

***Abstract: Implementation of Remote Control Station and UGV
for Military Operations in Future Warfare***

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Abstract

To take unmanned ground vehicles (UGV) systems to the next level and increase their capabilities and the range of missions they are able to perform in the combat field, new technologies are needed in the area of multiple UGV command and control. For this purpose, we propose a remote control station based on the awareness of various combat field situations in order for operating multiple UGV. Our remote control station is capable of sending a variety of messages designed for carrying out the skillful movement for collaborate among unmanned ground vehicles, gathering the information related with combat field situation, and completing the assigned missions which are described by operator in advance. In addition, we propose the UGV which is capable of autonomous driving based upon waypoints and basic obstacle avoidance, and also capable of driving controlled by human interface from far away. For this purpose, we develop the UGV for autonomous moving using a variety of sensing techniques. The proposed UGV is consisted of many sophisticated-designed systems such as obstacle detection sensor and network device for communication between UGV and remote control station. To verify the effectiveness of our proposal, we develop the sophisticated remote control station and well-formed UGV, and conduct a great many remote operating tests for multiple unmanned ground vehicles. As a result, we expect that the remote control station and UGV play an important role in future military operation.