COSMINO®
Continuous Improvement Software

express

OEE
Effectively Evaluate and Purposefully Increase Effectiveness

1 BASIC INFORMATION

Short Definition of OEE

The Overall Equipment Effectiveness (OEE) is a key indicator, which describes the effectiveness of the complete production process.

It is calculated by multiplying three factors:

◆ Availability (losses such as unplanned work center downtimes)

◆ Output rate (deviations from the planned target performance), and

◆ Quality rate (scrap)

Using the OEE key indicator you can assess your own effectiveness relative to a defined ideal state at a glance.

Typically, downtimes and their causes are documented, optimization potentials are exposed, and quality losses are documented.

Main objective is the reduction of downtimes and rework.

Cosmino® *express* OEE
Areas of Application

OEE evaluations are meaningful, wherever one works with target cycles or target times (starting from a batch size of 1).

Based on objective and current events, Cosmino® *express* OEE is an excellent tool to ...

◆ Define objectives:
Improve degree of efficiency and efficiency in general, expose hidden capacities, increase ROI, and purposefully improve availability / output rate /quality rate, and much more

◆ Monitor the degree of target achievement and demonstrate it to customers and/or investors as needed

◆ Continuously and comprehensively evaluate the continuous improvement processes

◆ Expose improvement potentials

◆ Transparently communicate the improvement process to every employee

◆ Involve employees in the process improvement in a motivating manner

Further important functions offered by Cosmino® *express* OEE are …

◆ Data entry,

◆ Data plausibility verification,

◆ Integration capability into the surrounding IT landscape (e.g. SAP) as well as

◆ an all including innovation and improvement management.

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1 BASIC INFORMATION

Ready-to-use Philosophy

Cosmino® *express* OEE is a lean standard software package, which can be immediately used.

The training effort is minimal, as your employees are systematically guided step by step through the improvement process.

Knowhow of over 25 years of development is contained in every detail of the solution, which provides you with time savings on a daily basis – whether with field-tested error type and loss type catalogs, with time-saving acquisition methods, or with integrated measure management.

If you would like to extend the functions of Cosmino® *express* OEE, there are currently 13 additional modules of the Cosmino® MES*plus* available (see page 11).

Your Cosmino® Advantages

◆ Extremely lean and time-saving solution, which can be immediately used (true "ready to use")

◆ Employees are systematically guided through the work steps excluding operating errors to the greatest possible extent

◆ Can be used as standalone solution as well as fully integrated into your IT environment (see page 11)

◆ Flexible data recording, handwritten or via touch panel, automated machine data input is possible

◆ Sophisticated reporting

◆ Integrated measure management
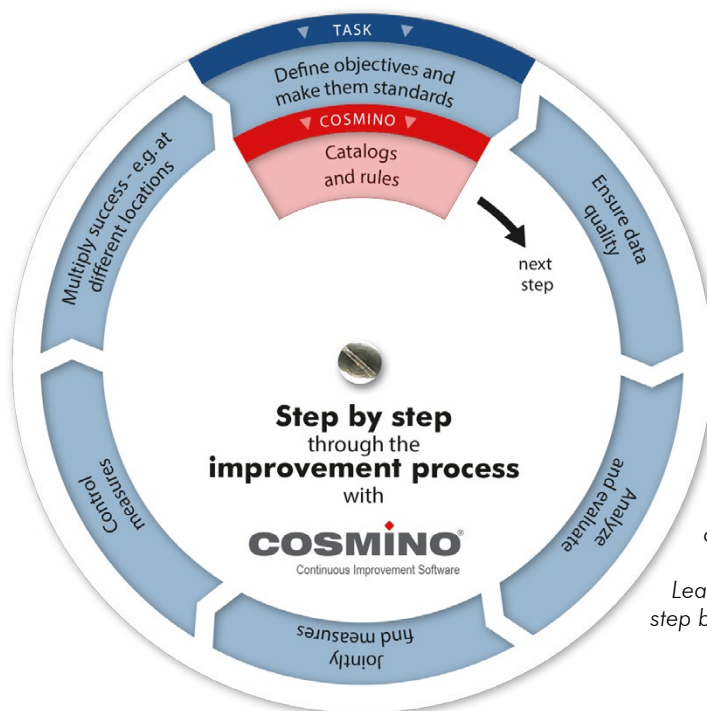
The Cosmino® user is guided step by step through all work steps of the improvement process.

