



YOUR
TECHNOLOGY
ADVISOR

Customer References

Safety guard
for industrial machinery

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Case presentation

Client

A specialist company in the plastic material processing sector and in the construction and assembly of safety guards and structures. It is organised in two divisions:

›**aluminium division:** specialised in producing modular safety guards and structures for industrial machinery and in the sale of components for constructing these.

›**plastics division:** specialised in producing protective housings and semi-finished methacrylate, polycarbonate, PVC, polyethylene, nylon and Teflon materials.



>01

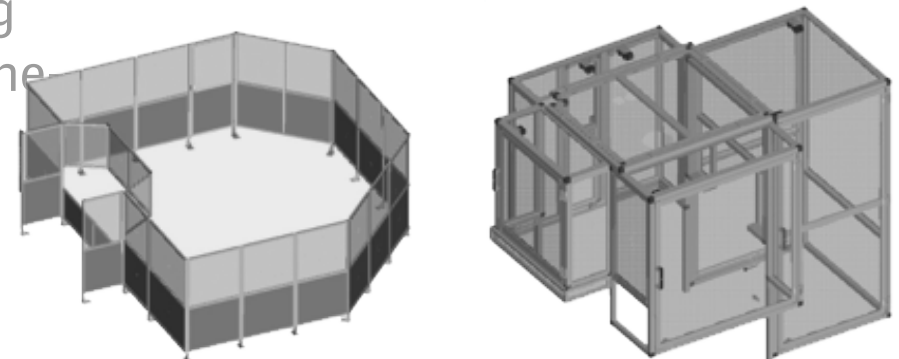
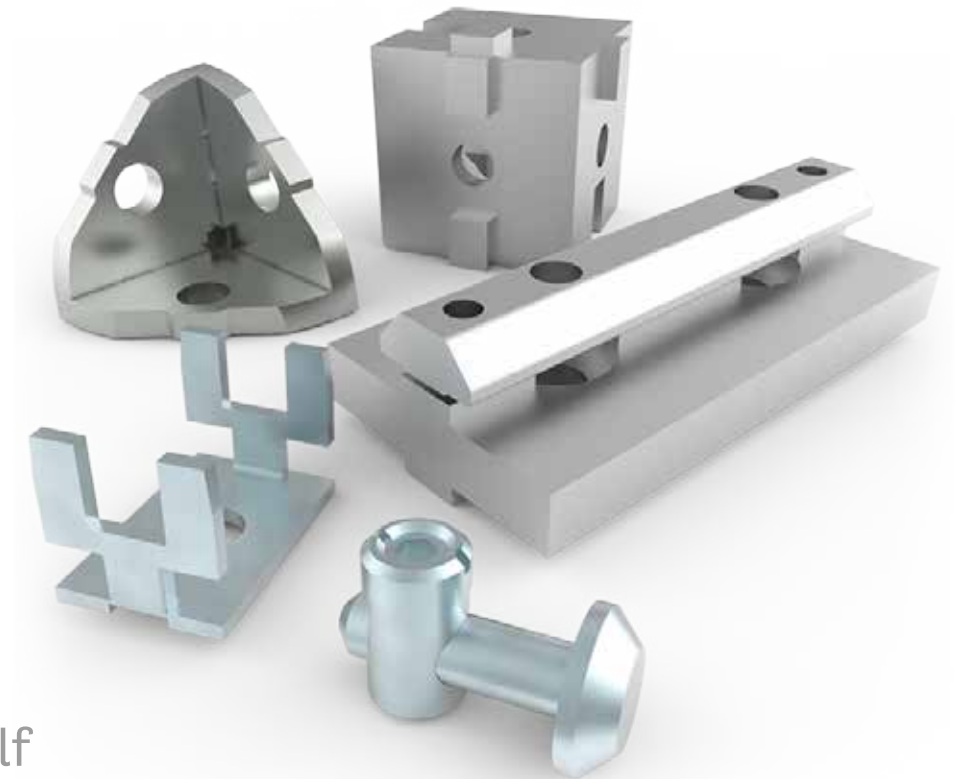
Case presentation

