



## EDITORIAL

It is 3 elements that location marketing today can use as success factors:

- + Skilled workers, a pool of highly-qualified staff;
- + available commercial property;
- + a balanced work-life-balance, i.e. the region's livability;

This was the unanimous opinion at this year's location management conference in Salzburg. In this respect, the urban centres, which these days are growing due to in-migration, are at disadvantage compared to the peripheral spaces. Potsdam, for instance, benefits from it because Berlin is growing but unable to offer these three factors. These days, the "boondocks" are no longer peripheral thanks to fast internet connections – the quality of life that they offer outweigh the non-availability of an airport, which takes hours to get to through the morning traffic, anyways. The direct one-to-one communication at regional authorities facilitates quick and non-bureaucratic building activities – the local population appreciates input from new residents. In cities, negative arguments are brought forth against all new settlements: more traffic, environmental pollution, enticement of employees. All of these are reasons to head for greenfield expanding or new establishments — in so-called peripheral zones that at the same time provide the assets for prospective

ventures and happy, well-qualified employees.

Being embedded in between the tourism regions of South Tyrol and Carinthia, East Tyrol offers all of these decisive factors: about 100 (high school) graduates of the local Higher Technical College for Mechatronics every year, a mechatronics university campus, unique natural surroundings, local citizens who have a natural sense for quality and manual know-how, plenty of commercial property that can be built on without having to struggle with bureaucratic obstacles, and – despite the rural location – closeness to urban centres like Salzburg – Venice – Trieste – Innsbruck, that are just 2 hours to drive. Unlike Potsdam, we do unfortunately do not have Berlin in front of our gates. Nevertheless — an invitation to all companies and entrepreneurs who experience staff shortage, insufficient opportunities for expansion or bureaucratic obstacles when it comes to building activities — East Tyrol is an excellent site. Learn more about it through our image clip on YouTube: [East Tyrol – A Place to think ahead.](#)

**Dr. Richard Piock, CEO of INNOS GmbH**

## INDEX

<b>Editorial</b>	1
<b>News</b>	3
+ Job fair "Zruck hoam"	3
<b>Science</b>	4
+ Additive metal manufacturing by selective laser melting	4
<b>Practice</b>	6
+ Recherche at the Universities @ Campus Technik Lienz	6
<b>Furtherance</b>	8
+ Recherche Grant	8
+ Impulspaket Tirol	8
<b>Portrait</b>	9
+ Enviroment as corporate mission, Revital Integrative Naturraumplanung GmbH	9
<b>Osttirol Live</b>	10
+ East Tyrolean Sounds	10
+ Workshop for senior citizens: Get ready for Internet, Smartphone and the like	11
+ Osttiroler Kulturspur (East Tyrolean culture traces)	12



# Education

is the most powerful weapon you can use to change the world.

## JOB FAIR "ZRUCK HOAM" IN LIENZ

Over the past years, East Tyrol has become a powerful economic location. Numerous local companies have gained international recognition with innovations and unique products and call renowned global players some of their customers. Despite the many job opportunities, these companies are always looking for well-qualified employees.



There are numerous commuters in East Tyrol who work outside the region. Some of them have established the centre of their life and their main residence there and – depending on their personal situation – do not come back home before several years have passed – or not at all. These highly qualified professionals are simply not available to regional companies. Additionally, the local population is decreasing.

In order to address and counteract this problem, INNOS GmbH has organised a job fair.

The motto of the fair is "Zruck hoam" ("Back Home"); its slogan is "Zurück ist nach vorn" ("Returning means progress").

13 companies based in East Tyrol presented their activities and used the fair as an opportunity to expand their network. In the first place, the fair aimed at making East Tyroleans located here and elsewhere aware of the region's professional potential and regaining skilled professionals for the area. 450 visitors, 76 contacts made, and some fix job assignments are the outcome of the first "Zruck hoam" job fair held in the district of Lienz.

Right away, the job fair enjoyed much interest and acceptance, and many commuters and returnees followed the call "Zruck hoam".

With this fair, INNOS GmbH can look back onto a highly successful weekend. We are already looking forward to the next time when the motto again is "Zruck hoam – Zurück ist nach vorn" ("Back Home – Returning means progress").



