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Exhibit R-2, RDT&E Budget Item Justification: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0305145F / <i>Arms Control Implementation</i>
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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	-	24.804	41.546	0.000	0.000	0.000	37.543	0.000	0.000	0.000	0.000	103.893
674283: <i>Open Skies Treaty Aircraft Recap</i>	-	20.670	41.546	0.000	0.000	0.000	37.543	0.000	0.000	0.000	0.000	99.759
675063: <i>Digital Visual Imaging System (DVIS)</i>	-	4.134	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.134

A. Mission Description and Budget Item Justification

The OC-135B aircraft supports the implementation of the United States Government (USG) Open Skies Treaty. This program addresses the requirements in the Presidential Policy Directive-15 (PPD-15). The Open Skies Treaty allows signatories to conduct observation flights over each other's territory using fixed-wing, unarmed observation aircraft. The aircraft can use optical cameras, video cameras, sideways-looking synthetic aperture radar, and infrared line scanning devices. There are 34 participating states to the Open Skies Treaty. The Air Force is required to allow over flight of USAF bases per multilateral request; to acquire, operate, and maintain the aircraft and equipment utilized during over flights of partner countries; to provide required sensor media and initial media processing; and to provide airfield servicing, logistics, and maintenance for foreign over flights of the US.

In October 2016, the Air Force used a multi-disciplinary High Performance Team to create and validate a series of required capabilities for an Open Skies aircraft, evaluate aircraft that could satisfy the required capabilities, and then consider each of the Doctrine, Organization, Training, materiel, Leadership and Education, Personnel, Facilities and Policy elements as part of a recommended solution. The effort accomplished two main purposes. First, it updated operational requirement and replaced the 1992 Operational Requirements Document to reflect both operational experience and expected Open Skies program needs for the foreseeable future. Second, it recommended an Air Force solution that best satisfied required capabilities within existing materiel solutions. The Joint Capabilities Board adopted the Air Force recommendation and directed acquisition of two small airliner class aircraft for the Open Skies Treaty mission to be acquired in a method consistent with the Federal Acquisition Regulation and other applicable guidance, training using existing contractor training facilities, equipment, and curriculum, and a maintenance concept with military personnel performing unit-level maintenance actions with contractor support for parts supply, and supply chain management, performed under a Low Utilization Maintenance Program.

This effort includes the design, development, and test activities for two OC-135B replacement weapon systems. This effort will modify a Federal Aviation Administration (FAA) certified, commercial-off-the-shelf, small airliner class aircraft. System Development requires structural design, interphone communications systems, flight deck avionics and modification to incorporate the Digital Visual Imaging System (DVIS) system.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver OSTAR weapon system capabilities. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

The FY2021 funding request was reduced by \$76.2 million to account for the availability of prior year execution balances.

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Appropriation/Budget Activity 3600: <i>Research, Development, Test & Evaluation, Air Force I BA 7: Operational Systems Development</i>	R-1 Program Element (Number/Name) PE 0305145F / <i>Arms Control Implementation</i>
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This program is in Budget Activity 7, Operational System Development because this budget activity includes development efforts to upgrade systems that have been fielded or have received approval for full rate production and anticipate production funding in the current or subsequent fiscal year.

B. Program Change Summary (\$ in Millions)	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
Previous President's Budget	21.374	54.546	76.200	0.000	76.200
Current President's Budget	24.804	41.546	0.000	0.000	0.000
Total Adjustments	3.430	-13.000	-76.200	0.000	-76.200
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	-13.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	4.134	0.000			
• SBIR/STTR Transfer	-0.704	0.000			
• Other Adjustments	0.000	0.000	-76.200	0.000	-76.200

Change Summary Explanation

FY 2019 funding increased by \$4.134M for below threshold reprogramming actions.

FY 2020 funding reduced due to Congressional mark for "Open Skies Recap delays."

FY 2021 funding request reduced by \$76.2M to account for availability of prior year execution balances.

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force										Date: February 2020		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0305145F / <i>Arms Control Implementation</i>				Project (Number/Name) 674283 / <i>Open Skies Treaty Aircraft Recap</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
674283: <i>Open Skies Treaty Aircraft Recap</i>	-	20.670	41.546	0.000	0.000	0.000	37.543	0.000	0.000	0.000	0.000	99.759
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Open Skies Treaty permits unarmed overflight of the sovereign territory of 34 signatory nations. The Treaty enhances mutual understanding and confidence by giving all participants, regardless of size, a direct role in gathering information through aerial imaging on military forces and activities of concern. Open Skies is one of the most wide-ranging international arms control efforts to date to promote openness and transparency in military forces and activities.