As the workflow is defined, training and familiarization effort is minimal, and operating errors are largely excluded.

Learn, how Cosmino® supports you step by step: www.cosmino.com

**2**   PLANNING

Centrally Manage Master Data

You can manage your production facilities, such as systems and work centers, simply and clearly in the master data module.

All modules of the Cosmino® MES*plus* access this centrally managed master data in real time.

Even in the case of highly complex production facilities, for which a multitude of key indicators occurs, maximum transparency and always correct evaluations are possible.

Your Cosmino® Advantages

◆ Acquisition of all relevant data: loss types and locations, error types and locations, cycle data, work centers, products, etc.

◆ Central data storage: all employees use the same master data catalog

◆ Clear hierarchical data structure

◆ Access for authorized employees only

◆ Multi-language support: any number of languages possible

◆ Change management possible – even in the case of distributed systems

◆ Automated plant data collection with time control

◆ Typical standard catalogs are already integrated and can be immediately used
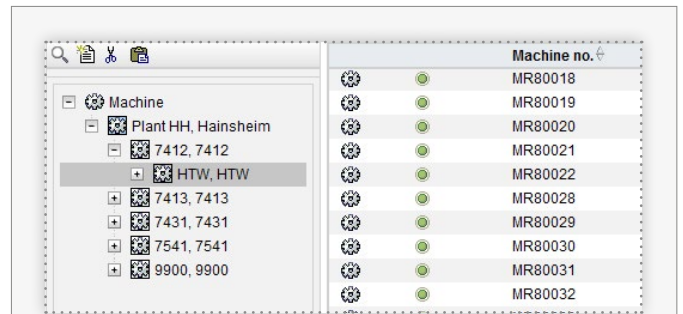
Workstation catalog
The hierarchical structure allows systematic and correct master data management
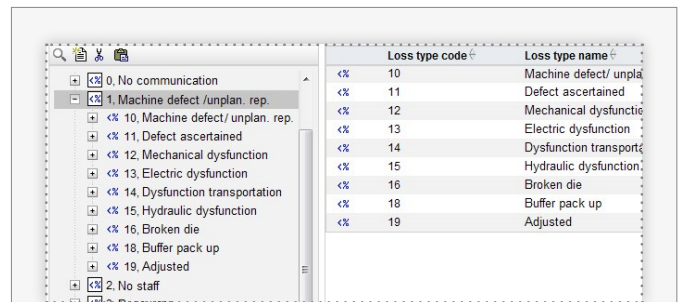
Loss type catalog
The predefined loss types can be manually changed and supplemented

3 DATA ENTRY

An improvement process provides the desired results only, if error and downtime causes are documented by the employees on a regular basis.

Cosmino® *express* OEE allows you to quickly enter this information in a time-saving manner using three different options:

◆ Handwritten entry using scannable documents

◆ Online entry per (touchscreen) dialog, supplemented by control and system sensor evaluation

◆ Data entry via interfaces to other software solutions

Data Import

If you would like to continue to enter error and downtime causes via already existing systems and solutions, you can import this data into Cosmino®.

For this purpose, respective standard import interfaces are available.

Such imported data is automatically evaluated by Cosmino®, similarly to data manually entered.
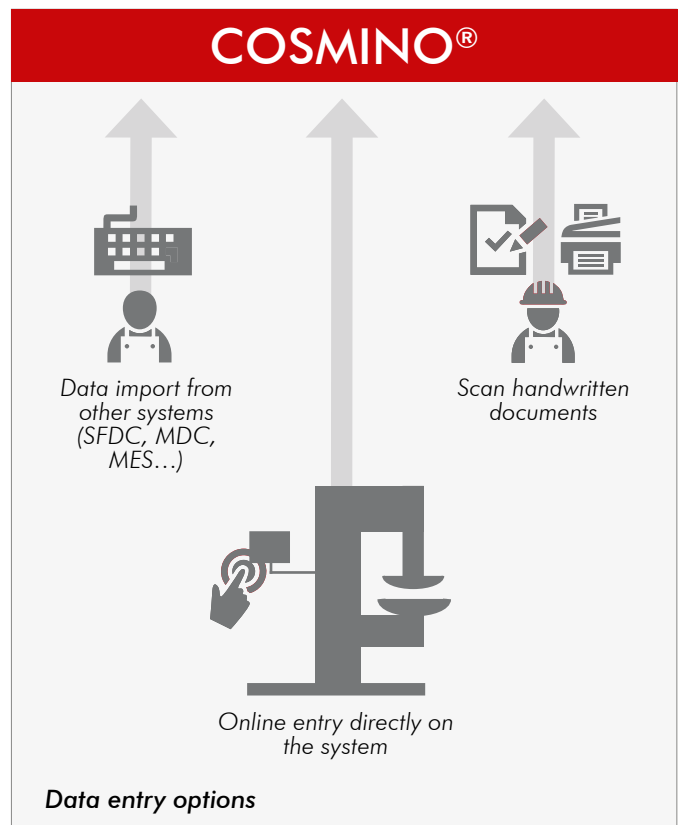
Your Cosmino® Advantages