The Exhibitors of the job fair "Zruck hoam"

# ADDITIVE METAL MANUFACTURING BY SELECTIVE LASER MELTING

Additive Manufacturing (AM) - "Additive Fertigung" in German and also known as 3D printing - describes a manufacturing process in which components are made by applying materials in layers. Instead of removing excess material mechanically, only the actually required materials are used in additive manufacturing processes.

There are numerous additive technologies. The different variants of the technology are defined on base of the material to be processed, the way the material is being added, and the joining method. Direct additive manufacturing from metals is made in two different ways: (i) by selectively melting a metal powder bed using a focused laser or electron beam (Powder Bed Fusion; PBF) (also refer to fig. 1) and (ii) by melting the raw material, which is a powder or filament and directly fed into the weld pool produced by a laser or electron beam (Direct Energy Deposition; DED) also refer to fig. 2). The indirect additive manufacturing of metals comprises Binder Jetting (whereby metal powder layers are locally bonded through a binder) and the technology of extrusion, which means that metal components are made by extruding a thermoplastic medium with powder core. The technology prevalent on the market for the additive manufacturing of metal materials is Powder Bed Fusion processes by laser (VDI term: LBM for Laser Beam Melting). Below, we will describe this procedure in more detail. LBM - in German-spoken countries also known as selecti-

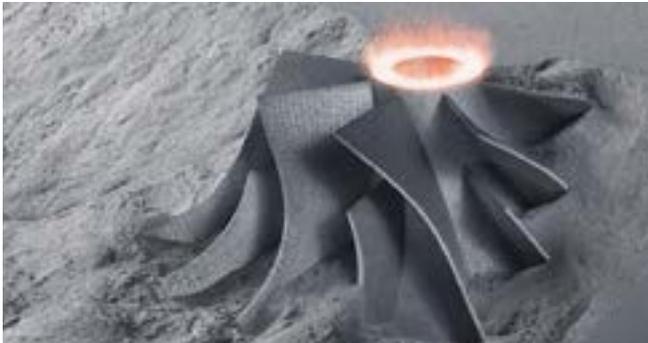


Fig. 1: Powder Bed Fusion

ve laser melting - starts with construction, whereas special software divides the component into various thin layers. A thin layer of the powdered material to be processed is applied to a base plate and locally fused on to it by laser in a build chamber rendered inert by shielding gas (nitrogen or argon). Subsequently, the base plate is lowered by the value of one layer's thickness before new powder is applied. This process is being repeated until the complete component can be taken from the build chamber. Selective laser melting becomes increasingly important in industrial production and comes into play right where traditional production technologies reach their limits. This technique is already being successfully used in the serial production of numerous components for the medical engineering, tool manufacture, and aviation sector. For instance, it facilitates the production of most sophisticated tools with integrated conformal coolant bores for high-pressure die casting (also refer to fig. 2). Tools can thus be selectively

cooled at predefined spots to reduce thermal strain when they are in use and to thus ensure the tools' longer service life. Moreover, the cycle time can thus be reduced and the productivity is increased. Apart from the high degree of freedom when it comes to building the components, selective laser melting also facilitates tool-free manufac-



Fig. 2: Direct Deposition

ture which saves time and money especially when sophisticated tools are to be produced in small batches. Components made from numerous single parts can additively be made in single parts to simplify their design and reduce their weight. This is of particular significance for the aerospace industry since it allows for saving fuel and thus reducing the CO2 emissions. One respective example is the fuel injector for the LEAP-1 aircraft engine developed by GE Aviation. Additive manufacturing allowed for simplifying a structure composed of 18 components to one single piece and reducing the weight by 25% at the same time [3]. Despite its numerous advantages and possible application fields, selective laser meeting is by now used in few



Fig. 3.1: Tools for two-component-plastic injection molding with internal cooling.

