



# Tactical Wheeled Vehicle (TWV) Autonomous Operations



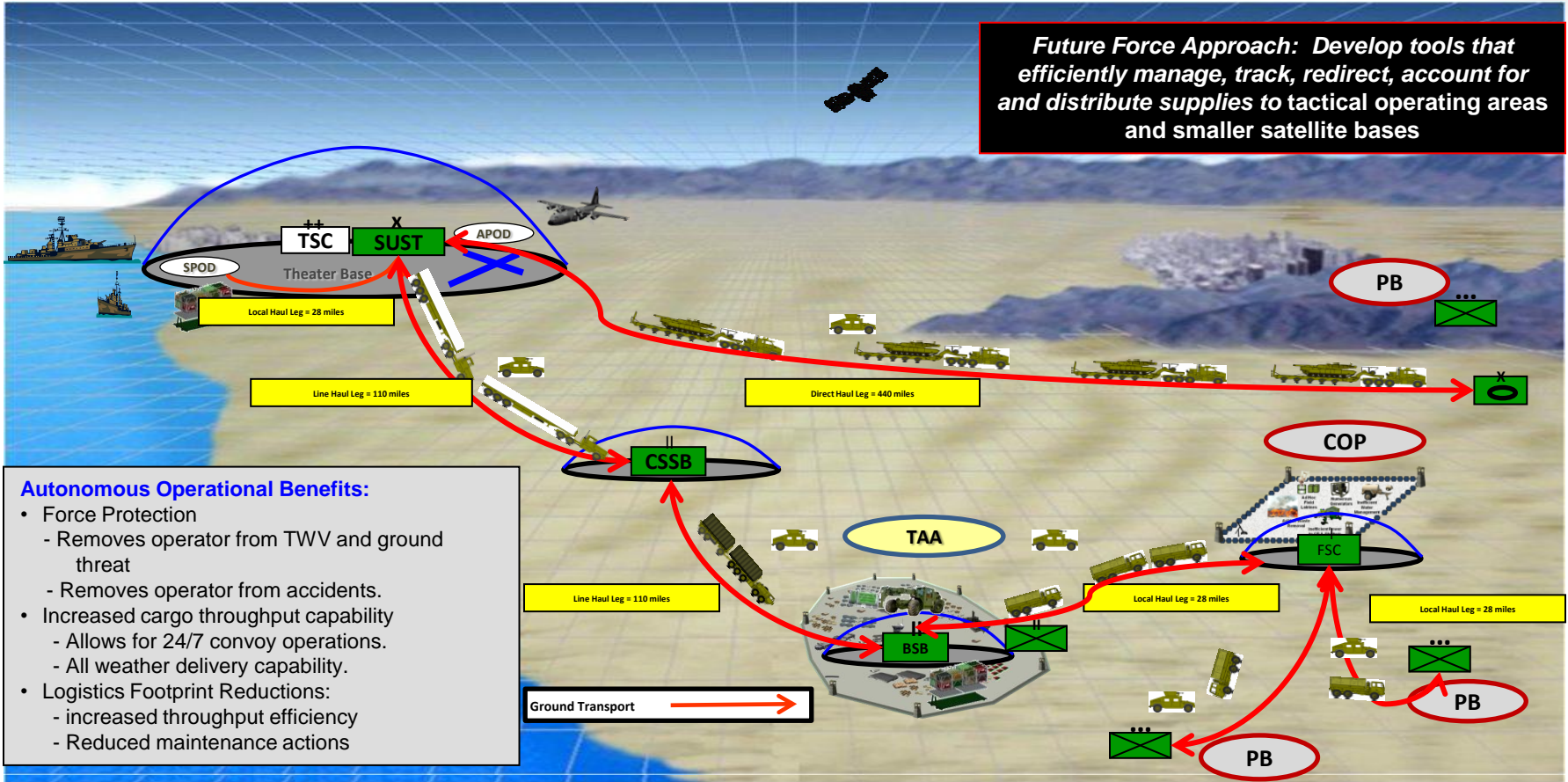
**Home of the Army's Sustainment Think Tank!  
Combined Arms Support Command and the  
Sustainment Center of Excellence  
Fort Lee, Virginia and Fort Jackson, South Carolina**



# Army Concept of Employment (Mid to Long Term)

Reduce personnel risk / Get what's needed, where it's needed, when it's needed

*Future Force Approach: Develop tools that efficiently manage, track, redirect, account for and distribute supplies to tactical operating areas and smaller satellite bases*



- Autonomous Operational Benefits:**
- Force Protection
    - Removes operator from TWV and ground threat
    - Removes operator from accidents.
  - Increased cargo throughput capability
    - Allows for 24/7 convoy operations.
    - All weather delivery capability.
  - Logistics Footprint Reductions:
    - increased throughput efficiency
    - Reduced maintenance actions

**Concept of Employment.** The Sust BDE Automated TWVs are a critical part of the theater distribution system providing the capability to efficiently and rapidly transport large volumes of cargo (dry and liquid cargo) from Sea Port of Debarkation (SPOD) and Aerial Port of Debarkation (APOD) to a Central Receiving Shipping Point (CRSP) at the CSSB or BSB. Automated TWVs will primarily support the Warfighting Functions of Movement and Maneuver and Sustainment. Additionally, they sustain by simultaneously supporting offensive, defensive, stability, homeland defense, peacetime and retrograde operations.





# Unmanned Vehicle Operations



TWV Autonomous Operations is systems that designed to incorporate automated capabilities into future and existing TWVs. These vehicles are designed to operate with limited autonomous or minimal human input to accomplish an assigned mission. These systems will utilize a series of sensors including radar, LIDAR, cameras and GPS to determine and navigate the most appropriate route. Autonomous vehicles can operate within purely automated convoys or in conjunction with manned vehicles.

## TWV Autonomous Operations CONOPS

Automation can address many of the complexities and threats inherent in ground distribution operations. This technology will be a solution that can improve the combat effectiveness of current and future force joint combined arms operations. TWV Autonomous Operations will improve **Force Protection** and **increase sustainment throughput** of convoy operations.

- ❑ Greater distribution and sustainment efficiencies
- ❑ Greater cargo throughput operational tempo (OPTEMPO)
- ❑ Enhanced force protection by reducing personnel exposure in dangerous environments
- ❑ Optimized military time sensitive deliveries, and compressed order-ship times.





# TWV Autonomous Operations Attributes



- Conduct Pre, During, and Post PMCS diagnostic checks
- Load, secure, and unload container and breakbulk cargo autonomously
- Drive/operate unmanned vehicles moving supplies or personnel to and from one location to another
- Automatically position itself in convoy position, and reposition itself post operation in a tactical operation
- Deliver vehicle health monitoring to Command and Control center, self diagnose, and self reporting
- Provide self recovery of disable vehicles in any type of terrain and situation
- Is a provider of security vise a consumer during convoy operations





# Questions?

