NAMC

JUNE 2020 | NAMC MEMBER SPOTLIGHT

ARCHITECTURE, SECURITY, AND MODULARITY	Shift5, Inc.
AUTONOMY	McQ, Inc.
COLLABORATION	GS Engineering, Inc.
FUELS & LUBES	Western Global
MOBILITY	Agility Robotics, Inc.
MODELING & SIMULATION	WPI Services, LLC. DBA Systecon North America
PETROLEUM AND WATER SYSTEMS	Womack Machine Supply Co.
POWERTRAIN	C&R Racing, Inc.
SURVIVABILITY	Uvision-USA Corporation

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NAMC will not alter submitted content.
Please make sure all information is correct and signed off on by your organization.

ARCHITECTURE, SECURITY, AND MODULARITY

SHIFT5, INC. | Arlington, VA

POC: Kara Kramer| kara@shift5.io | www.shift5.io | in

What is something unique about your product or service?

The Shift5 solution product suite (Shift5 Intake, Engine, and Gauge Cluster) provides the most comprehensive cyber resiliency capability available, allowing for full packet data capture and continuous, near real time, intrusion detection ability. Our technology enables greater insight into fleet cyber health status for Commanders, provides efficient and effective cyber inspection toolkits for weapon system operators, allows maintainers to quickly reconstitute systems following cyber-attacks, and provides data to CPTs to enable insight and information on the cyber health of the fleet. In addition, our solution provides significant cost savings since it does not require completely reengineering embedded data busses within a weapon system, significantly modifying existing Line Replaceable Units, or installing more than a single appliance on the data bus (the compact avionic interface computer).

What capability gaps are you able to fill and which industry colleagues would you like to know about them?

Today's weapon systems have little to no protection against cyberattacks. The vast majority of DoD weapons systems currently rely on serial data bus protocols—such as MIL-STD-1553 and CAN bus—and these serial data buses are highly vulnerable to cyberattacks. Ground combat systems and other weapons systems use these redundant serial data buses to communicate critical information between embedded computers (called Electronic Control Units or ECUs). Many ECUs and current serial data bus architectures, while incredibly reliable, are not designed to provide message data authentication or encryption. To mitigate this security vulnerability, the vast majority of other available approaches to system cyber assurance and survivability are cost prohibitive and non-adaptive to evolving threats.

How did your organization originate?

Shift5 was founded by three former Cyber Officers after their experiences in the US Cyber Command and across the Intelligence Community. While serving as US Army Captains, they led multiple demonstrations and projects that revolved around weapon system cybersecurity and sensitive activities related to the 2016 NDAA Section 1647. Unsatisfied with the progress made to protect weapon systems across the enterprise, and recognizing the breadth and criticality of similar vulnerabilities across commercial infrastructure, the three founders created Shift5 in October 2018 to build a suite of security products to address the civil and defense markets.

Shift5 is rapidly growing, with 15 full time employees as of June 2020. Shift5's human capital brings world-class experience in software and hardware product development, reverse engineering, system engineering and decomposition, and product and project management.

Capabilities:

Artificial Intelligence	Cybersecurity	Cyber Hardening	Cyber Physical Security	Edge Computing	IoT

Machine Learning	Operational Technology Cybersecurity

AUTONOMY

MCQ, INC. | Fredericksburg, VA

POC: Amy Slocum | aslocum@mcqinc.com | www.mcqinc.com | in f

What is something unique about your product or service?

McQ Inc is unique as a small business to be a leading producer of unattended and remote surveillance systems currently used by every operational command in the US military. For over 35 years, McQ has developed and delivered thousands of complete "concept to full scale production" rugged, Low-SWaP, low cost, intelligent sensing and surveillance equipment with custom embedded solutions in support of our military customers.

What capability gaps are you able to fill and which industry colleagues would you like to know about them?

McQ's product capabilities have evolved with the increasing demand for more intelligent and sophisticated technology to defend against US adversaries. Our small, tactical sensors deployed by hand, aircraft or robot, will detect and classify targets to end users on the ground or with embedded Iridium modems to move data real time to those beyond LOS. In response to current requirements, McQ has developed a 360 º radar for Unmanned Robotic Combat vehicles for advanced Situational Awareness of mobile platforms and a Visual Augmentation System to detect obstacles in front of vehicles in camera denied environments. McQ's vWatch system ensures persistent surveillance by moving compressed high definition video from on the edge embedded systems or remote vehicles to any member of a team no matter their location.

What are you most proud of?

McQ understands the crucial importance of being in the forefront of developing technology and are proud to consistently develop state of the art, high quality and performance systems. Relentless testing of capabilities prior to delivery ensures reliable and valuable information instilling confidence in our equipment by the end user. McQ continually supports our customers 24/7 with any operational needs resulting in lasting, trusting relationships with all of those we proudly support.

