

Partner offer

Date (01/12/2021)

- **Relevant topic(s) in work programme**

HORIZON-CL4-2022-TWIN-TRANSITION-01-02: Products with complex functional surfaces (Made in Europe Partnership) (RIA)

- **Quick description of the project concept**

- **Expertise proposition on:**

- Integrate the new surface treatments in a manufacturing line for profiles with complex shape or multimaterial content, with clear metrics on its efficiency during operation;

- **Description of the expertise requested/proposed (up to 1000 characters)**

For several years, we work on the toolpath computation for different kind of multi-axis robotized manufacturing process (manufacturing, polishing, additive manufacturing,...). Our originality is to integrate manufacturing process constraints and robot limitation on the tool path computation method. Thus, we have expertise in the formalization of the optimization problem for the tool path computation. We are able to develop fast computing model to simulate the robot behavior while performing the task with an adaptation to the part shape.

In the same time, we work on the formalization of the manufacturing process to conduct a research activity on the design for manufacturing.

Debout, P., Chanal, H., & Duc, E. (2011). Tool path smoothing of a redundant machine: Application to Automated Fiber Placement. *Computer-Aided Design*, 43(2), 122-132.

Fortunet, C., Durieux, S., Chanal, H., & Duc, E. (2018). DFM method for aircraft structural parts using the AHP method. *The International Journal of Advanced Manufacturing Technology*, 95(1), 397-408.

- **Keywords describing the expertise requested/proposed (up to 10 words)**

Tool path computation, robotic, design for manufacturing

Organisation information

Organisation and country: Institut Pascal / Clermont Auvergne INP, France

Type of organisation:

Enterprise SME Academic Research institute Public Body Other: Association

Former participation in FP European projects?

Yes No

Web address: <http://www.institutpascal.uca.fr/index.php/fr/>

Description of the organisation:

Institut Pascal is an interdisciplinary research laboratory working in the strategic fields of the Engineering and Systems Sciences: process engineering, mechanics, robotics, physics for information sciences, health technologies. It is supervised by the University of Clermont Auvergne and the CNRS. Clermont Auvergne INP is an engineering school.

Contact details

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