

# Transition Profile Recovery Fingerprint

## Identify opportunities for machine performance improvement

Profile recovery performance following machine transitions (sheet break, grade change, machine startup) is measured. Analysis of recovery time, profile control response, and steady-state setpoint comparison provides a transition performance benchmark. The resulting diagnostic report provides improvement recommendations and associated estimated ROI.

Typical savings potential: \$70,000 – \$150,000

### Benefits

- Facilitates management decision process by focusing on high impact opportunities for improvement
- Provides clear path to quickly close the performance gaps by using the proposed improvement plan
- Provides a solid foundation for continuous improvement based on data

### Features

- Access to ABB optimization experts
- Profile transition performance benchmarking
- Detailed ROI-based improvement plan
- Clear communications during data collection and of diagnosis activities

The ABB Transition Profile Recovery is a process diagnostic service for paper machine profile control optimization. This diagnosis is a platform-independent, non-invasive service that can be applied to machines with frequent grade changes or experience profile recovery time longer than twice the natural response time of the profile following a transition event.

The fingerprint includes executing a series of specialized diagnostic and benchmarking methodologies for profile control to identify barriers that hamper profile recovery performance. The analysis generates both a performance benchmark and an improvement plan for enhancing the profile recovery performance and improving profitability.

### Transition Profile Recovery Performance Indicators

The fingerprint involves comprehensive testing and analysis designed to measure four key performance indicators (see

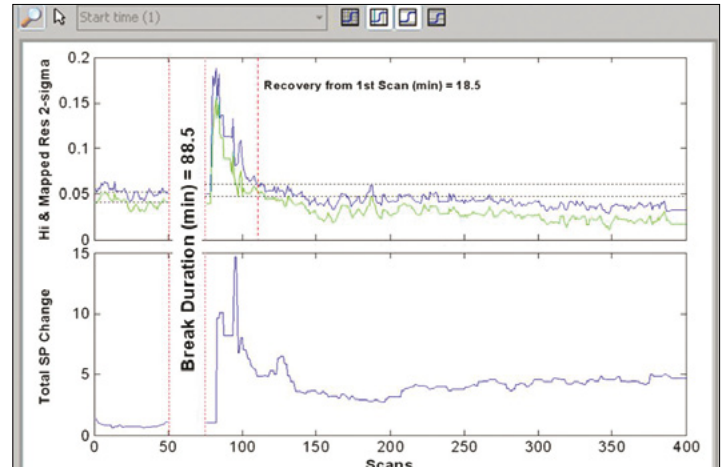


Figure 1). These indicators are used to assess profile recovery performance and identify potential areas for profile control improvement.

- Transition Time
- Steady-State Setpoint Correlation
- Profile Capability
- Profile Control Response

### Profile Transition Recovery Analysis

Each performance indicator is made up of a series of indices derived from 25 to 35 historically collected transition events, including breaks, grade changes and startups. The resulting index is used to evaluate the performance level of different areas of profile control and the profile transition process, including but not limited to:

- Profile control response
- Profile measurement availability
- Profiling constraint
- Profiler system readiness

The performance indicators are defined by specific tests and data analysis associated with the performance indicator (see Figure 2).

The complete fingerprinting process involves performing multiple levels of testing and analysis. The process requires the collection and observation of 20 to 25 break/startup events and 5 to 10 grade change events, from which recovery diagnosis is performed and improvement recommendations are based upon.

Once ABB performs the fingerprint, the steps to optimize the process and profile recovery time are identified to remove performance bottlenecks. The implementation plan is developed using the fingerprint information.

In order to provide practical solutions for problems often identified for profile recovery following a transition event, ABB has developed and defined logical optimization steps for different types of transition events.

Reporting

An Executive Report and a Technical Report are provided to disclose the findings and recommendations of the Transition Profile Recovery diagnosis.

- **Technical Report** provides supporting data collected during the fingerprinting process.
- **Executive Report** provides benchmark results, summary of findings, financial impact of recommendations, and an actionable improvement plan, based on the profile state diagnosis.

Improvement Plan

The improvement plan defines the steps needed to resolve the performance bottleneck and improve performance.

Based upon the findings, recommendations may include, but are not limited to, re-tuning CD control, introducing event triggered tuning dependency, introducing setpoint presets, updating operating procedures, or adding control logic.

The Transition Profile Recovery Fingerprint is the first step in achieving and sustaining higher performance levels. To achieve and continue the improvement process, annual diagnostic fingerprint, implementation, and sustaining services are recommended as part of your annual service contract agreement.

ABB is the world leader in pulp and paper 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.

Additional ABB Optimization Services  
Profile Grade Performance Fingerprint

The Profile Grade Performance Fingerprint complements the Transition Profile Recovery Fingerprint. This fingerprint involves comprehensive testing and analysis designed to measure inter- and intra-variability in control mapping and response modeling of major grade groups.

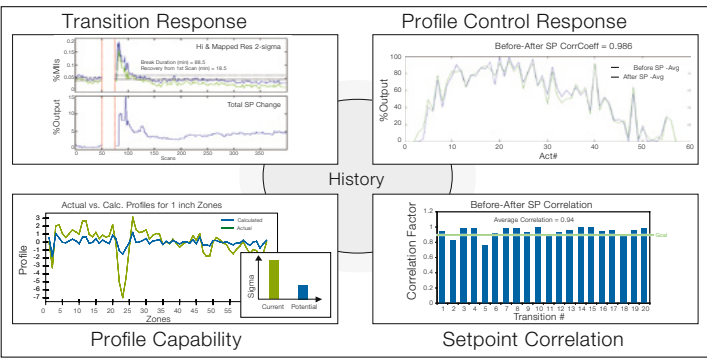


Figure 1 | Performance Indicators

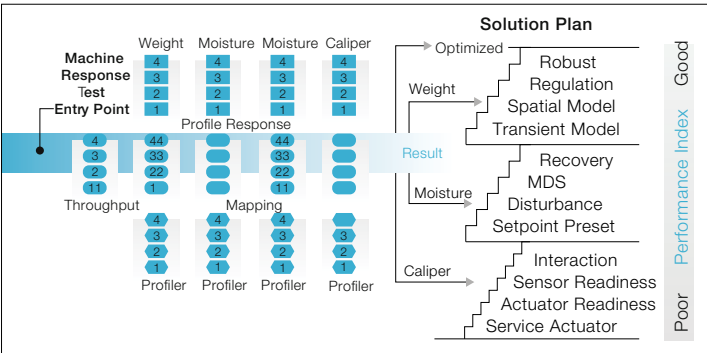


Figure 2 | Machine Areas: Implementation Modules

Delivery Schedule	
Preliminary	
Project introduction meeting	
Setup and verify data collection	
Collect 20 to 25 break or startup events	
Collect 5 to 10 grade change events	
Analysis	
Perform detailed data analysis	
Identify transition time, profile control response, and profiling constraints	
Correlate of before and after steady-state setpoint shapes	
Evaluate profile capability before and after transition event	
Complete ROI analysis based on recommendations	
Reporting	
Create Executive and Technical reports	
Review reports with the customer	

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