◆ Existing solutions are extended with functions for continuous process improvement

◆ No supplementary solutions for reporting necessary, as Cosmino® offers comprehensive reporting already

◆ Data import for a multitude of systems and interfaces (SFDC*, MDC*, MES/MIS, MS Excel, further solutions upon request)

◆ Automated plausibility check of the data to be imported

*SFDC - Shop Floor Data Collection, MDC - Machine Data Collection

Import of BDE / MDE / MES data

Data import from other systems (SFDC, MDC, MES…)

Scan handwritten documents

Online entry directly on the system

Data entry options

3 DATA ENTRY

Scannable Documents

The entry of scannable handwritten filled-out documents is unique in the OEE entry area and is realized using the Cosmino® IntelliScan module.
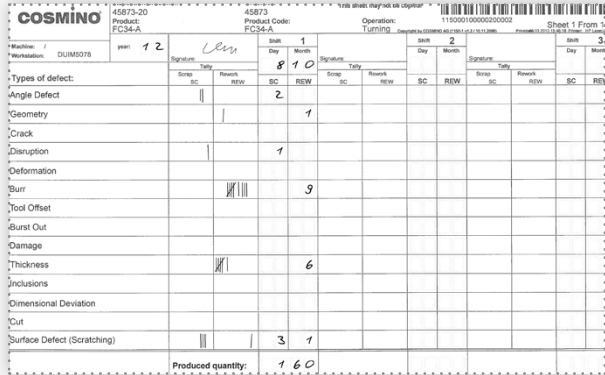
The infrastructure costs are minimal: Typically, nearly 300 documents are entered for 100 production workstations on a daily basis (three-shift operation).

Using a single Cosmino® workstation and a document scanner, this work is completed in less than one hour.
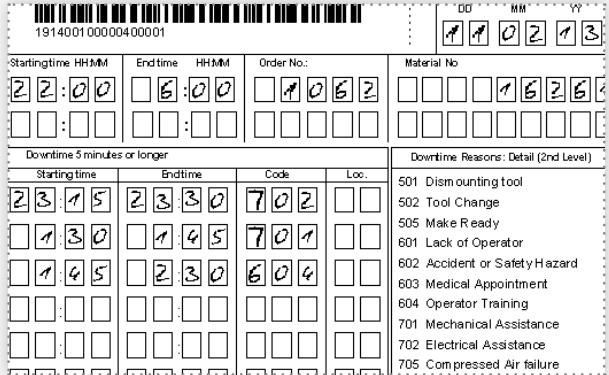
Your Cosmino® Advantages

◆ Can be introduced in a cost-effective and fast manner, as familiar log sheets can usually be continued in similar form.

◆ Handwritten completion strengthens the sense of responsibility of the workers

◆ High data quality, as it is automatically checked for plausibility and completeness

Further information can be found in the Cosmino® IntelliScan brochure

Entry document with fault tally

Downtime and loss type entry

Archive with entry documents:
www.cosmino.de/en/software/intelliscan/

3 DATA ENTRY

Online Shop Floor Data Entry

Using the Cosmino® WorkerPoint module, which is unique on the market, the workers enter error and downtime causes including time information via a few clicks per touchscreen. This entry is realized in real time directly at the work center or the system. The only requirement is an Intranet connection.

Cosmino® WorkerPoint enters all work center states required for the OEE evaluation.

For example, the worker can enter the reason in the case of downtimes or slowed-down production (e.g. "setup" or "repair").

Upon request, control or sensor values of the machine can be automatically applied. In this case, operation is simplified even more, as the reasons for loss, delays, downtime, etc. must only be entered (MDC).

