Maximizing Yield and Process Efficiency

EXPERT ⁵ⁱ

Reporting and Analysis Tools

Fast decisions. The key to high productivity.

ISRA

VISION

parsytec

EXPERT^{5i} – Making Hidden Facts Visible

Transform inspection and process data into cost saving decisions

EXPERT^{5i} are software modules helping to answer every day's quality related questions like:

- Does the product quality meet the customer's quality rules? If not, could quality rules of another customer be fulfilled instead, so that the product can still be sold with a high-level price?

- Can this coil be shipped? If not, how can it be repaired or further processed to reach saleable status?

- What is the root cause for the quality problem?

Many solutions are hidden in the inspection and production data

The *EXPERT*^{5i} software modules are the extended arm of plant management, taking action down to the plant floor. With this system you can make use of the inspection and process data being continuously collected at the line. By bringing together all available information, valuable correlations are revealed, which unleash huge potential in managing quality and production efficiency.

The solution quickly helps to find the right answers for many questions concerning yield and process optimization.

Secure highest quality standards

Achieve the goal of a zero-defect production. *EXPERT*^{5i} software modules enable you to react immediately to surface defects and other quality deviations. Operators receive early warnings of even approaching problems and can react immediately to secure the highest quality standards continuously. By using the system each process step can be controlled and analyzed, and quality finally becomes plannable.

All information is utilized

To make decisions, the *EXPERT*^{5i} software modules are able to access all available production-relevant data of the product (surface, thickness, width, flatness, etc.).

The software modules analyze and weigh all of this information according to particular criteria and generate knowledge-based suggestions for the decision makers.

Example for an alarming of *EXPERT*^{5i} „DefectTrend": Even if the grade of defect actually still meets the configured range, the *EXPERT*^{5i} „DefectTrend" already informs the operator that the detected repeating roll mark will become worse and exceed the tolerance limit soon. This enables the operator to take countermeasures before the line produces unsaleable scrap.

Benefits

- Guaranteed product quality and reduced customer claims

- Reduced production costs with no further processing of defective products

- Assure best price for each coil by reducing security downgrades

- Reduced process related surface defects by optimizing processes

- Optimized throughput of the line and reduced waste or scrap

EXPERT 5i – For Every Process Line the **Right Answer**

		Slab / Ingot	Hot Rolling	Pickling	Tandem	CAL	CGL	EGL	CC	Tinning	Finishing
Monitoring & Alarming	Monitoring & Alarming	•	•	•	•	•	•	•	•	•	•
	DefectTrend	•	•	•	•	•	•	•	•	•	
	DrossMonitor*						•				
	RollMonitor		•		•						
Quality Evaluation	SlabDecision / IngotDecision	•									
	PlateDecision		•								
	CoilRelease		•	•	•	•	•	•	•	•	•
	CoilReassignment	•	•	•	•	•	•	•	•	•	
	SlittingOptimization										•
Process Optimization	ProcessAnalysis	•	•	•	•	•	•	•	•	•	
	DefectPatternAnalysis	•	•	•	•	•	•	•	•	•	•
	StructureAnalysis						•		•		
Up / Downstream Information	CoilPreview			•	•	•	•	•	•	•	•
	PickleProcessTuning*			•							
	TandemProtection*			•	•						
	DefectTracking		•	•	•	•	•	•	•	•	
	CoilRepair			•	•	•	•	•	•	•	•

*steel only

Quick, easy and correct economic decisions

The *EXPERT* 5i software modules are currently available for all of the different tasks along the various production lines. Any user can implement the software modules, which are suited best to provide the optimum solution for the current application. Steel producers can therefore rely on a state-of-the-art software tool to continually improve their quality management.

Facts

- Analyze data to support the decision-making process through all company levels
- Combine huge amounts of data to understand their general relationships and meaning
- Utilize the process know-how to get more leverage on decisions
- Easy and fast access to information with predefined or individual EPROMI cockpits
- Optimize production, product, quality, efficiency and yield

EXPERT 5i

In combining selected or all *EXPERT* 5i software modules, the potential for increased productivity is reached: quality becomes plannable, processes and production are systematically optimized.

