National Advanced Mobility Consortium

Tony Melita
Executive Director

NATIONAL ADVANCED MOBILITY CONSORTIUM

NAMC – a 501(C)3 Entity

Established in 2014, the NAMC is organized as a Non-Profit 501(C)(3). As such, profit is not in our business model. We are committed to the sustainment and growth of our organization, because we believe it brings the best value to the Ground Vehicle Systems community and advanced technologies to the warfighter more quickly.

Mission & Vision

Mission

NAMC's mission is to provide the Government with ready, quality access to the broadest population of U.S. ground vehicle system (GVS), sub-system, and component technology developers and providers in a competitive environment; to work in partnership with the Government to implement and refine business processes and tools to streamline individual project contract administration; and to expedite the innovation, development, and production of new GVS capabilities for U.S. warfighters.

Vision

NAMC is recognized as the go-to entity and most effective means to conduct research, development, prototyping and production for manned and unmanned autonomy-enabled military ground vehicle systems and related technologies in the United States.

Structure

Member-Led	• Our consortium is member-led, this means, the majority of our Board of Directors are elected from within the membership; the rest of our Board is appointed by our Supported Organizations: The Association for Unmanned Ground Vehicle Systems International (AUVSI) and the National Center for Manufacturing Sciences (NCMS).
Membership	• Membership is comprised of various large and small organizations within the U.S. technology base: traditional defense contractors, non-traditional defense/commercial contractors, non-profits and academic institutions.
Teaming	• Members compete for government customer projects as prime, or as members of a team lead by another NAMC member serving as prime. A Prime's sub-contractors are not required to be NAMC members. NAMC business events provide the opportunity for teaming and for developing other business relationships among the membership.
Resources	• The NAMC staff and consortium administrative organization (NCMS) works with its members to fully understand the business enterprise, enabling the members to propose their technologies/solutions concisely and accurately, and to market their technologies to other members and the Government.
Fees	• Dues are kept at a flat, low rate of $500 annually to ensure that they are not a barrier for entry for any organization. No other fees are assessed of our members at this time.

FY18 NAMC Board of Directors

Class A (Term Expires Fall 2018)				
Name	Seat	Company	Officer	ExCom
Christopher Rohe	NT, Defense Supplier	Progressive Communications, Inc.		
David Bevly	Academic Research	Auburn University		
Dan Richard	Lrg, For-Profit	BAE		
Paul Luskin	Appointed, NCMS	Waymo, LLC		
Jon Riley	Appointed, NCMS	NCMS		
Dan Deguire	Appointed, AUVSI	QinetiQ, NA		
Chris Yunker	Past President	Hodges Transportation, Inc./NATC	Past President	X

Class B (Term Expires Fall 2019)				
Name	Seat	Company	Officer	ExCom
Tom Frost	Sr. Executive, Robotics	Endeavor Robotics		
Matt Dooley	Small Business	JHNA	Treasurer	X
Michael Ladika	Non-Profit	Southwest Research Institute	President	X
Rebecca Taylor	Appointed, NCMS	NCMS		
Mike Bolon	Appointed, NCMS	General Dynamics Land Systems		
Mark Gordon	Appointed, AUVSI	Stratom	Vice Chairman	X
Steve Sims	Appointed, AUVSI	Lockheed Martin		

Class C (Term Expires Fall 2020)				
Name	Seat	Company	Officer	ExCom
Kevin Mulrenin	Sr. Executive, Vehicles	Pratt & Miller Engineering	Vice President	X
Gerald Lane	Senior Technology	Great Lakes Systems & Technology		
Rick Jarman	Appointed, NCMS	NCMS	Chairman	X
Tom McMahon	Appointed, AUVSI	AUVSI		

Enterprise Business Model

- An agreement (i.e. contract), using Other Transaction Authority, between the Government and a consortium of large & small companies, non-profits, research institutions, and nontraditional small businesses organized to solve DoD challenges in a specific technology or mission area
- The Consortium membership is open to any eligible U.S. entity
- The Government establishes an operation that governs the overall business processes from requirements generation to contract award to consortium member(s)
- The Model is Open, Collaborative, Competitive, and Flexible

Benefits

Industry/Academia

- Provides access to Government stakeholders and networking with potential industry and academic partners.
- Affords greater visibility into Government needs, requirements and priorities, enabling more focused IR&D investments.
- Helps small companies and non-traditionals identify opportunities and establish relationships.
- Enables faster access to new opportunities.
- Enables funding on contract sooner via quick, responsive task negotiations and awards, which minimizes cash-flow challenges.