areas only. One reason for this fact is the limited number of materials that can currently be processed with it (ca. 20). EOS, for instance, market leader for LBM systems, offers powders and the technology for maraging steel X3NiCoMoTi 18-9-5 (1.2709), for martensitic steel X5CrNiCuNb16-4 (1.4542), for stainless steels X2CrNiMo17-12-2 (1.4404), X5CrNiCuNb16-4 (1.4542), the Al-alloys AlSi10Mg, AlSi7Mg0,6, the Ni-base alloys Inconel® HX, Inconel® 625, Inconel® 718, the Co-base alloy Co-28Cr-6Mo, for pure titanium (CP-Titan Grade 2) and the titanium alloy Ti6Al4V. Many materials of commercial interest can currently not

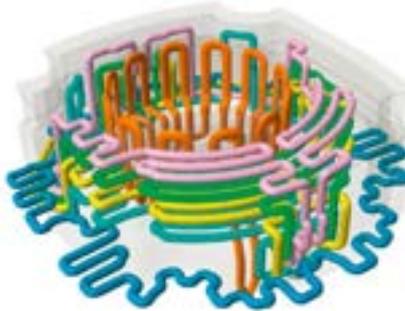


Fig. 3.2: cooling channel layout: a complex, tenfold parallel-interconnected tempering system ensures maximum cooling efficiency [2]

be processed by selective laser melting. One reason is that the respective alloy systems have been developed and optimised for traditional manufacturing processes like casting or shaping. In the process of selective laser melting, only one very small local weld pool is being generated, which sets at an extremely high cooling rate of 105 to 107 K/s. The high cooling rate combined with a high thermal gradient and the thermally induced change in volume expedite the incorporation of internal strains that may lead to cracks and deformation. The incorrect application of the powder layer or locally varying layer thickness, the formation of splatters, poor wetting behaviour, or the bead separating into individual blobs can cause pores and other blemishes. Also undesirable are anisotropic properties that might e.g. result from epitaxial grain growth as well as changes in the powder's chemical composition caused by mainly volatile constituents evaporating. Another problem so far frequently faced is poor surface quality. With many materials, it is not possible to produce a thick, crack- and pore-free component from metal powder exposed to pointed laser beams - this requires adapted alloy design. As the AM technology is being advanced, the development of new alloys specifically optimised with respect to a high solidification rate is increasingly in the focus of the related research activities. Alloy design adapted to the respective process allows for producing materials of an extremely fine-grained microstructure and improved mechanical properties at a process window that is wide enough to compensate for unavoidable fluctuations in the powder's quality. Headed by Univ.-Prof. Dipl.-Ing. Dr. Gerhard Leichtfried, also the project team Additive Manufacturing at the University of Innsbruck is dedicated to developing the next generation of metal alloys. They focus on adapting materials and processes, likewise. To achieve this goal, it is necessary to see the manufacturing process and optimise as a whole. This comprises the theoretical basics as well as understanding the physical processes and interactions, and optimising all steps in production on the way from powdered raw materials to complex solid bodies. For this purpose, research facilities for the production of powders and selective laser melting are available (refer to fig. 4). The project team's research activities thus cover a broad range from fundamental to applied research.

Additive manufacturing is evolving rapidly. Its annual growth rate amounts to about 20 % [4], and there is much evidence that indicates it might assert itself as manufacturing technology supplemental to currently established procedures with growing penetration of the market.



Fig. 4: Plasma spheroidization plant (left) and research facilities for selective laser melting (right) at the University of Innsbruck, Institute for Mechatronics / Material Sciences

However, if additive manufacturing really has the potential to revolutionize the manufacturing of nearly all products, as former US president Barack Obama suggested in his State of the Union address of February 2013, is not clear. Nevertheless, additive manufacturing does have the potential to improve the functionality of many products in various applications. This biggest challenge in this context is to make the design engineers rethink their standards (cit. Dr. Hans J. Lange, Founder and CEO of EOS).

Written by Prof. Leichtfried and Mr Mair M.Sc.

