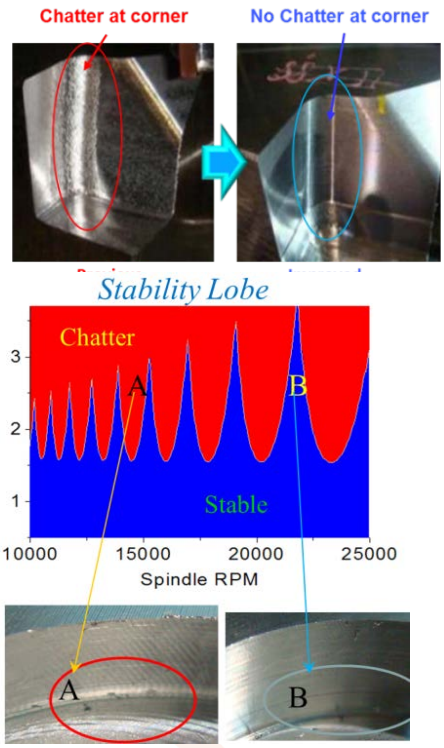
PE COI Precision Engineering Centre Of Innovation

Sustaining and Advancing PE Industry

CIP on Advanced Machining Dynamics Analysis Technology for Productivity and Quality Improvement

BACKGROUND

In machining, the optimal process zones shift with frequent changes in process dynamics. These include product geometry, material and tooling dynamics. It is difficult for engineers to come up with optimal cutting conditions for high productivity. SIMTech has developed a quick **milling and turning** vibration solver and optimizer to overcome this problem and improve productivity in machining.

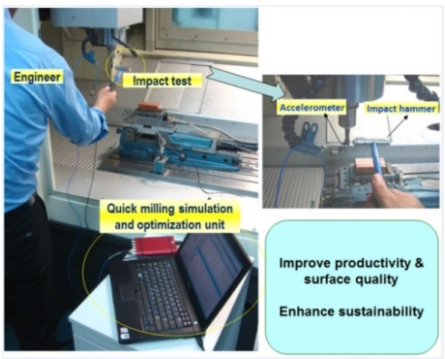


OBJECTIVES

To enhance the machining productivity and quality of local manufacturing industry in precision machining of steel and non-ferrous metals generally through technology transfer and customisation.

SCOPE/ DELIVERABLES

To customize quick dynamic milling and turning toolkit through machining dynamics analysis, to achieve chatter- and vibration-free machining, and to improve productivity.



POTENTIAL BENEFTIS

- Improve productivity by increasing material removal rate and decreasing polishing time
- Enhance quality by vibration-free machining to achieve chattering mark-free surface
- Prolong tool life by reducing work-piece damage and tool and spindle wear
- Save cost by reducing machining cost significantly
- Develop capability through machining toolkit, know-how and training for engineers

Cost of the Project for SMEs: Milling or Turning: $50k+GST; Milling and Turning (in one project): $76k+GST. Full CDG grant from SPRING available for eligible companies

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