RE2 Robotics develops mobile robotic technologies that enable robot users to remotely interact with their world from a safe distance -- whether on the ground, in the air, or underwater.

RE2 creates interoperable robotic manipulator arms with human-like performance, intuitive human robot interfaces, and advanced autonomy software for mobile robots.
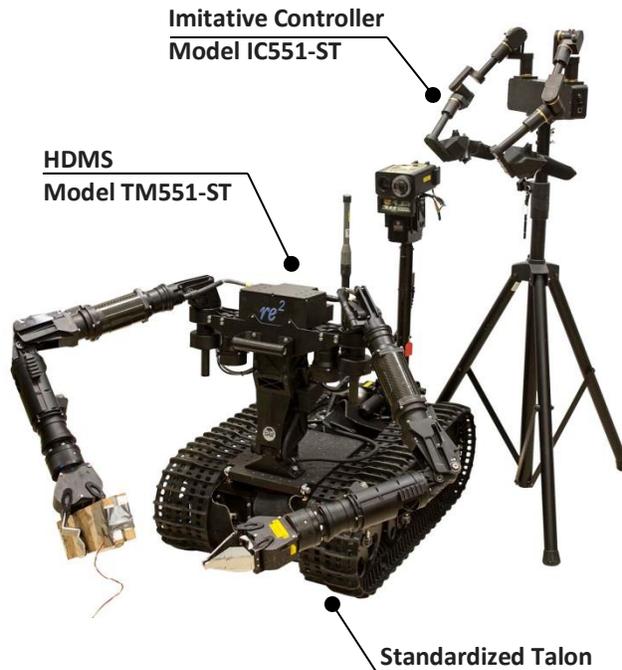
RE2 ROBOTICS

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ROBOTIC MANIPULATION

Don't just move through the world...interact with it!

Highly Dexterous Manipulation System (HDMS)

**Imitative Controller
Model IC551-ST**

**HDMS
Model TM551-ST**

Standardized Talon

RE2's Highly Dexterous Manipulation System is a dual-arm robotic system that provides a high degree of agility for complex tasks. HDMS is available in multiple configurations, including 11, 15 or 16 degrees of freedom (DoF) that meet or exceed the dexterity of a human arm. The system is extremely flexible and configurable, allowing for both the dexterous manipulation and precision placement of objects.

The system provides military and public safety users with agile, human-like control during dangerous missions, including the inspection, detection and neutralization of explosive devices. On the civilian side, HDMS can help people with physical limitations to improve the quality of their lives. In industrial settings, HDMS can alleviate risks presented by hazardous materials handling and gas and oil inspection.

SPECIFICATIONS:

Available in 11, 15 or 16 Degrees of Freedom:

- **11 DoF**: Two identical 5-DoF arms (shoulder roll, shoulder pitch, shoulder yaw, elbow pitch, wrist roll) with a torso pitch.

- **15 DoF**: Two identical 7-DoF arms (includes all of the above plus a wrist pitch and an additional wrist roll joint) plus a 1-DoF torso pitch.

- **16 DoF**: Two identical 7-DoF arms plus a 2-DoF torso (pitch and yaw).

Compatibility:

- Open architecture that supports JAUS and ROS communication protocols
- Compatible with AEODRS architecture
- Compatible with the U.S. Army's Interoperability Profiles (IOP)

BENEFITS:

- **Power-dense:** The 11-DoF HDMS system weighs just 33.5 pounds, but can lift 120 pounds (more than triple its body weight).

- **Power-efficient**: Runs off of standard DC voltages, drawing minimal current.

- **Quick Release** technology, which allows end effectors at the end of a robotic arm to be quickly and effortlessly changed.

- **Payload independent:** HDMS has more payload ports than a single-arm system, allowing users to add extra payloads, such as cameras, imaging sensors, navigation and communication systems.

- **Intuitive Control:** HDMS is controlled using RE2's propriety Imitative Controller, which is a scaled model of the robot's manipulators.

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