Product

Safety guard framework for tool machines,
modular structure comprising:

>**components** for assembling the structure itself
(profiles, connectors, accessories)

>**machine operations**, for finishing and completing
structures and safety guards (sliding doors, overhead
swing doors, single doors, panels)



›01

Case presentation

Objective

›Creo Parametric Essentials

›Creo AAX (Advanced Assembly Extension)

To develop a configuration procedure to be used within the Creo Parametric Essentials, environment in order to allow profiles to be assembled in a semi-automatic manner so as to build the 3D framework structure as well as to configure all the numerous machine operation variations.



To use the software tools of Creo Parametric Essentials, in order to obtain a CAD result that is repeatable, flexible and can be modified via pre- and post-configuration action.

›02 Configuration techniques used

- ›Family table
- ›Flexibility
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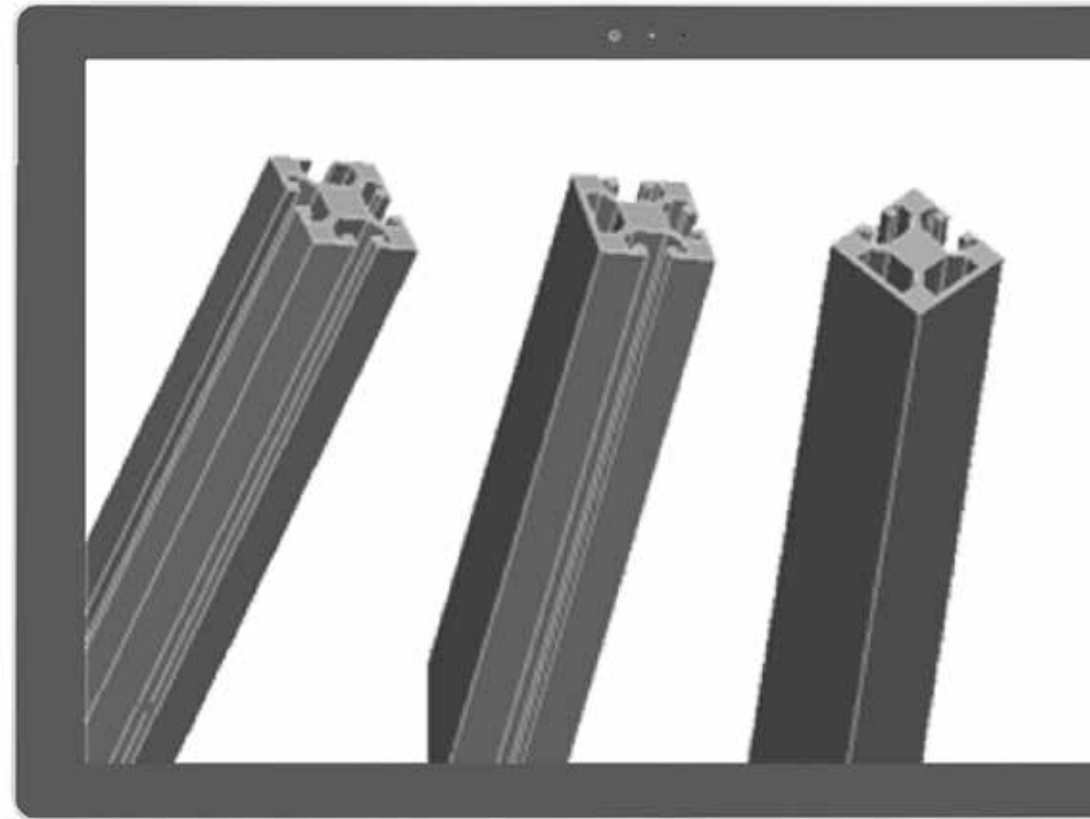


