Advanced Services

CRM Fingerprint
Recognize opportunities for cold rolling mill performance improvement

Process benchmarking in a cold rolling mill establishes current process and control performance levels and provides a basis for evaluating and identifying further improvement opportunities.

The ensuing implementation plan provides improvement recommendations and associated estimated “Return on Investment” (ROI).

Improvement potential of productivity, quality and yield up to 20% depending on age of plant and equipment.

Features
- Access to ABB optimization experts to achieve optimal process performance and improve cost effectiveness.
- Process performance benchmarking ensures tuning of plant control system efficiently, benchmarked to industry best practices.
- Detailed ROI (Return of Investment) - oriented improvement, helping our customers to achieve operational excellence.

Benefits
- “Executive Report” facilitates management decision process by focusing on high impact opportunities for improvement.
- Improvement plan provides clear path to quickly resolve Life cycle issues as well as productivity, quality and yield gaps.
- Provides a solid foundation for “Life Cycle Management” for installed products and solutions in cold rolling mill complex based on analytical methods.

Recognize opportunities for cold rolling mill performance

CRM Fingerprint workflow

At first we start with an initial meeting to determine the plant status with a structured interview. The results are the current-index as a figure and a detailed graphic analysis with “rating-axes”.

In the next step we create a list of recommendations and actions for a target-index according to customer's specific strategic goals.

In the second meeting we present and discuss of the list of recommendation with priority suggestions with the customer. There is also a discussion of alternative scenarios and relevant actions to maintain productivity over the desired plant life cycle.

Option

- Start preparation of detailed offers for desired actions
- Go into deeper analysis of specific issues

CRM Fingerprint assessment

Cold Rolling Mill Fingerprint includes comprehensive assessment of the following areas:

- Motors and drives (see example)
- Technology sensors and actors
- Automation platform
- Level 2 platform including set-up values
- Technology control loops
- Basic analysis of mechanical components

Critical issues in each of the areas including functionality, personnel, preventive maintenance strategy, emergency strategy, lifecycle strategy is evaluated and reported to the customer.

Diverse analysis in CRM Fingerprint

Detailed investigations are carried out using collected measured data (e.g. mill speed profile, thickness reference and deviation, control loop values) for analysis with respect to productivity, quality and yield.

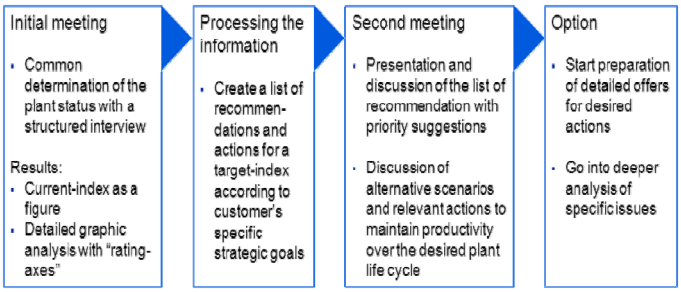
Technology control loop analysis is carried out such as for roll gap, friction, inertia compensation and thickness control.

Drives diagnostics involve speed control and inertia compensation analysis for coiler, mill drive and deflector rolls.

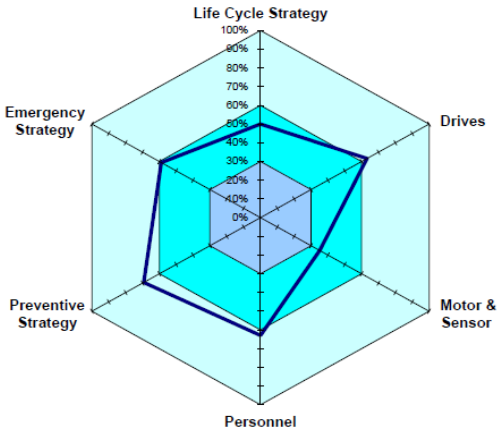
Advanced root cause analysis of thickness deviation.
Investigation of the thickness deviation including related sensors and actors as well as control loops in relation to:

