MULTI-AGENT PLATFORM FOR FAULT TOLERANT CONTROL SYSTEMS

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This paper proposes a new multi-agent platform for Fault Tolerant Control (FTC) Systems. Several multi-agent platforms exist to deal with different problems but none of them to deal with control systems tolerant to faults using the Matlab/Simulink® environment, which is in our days the scientific bench to this kind of research. When dealing with large-scale complex networked control systems (NCS), designing FTC systems is a very difficult task due to the large number of sensors and actuators spatially distributed and network connected. To solve this issue, the FTC platform presented in this paper uses simple and verifiable principles coming mainly from a decentralized design based on causal modelling partitioning of the NCS and distributed computing using multi-agent systems paradigm, allowing the use of agents with well established FTC methodologies or new ones developed taking into account the NCS specificities.

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