- [1] [https://www.trumpf.com/de\\_AT/anwendungen/additive-fertigung/](https://www.trumpf.com/de_AT/anwendungen/additive-fertigung/) (downloaded on 25.01.2019)
- [2] Gogoll, T.: Werkzeug-Optimierung: Konturnahe Temperierung von Spritzgießwerkzeugen, excerpt from technical journal FORM+Werkzeug 2 (2015)
- [3] Gogoll, T.: These Scientists Are Writing The 3D-Printing Cookbook For GE. <https://www.ge.com/reports/major-laser-this-scientist-is-helping-write-the-ge-3d-printing-cookbook/> (downloaded on 25.01.2019)
- [4] Wohlers, T. T., Campbell, I., Diegel, O., Kowen, J.: Wohlers Report 2017: 3D Printing and Additive Manufacturing State of the Industry / Annual Worldwide Progress Report, Wohlers Associates, Fort Collins (2017)

Photos: Universität Innsbruck

## RESEARCH AT THE UNIVERSITIES @ CAMPUS TECHNIK LIENZ

The Lienz site focuses on applied science. Scientists of the University of Innsbruck and the regional university UMIT cooperate with enterprises to find new solutions for tomorrow's society.

Established in 2018, Campus Technik Lienz provides synergies between university and school infrastructures that are unique in the German-spoken world. The two universities (LFUI and UMIT) complete the established school's (private HTL Lienz and Vocational School of Tyrol) development activities by university-based research work. Campus Technik Lienz thus becomes a centre for research and development (R&D) in the field of mechatronics. Next to studying mechatronics at university, the scientists in Lienz focus on developing tomorrow's future within the scope of their doctoral programme.

### Vibration Engineering

At Campus Technik Lienz, doctoral candidate Wolfgang Hörtnagel does not only analyse the development of noises but even minute vibrations inside cooling devices. His activities are supported by the flagship enterprise in East Tyrol, Liebherr Household Appliances Lienz, and the Austrian Research Promotion Agency. In order to show physical processes as mathematical models, external and internal vibration sources and the respective transmission channels all the way to stored chilled goods are experimentally identified and analysed. For this purpose, Hörtnagel makes use of transfer path analyses and highly-efficient algorithms, some of which are beyond the state of the art. "Such analyses allow for estimating improvement potential like active or non-linear modules objectively, which in the long run saves time and money in product development", Hörtnagel explains. First findings already make use of the Lienz-based synergies between universities and HTL to build a prototype.

**Wolfgang Hörtnagel** is a research assistant at Campus Technik Lienz and supervises courses on model design and control technology. His doctoral thesis addressing the modelling and dampening of vibrations is mentored by associate professor Univ.-Prof. Fadi Dohnal (Division for Mechatronics Lienz, UMIT, Lienz) and Univ.-Prof. Alexander Sutor (Institute for Measuring- & Sensor Technology, UMIT, Hall). [wolfgang.hoertnagel@umit.at](mailto:wolfgang.hoertnagel@umit.at)



### Cooling Circuit Control

Mariusz Zamojski has been working as independent entrepreneur in Lienz for several years. Since 2017, he has also been doctoral student and develops for and with company IDM Energiesysteme new approaches for controlling the cooling circuits for the next generation of heat pumps. "Apart from profound theoretical

knowledge about thermodynamics, my research activities also require a good feeling for the respective implementation because one needs to know what is to be done practically to make a good product even better. In the first place, our work aims at developing better control units that are still practical and testing them in real life", Zamojski explains. The high level of expertise as well as the close proximity to cooperation partner IDM provides efficient opportunities for achieving the research goal as quick as possible but on a solid base. The state of Tyrol supports his project within the scope of a FEI-project.

**Mariusz Zamojski** studied mechanical engineering in Poland. Since 2017, he has been a doctorate student at the Campus Technik Lienz and is engaged with developing new approaches to control the cooling circuits of heat pumps. He is mentored e.g. by associate professor Univ.-Prof. Fadi Dohnal (Division for Mechatronics Lienz, UMIT, Lienz) and Univ.-Prof. Frank Woittennek (Institute for Automation and Control Technology, UMIT, Hall). [mariusz.zamojski@umit.at](mailto:mariusz.zamojski@umit.at)



### Additive Manufacturing of Aluminium

GKN Powder Metallurgie is a global market leader. They combine advanced metal powderers with innovative production technologies to produce smart, reliable and accurate metal products for automotive and industrial applications. At the moment, only around 20 different metals meeting the specific requirements related to additive manufacturing are available. The project team at the University of Innsbruck focuses on most various materials of the next generation and possible ways to process them. Thanks to the cooperation with GKN Powder Metallurgie, another material has since recently been in the centre of their interest - aluminium. Combined with high mechanical strengths, its low weight makes it a material that is particularly interesting for moving objects like spacecraft, aircrafts, or all kinds of land based vehicles. However, only very costly aluminium alloys and such of moderate strength are available on the market. By developing an innovative aluminium alloy, Philipp Mair intends to leave his own traces in the sector of 3D-printing.