The Department of Defense is responsible for oversight, implementation of, and compliance with, arms control agreements, including the Open Skies Treaty. The United States Air Force has a requirement to execute missions under the Open Skies Treaty and utilizes two OC-135B aircraft as the observation aircraft. All roles and responsibilities are called out in Presidential Policy Directive 15, "Implementation of the Treaty on Open Skies," Mar 1, 2012. The OC-135B fleet has experienced decreasing mission reliability due to age, difficulties with out-of-production parts, and increasing operating costs. Open Skies missions averaged a 65% mission completion rate over the ten-year period from 2007 to 2017 with leading non-mission capable drivers being the engines, fuel system, landing gear, generators, and airframe. Additionally, the OC-135B aircraft's 6,500 km range is insufficient to fully execute mission options within the 96-hour in-country Treaty observation time constraint permitted under Treaty.

The Department of Defense, motivated by operational limitations of the OC-135B experienced during Open Skies missions combined with declining mission capability, prompted program officials to request a Capabilities-Based Assessment in July 2015 to study aircraft issues. The effort which completed in June 2016 indicated that key requirements within the 1992 Open Skies Operational Requirements Document were no longer current, and that the OC-135B had known capability performance gaps in range and mission completion.

In October 2016, the Air Force used a multi-disciplinary High Performance Team to create and validate a series of required capabilities for an Open Skies aircraft, evaluate aircraft that could satisfy the required capabilities, and then consider each of the Doctrine, Organization, Training, materiel, Leadership and Education, Personnel, Facilities and Policy elements as part of a recommended solution. The effort accomplished two main purposes. First, it updated operational requirement and replaced the 1992 Operational Requirements Document to reflect both operational experience and expected Open Skies Treaty program needs for the foreseeable future. Second, it recommended an Air Force solution that best satisfied required capabilities within existing materiel solutions. The Joint Capabilities Board adopted the Air Force recommendation and directed acquisition of two small airliner class aircraft for the Open Skies Treaty Aircraft Recap (OSTAR) mission to be acquired in a method consistent with the Federal Acquisition Regulation and other applicable guidance, training using existing contractor training facilities, equipment, and curriculum, and a maintenance concept with military personnel performing unit-level maintenance actions with contractor support for parts supply, and supply chain management, performed under a Low Utilization Maintenance Program.

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force	Date: February 2020
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Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305145F / Arms Control Implementation	Project (Number/Name) 674283 / Open Skies Treaty Aircraft Recap
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This effort includes the design, development, and test activities for two OC-135B replacement weapon systems. This effort will modify a Federal Aviation Administration (FAA) certified, commercial-off-the-shelf, small airliner class aircraft. System Development requires structural design, interphone communications systems, flight deck avionics and modification to incorporate the Digital Visual Imaging System (DVIS).

This program element may include necessary civilian pay expenses required to manage, execute, and deliver OSTAR weapon system capabilities. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

The FY2021 funding request was reduced \$76.2 million to account for availability of prior year execution balances.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021
<p>Title: Open Skies Treaty Aircraft Recap Development</p> <p>Description: The Open Skies System consists of the missionized aircraft (Digital Visual Imaging System sensor suite, flight deck avionics, and crew workstations) and Digital Ground Processing Station.</p> <p>The budget supports modification and Treaty Certification of two commercial-off-the-shelf, small airliner class OC-135B replacement aircraft. The program includes procurement of two commercial-derivative aircraft and Digital Visual Imaging System kits, design and development for mission system integration (structural design, interphone communications systems, flight deck avionics, and Digital Visual Imaging System hardware), test, and Federal Aviation Administration and Open Skies Treaty certification activities. Additionally, this effort establishes pre-operational support for aircraft, mission systems and Digital Ground Processing Station.</p> <p>FY 2020 Plans: Complete competitive source selection, award aircraft purchase contract. Release request for proposals for development and CLS contract.</p> <p>Major Milestones: - Aircraft Contract Award (Sep 2020)</p> <p>FY 2021 Plans: Developing the design to incorporate the Digital Visual Imaging System to include hardware, software, aircraft structures, observation windows, and interior modifications, communications capabilities (UHF, HF, SATCOM and other as required), and sensor operator workstations.</p> <p>Major Milestones: - Development and CLS Award Aug 2021</p>	20.670	41.546	0.000

