Where does ODU stand on in-house technology?

ODU

We do everything ourselves, because only then is it best.
From left: Managing Directors Denis Giba and Dr.-Ing. Kurt Woelfl
Editorial

Dear business partners and friends of ODU,
Cleaners featuring on the cover of the STECKVERBINDER?

What’s that all about?
We’ve dedicated this issue to showing you the extent of ODU’s in-house activities – so you can see just how much we do ourselves.
So yes, even our cleaners are permanent ODU employees. We train up our own young talent, with some 150 apprentices worldwide today. And we’ve even taken most of the photos in this edition ourselves! This issue will reveal to you how we make our connectors and complete assemblies ourselves and keep our clear focus on one topic: in-house expertise.
We do all of this for you, our valued customers, together with our strong partners and suppliers.

Enjoy your read!
Dr.-Ing. Kurt Woelfl and Denis Giba
IN-HOUSE TECHNOLOGY

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New ODU-MAC® Blue-Line

12 GHz coax module

ODU-MAC® PUSH-LOCK Blue-Line

An innovation for the medical market

New 2-in-1 Solution for the

ODU AMC® High-Density series

Designed especially for use in rough ambient conditions

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Sprint Academy

CHINA – A DIGITALIZED HIGH-TECH COUNTRY

ODU products for the Chinese market

An interview with Georg Heissen, ODU General Manager in China, about developments, opportunities and the future

ODU NEWS

News from Sibiu (ODU Romania),

Seoul (ODU Korea) and ODU Mühldorf

Worldwide trade fair dates
For this very purpose, we possess a high-power electroplating facility for the surface refinement of contacts, housings, accessories and third-party products. Including a special geometry and carefully selected basic materials, our contacts are able to provide several hundred thousand mating cycles.

Customers report having reached up to a million mating cycles – while constant physical and electrical contact properties have been maintained. This feature says just as much about ODU as the high contact density and wide variety of connectors that the company offers.

The objective is the greatest amount of function per surface area.

We meet this requirement thanks to our highly developed simulation procedure and sophisticated test and measurement technology – both of which we regularly make use of even during the early stages of development.

This leads to ever shorter development times.

Ensuring premium quality thanks to in-house technology – bundling production and development in close alignment, all under one roof.

This has been ODU’s recipe for success for over 80 years now when it comes to fulfilling the electrical connector requirements of projects to meet the needs of the current day.

The interface where a connector is needed is frequently exposed to harsh environmental conditions: salty sea air, strong temperature fluctuations, chemicals, pressure of up to 1,000 bar on the one hand and high vacuum conditions on the other, as well as shock and vibration. A consistent quality strategy that includes all the stages of the development, production and management processes ensures top quality connectors technology.

It takes a consistent quality strategy covering all steps of the development, production and corporate processes to guarantee maximum quality in connector technology.
Even during the internal coordination and development phase, we use testing to create a prototype and try it out after certification. The T²C Technology Test Center provides important data and generates a solid knowledge base regarding the complete development process.

DEVELOPMENT AND PRODUCT MANAGEMENT

Our specialists evaluate technical feasibility.

T²C TECHNOLOGY TEST CENTER

Even during the internal coordination and development phase, we use testing to create a prototype and try it out after certification. The T²C Technology Test Center provides important data and generates a solid knowledge base regarding the complete development process.

PRODUCTION

After successful development, the product goes into production. If new tools are required, they can be designed in-house by ODU and made in our tool-making shops around the world at the respective production sites.

ODU achieves an 80% vertical range of manufacture.

Strict accompanying quality checks at the T²C ensure consistent quality and fast, flexible production.
FACTS ABOUT 3D PRINTING

3D printing is also called additive manufacturing, generative manufacturing or rapid technology. It refers to all production methods in which the material is applied layer by layer ("printed"). The layer-wise application of one or several fluid or powdery materials is computer controlled and follows pre-defined dimensions and shapes. The object can be built up as physical or chemical curing or melting processes take place during the printing.

Typical materials used in 3D printing include thermoplastic materials, synthetic resins, ceramics and metals. More recently, carbon and graphite fibers have also been used as reinforcement materials.

The first 3D construction program was introduced to the market by Chuck Hull [USA] in 1985. Today, additive manufacturing is used to create models, prototypes and individual pieces and makes it possible for ideas to be tried out very quickly.

NEWS ABOUT 3D PRINTING

Microsoft Paint 3D app:
If you connect Paint 3D with your smartphone and scan an object, the software creates a virtual model of the object that can then be changed and adjusted freely – to be made ready for 3D printing. If you use Microsoft’s new mixed reality HoloLens smartglasses, you can even look at the model in 3D.

Saudi Arabia is planning on creating 1.5 million 3D printed private homes by 2030.