**Philipp Mair** has been doctoral student at Campus Technik Lienz since 2018. His efforts to develop an innovative aluminium alloy that can be processed by selective laser melting (3D-printing, additive manufacturing) are mentored by Univ.-Prof. Gerhard Leichtfried (Project Team Material Sciences, LFUI). [ph.mair@uibk.ac.at](mailto:ph.mair@uibk.ac.at)



## Sensor Node for the Internet of Things

The Internet of Things (IoT) is based on the idea of capturing data using numerous small and particularly budget-friendly sensors in order to create a digital real-time model of reality. Pooling the measured data and processing them automatically creates a smart environment. Various processes can thus be simplified, optimized and made more convenient. The electronic sensors play an important role in this structure, and their reliability is of course essential in particular when it comes to critical applications. Physicist Moritz Fischer advances sensor nodes of particularly low energy consumption and sophisticated power management. These properties are essential for all devices, irrespective of their supply or the communication interface selected. Moreover, Fischer intends to analyse the physical interface of non-battery sensors with respect to stable energy and reliable data transmission and improve them.



**Moritz Fischer** studied physics in Innsbruck and prepares his doctoral thesis at the Campus Technik Lienz. His thesis regarding a reference design for reliable hardware in the field of wireless sensor nodes is mentored by Univ.-Prof. Thomas Ußmüller (Division Microelectronics and Implantable Systems, LFUI). [moritz.fischer@uibk.ac.at](mailto:moritz.fischer@uibk.ac.at)

## Non-Linear Systems

Not only the doctoral students on site are engaged with research activities - so is the specifically established Division for Mechatronics Lienz, UMIT, which - due to its director associate professor Univ.-Prof. Fadi Dohnal - has specialised on non-linear dynamic systems. "Next to vibration dynamics (Wolfgang Hörtnagel) and the modelling of non-linear systems (Mariusz Zamojski), the division addresses the interpretation, modelling, prediction and evaluation of linear and non-linear systems. In most cases, these are systems whose functionality is affected by vibration-related issues. However, specific cases also involve multi-physical systems. Currently, these topics are treated scientifically but with a focus on applicability by an international cooperation team: Smart control in rotor dynamics (University of Athens, Greece, ETH Zurich, Switzerland, TU Munich, Germany, University of Campinas, Brazil), meta-materials for vibration dampening (Sorbonne Université, France, CINVESTAV, Mexico) and energy harvesting (University of Southampton, Great Britain, TU Ilmenau, Germany). Consulting and customer-specific training in the respective fields are available on request.

**Associate professor Univ.-Prof. Dr. techn. Dipl.-Ing. Dipl.-Ing. Fadi Dohnal** is scientific director of the LFUI and UMIT in Lienz and head of the Division for Mechatronics Lienz. He studied engineering physics and mechanical engineering, graduated in dynamics at TU Vienna and habilitated in 2012 dynamics at TU Darmstadt. After spending several years researching in Japan, Great Britain, Germany, the Netherlands, the US and working for the industry in Switzerland, he now promotes the scientific development at Campus Technik Lienz.



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## Interface to the Universities @ Campus Technik Lienz

Being the scientific director of the LFUI and UMIT in Lienz, Dohnal also acts as first contact for local and other companies to introduce these corporate partners to competent scientists in Lienz, Hall and Innsbruck. "This function is very satisfying and requires some sure instinct because usually it is not clear right away what exactly the problem is and if the solution is more likely to be found through research or through development", explains Dohnal, who has also spent several years working as research scientist for the industry and thus knows what efforts (time and money) are required for which benefit (general solution and utilisation of the same).