DoD

- Permits collaboration with industry.
- Provides access to a broader range of technology experts because of the involvement of non-traditionals.
- Casts a wider net for capturing ideas and innovations.
- Affords greater insight into the “art of the possible” for technology.
- Provides access to a broader range of potential solution providers in a competitive environment, including non-traditionals.
- Shorter contract administration time enables government technology managers to focus on technology and prototype development and demonstrations – gets solutions to end-user sooner.
- Flexible contracting capable of multiple tasks with a single set of terms and conditions. No protests allowed.

GVS OTA

Scope includes all System and Component Technologies for both Manned and Unmanned Ground Vehicles

Requirements Competed from ALL Services (Army, Navy, Marines, Air Force)

5 Years / $2B Ceiling

Contracted out of Army Contracting Command – Picatinny Arsenal, NJ

Projects are only Competed through the NAMC

Must have a Prototype Deliverable

GVS OTA Objective Areas

Modeling and Simulation	• Efforts to advance the state of the art in systems, subsystems, and force effectiveness as well as reducing physical testing and life cycle costs.
Autonomy	• Efforts to advance autonomy and autonomous perception, intelligent behaviors, and Human Machine Interaction (HMI) and Operator Controlled Units (OCU).
Collaboration	• Efforts to advance autonomy and/or coordination algorithms, including as applied to other platform types (aerial, surface, underwater) as they relate to GVS collaboration and ground, air, and maritime vehicle teaming.
Platforms	• Efforts to advance interior compartments, exterior body, survivability, occupant protection, fire suppression, material solutions, and thermal systems.
Mobility	• Efforts to advance the chassis, wheels, track, braking systems, suspensions, and other mobility systems.
Powertrain	• Efforts to advance engine, drive train, energy storage, and electrical power generation and distribution.
Survivability	• Efforts to advance the survivability of ground vehicle systems or the GVS Mission.
Fuels and Lubes	• Efforts to advance technologies in fuels and lubes for operational efficiency, increase power densities, alternatives, viscosity, and longevity.
Architecture, Security, and Modularity	• Efforts to advance open architecture compliance to existing standards; Vehicle Management Systems; vehicle networks; architecture modeling; physical, logical, and messaging interoperability, safety systems; cyber-security; and modularity of systems and subsystems.
External Systems	• Efforts to advance communications, payloads, and attachments such as robotic manipulators and end effectors, explosive detection sensors, mechanical countermine systems, perception sensors, and other mission specific sensors.
Testing and Evaluation	• Efforts to advance research in the area for testing, evaluation, and validation of manned and unmanned ground vehicle systems for both general and specific mission tasks.
Petroleum and Water Systems	• Efforts to advance research in fuel and water technology necessary for robust systems integration and operational efficiency.

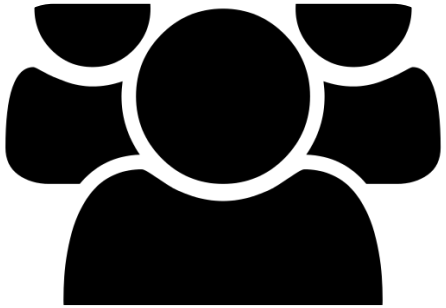
NEW!!! Follow-On Production

Section 815, Amendments to Other Transaction Authority, of the National Defense Authorization Act (NDAA) for Fiscal Year 2016, inserted Section 2371b, Authority of the Department of Defense to carry out prototype projects. Section 2371b(f) authorizes the award of a follow-on contract or agreement for production to the participants of the transaction carried-out under the authority of Section 2371b(a) without the use of competitive procedures if:

(A) competitive procedures were used for the selection of parties for participation in the transaction; and

(B) the participants in the transaction successfully completed the prototype project provided for in the transaction.