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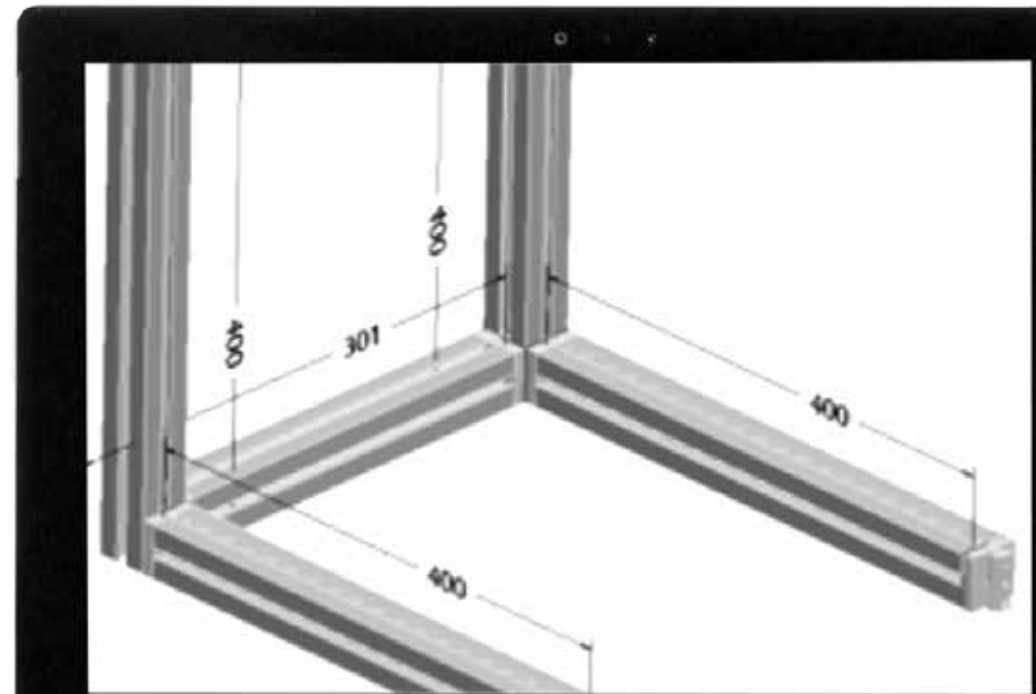
The use of flexible profile length dimensions allows us to speed up assembly of the same, postponing length definition operations, due to the use of 3D dimensional annotations.



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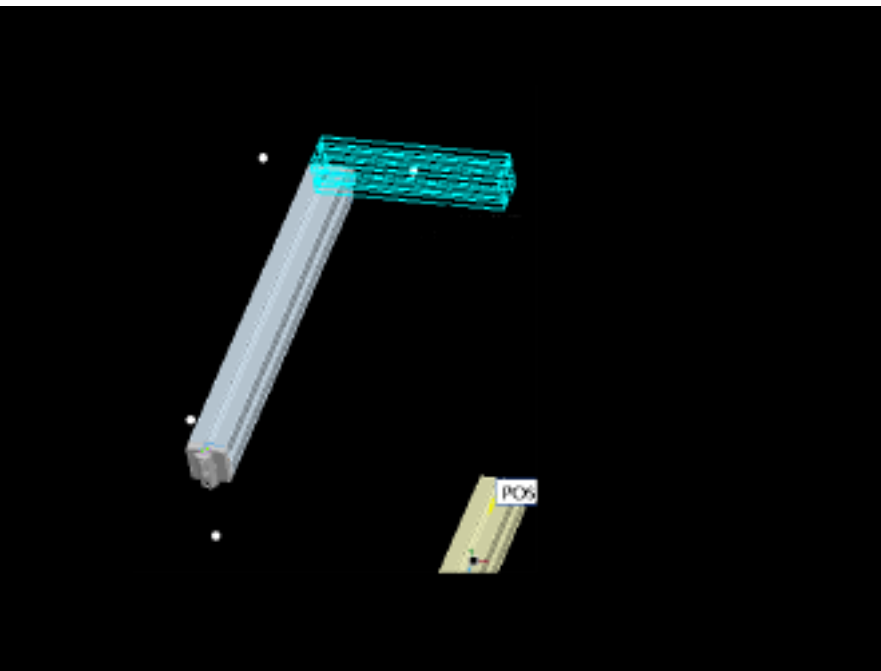
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Components are assembled in a semi-automatic manner as a result of the component interfaces having been defined.



