



**Telecommunications Industry Association
Written Comments**

**Request for Comments
Concerning Proposed Modification of Action Pursuant to Section 301:
China's Acts, Policies, and Practices Related to Technology
Transfer, Intellectual Property, and Innovation**

USTR-2018-0026

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The Telecommunications Industry Association, TIA, represents approximately 250 manufacturers and suppliers of global communications networks in the United States and around the world. TIA is also an ANSI-accredited standards development organization. We appreciate the opportunity to provide this testimony.

To summarize our position, we believe that imposing duties of up to 25 percent on the information and communications technology (ICT) products identified on the third-round Section 301 list would cause disproportionate economic harm to U.S. interests. U.S. leadership in technology innovation has been a key factor in American economic prosperity. Yet the digital domain in which many of these advancements take place depends on networking hardware to function. Taxing essential internet equipment will raise costs for consumers and act as a burden on innovators. It stands to discourage the U.S. adoption of advanced technologies in a period of growing competition over technological leadership.

At the back of this document we have appended an annex of items which we seek to safeguard from Section 301 tariffs. We wish to highlight the importance of those contained in HTSUS category heading 8517, particularly tariff line 8517.62, which contains many of the products essential to the operation of telecom networks.

We have briefly outlined below the negative consequences we believe would ensue from imposing tariffs on critical network infrastructure; a more detailed explanation follows in the body of this submission.

Tariffs could undermine the American adoption of strategic technologies including 5G, exacting longer-term economic costs and hurting U.S. strategic competitiveness. The proposed tariffs target equipment that is essential for the next-generation telecom technology known as 5G, which in turn enables network-based innovations like Artificial Intelligence (AI), cloud computing, and the Internet of Things (IoT). All of these advanced services run on hardware and components included on the supplemental \$200 billion list. Taxing the network equipment used to deliver them would handicap America amid a race for technology leadership.



Tariffs will ultimately hurt consumers, making it more expensive to access broadband internet and impeding efforts to narrow the digital divide in the United States. By increasing the costs of network hardware, tariffs would incur costs that will be borne by consumers and companies in the United States – not China. Tariffs will hinder efforts to expand broadband access and close the digital divide in rural areas and other underserved parts of America, exacerbating inequities in internet access.

I. **Tariffs could undermine the American adoption of strategic technologies including 5G, exacting longer-term economic costs and hurting U.S. strategic competitiveness.**

The items classified under HTS code 8517.62 include network infrastructure that is essential for the functioning of not only broadband internet but also the next generation of telecom technology known as 5G. 5G equipment and related components that are identified on the \$200 billion list will begin shipping in volume next year. By hiking the cost of the underlying hardware, the U.S. government could inadvertently slow the adoption of 5G. This would have serious long-term implications for the U.S. economy and could weigh on the introduction of sophisticated 5G-enabled technologies including AI and IoT.

To briefly provide context, 5G is viewed as an evolutionary jump forward for the telecom industry, allowing far more data to be transferred at faster speeds. A new generation of mobile computing technology only comes along once every decade or so, and the U.S. government has clearly identified 5G leadership as a priority. Testifying before a Congressional committee this summer, for example, Federal Communications Commission Chairman Ajit Pai pledged that the FCC will take actions “to ensure that our nation is a pioneer in 5G.”¹

The United States has led the world in the current generation of technology, 4G, and reaped very substantial benefits. By one estimate, winning the race to 4G boosted America’s GDP by nearly \$100 billion and spurred an 84 percent increase in wireless-related jobs; it also gave rise to an entirely new app economy.² Meanwhile Japan and Europe, which had dominated earlier generations of mobile technology, subsequently saw their telecom industries shrink and experienced corresponding job losses when they ceded leadership.

