## PART A - ONLINE INFORMATION

## Organisation Data

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| PIC Number | 999651543 |
| Full Name of Organisation: | Hochschule fuer Technik und Wirtschaft Dresden |
| Short name of Organisation: | HTW Dresden |
| Legal Status of Organisation: | Specific Legal Statuses  Legal person .......................................................... yes  Public body ............................................................ yes  Non-profit ............................................................... yes  International organisation ...................................... no  Secondary or Higher education establishment ...... yes  Research organisation ........................................... yes |
| **Department carrying out the proposed work** | |
| Department 1 Name: | Faculty of Informatics / Mathematics |
| Street: | Friedrich-List-Platz 1 |
| Town: | Dresden |
| Postcode: | D-01069 |
| Country: | Germany |
| **Main Contact Person** | |
| Title: | Prof. Dr. rer. pol. |
| Gender: | Male |
| First Name: | Torsten |
| Last Name: | Munkelt |
| E-Mail Address: | Torsten.munkelt@htw-dresden.de |
| Position in the Organisation: | Professor |
| Street: | Friedrich-List-Platz 1 |
| Town: | Dresden |
| Post Code: | D-01069 |
| Country: | Germany |
| Website: | www.htw-dresden.de/ |
| Telephone: | +49 351 462 2650 |
| Fax: |  |
| **Other contact persons (repeat lines as necessary)** | |
| First Name: | Anja |
| Last Name: | Roellich |
| Email: | anja.roellich@htw-dresden.de |
| Telephone: | +49 351 462 2003 |
|  |  |
| First Name: | Paul |
| Last Name: | Christ |
| Email: | paul.christ@htw-dresden.de |
| Telephone: | +49 351 462 3797 |

## Researchers involved in the proposal

If you are a University or Research Performing Organization or if you have employees with a researcher contract that will be active in the project, please fill in the following (repeat lines as necessary):

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Title** | **First Name** | **Last Name** | **Gender** | **Nationality** | **E-Mail** | **Career Stage** | **Role of Researcher (in project)** | **Reference Identifier** | **Type of Identifier** |
| Prof. | Torsten | Munkelt | Man | Germany | torsten.munkelt@htw-dresden.de | A | Leading |  | ORCID-ID |
| Mr. | Paul | Christ | Man | Germany | paul.christ@htw-dresden.de | D | Team member |  | 0000-0002-6096-7403 |
|  | N | N |  | Germany |  |  | Team member |  |  |

## Role of participating organisation in the project

(please put an X in all that apply)

|  |  |
| --- | --- |
| Project Management | X |
| Communication, dissemination and engagement | X |
| Provision of research and technology infrastructure |  |
| Co-definition of research and market needs | X |
| Civil society representative |  |
| Policy maker or regulator, incl. standardisation body |  |
| Research performer | X |
| Technology developer | X |
| Testing/validation of approaches and ideas | X |
| Prototyping and demonstration | X |
| IPR management incl. technology transfer |  |
| Public procurer of results |  |
| Private buyer of results |  |
| Finance provider (public or private) |  |
| Education and training | X |
| Contributions from the social sciences or/and the humanities |  |
| Other. If yes, please specify: (Maximum number of characters allowed: 50 |  |

## Achievements

List up to 5 of the following types of achievement: publications, or widely-used datasets, or software, or goods, or services, or any other achievements relevant to the call content

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| **Type of achievement** | **Short Description (max 500 characters)** |
| Publication | ALADIN generates graph-based models and tasks for problems from different disciplines and supports students in solving the problems. The generation is parameterized in order to meet the requirement profile of the user. ALADIN enables students to work on exercises independent of time and location. In addition, ALADIN checks the solutions directly for correctness without tying up teaching staff. Recording and playback functionality increases the benefit of ALADIN in blended learning scenarios. |
| Publication | ALADIN II allows self-directed e-learning independent of time and place, provides feedback on progress and can be extended with task types. ALADIN II the didactic challenges observed during the development and the use of ALADIN. ALADIN II introduces new types of tasks and supplements ALADIN with a didactic integration into the courses: ALADIN II interlocks face-to-face teaching controlled by the lecturer and e-learning controlled by the students. |
| Software | ALADIN generates exercises and exams and offers them digitally to students, so that they can solve them independently, at any time, in any place and at the appropriate level of difficulty. ALADIN frees teachers from setting exercises and exams, from correcting solutions and from supervising students while they solve the exercises. Recording, sharing and replaying of solution attempts enables asynchronous interaction between students and teachers. |
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Type of achievement: publications, datasets, software, goods, services, or other

## Previous projects or activities

List up to 5 most relevant precious projects or activities, connected to the subject of this proposal.

