Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Navy											Date: February 2020	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*					R-1 Program Element (Number/Name) PE 0303354N *I ASW Systems Development - MIP*							
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	53.931	8.889	9.991	9.151	-	9.151	9.335	10.722	10.938	11.157	Continuing	Continuing
0490: *Airborne Acoustic Intelligence (AAI)*	53.931	8.889	9.991	9.151	-	9.151	9.335	10.722	10.938	11.157	Continuing	Continuing

A. Mission Description and Budget Item Justification

The mission of Airborne ASW Intelligence (AAI) (CNO Project K-0416) is to provide advanced Anti-Submarine Warfare (ASW) capabilities through rapid development of new technology and prototype mechanisms for the collection of ASW related intelligence. This includes full spectrum intelligence collections and cataloging of current targets of interest. The program develops and swiftly deploys disruptive innovation to counter emerging threats in order to maintain the United States' current undersea warfare superiority. AAI employs the capability to quickly reconstruct and analyze passive and active measurements of submarine vulnerabilities providing actionable intelligence to fleet commanders. The AAI data collection program provides full spectrum intelligence data essential for the design and development of advanced sensors, weapon systems, environmental models, and tactical decision aids. AAI collection systems are installed and employed on uniquely configured aircraft, specially configured ground support facilities, ships, and other assets as required for the collection, processing, exfiltration, and dissemination of undersea intelligence. AAI includes recording systems, advanced detection and tracking systems, specially designed sensors, advanced processing systems and techniques, and specially derived tactics.

Furious Krypton is a Line of Sight (LOS) and Over the Horizon (OTH) data link utilizing a Naval Research Laboratory (NRL) communications payload onboard the Broad Area Maritime Surveillance-Demonstrator (BAMS-D) and Triton platform. The demonstration will show utilization of the payload to collect and retransmit sonobuoy data to both LOS and OTH receivers.

This is a Military Intelligence Program (MIP).

JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES because it includes all efforts necessary to evaluate integrated technologies, representative models or prototype systems in a high fidelity and realistic operating environment.

Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Navy					Date: February 2020
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*		R-1 Program Element (Number/Name) PE 0303354N *I ASW Systems Development - MIP*			
B. Program Change Summary ($ in Millions)	**FY 2019**	**FY 2020**	**FY 2021 Base**	**FY 2021 OCO**	**FY 2021 Total**
Previous President's Budget	8.889	9.991	9.158	-	9.158
Current President's Budget	8.889	9.991	9.151	-	9.151
Total Adjustments	0.000	0.000	-0.007	-	-0.007
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Rate/Misc Adjustments	0.000	0.000	-0.007	-	-0.007

Change Summary Explanation

Technical: Not Applicable

Schedule: Not Applicable

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy			Date: February 2020
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0303354N / *ASW Systems Development - MIP*	Project (Number/Name) 0490 / *Airborne Acoustic Intelligence (AAI)*	

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
0490: *Airborne Acoustic Intelligence (AAI)*	53.931	8.889	9.991	9.151	-	9.151	9.335	10.722	10.938	11.157	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The mission of Airborne ASW Intelligence (AAI)(CNO Project K-0416) is to provide advanced Anti-Submarine Warfare (ASW) capabilities through rapid development of new technology and prototype mechanisms for the collection of ASW related intelligence. This includes full spectrum intelligence collections and cataloging of current targets of interest. The program develops and swiftly deploys disruptive innovation to counter emerging threats in order to maintain the United States' current undersea warfare superiority. AAI employs the capability to quickly reconstruct and analyze passive and active measurements of submarine vulnerabilities providing actionable intelligence to fleet commanders. The AAI data collection program provides full spectrum intelligence data essential for the design and development of advanced sensors, weapon systems, environmental models, and tactical decision aids. AAI collection systems are installed and employed on uniquely configured aircraft, specially configured ground support facilities, ships, and other assets as required for the collection, processing, exfiltration, and dissemination of undersea intelligence. AAI includes recording systems, advanced detection and tracking systems, specially designed sensors, advanced processing systems and techniques, and specially derived tactics.

Furious Krypton is a Line of Sight (LOS) and Over the Horizon (OTH) data link utilizing a Naval Research Laboratory (NRL) communications payload onboard the Broad Area Maritime Surveillance-Demonstrator (BAMS-D) and Triton platform. The demonstration will show utilization of the payload to collect and retransmit sonobuoy data to both LOS and OTH receivers.

