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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2023 Navy **Date:** April 2022

<b>Appropriation/Budget Activity</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy / BA 7: Operational Systems Development</i>	<b>R-1 Program Element (Number/Name)</b> PE 0207163N / AMRAAM
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COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	283.737	39.286	32.564	30.898	-	30.898	31.786	27.988	26.389	26.825	111.683	611.156
0981: <i>AMRAAM</i>	283.737	39.286	32.564	30.898	-	30.898	31.786	27.988	26.389	26.825	111.683	611.156

**Program MDAP/MAIS Code:**  
**Project MDAP/MAIS Code(s):** 185

**A. Mission Description and Budget Item Justification**

The Advanced Medium Range Air-to-Air Missile (AMRAAM) is a joint Air Force/Navy, Acquisition Category 1C program with Air Force as lead service. AMRAAM is the premier all-weather, all-environment, radar guided missile with improved capabilities against very low and high-altitude targets in an electronic attack environment. The current AMRAAM variant, the AIM-120D, delivers improved performance via Global Positioning System (GPS) aided navigation; two way datalink capability for enhanced aircrew survivability and improved network compatibility; and incorporates new guidance software that improves kinematic performance and weapon effectiveness.

This Air Force/Navy program is structured in response to the Joint Service Operational Requirement Document and Mission Element Need Statement to develop an air superiority air-to-air missile with significant improvements in operational utility and combat effectiveness. The development program enhances AMRAAM capability and operational flexibility against current and projected threats, incorporates high payoff technology development, performs risk reduction activities, and investigates new variants and/or alternate missions that may use AMRAAM attributes. To maximize effectiveness of existing inventory and address findings from the field, the Navy and Air Force also develop, test, and field improvements via software upgrades into fielded missiles, and/or hardware upgrades inserted into the production line.

This program supports the integration of the Advanced Medium Range Air-to-Air Missile (AMRAAM) into Navy aircraft with analysis of Navy unique applications, aircraft missile integration tasks, product improvement efforts including missile software upgrade development and procurement of hardware to support Navy test and evaluation tasks. Funding in FY 2023 supports System Improvement Program (SIP) and Navy unique Test & Evaluation (T&E) for software fielding.

This program is funded under OPERATIONAL SYSTEMS DEVELOPMENT because it includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate funding in the current or subsequent fiscal year.

Cost to Complete: FY2028 - FY2031

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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023 Base</b>	<b>FY 2023 OCO</b>	<b>FY 2023 Total</b>
Previous President's Budget	40.253	32.564	0.000	-	0.000
Current President's Budget	39.286	32.564	30.898	-	30.898
Total Adjustments	-0.967	0.000	30.898	-	30.898
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.967	0.000			
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000
• Adjustments to Budget Year	-	-	30.898	-	30.898

**Change Summary Explanation**

Financial: See below

Technical: Not Applicable

Schedule: Counter Emerging Threats Fielding shifted from 2QFY22 to 3QFY22 due to repair required for test equipment failure.

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FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

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**Exhibit R-2A, RDT&E Project Justification:** PB 2023 Navy **Date:** April 2022

<b>Appropriation/Budget Activity</b> 1319 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207163N / AMRAAM	<b>Project (Number/Name)</b> 0981 / AMRAAM
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COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
0981: AMRAAM	283.737	39.286	32.564	30.898	-	30.898	31.786	27.988	26.389	26.825	111.683	611.156
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

**Project MDAP/MAIS Code:** 185

**A. Mission Description and Budget Item Justification**

This Air Force/Navy program is structured in response to the Joint Service Operational Requirement Document and Mission Element Need Statement to develop an air superiority air-to-air missile with significant improvements in operational utility and combat effectiveness. This program supports the integration of AMRAAM into Navy aircraft with analysis of Navy unique applications, aircraft missile integration tasks, product improvement efforts including missile software upgrade development and procurement of hardware to support Navy test and evaluation tasks. Funding in FY 2022 through FY 2027 supports System Improvement Program (SIP) and Navy unique Test & Evaluation (T&E) for software fielding.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
<b>Title:</b> Test and Evaluation	14.899	11.846	9.847	0.000	9.847
<b>Articles:</b>	-	-	-	-	-
<b>Description:</b> Test and Evaluation and associated government support required to ensure AIM-120 missile integration with Department of the Navy aircraft platforms (F/A-18 C/D/E/F/G, AV-8B and F-35), hardware-in-the loop facility operations and 5th generation aerial target emulation.					
<b>FY 2022 Plans:</b> Continue to develop and procure test resources required to meet test requirements and provide support personnel to continue AIM-120 DT and OT events. Continue evaluation efforts to address 5th generation aerial target emulation.					
<b>FY 2023 Base Plans:</b> Continue to develop and procure test resources required to meet test requirements and provide support personnel to complete AIM-120 DT and OT events. Complete efforts to address 5th generation aerial target emulation.					
<b>FY 2023 OCO Plans:</b> N/A					
<b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> FY2023 funding request decreased by \$1.999 million due to reduced test requirements.					
<b>Title:</b> System Improvement Program (SIP) Efforts	24.387	20.718	21.051	0.000	21.051