Capabilities:

Autonomous Systems	Communications	Electronics	Open Architecture & Standards Development	Sensors
Situational Awareness	Surveillance Systems			

COLLABORATION

GS ENGINEERING, INC. | Houghton, MI

POC: Kevin Hubert | kevin.hubert@gsengineering.com | www.gsengineering.com | in

What is something unique about your product or service?

As an employee owned company, our team carries a level of drive and dedication to building professional relationships, earning trust, and achieving mutual success. Our proven track record of successful project completion is a direct result of our disciplined utilization of standardized procedures, proven processes, established supply chains, and our experienced team of professionals operating to AS9100D / ISO9001:2015 quality standards. These strengths are reflected in a successful history supporting all branches of the military, vehicle original equipment manufacturers (OEMs), as well as off-highway, aerospace, and rail markets.

What capability gaps are you able to fill and which industry colleagues would you like to know about them?

GS Engineering has a well refined process for keeping aging fleets of vehicles functioning well past their original intended life expectancy or original purpose via obsolescence engineering. As an example, the California Department of Forestry and Fire Protection turned to GS Engineering to keep their fleet of Grumman S-2Ts in the air through an obsolescence engineering and supply-chain development process, ensuring their ability to protect citizens from wildfires.

Read more about this process at: https://www.gsengineering.com/obsolescence-engineering-whitepaper

What are you most proud of?

GS Engineering has evolved from a small services organization to an established company providing turn-key solutions across a broad spectrum of markets, clients, and products. This experience supports rapid adaptation to our client's challenges. With our skilled workforce embracing aggressive schedules and completing complex objectives, GS Engineering is here to help you succeed.

Capabilities:

| Autonomous Navigation & Controls | Controllers | Electronics | Energy | Manipulation | Materials | Mobility |

| Obsolescence & Reverse Engineering | Payloads Integration | Perception & Situational Awareness | Powertrain | Sensors |

| Suspensions | System Design & Engineering Services | Validation & Verification | Vehicle & Platform System Integration |

FUELS & LUBES

WESTERN GLOBAL | Troy, MI

POC: Brett Kischnick | brett.kischnick@western-global.com | www.western-global.com | Military Fuel Storage | in

What are your organizational goals?

Western Global is an expert in the fuel tank industry and a leading provider of tanks and dispensing equipment which ensure the SAFE secure storage of fuels and other liquids. From bulk diesel storage tanks to fuel tanks that are transportable full of fuel. Western Global can provide you with the best product for your needs, wherever you are in the world.

What is something unique about your product or service?

We can provide a Turn Key Fuel Tank solution of ANY size that has a Lockable Equipment cabinet, is DOT Approved, UL142 Approved, Double Walled Steel, has 4-Way Fork pockets and most importantly, Fire Marshal approved.

What do you consider your organization's differentiator?

Western Global tanks are Portable, IN STOCK and set up ready to use by our team of operations professionals. Several are TAA compliant and on GSA schedules.

Capabilities:

DOT Approved	Diesel Fuel Tank	Fleet Fuel Tank	FuelCube	Fuel Dispensing	Fuel Island	Fuel Pump
Liquid Storage Tank	Mobile Fuel	Portable Fuel Tank	Storage Tank	Tank	TransCube	

MOBILITY

AGILITY ROBOTS, INC. | Albany, OR

POC: Steve DiAntonio | steve.diantonio@agilityrobotics.com | www.agilityrobotics.com | in 🐦 YouTube

What is something unique about your product or service?
Mobility is a critical bottleneck to fielding robots and autonomous systems for military purposes. Agility Robotics builds legged robots that go where humans go. Digit, our latest product, can traverse challenging outdoor terrain, move freely in buildings with stairs and doors, map and video its surroundings, communicate sensor information back to warfighters, and move autonomously in cluttered environments.

What capability gaps are you able to fill and which industry colleagues would you like to know about them?
Potential military missions include building clearing and sentinel duty, remote surveillance, IED remediation, mapping and underground sensing and urban scout.

What are your teaming goals within NAMC?
We'll demonstrate Digit in a remote surveillance task at Twenty Nine Palms as part of DARPA's SquadX program in December. But we're looking for partners who can develop other military use cases of interest to the Army, Marines and SOCOM.

Capabilities:

Autonomous Navigation & Controls	Autonomy	Controllers	Humanoid	Manipulation	Mobility	Payload Integration
Perception & Situational Awareness	Platforms	Robotics	Scout	Sensors	Surveillance	Urban Mobility

MODELING & SIMULATION

Systecon

WPI SERVICES, LLC. DBA SYSTECON NORTH AMERICA | Juno Beach, FL

POC: James Woodard | jwoodard@systecon.us | www.systecon.us | in

What is something unique about your product or service?
Systecon offers an AI enabled fleet management capability powered by our proven Opus Suite platform that correlates multiple data sets to provide comprehensive decision support for fleet and individual system health. We utilize existing data download processes to provide operational regime-based analysis. This data is drawn from established data transfer protocols in use today. Health and Usage Monitoring systems are installed on many platforms. These files are downloaded regularly by personnel and moved automatically to a retrievable location. As this data is pulled and consolidated, our software stack can interface automatically.