The serial production of component parts in 3D is currently being used by the aerospace industry, in medical and dental technology as well as in the packaging industry.

NEW PRODUCTION TECHNOLOGY DEVELOPING AT A FAST PACE

3D PRINTING OF PROTOTYPES

Polymer system in 3D printing, a human heart

Progressive additive DMLS, SLM, SLS 3D printing technology with metal powder for dental technology
We’re front-runners when it comes to applied 3D printing and are in the middle of an exciting phase. We’re researching the options for using 3D printing effectively and in a targeted fashion as part of several pilot projects, e.g., in collaboration with Kumovis.

ODU Managing Director Dr. Kurt Woelfl has been a fan of 3D printing from day one. ODU is using technical plastics and metal alloys in several of its 3D printing pilot projects. The extent to which ODU will continue to engage in this technology, and in what way, is dependent on the outcomes of these projects.

The customer can carry out first trials at an earlier point in the process and by making the necessary adjustments, we can then cautiously approach the final product.

This enables ODU to make samples practically overnight.

The benefits are clear: Customers can very quickly know what their products will look like.
Test adapter with ODU SPRINGTAC® flat sockets and the ODU quick-change head for maximum flexibility in the production process.
PROTOTYPES MADE OF SERIAL PRODUCTION MATERIALS IN 3D PRINTING | IN-HOUSE TECHNOLOGY

THE STECKVERBINDER
Which technologies does ODU use?

DEVELOPMENT ENGINEER GERHARD NICKLBAUER:
We started out years ago using the classical FDM\(^{(1)}\) procedure and printed such items as housing samples for automotive connectors and larger insulating bodies with assembly aids for our production line.

In order to also manufacture small, intricate geometries in an additive process, we acquired an additional DLP\(^{(2)}\) printer.

Today we mostly use a multi-jet printer, which enables us to print top-quality versions of both very small and complex component parts as well as large housings.

Our current pilot project is aimed at testing the use of various thermoplastics, in other words near-series materials, for our products.

\(^{(1)}\) Fused deposition modeling
\(^{(2)}\) Digital light processing

THE STECKVERBINDER
What’s so innovative about 3D printing?

GERHARD NICKLBAUER:
When you compare plastic injection molding with cast metal, for instance, the production of the part is carried out without a tool and thus doesn’t incur high investment costs.

What’s more — and this is a major benefit — you save tool construction and production time. Since no tools are necessary, each printed part can be customized with minimum effort, to try out different solutions and options, for instance.

Producing samples is always exciting. Yet previous alternatives to 3D printing are limited when it comes to the product geometry. Additive procedures, in contrast, benefit greatly from an almost limitless freedom of geometry.

In this way, 3D printing enables an integration of functional features (snap-fits, undercuts, hollow cavities, cooling channels, etc.) and replacing multipartite assemblies through one-piece printed bodies. ■
When it comes to high-speed data transfer, the goal is to combine these requirements with the demands of high-frequency transmission in one connector – and to ensure optimal signal integrity across the complete product life cycle.

It’s crucial for the most suitable materials to be used and for the testing of scattering parameters to be carried out as early as possible in the process.

In addition, and depending on the application, high-speed connectors need to meet additional requirements regarding pole density and maximum mating cycles, be lightweight and vibration resistant, and have a robust design.

- The choice of plastics for the insulation body depends not only on the permitted suitable temperature range, but also on its ability to, for instance, provide a frequency-stable dielectric constant.
- The contacts must be able to both transmit electricity in a reliable fashion and possess wave impedance as well.
- The arrangement of the contacts must ensure that both tension (compliance with clearance and creepage distances) can be withstood, and that crosstalk between the signal pairs can be reduced.
- The housing must be watertight (depending on the application) and also provide a solid electromagnetic shield.
Multifunctional, robust, tight, secure, vibration-resistant – the requirements for high-speed data transfer are clearly defined.

As a global leader in high-frequency and data transmission solutions, ODU offers know-how to support you in an ideal fashion and get you ready for a technological future.

ODU is particularly experienced in data transmission under extreme ambient conditions. This is especially relevant for railway technology, military and security technology as well as medical technology and the oil extraction industry.

The ODU specialists assist their customers from consulting, project management and procurement all the way to integration and needs-oriented support.

FEM MODELS DELIVERING A RELIABLE FORECAST

The goal of the simulation procedures is to make a verified statement based on a reliable FEM model forecast, for instance regarding mechanical stability, high-frequency transmission and dynamic behavior. Moreover, the reliability of the connector system and its long-term behavior can be simulated.

A client- or application-specific combination of gigabit Ethernet capability, corrosion resistance, vibration safety and an IP69 protection class with at least 50,000 mating cycles is possible.
A growing need for identifying connected devices and increased security requirements – EEPROMs can rise to these challenges and more.

