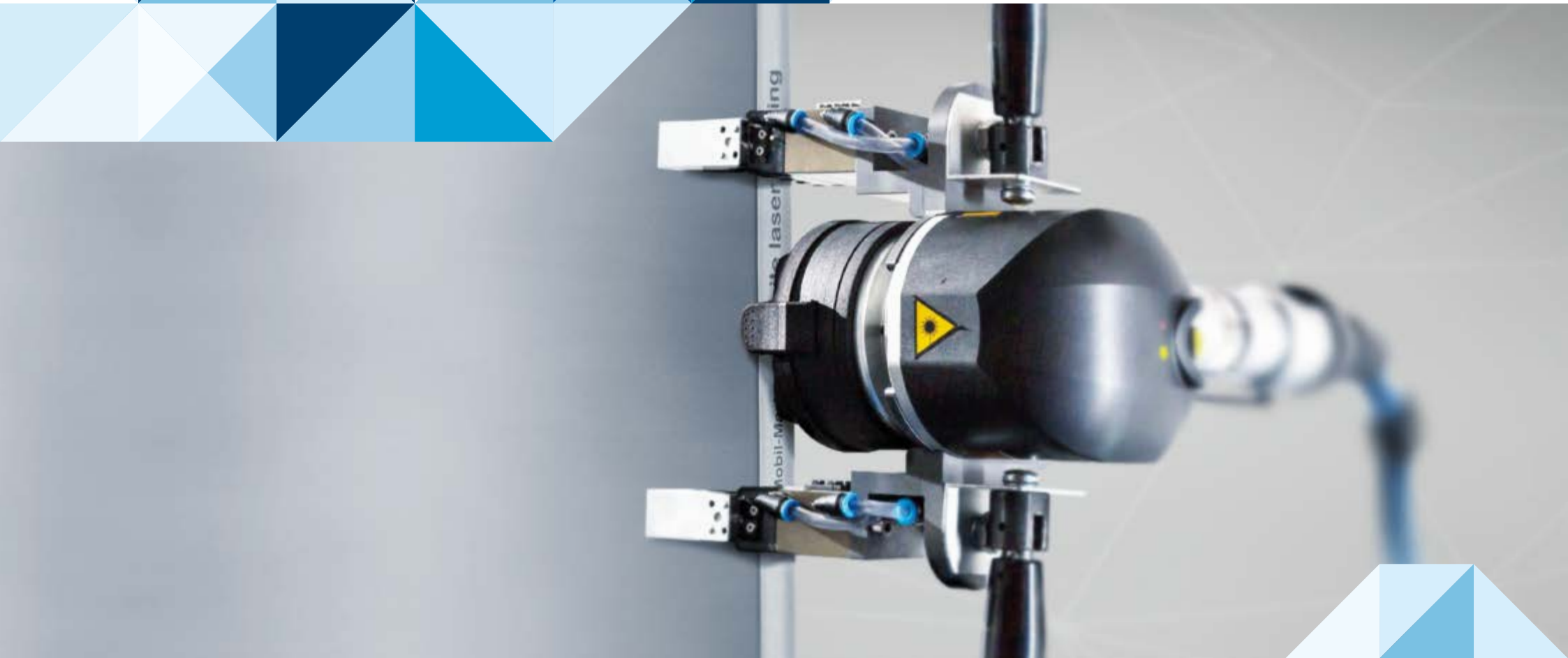


Mobil-Mark

mobile laser marking





The versatile Laser System for mobile applications.

Bring the laser to the product, not the product to the laser. With this goal in mind, the Mobil-Mark GmbH developed the versatile laser marking system, mobil-mark®. This portable laser offers a solution for nearly any marking application in various industries. Its main advantage is reliably marking plant parts, machinery, equipment or products made of various materials that do not fit into conventional stationary laser systems. The markings are permanent and of the highest quality.

The combination of our engineering know-how with the flexibility of the laser system allows for precise adjustments to customers' specifications. The application of mobil-mark® includes hand operated labeling of small parts, the integration in an assembly line station or - in combination with a robot in a highly automated production line.

