PE NUMBER: 0708011F
PE TITLE: Industrial Preparedness

Exhibit R-2, RDT&E Budget Item Justification

DATE: February 2004

BUDGET ACTIVITY: 07 Operational System Development

PE NUMBER AND TITLE: 0708011F Industrial Preparedness

Cost ($ in Millions)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
Total Program Element (PE) Cost	45.340	57.007	38.012	38.782	38.237	40.768	41.400	0.000	0.000
2865 Manufacturing Technology	45.340	57.007	38.012	38.782	38.237	40.768	41.400	0.000	0.000

(U) A. Mission Description and Budget Item Justification

The DoD Manufacturing Technology (ManTech) program is mandated by Section 2521, Title 10, United States Code, to create an affordable, world-class industrial base manufacturing capability responsive to warfighter's needs. The Air Force ManTech major program tenets are: improvement of manufacturing processes and technologies; collaboration with Government program offices, industry, and academia; investments in technologies beyond reasonable risk level for industry alone; cost-sharing; multiple system/customer applications; potential for significant return on investment; and customer commitment to implement. To this end, ManTech develops, demonstrates, and transitions advanced manufacturing processes and technologies to reduce costs, improve quality/capability, and shorten cycle times of weapon systems during design, development, production, and sustainment. ManTech projects include efforts that respond to Government program office acquisition and sustainment requirements to reduce cost, schedule, cycle time, and risks during transition of technology. Where mature processes are not available, laboratory-developed initial process capabilities are matured and inserted into weapon system programs. ManTech objectives are conducted through partnership with all industry levels, from large prime contractors to small material and parts vendors. Program planning centers on the aeronautical, sustainment, armament/directed energy, and command, control, intelligence, surveillance, and reconnaissance sectors of the industrial base. Note: In FY 2003, Congress added $3.2 million for Prototype Low-Observable Coatings Development, $2.0 million for Laser Peening for F-119 Engine, $1.5 million for Technology Insertion Demonstration and Evaluation, and $1.0 million for Bipolar Wafer-Cell Nickel-Metal Hydride Aircraft Battery. Note: In FY 2004 Congress added $17.947 million for Applied Research & Technology in Transition ($9.717 million), Bipolar Wafer Nickel Metal Hydride Battery Development ($1.983 million), Doyle Center-TIDE Program ($2.479 million), Electronic Industry-Wide Network for Characteristics and Specifications ($0.992 million), Prototype Low Observable Coatings ($2.776 million).

ManTech is in Budget Activity 7, Operational System Development, since it provides support for systems in design, production, and/or operational use. ManTech is part of the Industrial Preparedness Program Element supporting the Defense Planning Guidance and the Air Force Planning Guidance.

Exhibit R-2, RDT&E Budget Item Justification	DATE February 2004
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0708011F Industrial Preparedness

(U) B. Program Change Summary ($ in Millions)

		FY 2003	FY 2004	FY 2005
(U)	Previous President's Budget	44.381	39.396	40.112
(U)	Current PBR/President's Budget	45.340	57.007	38.012
(U)	Total Adjustments	0.959	17.611	
(U)	Congressional Program Reductions			
	Congressional Rescissions		-0.489	
	Congressional Increases		18.100	
	Reprogrammings	2.000		
	SBIR/STTR Transfer	-1.041		
(U)	Significant Program Changes:			
	Not applicable.			

Exhibit R-2a, RDT&E Project Justification

DATE: February 2004

BUDGET ACTIVITY: 07 Operational System Development

PE NUMBER AND TITLE: 0708011F Industrial Preparedness

PROJECT NUMBER AND TITLE: 2865 Manufacturing Technology

Cost ($ in Millions)	FY 2003 Actual	FY 2004 Estimate	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	Cost to Complete	Total
2865 Manufacturing Technology	45.340	57.007	38.012	38.782	38.237	40.768	41.400	0.000	0.000
Quantity of RDT&E Articles	0	0	0	0	0	0	0		

