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8TH ANNUAL

FUTURE GROUND COMBAT VEHICLES

DECEMBER 1 - 3, 2020

DETROIT, MI

Enabling Next-Generation Ground
Combat Vehicle Dominance for

U.S. BATTLEFIELD SUPERIORITY

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FUTURE GROUND COMBAT VEHICLES

Dear Colleague,

Welcome to the Institute for Defense and Government Advancement's 8th Annual **Future Ground Combat Vehicle Summit!** The FGCV Summit is driven by emerging ideas and initiatives from leading stakeholders across the rapidly evolving Ground Combat Vehicle community.

IDGA's FGCV is an industry staple that provides the ground combat vehicle community a platform to discuss the most effective means to develop and realize the next generation of combat vehicles for the Joint Force. With the Army's highlight of the need for GCVs modernization, the Next-Generation Combat Vehicle modernization initiative has offered this community the means to massively exceed current levels of capability for GCV fleets.

With near-peer capability development of land forces at an all-time high, the GCV community must collaborate in order to ensure the delivery of next-generation fleets, to include how our current fleets are maintaining their competitive edge across multiple AORs and domains.

Whether it is a careful review of NGCV efforts, fleet modernization priorities, emerging technology and its application on GCVs, IDGA's Future Ground Combat Vehicles Summit serves as a marquee industry event to share in the GCV community's current goals and aims, and we'd be honored to have you in attendance.

Join IDGA's FGCV Summit for the unique opportunity to not only learn from those leading the ground combat vehicle revolution, but also to stake your own place in this rapidly evolving community.

V/r,



Jonathan Sanders
Deputy Divisional Director, IDGA
Program Director, 8th Annual FGCV Summit
Detroit, MI

FUTURE GROUND COMBAT VEHICLE AGENDA CODING:



Enabling **GCV Battlefield Dominance**



Improving **GCV Lethality**



Advancing **Mobility and Maneuverability Capabilities**



Leveraging **Robotic and AI Technologies** to Bolster GCVs



Enhancing **Protection Capabilities**



2020 FGCV SPEAKERS



General Paul E. Funk II
Commanding General United States Army Training and Doctrine Command



Lieutenant General James F. Pasqualette
Army Deputy Chief of Staff G-8, United States Army



Jeffrey White
Principal Deputy to the ASA (ALT)
US Army



Mr. Robert Miele, SES
Executive Technical Director
U.S. Army Test and Evaluation Command



Colonel Warren Sponsler
Deputy Director, Next-Generation Combat Vehicle
CFT
Army Futures Command



Colonel Christopher Barnwell
Chief, Field Experimentation Division
Joint Modernization Command, US Army



LTC Jonathan Bodenhamer
Product Manager Applique' and Large Unmanned Ground Systems
PEMS
System Combat Support and Combat Service Support,



Lieutenant Colonel Ryan Orders
Armoured Fighting Vehicles, Army Headquarters
Australian Defense Force



Mark C. Hassler II
Associate Director, Global Technology Office
United States Army Combat Capabilities Development Command



COL Tim Klenske
Director for Futures, Major Defense Acquisition Programs, and Special Projects
JPEO-CBRND



Daphne Fuentesvilla, PhD
Director Land and Sea Platforms (Acting)
Office of the Undersecretary of Defense for Research and Engineering



Jason Miller
Mechanical Engineer
Naval Surface Warfare Center, Crane



Ryan Makinson
AAAS Science and Technology Policy Fellow
Defense Technical Information Center (DTIC)



Major General (R) William Hix
Managing Partner, Next Horizon Partners, LLC Former Director of Strategy, Plans & Policy, Deputy Chief of Staff G-3/5/7 HQDA



Seyed (Reza) Zekavat, Ph.D
Professor of Data Sciences, Professor of Physics
Worcester Polytechnic Institute (WPI)



Eric Troidl, P.E.
Product Support Mechanical Engineer and Team Leader Support Equipment and Vehicles Team, Power and Energy Division
University of Dayton Research Institute



