Carlo Janka.

In 2016 an artificial dry ski slope made of Neveplast material was installed at the Obersaxen sports facility, on the grass next to the tennis court and the football field. On the ramp, members of the Swiss youth ski teams and the elite skiers of the Swiss Ski Team (Carlo Janka among others) train intensively to become even faster at the start gate.

For the original set up, Neveplast installed two parallel slopes: a steep one (45% gradient) and a more gen-

tle one. At the end of 2019 the steep slope was removed because the other one was judged to be more functional. The ski slope is approximately 80 meters long and is equipped with two timing systems that measure speed at two different points: a few meters after the start and at the bottom of the slope.

“For this project, the work of our Swiss partner Borer Lift AG has been fundamental,” says Niccolò Bertocchi, Managing Director of Neveplast, and he continues: “The fact that Carlo and the other members of the Swiss Ski Team train on our ski slope to improve their performance makes us really proud. I believe that our material can be a significant tool in saving precious time at the start.”

In a telephone conversation, Carlo Janka talked to Neveplast about his workouts and future aims, Covid-19 permitting.

Neveplast: Carlo, how did you experience the lockdown? Are you back in training?

Carlo Janka: I spent the lockdown with my family. Here the situation has always been quite under control. I wasn’t back in training until May 4, that is as soon as it was allowed. In this first phase of preparation, I am focussing as usual on the physical side. When I put my skis on, an important part of my training will be on the Neveplast slope. It enables me to improve my starting technique especially.

Neveplast: When will you start training with the team on the glacier? The Austrians are expected to start in a few days.

Carlo Janka: At the moment, our first training on snow is planned for the first week of August. Hopefully the situation with the pandemic will be under control by then. If it is not possible to train on snow this summer, the Neveplast ski slope will definitely be a valid option.

Neveplast: Carlo, how crucial is being fast at the start gate? Especially in the Downhill and Super-G, how important do you think it is?

Carlo Janka: Ski races are all about seconds, actually hundreds of seconds. Very often the hundreds of seconds are lost in the very first phase of the race, which coincides with exiting the gate. Obviously a good start counts in the slalom events, too, but it plays a less crucial role there. In the downhill, on the other hand, a bad start is very damaging.

The difficult starts, however, are the flat ones, like at Wengen, which is the flattest start on the whole World Championship circuit.

Neveplast: What role did the Neveplast ramp play in improving your performance at the start gate? The ski slope is not served by a conveyor lift. Pius Berni (former coach of Carlo Janka) told me that in the first

year, you walked 36 km up and down the slope.

Carlo Janka: Yes but luckily, the year following installation, we were able to use an electric bike to get back to the start. I think I improved a lot thanks to the Neveplast set up, as it permits simulation of the sequence of movements involved in the launch from the start gate. The advantage is that in one day you can practice the start 15 or 20 times, which is something that would be unimaginable on the glacier in summer. Once the sequence of movements on the ramp is automated, you must repeat the same movement so as to get the feeling for adapting it on snow.

Neveplast: Talking about feeling. Do you believe that the Neveplast material gives the same sensations of skiing as on snow?

Carlo Janka: Neveplast is an excellent material that offers great simulation of skiing on snow. It comes really close to it. And yet it is not the same; I think it is very important to develop a material with exactly the same characteristics as natural snow.

Neveplast: Who trains on the Neveplast ski slope besides you?

Carlo Janka: Many of my teammates train on the Neveplast slope as well as kids from the Obersaxen ski clubs and local youth teams. The busiest period is from May to September. The concept is highly appreciated by everyone.

Neveplast: I know you are very keen to communicate the skiing message, especially to children. Do you think that, by bringing the snow to the cities all year



Carlo Janka says: "Neveplast is an excellent material that offers great simulation of skiing on snow."

round, Neveplast could be a good tool for getting more people interested in the sport?

Carlo Janka: Yes, I think so. Anything that can recruit as many people as possible to skiing is worth looking at. Skiing in general is not having an easy time at present. Every year there are fewer skiers on the mountains.

So if Neveplast brings the snow to the cities and makes it available for everyone learning to ski everywhere and offers them an easy way to improve their technique, that is obviously great! Neveplast ski slopes are ideal for learning to ski, especially for children and beginners. I like the Neveplast mission to propagate an easier, more affordable and more fun way of learning how to ski.

Neveplast: What's your opinion regarding the decision to cancel the finals in Cortina because of the health emergency?

Carlo Janka: I'm convinced that sport must step back for everyone's good. Cancelling the finals in Cortina was the right thing to do. Now we can all look forward to the World Championships in 2021.

Neveplast: Going back to when you were a kid living in Obersaxen and skied with the ski club there. How important was having a coach like Pius Berni?

Carlo Janka: Pius was my first coach when I was a kid, and he is still a mentor to me. It is an honor to be able to rely on a passionate and professional coach like him. Also, he is a really nice guy!

Neveplast: Thank you for the interview!

Camilla Ronchi

PROFILE ON CARLO JANKA:

When he was 19 he made his debut in the World Cup. In 2010, when he was only 23, he had already had two heavy gold medals round his neck (gold at the World Championship in Val d'Isère and Olympic gold at Vancouver in the giant slalom) plus a crystal globe, which Switzerland had had to go without since Pauli Accola back in 1992. With such a great beginning, as a winner in all the disciplines he was immediately hailed as a worthy successor to Hermann Maier. In 2011 he had his first physical problems and has never been completely free of them since. Today at the age of 33, he retains his place among the jet men of the Swiss team. 2019/2020 was something of a comeback season for Carlo Janka, finishing up among the medals twice and several times in the first ten.

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Interalpin 2021: The preparations have begun

INDUSTRY EVENT The highly successful results for the exhibiting companies at *Interalpin 2019* offer strong motivation for Congress Messe Innsbruck to further expand its trend-setting role as the leading international trade fair for alpine technologies in the next edition of *Interalpin* from April 14 – 16, 2021.



The success of *Interalpin* in 2019 is set to be repeated in 2021.

All key players and technology leaders of the global ropeway and mountain technology industries presented world firsts and groundbreaking product innovations at *Interalpin 2019* in Innsbruck. *Interalpin* was thus able to consolidate its position as the world's leading trade fair for alpine technologies with around 29,000 trade visitors from 117 countries. Now the team at Congress Messe Innsbruck is start-

ing with the preparations for next year's 24th *Interalpin*. "As a unique industry platform, *Interalpin* brings together premium exhibitors – from key players to smart start-ups – and international decision-makers from ropeway operating companies worldwide," says Christian Mayerhofer, Managing Director of Congress Messe Innsbruck (CMI). The decisive factor for the success of *Interalpin* and its status as the "leading international trade fair

for alpine technologies" is above all the professional quality of the attendees, as confirmed in an independent survey conducted at last year's event: Around two thirds of visitors were top decision-makers in the industry.

TARGETED PRODUCT DIVERSITY

At next year's *Interalpin*, from April 14 to 16, project manager Stefan Kleinlercher is expecting about 650 exhibitors from over 50 countries. "They will be presenting their innovative products and services in the fields of uphill installations, snowmaking systems, snow grooming and winter services, access systems, digital solutions, mountain safety, summer attractions and much else besides."

The trend-setting role of *Interalpin* as the world's number-one mountain trade show is to be consolidated at the newly established *Interalpin Inspiration Days*: "The great interest shown in the sessions in 2019 underscores the forward-looking thinking that is typical of the industry and encourages us to develop this format further," Kleinlercher concludes.

www.interalpin.eu

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