The innovative system that accomplishes all of your labeling tasks.

mobil-mark® knows no limits. Our developing engineers deal with your individual requirements down to the smallest detail and carefully tailor the labeling system to your specific needs. Whether you want to label a complex plastic part or a precise deep engraving of hard metal, we have a solution.

Mark for example:

- glass
- steel or plastic piping
- plastic parts
- gas bottles
- brake discs
- gear parts
- golf clubs
- filter units
- sensors
- grinding wheels
- sanitary ceramics
- stainless steel barrels
- band saws
- airplane parts
- electric motor housings
- machinery parts
- containers / tanks
- exhaust systems
- tools
- surgical tools
- and much more

flexible

Mobile base unit with a flexible laser head.

The mobil-mark® consists of a compact and easily portable base unit and a flexible, hand-held laser head. The base unit contains all process-relevant components, which keep the laser head small and compact. As a result, the laser head can get to hard-to-reach places. Size and shape of the parts do not matter - simply add a logo, a number, a 2D-code or another distinct machine-readable identification in no time. Through the different laser head adapters and our in-house laser source development, mobil-mark® can be tailored to your exact needs.

Highest occupational safety thanks to laser protection class 1. The elaborate safety technology of mobil-mark®, in combination with the different attachments, ensures the efficient shielding from the laser beam. The integrated safety system will prevent the laser from turning on until all safety provisions are in place. The mobil-mark® safety system allows use without safety goggles. Even when used by a robot, no protective enclosures are required.

Windows-based software SCAPS
mobil-mark® interfaces with SCAPS, the most commonly used marking software in the global market. SCAPS is a Windows®-based software with an easy and flexible user interface to mobil-mark® system. With SCAPS the user can save up to 15 preset labeling jobs to your mobil-mark® system, making it truly mobile and independent from a computer, monitor and keyboard.



Our all-in-one laser system satisfies customers in a wide range of industries such as:

- aerospace
- automotive
- electrical
- computer
- glass & ceramic
- semiconductor
- plastics
- robotics
- construction
- metal
- medical
- solar
- watch and jewelry
- packaging
- tooling and molding
- sporting goods

From the manual laser marking to the usage with an industrial robot – mobil-mark® is as flexible as your production processes need it to be.

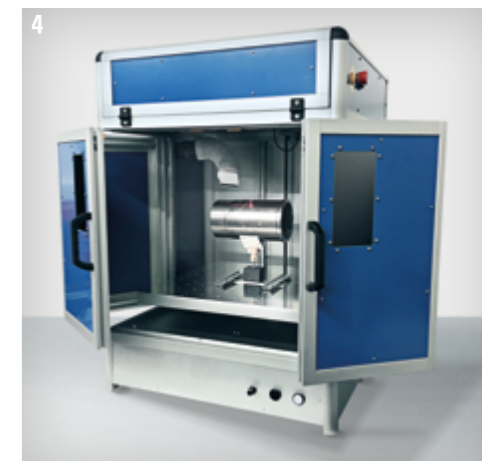
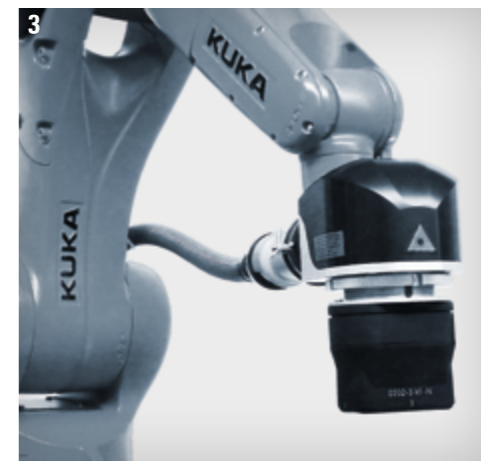
A laser with a multitude of application options.

