Sample:

Name of the Institute / University:

Technical University of Munich (TUM)

Description of the legal entity:

The Technical University of Munich (TUM) is one of Europe's top universities. It is committed to excellence in research and teaching, interdisciplinary education and the active promotion of promising young scientists. The university also forges strong links with companies and scientific institutions across the world. TUM was one of the first universities in Germany to be named a University of Excellence and regularly ranks among the best European universities in international rankings. TUM promotes both basic research, aimed at furthering scientific knowledge and insights in general, and applied research, focused on concrete solutions to defined problems. These mutually complementary research strands both shape the transfer of knowledge and technology to society through collaboration with industry partners. Every year, TUM signs more than 1,000 research agreements with partners in both the scientific and business communities.

The Munich School of Robotics and Machine Intelligence (MSRM) at TUM is an integrative research center in the field of robotics and machine intelligence directed by Prof. S. Haddadin. Its purpose is to research the fundamentals of robotics, perception and artificial intelligence in order to develop innovative and sustainable technological solutions for central challenges of our time. With the expertise of more than 50 professors from a wide range of disciplines and the tight collaboration with institutions in the areas of philosophy, ethics, and law, responsible technology development and subsequent integration into society are ensured. MSRM forms the basis for sustainable science, education, technology development, and implementation in through interdisciplinary basic research, applied research oriented toward societal needs and cutting-edge education. By means of flagship initiatives, the scientific and technical results will be translated into the real world within the context of globally relevant topics of our time, namely the future of health, work and mobility.

The Chair of Robotics and Systems Intelligence (RSI) is a member of MSRM. The goal of RSI is to significantly advance the scientific foundations for intelligent machines capable of autonomous acting in our world and in close interaction with their human creators. The research focus of RSI is the development of control algorithms, mechatronics, intelligent robotics and prosthetics, robot learning algorithms, foundations of machine intelligence, as well as nonlinear control and systems theory. Prof. Haddadin and his team contributed in the research domains of physical human-robot interaction, nonlinear robot control, real-time motion planning, real-time task and reflex planning, robot learning, optimal control for elastic systems, human motor control, variable impedance actuation as well as safety in robotics.

The Chair / Group / Institute / … of … (if applicable)

The Chair / Group / Institute / … of … (if applicable)

Role in the project and main tasks:

TUM is the coordinator of CENTRIS. Other than management activities described in WP1, which will be fulfilled by the C&M Board Coordinator (hired by TUM), TUM is also responsible for WPA (Research Programm) led by Sami Haddadin. Furthermore TUM will contribute to … . TUM

coordinates several renowned German and EU projects and has a strong international research and industry networks.

Description of the key persons involved:

Prof. Sami Haddadin (M) is Director of the Munich School of Robotics and Machine Intelligence at the Technical University of Munich (TUM) and holds the Chair of Robotics and System Intelligence. He received his PhD from RWTH Aachen University. Prof. Haddadin was Chair of the Institute of Automatic Control at Gottfried Wilhelm Leibniz Universität Hannover from 2014 to 2018. Prior to that, he was head of the DLR research group "Human-Centered Robotics" and the program "Terrestrial Assistant Robotics" and participated or coordinated several research and industrial projects. He was strongly involved in the development and technology transfer of the DLR Lightweight robot to KUKA and is the founder of FRANKA EMIKA GmbH that won the EY Entrepreneur of Year Award 2019. Among others, he is a recipient of the George Giralt PhD Award (2012), the RSS Early Career Spotlight (2015), IEEE/RAS Early Career Award (2015), and the Alfried Krupp Award for Young Professors (2015). Furthermore, he received both major German research and innovation awards: the German Future Prize of the Federal President (2017) and the Leibniz Prize (2019). In 2019, he was elected as a member of the National Academy of Technical Sciences (acatech). He contributed to various national and EU funded projects including SoftPro (Horizon 2020), ILIAD (Horizon 2020), SAPHARI (FP7), VIACTORS (FP7), SMERobot™ (FP6), PHRIENDS (FP6) and NEUROBOTICS (FP6). Prof. Haddadin has published almost 200 scientific articles in international journals and conferences. His research interests include intelligent robot design, robot learning, task and reflex planning, collective intelligence, human-robot interaction, nonlinear control, realtime planning, optimal control, human neuromechanics and prosthetics, and robot safety.

Key Person 2 (M) is … **(if applicable)**

Relevant publications, and/or products, services (max. 5 items):

- e.g. Publication 1
- e.g. Publication 2
- e.g. Product 1
- e.g. Product 2
- e.g. Service 1

Relevant previous project or activities, connected to the subject of this proposal (max. 5 items):

- Project 1
- Project 2
- Project 3
- Project 4
- Project 5

Description of any significant infrastructure and/or any major items:

- e.g. Infrastructure 1
- e.g. Infrastructure 2
- e.g. Item 3
- …