Subject: Integrated Visual Augmentation System Prior Approval Request	DoD Serial Number: FY 18-20 PA
Appropriation Title: Various Appropriations	Includes Transfer? Yes

Component Serial Number:	*(Amounts in Thousands of Dollars)*							
	Program Base Reflecting Congressional Action		Program Previously Approved by Sec Def		Reprogramming Action		Revised Program	
Line Item	Quantity	Amount	Quantity	Amount	Quantity	Amount	Quantity	Amount
a	b	c	d	e	f	g	h	i

This prior approval reprogramming action is submitted for approval because this action uses general transfer authority, exceeds established reprogramming thresholds, and affects special interest items. This reprogramming action provides funding in support of higher priority items, based on unforeseen military requirements, than those for which originally appropriated; and are determined to be necessary in the national interest. They meet all administrative and legal requirements, and none of the items have previously been denied by the Congress.

This reprogramming action transfers $648.1 million between Fiscal Year (FY) 2018 appropriations. This reprogramming action uses $648.1 million of general transfer authority pursuant to section 8005 of division C of Public Law 115-141, the Department of Defense (DoD) Appropriations Act, 2018; and section 1001 of Public Law 115-91, the National Defense Authorization Act for FY 2018.

FY 2018 REPROGRAMMING INCREASES: **+648,100**

ARMY INCREASES: **+648,100**

Research, Development, Test and Evaluation, Army, 18/19 **+648,100**
Budget Activity 04: Advanced Component Development and Prototypes
PE 0603774A Night Vision Systems Advanced Development
10,938 10,938 **+491,300** 502,238

Explanation: Funds are required to accelerate the development of components, algorithms, and demonstrations in support of the next generation day/night vision system/Heads Up Display (HUD) 3.0. This project will provide Rapid Target Acquisition capability with the Family of Weapon Sights–Individual and next generation End User Device (EUD), to include advanced EUD applications. The focus is to integrate external data sources and advanced processed imagery with overlay data display. This is a priority of the Secretary's Close Combat Lethality Task Force. This is a base budget requirement. The following provides a more detailed explanation of the prototype capabilities being pursued:

- $+53.6 million to accelerate development of an ultra-compact thermal camera sensor module with standard interfaces to incorporate into the next generation day/night vision system.
- $+54.5 million for converting the analog image intensification night vision tube to a fully digital low light solid state camera for integration into the next generation day/night vision system and fused imaging with the ultra-compact thermal sensor.
- $+50.2 million to accelerate development of the Government-owned Adaptive Soldier Architecture (ASA) based on common interface controls to enable rapid iteration, promote competition, maintain

Approved (Signature and Date) JUL 1 8 2018

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interoperability, and manage obsolescence. The ASA will reduce integration risk and provide flexibility during the prototyping process.

- $+116.1 million to exploit emerging spatial computing technologies and advancements in wave guide displays in order to provide significantly increased situational awareness. This effort will demonstrate the Heads Up Display effectiveness of thermal, low light, and day camera imaging in day, night, and reduced visibility environments. It will demonstrate three dimensional imaging to enable a fully integrated synthetic training environment for training and rehearsing on the same day/night vision Heads Up Display system intended for operational use.
- $+54.1 million to fully integrate the next generation Nett Warrior 3.0 EUD with Android Tactical Assault Kit and next generation dismounted situational awareness capabilities aided by artificial intelligence and machine learning. The next generation EUD will contain significant on-soldier processing capability, move data across the Soldier wirelessly, as well as exploit the network for off-soldier processing.
- $+34.3 million to develop Squad Performance and Soldier Lethality Ratings Model based on aggregated data in a common repository and the development of performance algorithms. Lethality ratings will measure the impact of new capabilities, training readiness, biometric information, cognitive testing, and leadership evaluations of the overall lethality of an Infantry Squad.
- $+122.4 million to develop initial artificial intelligence capabilities for rule-based planning, decision, and opposing force adaptation support and advanced algorithms for quantitative pattern recognition, change detection, and identification support.
- $+6.1 million to deliver prototypes for Soldier touch point tests.

PE 0604121A Synthetic Training Environment Refinement & Prototyping	1,536	1,536	**+97,000**	98,536

Explanation: Funds are required to support the development and integration of the Synthetic Training Environment (STE) Squad Training capability; the next generation close combat training capability. Funds will specifically address the integration of STE Squad training capability into the Heads Up Display (HUD) 3.0 and core STE capabilities of Global Terrain/One World Terrain (OWT), Training Simulation Software (TSS), and Training Management Tools (TMT). Funds will support the development of the first two of four Soldier capability sets that will demonstrate an initial squad close combat training capability at corresponding Soldier touch points. This funding will increase Squad's ability to "Fight 25 Battles before the First", fulfilling the Secretary's Close Combat Lethality Task Force priority for increasing squad lethality. This is a base budget requirement.

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Budget Activity 05: System Development and Demonstration
PE 0604710A Night Vision Systems – Eng Dev
125,917 125,917 **+59,800** 185,717

Explanation: Funds are required to accelerate the development of Heads Up Display (HUD) 3.0 prototypes for the Family of Vision and Mobility Capabilities (FVMC). This development will improve miniaturized high performance night vision electro-optics, thermal and laser systems, integration, and adapt demonstrated technologies to increase Soldier lethality, mobility, and situational awareness. The FVMC will provide automatic adjustment of imagery and matched sensor fields of view. The FVMC will provide day/night rapid target acquisition capability, day/night data display for the Soldier Network Warrior End User Device (EUD)/computer, ability to send/receive data to the end user device to support advanced EUD applications to process sensor video, integrate external data and produce advanced imagery with data overlay. Development will result in evaluation of HUD 3.0 prototypes at numerous locations/environments as part of the initial two of four Soldier touch point test events. This is a priority of the Secretary's Close Combat Lethality Task Force. This is a base budget requirement. The HUD 3.0 development includes the following efforts:

- $+2.4 million Thermal Camera Integration
- $+1.7 million Low Light Level Camera Integration
- $+1.1 million Adaptive Soldier/Squad Architecture
- $+6.5 million Heads Up Display Integration
- $+16.6 million Network Warrior 3.0 Integration
- $+1.4 million Squad Performance Model
- $+18.6 million Artificial Intelligence/Machine Learning
- $+11.5 million Soldier Touch Point testing

FY 2018 REPROGRAMMING DECREASE: **-648,100**

DEFENSE-WIDE DECREASE: **-648,100**

Defense Health Program, 18/18 **-648,100**
Budget Activity 01: Operation and Maintenance
31,918,359 31,778,446 **-648,100** 31,130,346

- $-635.7 million in the Private Sector Care budget subactivity due to implementation of financial improvements in the contract administration fee structure for the new T-2017 Managed Care Support Contracts, including the retention of beneficiary enrollment fees by the Federal government ($-352.9 million); implementation of the Interim Final Rule ($-166.3 million), which

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utilized regulatory authority to synchronize the grandfathered and non-grandfathered retiree health care visit categories; and lower than projected healthcare costs driven by medical inflation ($-116.5 million). This is a congressional special interest item. This is base budget funding.

- $-12.4 million in the Consolidated Health Support budget subactivity due to both 1.) the standardization of workflow processes for the U.S. Army Medical Command's Integrated Disability Evaluation System allowing a reduction in staffing levels, and 2.) a reduction in case volume for various programs. This is base budget funding.