This is a Military Intelligence Program (MIP).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Title: Systems Engineering / Aircraft Mods Active Acoustic Program	1.399	1.399	1.426	0.000	1.426
Articles:	-	-	-	-	-
FY 2020 Plans: Engineering support of Acoustic Intelligence (ACINT) Collection Suites (ACS) for certified AAI collection platforms and management of full spectrum database. Engineering support for design upgrades to ACINT Collection Suites for certified AAI collection platforms. Evaluate additional P-8 aircraft sensor station for in-flight analysis of ACINT. Continue evaluation of Fleet software releases for Office of Naval Intelligence(ONI)					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0303354N / *ASW Systems Development - MIP*	**Project (Number/Name)** 0490 / *Airborne Acoustic Intelligence (AAI)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
certification aboard ASW collection platforms. Continue upgrades and development for unique airborne avionics and sensors. Continue fielding ACS kits in support of P-8A deployments. ***FY 2021 Base Plans:*** Engineering support of Acoustic Intelligence (ACINT) Collection Suites for certified AAI collection platforms and management of full spectrum database. Engineering support for design upgrades to ACINT Collection Suites for certified AAI collection platforms. Evaluate additional P-8 aircraft sensor station for in-flight analysis of ACINT. Continue evaluation of Fleet software releases for Office of Naval Intelligence(ONI) certification aboard ASW collection platforms. Continue upgrades and development of hardware and software for unique airborne avionics and sensors. Continue fielding ACS kits in support of P-8A deployments. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Increase is due to inflation.					
Title: Data Collection and Analysis	1.044	1.098	1.120	0.000	1.120
Articles:	-	-	-	-	-
FY 2020 Plans: Data collection support at Operational Wings and Tactical Anti-Submarine Warfare (ASW) commands. Ongoing collection of high interest acoustic and non-acoustic data in support of Measurement and Signatures Intelligence (MASINT)/Office of Naval Intelligence (ONI) threat assessment and trend analysis requirements for further development of future USN Undersea Warfare Warfighting (USW) capabilities. Characterization, analysis and certification of the upgraded Fleet MASINT collection assets. Reduction, Analysis and Fleet Rapid Feedback. Conduct special operations support. Essential performance modeling and evaluation for advanced technology sensor systems design and Fleet tactics development. Develop post mission analysis hardware, software and processes in response to evolving enemy capabilities. ***FY 2021 Base Plans:*** Data collection support at Operational Wings and Tactical Anti-Submarine Warfare (ASW) commands. Ongoing collection of high interest acoustic and non-acoustic data in support of MASINT/ONI threat assessment and trend analysis requirements for further development of future USN Undersea Warfare Warfighting (USW) capabilities. Characterization, analysis and certification of the upgraded Fleet MASINT collection assets. Reduction, Analysis and Fleet Rapid Feedback. Conduct special operations support. Essential performance					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0303354N / *ASW Systems Development - MIP*	**Project (Number/Name)** 0490 / *Airborne Acoustic Intelligence (AAI)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
modeling and evaluation for advanced technology sensor systems design and Fleet tactics development. Develop post mission analysis hardware, software and processes in response to evolving enemy capabilities. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Increase is due to inflation.					
Title: Active Measurement Validation	0.143	0.146	0.148	0.000	0.148
Articles:	-	-	-	-	-
FY 2020 Plans: Active Measurement Validation of targets of interest. Provides the acoustic analysis of echo characterization (which includes: signal excess measurements, peak frequency, trend analysis and pulse duration measurements) and target strength. ***FY 2021 Base Plans:*** Active Measurement Validation of targets of interest. Provides the acoustic analysis of echo characterization (which includes: signal excess measurements, peak frequency, trend analysis and pulse duration measurements) and target strength. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Increase is due to inflation.					
Title: Navy Underwater Active Multiple Ping (NUAMP) Product Development	5.103	5.144	5.209	0.000	5.209
Articles:	-	-	-	-	-
FY 2020 Plans: Continue sonic frequency design, development, integration and test for remaining sonic frequencies of the NUAMP sonobuoy family. Procure prototype systems for data collection activities. ***FY 2021 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0303354N / *ASW Systems Development - MIP*	**Project (Number/Name)** 0490 / *Airborne Acoustic Intelligence (AAI)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Continue sonic frequency design, development, integration and test for remaining sonic frequencies of the NUAMP sonobuoy family. Procure prototype systems for data collection activities. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Increase is due to inflation.					
Title: Passive Extended Range Sonobuoy System (PERSS) Product Development ***Articles:*** ***FY 2020 Plans:*** Continue development of disruptive innovative sensors by experimenting and prototyping in a high fidelity and realistic operating environment. Transition various laboratory sonobuoy subsystems by proving the subsystems maturity in real world environments. Perform risk reduction technology demonstration efforts using high gain beamforming sonobuoy transducer assemblies. ***FY 2021 Base Plans:*** Continue development of disruptive innovative sensors by experimenting and prototyping in a high fidelity and realistic operating environment. Transition various laboratory sonobuoy subsystems by proving the subsystems maturity in real world environments. Perform risk reduction technology demonstration efforts using high gain beamforming sonobuoy transducer assemblies. ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** Increase is due to inflation.	1.200 -	1.225 -	1.248 -	0.000 -	1.248 -
Title: Furious Krypton ***Articles:*** ***FY 2020 Plans:*** Develop and demonstrate a disruptive innovative method to provide Tactical Anti-Submarine Warfare (ASW) data to multiple users both Beyond Line of Sight (BLOS) and via Satellite Communications (SATCOM). ***FY 2021 Base Plans:***	0.000 -	0.979 -	0.000 -	0.000 -	0.000 -