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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
- Milestone B Sep 2021			
FY 2020 to FY 2021 Increase/Decrease Statement: Funding decrease due to availability of prior year execution balances.			
Accomplishments/Planned Programs Subtotals	20.670	41.546	0.000

C. Other Program Funding Summary (\$ in Millions)											
Line Item	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
• APAF 01 C135B0: C-135B	125.000	-	-	-	-	-	-	-	-	0.000	125.000

Remarks

D. Acquisition Strategy

The Air Force Milestone Decision Authority approved the Open Skies Treaty Aircraft Recapitalization Materiel Development Decision (MDD) and revised Acquisition Strategy on 22 January 2020. The program will award two contracts for aircraft purchase and development with embedded services for Contractor Logistics Support and Engineering Services. The program will utilize Full and Open Competition under Part 12 and Part 14 of the Federal Acquisition Regulation. The program will procure aircraft capable of achieving Open Skies Treaty Missions, integrate new treaty certified commercial-off-the-shelf Digital Visual Imaging Systems, and perform required Developmental Test, Operational Test, and Treaty Certification Data Gathering. The program will establish Pre-operational Support for aircraft, mission systems and the Digital Ground Processing Station necessary to deliver an aircraft, ready for Treaty Certification, by 2024. The program provides for Engineering Services necessary to support the Treaty Certification process. Contractor Logistics Support elements include worldwide supply chain management, establishment of a Contractor Managed Base Supply, program management, depot maintenance, training services, field support, and engineering services for the aircraft, engines, and mission systems. The program Request for Proposals in April 2020 and award the contract to procure the aircraft by September 2020. Development/CLS Request for Proposals September 2020 and contract award August 2021.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force **Date:** February 2020

Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305145F / Arms Control Implementation	Project (Number/Name) 674283 / Open Skies Treaty Aircraft Recap
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Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Product Development	C/CPAF	Not specified. : TBD	-	17.896	Sep 2020	33.848	Aug 2021	-		-		-	Continuing	Continuing	-
Subtotal			-	17.896		33.848		-		-		-	Continuing	Continuing	N/A

Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Tech Orders	TBD	Not specified. : TBD	-	-		1.900	Mar 2021	-		-		-	Continuing	Continuing	-
SIL	C/CPAF	Not specified. : TBD	-	-		-		-		-		-	Continuing	Continuing	-
PIT/Program Integration	C/CPAF	Not specified. : TBD	-	-		-		-		-		-	Continuing	Continuing	-
Acquisition Support	Allot	Not specified. : TBD	-	0.574	Sep 2019	3.021	Sep 2020	-		-		-	Continuing	Continuing	-
Subtotal			-	0.574		4.921		-		-		-	Continuing	Continuing	N/A

Management Services (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 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			
Government Support Costs	Various	Not specified. : Tinker AFB, OK	-	2.200	Apr 2019	2.777	Jan 2020	-		-		-	Continuing	Continuing	-
Subtotal			-	2.200		2.777		-		-		-	Continuing	Continuing	N/A

	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			-	20.670	41.546	-	-	-	Continuing	Continuing

Remarks
Government Support Cost include costs related to program office travel and government led test.

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Exhibit R-4, RDT&E Schedule Profile: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305145F / <i>Arms Control Implementation</i>	Project (Number/Name) 674283 / <i>Open Skies Treaty Aircraft Recap</i>

	FY 2019				FY 2020				FY 2021				FY 2022				FY 2023				FY 2024				FY 2025			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<i>Open Skies Treaty Aircraft Recap</i>																												
Aircraft Contract Source Selection																												
Aircraft Contract Award																												
Development Contract Source Selection																												
Development Contract Award																												
Design/Integration																												
Install/Test																												
Ready for Treaty Certification																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305145F / <i>Arms Control Implementation</i>	Project (Number/Name) 674283 / <i>Open Skies Treaty Aircraft Recap</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Open Skies Treaty Aircraft Recap</i>				
Aircraft Contract Source Selection	3	2020	4	2020
Aircraft Contract Award	4	2020	4	2020
Development Contract Source Selection	4	2020	4	2021
Development Contract Award	4	2021	4	2021
Design/Integration	4	2021	4	2023
Install/Test	4	2023	2	2024
Ready for Treaty Certification	2	2024	2	2024