CONNECTION SOLUTIONS WITH INTEGRATED MICROCHIPS, OR EEPROMS:
Whether it’s new medical devices, equipment for security technology, product tracking, eMobility vehicle systems or innovative communication technologies for G5 mobile communication: More and more applications need to meet increasingly high demands when it comes to security, performance, and documentation as well as maintenance and user-friendliness.

Both intelligent and integrated solutions are needed.

ODU connectors systems with integrated microchips such as EEPROMs (Electrically Erasable Programmable Read-Only Memory) are perfectly suited to meet these demands.

With the help of EEPROMs, devices and connectors can be easily paired, electronic devices can be recognized, configurations can be compared, the connection status can be retrieved in real time and the number of mating cycles can be counted.

Particularly in the areas of medical technology, military and security as well as in the market segment of measurement and testing, ODU is witnessing a growing market potential.

In his highly relevant new whitepaper, Rudolf Weidenspointner has provided an overview of the fascinating possibilities this offers.

As product manager for cable assembly at ODU, Weidenspointer is responsible for the development of new products, standard EEPROMs as well as market-oriented and future-forward solutions.

CONNECTORS WITH INTEGRATED EEPROMS
The fine line between minimal assembly space and maximum power transmission

Particularly when it comes to connectors with small assembly spaces, it’s indispensable to comply with the necessary clearance and creepage distances to reach a constant dielectric strength. ODU takes it one step further by taking into account important additional parameters as well:

The so-called partial discharge.

According to the IEC 60664 series, the partial discharge issue must be complied with from a permanently applied voltage of > 1 kV. For this reason, ODU considers all connectors from > 1 kV to be high voltage connectors – even if, in fact, they do not fall in the generally defined high voltage category (60 kV to 110 kV).

The challenge of high voltage applications lies in the implementation of high-power transmission in small assembly spaces.

THE REQUIREMENTS AND IMPLEMENTATION OF HIGH VOLTAGE APPLICATIONS

- Avoiding “hot plugging”, for example by using retarded contacts including an additional switch unit in the device
- Increasing the clearance and creepage distances for outstanding touch protection, for instance through additional domes and insulating collars

**Industrial Electronics**
Uninterruptable power supply and more

**Medical Technology**
High-end endoscopes and more

**Test and Measurement**
Capacity measuring devices and more
ODU SYSTEMS SOLUTIONS | HIGH VOLTAGE

ODU MEDI-SNAP®
- Systems solutions for medical and industrial applications with a transmission of up to 1,000 V AC / 16 A
- Complete cable assembly with 5-wire medical and industrial cable available

ODU-MAC® MODULE
- From the White-/Silver-Line for an operational voltage of 6,300 V in contamination class 2 and up to 9,500 V upon request
- From the Blue-Line for an operational voltage of 2,500 V / 58 A in contamination class 2
THE PEOPLE BEHIND THE TECHNOLOGY

When Bavarian life culture meets Brazilian joie de vivre, an interview with Joachim Grimm.

BUSINESS ENGINEER JOACHIM GRIMM

Global Head of Product Management

His hands bring all the threads together when it comes to planning, steering and controlling catalog products throughout their product lifecycle. Grimm manages his team from the identification and determination of ideas to product development, market maturity and eventually market exit.
Mr. Grimm, we’ve gotten to know you a bit over recent months and have discovered that you’re a man who’s full of energy!

Your wife is from Brazil, and your hobbies, roots and the home turf of your family are in Bavaria. Would we be right to say that you’ve brought together the best values of both worlds and that you draw your energy from your private sphere?

Yes, that’s exactly right – and may I add the Alps and the Inntal valley where I live with my family. I find peace and quiet in the mountains and can sort my thoughts out there.

Your career has been very purposeful. What are your impressions of ODU so far?

When it comes to blazing new trails in connector technology, the company from Mühldorf always pushes the limits of what’s technically feasible. This is made possible by bringing together a variety of factors: the employees’ many years of know-how as well as collaborations with research institutes and universities, a high level of vertical integration and innovative production engineering. That’s where product management comes in and plays a central role. It’s the perfect place for me.

You’re the new head of product management. What’s your objective and how do you plan on meeting it?

As far as I’m concerned, my task is to further develop our product management, establish it worldwide and direct its focus towards the markets and customers.

The main focus is on four pillars:
- Defining medium- and long-term product strategies and developing roadmaps from these strategies
- Laying down guidelines, processes and procedures
- Developing and managing staff
- Planning and escalations

Implementation is achieved through global coordination, communication with the interface departments and customers, as well as the continuous identification of measures for reaching our goals.
THE STECKVERBINDER

What makes a good product manager?

