FEASIBILITY STUDY
QUICK WAY TO VERIFY THE AUTOMATION POTENTIAL OF ASSEMBLY PROCESSES

Background
Can the assembly process be automated without impacting on the process? Is the desired cycle time achievable? Which tolerances can be compensated? Which components are suitable for the planned automation? Are you in the process of planning an automation solution and find yourself confronted with the above questions? If so, we can help you answer these questions by carrying out a feasibility study for you.

IPA’s approach
In our assembly lab, our automation experts will examine the automation potential of your assembly process. The first step is to configure a robot work cell to suit your specific requirements. To do this, we select the appropriate robot for your application as well as the necessary sensors (tactile, optical, etc.). Also, we use the rapid prototyping method to adapt the grippers to your product geometry. In addition, we generate a customized robot program with variable process parameters and conduct jointly defined test cycles with parameter/tolerance variations.

How you benefit
You are provided with a credible statement – which has been verified under real-world conditions – on the automation potential of your assembly process. The tests are conducted by experienced automation experts using state-of-the-art technology in our assembly lab. In line with your requirements, relevant parameters are investigated and assessed by means of a standardized procedure for data acquisition, logging and evaluation. This fast-track process (a project typically takes less than four weeks to
complete) allows the project results to be directly integrated into development of the production process.

What we offer

Our feasibility studies start at €5000. Ask for a quotation or contact us to discuss your requirements.

We have the following equipment at our disposal for carrying out feasibility studies in our assembly lab:

Robot cells
- Lightweight robots: KUKA iiwa, KUKA LBR4+ Universal Robot UR5, Schunk arm LWA3
- Two-armed robot: Motoman SDA10
- Co-operating robots from KUKA
- Robots up to 500 kg payload from various manufacturers
- Small robots from various manufacturers
- Large robots up to 4 x 4 x 4m workspace
- Mobile platform: omnidirectional driverless transport system (optionally with robotic arm)

Control technology
- Real-time PCs with interfaces to the robot control system
- NC-based control technology for robots
- PLCs from various manufacturers
- Interfaces and components for field buses (e.g. EtherCAT, Sercos, CAN, DeviceNet)

Measuring devices, sensors and components
- Force/torque sensors in various sizes
- Laser scanners
- 3D TOF cameras
- 2D cameras
- Grippers: Schunk hand, diverse gripper units from various manufacturers
- Leica laser tracker for high-precision 3D measurement of robots and systems
- Nikon K600 measuring system for 6D measurement of robots and systems
- Milling spindles in various power classes, stationary and with adaption to robot flange
- Fronius welding source

Test beds
- Human-robot cooperation
- Machining with industrial robots
- Data acquisition for image processing in robotics