- Weak high pressure hydraulic
- Problems in valves
- Timing of control actions and related size
- Impact from strip hardness deviation
- Impact from incoming thickness deviation
- Impact from coil eccentricities
- Impact from roll eccentricities
- Impact from speed and tension accuracy

CRM Fingerprint workflow



Executive overview of findings for motor and drives



Reporting

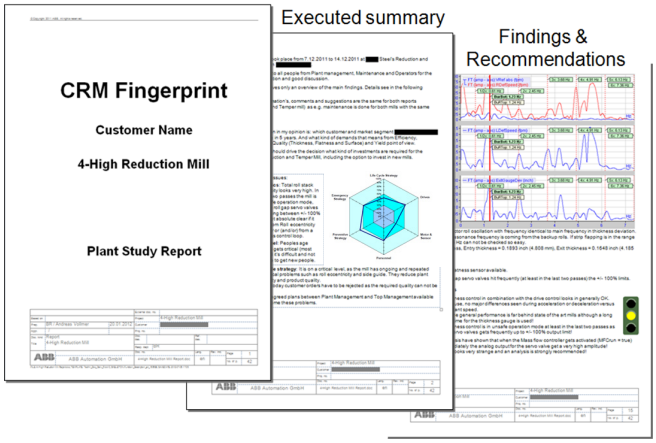
At the end of the evaluation period, findings are presented. An Executive Summary and detailed Technical Report are provided to unveil the findings and recommendations of the process performance diagnosis.

Executive Summary provides a general overview of critical findings with overview spider diagram as well as general recommendations.
Benchmark results, summary of findings, financial impact of recommendations and an actionable improvement plan, based on the process diagnostic steps.

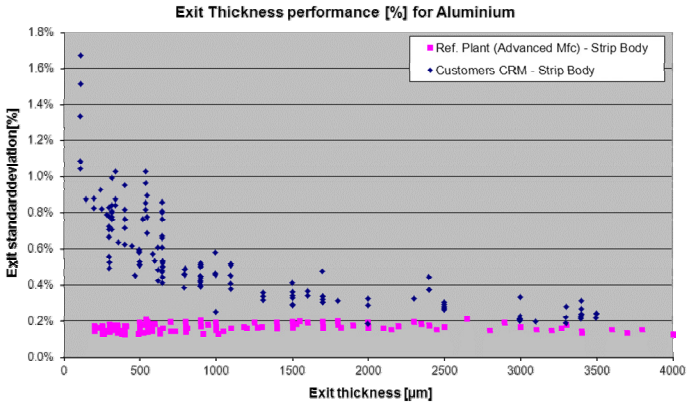
Technical Report provides base of study, detail analysis with data, trends, calculation, root cause and related recommendations and improvement plan to overcome current product life cycle, productivity, quality and yield issues.

The process fingerprint is the first step in achieving and sustaining higher performance levels. Annual Fingerprint, Implementation and Sustaining services are recommended as part of your service contract agreement to achieve and continue the improvement process. These can be scheduled within a single- or multi-year service contract agreement.

ABB is a leading company in metals applications. In depth knowledge and experience in this area allows comprehensive evaluation, diagnosis, remedial recommendations and implementation, and the ability to manage and sustain process performance improvement.

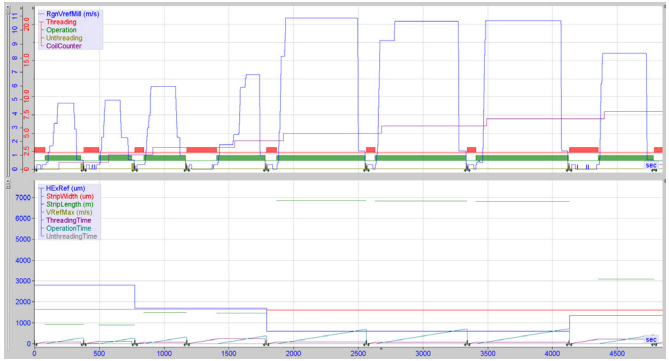


CRM fingerprint plant study report



Thickness performance analysis: comparison of customers mill versus benchmark reference plant

Throughput analysis



Root cause analysis of thickness deviation

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