[www.uibk.ac.at](http://www.uibk.ac.at)  
[www.umit.at](http://www.umit.at)  
[www.campus-technik-lienz.at](http://www.campus-technik-lienz.at)



Written by Wolfgang Hörtnagel, Mariusz Zamojski, Philipp Mair, Moritz Fischer, Fadi Dohnal and the marketing departments of LFUI and UMIT.

Photos: Campus Technik Lienz

## RESEARCH GRANT

For their expenditures in the field of research and experimental development, companies can make use of a research grant. The application for a grant for proprietary F&E or contract research is to be submitted to the competent finance authority. The grant amounts to 14 % of all expenditures dedicated to research within one financial year. It is credited by the finance authority and can also be used by non-profit-making enterprises. In order to claim research grants for proprietary research and experimental develop,

an annual export report issued by the FFG is required. This annual export report is not subject to any fee and can be requested via FinanzOnline.

More information is available at:  
<https://www.ffg.at/forschungspraemie>

Photo: Pexels.de



## IMPULSPAKET TIROL

“Impulspaket Tirol” serves to support projects and initiatives that are realized through specific incentives for sustainable growth and ensuring employment in Tyrol. Eligible are investment projects that are of special significance for the region’s economic life, aiming at improving the operational structure, employment market situation and/or enhancing the capacities for innovation in the area.

### Grant recipients:

Small and medium-sized enterprises as defined by the EU competition law, mainly from the manufacturing sector, with existing business license under the trading regulations. Also entitled to apply are:

- + Telecommunication and broadcasting companies authorized by RTR GmbH
- + Members of the Chamber of Architects and Consulting Engineers for Tyrol and Vorarlberg who are based in Tyrol

Within the scope of the national regional aid area, large-sized enterprises as defined by the EU competition law may be considered.

### Support focuses:

Projects and/or investments in the sector of

- + Establishment or expansion of businesses
- + Product or process innovations (incl. innovative services)

### Type and scope of the grant:

The grant is a one-time grant of maximum 5 % of the expenditures eligible that does not have to be repaid. Within the scope of the national regional aid area, an extra of up to 2.5 % may be granted. Minimum amount: EUR 500,000. - / max. EUR 30 million

More information is available at:

<https://www.tirol.gv.at/arbeit-wirtschaft/wirtschaftsfoerderung/wirtschaftsfoerderungsprogramm/impulspaket/ff>

## ENVIRONMENT AS CORPORATE MISSION

### REVITAL INTEGRATIVE NATURRAUMPLANUNG GMBH

Revital creates the perfect atmosphere to pool expertise on scientific and technical issues and to thus facilitate the best solutions for man and nature. Its CEO DI Klaus Michor has already devoted himself to nature when he was a child. By now, he heads - in cooperation with Mag. Maria Mietschnig MSc - one of Austria's ten biggest environmental consultancies.

In times when planning processes and official procedures become increasingly complex it is important to find solutions that are feasible and can still be accepted by all involved parties. Revital achieves this through its integrated approach. Its planning teams comprise zoologists, botanist, architects, geo-informatics scientists, cultural technology specialists, civil engineers as well as agriculturalists and forest managers. Usually, they try to find solutions to accommodate for the conflicting priorities of men, nature, and the environment. An ideal tool for this e.g. is "Integrative REVITAL Café" - a special kind of workshop where experts in various fields come together, share their know-how on specific questions, and mutually try to find integrative solutions that provide synergetic effects for all involved parties.



#### Nature meets digitalisation

In 1989, founded Klaus Michor the company "Revital Integrative Naturraumgestaltung GmbH". His interest is not only in nature but also in technical possibilities. Already in an early stage, he started to combine digital aids with field work to optimise the related tasks. For instance, computer-aided systems facilitate calculating the suitability of specific habitats for certain plant or animal species. This so-called habitat modelling e.g. allows for simulating the effects that climate changes will probably have on a specific environment's fauna and flora and to thus predict whether or not certain animals live in a specific area because it provides the right conditions. This saves the time that would otherwise be necessary to physically look for this animal.

