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OMB Control Number: 0694-XXXX

Expiration Date: XXXXXX

REQUEST FOR PUBLIC COMMENT: RISKS IN THE SEMICONDUCTOR PRODUCT SUPPLY CHAIN

This form is intended to be used to submit comments on challenges currently facing the semiconductor product supply chain. All comments are invited, with this form designed to facilitate submission of information from sellers of integrated circuits (in Sections 2 through 5) and purchasers of integrated circuits or related products (in Sections 6 through 8).

Indicate here if this form contains business confidential information, or if all information contained throughout this form is public:

A.	Organization Name	
	Street Address	
	City	
	State	
	Zip Code	
	Website	

From the list below, identify your organization's primary and additional participation in the semiconductor product supply chain. Please mark all applicable rows.

	Segment	Participation
B.	Integrated Circuit Design	
	Front End Fabrication	
	Back End/Assembly Test/Packaging	
	Electronic Manufacturing Services / Printed Circuit Board Assembly	
	IC Distributor	
	Equipment Supplier	
	Material Supplier	
	Electronic Component Supplier	
	Intermediate or End User of Semiconductor Products	
	Other	(specify here)

Next Step:

Sections 2 through 5 of this form are intended to be filled out by organizations that have primary or additional participation in the following segments: Integrated Circuit Design, Front End Fabrication, Back End/Assembly Test/Packaging, Electronic Manufacturing Services / Printed Circuit Board Assembly, and IC distributor.

Sections 6 through 8 of this form are intended to be filled out by organizations that purchase integrated circuits.

If your organization's responses do not reasonably fit in the above sections, please provide comments in Section 9.

BURDEN ESTIMATE AND REQUEST FOR COMMENT

Public reporting burden for this collection of information is estimated to average 4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information to BIS Information Collection Officer, Room 6883, Bureau of Industry and Security, U.S. Department of Commerce, Washington, D.C. 20230, and to the Office of Management and Budget, Paperwork Reduction Project (OMB Control No. 0694-XXXX), Washington, D.C. 20503.

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This response was not identified as either BUSINESS CONFIDENTIAL or PUBLIC; please complete this information on the Organization Information tab.

Section 2: Semiconductor Providers - Product Capabilities

Indicate the technology nodes (in nanometers), semiconductor material types, and device types with which this organization is capable of operating (design and/or manufacture). A blank response is counted as "No Capability".

Technology Node (nm)		Semiconductor Material Type		Device Type	
Organizations participating in the Electronic Manufacturing Services / Printed Circuit Board Assembly segment should list device types under "Other"					
6,000 - 10,000		Amorphous Silicon		Analog/Linear Technologies	
3,000 - <6,000		Bulk Silicon		Digital Logic Technologies	
1,500 - <3,000		Silicon on Insulator		Digital Signal Processors	
1,000 - <1,500		Silicon Germanium		Field Programmable Gate Arrays	
800 - <1,000		Silicon on Sapphire		Structured ASICs	
500 - <800		Silicon Carbide		Standard Cell ASICs	
350 - <500		Gallium Arsenide		Custom ASICs	
250 - <350		Gallium Nitride		3D/2.5 ASICs	
180 - <250		Indium Phosphide		System-on-Chip	
130 - <180		Antimonides		Other Processors	
90 - <130		Organic Technologies		Mixed Signal Technologies	
65 - <90		Carbon based technologies (e.g. nanotubes)		Nonvolatile Memory	
45 - <65		Superconducting Materials		SRAM	
32 - <45		Other <input type="text" value="(specify here)"/>		DRAM	
28 - <32				MEMS Technologies	
14 - <28				Optical/Photonic Technologies	
7 - <14				MMIC Technologies	
<7				Other RF Technologies	
				Other <input type="text" value="(specify here)"/>	

Point of Contact					
E.	Name	Title	Phone Number	E-mail	State

Comments:

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Section 3: Semiconductor Providers - Integrated Circuit Production

For the integrated circuits you produce--whether fabricated at your own facilities or elsewhere--identify the primary integrated circuit type, product type, relevant technology nodes in nanometers, and estimates of annual sales for the years 2019, 2020, and 2021 based on anticipated end use.

Integrated Circuit Type						Integrated Circuit Production				
	Primary IC Type	Product Type	Primary Technology Node (nm)	Smallest Technology Node (nm)	Largest Technology Node (nm)			2019	2020	2021
Total						Total	\$(million) Units Capacity (Units)			
Aerospace						Aerospace	% of Total \$			
Automotive						Automotive	% of Total \$			
Healthcare/Medical						Healthcare/Medical	% of Total \$			
Industrial						Industrial	% of Total \$			
IT/Computers - Personal and Consumer Products						IT/Computers - Personal and Consumer Products	% of Total \$			
IT/Computers - Servers						IT/Computers - Servers	% of Total \$			
Mobile Devices						Mobile Devices	% of Total \$			
Network Infrastructure						Network Infrastructure	% of Total \$			
Other (specify here)						Other	% of Total \$			

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Section 5: Semiconductor Providers - Disruptions

What are the primary disruptions or bottlenecks that have affected your ability to provide products to customers in the last year?			
	Disruption/Bottleneck	Supplier of Delayed Input	Primary Product Impacted (from Section 3a)
A.1			
A.2			
A.3			
A.4			
A.5			
A.6			
A.7			
A.8			
A.9			
A.10			
B.	What is your organization's back-to-bill ratio for the past three years?	2019	Explanation of changes:
		2020	
		2021	
	If the demand for your products exceeds your capacity, what is the primary method by which your organization allocates the available capacity?		Explanation:
	Does your organization have available capacity?	If Yes, what is preventing the filling of that capacity?	
	Is your organization considering increasing its capacity?	If Yes, in what ways, over what timeframe, and what impediments exist?	
	What factors does your organization consider when evaluating whether to increase capacity?		
C.	Has your organization changed its material and/or equipment purchasing levels or practices in the past three years?		Explanation:
	What single change (and to which portion of the supply chain) would most significantly increase your ability to supply semiconductor products in the next six months?		