JOACHIM GRIMM

If product manager can successfully bring products (his babies) to the market that he’s identified based on his market and competitive analyses – successfully in the sense of adhering to cost, time and quality objectives and achieving the planned returns on investment and contribution margins.

The product manager serves as an entrepreneur within the company and is a central interface, first of all between sales/customers and technology (engineeering office and development), but also with operations, purchase, controlling, logistics and marketing. The task therefore requires both technical and business management expertise.

When doing this, we must always focus on the customer and the market.

THE STECKVERBINDER

What does this look like in real life?

JOACHIM GRIMM

Currently we’re working on getting all ODU product managers from around the world fully networked.

We’re intensifying the exchange, bundling our know-how – and this is creating synergies which will put us in a position to serve the market and its future demands in the best possible way.

For instance, we’ve developed the ODU-MAC® PUSH-LOCK, a compact, easy-to-handle connector in a dense housing with push-pull locking. Seven units can be integrated to create customized, hybrid connector profiles meeting protection class IP67. It’s ergonomical, user friendly, modular and space saving.
In the context of our strategy discussions, we identified and defined as our growth markets the areas of medical technology, military and security technology, and test and measurement. Specifically, our focus on target markets means that we actively bring both new and existing products to the chosen markets. It also means that we analyze future catalog products with regard to market requirements and specialize for those markets.

THE STECKVERBINDER

What significance does your focus on target markets have, and how are you implementing it?

JOACHIM GRIMM

Our focus on target markets is a crucial component of our Strategy 2025. Essentially, it’s all about concentrating on markets and driving market development.
FULL RESPONSIBILITY | ODU INTENSIFIES ITS EFFORTS

CABLE ASSEMBLY

Rudolf Weidenspointer is responsible for the development of products and technologies in this area, including silicone overmolding, system solutions and fiber optic solutions. He also looks after standardization in the area of connector assembly, so we can offer product-specific standard assemblies to our customers. This is how we continue to drive forward cable assembly. Through globalization and by examining existing processes, market- and future-oriented solutions are being improved and made available quickly.
From the cable to the overmolding – the complete systems solution from one source.

ODU’s growing field of cable assembly is continuously being expanded. The company offers its customers complete solutions in all the various market segments. This includes everything from the connector itself to the cable overmolding and the cable. Customers benefit greatly, as know-how and experience around complete connector solutions make ODU both effective and interactive.

Customer-specific overmolding for small series

The overmolding of customized designs is a novelty in the area of cable assembly, and it’s now available for samples and small series, too. This process allows us to offer our customers maximum flexibility when it comes to the overmolding of different shapes while greatly saving time and costs.

These customer-specific small series are available in very short delivery times and at very economical prices for up to 2,500 pieces.

Thanks to the cutting-edge production facilities at our various sites, we can ensure worldwide availability while fully meeting industrial quality standards.

COMPLETE AND CUSTOMIZED FOR A PERFECT CONNECTOR SOLUTION
• Many years of experience in cable assembly
• Cutting-edge production facilities at our sites around the globe
• Close collaboration with leading cable manufacturers
• Standard and customer-specific overmolding through hot-melt and high-pressure procedures
• Customer-specific labeling and cable printing
• Sample, small series and high-volume production
APPLICATION AREAS

Robotics
- For use under a wide range of loads
- Tension- and torsion-resistant
- Cables and connectors can be combined according to customer needs

Dental
- Hybrid connections available for parallel supply with water, air and power
- Biocompatible cables with memory and non-stick effect
- Sterilizable

Endoscopy
- For high-resolution images in the ultra-high vacuum range
- Biocompatible materials
- Skin-friendly and slidable
- Steam sterilizable
- Smallest possible outer diameter depending on the defined pole number

Monitoring
- For use in EKGs, for measuring oxygen, blood pressure and temperature
- Fail-safe, even during device transport, and vibration resistant
- Resistant against signal interference from mechanical impact factors such as torsion, vibration and bending
SILICONE-OVERMOLDED SYSTEM SOLUTIONS

TOP DESIGN, IDEAL SURFACE PROPERTIES
Medical technology applications tend to be exposed to harsh mechanical and chemical impacts. Our experts have advanced the development of a high-quality technology for silicone cables and overmolding.

ODU thereby offers a flexible system solution consisting of a connector, a cable with suitable cable assembly and optional labeling. As part of this process, we use both fluid and solid silicone.

The newly developed silicone cables are subject to medical technology inspection according to DIN EN ISO 10993-5. Our new product meets the sophisticated requirements of applications from the field of medical technology in an exceptional manner. Up to 500 autoclave cycles are guaranteed along with wipe disinfection, chemical resistance and biocompatibility. Thanks to its unique surface, the product has a pleasant non-stick feel and complies with top hygiene standards.

