

# Creating a training program for statistical methods and design of experiments

**ORDER:**

To create a tailored statistics training concept for the engineers of an international electronic components manufacturer

**DURATION/PLACE:**

12 months/Germany

**INDUSTRY:** SEMICONDUCTOR

Training



## JOB DESCRIPTION

The customer wanted to create a tailored statistics training concept, complete with course materials and a certification program. Based on their specifications, we designed a five-day training program with comprehensive course materials, including learning objectives, exercises, teaching content, and didactic resources.

After test runs and fine-tuning along with the customer, a certification concept for the trained engineers was deployed successfully. To enable further company internal deployment and the proliferation of the obtained quality standards, we certified the customer's internal trainers according to the LETR procedure (Learn-Examine-Train-Release).

**SERVICES OFFERED:**

- Development of a tailored training concept for statistical methods and design of experiments

## RESULT

A customized course with a unique didactic concept was developed and delivered to the customer. Internal trainers were coached and certified to continue this training concept.

# Interim management and organizational development at a start-up company

**ORDER:**

To establish a manufacturing organization at a 3/5 semiconductor manufacturer

**DURATION/PLACE:**

28 months/Netherlands

**INDUSTRY:** SEMICONDUCTOR

Training, Process Management



## JOB DESCRIPTION

A start-up company in the field of photonic components with around 25 employees wanted to realize organic growth in its next developmental stage. Following the successful proof of technical feasibility of their first commercial product, we gradually established the foundations for industrial pilot production. By fostering a strong focus on cost efficiency, timely delivery, and high-quality standards, we were able to establish a value-stream-oriented process and lay the groundwork for industrial quality assurance. Additionally, we introduced electronic production control and reporting systems to enhance operational efficiency.

During the project, the workforce grew to approximately 70 employees, and the organizational structure was adapted several times to address new challenges. With the successful completion of the due diligence review and secured investment for further capacity expansion, the project was completed on schedule.

**SERVICES OFFERED:**

- Development of a value stream-oriented process landscape
- Establishment of a quality management system
- Introduction of production control and reporting systems

## RESULT

After the successful achievement of the developmental goal, operational management was handed over to the company's internal successor.

# Production ramp-up of a semiconductor production facility

**ORDER:**

Task force management of the volume ramp-up of a 3/5 semiconductor laser diode production.

**DURATION/PLACE:**

20 months/Germany

**INDUSTRY:** SEMICONDUCTOR

Factory Ramp-up



## JOB DESCRIPTION

We analyzed the need for structural improvements within the production facility to meet the increasing production demand and implemented targeted optimizations accordingly. These were addressed by transparent shop floor control and consecutive bottleneck management. Further root cause investigation of the instable deliveries revealed key structural deficits in the product development management originated from the organically grown laser diode production facility. These problems were addressed by initiating technical project management aimed at enhancing water manufacturing process and resolving technical issues in back-end processing and component separation. By creating a data driven decision making and closing the loop back to development, the efficiency and speed of visual inspection and optical quality control were improved. Additionally, we established a dedicated industrial quality department, along with robust quality processes, to reinforce product standards. To streamline operations, we introduced semi-automated product and process monitoring, supported by automated data analysis, enabling more efficient and accurate oversight. Together, these measures strengthened the production framework, setting the foundation for ongoing growth and operational excellence.

**SERVICES OFFERED:**

- Taskforce leadership
- Technical project management
- Problem solving
- Establishment of a quality assurance system
- Product and process monitoring
- Automated data evaluation

## RESULT

The annual yield of quality-compliant products grew from just 3 million units/year to 12 million units/year.

# Interim management and organizational development for a special machine manufacturer

**ORDER:**

To establish a technology and service organization in the Asia-Pacific region.

**DURATION/PLACE:**

18 months/Germany, South Korea

**INDUSTRY:** SPECIAL MACHINES

Factory Ramp-up



## JOB DESCRIPTION

For the manufacturer of flatbed plasma deposition lines, we established a technology and service organization in South-Korea to support their customers in the Asia-Pacific region. Our responsibilities in the process included setting up a branch office, building the local expert team, managing its costs and integrating it into the local structures. A dedicated customer and complaint management system was put in place to help them serve their customers more efficiently.

To ensure the smooth supply of critical spare parts in the Asia-Pacific region, an emergency storage facility was set up in the duty-free area of an international airport, easily accessible from both Germany and Korea. This reduced response time and downtime for the customers. Additionally, we provided them with lasting technical support by recruiting and training a team of local experts and engineers adept at rectifying on-site faults, thereby ensuring fast and effective service for their customers.

**SERVICES OFFERED:**

- Project leadership
- Recruitment and training of specialized team
- Logistic process development
- Establishment of a customer and complaint management system

## RESULT

Successful establishment of a technology and service organization that was handed over to an internal successor at the end.

# Task force management in the field of spare parts logistics and field service

## ORDER:

To lead a task force to reduce the error rate in the refurbishment kits delivered to the field for special machinery upgrade and repair

## DURATION/PLACE:

14 months/  
Netherlands, Germany, Taiwan

## INDUSTRY: SPECIAL MACHINES

Taskforce Management



## JOB DESCRIPTION

The international special machine manufacturer for Semiconductors faced challenges with faulty spare parts kits and incompatible upgrades that didn't align with the machine configurations in the field. The rapid technological advancements and frequent design changes added to the complexity, creating an urgent need to address these challenges and restore customer satisfaction, especially in the Asian market.

