Details of Technology



Name of Technology	Method using fillet surface by 3D Shape Measurement System	IT
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Key words	3D coordinate point cloud, contour line extraction, area segmentation, feature line extraction, ridge line, flatness, fillet surface	

What kind of technology is this?

Outline



Conventionally, when merging 3D coordinate point clouds into the same space as a CAD model, the method used set up reference points (markers), measured the reference points and the target objects together, and merged the point clouds so as to match the reference points. This method, however, is limited to objects for which reference points can be set up.

There is also another method to extract the features of shapes from 3D coordinate point clouds in the form of feature lines and utilize them in merging point clouds. This method, however, limits the acquired feature lines to outlines; thus, they are insufficient to merge point clouds.

We developed technology starting with the outlines extracted by the existing method. Utilizing the fact that the point clouds are flat in the vicinity of an outline, we developed the technology necessary to extract flat surfaces from the point clouds, and extract feature lines expressing fillet surfaces contacting the flat surfaces.

What are its applications?

Among mechanical parts, the optimal object for measurement by this technology is a shape in which fillet surfaces are generated where multiple flat areas intersect.

In terms of finished products, this system can be provided as licensed software or in a bundle program for processing range sensor data.

Related patents	Japanese Patent Application No. 2008-155839
Related materials	