(U) A. Mission Description and Budget Item Justification

The DoD Manufacturing Technology (ManTech) program is mandated by Section 2521, Title 10, United States Code, to create an affordable, world-class industrial base manufacturing capability responsive to warfighter's needs. The Air Force ManTech major program tenets are: improvement of manufacturing processes and technologies; collaboration with Government program offices, industry, and academia; investments in technologies beyond reasonable risk level for industry alone; cost-sharing; multiple system/customer applications; potential for significant return on investment; and customer commitment to implement. To this end, ManTech develops, demonstrates, and transitions advanced manufacturing processes and technologies to reduce costs, improve quality/capability, and shorten cycle times of weapon systems during design, development, production, and sustainment. ManTech projects include efforts that respond to Government program office acquisition and sustainment requirements to reduce cost, schedule, cycle time, and risks during transition of technology. Where mature processes are not available, laboratory-developed initial process capabilities are matured and inserted into weapon system programs. ManTech objectives are conducted through partnership with all industry levels, from large prime contractors to small material and parts vendors. Program planning centers on the aeronautical, sustainment, armament/directed energy, and command, control, intelligence, surveillance, and reconnaissance sectors of the industrial base. Note: In FY 2003, Congress added $3.2 million for Prototype Low-Observable Coatings Development, $2.0 million for Laser Peening for F-119 Engine, $1.5 million for Technology Insertion Demonstration and Evaluation, and $1.0 million for Bipolar Wafer-Cell Nickel-Metal Hydride Aircraft Battery. Note: In FY 2004 Congress added $17.947 million for Applied Research & Technology in Transition ($9.717 million), Bipolar Wafer Nickel Metal Hydride Battery Development ($1.983 million), Doyle Center-TIDE Program ($2.479 million), Electronic Industry-Wide Network for Characteristics and Specifications ($0.992 million), Prototype Low Observable Coatings ($2.776 million).

ManTech is in Budget Activity 7, Operational System Development, since it provides support for systems in design, production, and/or operational use. ManTech is part of the Industrial Preparedness Program Element supporting the Defense Planning Guidance and the Air Force Planning Guidance.

(U) B. Accomplishments/Planned Program ($ in Millions)	FY 2003	FY 2004	FY 2005
(U) MAJOR THRUST: Manufacturing Technology (ManTech) -- Manufacturing of Aeronautical Survivability and Modernization. Pursue affordable and efficient manufacturing ManTech investigations for critical, high quality, reliable structural, propulsion, stealth, and electronic components and assemblies required for existing and next generation aircraft.	20.499	16.087	10.034
(U) IN FY 2003: Continued high-value pilot efforts to verify advantages of flexible manufacturing, commercial/military integration, quality processing, and supplier improvements (e.g., Composites Affordability Initiative). Completed metals affordability initiatives focused on laser forming, casting, welding, and forging. Continued activities aimed at manufacture of more affordable low-observable coatings. Started effort to reduce high-cycle fatigue damping in engine components. Initiated rapid response productivity improvement effort to address manufacturing issues related to agile acquisition of low-rate production airframes.			

Exhibit R-2a, RDT&E Project Justification		DATE February 2004
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0708011F Industrial Preparedness	PROJECT NUMBER AND TITLE 2865 Manufacturing Technology