David Bragg
National Security Program Area Lead, Florida Applied Research in Engineering (FLARE)
University of Florida



Afsaneh Rabiei
Professor of Mechanical and Aerospace Engineering
North Carolina State University

KEYNOTE SPEAKER HIGHLIGHT



General Paul E. Funk II
Commanding General
United States Army Training and Doctrine Command

**Event Keynote Remarks:
Developing GCV Operational
Doctrine to Enable Continued
Army Mission Success**

Gen. Paul E. Funk II assumed duties as the 17th Commanding General, United States Army Training and Doctrine Command, on June 21, 2019. As TRADOC commander, Funk is responsible for 32 Army schools organized under eight Centers of Excellence that recruit, train and educate more than 500,000 Soldiers and service members annually.

Funk was born at Fort Hood and graduated from Fort Knox High School. He was commissioned an Armor Officer through ROTC upon graduation from Montana State University.

General Funk has commanded at every level, Company through Corps, including:

- A Company, 2d Battalion, 32d Armor Regiment, 1st Brigade, 3rd Armored Division in Kirchgoens, Germany
- Headquarters and Headquarters Company, 4th Battalion, 67th Armor Regiment, 3rd Brigade, 3rd Armored Division in Kirchgoens, Germany
- 1st Squadron, 7th Cavalry Regiment (GARRYOWEN), 4th Brigade, 1st Cavalry Division at Fort Hood, Texas

- 1st Brigade Combat Team (IRONHORSE), 1st Cavalry Division at Fort Hood, Texas
- 1st Infantry Division (Big Red One) at Fort Riley, Kansas
- III Armored Corps (AMERICA'S HAMMER!) at Fort Hood, Texas

Funk holds a Bachelor of Arts degree in speech communications, from Montana State University, and a Master of Science degree in administration, from Central Michigan University. He is a graduate of the Armor Basic Officer Leaders and Advanced Courses, the Command and General Staff College, and completed his Senior Service College as a fellow at the Institute of Advanced Technology, University of Texas at Austin.

WHY YOU CAN'T MISS OUT ON THIS YEAR'S FUTURE GROUND COMBAT VEHICLES SUMMIT



CONTENT:

The Future Ground Combat Vehicles Spring Summit will deliver senior-level briefings that provide a full picture viewpoint of the challenges and opportunities currently in the GCV space. You can expect to hear leaders and decision makers discuss imminent needs for the GCV community and their acquisition, R&D, and S&T priorities in the near and long term.

NETWORKING:

With each iteration of IDGA's Future Ground Combat Vehicle Summit, we have grown in both size and diversity. This is the event of year to foster and develop relationship with key decision makers across the Services including our academic, industry and Federal Government partners. No other event offers the opportunity to network with a more diverse group of GCV professionals.

EXPERIENCE:

We at IDGA strive to provide our attendees an experience that enhances their learning opportunities, networking and general enjoyment. Customize your experience with interactive learning opportunities covering a wide array of GCV focused topics to ensure your event experience is tailored to your summit goals. We offer plenty of refreshment breaks to process the briefings and network face-to-face with Military and industry leaders to create valuable partnerships moving forward.

PRE-CONFERENCE FOCUS DAY

WEDNESDAY, MAY 27, 2020

0800 Registration & Breakfast

0915 Chairperson Opening Remarks



Major General (Ret.) William Hix
Managing Director, Next Horizon Partners, LLC
Former Director of Strategy, Plans & Policy, Deputy Chief of Staff G-3/5/7 HQ, US Army

0915 Developing, Integrating, Fielding and Sustaining Unmanned Ground Platforms to Inform Future Army Ops

The proliferation of unmanned and semi-autonomous capabilities into the Military ecosystem has exploded over the past decade. Providing affordable, operationally relevant automated technology has direct benefit to the Warfighter, and our speaker will highlight these efforts to integrate these capabilities for the benefit of large ground combat systems.