To address these issues, an interdisciplinary task force implemented an online version control system for hardware and software configurations, covering both in-house production and field equipment. By integrating a technical versioning system and a newly developed modular, sequential release concept, we successfully managed upgrades and minimized downtime for the critical plant components in the highly integrated production facility.

## SERVICES OFFERED:

- Task force management
- Problem solving
- Technical change control / versions management

## RESULT

Successfully reduced the error rate by 85% while simultaneously doubling the number of successfully executed upgrades.

# Project management: Commissioning of production lines

## ORDER:

To Plan, install and commission turnkey plants for solar cells and module production

## DURATION/PLACE:

26 months/  
Spain, South Korea, Germany

## INDUSTRY: SPECIAL MACHINES

Project Management,  
Factory Ramp-up



## JOB DESCRIPTION

The customer wanted to set up semiconductor production lines for solar modules based on polycrystalline silicon wafers. Starting with an investment plan and performance specifications based on an existing manufacturing process, we designed the production lines for solar modules. The necessary machinery was developed, built, and approved in close collaboration with the customer.

Production facilities, including the chemical plant and logistics centers, were set up and the production processes were established and qualified on site. Teams were assembled to undertake tasks such as assembly, commissioning and process installation. With the training and orientation of the factory employees, a multi-shift operation was introduced, to maintain high efficiency in the production facility.

In accordance with the customer's performance specifications, the products were qualified, and the production lines were accepted and handed over to the customer.

### SERVICES OFFERED:

- Programm & Project management
- Planning, construction and commissioning of a production line
- Orientation and training of employees

## RESULT

Successfully planned, designed, and commissioned the production line. Completed all acceptance tests before handing it over to the customer.

# Implementation of a worldwide training program at a major international corporation

**ORDER:**

To train the engineers of an international Original Equipment Manufacturer (OEMs) in the areas of reliability, Design for reliability and system structuring

**DURATION/PLACE:**

36 months/  
Europe, USA, Mexico, Asia

**INDUSTRY:** AUTOMOTIVE

Training



## JOB DESCRIPTION

For the large corporation, standardized training courses were conducted internationally across its various locations, with the primary goal of achieving a high and consistent level of quality across all countries and regions.

In close coordination with the customer, their existing training concept adapted to meet the latest technical requirements. The improved teaching content and didactics of the eight-day course were implemented worldwide as part of the specialist employee training program. With SYSMANO trainers also working as project managers or task force leaders in these areas, course participants gained valuable practical insights. This approach enabled a clear, authentic, and high-quality transfer of specialized knowledge, with numerous real-world examples making the learning experience both competent and engaging.

**SERVICES OFFERED:**

- Worldwide implementation of subject-specific training courses
- Certification of in-house trainers

## RESULT

Successfully completed the training program and received excellent feedback from the participants and the corporation.

# Project management in the field of Semiconductor-Special Machine Construction

**ORDER:**

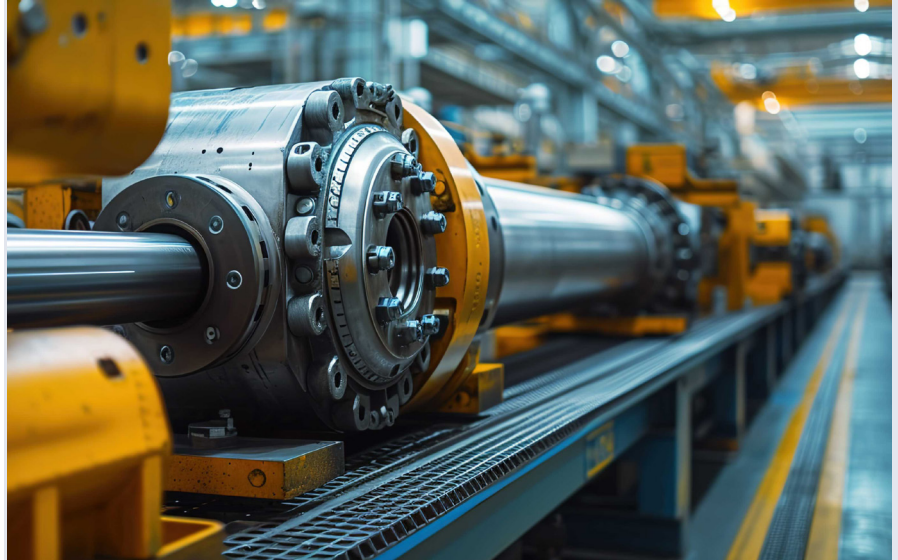
Project management for the prototype development of an innovative light source for the production of sub-20nm semiconductor structures

**DURATION/PLACE:**

24 months/Netherlands, USA

**INDUSTRY:** SPECIAL MACHINES

Project Management,



## JOB DESCRIPTION

The mechanical main carrier for the novel light source in lithographic exposure systems for semiconductor production was developed and integrated with functional components from other subsystems.

Starting with an existing solution concept, we completed the system integration of the light source, followed by the design and development of functional prototypes. This system was then transitioned into a small prototype series through international collaboration. Employing the “concurrent engineering” approach, we addressed and resolved technical challenges in high vacuum technology, cleanroom production, and high-energy laser technology in the project.

To ensure optimal coordination of technical changes across subsystems both in terms of functionality and time, we also introduced systematic technical version control and structured technical change processes.

**SERVICES OFFERED:**

- Project management
- Introduction of prototype small series
- Technical problem solving
- Introduction of change process

## RESULT

Four prototypes were delivered, and an initial pre-series of 10 systems entered into production.