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2023 Navy		<b>Date:</b> April 2022
<b>Appropriation/Budget Activity</b> 1319 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207163N / AMRAAM	<b>Project (Number/Name)</b> 0981 / AMRAAM

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
<i>Articles:</i>	-	-	-	-	-
<p><b>Description:</b> Continuation of System Improvement Program (SIP)/Risk Reduction (RR) efforts for the AMRAAM weapons system. These include systems engineering, program management, missile software and/or hardware upgrades to increase capability, survivability, lethality, as well as aircraft Operational Flight Profile (OFP) updates on a recurring basis. SIP-3F will host AIM-120D SIP-3 software on AIM-120D3 hardware. AIM-120D3 SIP-4 will exploit new Form, Fit, Function Refresh (F3R) hardware to maximize missile performance. AIM-120D SIP 3 Tape 2 will address newly matured capabilities, emerging threats, and Operational Test (OT) deficiencies. AIM-120C3-C7 Counter Emerging Threat (CET) software will maintain inventory viability by addressing emerging electronic attack threats. Candidate Selection Process (CSP) analyzes warfighter priority deficiencies and enhancements to feed risk reduction efforts and future SIP efforts.</p> <p><b>FY 2022 Plans:</b> Complete SIP-3 OT and deliver the tactical AIM-120D software to the field. Complete CET FCAs and flight test requirements. Field CET tactical software. Continue SIP-3F software builds and begin flight test. Continue CSP. Continue SIP-4 RR software efforts for the AIM-120D3 (F3R) configuration. Begin SIP-3 Tape 2 development deficiencies.</p> <p><b>FY 2023 Base Plans:</b> Complete SIP-3F FCA and flight test requirements. Field SIP-3F with F3R hardware to maximize missile performance. Continue CSP. Continue SIP-4 software development and complete Minimum Viable Product (MVP) milestone demonstrating software maturity. Continue SIP-3 Tape 2 software development.</p> <p><b>FY 2023 OCO Plans:</b> N/A</p> <p><b>FY 2022 to FY 2023 Increase/Decrease Statement:</b> FY2023 funding request increased by \$0.333 million due to inflation.</p>					
<b>Accomplishments/Planned Programs Subtotals</b>	39.286	32.564	30.898	0.000	30.898

**C. Other Program Funding Summary (\$ in Millions)**

Line Item	FY 2021	FY 2022	FY 2023	FY 2023	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Cost To	
			Base	OCO	Total					Complete	Total Cost
• WPN/ 2206: AMRAAM	204.251	0.000	335.900	-	335.900	285.401	269.078	85.545	84.685	227.024	4,618.662
• MPAF/3479: AMRAAM	306.223	214.002	320.560	-	320.560	231.473	330.822	462.367	306.098	1,040.926	13,474.057
• RDTE,AF/673777: AMRAAM	51.705	51.288	52.704	-	52.704	33.557	53.724	51.403	52.547	127.764	1,186.042

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2023 Navy	<b>Date:</b> April 2022
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<b>Appropriation/Budget Activity</b> 1319 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207163N / AMRAAM	<b>Project (Number/Name)</b> 0981 / AMRAAM
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**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u> <u>Base</u>	<u>FY 2023</u> <u>OCO</u>	<u>FY 2023</u> <u>Total</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>FY 2026</u>	<u>FY 2027</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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**Remarks**

**D. Acquisition Strategy**

AMRAAM production procurements will continue across the Future Years Defense Program with periodic pre-planned technical design refreshes and value engineering change proposals.

AMRAAM's Acquisition Program Baseline was updated on 28 Oct 2015.

AMRAAM's Acquisition Strategy Report was updated 16 May 2018.

