

# The Need for a Symbiotic Interface for a Digital Twin

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**Abstract.** Human interaction with a Digital Twin is an emerging concept for which there are no common definitions. This paper considers the various types of human interaction with Digital Twins. There is very little research considering human cognitive interaction with a digital twin, therefore to enable human and digital twin interactive collaboration an interface is required. In a dynamically changing environment there is a need for an intelligent adaptive user interface which adapts to the context and to the skills, requirements and preferences of the human operator. This type of interface, which is termed a “symbiotic interface”, needs to learn, evolve and to provide support for decision making, problem solving and unanticipated events. Ecological interface design (EID) is identified as a suitable design methodology to create this interface.

**Keywords.** Digital Twin, Ecological Interface Design, Intelligent Adaptive Interface, Human Interaction, Decision-making

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