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## Advanced robotic system for automated plate processing: precision, efficiency, and seamless integration

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This paper presents an advanced robotic system designed to automate key quality control and marking processes for plates exiting the rolling mill. The solution integrates shaping automation (contour and flatness control), defect detection, thickness measurement, ink marking, and stamp marking, ensuring high precision and efficiency.

An advanced vision system enables real-time conformity checks, comparing customer specifications with actual plate data. This allows for automatic classification of non-compliant plates, which can be discarded, downgraded for alternative orders, or reprocessed for requalification. The system also features a user-friendly HMI, enhancing safety and optimizing robot operation management.

A key advantage of this solution is its seamless integration into existing plants, significantly reducing investment costs while enabling incremental implementation in multiple phases. Additionally, the system provides an opportunity to incorporate a product tracking platform, enhancing traceability and process optimization throughout production.

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