LTC Jonathan Bodenhamer
Product Manager Applique' and Large Unmanned Ground Systems
PEO Combat Support and Combat Service Support

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1000 ASA(ALT) Ground Combat Vehicle Priorities to Meet Future Army Needs

ASA(ALT) provides our soldiers a decisive advantage in mission sets through the delivery of the world's best equipment and services by leveraging next-gen technology that meets the US Army's needs. The Army's prioritization of the Next-Generation Combat Vehicle Modernization effort requires constant collaboration between our Service leaders and Acquisition professionals, and this session will highlight ASA(ALT)'s ongoing efforts to meet the Army's current and future ground combat vehicle fleet needs.



Jeffrey White
Principal Deputy to the ASA (ALT)
US Army

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1045 Morning Networking Break

1130 Event Keynote Remarks: Developing GCV Operational Doctrine to Enable Continued Army Mission Success



General Paul E. Funk
Commanding General
United States Army Training and Doctrine Command

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FORCE

1215 Keynote Remarks: Accelerating NGCV CFT Modernization Efforts: Current Lines of Efforts & Updates

The demands of a modern battlefield, from sensing and processing data, to moving around in different types of physical terrains and domains, the Army has forged a new way of thinking about ground vehicles. The Next-Generation Combat Vehicle CFT aims to push vehicle development into the future of the Service's needs, and this session will highlight some of these ongoing efforts.



Colonel Warren Sponsler
Deputy Director, Next-Generation Combat Vehicle CFT
Army Futures Command

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PRE-CONFERENCE FOCUS DAY

WEDNESDAY, MAY 27, 2020

1300	Lunch
1400	Overview of Emerging Ground Combat Vehicle Priorities and Areas of Interest Formerly the Army's Chief Strategy Officer, a retired Major General, and our event Chairman, Major General (R) Hix will provide an overview of emerging ground combat vehicle priorities, advancements, and thrust areas as it relates to the future of US ground forces.  Major General (R) William Hix Managing Partner, Next Horizon Partners, LLC Former Director of Strategy, Plans & Policy, Deputy Chief of Staff G-3/5/7 HQDA GCV LETHAL TECH
1445	Naval Surface Warfare Center Vehicle Electrification Projects This session will highlight the ongoing efforts at NSWC to deliver next-generation electrification efforts for their platforms, and will provide a cross-service look into shared solutions to potentially bolster ground platforms.  Jason Miller Mechanical Engineer Naval Surface Warfare Center, Crane IM TECH
1530	Chairperson Closing Remarks Major General (R) William Hix
1545	End of Focus Day



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TECH Leveraging **Robotic and AI** Technologies to Bolster GCVs

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MAIN DAY ONE

THURSDAY, MAY 28, 2020

0800 Registration and Morning Networking

0850 Chairperson Opening Remarks



Major General (Ret.) William Hix
Managing Director, Next Horizon Partners, LLC
Former Director of Strategy, Plans & Policy, Deputy Chief of Staff G-3/5/7 HQ, US Army

0900 T&E Efforts for Army Ground Combat Vehicles

Dr. Miele is responsible for ensuring that Army and OSD senior leaders have the essential information required before weapons and equipment are placed into the hands of Soldiers and throughout the lifecycle of those systems. He directs the test and evaluation for over 400 weapons programs through a 9000 person workforce and a \$2B budget.

- Weapons systems testing efforts for future GCVs
- Ongoing experimentation efforts for current fleet of GCVs
- Guiding ATEC evaluation strategy: vision for future ATEC efforts



Mr. Robert Miele, SES
Executive Technical Director
US Army Test and Evaluation Command

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0945 Driving Advanced Research and Engineering Processes to Bolster DoD Land Platform Capability

This session will highlight USD R&E's efforts to further develop and conduct oversight of DoD technology strategy across the land platform enterprise.