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Section 6: Semiconductor Product Consumers

From the list below, identify the market segments that your organization currently serves:

Market Segment		Primary/Secondary/Other	Defense/Commercial
A.	Aerospace		
	Automotive		
	Healthcare/Medical		
	Industrial		
	IT/Computers - Personal and Consumer Products		
	IT/Computers - Servers		
	Mobile Devices		
	Network Infrastructure		
	Other (specify here)		
	Other (specify here)		

Provide a general description of the types of products your organization sells that rely on semiconductors:

B.

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Section 7b: Consumers - Input Lead Times and Inventory

For each of the top semiconductor products identified in Section 7a, estimate each product's lead times and your organization's inventory for (a) 2019 and (b) currently (in days). Provide an explanation of any current delays or bottlenecks.

	Supplier Product (auto-generated from 7a)	Lead Time		Inventory		Explanation of Delays/Bottlenecks and Changes in Inventory Practices
		2019	Current	2019	Current	
	Total (all semiconductor products)					
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

This response may not be identified as either **BUSINESS CONFIDENTIAL** or **PHDLC**; please complete this information on the Organization Information tab.

Section B: Customers - Supply Chain Disruptions

What are the primary disruptions or bottlenecks that have affected your ability to provide products to customers in the last year?

	Disruption/Bottleneck	Primary Semiconductor(s) Impacted	Supplier of Delayed Input	Your Organization's Primary Product Impacted	Explanation
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

D.	In your organization limiting production due to lack of available semiconductor?		Explanation	
	What percentage of your current production has your organization had to defer, delay, reject, or suspend in the last year due to semiconductor shortages or sourcing delays?		Explanation	
	What percentage of your current production has your organization had to defer, delay, reject, or suspend in the last year due to semiconductor shortages or sourcing delays?		Explanation	

What semiconductor product types are most in short supply, and by what estimated percentage relative to your demand? What is your view of the outlook?

	Product	Percent of your demand you are able to fill	Explanation
1			
2			
3			

D.	Has your organization changed its material and/or equipment purchasing levels or practices in the past three years?		Explanation:
	What single change (and in which portion of the supply chain) would most significantly increase your ability to purchase semiconductor in the next six months?		

E.	What percentage of your orders are fulfilled by distributors vs. through direct purchase orders to semiconductor product manufacturers?	Direct Purchase from OEM	
		Distributor	

Has your organization found "downside" (defined as a violation from a supplier that reported or unannounced supply will not be delivered in the agreed upon time and quantity) in recent months? If this is a significant issue, please explain [e.g., nature of product, supplier, impact].

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Section 9: General Comments

Use this space to provide any general comments that do not reasonably fit in other sections of the form. Please limit your response to the space available; supplemental information can be submitted as a separate attachment on [regulations.gov](https://www.regulations.gov).

A.

Section X: Definitions

Term	Definition
Authorizing Official	An executive officer of the organization or business unit or another individual who has the authority to execute this survey on behalf of the organization.
Capability	The ability to perform standardized design and/or manufacturing steps for producing integrated circuit products within an organization's own facilities and its own employees with little or no outsourcing.
Complementary Metal Oxide Semiconductor (CMOS)	A class of semiconductor used in digital logic circuits employed in microcontrollers, microprocessors, memory, and other devices. The technology is also used in analog circuits such as sensors, transceivers, data converters and other systems.
Customer	An entity to which an organization directly delivers the product or service that the facility produces. A customer may be another organization or another facility owned by the same parent organization. The customer may be the end user for the item but often will be an intermediate link in the supply chain, adding additional value before transferring the item to yet another customer.
Design Facility	A facility with personnel who use design software, intellectual property blocks, supporting computer systems, and other information technology to create integrated circuit designs.
Extreme Integration	The incorporation of functional systems (e.g., logic, memory, input/output, etc.) on an integrated circuit (IC) die or in combination with the integration of multiple IC die (such as memory, standard processors, and field programmable gate arrays) to form a single operational component.
Foundry	For the purpose of this survey a foundry is considered to be a facility that manufactures integrated circuit products for outside organizations as a business. Foundries are: 1) businesses dedicated solely to manufacturing integrated circuit products for fabless integrated circuit companies and other businesses; and/or 2) organizations that chiefly design and manufacture their own integrated circuit products, but that also operate a business of manufacturing IC products for other entities for a fee.
Integrated Circuit (IC)	Analog or digital devices that incorporate transistors, diodes, capacitors, resistors, and other circuit elements that are integrated on a single substrate (chip), typically silicon.
Manufacturing	The production of a working integrated circuit product at a fabrication facility.
Manufacturing Facility	A facility that transforms integrated circuit designs into integrated circuit devices using an array of fabrication equipment including photolithography, deposition, etch, wafer dicing, and testing tools. These facilities produce functioning die as an end-product, devices that may be built with electronics-grade silicon or compound semiconductor materials, including gallium arsenide, gallium nitride, indium phosphide, and others.
Non-U.S. Company	For the purpose of this survey, a non-U.S. company is an organization (publicly traded, privately held, for profit, not-for-profit, or non-profit) that is domiciled at a location outside of the United States. Companies that are a business unit of a parent organization with legal domicile located outside of the United States are non-U.S. companies.
	A company, firm, laboratory, or other entity that owns or controls one or more U.S. establishment(s) capable of designing and/or manufacturing integrated circuit products. A company may be an individual proprietorship, partnership, joint venture, or corporation.