(U)	IN FY 2004: Complete manufacturability efforts of laser components for the Affordable Missile Warning Sensor for large aircraft. Continue high value pilot efforts to verify advantages of flexible manufacturing, commercial/military integration, quality processing, and supplier improvements (e.g., Composites Affordability Initiative). Investigate and develop manufacturing capabilities for more affordable low-observable structures. Continue effort to reduce high-cycle fatigue damping in engine components. Initiate/continue rapid response producibility improvement efforts with selected high value programs.			
(U)	IN FY 2005: Continue high-value pilot efforts to verify advantages of flexible manufacturing, commercial/military integration, quality processing, and supplier improvements. Initiate/continue rapid response productivity improvement efforts with selected high value programs.			
(U)				
(U)	MAJOR THRUST: ManTech -- Manufacturing for Sustainment/Readiness. Pursue cost-effective repair and manufacturing technologies for affordable sustainment components	12.185	8.085	11.539
(U)	IN FY 2003: Pursued cost-effective repair and manufacturing technologies for affordable sustainment of aircraft and turbine engine components. Continued pilot efforts to assess benefits derived from inserting electronic parts obsolescence management tools into weapon system production programs. Continued technical effort to extend the life of critical, high-value rotating engine components exposed to high-cycle fatigue environments (Engine Rotor Life Extension effort).			
(U)	IN FY 2004: Pursue cost-effective repair and manufacturing technologies for affordable sustainment of aircraft and turbine engine components. Complete pilot efforts to demonstrate benefits from inserting electronic parts obsolescence management tools into weapon system production programs. Maintain technical effort to extend the life of critical, high-value rotating engine components, which have been exposed to high-cycle fatigue environments (e.g., Engine Rotor Life Extension effort). Initiate and continue rapid response producibility improvement efforts with selected high value programs.			
(U)	IN FY 2005: Continue cost-effective repair and manufacturing technologies for affordable sustainment of aircraft and turbine engine components. Continue technical effort to extend the life of critical, high-value rotating engine components, which have been exposed to high-cycle fatigue environments. Complete effort to reduce high-cycle fatigue damping in engine components. Initiate and continue rapid response productivity improvement efforts with selected high-value programs.			
(U)				
(U)	MAJOR THRUST: Manufacturing for Armament and Directed Energy Systems. Develop efficient and cost-effective manufacturing methods for high performance, high reliability electronics and materials for advanced tactical missiles and aircraft missile sensors.	4.094	4.735	2.827
(U)	IN FY 2003: Continued development of efficient and cost-effective manufacturing methods for high performance and reliable electronics for advanced tactical missiles and aircraft missile sensors. Continued joint program with Navy to provide a lower drift-rate Inertial Measurement Unit (IMU) for Micro-Electro-Mechanical Systems. Completed rapid			

Exhibit R-2a, RDT&E Project Justification		DATE February 2004
BUDGET ACTIVITY 07 Operational System Development	PE NUMBER AND TITLE 0708011F Industrial Preparedness	PROJECT NUMBER AND TITLE 2865 Manufacturing Technology

response productivity improvement efforts to increase production (surge) rate of IMUs for precision-guided munitions and provide high-quality glass material acceptable for use in airborne laser turret windows.

(U) IN FY 2004: Continue to pursue efficient and cost-effective manufacturing methods for high performance and reliable components for advanced tactical missiles, aircraft missile sensors (e.g., Inertial Measurement Unit for Micro-Electro-Mechanical Systems effort), and directed energy systems. Initiate manufacturing technology efforts supporting producibility/affordability improvements in high priority precision-guided munitions components. Initiate and continue rapid response producibility improvement efforts with selected high-value programs.

(U) IN FY 2005: Continue to pursue efficient and cost-effective manufacturing methods for high performance and reliable electronics for advanced tactical missiles and aircraft missile sensors. Continue manufacturing technology efforts supporting precision-guided munitions fuse, battery, inertial measurement unit, and next generation inertial navigation units. Initiate and continue rapid response productivity improvement efforts with selected high-value programs.

(U)

(U) MAJOR THRUST: Manufacturing of C2ISR Electronics. Address critical manufacturing issues for various command, control, intelligence, surveillance, and reconnaissance platforms.	1.119	10.153	13.612

(U) IN FY 2003: Developed risk reduction efforts addressing critical manufacturing issues for various command, control, intelligence, surveillance, and reconnaissance platforms. Focused efforts on components such as electronically scanned arrays to improve producibility, reliability, and affordability.

(U) IN FY 2004: Continue efforts to address critical electronics manufacturing technologies for various command, command, control, intelligence, surveillance, and reconnaissance platforms. Focus efforts on components such as electronically scanned arrays to improve producibility, reliability, and affordability. Initiate and continue rapid response producibility improvement efforts with selected high value programs.