- Land platform priority research areas
- Technological capability to be met to enable future GCV dominance
- Considerations as to land platform roadmap for the DoD



Daphne Fuentevilla, PhD
Director Land and Sea Platforms (Acting)
Office of the Undersecretary of Defense for Research and Engineering

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1030 Networking Break and Demo Drive

1115 Strategic Overview of Resourcing Efforts and Impact on Advancement of Ground Combat Vehicle Fleets



Lieutenant General James F. Pasquarette
Army Deputy Chief of Staff,
G-8, United States Army

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1200

Improving CBRN Protection and Sensor Capabilities to Bolster GCVs Survivability

Joint Program Executive Office for Chemical, Biological, Radiological and Nuclear Defense core focus areas contribute to building a more lethal force, and streamline JPEO-CBRND efforts to meet the Joint Service's needs in combating chemical, biological, radiological and nuclear (CBRN) threats. Mr. Bryce will highlight JPEOCBRND's ongoing efforts to bolster current and future GCV fleets, and the technology needs to enable it.

- Improving integrated situational understanding for GCV fleets
- Future directions of the JPEO to better support GCV operations
- Improving physical protection and mitigation capabilities through agile technology fielding



COL Tim Klenske
Director for Futures, Major Defense Acquisition Programs, and Special Projects
JPEO-CBRND

PC

1245

Networking Lunch

1345

Understanding the Unique Armoured Fighting Vehicle Needs for the Australian Army

This session will go on to highlight the ongoing development efforts of the Australian Army's Armoured Fighting Vehicle Concepts.

- Capabilities sought to enable Australian mission success
- Vision for a 21st century battlefield
- Partnership efforts to deliver next-generation ground combat vehicle capability



Lieutenant Colonel Ryan Orders
Armoured Fighting Vehicles, Army Headquarters
Australian Defense Force

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1430

Driving CCDC International Armaments Cooperation Activities to Advance Army GCV Capability

CCDC's Global Technology Office is the Army's centralized organization for global engagement, one that ensures interoperability with US allies and greater international cooperation for GCVs.

- Supporting international armaments cooperation to better align support CCDC, AFC, and ASA(ALT) GCV needs
- Acquiring assessing mature technologies from the industry of friendly foreign nations to meet current acquisition and/or operational needs
- Domestic and foreign technologies of current interest



Mark C. Hassler II
Associate Director, Global Technology Office
United States Army Combat Capabilities Development Command

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MAIN DAY ONE

THURSDAY, MAY 28, 2020

1515 Afternoon Networking Break

1545 Improving Armor and Protection Capabilities While Reducing Weight

Advancing protection capabilities for current GCVs is of the highest priority, and our invited speaker will highlight their efforts to improve protection capabilities without adding on undue weight. Providing improved armor capabilities for ground combat vehicles at lower weights

- Reducing weight of armor without sacrificing protection: engineering challenges to be met
- Efforts to advance composite metal foam capabilities for ground combat vehicle insertion



Afsaneh Rabiei
Professor of Mechanical and Aerospace Engineering
North Carolina State University

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1630 Chairperson Closing Remarks



Major General (Ret.) William Hix
Managing Director, Next Horizon Partners, LLC
Former Director of Strategy, Plans & Policy, Deputy Chief of Staff G-3/5/7 HQ, US Army

