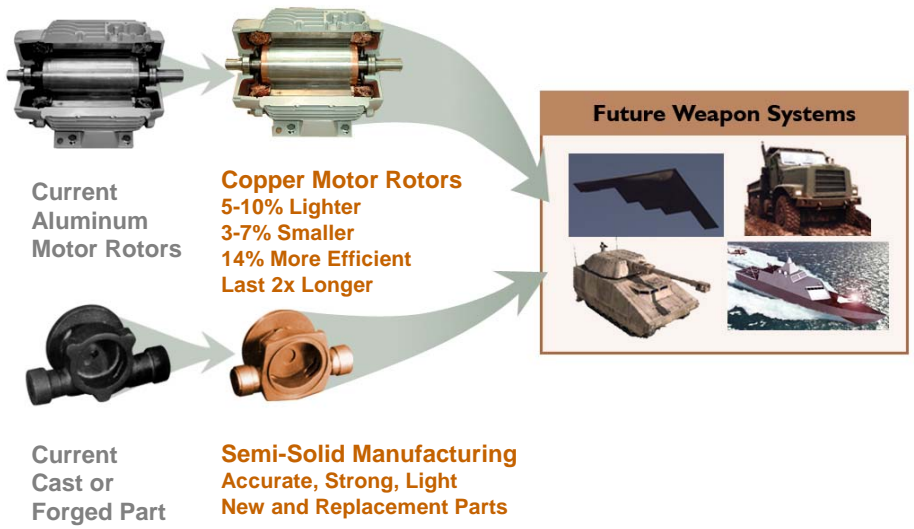




# Copper-Based Casting Technology Program

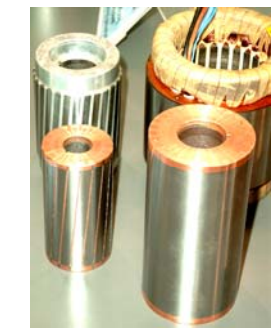
## C-BCT

The Army needs are being driven by the need for lighter weight, lower cost, environmentally friendly, and more reliable materials for the Objective Force. Reduced weight is a goal for all weapon systems and logistics support items. The Copper-Based Casting Technology (C-BCT) program supports these goals. The objectives of the C-BCT program are to develop, demonstrate, and deploy applications of copper base alloys to make significantly lighter, more efficient, components for use in defense systems. Through Copper's unique combinations of physical properties, C-BCT will accomplish these objectives by developing and testing the use of Cast Copper Rotors for AC induction motors and Semi-Solid Metal casting applications for new and replacement component parts.



### Copper Motor Rotor Technology

The Cast Copper Rotor program area will build on new and successfully demonstrated tooling technology to develop and test electrical motors that utilize copper alloy components. These motors will cost less



to manufacture, last longer, operate more efficiently, and save weight compared to available components used in defense systems.



For more information visit [www.copper-motor-rotor.org](http://www.copper-motor-rotor.org).

### Semi Solid Metal (SSM) Forming of Copper Alloys

The Semi-Solid Metal casting thrust of the program will utilize new net-shape tooling technologies available for copper-based materials to make significantly lighter, high integrity, wear resistant and corrosion resistant components applicable to both weapons systems and industrial applications.



These efforts include the testing of existing alloys and the development and testing of new alloys and feedstock materials. For more information visit <http://ssmcopper.com>.

# C-BCT TEAM

RELIANCE  
ELECTRIC



Copper Development Association Inc.



CBC-T is a partnership comprised of government, industry, and academic team members. The team includes two motor manufacturers Reliance Electric and Ramco Rotors - addressing military, industrial, and aerospace motor applications; Vforge - an advanced casting and manufacturing facility; SatCon, a leader in analysis and testing for power electronic and electromechanical systems; and Worcester Polytechnic Institute (WPI) and Massachusetts Institute of Technology (MIT) – leading research institutions in the area of materials characterization and motor design. The team also includes representatives from the Army Research Lab (ARL), the Defense Logistics Agency (DLA), and the Defense Supply Center Richmond (DSCR). ATI specializing in consortia formation, provides leadership and program management.



## C-BCT

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