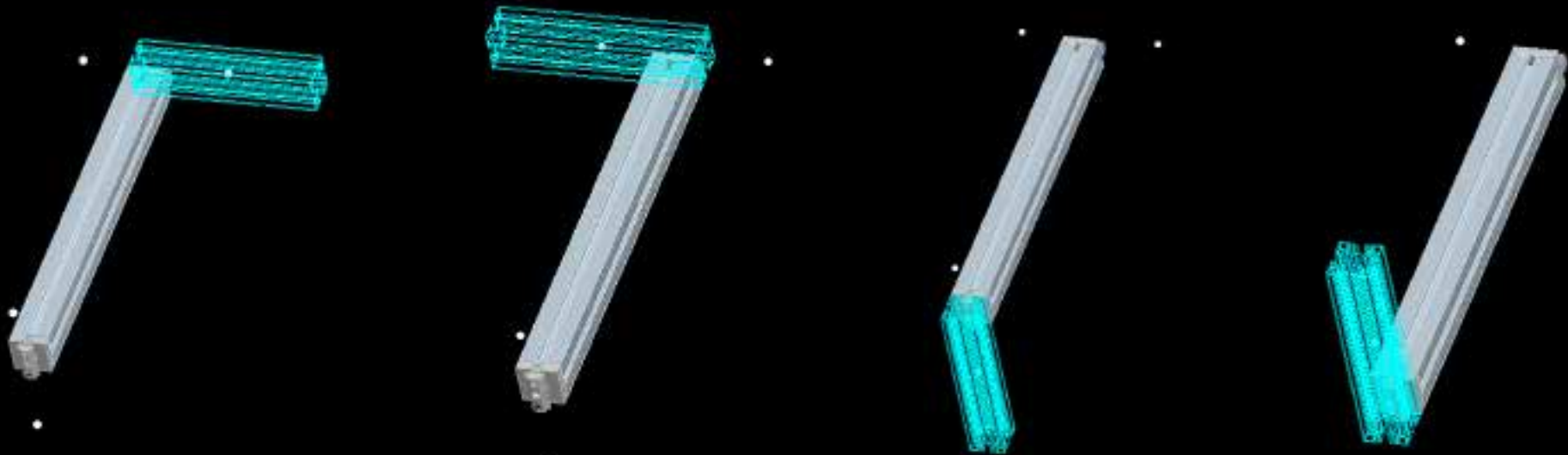
The system guides the user in assembling the component selected during the session, marking all slots that can be occupied in three-dimensional space with a white dot, according to criteria that will have been suitably defined during the configuration phase and with a related interference check.



