

DECENTRALIZED CYBER-PHYSICAL SYSTEM

ABSTRACT OF THE DISCLOSURE

The disclosure relates to a decentralized cyber-physical system including a managing unit and a plurality of components. The managing unit includes a root resilient manager including a root contract and a sub-contract generator. The sub-contract generator is configured to decompose the root contract into a plurality of sub-contracts and assign the plurality of sub-contracts to the plurality of components, respectively. Each component includes at least one observer configured to monitor if the property of the individual component violates the sub-contracts corresponding thereto. When one of the plurality of sub-contracts violates during the runtime of the decentralized cyber-physical system, the root resilience manager issues an alarm.

Figure 3