(U) IN FY 2005: Continue efforts to address critical electronics manufacturing technologies for various command, control, intelligence, surveillance, and reconnaissance platforms in order to improve affordability and producibility. Efforts will focus primarily on active electronically scanned array components. Initiate and continue rapid response producibility improvement efforts with selected high value programs. Continue major multi-year and cross-sector effort on Active Electronically Scanned Arrays (AESA) to enable improved manufacturing processes, reduced integration and test, and reduce production costs for all users and developers of advanced conformal AESA systems.

(U)

(U) CONGRESSIONAL ADD: Advanced Low Observable Coatings.	3.093	2.776	

(U) IN FY 2003: Developed tasks associated with Prototype Low-Observable Coatings Development (e.g., increase sputtering rate during coating application).

(U) IN FY 2004: Produce coatings via improved manufacturing process and begin system level demonstration, test, and evaluation.

(U) IN FY 2005: NOT APPLICABLE

Exhibit R-2a, RDT&E Project Justification		DATE February 2004
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(U)				
(U)	CONGRESSIONAL ADD: Technical Insertion Demonstration and Evaluation.	1.451	2.479	
(U)	IN FY 2003: Developed tasks associated with Technology Insertion Demonstration and Evaluation (e.g., supply chain requirements definition, system development, and demonstration).			
(U)	IN FY 2004: Continue tasks associated with Technology Insertion Demonstration and Evaluation.			
(U)	IN FY 2005: NOT APPLICABLE			
(U)				
(U)	CONGRESSIONAL ADD: Nickel Hydride Battery.	0.966	1.983	
(U)	IN FY 2003: Developed tasks associated with Bipolar Wafer-Cell Nickel-Metal Hydride Aircraft Battery (e.g., performance testing and environmental testing).			
(U)	IN FY 2004: Continue test and evaluation; design and implement additional production scale-up efficiencies and automation.			
(U)	IN FY 2005: NOT APPLICABLE.			
(U)				
(U)	CONGRESSIONAL ADD: Laser Shock Peening for F119 Engines.	1.933	0.000	
(U)	IN FY 2003: Develop tasks associated with Laser Peening for F-119 Engine (e.g., increase damage tolerance of integrally bladed rotors).			
(U)	IN FY 2004: NOT APPLICABLE.			
(U)	IN FY 2005: NOT APPLICABLE.			
(U)				
(U)	CONGRESSIONAL ADD: Applied Research & Technology in Transition.	0.000	9.717	
(U)	IN FY 2003: NOT APPLICABLE.			
(U)	IN FY 2004: Develop tasks associated with Applied Research & Technology in Transition. Begin to develop a Center for Aerospace Manufacturing Technology (CAMT) at the University of Missouri - Rolla dedicated to research on advanced aerospace manufacturing.			
(U)	IN FY 2005: NOT APPLICABLE.			
(U)				
(U)	CONGRESSIONAL ADD: Electronic Industry-Wide Network for Characteristics & Specifications.	0.000	0.992	
(U)	IN FY 2003: NOT APPLICABLE.			
(U)	IN FY 2004: Develop tasks associated with Electronic Industry-Wide Network for Characteristics & Specifications.			
(U)	IN FY 2005: NOT APPLICABLE.			
(U)				
(U)				
(U)	Total Cost	45.340	57.007	38.012

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

(U) D. Acquisition Strategy

All major contracts in this Program Element were awarded after full and open competition.