EXPERT *5i* Efficient Decisions

Reporting and Analysis Solutions for Max

Process Specific EXPERTs and optional EXPERT Views
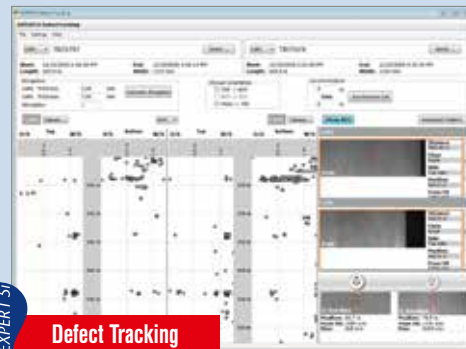
Optional EXPERT Views for Monitoring & Alarming

CoilView

Provides most direct feedback on product quality, even during production. Uses same rules as decision module.

Coil Specific EXPERTs

EXPERT 5i

Defect Trend

Shows synchronized trend data of relevant surface defects spanning multiple coils. Alarms allow immediate reaction to process problems.

EXPERT 5i

Defect Tracking

Isolates the origin and cause of defects, tracking the defects through the entire production process. Defect causes are quickly resolved, reducing scrap while optimizing release decisions.

Line Specific EXPERTs

Casting

H

EXPERT 5i

SlabDecision

Shows surface defects and quality relevant data, e.g. chemical composition. A special module allows investigation of casting process. It creates "error events" like "low mold level", "casting speed deviation", etc. which are taken into account during slab/ingot quality evaluation. Result: a precise release decision.

EXPERT 5i
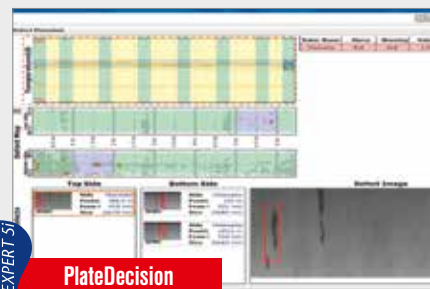
PlateDecision

Allows quality evaluation of plates. izes defect images and provides information for each defect. Seve defects can be analyzed in detail. To with other gauge data it allows well-gr release decision.

through Facts and Trends
ximized Yield in Metal Production

ProcessView

Allows complete view of product quality – all production steps, all data. Thereby supporting the analysis of root causes of quality problems.

PlantMonitor

Perfect tool for mill manage of currently produced mat drilling down to each single

CoilRepair

Evaluates quality of repair measures and frequently prevents downgrading of coils. Result: Improved material utilization and higher profit.

CoilRelease

Provides quality analysis of a release suggestion for nex customer.

ot Rolling Coils/Plates

Pickling

Visual-detailed rity of together ounded
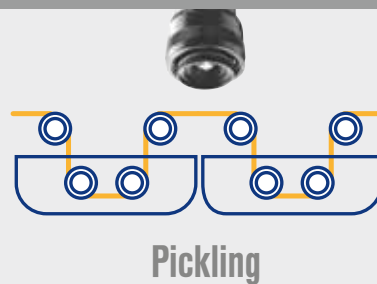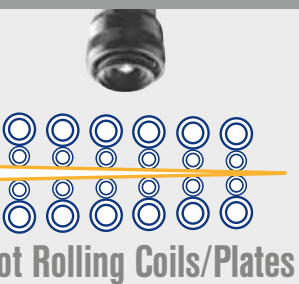
RollMonitor

Evaluates and provides visual image of the severity and cause of periodic roll marks. If several rolling stands are involved, the defect causing stand is identified.

PickleProcessTuning

Generates suggestions for optimal pickling speed, provides visualization of scaling degree and temperature of the coil from previous hot rolling process. Thereby optimizing throughput, while reducing overpickling and residual scale.