Metrics to Date



304 NAMC Members

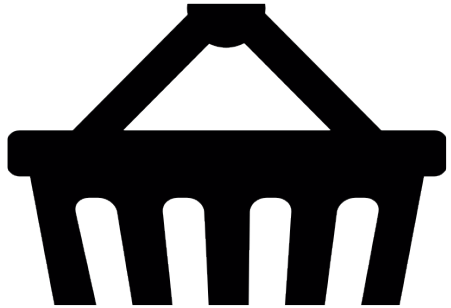
- 64.1% Nontraditional Defense Contractors
- 57.9% Small Businesses

GVS OTA

- $316M Obligated
- 111 Projects Awarded to 53 Unique Members

20 RPPs Released

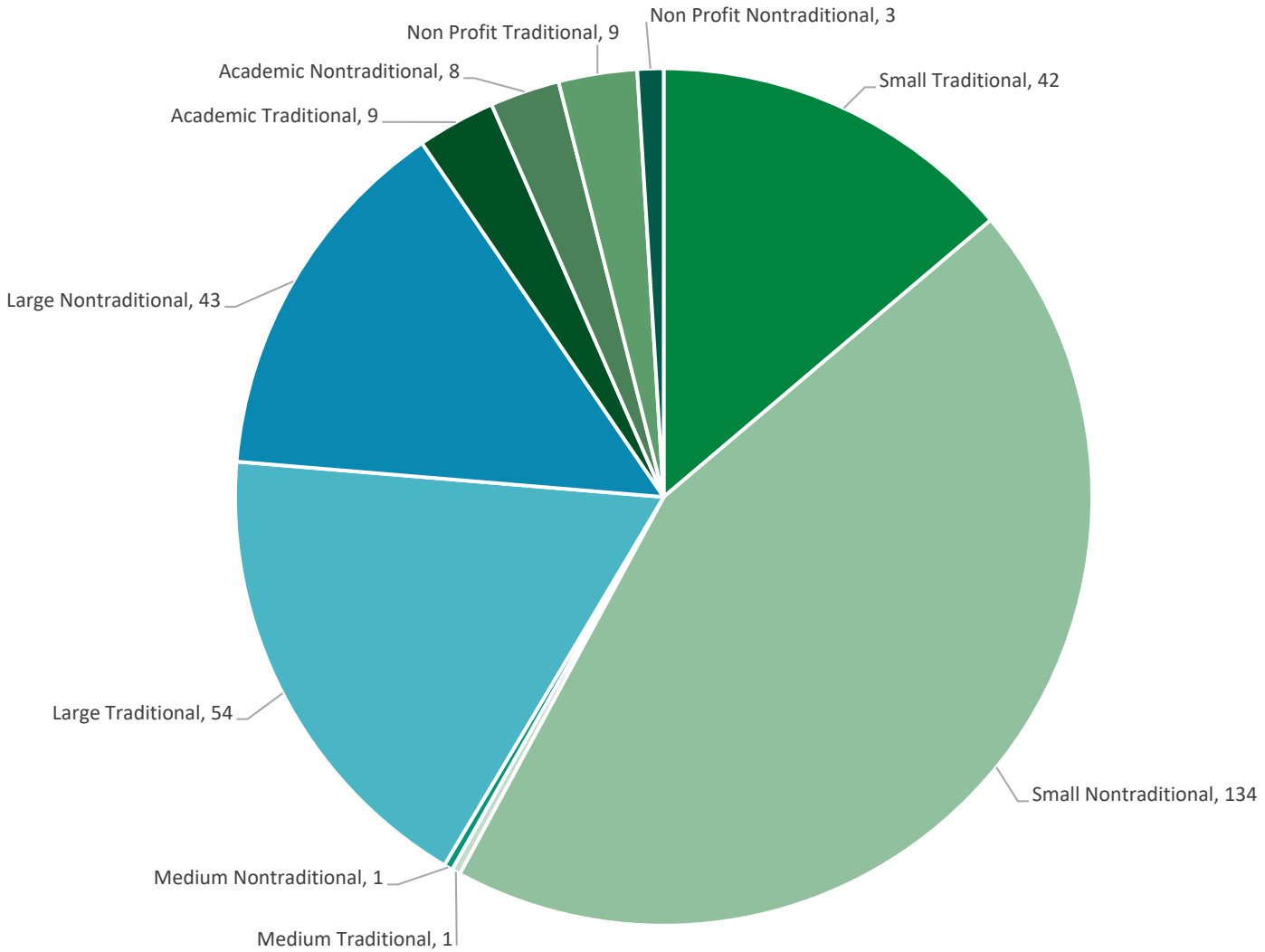
- 10 Task Requests
- 294 Projects Competed only through the NAMC