Exhibit R-2A, RDT&E Project Justification: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0303354N / *ASW Systems Development - MIP*	**Project (Number/Name)** 0490 / *Airborne Acoustic Intelligence (AAI)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
N/A ***FY 2021 OCO Plans:*** N/A ***FY 2020 to FY 2021 Increase/Decrease Statement:*** No funding is provided in FY21 for Furious Krypton.					
Accomplishments/Planned Programs Subtotals	8.889	9.991	9.151	0.000	9.151

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Airborne ASW Intelligence (AAI) is a CNO Special Project. The included technology developments are primarily in-house with contractor participation through existing vehicles.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy			Date: February 2020
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0303354N / *ASW Systems Development - MIP*	Project (Number/Name) 0490 / *Airborne Acoustic Intelligence (AAI)*	

Product Development ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Active Measurement Validation	WR	NAWCAD : PATUXENT RIVER, MD	2.031	0.143	Dec 2018	0.146	Dec 2019	0.148	Dec 2020	-		0.148	Continuing	Continuing	Continuing
Ancillary Hdw Development	WR	NAWCAD : PATUXENT RIVER, MD	6.514	0.500	Dec 2018	0.515	Dec 2019	0.525	Dec 2020	-		0.525	Continuing	Continuing	Continuing
Ancillary Hdw Development Cont	Various	VARIOUS : VARIOUS	2.131	0.593	Dec 2018	0.600	Dec 2019	0.612	Dec 2020	-		0.612	Continuing	Continuing	Continuing
Systems Eng	WR	NAWCAD : PATUXENT RIVER, MD	6.483	0.676	Dec 2018	0.690	Dec 2019	0.699	Dec 2020	-		0.699	Continuing	Continuing	Continuing
Systems Eng	Various	VARIOUS : VARIOUS	3.058	0.723	Dec 2018	0.717	Dec 2019	0.727	Dec 2020	-		0.727	Continuing	Continuing	Continuing
Primary Hdw Development	SS/CPIF	ERAPSCO : COLUMBIA CITY, IN	29.140	6.004	Dec 2018	7.069	Dec 2019	6.182	Dec 2020	-		6.182	Continuing	Continuing	Continuing
		Subtotal	49.357	8.639		9.737		8.893		-		8.893	Continuing	Continuing	N/A

Management Services ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2019 Cost	FY 2019 Award Date	FY 2020 Cost	FY 2020 Award Date	FY 2021 Base Cost	FY 2021 Base Award Date	FY 2021 OCO Cost	FY 2021 OCO Award Date	FY 2021 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Mgt & Prof Spt Svcs (Non-FFRDC)	Various	VARIOUS : VARIOUS	3.675	0.205	Dec 2018	0.209	Dec 2019	0.213	Dec 2020	-		0.213	Continuing	Continuing	Continuing
Travel	Various	VARIOUS : VARIOUS	0.280	0.045	Dec 2018	0.045	Dec 2019	0.045	Dec 2020	-		0.045	Continuing	Continuing	Continuing
Prior year Mgmt Svcs no longer funded in the FYDP	Various	VARIOUS : VARIOUS	0.619	0.000		0.000		0.000		-		0.000	0.000	0.619	-
		Subtotal	4.574	0.250		0.254		0.258		-		0.258	Continuing	Continuing	N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Navy			Date: February 2020
Appropriation/Budget Activity 1319 / 4	R-1 Program Element (Number/Name) PE 0303354N / *ASW Systems Development - MIP*	Project (Number/Name) 0490 / *Airborne Acoustic Intelligence (AAI)*	

	Prior Years	FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	53.931	8.889		9.991		9.151		-		9.151	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0303354N / *ASW Systems Development - MIP*	**Project (Number/Name)** 0490 / *Airborne Acoustic Intelligence (AAI)*

PMA-264 Airborne Acoustic Intelligence (0490)