The shape of the cable overmolding protects the device from any kind of bending that could potentially damage the connector or cable. An ideal connection is guaranteed thanks to the new silicone overmolded system solution.

YOUR BENEFITS
- New surface with unique feel – no stick-slip effect
- Up to 500 autoclave cycles
- Bend protection and new shape: smooth and seamless overmold

THE NEW DEVELOPMENT IS AVAILABLE FOR THE ODU AMC®, ODU MINI-SNAP® AND ODU MEDI-SNAP® PRODUCT SERIES AND CUSTOMER-SPECIFIC SOLUTIONS.
INVESTMENT IN HIGH-VOLUME PRODUCTION

MORE FLEXIBILITY IN CONTACT DESIGN

PROPERTIES

- Turned, slotted sockets
- Robust contact system, even for harsh ambient conditions
- > 10,000 mating cycles
- Low and stable mating and demating forces
- Smallest dimensions with 0.3 mm contact diameter possible
- Angled connecting up to an inclination from 5° possible
The robust ODU TURNTAC® contact system consisting of turned slotted contacts, is versatile in its application.

It combines the best contact properties with an ideal cost structure. It’s also stood the test of time in a wide range of application areas, particularly in the automotive area for eMobility, power charging and charging adapters.

By comparison, the time and investment required for developing this type of contact all the way to serial production is considerably lower.

What’s more, alterations to the contact design can be done in a very flexible manner.

Over the past two years, ODU has increased its production capacities in this area by more than 40%.

The existing machinery portfolio was extended almost exclusively by automatic lathes. In its turning shop, ODU can turn the smallest of areas – from a diameter of 0.3 mm all the way to highly complex versions of up to 80 mm in diameter – and offers optimal contact design flexibility for smaller and medium-sized volumes.

For high-volume articles of up to 13 mm in diameter, such as contact sockets, ODU uses fully CNC-controlled rotary transfer machines with top production speeds and maximum cost efficiency.

ODU – all under one roof.
The market requirements for high-frequency (HF) transmission media, especially from the area of test and measurement, are constantly on the rise.

The module diversity of HS signals (coax) has therefore been extended to include a fourth variety.

This enables ODU to offer the ideal solution for any application option. The coax module can be combined with the existing ODU-MAC® Blue-Line module as usual, to create a customized connector solution.

With this module, the ODU-MAC® PUSH-LOCK slots right in with the compact HF connectors with push-pull locking.

A higher frequency range, as offered by this module, is necessary in the field of automotive component testing, for instance.

When it comes to docking applications, the frequency range can be expanded to 16 GHz by means of a special coax cable. This requires an inter-frame gap of < 0.2 mm.

- 10,000 mating cycles
- 50 Ω
- Frequency range: 0–12 GHz
- 5 units
- SMA interface
After the successful market entry and positive feedback of the ODU-MAC® PUSH-LOCK, it will also be made available in a white housing variety in 2020.

Specific requirements exist for the medical market. Apart from the white color, these include product properties such as an ergonomic and attractive design which can blend in with other medical technology products.

Another important aspect is ease of cleaning. Thanks to the mounting solution on the back of the product, no screws are present on the front. The ODU-MAC® PUSH-LOCK is particularly easy to clean thanks to this smooth surface.

This compact connector solution provides reliable push-pull locking. Maximum mating security is achieved through the mechanical coating, which renders erroneous mating impossible – even in stressful situations. Thanks to the wide range of available modules, application opportunities are extremely varied within the field of medical technology.
**NEW 2-IN-1 SOLUTION**

**ODU AMC® HIGH-DENSITY BREAK-AWAY**

**ODU AMC® HIGH-DENSITY SCREW-LOCK**

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**PRODUCT FEATURES**

- Smallest housing diameters from under 10 to 18.5 mm
- High pole density of up to 40 contacts
- Watertight – protection class IP68

- Long service life of up to 5,000 mating cycles
- Maximum operating security thanks to mechanical and optical color coding
When it comes to rough ambient conditions, reliable connections are a must.

The ODU AMC® high-density connector – with the impressive number of contacts it packs into the smallest of spaces – is a very suitable component part for such purposes.

These features open up new options and solutions for developers, while also challenging the manufacturer – as top reliability in the connectors as well as electrical and mechanical robustness, high data transmission performance as well as high shock and vibration resistance must be maintained despite the product’s compact size.

To meet these growing demands, ODU is continuously developing its series of robust mini connectors. The demand for application solutions requiring a higher level of vibration resistance has prompted ODU to expand its ODU AMC® high-density series to include an additional SCREW-LOCK solution.

Thanks to the newly developed screw lock, which smoothly fits into the existing connector design, the AMC® product series has become even more powerful and variable.

In the future, two different locking types – the screw lock and the break-away – will be combined in one component part.

