

Manned-Unmanned Teaming



Are your assets synchronized for maximum effect?

When manned and unmanned teammates are not coordinating effectively, teams are vulnerable to threats that can compromise mission objectives.

Charles River Analytics ensures that unmanned systems act as well-coordinated and natural extensions of their human team through shared understanding of their dynamic operational environment and mission goals.



When you enhance your unmanned platforms with our Manned-Unmanned Teaming (MUM-T) technologies, human-machine communication becomes synchronized and responsive, creating effective coordination among human and robotic teammates—missions are executed successfully and your people are kept safe.

Our technologies explain the reasoning behind the actions of autonomous teammates. This reasoning is intuitively expressed, making autonomous behavior more reliable and understandable to human teammates. This trust allows humans to make higher quality decisions quickly in challenging mission environments.

Our rich understanding of MUM-T across numerous unique contexts is the result of extensive research, development, and deployment in many disciplines, such as AI, machine learning, cognitive science, and human factors. We offer products, research, operational concepts, and mission support that can enhance your existing MUM-T concepts.

Are you looking to apply MUM-T components to your AI platforms? See how we've advanced these capabilities for our customers.



Developing Leap-Ahead Capabilities in Mission-Level Autonomy

The US Army, through efforts like the Combat Vehicle Robotics (CoVeR) program, is addressing current robotics challenges by developing technologies that support scalable integration of multi-domain robotic and autonomous systems.

Our contributions in Manned-Unmanned Teaming (MUM-T) enable leap-ahead capabilities in mission-level autonomy for single, tele-operated platforms as well as multi-platform, collaborative robotic teams that self-organize around high-level objectives and commands. We envision a human-machine interface where Commanders can issue instructions to an unmanned robotic system with the same natural communication as they use with human personnel.



Under the CoVeR program, Charles River Analytics is developing a Modular Appliqué Enabling Natural Teaming with Autonomy (MANTA).

MANTA is a platform-independent, natural control and autonomy robot appliqué that enables a user to easily direct one or more host platforms to perform a range of autonomous behaviors. Robotic and autonomous systems (RAS) equipped with the hardware/software appliqué will be able to execute any behavior supported by platform capabilities, as well as share and access information with any other vehicle equipped with the appliqué. Equipped platforms can be controlled using simple speech and gesture inputs, such as "monitor the back of the red building for activity," "give me a close-up view of that green car," or "search Zone 2 for potential hostiles."

MANTA enables a broad range of MUM-T capabilities on equipped platforms. With MANTA, armed forces can evaluate the feasibility, military utility, and enhanced military personnel mission effectiveness afforded by novel MUM-T technologies, and identify paths forward to requirements generation, technology improvement, and adoption into tactics, training, and procedures (TTP).

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About Charles River Analytics

Charles River Analytics has been at the forefront of human-centered AI R&D, implementation, and deployment for decades. We transform our customer's data into mission-relevant tools and solutions to support autonomy and human decision-making. Charles River continues to grow its technology, customer base, and strategic alliances through programs for the NIH, DoD, DHS, NASA, and the Intelligence Community. We address a broad spectrum of mission areas and functional domains, including sensor and image processing, situation assessment and decision aiding, human systems integration, cyber security, human-robot interaction, and robot localization and autonomy. We take on the most challenging problems in the most difficult environments, and deliver insights that lead to action.

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