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| --- | --- |
| **Name of Project or Activity** | **Short Description (max 500 characters)** |
| ALADIN | ALADIN generates graph-based models and tasks for problems from different disciplines and supports students in solving the problems. The generation is parameterized in order to meet the requirement profile of the user. ALADIN enables students to work on exercises independent of time and location. In addition, ALADIN checks the solutions directly for correctness without tying up teaching staff. Recording and playback functionality increases the benefit of ALADIN in blended learning scenarios. |
| ALADIN II | ALADIN II allows self-directed e-learning independent of time and place, provides feedback on progress and can be extended with task types. ALADIN II the didactic challenges observed during the development and the use of ALADIN. ALADIN II introduces new types of tasks and supplements ALADIN with a didactic integration into the courses: ALADIN II interlocks face-to-face teaching controlled by the lecturer and e-learning controlled by the students. |
| OPALADIN | OPALADIN supports standardized interfaces, such as LTI v1.3, for the embedding into learning management systems (LMS) such as OPAL or Moodle. OPALADIN simplifies the construction of new task types by generalizing the task generation and providing a task authoring tool. OPALADIN implements Gamification and Spaced Repetition to motivate students and provide them with individual exercises and repetition rates, to optimize their learning ability. |
| REPLAKI | The project „Realisitischer Planen mit künstlicher Intelligenz“ (RePLaKI) aims to increase the prediction accuracy of production plans. To optimize production and improve production planning, RePLaKI will collect, process and analyze historical process data at the participating SMEs, use artificial intelligence (AI) to determine interdependencies between influencing variables and process data and map them in demonstrator software for sustainable improvement of production and for new planning. |
| CASO | In the project "Capabilities-bAsed and Self-Organizing Manufacturing Management" (CASO) a software framework was developed that supports the production planning and control of a smart factory. The project investigated the combination of self-organization and central production planning in a smart factory, the dynamic generation of plant recipes based on semantic models and the protection of intellectual property in the case of third-party production. |

## Infrastructure

Description of any significant infrastructure and/or any major items of technical equipment that you already have that are relevant for the proposed work.

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| **Name of Infrastructure of equipment** | **Short Description (max 300 characters)** |
| “*Zentrum für Informationsdienste und Hochleistungsrechnen*” – High Performance Computing-Cluster | The heart of the computing power are the total of 272 NVIDIA A100 GPUs. Eight of these GPUs are contained in each of the 34 compute nodes. Their maximum performance of floating point operations is more than 2.6 PFlop/s for 64-bit and more than 5.3 PFlop/s for 32-bit. Each node offers 1 TB memory. |
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## Gender Equality Plan

Does your organization have a Gender Equality Plan in place? Yes

# PART B - ONLINE INFORMATION

## MEMBERS OF THE CONSORTIUM

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| **Brief description of the organisation** |
| The HTW Dresden - University of Applied Sciences was founded in 1992. It is the second-largest university in the capital of the state of Saxony. Engineering, economics, design, and 'green' disciplines constitute the four pillars that the 42 forward-looking diploma, bachelor's, and master's degree programmes in civil engineering/architecture, electrical engineering, informatics, product design, machine engineering, and business administration are based on. These degree programmes include a number of subjects that are unique to post-secondary education in Saxony such as agriculture, horticulture, landscape planning and development, environmental monitoring and analysis, geoinformatics and surveying, as well as geoinformatics and cartography. With 8 faculties, approximately 170 professors, and about 5,000 students, the university is large enough to integrate the different disciplines successfully and generate a high synergistic effect. On the other hand, it is still manageable enough to facilitate personal dialogue in individual courses. |
| **Tasks in the project (please don’t write a full text, just bullet points)** |
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| **Why are you the best partner to perform these tasks?** |
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| **Key personnel involved** |
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| **Have you/your entity received any Awards? If yes, which ones?** |
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