›02

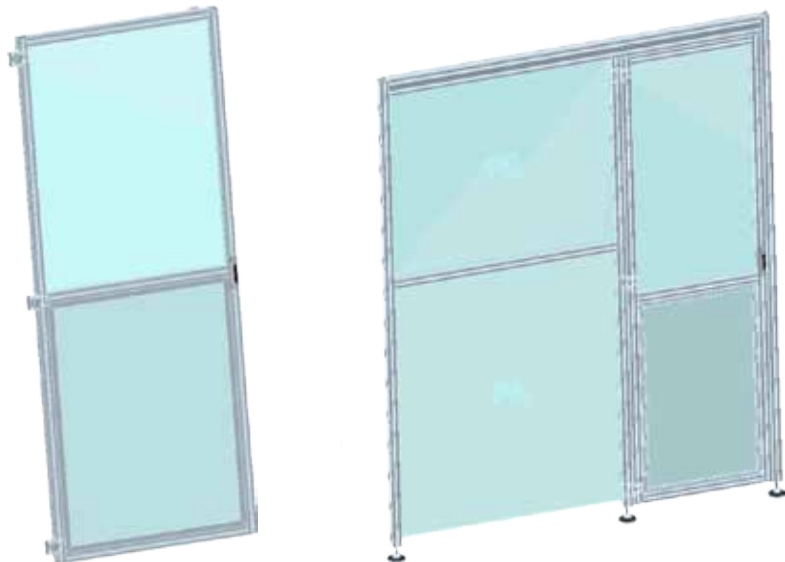
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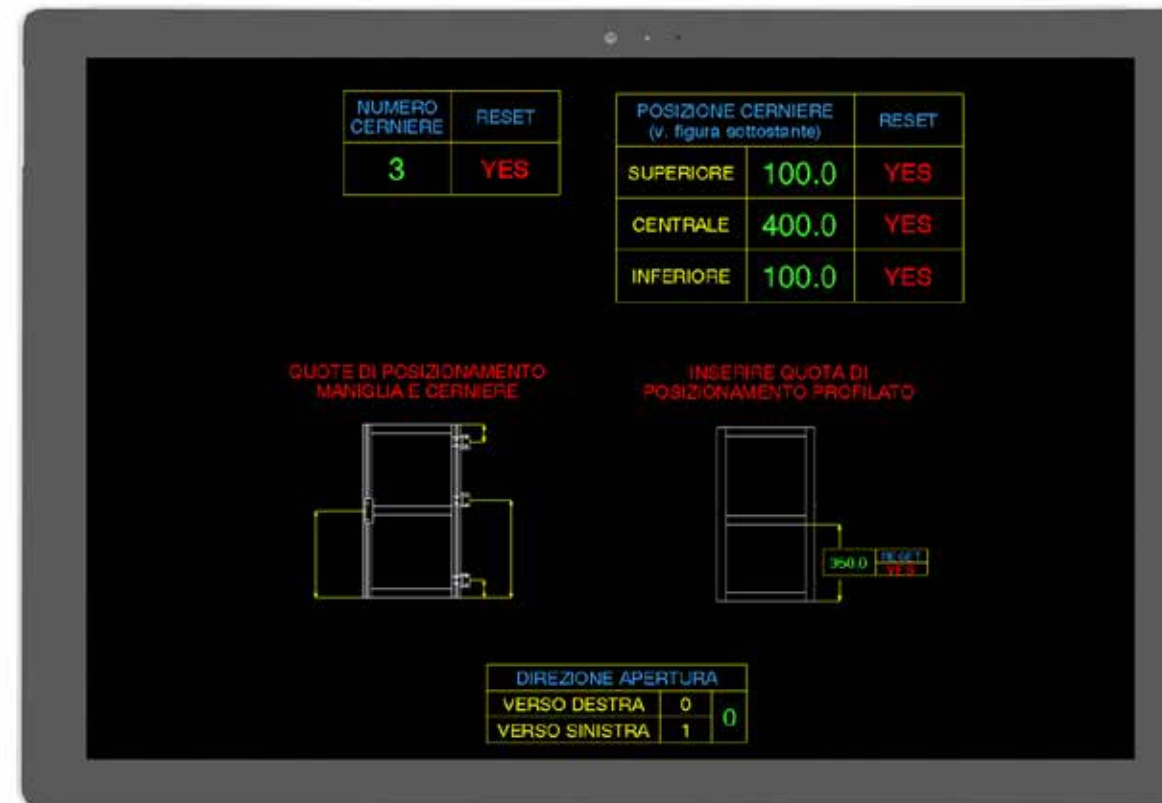
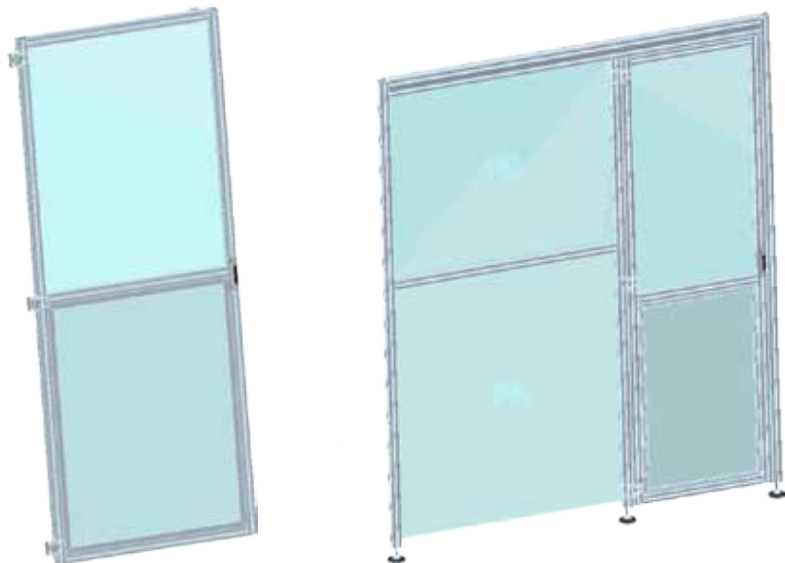
The layout tool is used to process all the components to be installed on the framework and it allows us to quickly and flexibly configure the numerous variants available.



