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# Crew-integration and Automation Testbed (CAT) Program Overview and RUX06 Introduction

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Patrick Nunez, Terry Tierney, Brian Novak  
U.S. Tank Automotive Research, Development, and Engineering Center

Kaleb McDowell, Ph.D.  
U.S. Army Research Laboratory



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# Problem Statement

- Future combat systems must be reduced in size and weight
- Network-centric warfare introduces large amounts of information into combat vehicles
- Unmanned assets on future battlefield must be controlled / supervised by Soldiers



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# Technical Approach

- Multi-mission crew stations that provide the capability to perform fight, scout, and carrier missions
- Unmanned asset control for UGVs, UAVs, and UGSs
- Autonomous Navigation System for MGCV
- Crew Aiding Behaviors for assistance with manned and unmanned mission planning and execution
- Embedded simulation system for in-vehicle mission rehearsal, mission planning, and embedded training
- Advanced warfighter interfaces for efficient multi-task execution

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# RUX06 Experiment

- Capstone CAT experiment
  - Evaluate effectiveness of CAT program in improving the performance and/or reducing the workload for a mounted Soldier through the use of automated software tools and the integration of autonomous mobility systems on the manned platform
- Four Army S&T Programs
  - Crew-integration and Automation Testbed (CAT)
  - Robotic Follower (RF)
  - Fire Control Node Engagement Technologies (FC-NET)
  - Robotics Collaboration (RC)



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# RUX06 Experiment List

- X1 - "Mission Planning"
- X2 - "Autonomous Mobility and Planning while Driving"
- X3 - "Re-planning on the move"
- X4 - "Target Engagement"
- X5 - "Supplementary Experiments"
  - X5-LAA - "Local Area Awareness"
  - X5-HRI - "Human-Robotic Interaction"
- X6 - "Platoon Leader"
- FXP - Motion Sim Lab Pilot of X2 (with eye tracker)



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# CAT Program Contributors



**GENERAL DYNAMICS**  
Robotic Systems

**GENERAL DYNAMICS**  
Land Systems



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