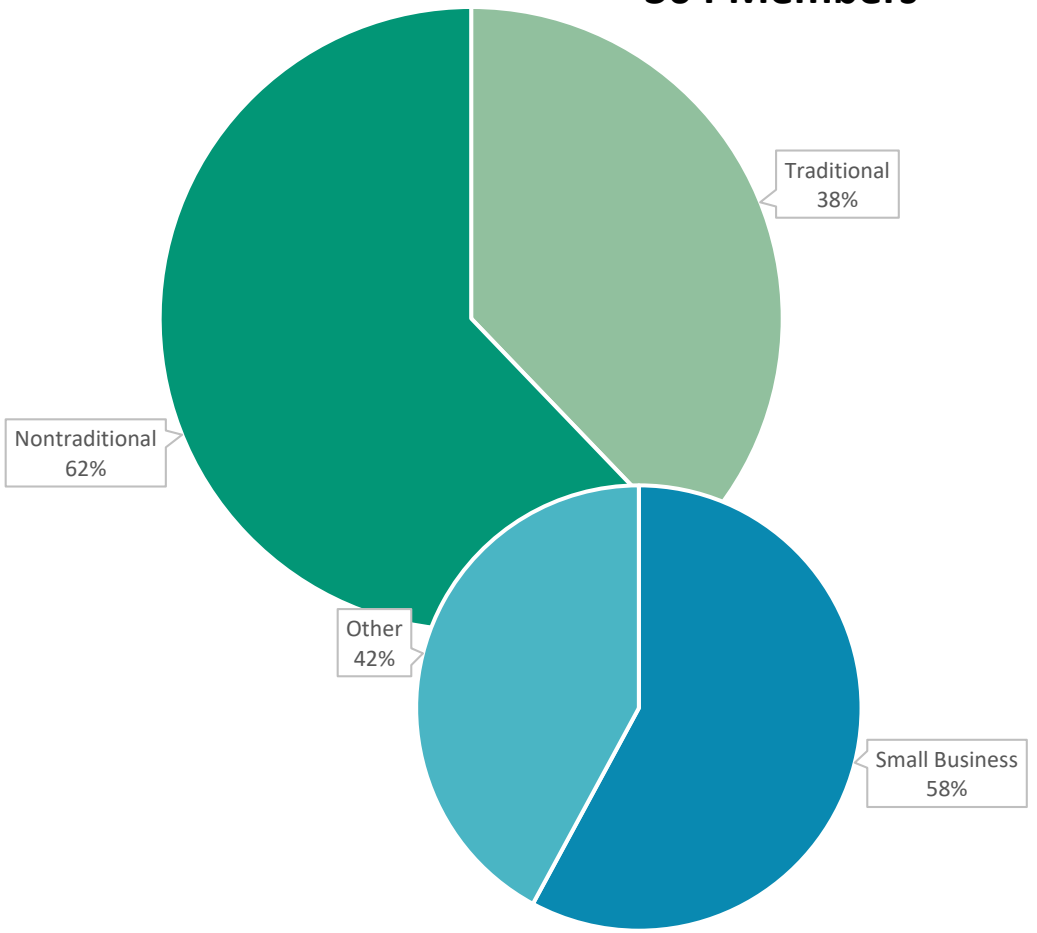
372 Proposals in the Basket

- 20 Basket Proposals Awarded

Membership



as of 03/13/18
304 Members



NAMC Goals and Objectives

FY19 Goals & Objectives	Continuity and Governance	Refine NAMC Brand and Market through trade shows and social media
	Techniques/Tools for Government/Industry Collaboration	Align Government Needs with Member Competencies
	Enable Technical Innovation for the Government	Provide Leadership in Technical Innovation through engagement of non-traditional and facilitated teaming among membership