The user inputs the desired project design package parameters via a wizard that produces a definitive regenerated 3D model.

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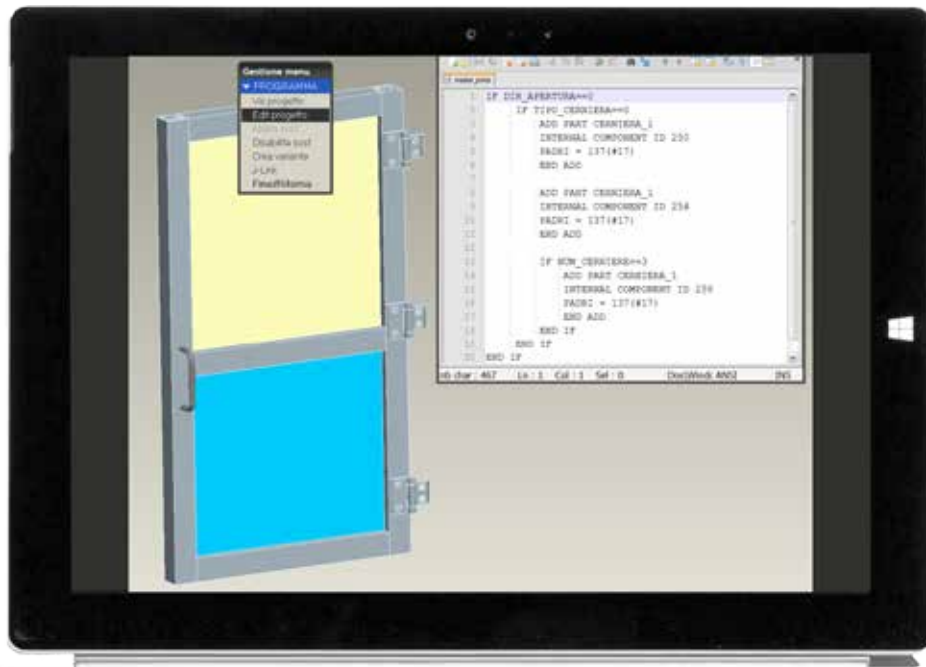
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The Creo Parametric Essentials program enables automatic assembly of all the accessory components to be included in production operations (hinges, handles, and fixing blocks etc.).



The user using the layout tool chooses the basic characteristics of the component which is “taken” from an archive and correctly assembled within the machine operation.



