

Overview Services:

Solving Complex Quality Problems

We offer you to support your team in your production, whenever a complex quality problem requires a quick and reliable solution.

Especially if more companies are involved, e.g. whenever you face problems when processing the products of an important supplier, we offer a fast way to solutions by carrying out objective investigations and applying efficient methods of analysis.

We support you using methods of systems engineering that can be applied in any industry, to systematically find all theoretical solutions for a problem. Based on that we apply reliable approaches of mathematics, statistics and soft computing to make technical as well as economical models to evaluate these alternatives and select the best solution.

Finally professional methods of project management and our know how in many areas of process and production technology guarantee an efficient and successful realization.

A mutual project may contain one, some or all of the following steps. Of course, we match the scope of our services in each step to satisfy your specific demands:

1. Definition of Objectives

- Definition of the demanded properties of the product and the necessary conditions of the process

2. Analysis of the Problem

- Theoretical and scientific limitation of the possible causes for the problems
- Analysis of single processes or the complete production line to determine all process parameters relevant for the problem and estimating their influence on the process
- Checking all available data on completeness and consistency

3. Identification of Processes and Process Parameters Determining Quality

3.1. Identification of the Causes for Problems Using Available Data

- Investigation of available data on the applicability of methods of mathematics, statistics or soft computing
- Building technical models from available data using appropriate methods of mathematics, statistics or soft computing to identify causes for the problems

3.2. Identification of the Causes for Problems Based on Systematic Generation of New Data (If necessary)

- Developing a strategy to subdivide the production plant to identify processes and parameters causing the problems with a minimum of experiments
- Carrying out the experiments:
Determining if - then rules connecting process and product data, as well as the levels of significance of these rules by using proprietary software tools, enabling a systematic reduction of the investigated processes and process parameters till the steps and parameters determining the quality are unequivocally identified

Experiments may be carried out by personnel of the client or personnel provided by us. Yet we recommend the we control experimentation at least a temporarily.

4. Optimizing Processes

- Application of methods of process optimization on the identified processes respectively process parameters

(See our service information [Optimization of Production Processes.](#))

5. Realization of the Optimum

- Determination of new set points for process parameters
- Actualization of the relevant documentation:
Determination of previously undefined quality criteria (eventually with clients), supplier specs, process documentation, process parameters (SPC: control warnings and control limits), out of control action plans, product specifications
- Training of Personnel