Your Cosmino® Advantages

◆ Data entry in real time

◆ Fast, uncomplicated inquiry of work center data via available interfaces

◆ The Cosmino® OPC interface allows the simple, cost-effective connection of machines on your own

◆ Every production workstation enables an improvement meeting thanks to the direct access to reporting, audit questions, audit evaluations and measure management

◆ Can be used in series production as well as at assembly workstations

Further information can be found in the Cosmino® WorkerPoint brochure.
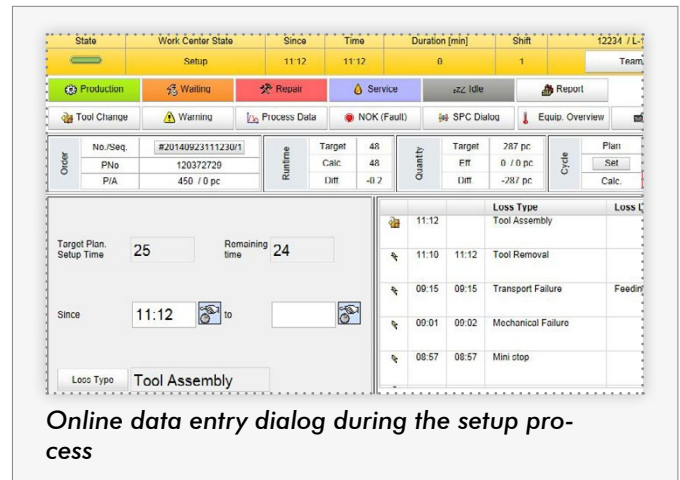
Online data entry dialog during the setup process
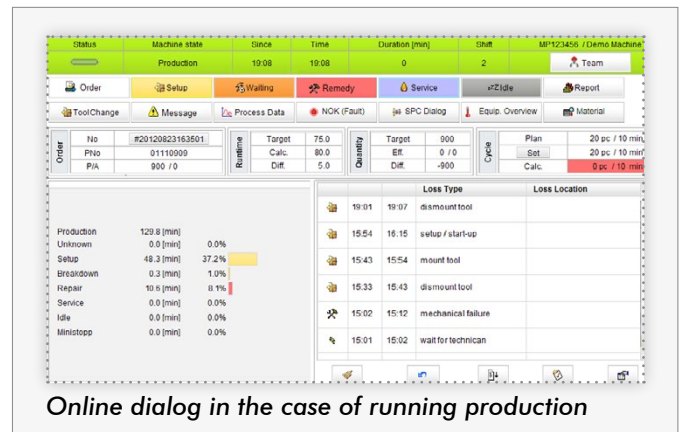
Online dialog in the case of running production

4 REPORTING

Interactive Evaluations

Any improvement process is only as good as the evaluations it is based on.

The award-winning Cosmino® DynaMon module for reports and evaluations was consequently customized for the use in continuous improvement.

Besides data acquired in production, objectives, measures, and in particular results are visualized.

This is enabled by a unique operating concept: While viewing the reports, employees are prompted to immediately enter their improvement measures. This is realized in a surprisingly easy manner, by simply clicking on an evaluation bar and selecting a measure next.
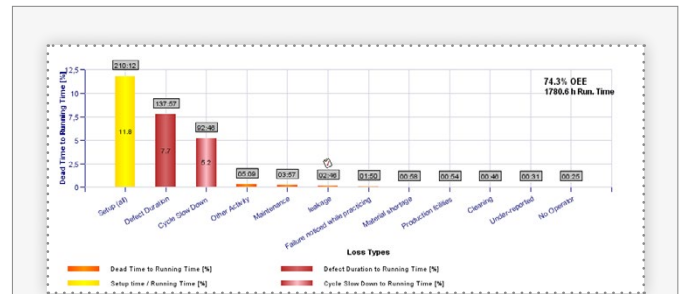
This measure is directly linked with the key indicator of the clicked bar and visualized in the future in the reports. Thus, you can recognize the effectiveness of the individual measure in every single chart.

The result: maximum transparency with minimum time effort and ease of use.

