

# Parametric CAD Modeling



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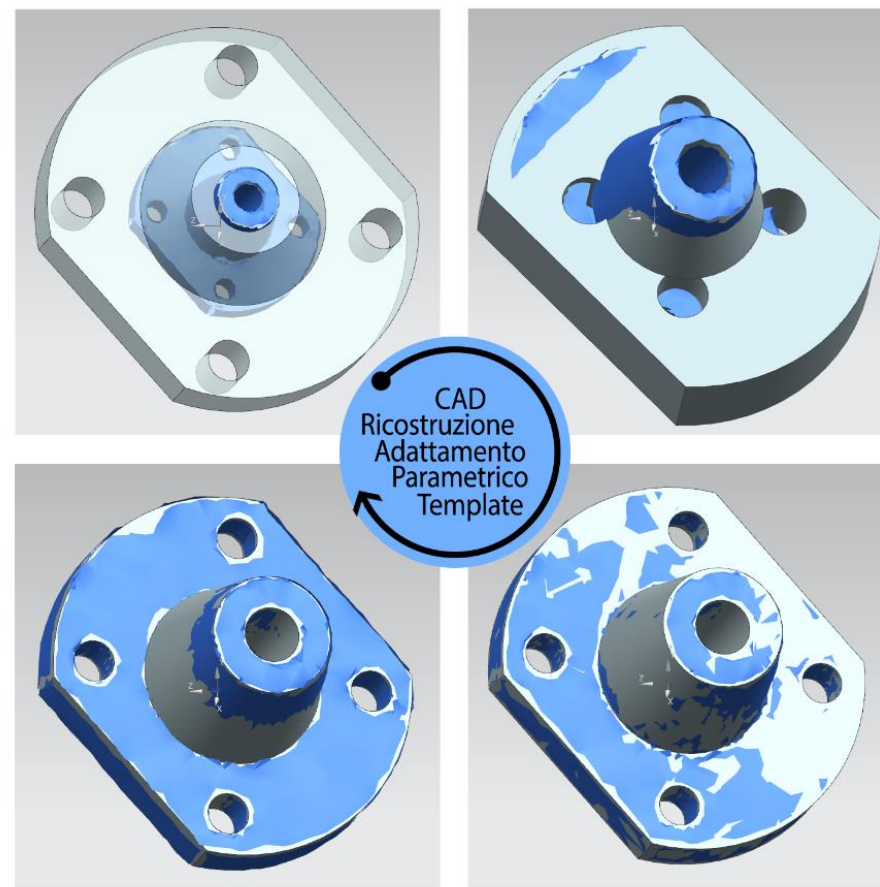
## Invention



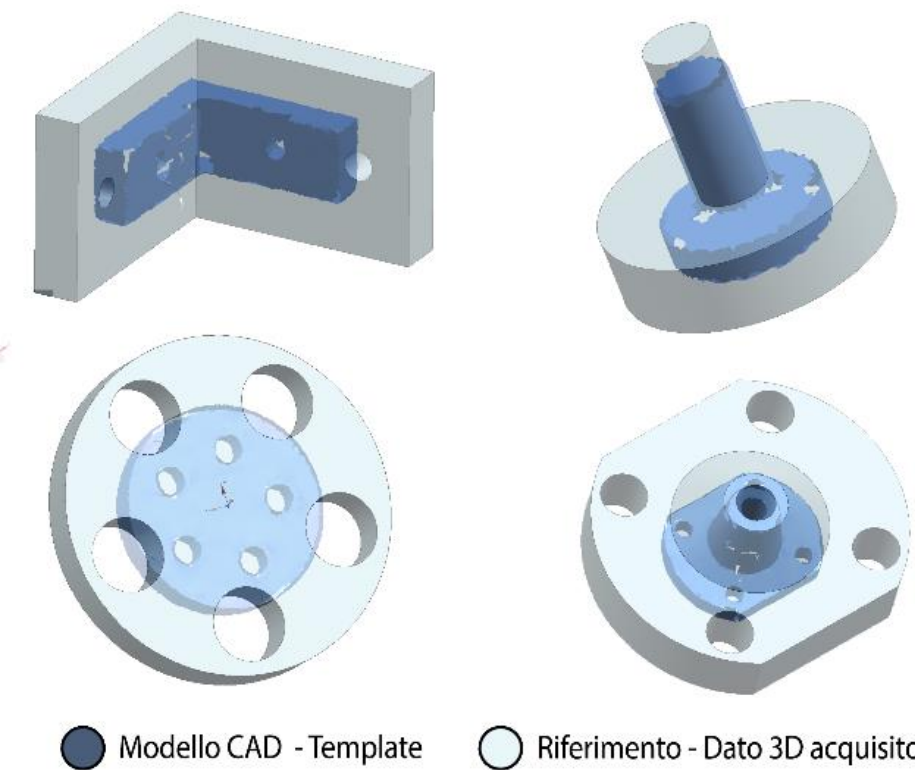
The invention consists of a method for the reconstruction of a CAD model with parametric and associative properties starting from: a scan of a real object, and from a CAD template of the object (parametric-associative) in order to simplify the reverse engineering processes.

The method object of the patent provides for the automatic reconstruction of a CAD model, thanks to the comparison of a digital scan of a real object with a CAD template with parametric properties. The generated CAD model is parametric and associative and can be modified in all its features and characteristics (size, shape, position). The algorithm devised, which implements the method, allows the software to modify the template by taking the scanned object as a model, so as to reconstruct it in a parametric environment and thus allow an easier re-engineering process. The adaptation procedure is carried out thanks to an iterative procedure that minimizes a global error function capable of describing the difference between the CAD surfaces and those defined by the scanned data.