Exhibit R-3, RDT&E Project Cost Analysis

DATE: February 2004

BUDGET ACTIVITY: 07 Operational System Development

PE NUMBER AND TITLE: 0708011F Industrial Preparedness

PROJECT NUMBER AND TITLE: 2865 Manufacturing Technology

(U) Cost Categories (Tailor to WBS, or System/Item Requirements) ($ in Millions)	Contract Method & Type	Performing Activity & Location	Total Prior to FY 2003 Cost	FY 2003 Cost	FY 2003 Award Date	FY 2004 Cost	FY 2004 Award Date	FY 2005 Cost	FY 2005 Award Date	Cost to Complete	Total Cost	Target Value of Contract
(U) Product Development												
Advanced Technology Inst	Coop Agmt		0.825							0.000	0.825	
Aerojet-General Corp	Coop Agmt		2.150							0.000	2.150	
Anteon	Various		6.686	0.966						0.000	7.652	
AT&T Government Solutions	Cost Plus		0.300							0.000	0.300	
Boeing	Various		25.670	1.180		0.582		0.625		0.000	28.057	
Central State University	Cost Share		0.312	0.088						0.000	0.400	
Doyle Center for MTech, PA	Various		0.000	0.000		2.500					2.500	
Electro Energy Inc	Various		0.000			2.000					2.000	
Frontier Technologies	Cost Plus		0.365	0.192						0.000	0.557	
GE	Coop Agmt		0.898							0.000	0.898	
General Atomics	Various		0.000			2.800					2.800	
GRC	Cost Plus		2.470			1.000				0.000	3.470	
Honeywell	Various		2.690	1.500		0.750		0.238		0.000	5.178	
KBSI	Cost Share		3.350							0.000	3.350	
Lockheed Martin	Various		14.874	1.371		0.966		0.575		0.000	17.786	
LSP Technologies	Cost Share		6.901	1.933						0.000	8.834	
Mississippi State University	Cost Share		0.250							0.000	0.250	
MIT	Coop Agmt		10.456							0.000	10.456	
Motorola	Tech Int Agr		1.939							0.000	1.939	
Northrop Grumman	Various		25.185	4.744		4.366		2.900		0.000	37.195	
Pratt & Whitney	Tech Int Agr		5.950							0.000	5.950	
Raytheon	Coop Agmt		1.100							0.000	1.100	
TMCI	Cost Plus		1.635							0.000	1.635	
TRW	Coop Agmt		4.615							0.000	4.615	
Univ Dayton Res Inst	Cost Plus		3.300	5.004		4.646		6.696		0.000	19.646	
Univ Maryland	Coop Agmt		2.250	0.300		9.800				0.000	12.350	
UTC	Various		0.530	0.300						0.000	0.830	
Various	Various		76.839	27.762		27.597		26.978		Continuing	TBD	

Exhibit R-3, RDT&E Project Cost Analysis

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT NUMBER AND TITLE
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	Subtotal Product Development	201.540	45.340	57.007	38.012	Continuing	TBD	0.000
	Remarks:							
(U)	Support							
	In house support						0.000	
	Subtotal Support	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Remarks:							
(U)	Test & Evaluation							
							0.000	
	Subtotal Test & Evaluation	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Remarks:							
(U)	Management							
							0.000	
	Subtotal Management	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Remarks:							
(U)								
							0.000	
	Subtotal	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Remarks:							
(U)	Total Cost	201.540	45.340	57.007	38.012	Continuing	TBD	0.000

Exhibit R-4, RDT&E Schedule Profile		DATE: February 2004
BUDGET ACTIVITY: 07 Operational System Development	PE NUMBER AND TITLE: 0708011F Industrial Preparedness	PROJECT NUMBER AND TITLE: 2865 Manufacturing Technology

