**Start ups – METAV 2022**

**Ensun GmbH, Siegen, Germany**

ensun's vision is clearly defined: We want to become the largest TEC scouting portal in Europe. Company-related problems and challenges are to be communicated to the appropriate experts via our platform. Guided by the basic idea of increasing efficiency, we have set ourselves the goal of supplementing missing in-house capacities and resources with our community. Based on the skillset and expertise of our community, innovations are to be driven and created in Europe.

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**Exentis Group AG, Stetten, Switzerland**

Exentis Group AG is an independent premium provider of intelligent series production solutions in the unique 3D screen printing process. Exentis is the only company worldwide to combine the "Economies of One" with the "Economies of Scale". Individualised component geometries in large series with a wide choice of materials. The focus is on customer-specific product solutions that Exentis realises. These include, in particular, customised solutions in the automotive, life science, biotechnology and renewable energy sectors. On the basis of production and material licences, customers can produce their parts themselves or commission series production.

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**FoxBase GmbH, Düsseldorf, Germany**

Founded in 2016, FoxBase GmbH from Düsseldorf has developed a software platform that enables companies to digitalise their knowledge-based sales processes with the help of artificial intelligence and make them scalable. With the digital solution, customers and sales staff in B2B find the best product, system or service in the shortest time, easily and digitally.

The software identifies individual customer needs via an interactive user interface and calculates a concrete product recommendation. With the help of the innovative solution, people searching for the right product, system or service should be advised just as well online as on site and save time in the process. B2B customers today are looking for simple, fast and digital advice and expect the same service and convenience they are used to from their private consumer behaviour. It is therefore even more important that customer needs are also taken into account on the online channels and that digital advice is offered. To solve these problems, FoxBase has developed the Digital Product Selector. The advantages for companies:

• More qualified leads

• Shorter sales cycles

• Fast implementation without IT

• Flexibly configurable

The innovative solution has so far not only convinced numerous SMEs as well as Dax corporations, but also most recently the state government of North Rhine-Westphalia. Since March, FoxBase has been part of the accelerator programme “Scale-up.NRW”, which supports high-growth start-ups in addressing the requirements of rapid and international scaling. Today, FoxBase has a young and dynamic team of over 40 employees, and the trend is still growing.

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Jellypipe AG, Fislisbach, Schweiz

Getting into additive manufacturing is not easy, especially for small and medium-sized companies. Professional 3D printing machines require expensive investments. In addition, personnel capacities must be available. This is where Jellypipe offers a solution. The company's mission: make additive manufacturing accessible to the entire manufacturing industry and furthermore promote innovation.

Jellypipe connects companies and brings together customers, SMEs, and print partners on an inhouse developed e-commerce platform. The platform offers a choice of 14 technologies and more than 100 materials for ordering 3D-printed components. Companies from the SME sector, e.g., contract manufacturers, get their own e-shop with a direct connection to the Jellypipe factory. This enables these companies to make 3D printing accessible to their customers. In addition to the platform, which calculates price and delivery time within 30 seconds, professional advice is also part of the service.

The company was founded in Switzerland in 2017. The platform and the Jellypipe service is now offered throughout the DACH region, France, the Benelux countries, and England. Currently, around 100 solution partners offer 3D printing to their customers via the platform. Jellypipe selects the print partners carefully and audits them regularly to ensure high quality. In addition, Jellypipe takes over processes such as logistics and invoicing and simplifies the cooperation for all companies involved.

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**Kreatize Gmbh, Berlin, Germany**

The Kreatize Manufacturing Cloud gives customers access to global manufacturing capabilities. It automatically handles the entire ordering process via a seamless digital platform. Customers source their customized milled/turned parts, sheet metal parts and 3D printed parts through Kreatize. The company takes care of selecting the appropriate supplier and handles all logistics. The cloud solution can help companies save at least 10 percent of their component procurement costs - by reducing purchasing effort, more reliable supply chains through a global network and real-time global market data (material, suppliers, ...).

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**Oculavis, Germany**

**Modular Augmented Reality platform**

Oculavis Share is the modular service platform bridging the gaps where humans, machines and processes interact to provide innovative services. The core value of the software solution is the efficient implementation of remote processes that connect subject matter experts and service technicians with assets worldwide. Cutting-edge Augmented Reality (AR) technology, visual assistance and digital workflows with step-by-step instructions enable maintenance and service operations to be carried out in a much more resource-efficient manner today.

The software can be used wherever knowledge needs to be exchanged systematically. Typical applications are remote acceptance tests and commissioning up to maintenance and troubleshooting of machinery and equipment. Additionally use cases such as smart service solutions for mechanical and plant engineering, the solution is also utilized for the cross-locational knowledge exchange in manufacturing companies to use Augmented Reality in smart factory concepts.

The software enables companies to establish digital business models, faster response times, remote support services or Augmented Reality based smart self-services for their customers. The service is more resilient in the context of pandemics, environmental disasters or political sanctions and reaches customers worldwide in seconds to collaborate closely on technical issues without having to travel.

