Workshop

Human-centric Digital Twin – A Transdisciplinary View

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Due to the rising digitalization in the past few years, even more data are collected in order to describe the real world, goods, environments and newly humans including those mutual interactions.
Digital twin (DT) has become a key word in engineering, society and medicine, which is also a hot topic in research for creating virtual data-driven replicas of real objects and simulating their behaviours to predict and optimize the entire system functioning. Digital twins can mirror physical entities throughout their lifecycle and create real-time connections between the physical and virtual worlds to monitor and control physical objects from any location. Physical objects can be any living or non-living object, such as humans, machines, robots, cars, buildings, plants, food, or economy.

In the past ISTE conferences, numerous papers related to digital twin in various industries have been presented. One of most important topics with ongoing research is the human-machine interaction: in this context, how to shape a human-centric digital twin (HCDT)?

Now, we want to discuss with the delegates the topic of digital twin focused on humans. Depending on the specific context of application we can identify different application of the DT, where humans play different roles:

- Human as operator
- Human as worker
- Human as planner
- Human as consumer
- Human as patient
- Human as nurse

For each application, real cases will be presented and discussed, reflecting on how a human-centric perspective can add value and help a successful system design.

The purpose of this workshop is:

- Identify the main application areas of HCDT
- Discuss the main impacts and value-added features that HCDT can bring in the different context
- Estimate the degree of maturity for each application of HCDT
- Pose digital twin in the landscape of transdisciplinary engineering
- Gain the input for further research