
This software reference details the functions of SaTool – a tool for structural analysis of technical systems. SaTool is intended to be used as part of an industrial systems design cycle. Structural analysis is a graph-based technique where principal relations between variables express the system’s properties. Measured and controlled quantities in the system are related to variables through functional relations, which need only be stated as names, their explicit composition need not be described to the tool. The user enters a list of these relations that together describe the entirety of the system. The list of such variables and functional relations constitute the system’s structure graph. Normal operation means all functional relations are intact. Should faults occur, one or more functional relations cease to be valid. In a structure graph, this is seen as the disappearance of one or more nodes of the graph. SaTool makes analysis of the structure graph to provide knowledge about fundamental properties of the system in normal and faulty conditions. Salient features of SaTool include rapid analysis of possibility to diagnose faults and ability to make autonomous recovery should faults occur.

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