Task Requests

Enable the dynamic formation of joint teams of Government and industry subject matter experts (SMEs) tasked under the NAMC OTA with collaboratively creating, developing, maturing, enhancing, testing, and documenting architectures, software, tools, know-how, and other standards that reduce risk and benefit Government and industry writ large. Task request teams also demonstrate and propagate the use of the developed standard or common capability and solicit input and feedback among interested Government and industry organizations.

Goal: to leverage, encapsulate, and build off of DME members' collective expertise to produce open, Government-owned, *de facto* standards that address issues of common interest to Government and industry alike

Structure: the ***core team*** consists of Government and compensated, competitively selected industry SMEs responsible for organizing, leading, and contributing to the development effort; and for coordinating the contributions of a ***community of interest (COI)***, consisting of representatives from Government and industry organizations willing and able to voluntarily participate in meetings, offer input, review materials, and provide feedback.

Examples: Universal Tactical Controller, ROS-M, MAPS

Benefits: By enabling the creation, maturation, and propagation of common, collaboratively developed standards and capabilities available to all, task requests serve to eliminate duplicative efforts, decrease costs, accelerate timelines, reduce risks, improve reliability, increase innovation, and expedite collaboration.

Task Request Success Story: Universal Tactical Controller

The Universal Tactical Controller (UTC) serves as an operational prototype for the universal controller to be further developed and fielded as part of the Common Robotic System (Individual) program of record (PoR). The CRS(I) universal controller will provide a common, standard means for the warfighter to operate all, battalion level and below, PoR, air and ground, robotic and autonomous systems platforms and payloads.

Customer: Product Manager of Unmanned Ground Vehicles (UGV) located at Selfridge Air National Guard Base (SANG) in Harrison Township , Michigan

Goal: To reduce the highest risk facing the CRS(I) PoR and create a *de facto* industry standard by establishing a joint team of Government and competitively selected industry subject matter experts tasked under NAMC's GVS OTA with collaboratively developing, testing, and demonstrating the required controller software, then propagating it to industry at large in time for potential bidders to include it in their CRS(I) proposals

Approach: The "task request" team developed, tested, and demonstrated the resulting **MOCU 4** software in a series of four, rapid development cycles, or "Spirals", from August, 2016 through August, 2017. During that time the task request team also provided training, and arranged with the Government to make the software available, to companies considering submitting a CRS(I) proposal.

Outcomes: For a total budget of $1.3 million (industry portion), the task request team delivered Government-owned, TRL7, prototype software that met the basic CRS(I) universal controller requirements and achieved *de facto* industry standard status as measured by every CRS(I) bidder having proposed its use.

Accelerating Acquisition through Prototyping

Allows increased efficiency through collaboration between the U.S. Government, industry and academia, via the NAMC's GVS OTA, to develop prototypes which will allow identification, development and fielding of technologies to enhance the mission effectiveness of the warfighter and their support systems.

Goal: to provide an innovative acquisition approach for R&D prototyping and limited production with a technology or mission area focus

Structure: NAMC uses an agreement, under the Other Transaction Authority, between the Government and our consortium of large & small companies, non-profits, research institutions, and nontraditional small businesses organized to solve DoD challenges in a specific technology or mission areas

Examples: Squad Multipurpose Equipment Transport (SMET), Combat Vehicle Robotics (CoVeR)

Benefits: By the use of prototyping under NAMC's consortium-based OTA, the Government can reduce risk by controlling costs and eliminating unnecessary processes while promoting competition amongst a targeted group of qualified technology providers. Prototyping allows the DoD to better understand the technical requirements of a particular design and decide early in the lifecycle whether the design approach will work, and whether a program warrants inclusion in future budgets.