›03

The use of Mathcad for automatic renaming

Problems The profile

The profile assembly procedure is implemented using generically-named components.



Objective

Automating the renaming operation for profiles included in the assembly, so that they are renamed with the definitive company code.

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Implemented solution

Written in the program Mathcad which receives as input all the information from the model tree of Creo Parametric Essentials and the data necessary for carrying out coding operations. It returns a file trail as output which carries out profile renaming operations automatically.

>03

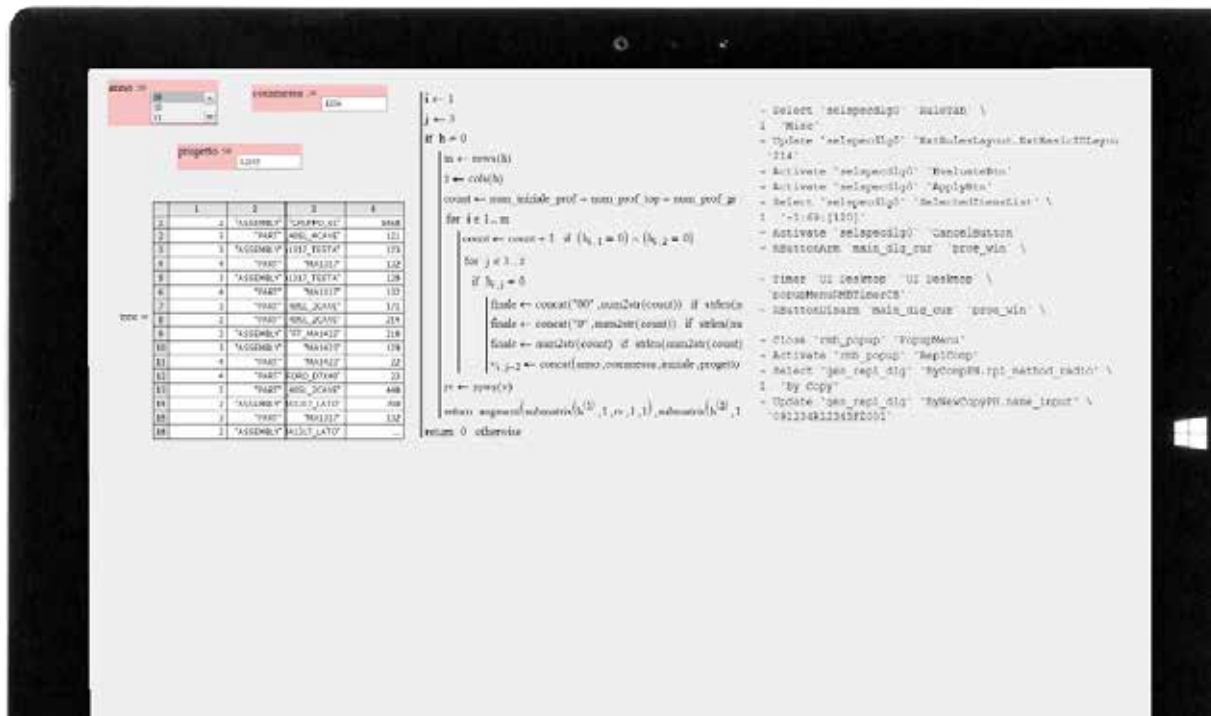
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›04 Conclusioni

- ›The described procedure takes advantage of the advanced features of Creo Parametric Essentials to automate the creation of the support framework assembly and to configure possible variants in the structure-completing operations
- ›The use of the programming and text-writing functions made available by Mathcad allows the assembled profiles to be automatically renamed according to company codification criteria.
- ›The method presented allows one to obtain an easily and speedily modifiable 3D model (as well as the relative 2D drawings) that exploits the parametric potential of the tools used.

Thank you!



Organizzazione con Sistema di Gestione per la Qualità certificato
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