Both the connector and the device part are downward compatible. This means that, whenever necessary, the flexible 2-in-1 solution can offer both the option of quick mating and unmating of the connection and additional security through the screw lock for high vibration loads.

In military and security technology, ODU offers more than just first-class quality connections such as the ODU AMC® high-density series – it goes above and beyond to deliver the appropriate cable confection including overmolding, for standard and client-specific applications, flex-layer assemblies as well as comprehensive system solutions.

Small, light, assembled!

YOUR BENEFITS

- **2-in-1 solution** – a device part that’s compatible with the robust screw lock
- **High-speed data transmission** – signal, power and data transmission all within one connector
- **Complete system** – cable assembly including overmolding and flex assembly at the device part
Thanks to its unique sensor technology, the owner-managed company from Switzerland is shaping future technologies for the automotive and industrial automation fields as well and multiple other up-and-coming industries.

Cutting-edge technology is the foundation for Kistler’s modular solutions.
© Kistler Group

The Kistler Group is a leading provider of dynamic measurement technology for recording pressure, force, torque and acceleration.

As an experienced development partner, Kistler enables its industry and science customers to optimize products and processes and create long-term competitive advantages.

With its broad application know-how and unwavering dedication to top quality, Kistler is making an important contribution to measurement technology with the goal of driving forward current megatrends.

This includes such topics as electrified drive engineering, autonomous driving, emission reduction and industry 4.0.

The use of bridges can be efficiently monitored by Kistler – and limited as needed – with weigh-in-motion systems.

Image: The second highest bridge in North America. © Kistler Group
As traffic continues to increase, so do the demands on vehicle safety. Crash tests significantly contribute to making automobile traffic safer and to drastically reducing the number of passengers who sustain injuries. Weather pre-crash, crash or post-crash systems: State-of-the-art measurement technology is needed to reach this goal. Precise sensors, reliable data capture systems, customer-oriented services and modern application software make the sophisticated measurements possible.

Our collaboration began when Kistler needed a fast, flexible and, most of all, dependable custom solution for their crash data capture system called KiDAU (Kistler Data Acquisition Unit).

Leo Greil works in the production of cables and electronic data capture systems, and Daniel Goubeau is an application and support engineer at Kistler.

CRASHTESTS AS LIFE SAVERS

LEO GREIL

We'd been looking for a solution-oriented supplier even for KiDAU’s predecessor. With ODU, we've found a partner who's super easy to collaborate with and who fully responds to our needs and specifications.

ODU has always had an open mind when it comes to special solutions and making improvements on existing component parts. They’ve helped us design special connectors and sockets. This isn't always easy, but it’s doable.

Leo Greil, production/electromechanics technician at Kistler

THE STECKVERBINDE

Mr. Greil, how did you find ODU and what were you looking for?
THE STECKVERBINDER

What are your requirements for connectors and connector systems in your crash test system?

DANIEL GOUBEAU, APPLICATION AND SUPPORT ENGINEER AT KISTLER

The connectors and sockets that we need have to meet high-quality standards, while at the same time being easy to install, precise and extremely reliable.

When it comes to connectors, one of the most important specifications is a resilient strain relief.

The mechanical requirements for vehicle crash tests are very high. Sometimes an acceleration force of up to 100 g can be exerted on the devices. Even under such high acceleration, the connectors must not come loose from the device.

In our production, we attach great importance to the perfect fit between connectors and cables, the resilience of the strain relief and the precise connection between the pins and the connector – there has to be as little play as possible between the pins.

Since we use most sizes from the ODU MINI-SNAP® series, we also use different mechanical coding options to prevent erroneous mating.

THE STECKVERBINDER

Where exactly is KiDAU used?

DANIEL GOUBEAU

KiDAUs are primarily used in vehicle crash tests. They’re typically affixed to the trunk, roof or hood of the car, depending on the test.

This means that they’re exposed to great acceleration forces that will eventually destroy the car – while they themselves must remain intact.

Up to 32 analogous measuring channels and up to 16 digital channels are connected per KiDAU. If you include the dummies and vehicle measurement points, this quickly adds up to over 100 channels.

For tests like these, it’s indispensable for some internal checks to be carried out before the start to ensure that all devices and sensors are in perfect working order and that all the necessary data will be recorded in the end.
The worst-case scenario for any crash test is when the trigger isn’t released and therefore no measurement data is recorded during the test.

During a crash test, there’s up to 100 g of impact on the devices.

For this reason, every connection must be reliable, fully functional and a perfect fit.

This includes checking that the connection between the sensors and the KiDAU is correct. So if a connector turns out to be deficient or incorrectly mated, we’ll find out about it even before the test begins.

**ARMIN WOHLHAUPTER, ODU SALES ENGINEER**

The ODU MINI-SNAP® in size 1 is the ideal connector for the sophisticated KiDAU Advanced test system.