1645 Post Conference Networking



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0800	Registration and Morning Networking
0850	Chairperson Opening Remarks  Major General (Ret.) William Hix Managing Director, Next Horizon Partners, LLC Former Director of Strategy, Plans & Policy, Deputy Chief of Staff G-3/5/7 HQ, US Army
0900	Resilient Systems in a Contested Environment As our platforms become more inter-connected and capable, their threat vector inevitably will grow, elevating their ability to be attacked by adversaries for their gain. This session will highlight ongoing efforts to engineering resilient platforms for GCVs. <ul style="list-style-type: none">• Engineering and technology challenges to be met to enable resilient systems• Challenges associated with A2/AD• Partnership efforts to bolster UF capability and utilization  David Bragg National Security Program Area Lead, Florida Applied Research in Engineering (FLARE) University of Florida GCV LETHAL TECH
0945	Advancing Army Ground Combat Vehicle Warfighting Concepts and Modernization Efforts The U.S. Army Joint Modernization Command provides insight about future ways of fighting, future technology, and force structure during realistic live, constructive, and/or simulated training exercises, providing a unique viewpoint as to the role of NGCV in the future battlespace. <ul style="list-style-type: none">• Efforts to assess Army ground combat vehicle warfighting capabilities and concepts• Necessary next steps to improve ground combat vehicle effectiveness• Challenges associated with defining warfighting concepts for unidentified future areas of operation  Colonel Christopher Barnwell Chief, Field Experimentation Division, Joint Modernization Command US Army GCV IM TECH
1030	Networking Break and Demo Drive

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1115 **The Future of Battlefield Situation Awareness via Vehicular Intensified Early Warning (VIEW)**

This talk presents the foundations of Vehicular Intensified Early Warning (VIEW) technology. VIEW is realized via an integration of a Wireless Local positioning System (WLPS) and sensor data-enabled crowd source-based situation awareness. WLPS allows active vehicular localization. WLPS maintains accurate and real-time decision making via a fusion of comprehensive data acquisition, data analysis, and data management. Installed on combat vehicles, VIEW offers an immediate “view” to battlefield commanders and operators to support secure, safe, and efficient operation, and avoid tragic self-destructive incidents in complex battlefield media.



Seyed (Reza) Zekavat, Ph.D
Professor of Data Sciences, Professor of Physics
Worcester Polytechnic Institute (WPI)

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1200 **Fuel Desulfurization for Vehicles and Fuel Cells**



Eric Troidl, P.E.
Product Support Mechanical Engineer and Team Leader, Support Equipment and Vehicles Team, Power and Energy Division
University of Dayton Research Institute

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1245 **Networking Lunch**

1345 **Aggregating Ground Combat Vehicle Data to Rapidly Deliver Next-Gen Technology Development**

The Defense Technical Information Center has served the information needs of the Defense Community for nearly 70 years, delivering the tools and data needed to empower the research and engineering enterprise to accelerate ongoing technological developments. This session will highlight some of their collaborative research efforts.

- DTIC GCV efforts
- DTIC collaborative efforts to spur advanced results
- Technology suggestions as a result of collaboration and data collection



Ryan Makinson
AAAS Science and Technology Policy Fellow
Defense Technical Information Center (DTIC)

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1430 **Chairperson Closing Remarks**



Major General (Ret.) William Hix
Managing Director, Next Horizon Partners, LLC
Former Director of Strategy, Plans & Policy, Deputy Chief of Staff G-3/5/7 HQ, US Army

1445 **End of FGCV Conference**

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SPONSOR THIS SUMMIT

The **Future Ground Combat Vehicles Spring Summit** is a unique and annual opportunity to participate, share knowledge and connect with those leading the next-generation of Ground Combat Vehicle platforms and capabilities.

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Main Conference + Focus Day**

All Active Federal Employees, to include Military Personnel, will be granted free admission to our event. However, in order to logistically support this event, we must require online pre-registration. Onsite registration will not be permitted and online registration will close on 5/15/20. Limited Passes Available.

Academia, Non-Profit, and Foreign Military	Register & Pay By Sept. 18, 2020	Standard Pricing
2 Day Main Conference	\$995 Save \$400	\$1,395
3 Day All-Access Pass: Main Conference + Focus Day	\$1,495 Save \$400	\$1,895
Focus Day		\$595

Vendors, Consultants, and Solution Providers	Register & Pay By Sept. 18, 2020	Standard Pricing
2 Day Main Conference	\$1,115 Save \$400	\$1,515
3 Day All-Access Pass: Main Conference + Focus Day	\$1,865 Save \$400	\$2,265
Focus Day		\$750

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