SIP development efforts continually mature capabilities through software and/or hardware upgrades to maximize missile performance to address current and emerging threats. These missile performance improvements are incrementally fielded ensuring inventory viability into the future. SIP development contracts are cost type efforts.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Navy** **Date:** April 2022

<b>Appropriation/Budget Activity</b> 1319 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207163N / AMRAAM	<b>Project (Number/Name)</b> 0981 / AMRAAM
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<b>Product Development (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Primary Hdw Development (EGLIN)	SS/CPAF	RAYTHEON COMPANY : Tucson AZ	128.278	20.487	Jan 2021	17.279	Jan 2022	17.771	Jan 2023	-		17.771	132.737	316.552	317.102
Award Fees (EGLIN)	SS/CPAF	RAYTHEON COMPANY : Tucson AZ	21.142	3.615	Jan 2021	3.049	Jan 2022	3.136	Jan 2023	-		3.136	23.424	54.366	54.463
Primary Hdw Development (NAWCAD)	WR	NAWCAD : Patuxent River MD	5.212	0.224	Nov 2020	0.319	Nov 2021	0.076	Nov 2022	-		0.076	0.667	6.498	-
Prior Years Dev Cost no longer funded in the FYDP	Various	Various : Various	32.477	0.000		0.000		0.000		-		0.000	0.000	32.477	-
<b>Subtotal</b>			187.109	24.326		20.647		20.983		-		20.983	156.828	409.893	N/A

<b>Support (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Prior Years Support costs no longer funded in the FYDP	Various	Various : Various	23.795	0.000		0.000		0.000		-		0.000	0.000	23.795	-
<b>Subtotal</b>			23.795	0.000		0.000		0.000		-		0.000	0.000	23.795	N/A

<b>Test and Evaluation (\$ in Millions)</b>				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Dev Test & Eval (NAWCWD)	WR	NAWCWD : China Lake CA	61.175	12.200	Nov 2020	10.795	Nov 2021	8.673	Nov 2022	-		8.673	56.685	149.528	-
Oper Test & Eval	WR	COMOPTEVFOR : Norfolk, VA	2.819	2.699	Mar 2021	1.052	Mar 2022	1.174	Mar 2023	-		1.174	10.655	18.399	-
<b>Subtotal</b>			63.994	14.899		11.847		9.847		-		9.847	67.340	167.927	N/A



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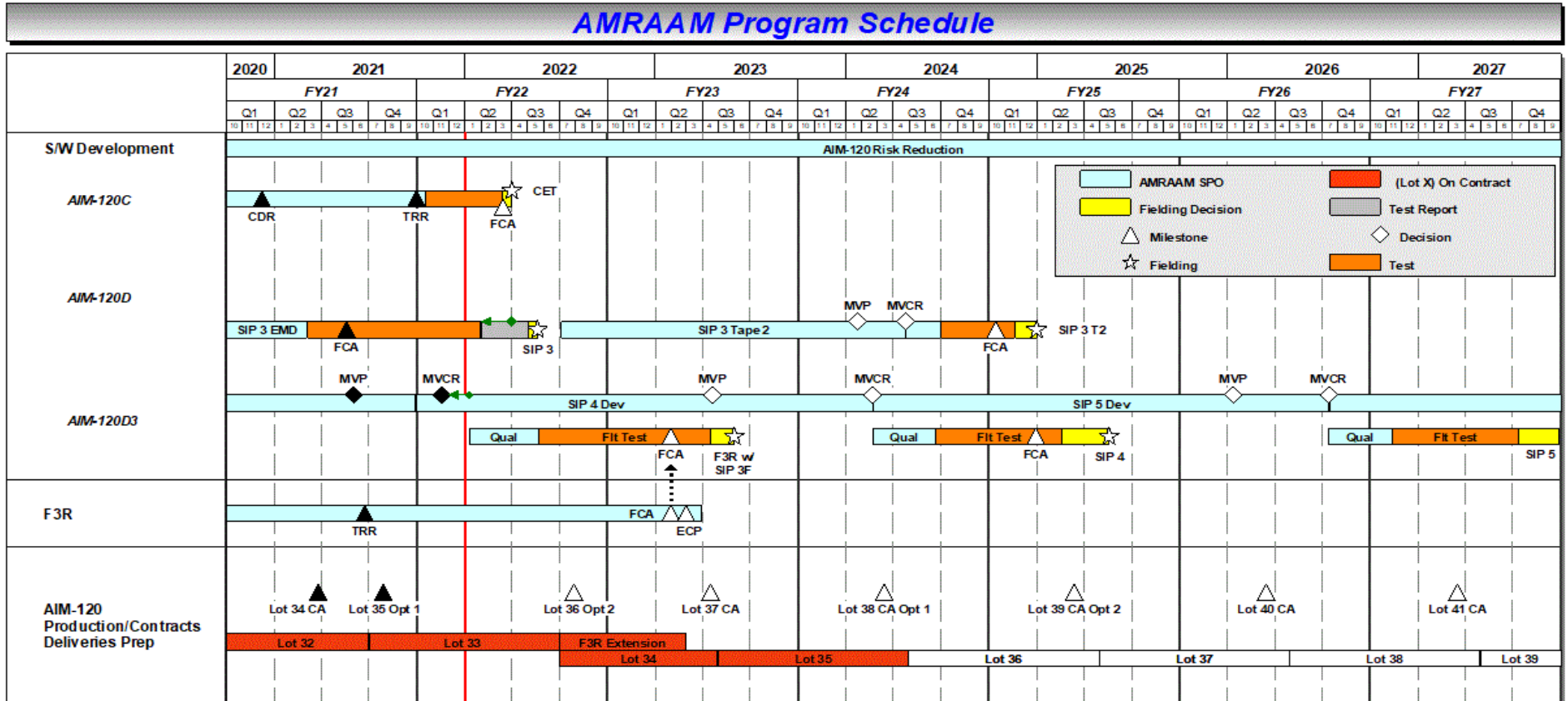
Exhibit R-4, RDT&E Schedule Profile: PB 2023 Navy