The circular connector in its robust metal housing offers top quality while also being dependable and user friendly.

The push-pull principle ensures that the connection isn’t unintentionally disconnected, i.e., once it’s mated, the ODU MINI-SNAP® in the device locks automatically.

The connector cannot be disconnected by pulling on the cable, yet can be easily removed from the device part once the outer sleeve is pulled back.
ODU NORTH AMERICA | CUSTOMER STORY

ODU MINI-SNAP® provides positive training results for elite athletes

SPRINT ACADEMY

Sprint Academy is an Athletic Training Organization that focuses on Elite Athlete Performance.

Their team has been working to develop an application called the Bounce Box timer which allows coaches and athletes to evaluate the athletic enables of a box jump.

The data collected allows the coaches to evaluate performance down to the millisecond, giving them the opportunity to judge and recognize performance, form and fatigue.

This eliminates the potential for injury and allows coaches to improve their training.

ODU started to engage with Sprint Academy about 5 months ago, when they came in looking for design help and an easy-to-use connector that could withstand the elements. After a few design meetings with Amanda Grant, the local Regional Sales Manager, they decided on the connector and the assembly design:

ODU MINI-SNAP® K Series size 1.

This is just another example on how broad the applicability of our connector solutions can be.

Amanda Grant, West Regional Sales Manager
Box jump – Bodyweight training

A classic interval cardio training program with multiple fitness factors. Coordination skills, fitness, jumping power and ankle stabilization all in one exercise.

Got a minute and a box?

The little self-experiment for athlete training.

HOW TO BOX JUMP:

1. Usually, the box should be at about knee height, but this can vary depending on your performance level.

2. An ideal takeoff is done with both legs at same time from a distance of about 2 feet from the box. Place your feet in alignment with your shoulders. Slightly bend your legs and swing your arms backward. In one explosive moment, swing your arms forward and jump upward onto the box.

3. Land with both feet at same time. Your knees must be bent upon landing to avoid injury. After landing, return to a standing position. Make sure to look straight ahead throughout the entire exercise. Using both legs at the same, quickly jump back down and avoid a hard landing on the floor.

4. Cardio training session as a general guideline: Repeat the box jumps for one minute without stopping, then pause briefly and repeat according to your fitness level.
INTERVIEW

with Georg Heissen, ODU General Manager in China

ODU PRODUCTS FOR THE CHINESE MARKET
Mr. Heissen, how has your new start at ODU been? What does the strategic development or ODU China look like?

GEORG HEISSEN
The connector business was the new start for me. I’ve lived and worked in China for over 10 years now, and I’ve acquired a lot of experience – especially in the field of machine and plant engineering. Over the past months, I’ve visited our major customers to establish personal contact with them and familiarize myself with their various applications and requirements.

For our production facility in Shanghai, our focus lies on the ODU MEDI-SNAP® product line including cable assembly.

We work closely with our customers in order to meet their needs as best we can.

The broad ODU product range covers the requirements of medical, military and industrial applications. We have a high level of internal technology expertise and our own production facility. This makes us independent while guaranteeing high-quality standards and great dependability for our customers.

We’re also focusing on becoming more efficient when it comes to meeting specific local needs.

The medical and Neighborhood Electric Vehicle (NEV) segments in particular have an important role to play in our future growth in China.

THE STECKVERBINDER
What’s the position of ODU connector systems in China? Globally speaking, what role does ODU China play in ODU’s worldwide production and sales network?

GEORG HEISSEN
China has changed a great deal over recent years and grown into a leading global economy.

Innovations developed in China, as well as decisions made there, have a global impact and affect our future society.

China is already showing it can set the pace in various areas such as digitalization and the automotive sector.

We’re ideally situated to benefit from current developments with our local production facility and our strong team.
GEORG HEISSEN

If an application requires a connector design or function that isn’t covered by our standard products, our engineers will tailor a concept to meet the specifications of the Chinese customers. Our team of engineers in our local product development center in Shanghai fully understands the specific needs of our customers. These ODU engineers speak the language of the customer – both when it comes to technical questions and quite literally, too. ODU focuses on manufacturing high-quality connectors that stand out from the rest, and that’s why we don’t compete for every contract. We offer stable and reliable high-tech connectors and impress our customers with outstanding quality and dependability.

**Our production facility in Shanghai is the global production center for the ODU MEDI-SNAP® series.**

Which is why North America plays a big role for us.

THE STECKVERBINDER

The Chinese industry has entered a key phase of digital evolution. Are you prepared for advertising via wireless mobile devices?

