SMART STEEL
TECHNOLOGIES

THE LEADER FOR AI IN STEEL

SST PRODUCT OVERVIEW

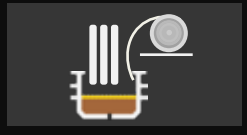
IMPROVE
QUALITY, ENERGY,
CO_2 EMISSIONS

Smart Steel Technologies supplies ready-to-use AI software products for process optimization in steel plants. These products serve to optimize energy consumption and CO2 emissions, improve product quality and reduce costs. Smart Steel Technologies' product line focuses on temperature optimization for the liquid phase, reduction of casting and rolling defects, and the stabilization of surface inspection. As a result of the increased efficiency, steelmakers can save significantly on production costs and reduce their emissions.

ArcelorMittal, the world's leading steelmaker, is an official reference customer of Smart Steel Technologies.

At multiple integrated and EAF steel plants, SST's software is used successfully in production to optimize quality and to reduce costs.

SST TEMPERATURE AI



SST STEEL AI

SST CASTING AI

SST ROLLING AI

SST SURFACE AI

SST TEMPERATURE AI

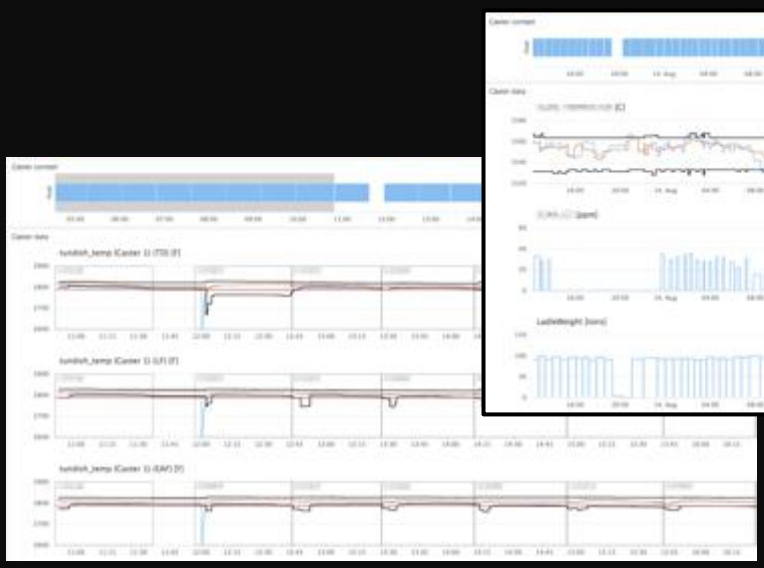
EBITDA IMPACT: **EUR 5 MILLION P.A.**
FOR PRODUCTION VOLUME OF
5 MILLION TONS P.A.

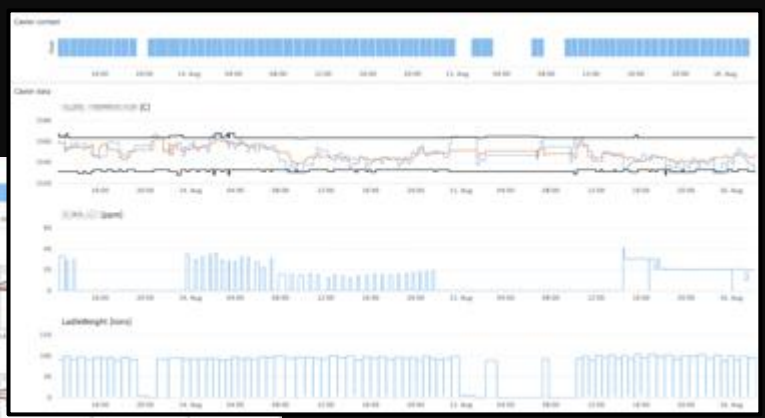
FULL TEMPERATURE GUIDANCE FROM TAPPING TO CASTING

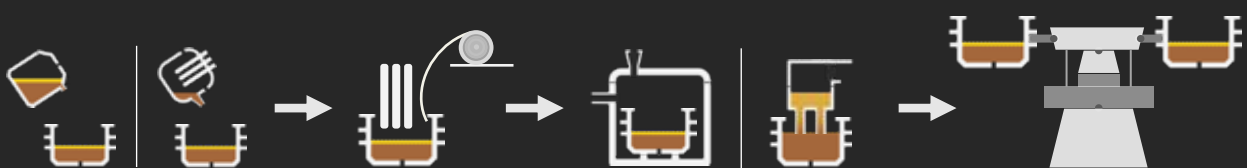
SST Temperature AI provides live temperature guidance for every heat and for each liquid phase process. Through precise modeling of each individual process as well as by cross-process modeling, SST Temperature Optimization AI increases precision in temperature guidance and provides higher process stability and reduced energy costs.