Date: April 2022

Appropriation/Budget Activity  
1319 / 7

R-1 Program Element (Number/Name)  
PE 0207163N / AMRAAM

Project (Number/Name)  
0981 / AMRAAM



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<b>Exhibit R-4A, RDT&amp;E Schedule Details: PB 2023 Navy</b>		<b>Date: April 2022</b>
<b>Appropriation/Budget Activity</b> 1319 / 7	<b>R-1 Program Element (Number/Name)</b> PE 0207163N / AMRAAM	<b>Project (Number/Name)</b> 0981 / AMRAAM

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>AMRAAM</b>				
Acquisition Milestones: Milestones: SIP 3 AIM-120D FCA	3	2021	3	2021
Acquisition Milestones: Milestones: SIP 3 AIM-120D Fielding	2	2022	2	2022
Acquisition Milestones: Milestones: CET FCA	2	2022	2	2022
Acquisition Milestones: Milestones: CET Fielding	3	2022	3	2022
Acquisition Milestones: Milestones: SIP3F AIM-120D3 FCA	2	2023	2	2023
Acquisition Milestones: Milestones: SIP3F AIM-120D3 Fielding	3	2023	3	2023
Acquisition Milestones: Milestones: SIP 3 Tape 2 FCA	1	2025	1	2025
Acquisition Milestones: Milestones: SIP 3 Tape 2 Fielding	1	2025	1	2025
Acquisition Milestones: Milestones: SIP 4 FCA	1	2025	1	2025
Acquisition Milestones: Milestones: SIP 4 Fielding	3	2025	3	2025
Systems Development: Software Development: SIP-3 Development	1	2021	2	2022
Systems Development: Software Development: SIP-3F Development	1	2021	3	2023
Systems Development: Software Development: CET Development	1	2021	3	2022
Systems Development: Software Development: SIP-4 Development	1	2022	3	2025
Systems Development: Software Development: SIP 3 Tape 2 Development	4	2022	1	2025
Systems Development: Software Development: SIP-5 Development	2	2024	4	2027
Test and Evaluation: SIP 3	1	2021	2	2022
Test and Evaluation: SIP 3F	4	2021	3	2023
Test and Evaluation: CET	1	2022	2	2022
Test and Evaluation: SIP-4	2	2024	3	2025
Test and Evaluation: SIP 3 Tape 2	4	2024	1	2025
Test and Evaluation: SIP 5	4	2026	4	2027

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**Exhibit R-4A, RDT&E Schedule Details: PB 2023 Navy** **Date:** April 2022

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Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Production Contract Awards: Production Lot 34 Contract Award	2	2021	2	2021
Production Contract Awards: Production Lot 35 Contract Award	4	2021	4	2021
Production Contract Awards: Production Lot 36 Contract Award	4	2022	4	2022
Production Contract Awards: Production Lot 37 Contract Award	3	2023	3	2023
Production Contract Awards: Production Lot 38 Contract Award	2	2024	2	2024
Production Contract Awards: Production Lot 39 Contract Award	2	2025	2	2025
Production Contract Awards: Production Lot 40 Contract Award	2	2026	2	2026
Production Contract Awards: Production Lot 41 Contract Award	2	2027	2	2027
Production Deliveries: Production Lot 32 AUR	1	2021	3	2021
Production Deliveries: Production Lot 33 AUR	4	2021	2	2023
Production Deliveries: Production Lot 33 CATM	2	2022	1	2023
Production Deliveries: Production Lot 34 AUR	4	2022	3	2023
Production Deliveries: Production Lot 34 CATM	4	2022	3	2023
Production Deliveries: Production Lot 35 AUR	3	2023	3	2024
Production Deliveries: Production Lot 35 CATM	3	2023	3	2024
Production Deliveries: Production Lot 37 AUR	3	2025	3	2026
Production Deliveries: Production Lot 38 AUR	3	2026	3	2027
Production Deliveries: Production Lot 39 AUR	3	2027	4	2027