#### Natural environment projects

Every year, Revital Integrative Naturraumplanung maintains about 100 projects in Austria, Germany, and Switzerland as well as alongside River Drava in South Tyrol and Slovenia, all the way down to Croatia. One of the enterpri-

se's focuses is planning activities for large-scale infrastructure projects. Apart from that, the company is engaged with expert opinions and research projects. River restorations - frequently combined with flood protection projects - are another focus of Revital. Especially when it comes to projects concerning boundary rivers, integrative solution-finding approaches are supportive since differing laws and cultures are to be accounted for. This type of planning jobs are currently being pursued e.g. along River Salzach (in the borderland between Bavaria and Austria) or around the Alpenrhein (in the borderland between Switzerland and Vorarlberg).

Comparatively new sectors for Revital are tourism and regional development. For instance, the company is preparing a spatial development plan for the Kleinwalsertal: first of all, the environment's performance as ecological system (e.g. in terms of providing food, water, raw materials, or energy) has to be evaluated. Based on these findings, a masterplan how to guide visitors through this valley of high touristic interest is being worked out. The goal is to develop the valley in a way that accommodates for the interests of all involved parties.



#### Being headquartered on the countryside is no disadvantage

Revital is probably Austria's only environmental consultancy headquartered on the countryside. Klaus Michor does not consider this a drawback, though: "East Tyrol is a most central region", he says with a smile on his face. "Whether we want to go to Klagenfurt, Bolzano, Innsbruck, Ljubljana, or Salzburg - it takes about the same time". Apart from the staff in East Tyrol, Revital also employs teleworkers in Linz and Dornbirn. Currently, another site in Vorarlberg is being established. Most of the 40 employees come from East Tyrol or Upper Carinthia, some of them also from other federal states or Bavaria. Revital is one of just a few East Tyrolean companies that employ particularly many graduates. Moreover, half of the staff is female. All of that makes Revital a model company for rural areas.

Photos: Revital Integrative Naturraumplanung GmbH

## EAST TYROLEAN SOUNDS

For several centuries, East Tyrol preserved an instrument of special design and sound: the diatonic East Tyrolean dulcimer, a string instrument mainly used to back dance music groups.

The size of the trapezoidal sounding box enables this instrument to come out on top and become prevalent even in dance music groups with wind instruments. The sounds are generated by striking the chords with wooden mallets. For a good sound it takes a special kind of tone wood, namely "bear-claw fir" or "hazel spruce".

### The dulcimer in history:

Verified by pictures and text, it turns out that dulcimers originally come from the Near East. Its precursor is the psaltery. The first European pictures and texts referring to the dulcimer date back to the 15th century. Coming in particular from the Duchy of Burgundy, the instrument was spread all across the continent. In the Alpine region, this instrument boomed around 1920. In 1934, Tobias Reiser and instrument maker Heinrich Bandzauner developed – based on the East Tyrolean dulcimer – the chromatic Salzburg dulcimer, which is played by numerous musicians these days. Alpine folk music without it is unimaginable.

### In the course of time

It is also an interesting fact that there has always been people in the Isel Valley – from Prägraten to Lienz – who learnt how to build dulcimers and passed that knowledge on to others. During the Second World War, most of the dulcimers were taken to the German Reich. Many of the musicians did not return home after serving in the army. Therefore, this long-standing tradition was at risk of coming to an end. However, a few old men were left to play the dulcimer. And fortunately this young generation was also interested in the instrument, so playing the dulcimer lives on in East Tyrol – not least thanks to the efforts of dedicated musician Florian Pedarnig.

### Iseltaler Hackbrettlertreffen

He initiated the "Iseltaler Hackbrettlertreffen" (the „Dulcimer Meeting of Isel Valley" 1975 – an occasion for dulcimer players from all over Tyrol and the adjoining regions to come together, make music and share their knowledge. This year's event will take place on **Sunday, September 21 at 14:00 PM** in the Kultursaal (culture hall) of Ainet.

The text is composed of parts written by Martin Weger, an excerpt of the diploma thesis of Mrs. Mag. Monika Bodner and research made by INNOS GmbH.



