FDI/FTC FOR COMPLEX NETWORKED CONTROL SYSTEMS BASED ON MULTI-AGENTS

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When dealing with large-scale complex networked control systems, designing FDI/FTC systems is a very difficult task due to the large number of sensors and actuators spatially distributed and networked connected. Any solution given to this problem must take into account that practitioners prefer rather simplistic solutions since in practice, simple and verifiable principles always win the competition versus complex solutions that are usually characterized by instability, unpredictable behaviour and large computational burden. The FDI/FTC framework presented in this paper is able to achieve this goal by using simple and verifiable principles coming mainly from a decentralized design based on causal modelling partitioning of the NCS and distributed computing using multi-agents systems, allowing the use of well established FDI/FTC methodologies or new ones developed taking into account the NCS specificities.