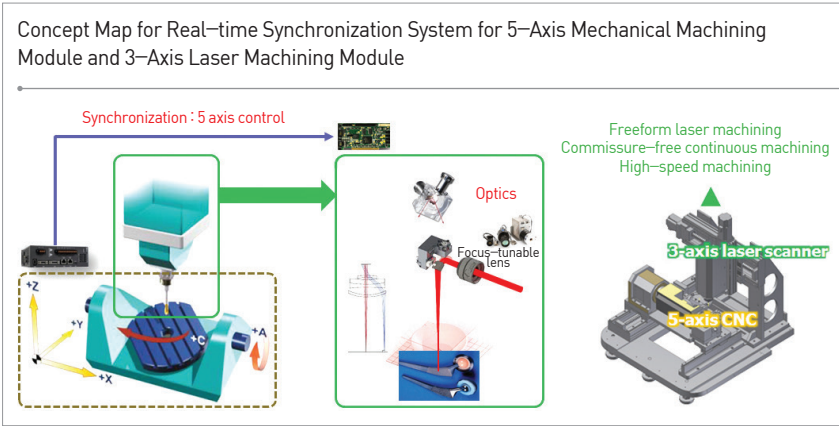


5-Axis Mechanical Machining System and 3-Axis Scanner Connection Technology

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- ⇒ New breakthrough technology surpassing the limit of existing laser machining area and speed through real-time synchronization of 5-axis mechanical machining module and 3-axis laser scanner
- ⇒ With this technology, micropatterning of size 15 μm at the continuous machining speed over 280 mm/s can be performed on a freeform surface.



Client / Market

- Functionality of home appliances/market requiring aesthetic surface, cell-friendliness improving implant/hip surface treatment, cutting and boring of automobile/aircraft surface component
- 5-axis cutting/boring laser machining market, real-time synchronization controller market, laser CAM SW market

Limitation of Existing Technology

- 3-axis laser scanner cannot cope with a completely freeform due to the depth factor of process.
- Foreign machine tool companies commercialize a simple combination of 5-axis processor with 3-axis scanner.
- The manufacturing speed decreases and a commissure issue occurs with the step and scanning method used with a simple combination of 5-axis processor and 3-axis laser scanner.

Technical Differentiation

- Control unit for real-time synchronization by entering the position/speed of 5-axis processor into the scanner control board
- World's first scanner control board for 5-axis signal input

DESIRED PARTNERSHIP

Technology Transfer

Licensing

Joint Research

Other



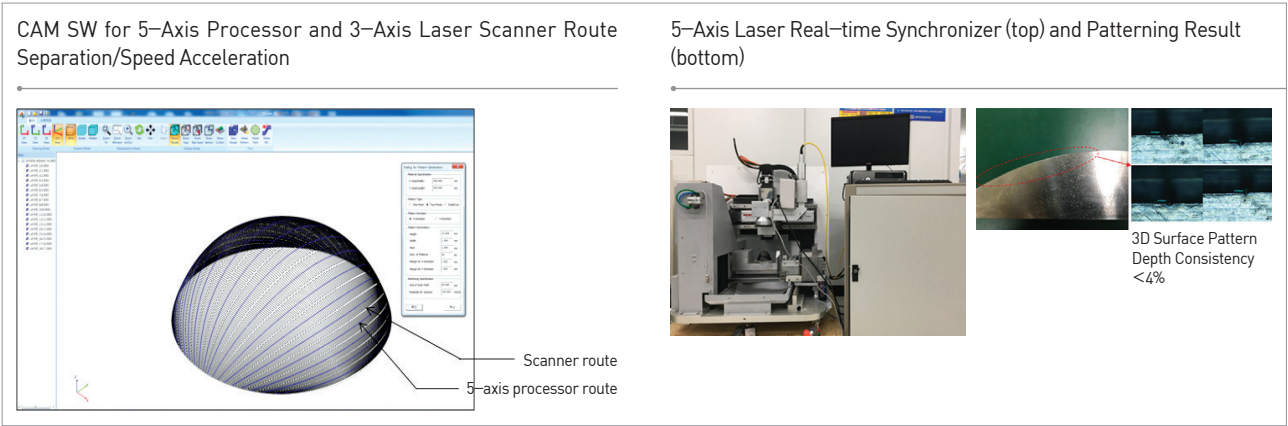
TECHNOLOGY READINESS LEVEL [TRL]



- CAM SW development for separation of heavy weight 5-axis processor transfer route and high-speed 3-axis laser scanner route/speed acceleration

Excellence of Technology

- Real-time synchronization of 5-axis mechanical machining module and 3-axis laser scanner to surpass the limit of machining area and speed of existing laser.
- With this technology, micropatterning of size 15 μm at the continuous machining speed over 280 mm/s can be performed on a freeform surface of material difficult for processing, Ti.



Current Intellectual Property Right Status

PATENT

- 3D Laser Irradiator and 3D Laser Irradiation Method (KR1769550)

KNOW-HOW

- Scanner control board design technology for 5-axis processor signal input and real-time correction calculation
- 5-Axis processor and 3-axis laser scanner route and speed acceleration algorithm