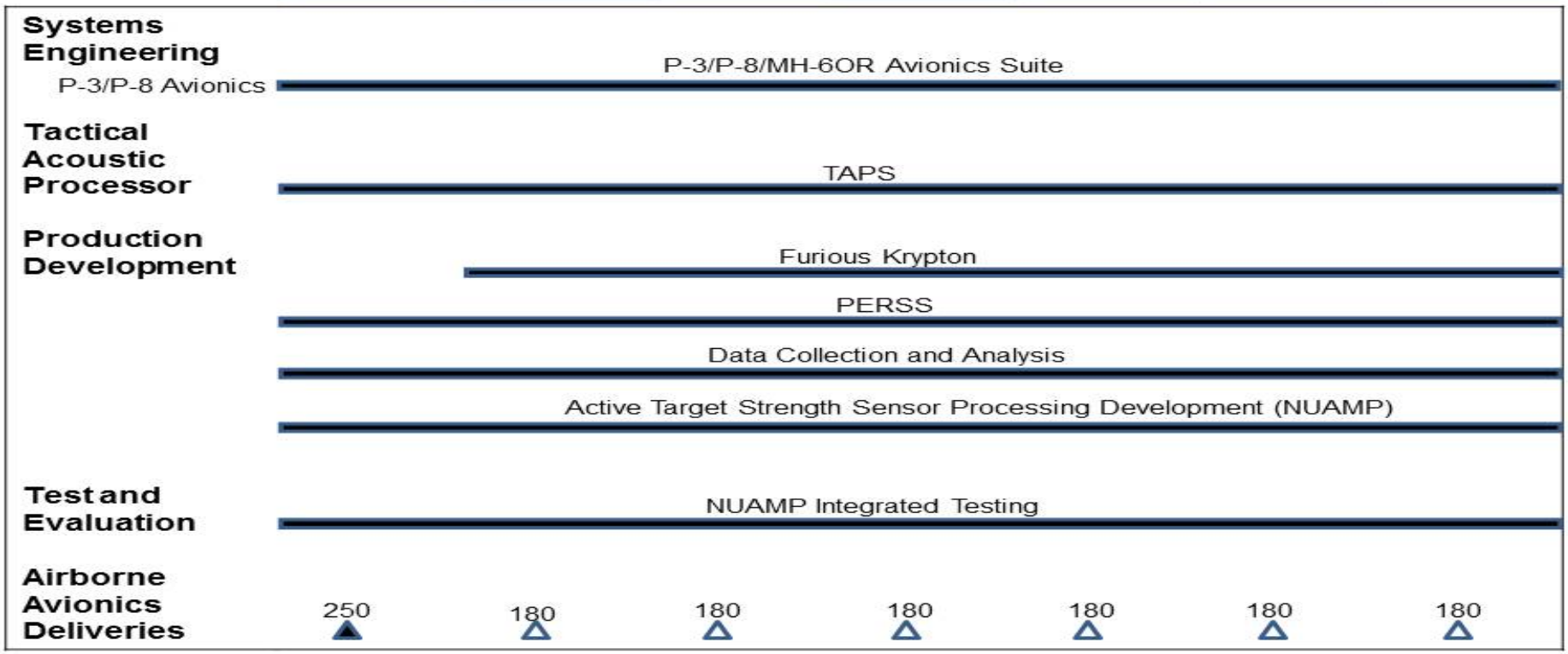

Exhibit R-4A, RDT&E Schedule Details: PB 2021 Navy		Date: February 2020
Appropriation/Budget Activity 1319 / 4	**R-1 Program Element (Number/Name)** PE 0303354N / *ASW Systems Development - MIP*	**Project (Number/Name)** 0490 / *Airborne Acoustic Intelligence (AAI)*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
Proj: 0490 Airborne Acoustic Intelligence (AAI)				
Systems Engineering: P-3/P-8 Avionics Suite: P-3/P-8/MH-60R Avionics Suite	1	2019	4	2025
Sys Eng Tactical Acoustic Processor (TAPS): Sys Eng Tactical Acoustic Processor (TAPS)	1	2019	4	2025
Product Development: Furious Krypton Development	1	2020	4	2025
Product Development: Passive Extended Range Sonic Sensor	1	2019	4	2025
Product Development: Data Collection and Analysis	1	2019	4	2025
Product Development: Active Target Strength sensor processing development	1	2019	4	2025
Test & Evaluation: Technical Evaluation	1	2019	4	2025
Airborne Avionics Deliveries: Prototype 6	2	2019	2	2019
Airborne Avionics Deliveries: Prototype 7	2	2020	2	2020
Airborne Avionics Deliveries: Prototype 8	2	2021	2	2021
Airborne Avionics Deliveries: Prototype 9	2	2022	2	2022
Airborne Avionics Deliveries: Prototype 10	2	2023	2	2023
Airborne Avionics Deliveries: Prototype 11	2	2024	2	2024
Airborne Avionics Deliveries: Prototype 12	2	2025	2	2025