GEORG HEISSEN

Every time I travel back to Europe, I miss the benefits of the advanced level of digitalization we have in China. WeChat or Alipay are services that I use every single day. I think it will take a long time for Europe to catch up with this standard. In China, ODU possesses its own WeChat platform, which we use to advertise our latest developments to our followers and send out invitations to trade fairs and other events, or to exchange information about ODU. We’d love to have you follow our WeChat account!

THE STECKVERBINDER

The eMobility industry has sophisticated requirements when it comes to high voltage, high loading currents and automatic docking. Which contact products and special solutions can ODU offer to meet these needs in terms of stability, robustness, durability and top reliability?

GEORG HEISSEN

The key to transmitting high loading currents is a dependable, top-quality electrical contact. This is a key product at ODU. We’re in a position to design the complete connector according to the specific needs of our customers. ODU contacts and connectors are an ideal choice for charging handles, inverter connectors and battery change applications.

THE STECKVERBINDER

In today’s robotics industry, customers expect connector systems that are adjustable, flexible, high performing and easy to use.

GEORG HEISSEN

In the robotics segment, we’re particularly interested in test applications.
China has made massive investments in eMobility in recent years. In addition to electric vehicles, urban bus fleets are now being systematically electrified as well.

Shanghai chengdu road, China

Find out about ODU China at www.odu.com.cn and get in touch at sales@odu.com.cn

V.l.: Alex Shen, PDC Manager, Georg Heissen, ODU General Manager in China and Yang Han, Sales Manager East China

China has made massive investments in eMobility in recent years. In addition to electric vehicles, urban bus fleets are now being systematically electrified as well.

Shanghai chengdu road, China
SIBIU, ODU ROMANIA
Let’s celebrate! Sibiu has increased its cable and connector assembly capacities. 
Late May saw numerous guests joining us at the opening of the new production site, ODU Romania Manufacturing, in Sibiu.

After the official opening ceremony, we celebrated a party with staff and families.

ODU Romania Manufacturing has continuously grown into a center of competence for cable and connector assembly ever since it was opened up in 2006. It has also grown into a successful and powerful member of the ODU Group.

Three central product categories are manufactured in Romania.

ODU push-pull circular connectors such as the ODU MINI-SNAP®, PCB connectors such as the ODU FLAKAFIX / ODU CARD and cable assemblies.

ODU customers can obtain one-stop system solutions such as high-quality connectors with a complete and comprehensive cable assembly.

Currently, around 600 skilled employees are employed in Sibiu, working in compliance with ISO 9001 and ISO TS 16949.
Impressions from the opening ceremony and new factory in Romania.

Claudiu Borcea is the new sales manager of ODU in Romania.

His office is based in Sibiu and he reports to Thomas Irl, Sales Director Europe.

claudiu.borcea@odu-romania.ro
ODU on tour in Seoul,
In the Songdo neighborhood, International Business district.
From left: Kai Schneider, Representative Director ODU Korea, Hojun Lee and Stefan Putz, ODU engineer and Manager Application Team Modular.
SEOUL, ODU KOREA

ODU Korea has been active for eight months now and provides consultancy and advice to new and existing customers. It’s now intensively engaged in project work.

Customer visits are carried out on a daily basis, often together with ODU experts from Mühldorf. This is how the Korea team is consistently expanding its market presence.

The Korean website has gone live and catalogs and other informational materials are available for download.

We welcome Hojun Lee as the new sales manager for ODU in Korea.

Supporting Kai Schneider, Managing Director of ODU Korea, as sales manager, it’s Hojun Lee’s task to look after our customers in Korea and strengthen the ODU connector portfolio in the Korean market.

We’re focused on the areas of medical technology and military. The eMobility sector and the railway market could also prove interesting, says Hojun Lee.

Monorail train in Korea
**ODU MÜHLDORF**

**Trainee trip** to Hamburg

How does one plan an outing for 75 people? Once again, our trainees have demonstrated this with success:

In May, they traveled to Hamburg by bus for a four-day trip.

After a short layover at Papenburg’s Meyer-Werft dockyard, where many cruise ships are built, they visited Hamburg and took a tour of the harbor. They also saw the Miniatur Wunderland, the Hamburg Dungeon, and of course enjoyed a musical, too.

Along with discovering new cities and cultures, our trainee trips focus on teambuilding, since all different types of apprenticeships are represented in the group.

**INSTA CHANNEL!**

**Training**, ODU Mühldorf

Getting closer to the trainees of tomorrow ODU goes on Instagram

With the new account, we hope to grant insights into the everyday life of our trainees and show that apprenticeships at ODU also include experiences outside the office and workshop.
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<thead>
<tr>
<th>Trade Fair</th>
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<td>productronica 2019</td>
<td>Munich, Germany</td>
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<td>Chiba, Japan</td>
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<td>Medical Technology Ireland 2020</td>
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A PERFECT ALLIANCE.

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