

# In-house software department for best possible customer service

Where others are still calculating, we are already programming



In the course of digitizing business processes, products and services, it is incredibly important for us as a modern company to have our own software development team.

Our in-house development team consists of experts in a wide variety of fields, ranging from software engineers and hardware specialists to mechanical engineers. With this diversity of professional expertise, we take care of individual solutions such as project management software tools like CERT or software supported test tools that can be semi or fully automated.

In addition, we offer our customers test solutions tailored to their specific needs and applications.

The scope of development projects can range from consulting to turnkey solutions. As a laboratory, we are close to our own services and understand our customers' needs very well.

Due to our many years of experience, we have developed our own software framework for test applications, on which many of our applications are based.

Over the last 10 years, we were able to gain experience in a wide area:

- Project supporting software tools
- Software framework for application testing
- Software-driven automation (such as TOM)
- Automation with robotic systems
- Quality assurance solutions
- Solutions for remote accreditation
- Customized software solutions





## OUR LABORATORY USES PROPRIETARY AUTOMATED SOLUTIONS FOR TESTING AND EVALUATION IN THE FOLLOWING AREAS:

- Interoperability test systems
  - various positioning systems for validation of contactless communication via NFC
  - approved by several payment schemes: Visa, Mastercard, EMVCo, Discover, Amex
- Protocol testing solutions
  - platform for validation of ISO 8583 protocols
  - approved by the German Banking Industry
- Automated fingerprint testing
- Smartcard personalization validation
- Creation of test reports

## WITH OUR INDIVIDUAL TESTING SOLUTIONS, WE CAN MEET THE SPECIFIC REQUIREMENTS OF OUR CUSTOMERS AND HAVE SUPPORTED E.G. VISA IN THE FOLLOWING AREAS WITH OUR SOFTWARE SOLUTIONS:

- **Visa Terminal Cross Test Bench**  
(Test of a contactless payment device (card or mobile) against a pool of 50 reference terminal devices)
- **Visa Card Cross Test Bench**  
(Test of a payment terminal device against a pool of 1000 reference cards)
- **Visa Cross Test auditing solutions**  
(Retest of devices and automated comparison of results)
- **Visa VCAS Interface definition**  
(Interface definition to automation of device testing)
- **Visa VCAS Interface validation**  
(Application for validation of interface implementation)

- **Visa Middleware reporting and validation (patent pending)** (Communication recording used for continuous testing and reporting)
- **Visa Terminal Emulator auditing device (patent pending)** (Dummy payment terminal for remote laboratory testing)
- **Visa Personalization Validation** (Automated verification of smart card personalization)
- **Visa Card Deck Consistency Check** (Automated testing of smart card quality consistency)





## DUE TO THE HIGH DEMANDS ON OUR SYSTEM DEVELOPMENT AND OUR CONTINUOUS TRAINING, WE HAVE GAINED EXTENSIVE EXPERIENCE WITH A WIDE VARIETY OF TOPICS IN THE FIELD OF ROBOTICS AND TEST ENVIRONMENTS:

- Sample identification via QR and NFC
- Vacuum and gecko gripper solutions
- Position validation via laser profile scanner
- Position validation via camera
- Safety systems for robot stations
- Long-term testing and automated troubleshooting
- Dynamic power distribution of devices under test (DUT)
- Experience in 3D printing prototyping
- Experience in audio detection
- Device automation without API (via individual scripts)
- Dynamic robot programming without fixed sequence

## OUR TECH STACK IS FOCUSED ON .NET DEVELOPMENT:

- C# .NET development
- WPF desktop applications
- Microsoft SQL Server
- Microsoft Entity Framework Core
- Various types of ABB industrial and collaborative robots
- ABB Rapid programming
- Autodesk Fusion CAD design

## DUE TO OUR EXPERIENCE AND KNOWLEDGE IN DIFFERENT AREAS, WE CAN OFFER YOU A FLEXIBLE AND RELIABLE COOPERATION:

- Consulting on an hourly basis
- Turnkey solutions
- Agile project development
- Application and feasibility analysis
- Software and interface development
- Process automation
- Robot environment design
- Assembly and commissioning
- Maintenance and support



We will not leave you alone with your questions and will gladly support you with our knowledge for your special requirements.

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