ABC evaluation of loss types
The bars can be clicked in order to directly link measures to an evaluation

OEE history

Your Cosmino® Advantages

◆ Ready-to-use evaluations, which provide all information necessary for continuous improvement

◆ Evaluations can be individually changed and defined

◆ Measures and key metrics are linked in an inseparable way and can be called up by a mouse click

◆ Fully automatically generated reports save time, as manual data entry and the generation of charts become unnecessary

Further information can be found in the Cosmino® DynaMon brochure

A selection of example evaluations under:
www.cosmino.de/en/software/dynamon/

4 REPORTING

OEE Cockpits

Besides interactive reports, OEE Cockpits additionally simplify your work.

Reports are optimally customized for the target groups:

The "OEE Cockpit" with objectives, key production indicators, and measures consolidated on a monthly and yearly basis, is available for sound, fact-based decisions in management.

The "Loss Type Cockpit" provides current information for improvement teams and workers. Here, you can for example find daily evaluations of all actual losses and measures. Depending on your interest, you can view the data from different perspectives.

If you would like to purposefully respond to individual events, individual, automatically generated reports are provided by the Cosmino® DynaMon module.

Your Cosmino® Advantages

◆ No waiting times for the calculation of evaluation data: every evaluation is immediately available at the push of a button

◆ Excellent report comprehensibility based on decades of experience

◆ Standardized reporting on all hierarchical levels, from individual workstation to plant report for company management

◆ Highest objectivity, de facto 100 % of losses are presented

◆ Objectives and Alarm management

Further information can be found in the Cosmino® DynaMon brochure
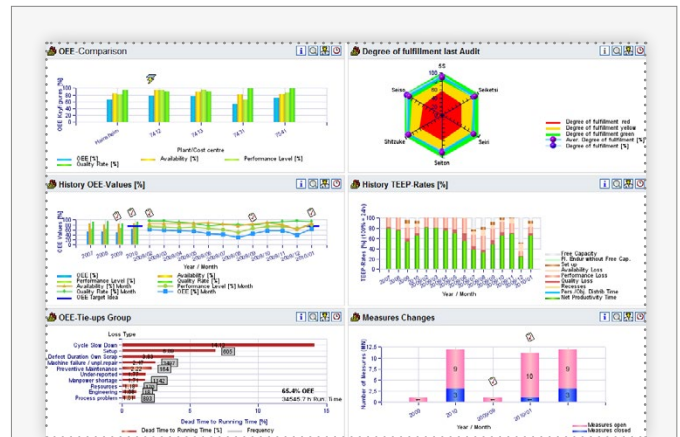
OEE Cockpit for company management
Partial view (in addition, measure development and OEE downtimes are shown)

Loss Types Cockpit for workers

5   MEASURE MANAGEMENT

Define, Trigger and Evaluate Measures

Evaluations indicate improvement potentials. However, you actually optimize your process via implemented measures only.

As comprehensive solution for continuous improvement, Cosmino® purposefully supports you in

- Drawing conclusions from the obtained findings,

- Triggering the best measures next, and

- Checking the success of these measures in real time.

Only this integration of all necessary work steps generates the maximum on time and cost saving, for which Cosmino® has been internationally known for 25 years.

Your Cosmino® Advantages

- Fully automated evaluation of ongoing measures in real time through reporting

- The respective measures and their success are shown for every loss type

- Deadlines and tasks are created, managed, and monitored using the Cosmino® ImproveManager module

- Meeting planning and control using the Cosmino® MeetingManager module

- Automated auditing using the Cosmino® AuditManager module, e.g. 5S workstation audits

Further information can be found in the respective module brochures

Measures development

The success of ongoing measures can be evaluated in real time
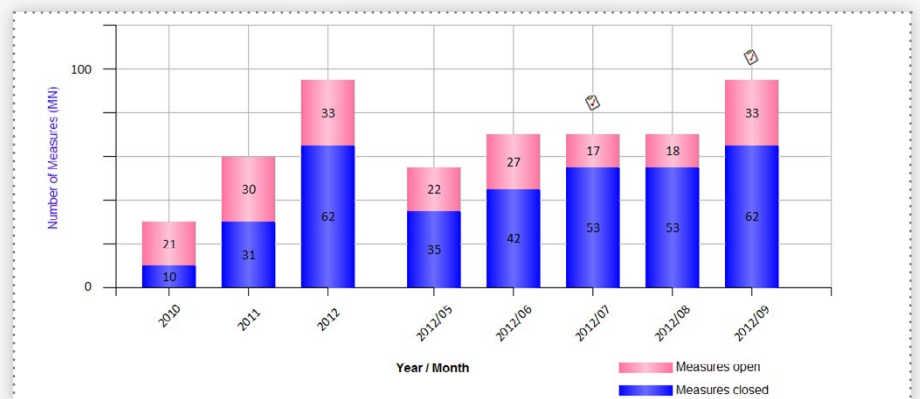
6   INTEGRATION INTO THE COSMINO® MES*plus*