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**oee.ai - The Manufacturing Intelligence platform**

For manufacturing companies, it is essential to use production equipment and machines as effectively as possible. The concept of Overall Equipment Effectiveness (OEE) has been developed in order to make losses in effectiveness measurable. Studies show that the average OEE in German companies today is between 40 and 60 percent. This means that there is a lot of potential for increasing competitiveness when it comes to equipment effectiveness.

The startup oee.ai from Aachen, Germany, records the equipment effectiveness without interfering with the PLC and combines all relevant production data in a cloud in real time. In this way, oee.ai users receive a 360-degree picture of their productivity, as well as their productivity potential and can actively intervene while the problem is still present in order to ensure that production targets are met. The analyses and visualizations based on the data are available in widget-based reports that can be configured individually for each customer. This flexibility makes it possible to generate exactly the reports that are needed in the company. The use of statistics and artificial intelligence allows to identify anomalies in the data and use the information gained in projects to increase equipment productivity. For example, cyclical or clustered losses can be detected at the push of a button.

Another focus of oee.ai is the involvement of employees in the improvement process. Gamified visualizations and messages are available to increase employee motivation and commitment. For example, positive trends (e.g. reduction of set-up times, increase of MTBF) are recognized by an algorithm and displayed on screens in production.

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**QuantoLux Innovation GmbH, Blaustein, Germany**

With decades of OES experience, Mischa Ounanian and Andreas Kunz decided to rethink (spark) OES entirely in 2016 and founded QuantoLux GmbH. Since then, the QuantoLux develops, produces, and distributes high-end laser spectrometers for various applications worldwide.

The advantages of laser OES compared to spark OES and X-ray fluorescence analysis are numerous. Laser excitation enables exceptional long-term stability, low or no argon consumption, hardly any cross-contamination, and maintenance-free operation for years are just some of the advantages.

In detail, the QuantoLux analyzers enable:

* The simple transformation of scrap metal into valuable material in the scrap yard. The AlloyChecker is the lightest fastest solution to test alloys. It efficiently sorts scrap, increases quality value and resale prices.
* Easy, safe and location-independent identification of metals in the warehouse  
  The QLX1 is the first precise and truly mobile OES solution for accurate Positive Material Identification (PMI). In the past, at least 2 liters of argon pressure bottles with corresponding weight were required for spark OES, while with Laser OES a lightweight 200 ml bottle is sufficient. Combined with the low device weight, fast measuring time, small measuring points and remarkable precision, mix-ups and thus compensation claims are reliably excluded.
* Energy and resource saving production in chemical process engineering  
  Whenever input materials, process samples or products are inhomogeneous, analysis becomes tedious and complicated. For quality monitoring, samples then have to be physically homogenized and then usually analyzed with X-ray fluorescence analyzers. The QLX9 enables the analysis of non-conductive materials with OES. Fast, contact-free and without sample preparation. With analysis time reduced by a factor of 10-20, in-situ process control is then established, which in turn increases efficiency and reduces the consumption of resources.

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**Sonic Technology AG, Stuttgart, Germany**

When it comes to the digitization of German industry, there is no shortage of visions. But these quickly turn out to be pipe dreams. The stalemate in the prestige cloud project Gaia-X sends its regards.

The situation is similar with the buzzword "smart factory". Many smart factory projects exist only on paper or in the heads of expensive consultants. The problem is that such projects are usually designed on the "green field". But this ideal situation does not exist in established German industry.

The Stuttgart-based software company Sonic Technology is taking a different approach: starting with the "brown field", i.e. the status quo in production, the processes are gradually transferred to software that is equally easy to use for managers and workers. This is called "Digital Lean" and promises measurable improvements after just eight weeks. Sonic Technology can report how companies such as Daikin, CATL or zetec are thus taking a more practical path towards the smart factory.

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**tr8fin GmbH, Speyer**

As an innovative fintech company, tr8fin supports export transactions of mechanical engineering companies with customer-oriented financing solutions.

tr8fin is the digital platform that enables all German companies to export their goods and services to world markets - regardless of the size of the company or the value of the order. Time-consuming processes are a thing of the past. As service partner, we provide digital and competent support along the entire process - from initiating business to applying for export insurance and procuring liquidity.

By using the latest technologies, we bring exporters to the digital table with all decision-makers (importer, federal export credit guarantees, banks) and thus revolutionize the handling of export business. Tr8fin stands for intuitive export processing, personal and competent advice, a fast approval process, transparent conditions and limitless possibilities.

Together with a consulting company for digital banking services, tr8fin was founded in 2018 by experienced financing experts from the mechanical engineering industry. The founders are Joachim Dörr (TRUMPF Financial Services), Ralf Steger, (Heidelberg Print Finance) and the Managing Director Reimund Felderhoff.

The business idea of tr8fin is to close the financing gap for smaller export orders (small tickets) through standardization and digitization as well as individual consulting for medium-sized export companies.

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