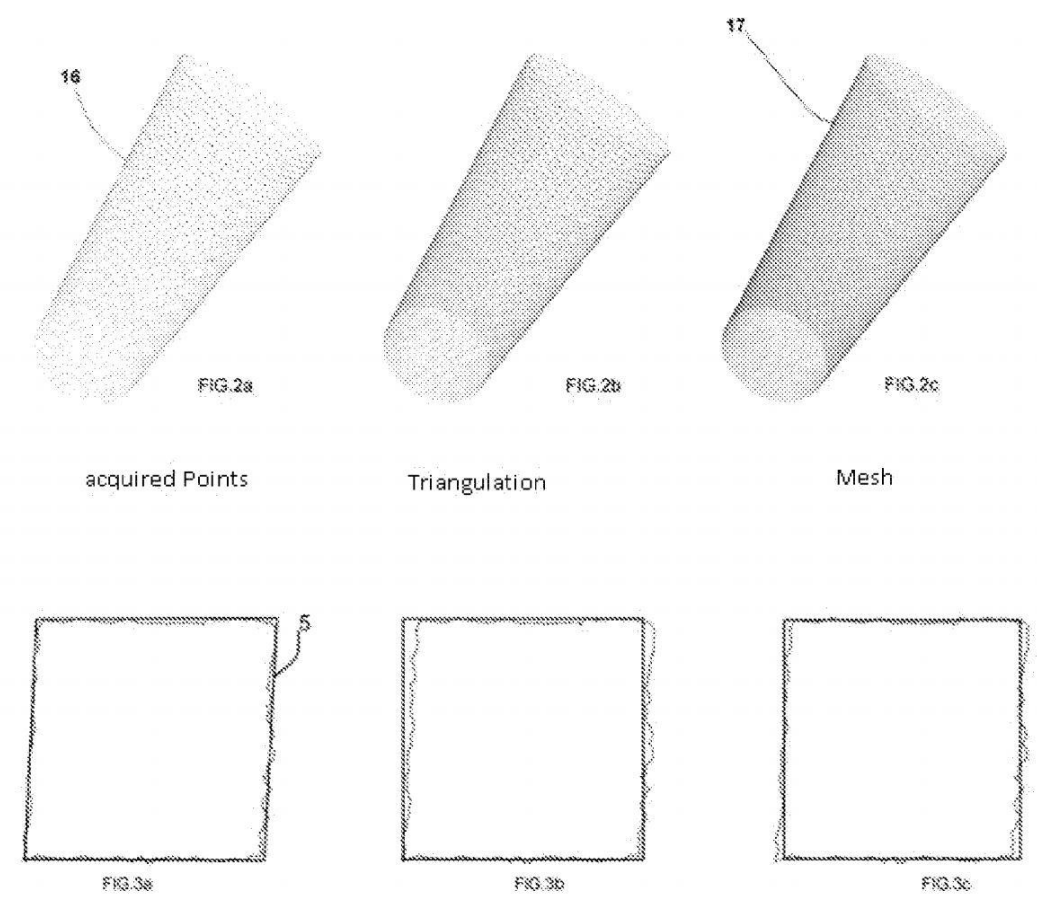
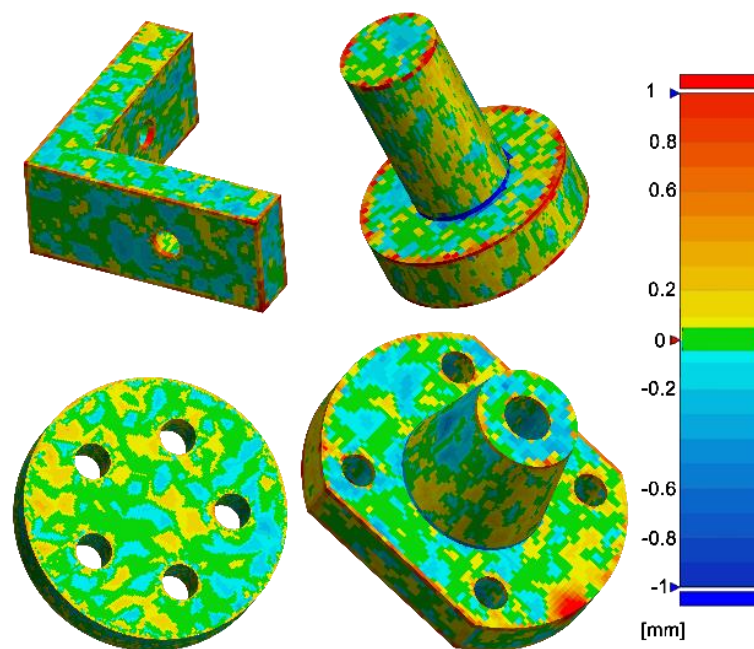
# Drawings & pictures



## Situazione iniziale



## Risultati



## Industrial applications



The invention can find application in any company that deals with design, modeling, engineering, design and industrial design as well as in the context of reverse engineering.

The advantages ensured by this technology reside in the possibility of obtaining associative parametric CAD models, greatly reducing the working time, through three-dimensional scans and automated design of the desired object. The method allows the intervention of the technician at any time, so as to allow design changes and full exploitation of the acquired data.

## Possible developments



The patent is available for sale or exclusive and non-exclusive license. The licenses are available for the entire patent life.

The research group is available for new research activities in collaboration and on behalf of third parties, technical insights, scientific advice, also aimed at raising the TRL of technology.

The TRL of the invention is 5/6.

For more information:



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