ManTech Schedule Summary

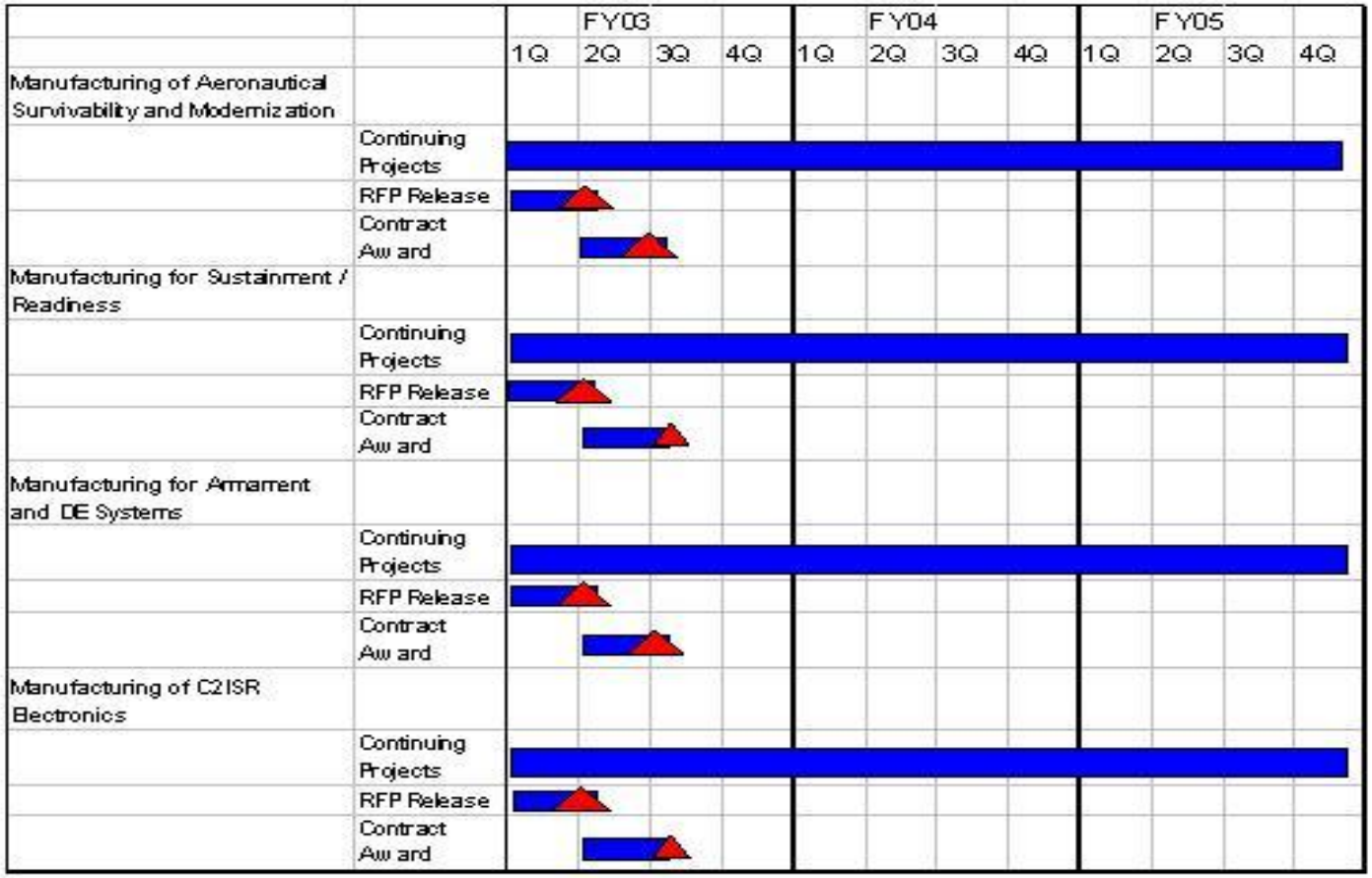

Exhibit R-4a, RDT&E Schedule Detail		DATE February 2004
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(U)	Schedule Profile	FY 2003	FY 2004	FY 2005
(U)	Manufacturing Technology for Aeronautical Survivability and Modernization.	1-4Q	1-4Q	1-4Q
(U)	Request for Proposal Release	2Q	2Q	2Q
(U)	Contract Awards	3Q	3Q	3Q
(U)	Manufacturing Technology for Sustainment / Readiness	1-4Q	1-4Q	1-4Q
(U)	Request for Proposal Release	1Q	1Q	1Q
(U)	Contract Awards	2Q	2Q	2Q
(U)	Manufacturing for Armament and Directed Energy Systems.	1-4Q	1-4Q	1-4Q
(U)	Request for Proposal Release	1Q	1Q	1Q
(U)	Contract Awards	2Q	2Q	2Q
(U)	Mfg for command, control, intel, surveillance, and reconnaissance (C2ISR) electronics	1-4Q	1-4Q	1-4Q
(U)	Request for Proposal Release	1Q	1Q	1Q
(U)	Contract Awards	2Q	2Q	2Q