Success Story: SMET

The Squad Multipurpose Equipment Transport (SMET) provides the small unit with the ability to support squad and platoon operations for 72 hour missions. Provides unmanned internal resupply capability to the small unit.

Customer: Product Manager of Applique and Large Unmanned Ground Systems (ALUGS) located at Selfridge Air National Guard Base (SANG) in Harrison Township , Michigan

Goal: To competitively select, acquire, and issue to Soldiers a number of state of the art prototype systems, and conduct an extensive 1-year Technology Demonstration intended to test and evaluate the acquired prototype systems.

Phase I: Assessment – Contractors provided an SMET Solution that met defined requirements which were tested in September/October 2017 in Ft. Benning, Georgia.

- 10 Awards of ~$10,000 each

Phase II: Demonstration – Delivery of up to 3 prototype systems to be delivered to Aberdeen Test Center and 1 prototype system to PdM ALUGS per awarded contractor in support for Government Testing. At the conclusion of testing, this phase may include the delivery of up to 16 additional prototype systems per contractor for a 1-year Technology Demonstration.

- 4 Awards at NTE of $3.6M each, to be awarded by end of May 2018.
- One year Technology Demonstration tentatively set to begin in 1st quarter of GFY 2019.

Coming Soon: CoVeR

Combat Vehicle Robotics *(CoVeR) is primary an S&T program to develop the foundational technologies, methods, and interfaces to mature weaponized robotic platforms.*

Objectives:

1. To develop/integrate technologies to enable autonomous system capabilities to assimilate with Army formation and support for all combat warfighting function (close combat, reconnaissance, targeting and acquisition, etc.).
2. Develop Manned/Unmanned Teaming (MUM-T) behaviors using the Soldier-in-the-loop.
3. Develop the Soldier machine interface to intuitively interact and control robotics systems.
4. Develop the methods and protocols to operate and assess these systems safely.

Technology Focus Areas: Robotics and Autonomous Architecture; Autonomous Behaviors; Soldier Machine Interface; Platform Electronic Control; Autonomous Safety and Test Engineering

Scheduled to be released through the NAMC by the end of FY18

FY19 Annual Plan Cycle Schedule

NAMC Good Idea Submission Phase	14 AUG – 28 AUG 2017
BIDS Opens for GOV input into DRAFT FY19 Annual Plan	11 SEP – 09 NOV 2017
NAMC DRAFT FY19 Annual Plan Comment Period	14-29 NOV 2017
Publish FINAL FY19 Annual Plan in BIDS (Open Communication)	15 JAN 2018
NAMC Whitepaper Submission Phase	15 JAN – 12 FEB 2018
GOV Evaluation of NAMC Whitepapers (Conversations Cease)	13 FEB – 12 MAR 2018
NAMC Whitepaper Feedback Released in BIDS	9 APR 2018
Request for Prototype Proposal (RPP)Published to NAMC website (Open Communication)	9 APR 2018
NAMC Proposal Submission Phase	9 APR – 11 MAY 2018
Proposal Evaluation Phase (Conversations Cease)	11 MAY – 26 JUN 2018
NAMC General Membership Meeting	26 JUN 2018
2018 DME Collaboration Days for FY20 Annual Plan	27-28 JUN 2018
FY19 Annual Plan Project Selection and Award Process Begins	JUL 2018

Save-the-Date

NAMC General Membership Meeting
June 26th, 2018

DME Collaboration Days (Briefs/One-on-Ones w/ Gov)
June 27th & 28th, 2018

Detroit Troy Marriott
Troy, Michigan

Visit NAMC

NDIA MDEX, Warren, Michigan
April 25 & 26, 2018
DME Booth F16

ITS America Annual Meeting, Detroit, Michigan
June 4-7, 2018
DME Booth 116

NDIA GVSETS, Novi, Michigan
August 7-9, 2018
DME Booth 504

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Questions?