Solutions provided at critical points in liquid phase processes:

- BOF in-blow point
- EAF flat bath phase
- LF, RH
- Continuous casting





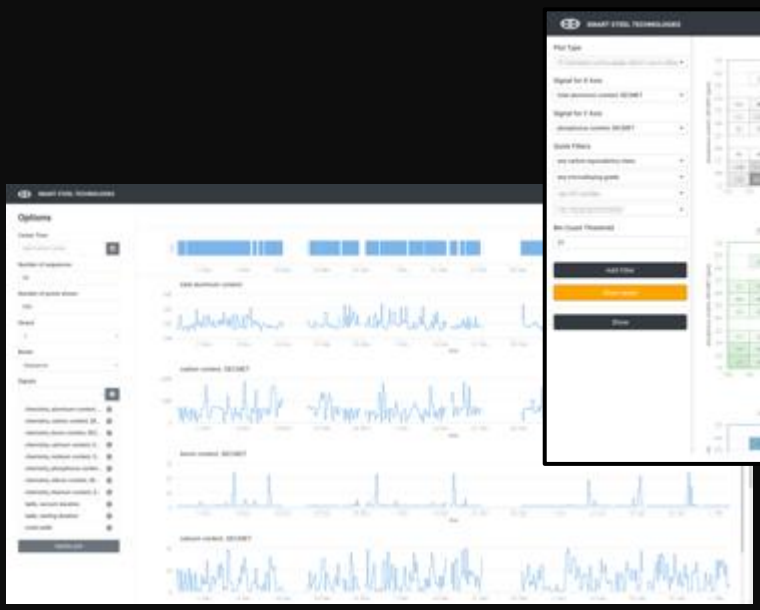


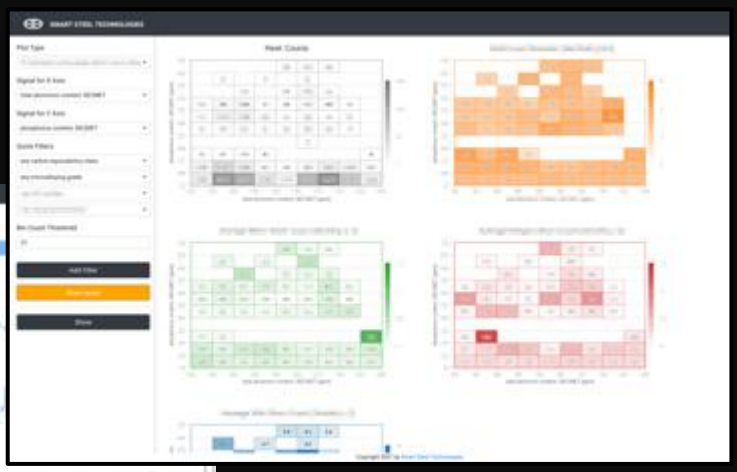
SST STEEL AI

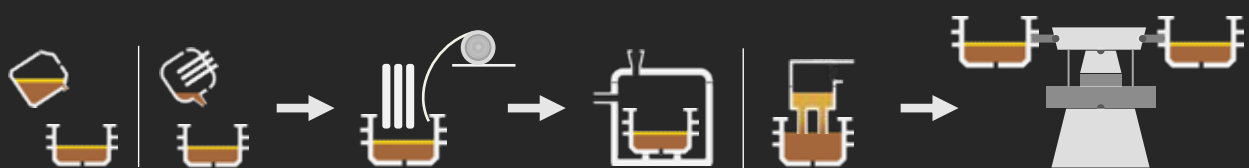
EBITDA IMPACT: **EUR 2 MILLION P.A.**
FOR PRODUCTION VOLUME OF
5 MILLION TONS P.A.

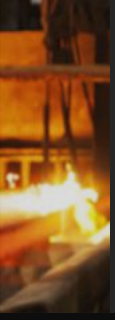
OPTIMIZED STEEL CLEANLINESS

SST Steel AI leads to significantly improved liquid steel cleanliness with subsequent higher alloy yield while allowing a precise adjustment of the steel chemistry.
This is achieved via an automatic computation of optimal yet cost efficient process parameters.
Starting at a EAF or BOF, the software seamlessly integrates into the entire secondary metallurgy process and guarantees considerable quality benefits and costs reductions for high-quality steel products.