COSMINO AG supports you in getting the full potential of your manufacturing and achieving the best results:

- ◆ More output
- ◆ Better quality
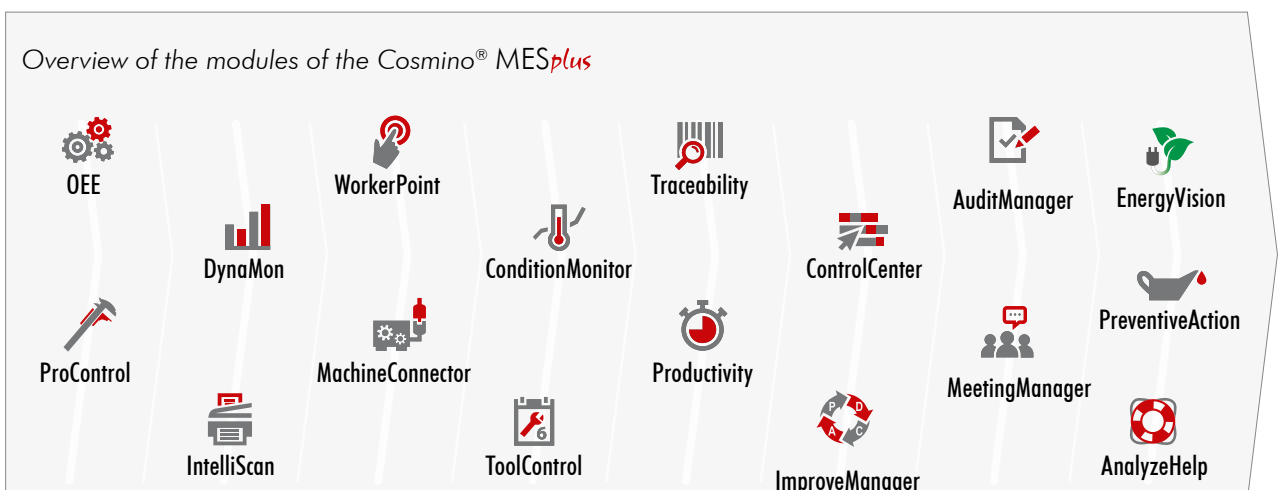- ◆ Increased reliability
- ◆ Reduced costs
- ◆ Full transparency

Our software belongs to the field of Manufacturing Execution Systems (MES) and can therefore be your navigator on the path to Industry 4.0 (Integrated Industry).

Thanks to more than 26 years of project experience, we can count global companies like BMW AG, Daimler AG and Continental AG among our clients today.

Thanks to its modular, standardized architecture, Cosmino® MES*plus* offers particularly medium-sized companies from various industries important support in the optimization of their processes and products.

Your Cosmino® MES*plus* Advantages

- ◆ Focus on people
  (their knowledge will be developed and used)
- ◆ Causes instead of symptoms for downtimes
  (by integrating the employee's knowledge)
- ◆ Reporting system oriented on measures
  (award-winning, fully automated and easily understood)
- ◆ Integrated improvement management system
  (measures are linked to metrics)
- ◆ Quick start (*express*) is possbile
  (automate data from paper forms; get digital data by scanning)
- ◆ Award-winning Online Data Acquisition Dialog
  (acquires data and displays information)

*Overview of the modules of the Cosmino® MES*plus*

OEE   WorkerPoint   Traceability   AuditManager   EnergyVision

DynaMon   ConditionMonitor   ControlCenter

ProControl   MachineConnector   Productivity   PreventiveAction

MeetingManager

IntelliScan   ToolControl   ImproveManager   AnalyzeHelp

COSMINO AG has specialized
in consulting, software development and service
in the fields of Manufacturing Execution Systems (MES) and
continuous improvement processes since 1988.

COSMINO AG supports industrial companies of any size achieve full potential of their manufacturing systems and shows how the best possible result can be achieved using the existing resources. From data acquisition to improvement management, the potential of all employees will be brought to bear.

Have we awakened your interest?
Our sales team is looking forward
to making contact with you!

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