

**Marie Skłodowska Curie Action – Postdoctoral Fellowship 2023**  
**Expression of interest – Hosting offer**  
**(MSCA-PF-2023)**

<b>Contact Person/Scientist in charge</b> <i>(data of the principal investigator of the research group/lab or scientific supervisor)</i>	<b>Name</b>	Fuchs
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<b>Laboratory /Department /Institute /Centre /</b> <i>(data of the centre/department where the fellow would be located)</i>	<b>Name</b>	Friedrich-Alexander-Universität Erlangen-Nürnberg Institute for Factory Automation and Production Systems
	<b>Address</b>	Egerlandstraße 7-9, 91054 Erlangen
<b>Research Area</b> <i>(Please select the research area: corresponding to the eight MSCA evaluation panels. You can select between one and up to three scientific areas per EO)</i>		Information Science and Engineering (ENG)
<b>Brief description of the Centre/Research Group</b> <i>(max. 1,600 characters including spaces: information about the research centre or research group, scientific staff. Please include URL if possible)</i>		<p>FAPS is a recognized institute for teaching and research in the area of automation and mechatronic systems, with a interdisciplinary development of holistic optimization to serve the welfare of the people. Within the research sector Automation Technologies we conduct research in four focus areas:</p> <p><b>Control technology and sensor technology:</b> flexible control concepts, implementation of distributed system architectures in automation, methodical design and implementation of soft sensors, sensor fusion, and sensor networks.</p> <p><b>Industrial communication:</b> application of radio-based technologies, integration of edge-based solutions, implementation of cybersecurity on the store floor, simulation of industrial communication.</p> <p><b>Software and IT in manufacturing:</b> design and implementation of the digital shadow of production, application of KI methods, preparation and visualization of processes and contexts on the shop floor, datadriven software engineering in an industrial environment.</p> <p><b>Factory energy networks and energy efficiency:</b> Hybrid AC/DC energy networks, integration of renewable energies and energy storage systems, increasing efficiency in industrial energy grids, integration into smart energy management, CO<sub>2</sub> reduction and sustainability, own DC grid with industrial showcases</p> <p><a href="https://www.faps.fau.eu/">https://www.faps.fau.eu/</a></p>

<p><b>Project description</b></p> <p><i>(max. 1,800 characters including spaces: short description of the research project / research line where the fellow would be hosted and develop his /her project)</i></p>	<p>In the research sector Automation Technology, innovative, digital approaches for the production of tomorrow are researched. Among other things, novel wired and wireless communication technologies (e.g. OPC UA over TSN, WiFi 6 and 5G) are investigated with regard to their potential in automation technology. Especially the integration of wireless communication technologies is an important component for increasing flexibility in production. To this end, applicative communication requirements for the industrial communication system are being further developed and profitably applied with the aid of simulations. Main topics:</p> <ul style="list-style-type: none"> <li>- Basic research in the context of industrial communication</li> <li>- Investigation of new communication technologies with regard to their industrial suitability</li> <li>- Development of application-specific communication requirements (machine-to-component)</li> <li>- Development of emulation and simulation environments for communication traffic in industrial context</li> <li>- Modeling of communication requirements for use in simulations</li> <li>- Validation of the results on the basis of a testbed to be set up</li> <li>- Preparation of own research results by publications on national and international platforms</li> <li>- Support in public relations as well as technology transfer (e.g. through teaching, trade fairs, seminars, symposia etc.)</li> </ul> <p>These tasks are embedded in an exciting, innovative environment where you will use your expertise and our network to apply for and work on publicly funded or industrial research projects.</p>
<p><b>Applications: documents to be submitted and deadlines</b></p> <p><i>(Please indicate the documents that the candidate fellow should submit to establish contact: CV, letter of motivation, letter of references, etc., please indicate deadline. Recommended deadline: April 2023)</i></p>	<p>Needed documents:</p> <ul style="list-style-type: none"> <li>- CV</li> <li>- Copy of academic records (only official records are acceptable)</li> <li>- Abstract of PhD Thesis</li> <li>- Letter of motivation</li> <li>- Further documents such as representative publications, letters of recommendation, job references</li> </ul> <p>Deadline: 30.06.2023</p>