1 Manual laser marking. The portability of the system and the flexibility of the laser head allows to simply take the laser to the finished product. You merely attach the laser head to the desired position, push the start button and the label is instantly done. You can choose between different additional components and different optics, to cover a marking area of up to 100 x 100 mm.

2 Application in an assembly line. For the use in assembly lines the mobil-mark® laser offers considerable advantages. Without a costly laser safety enclosure, the laser head with its safety mechanisms can be easily moved by an XYZ-Stage. A small movement is enough to attach the head closely and safely to the product and to activate the marking with an external trigger. Afterwards, a new position can be chosen for the next marking.

3 Application with industrial robots. The flexibility of mobil-mark® enables you to use it with industrial robots without a safety enclosure. The robot takes the laser head and moves to the target position in a three-dimensional space. The communication with the laser control system allows, for instance, for large-scale labeling, which can be assembled in a grid-like fashion.

4 Laser safety enclosure for small parts. Our product portfolio includes two standard laser safety enclosures (big and small). The parts that are being labeled are placed on a lift table, positioned according to a red light laser reticle and labeled in a self-contained enclosure which meets laser protection class 1.



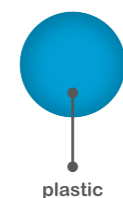
universal

For every type of material.

mobil-mark® marks a variety of materials.

The laser uses a wave length of 1064 nm and can be used in continuous wave (cw) mode, as well as in pulsed mode. Pulse peaks of up to 30 kW allow the use with high thermal applications, for example, steel heat coloration and engraving, and excellent discoloration of plastics. With the direct marking of parts of metal, plastics, rubber, latex,

ceramics, wood, glass, as well as plastic films and foils, you achieve a durable, abrasion-proof and forgery-proof result. Depending on the material there are different procedures to be used. Regardless of which of the available processes you choose to use: the laser labeling results are quite remarkable.



plastic



metal



wood



glass



ceramics

Application procedure

During this procedure, special laser colors are being fused onto the part with the energy of the laser beam. The application height amounts to only fractions of a millimeter. In this manner lettering in different colors are created, while the surface is left almost unchanged. The application procedure is especially well suited for glass and ceramics.

Ablation procedure

A widely used technique is the lasering off or „shooting off“ of color layers. This technique removes the paint from specific spots on a lacquered part, thereby generating markings, such as symbols and logos.

Engraving

The engraving leaves an indentation on the part. The immense pulse energy of several kilowatts, which only lasts billionths of a second, shoots the material and an ablation, like the one resulting from sandblasting, is generated. Throughout, the material itself stays virtually cold, so that even very thin sheet metals can be labeled.

Frothing and carbonization

During frothing gas bubbles are being created in the surface. A slightly elevated label emerges and a color change sets in. The gas bubbles generate a light, white or grey marking in plastics. During carbonization the conversion from plastics to carbon results in a dark marking.

Annealing marking

The annealing marking is especially suitable for stainless steel. Depending on the material very high contrast is achieved and no ablation occurs.

Marking with inert gas

To improve the corrosion resistance of the laser engraving of alloyed steel, the laser head can be supplied with inert gas (e.g. nitrogen).