Which Government Customer would you like to pitch your organization to?
Program Management Offices.

What are you most proud of?
Systecon North America is currently providing support to the Naval Aviation Enterprise and the F-35 Joint Program Office (JPO) across numerous product support elements, developing and implementing supply chain and performance optimization strategies, optimizing outcomes, and uncovering and validating affordability initiatives. Systecon's tool development efforts have allowed the Navy and the JPO to optimize the logistics support strategy and supply chain, and performed numerous Modeling & Simulation (M&S) studies for performance-based outcomes, manpower, sparing, and cost. Systecon's results are briefed to the highest level in the JPO and within OSD to provide defensible decision support to justify program actions. To date, Systecon's work has been credited with billions of dollars in cost avoidance and double digit increases in readiness rates across the fleet.

Capabilities:

Integrated Logistics Support	Life Cycle Management	Mission Readiness	Modeling & Simulation	Predictive Analytics
Predictive Maintenance	Software	Supply Chain Optimization	System Design & Engineering	

PETROLEUM AND WATER SYSTEMS

WOMACK MACHINE SUPPLY CO. | Farmers Branch, TX

POC: Robert Ramsey | rramsey@womackmachine.com | www.womackmachine.com | in

What is something unique about your product or service?
Womack Machine Supply Co. offers custom built on-vehicle fluid analysis systems that can provide ISO cleanliness level and H2O saturation content reporting through the vehicle's J1939 databus, off-power fluid filtration systems that extend the service life of petroleum products, custom containerized reverse osmosis water purification units, seawater RO units, brackish water RO units, and custom container builds built to your specification.

What do you consider your organization's differentiator?
Womack Machine Supply Co. can provide one off prototype machine builds, industrial automation solutions, conveyor systems, reverse osmosis systems, custom fluid power design, HMI programming, global remote machine monitoring, and warranted hydraulic pump repair. Our diverse offering and depth of fluid power experts makes us a unique partner/subcontractor to design your next project.

What are your teaming goals within NAMC?
Womack Machine Supply Co. would like to partner with prime contract holders or other small businesses to design and/or manufacture systems for your build.

Capabilities:

Brackish RO	Certified Quality Filter Program	Containerized Systems	Custom Water Treatment	High Purity
Micro-Filtration	Nano-Filtration	Off Power Filtration	On-Board Vehicle Fluid Analysis	Post-Treatment
Pre-Treatment	Reverse Osmosis	Seawater RO	Ultra-Filtration	

POWERTRAIN

C&R RACING, INC. | Indianapolis, IN
POC: Chris Caylor | chrisca@crracing.com | www.crracing.com |

What do you consider your organization's differentiator?
We are an end-to-end supplier of advanced cooling solutions from concept, manufacture and validation processes. We have in-house engineering support for thermal design and prediction as well as a reputation for fast lead times for prototype to production scales.

What capability gaps are you able to fill and which industry colleagues would you like to know about them?
Our ability and experience with thermal management of ICE, hybrid, EV and alternative drive trains makes us uniquely qualified to provide solutions that work for autonomous land, sea and air vehicles. Our experience with electronics and embedded computing solutions allows us to go beyond the aspects of typical drive train cooling solutions.

What are you most proud of?
C&R Racing and our parent company, PWR Advanced Cooling Technology, were born in the world of racing and motorsports. We still supply 9 of 10 Formula 1 teams for many aspects of their thermal management needs. We bring that racing mindset to the world of autonomy, defense and aerospace customers.

Capabilities:

Battery	Brazed Heat Exchangers	Electronics	Liquid Cold Plates	Motor and Electronics Cooling	Powertrain
Radiators	System Design & Engineering Services	Thermal Management	Vehicle & Platform System Integration		

SURVIVABILITY

UVISION-USA CORPORATION | Purcellville, VA

POC: Jim Truxel | jim.truxel@uvisionusa.com | www.uvisionuav.com |

What is something unique about your product or service?
Our technology is designed so that it can be operated by the same C2 system whether carried or integrated in a vehicle, regardless of product type.

What do you consider your organization's differentiator?
Our ability to quickly adapt the Governments designs into our MOSA.

What do you want other NAMC Members to know about you?
Our technology can be mounted on any size vehicle providing BLOS ISR, and Effects from 5km to >75km.

Capabilities:

Autonomous Navigation & Controls BLOS Munitions Lethality Perception & Situational Awareness Survivability

Vehicle & Platform System Integration