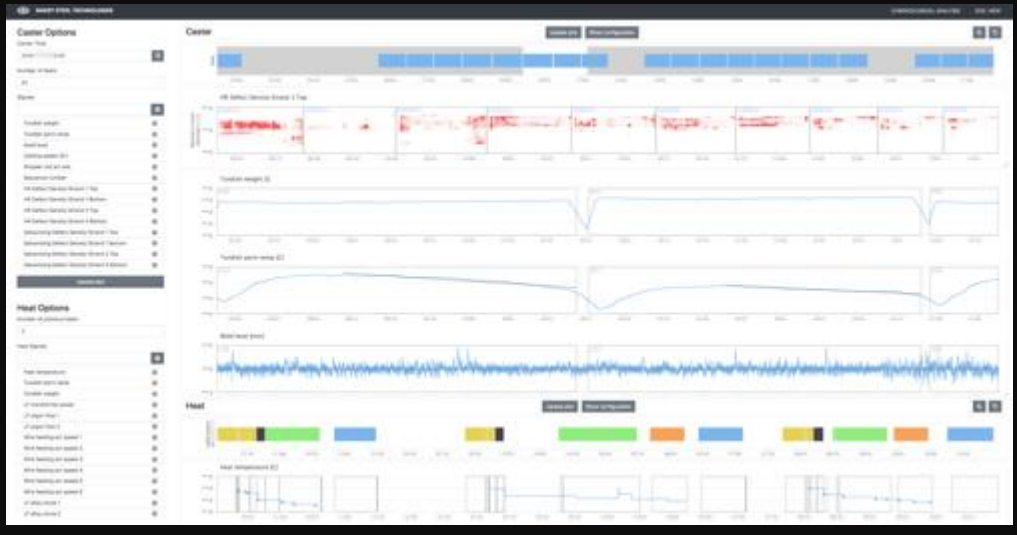
SST CASTING AI

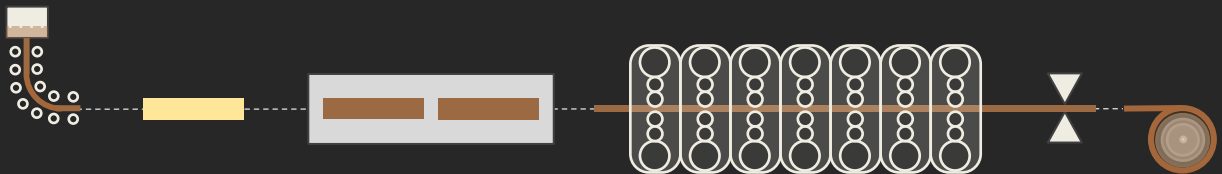
EBITDA IMPACT: **EUR 7 MILLION P.A.**
FOR PRODUCTION VOLUME OF
5 MILLION TONS P.A.

PERMANENTLY REDUCED RATE OF CASTING DEFECTS WITHOUT INSTALLATION OF NEW EQUIPMENT

SST Casting AI leads to per-manently increased casting quality without installation of new equipment. Defect rates and downgrading costs are reduced. Yield is improved, in particular, for high quality steel grades. Energy is saved through increased hot charging.

SST provides one software component for automated optimization of each casting se-quence before start of casting and a second software component for live optimization during casting. The solution uses all avail-able process and quality data and has been designed by continuous casting experts.