customized

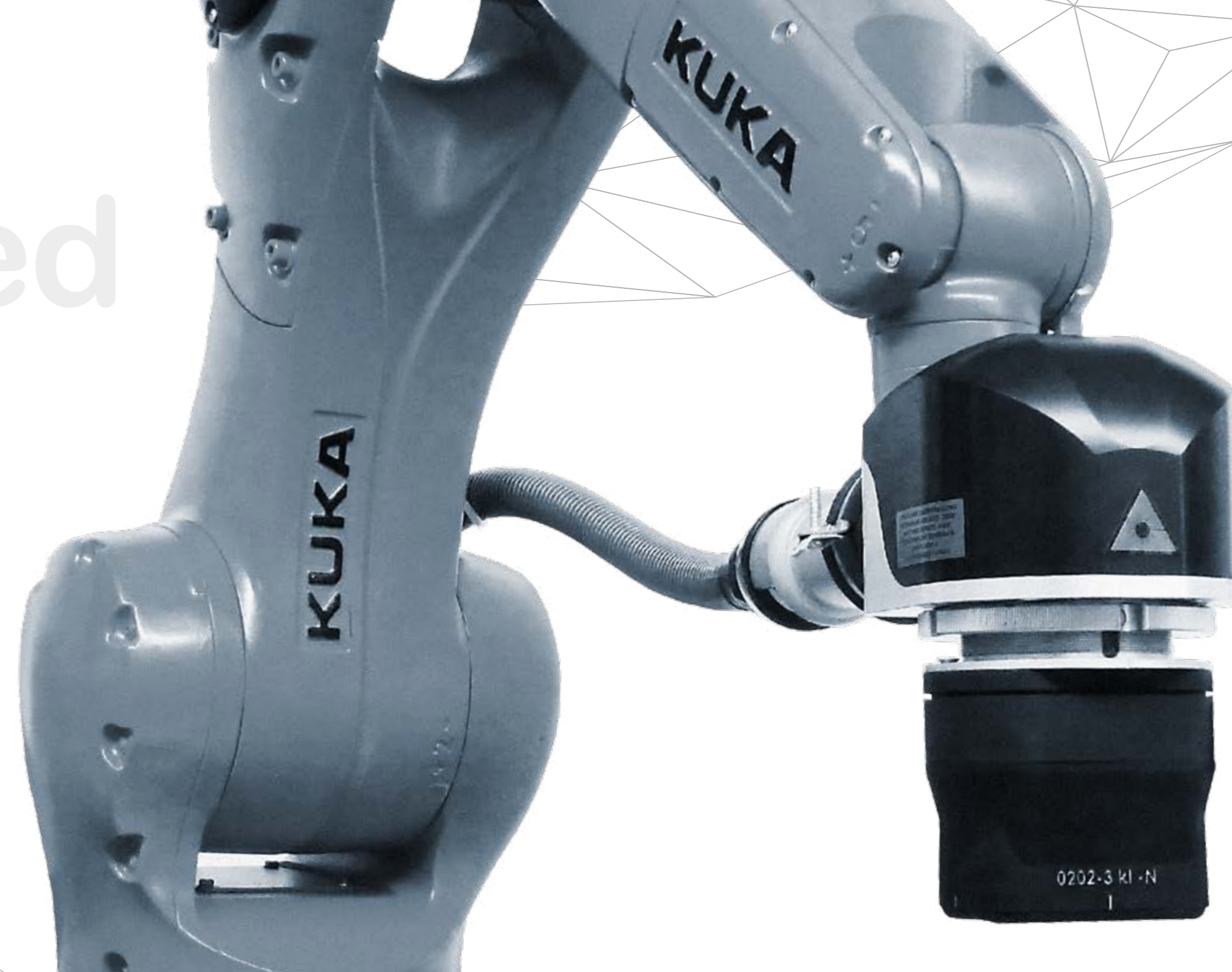
We deliver your custom laser marking system.

As quality manufacturers we consider ourselves as providers of custom solutions.

Let us know about your product and where you want to mark it – we will deliver the laser that is tailored exactly to your needs. You will get the whole system from us: the laser with customized adapters, the mobile system, the laser safety enclosure, if required and the vertical stand for a working station. In addition we offer training on the usage of the laser and the application of the pre-installed marking-software.

The complete mobil-mark® laser system is developed and manufactured in Ulm - "Made in Germany".

With the mobil-mark® laser we have developed and manufacture the only portable and universally usable laser marking system worldwide. Our current distribution is focused primarily in Europe. The expansion to a worldwide distribution is underway. Mobil-mark® is already in use in North America, Egypt, China, India and Turkey. For our innovative research and design we have been distinguished by numerous awards, including the IFIA CUP FOR THE BEST INVENTION, the Innovationspreis IT of the „Initiative Mittelstand“ (Small Business Initiative), as well as the Dr. Rudolf Eberle award by the Ministry of Commerce Baden-Württemberg.





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