Photos: Martin Weger

## WORKSHOP FOR SENIOR CITIZENS: GET READY FOR INTERNET, SMARTPHONE AND THE LIKE

Online banking, video telephony, and social media rule our everyday life. However, for some people smartphones, internet, and the like are completely unknown territory. The association "Industrie 4.0" has now organised a workshop to address this issue and introduce senior citizens to the digital world.

Through so-called Phablets, senior citizens are being familiarised with the basic functions of mobile phones or tablet PCs. Students of the HAK Lienz show them how to set up contacts, take photos and send them to their friends and family via WhatsApp. Basic concepts like internet, smartphone, or app are being explained and tried out in practice. The goal is to still the senior citizens' fears from digital devices and show them the advantages and digital opportunities related to them. After the course, the participants may take the devices home with them for a week and practice what they have been taught. If someone is interested in expanding their knowledge, the Catholic Training Institute offers an extension course.

The training has already been held in Abfaltersbach and Assling. The senior citizens of both communities have keenly learned how to deal with said digital devices.

"For us elderly people, this is a nice chance to get introduced to the matter. The students informed us well. The supervisors are kind and helpful. I'd like to buy a device for myself."  
- Mr. Schneider, aged 89 years

"This course is perfect for learning how to use the basic functions of a mobile phone, like making phone calls or taking photos. I enjoy riddles, and the information I need for this I can now find on the internet. Unfortunately, I'm not perfect at everything yet but no one is born a master."  
- Mr. Aichner, aged 77 years



Photos: INNOS GmbH | Magdalena Nitsch

## OSTTIROLER KULTURSPUR (EAST TYROLEAN CULTURE TRACES)

Museums - being sneered at as static and square institution formerly - are reinventing themselves in times of globalisation. By now, museums have positioned themselves as cultural platforms that keep interpreting their rich collections, presenting them in surprising ways, and create room for open communication and one-on-one discussions while they are doing this.



Museums are aware of their history and tradition und combine knowledge and creativity in new forms to address visitors from all over the world with their diversity and richness. This transformation process is just changing the contemporary museum scene and provides numerous opportunities - in particular for East Tyrol and its museums. Cultural network

The Osttiroler Kulturspur is an association of East Tyrolean culture institutions that host exhibitions has been established in order to attend and support its members in this process.

The cultural network's guiding principle comprises these objectives:

- + Maintaining East Tyrol's varied cultural richness which in particular museums preserve for future generations.
- + Supporting and promoting all areas of museum and cultural activities - like collecting and preserving, researching and examining, exhibiting and conveying, managing and communicating.
- + Improving the scientific, artistic and cultural-touristic value and quality of cultural institutions.

The network's activities also take place on a practical level since its members' actual work in museums is being supported. At the same time, the East Tyrolean cultural network also serves guests and visitors if they want to gain an overview on East Tyrol's cultural institutions, need tips or recommendations for specific target groups, request information on current events or special exhibitions, or look for services offered by East Tyrolean museums and visitor centres.

### International Museum Day

This year's International Museum Day on May 18 2019 is characterized by the idea of future and past. Under the motto "Museums – The Future of Living Traditions", more than 35,000 museums in over in 140 countries on all 5 continents organise campaigns and events all around the globe. The museums of East Tyrol participate for the first time!

The varied and rich East Tyrolean museum and exhibition scene presents itself:

**Saturday, 18 May 2019, from 09:00 AM until 14:00 PM at Johannesplatz in Lienz.**

The East Tyrolean cultural network is supported by the federation, the State of Tyrol and the European Union within the scope of a LEADER project.



Photos: Kulturspur Osttirol

Innos GmbH is a private-public partnership between the Land Tirol (State Tyrol) and 16 leading corporations of Eastern Tyrol with the scope to economically develop the region of East Tyrol. Innos is a result of a social thought process "Vordenken für Osttirol", started 2013, becoming a benchmark for regional development projects. Innos advises corporation in innovation - internationalization and digitalization.



Innos publishes regulary InnosTimes as a newsletter, informing on economic activities in East Tyrol. If you wish to receive regulary the newspaper, please subscribe: [www.innos.at/newsletterarchiv](http://www.innos.at/newsletterarchiv) an.

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