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Applying Sliding Autonomy for a Human-Robot Team on USARSim

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Abstract : This paper describes a sliding autonomy approach for coordinating a team of robots to assist the human operator to accomplish tasks while adapting to new or unexpected situations by requesting help from the human operator. While sliding autonomy has been well studied in the context of controlling a single robot. Much work needs to be done to apply sliding autonomy to a multi-robot team, especially human-robot team. Our approach aims at a hierarchical sliding control structure, with components that support human-robot collaboration. We validated our approach in the USARSim simulation and demonstrated that the human-robot team's overall performance can be improved under the sliding autonomy control.

Keywords : sliding autonomy, multi-robot team, human-robot collaboration, USARSim
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