

**Yildiz Technical University**

**Scientific Research Projects (SRP) Coordination Unit**

**Call for Projects**

1. **Call Code**

**IRP-DIGITAL\_TECHNOLOGIES-2022-1**

1. **Call Title**

**Applied Digital Technologies for the Arts, Education and Industry**

**3. Subject of the Call and General Framework**

Today, digital technologies enable the emergence of products and processes with high added value, especially in the fields of art, education and industry, and become a great need in the presence of situations such as pandemic that leads to socially challenging conditions.

The emergence of imperative conditions such as the pandemic and the need for new methods and applications that are technology-supported by students who think and learn differently from the previous generations have been effective in the acceleration of digital transformation in education. It is of strategic importance to become a country that produces high-tech products and processes in this process where daily life, business methods, working models, education-training methods develop together with digitalization.

Art and design, along with the fields of technology and science, develop in a dynamism that carries each other to an upper platform. With the transformative effect of art, in today’s world, the productions of modern artists with computers have started to gain value like traditional works of art, and many artists and designers have started to sell their computer-generated imagery works in digital media. The development of digital art will gain momentum with technologies such as artificial intelligence and augmented reality.

Major changes in industrial production and industrial revolutions shape the economic policies of countries. Countries are developing various strategies to adapt to this change movement in order to increase their competitiveness in the economic field. Application of digital transformation to every business process that can be digitized, such as organization and governance, sales marketing and customer management, product development, R&D, supply chain and stock management, production and determination of the deficiencies of enterprises by establishing the digitalization maturity levels will increase efficiency by decreasing costs at long term.

In the Eleventh Development Plan covering the years 2019-2023, published by the Presidency of the Republic of Turkey, Ministry of Strategy and Budget, horizontal policies that accelerate digital transformation in the manufacturing sector were determined in order to strengthen Turkey's competitive production structure and to make it faster, flexible and more efficient.

In order to realize, disseminate and sustain digital transformation in the arts, education and industry, it is necessary to increase awareness on this issue and to determine the transformation roadmaps including the points to be focused on. Artificial intelligence, autonomous robots, big data and advanced analytics, cloud computing, augmented and virtual reality, internet of things, new generation smart sensor technologies, cyber security, cyber physical systems and blockchain as leading technologies in digital transformation will increase the added value, productivity, profitability, quality and many similar factors of the companies which are guided by a correct roadmap and planning to higher levels.

In line with this vision and policies, studies to be carried out with the focus of Applied Digital Technologies for the development, production and commercialization of processes and high value-added products for the field of arts, education and industry are among the priority areas of our country. It is expected that the infrastructure of our university should be strengthened in line with the needs of R&D studies in the field of industrial digital technologies, the training of qualified human resources needed in these fields, and the researchers with the vision of internationalization in related fields will present their original ideas with a project in accordance with Applied Digital Technologies for the Arts, Education and Industry call.

**4. Aims and Goals**

The purpose of the industry oriented digital technologies call program; is the development of research studies that can be integrated into industrial processes, strengthening the authorities and infrastructure of the researchers in our university in the field of digital technologies for the industry, meeting the targets specified in the eleventh development plan, and ultimately increasing the international competitiveness of our country. Within the scope of the call, it is expected to focus on R&D studies for production, system, module, process design and application.

* Artificial intelligence solutions
* Cyber physical systems
* New generation smart sensor technologies
* Big data and advanced analytics techniques
* Systems that provide robotic-based services for industry
* Innovative Robotics Solutions (Human – Robot, Robot-Robot interactions)
* Approaches that enhance the AI, data and robotics ecosystem
* Flexibility, configurability, adaptability and competitive information automation
* Augmented reality applications
* Value-added digital twin approaches
* Blockchain and NFT applications in industry
* Advanced digital solutions for improved distance education

**5. Call Calendar**

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| **Call Opening Date:** | **07/03/2022** |
| **Call Closing Date:** | **15/04/2022** |