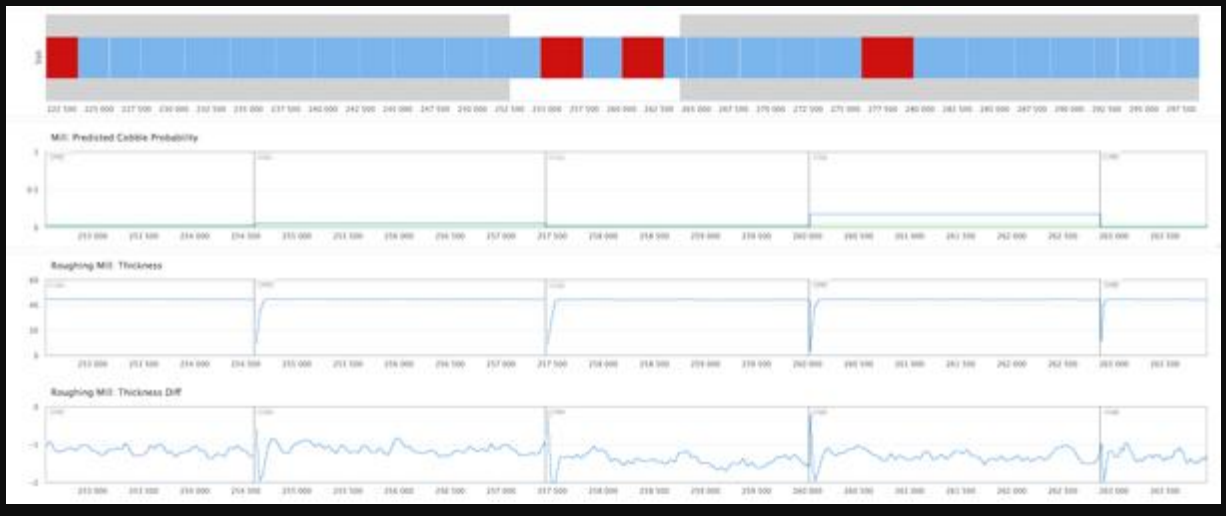
SST ROLLING AI

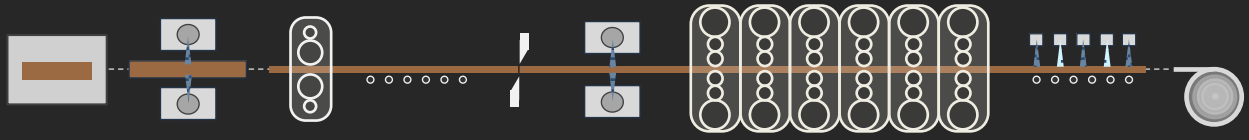
EBITDA IMPACT: **EUR 6 MILLION P.A.**
FOR PRODUCTION VOLUME OF
5 MILLION TONS P.A.

STATE OF THE ART QUALITY AND PROCESS STABILITY FOR ROLLING MILLS

SST Rolling AI leads to a permanently increased quality of rolled pro-duct without installation of new equipment. Geometry tolerances, defects caused by the rolling process and unwanted rolling inter-ruptions are reduced. All systems are con-tinuously monitored for further potential for rolling optimization.

SST's software components enable live optimization of the rolling process. This in-cludes predictions of quality deviations and interruptions of the rolling process. The solution enables the steelmaker to react in real-time to minimize rolling defects and undesired interruptions.





SST SURFACE AI

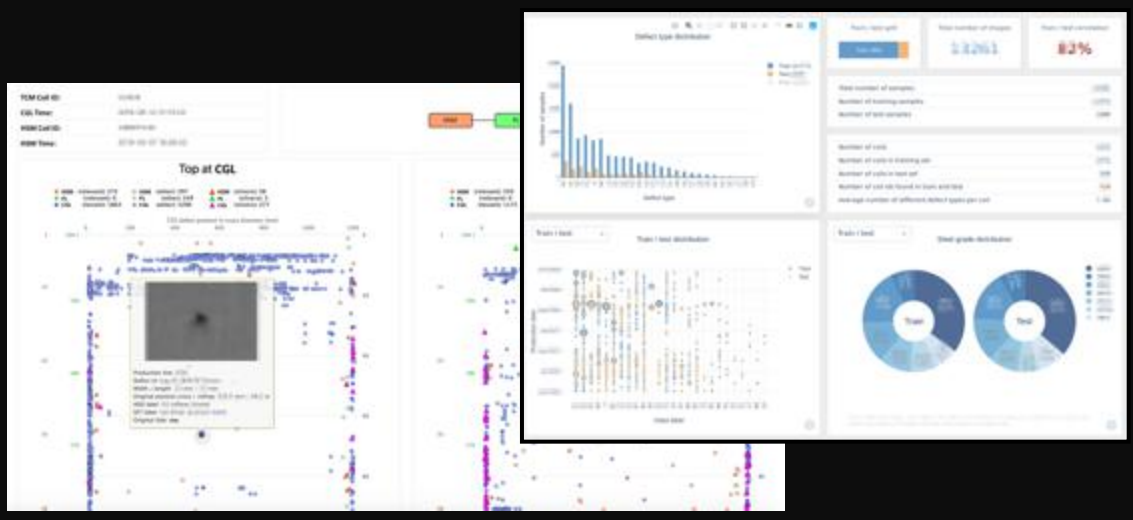
BOOST DEFECT
CLASSIFICATION
ACCURACY

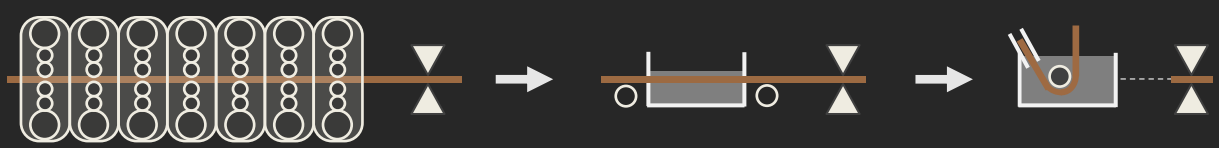
ACCURATE DEEP LEARNING CLASSIFIERS FOR HSM, PL, CGL

Deep CNN classifiers specifically designed for hot strip, pickled strip and galvanized strip dwarf conventional surface inspection systems when it comes to accurate classification of complex surface defects, e.g., slivers. The full package includes tools for defect image search, quick training set optimization, and more.

CROSS-PROCESS SOLUTION

All surface defects are mapped into a central coordinate system and are displayed on SST's Centralized Coil Map. From the hot strip mill down to all galvanizing lines, the software processes each coiling / uncoiling operation, cutting, cropping, welding, and trimming steps to match defects to exact positions across all production steps.





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