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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Office of the Secretary Of Defense **Date:** February 2020

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 2: Applied Research</i>					R-1 Program Element (Number/Name) PE 0602230D8Z / <i>Defense Technology Innovation</i>							
COST (\$ in Millions)	Prior Years	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	9.989	0.000	0.000	35.000	-	35.000	23.000	20.000	10.000	12.000	Continuing	Continuing
835: <i>Defense Technology Innovation</i>	9.989	0.000	0.000	35.000	-	35.000	23.000	20.000	10.000	12.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program will build upon the technology foundation that underlies fifth-generation cellular network (5G) systems as a basis to create the next generation of wireless cellular network and security technologies for military applications. Working in concert with other U.S. Government science and technology agencies, this DoD program will enable the U.S. to regain leadership in emerging wireless technology standards including sixth generation (6G) and beyond by investing in research and workforce development in critical technologies. The development of an engagement plan with other Departments, agencies, industry, and universities will ensure continued U.S. influence in both the international commercial marketplace as well as Government sectors.

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	35.000	-	35.000
Total Adjustments	0.000	0.000	35.000	-	35.000
• Congressional General Reductions	0.000	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Increase for Next Generation ICT	-	-	35.000	-	35.000

Change Summary Explanation

The increase in FY 2021 through FY 2025 is for Next Generation Information Communications Technology (ICT): 5G to Next Generation (NextG).

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
Title: Defense Technology Innovation	-	-	35.000
Description: This program will build upon the technology foundation that underlies fifth-generation cellular network (5G) systems as a basis to create the next generation of wireless cellular network and security technologies for military applications. Working in concert with other U.S. Government science and technology agencies, this DoD program will enable the U.S. to regain leadership			

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C. Accomplishments/Planned Programs (\$ in Millions)		FY 2019	FY 2020	FY 2021
<p>in upcoming wireless technology standards including sixth generation (6G) and beyond by investing in research and workforce development in critical technologies. The development of an engagement plan with other Departments, agencies, industry, and universities will ensure continued U.S. influence in both the international commercial marketplace as well as Government sectors.</p> <p>FY 2021 Plans: DoD will work in concert with other U.S. Government science and technology agencies such as the National Science Foundation (NSF) and the National Institute of Standards and Technology (NIST) to execute this investment through collaborative mechanisms such as co-investment in early-stage technology testbeds and focused fellowship programs with NSF. The research areas include:</p> <ul style="list-style-type: none"> • Radio Frequency (RF) technology including millimeter wave technology and multi-antenna systems • Dynamic spatial spectrum reuse utilizing adaptive machine learning for wireless systems • Highly dynamic spectrum access using spatial and other degrees of freedom • Spatial/spectral/network security techniques • Secure, reconfigurable, and robust network capabilities based on network slicing for creation of virtualized networks and management using software defined networking • Edge computing to provide extremely low latency computing for Next G applications. <p>FY 2020 to FY 2021 Increase/Decrease Statement: Increase in FY 2021 for Next Generation Information Communication Technology (ICT).</p>				
Accomplishments/Planned Programs Subtotals		-	-	35.000
D. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
N/A				
E. Acquisition Strategy				
N/A				