

Introduction of Technical Committee

The main purpose of a technical committee is the investigation of research on and information exchange regarding specific fields on a continuous basis. The introduction of technical committees was mentioned in volume 28 number 1 and volume 29 number 2. Recently, some technical committees have been formed newly. The details on one of them is introduced as follows.

Convergence Engineering Technical Committee

Recently digital engineering, which is the design and manufacturing support information system utilizing CAD/CAM/CAE, internationally popularizes, so only the digital engineering technology is not enough for international competitive. The method to dramatically improve product development suitable for Japanese manufacturing applying digital engineering, which integrates highly evolved scanning technology, shape modeling and simulation technology from the scanning data, is proposed as Convergence Engineering (an engineering fusing scanned actual object and CAD model) as shown in Fig.3.

The background of appearing this Convergence Engineering is such that, (1) the necessity of evaluation not only of CAD model but also of actual object to produce high-quality product on a field which reflects the strength of Japanese manufacturing, (2) the necessity of rational method based on both phenomenon-data generation by scanning and analysis of the data due to the limit of former method based on skilled worker's knowledge for complicating

manufacturing processes, (3) the necessity of data utilization in unified manner by digital engineering. Convergence Engineering makes actual object shape comparison and trace in manufacturing processes available, while optimizing the shape in the level of CAD model. The objectives of this technology are quality improvement, cost reduction and lead-time shortening.

The technology to realize these objectives includes the following; (1) process parameter optimization comparing actual-object scanning result with CAD model, (2) digitizing actual object of a design model, a metal mould and so on, (3) CAE simulation for actual object, and (4) process planning and equipment planning for actual object, such as NC and robot welding tool-path generation.

In order to improve Convergence Engineering, it is necessary (1) to activate this domain and to acknowledge this technology by making ease of collaboration between measurement technology and digital engineering, (2) to promote industry and academy collaboration by making information exchange vivacious, and (3) to jack up the level of this technology. Therefore this committee promotes information delivery by holding meeting or symposium several times a year and by publishing. And further, it plans to make technology roadmap and to make standard and database related to this technology.

From now on, this committee progresses as the core of this domain. Far more participations to this committee are recommended.

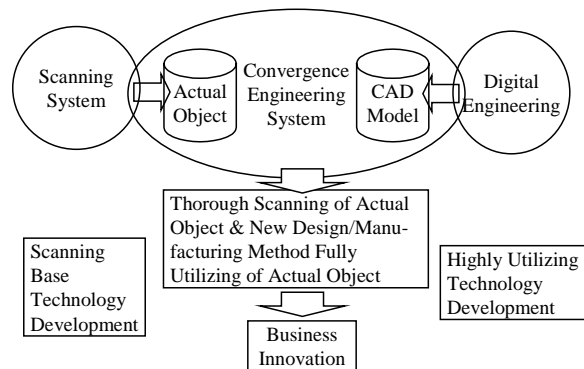


Fig.3 Convergence Engineering