Process chain comprehensive EXPERT
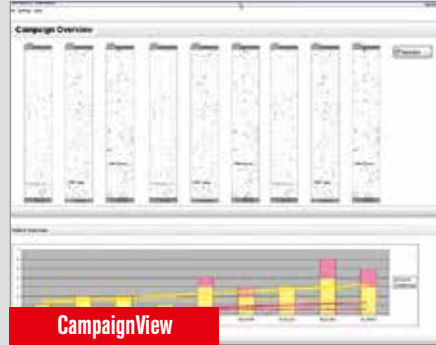
EXPERT 5i — Monitoring & Alarming

Offers different views on the production to provide instant feedback on quality problems and to support the analysis of root causes by reviewing the quality in previous production steps.
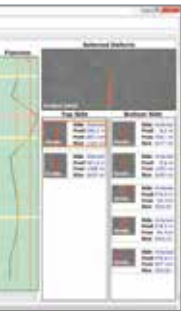

...ers showing the quality situation
...terial at all lines and supports
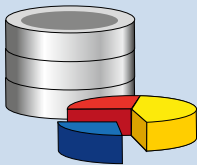...e measurement.

CampaignView

Shows the last coils produced in the current campaign. Gives over-view about defect trends, number of alarms and warnings. Provides benchmarks with averages for this campaign type.

...coils and issues
...xt process or end

EXPERT 5i — CoilReassignment

Reassigns blocked material to different customer orders with matching requirements. Ensures im-proved material utilization and higher profit.

EXPERT 5i — CoilPreview

Shows defects and r...
previous production p...
ings and reduces proc...
repairs and downtime.

Cold Rolling

Annealing

EXPERT 5i — TandemProtection

Alerts mill operator of specific defects (defect image, location and type) that could cause a coil to break and damage to the cold rolling mill. Makes sugges-tions to avoid this type of serious process incident.
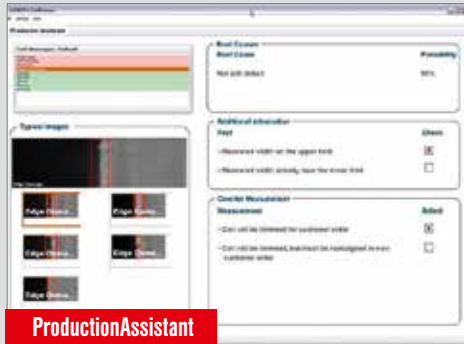

EXPERT 5i — RollMonitor

Evaluates and provides a visual image of the severity and cause of periodic roll marks. If several rolling stands are involved, the defect causing stand is identified.

EXPERT 5i — StructureAnalysis

Determines the quality va...
structure for a configurab...
per coil. It generates ala...
structure does not meet t...

ProductionAssistant

Helps overcome current quality problems. A knowledge base offers proven correction actions for quality problems. Interactive feedback allows for tracing the correction results.

...repair requirements from ...processes, issues warn-...cessing defective material, ...Throughput is optimized.

EXPERT Si **DefectPatternAnalysis**

Aggregates defect distribution of several coils and allows user to find typical defect pattern, e.g. caused by defective descaler nozzle, defective roll or by corner defects of an ingot. Allows for analyzing the root cause of surface defects.
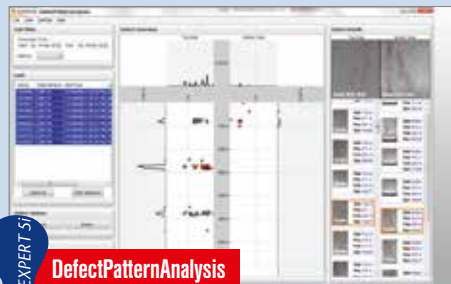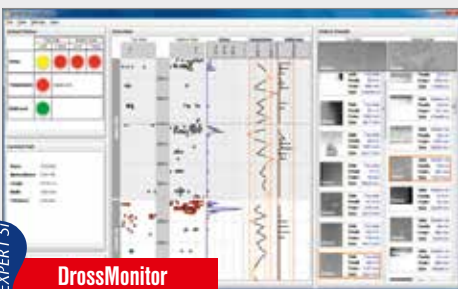

EXPERT Si **ProcessAnalysis**

Provides a visual correlation of process parameters with resulting surface quality. Offering concrete analysis of defect causes. Process defects can then be quickly identified.
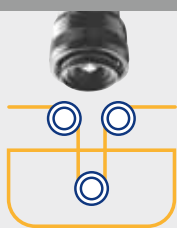
Galvanizing Tinning / Color Coating

Recoiling / Slitting

...alue of the surface ...le number of lanes ...arms if the surface ...he quality target.