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force										Date: February 2020		
Appropriation/Budget Activity 3600 / 7					R-1 Program Element (Number/Name) PE 0305145F / Arms Control Implementation				Project (Number/Name) 675063 / Digital Visual Imaging System (DVIS)			
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
675063: Digital Visual Imaging System (DVIS)	-	4.134	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.134
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The OC-135B aircraft supports the implementation of the United States Government (USG) Open Skies Treaty. This program addresses the requirements in the Presidential Policy Directive-15 (PPD-15). The Open Skies Treaty allows signatories to conduct observation flights over each other's territory using fixed-wing, unarmed observation aircraft. The aircraft can use optical cameras, video cameras, sideways-looking synthetic aperture radar, and infrared line scanning devices. There are 34 participating states to the Open Skies Treaty. The Air Force is required to allow over flight of USAF bases per multilateral request; to acquire, operate, and maintain the aircraft and equipment utilized during over flights of partner countries; to provide required sensor media and initial media processing; and to provide airfield servicing, logistics, and maintenance for foreign over flights of the US.

Open Skies Sensors - Mission equipment on the OC-135B includes wet film optical framing and panoramic cameras. Open Skies Sensors program addresses the requirements in the Presidential Policy Directive-15 (PPD-15), which states, "The United States shall begin budgeting no later than FY14 to upgrade the sensors on the current aircraft by replacing film-based cameras with available electro-optical sensors. (U)"

Test articles will be procured for the purpose of developmental testing and to support Treaty certification of the sensors.

This program element may include necessary civilian pay expenses required to manage, execute, and deliver DVIS weapon system capabilities. The use of such program funds would be in addition to the civilian pay expenses budgeted in program element 0605831F.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2019	FY 2020	FY 2021
Title: OC-135 Open Skies Sensors	4.134	0.000	0.000
Description: Replace existing Open Skies aircraft wet film sensors with digital sensors.			
FY 2020 Plans: Conducted developmental test and complete development effort.			
Major Milestones: Dec-Feb 2020 Conduct Developmental Test			
FY 2021 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305145F / <i>Arms Control Implementation</i>	Project (Number/Name) 675063 / <i>Digital Visual Imaging System (DVIS)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2019	FY 2020	FY 2021
N/A			
Accomplishments/Planned Programs Subtotals	4.134	0.000	0.000

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

<u>Line Item</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u> <u>Base</u>	<u>FY 2021</u> <u>OCO</u>	<u>FY 2021</u> <u>Total</u>	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• APAF 05 C135BO: OC-135B	5.913	0.000	0.000	-	0.000	-	-	-	-	0.000	5.913

Remarks

D. Acquisition Strategy

The acquisition strategy is to acquire, develop, test, purchase, and install DVIS update the Open Skies Medial Processing Facility (OSMPF) through full and open competition. The contracting strategy is for a single award to one integrator (small business) for development, test, production, and installation, treaty certification support, and pre-operational support.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2021 Air Force												Date: February 2020				
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)								
3600 / 7				PE 0305145F / Arms Control Implementation				675063 / Digital Visual Imaging System (DVIS)								
Product Development (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Product Development	C/CPAF	Not specified. : TBD	-	3.560	Sep 2019	-		-		-		-	Continuing	Continuing	-	
Open Skies Sensors Engineering, Development and Prototype Subtotal Product Development	C/CPFF	Various : Various	-	-		-		-		-		-	Continuing	Continuing	-	
Subtotal			-	3.560		-		-		-		-	Continuing	Continuing	N/A	
Support (\$ in Millions)				FY 2019		FY 2020		FY 2021 Base		FY 2021 OCO		FY 2021 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Support	C/CPAF	Not specified. : TBD	-	0.574		-		-		-		-	Continuing	Continuing	-	
Sub Total Support	Various	Various : Various	-	-		-		-		-		-	Continuing	Continuing	-	
Subtotal			-	0.574		-		-		-		-	Continuing	Continuing	N/A	
Project Cost Totals			-	4.134		0.000		-		-		-	Continuing	Continuing	N/A	
Remarks																

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Exhibit R-4A, RDT&E Schedule Details: PB 2021 Air Force		Date: February 2020
Appropriation/Budget Activity 3600 / 7	R-1 Program Element (Number/Name) PE 0305145F / <i>Arms Control Implementation</i>	Project (Number/Name) 675063 / <i>Digital Visual Imaging System (DVIS)</i>

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>Open Skies Sensors</i>				
Flight Testing on Aircraft	1	2020	2	2020
Ready for Treaty Certification	3	2020	3	2020