Army-517: Innovation in The Field

SPONSORING ORGANIZATION
METC - Army

CHALLENGE
The Operational Army and Joint Forces seek methods to create innovative solutions via Advanced Manufacturing Technologies to address soldiers who are constantly on the move having ill equipped resources for in the field capabilities and instead need to have secure, reliable, and rugged, equipment that will meet requirements and operational needs of Warfighters.

RELEVANT CONTEXT
- Recently the Secretary of War has pushed to use 3D printers in the field for soldiers on the move to address the ever changing and advancing threats soldiers face, and currently do not have the proper equipment to counter.
- Current Issue: Soldiers are currently carrying standard 3D printers and scanners that don't work when soldiers are constantly on the move and there is no stable surface for the 3D printer to settle on.
- Additional Factors: Soldiers are limited on what they can carry on their person. Approved Items are cut down to essentials only, making the standard printers currently being utilized unhelpful, an unessential extra weight, and time costly.
- There are no additional resources outside of what soldiers have on them, causing them to be creative and make do with what they have on the move, and using what they can from the 3D printers to add on to their present resources.
- The MVP should address:
    - Is there a way 3D printers can be mobile and still work as needed?
    - Is there a way to fix the equipment, software, or the design?
    - How can the Problem Sponsor and Team make a soldiers' life easier?
    - The capability (or capabilities) provided has to have multiple uses (dual –use) otherwise it is not worth carrying around.
    - The capability (or capabilities) needs to be capable of being utilized on the front lines
    - Allow for a soldiers' ideas to be turned into a tangible item
    - Innovative capabilities that integrate hardware and software are desired.
    - Innovative capabilities have to be reusable - Other concepts are also desirable to allow repeatability and accuracy of AM during mission profiles.
- Current 3D printers, scanners, fabrication and manufacturing equipment, and techniques are not operating well while soldiers are moving in the following domains: Truck / Trailer / Boat / Aircraft

IMPACT
If this problem were to be solved it would reduce the logistic burdens on soldiers and increase soldier capability and readiness on the field.

POTENTIAL BENEFICIARIES
Marine Expeditionary Units, Soldiers in the Field, The Operational Army and Joint Forces.

TEAM RECOMMENDED SKILLSETS
3D printers both equipment and design, AI/ML, Decision making tools

RESOURCES
Approved Equipment list

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