EXPERT Si **DrossMonitor**

Warns of increased density of dross defects. Result: Process optimization in the galvanization area while avoiding inferior quality. Extension of automotive exposed campaigns.
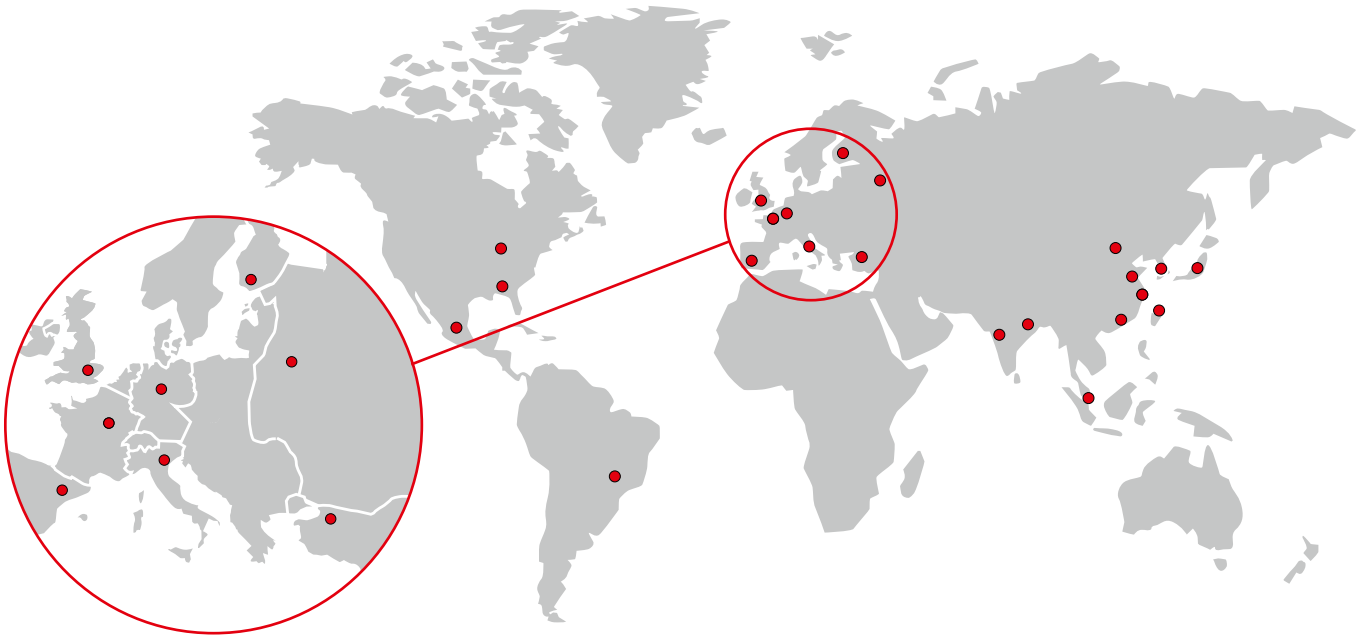

EXPERT Si **SlittingOptimization**

Allows for quality decision for each single slit strip. Additionally uses surface quality data and flexible quality rules to optimize slitting plan for achieving highest yield.

Innovations for Automatic Surface Inspection

A business relationship with the ISRA VISION group is the beginning of a long term partnership.

Our clients benefit from the experience of our highly qualified team of experts, who work with them to design and implement solutions for the quality inspection applications of the future.

The ISRA VISION group is a global enterprise that guarantees its customers excellence in every aspect: from consulting, service, and confidentiality, to complete solutions and worldwide support.

• We can make your business more competitive and productive

• We view ourselves as a partner and supplier of application oriented standard systems for selected industrial sectors

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