

Sliding Autonomy for High Dexterity Operation

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DARPA Revolutionizing Prosthetics Program Overview

- Vision: create a *neurally-integrated* prosthetic upper limb with human-like capabilities for wounded Warriors
 - Anthropomorphic form factor and appearance
 - Human-like strength and dexterity
 - High-resolution tactile and position sensing
 - *Cortical neural interface for intuitive and natural closed-loop control*

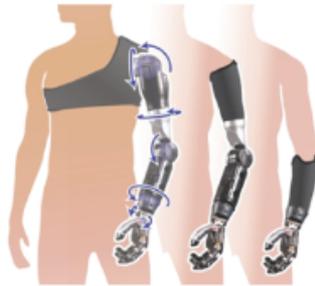


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Modular Prosthetic Limb (MPL) System

- **Modular Design**
- **26 Articulated Joints**
- **190 Sensors**
 - **Pressure/Contact**
 - **Vibration**
 - **Position**
 - **Torque**

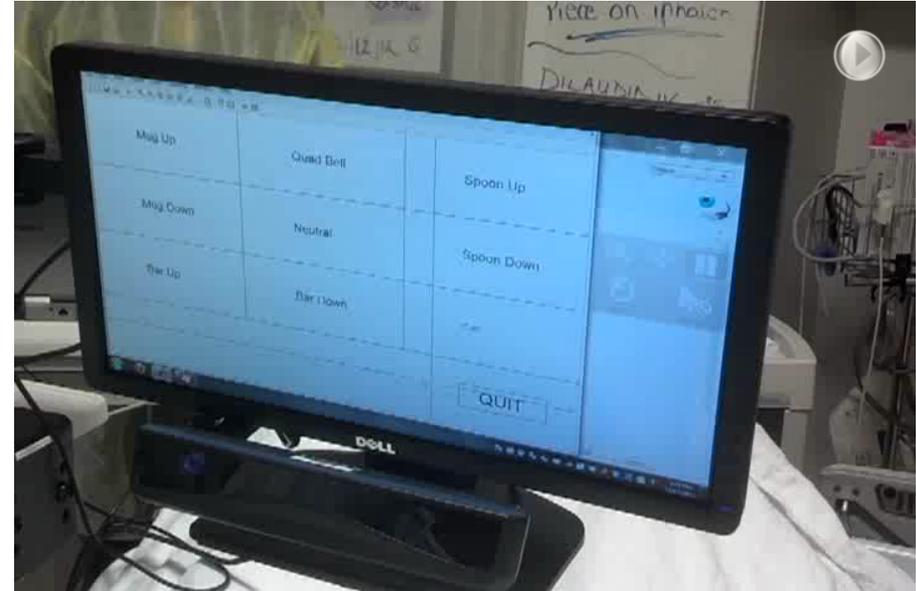


Augmented Control

- Combine Human Interface with Intelligent Robotics



Eye-Tracking Control



- **Eye-tracking interaction with buttons for high-level tasks, controls**

Neural Control for Flight “Mindflight”: First Tests



Highlight: DRC Tech Expo demo



Shows 1 of 4 live public demos of several IRAD developments:

- ✓ Supervised autonomy
- ✓ Robot vision
- ✓ Autonomous manipulation
- ✓ Autonomous mobility
- ✓ Marsupial teleoperation

<https://www.youtube.com/watch?v=Hvh20ySwgPw&index=1&list=PL542FC32ACC8D2513>

Questions?



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