An assessment of the 4G competitive landscape by one consulting firm noted that innovative smartphones and operating systems largely developed in the United States “in turn depended on the strength of the networks that they rode upon. For all of this would not have been possible if American

¹ *Statement of Federal Communications Commission Chairman Ajit Pai*, the Subcommittee on Communications and Technology, U.S. House of Representatives Committee on Energy and Commerce, July 25, 2018, <https://docs.house.gov/meetings/IF/IF16/20180725/108599/HHRG-115-IF16-Wstate-PaiA-20180725-U11.pdf>

² *How America’s 4G Leadership Propelled the Economy*, Recon Analytics, April 16, 2018, at 1, https://api.ctia.org/wp-content/uploads/2018/04/Recon-Analytics_How-Americas-4G-Leadership-Propelled-US-Economy_2018.pdf (“Recon Analytics report”)



mobile operators hadn't built the first large-scale 4G networks that created the necessary foundation that wiped out competitors on a global basis. Having the right networks in place at the right time was a critical advantage for the US."³

With 5G, the rewards of leadership may be still greater than with 4G. A recent report from Deloitte suggested 5G has the potential to bestow an even larger first-mover advantage than in the past because it will so vastly expand the reach of communications networks.⁴ Put another way, the network effect – where the value of a network increases in relation to the number of users - stands to be even greater with 5G than with earlier generations of technology, because it will generate so many dense webs of interconnections.

Moreover, because it allows for ultra-fast transmission of massive amounts of data, 5G is considered an essential enabling technology for transformative technologies such as AI and IoT. A 5G ecosystem will facilitate transfers of the vast amounts of data needed for AI-enabled devices to act more “intelligent” – greater volumes of information provide the context for devices to better respond to environmental cues. The low-latency, high-speed environment enabled by 5G lets devices communicate directly with each other, allowing for “swarm computing.” To consider one practical example, individual drones surveying a bridge could swap digital images with each other, then use AI to knit the images together to build a 3D image of a bridge in real time.⁵ The AI use cases are many – but the most sophisticated and innovative applications will rely on next-generation 5G telecom networks.

However, the U.S. faces fierce competition in the 5G race, particularly from China. Beijing has not only designated 5G as a strategic priority in multiple industrial plans, but it has also outlined funding mechanisms to support the next generation of networks.

These include the following:

- China's three-year action plan for artificial intelligence calls for speeding deployment of high-bandwidth, low-latency 5G networks that can support AI, while providing funding through related industrial plans, scientific projects and local governments. The goal is to ensure that by 2020, a broadband footprint covering 90 percent of China could support AI industry

³ Recon Analytics report at 15

⁴ Deloitte, *5G: The Chance to Lead for a Decade*, at 2, August 7, 2018, <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/technology-media-telecommunications/us-tmt-5g-deployment-imperative.pdf>

⁵ Tam Harbert, “How 5G Will Make AI-Powered Devices Smarter,” IQ Intel blog, February 21, 2018, <https://iq.intel.com/how-5g-will-make-ai-powered-devices-smarter/>



applications. Funding will come from existing programs, including the Made in China 2025 plan, as well as local governments.⁶

- China's 13th Five-Year Plan calls for boosting development of 5G and high-bandwidth broadband networks. It highlights the need to promote smart manufacturing that will allow China to be more globally competitive and commits the state to providing financial assistance.⁷
- The Made in China 2025 roadmap calls for Chinese innovators to make breakthroughs in 5G communications and develop a low-delay, wide-coverage internet for industrial use, while generally encouraging the use of the internet in manufacturing. The plan pledges greater government support for new generation IT, high-end equipment and materials.⁸

To sum up, the Chinese government is proactively helping its own domestic telecom industry through systematic state investments in network infrastructure. This makes it all the more important that the American government not act so as to financially handicap telecom companies here in the United States – and there is no question that duties of up to 25 percent on core equipment and components would impose a significant burden on the U.S. telecom industry.

Indeed, the competitive backdrop with China only underscores the importance of creating a favorable policy environment in the United States. The 5G contest is already underway. The four major operators in the United States have publicly announced they will begin providing 5G services between late 2018 and mid-2019.⁹ 5G network equipment will begin shipping in the United States in 2019.

If the U.S. government proceeds with imposing tariffs on products used in 5G networks, there is a risk that resulting cost increases of 10 to 25 percent may artificially depress demand, especially among more budget-conscious American consumers. Higher price tags might prompt smaller companies or schools or government agencies, for example, to consider delaying upgrades or making smaller investments.

Such a result would only serve to strengthen China's hand in the technology sphere and bolster its standing in the 5G race relative to the United States – an outcome clearly at odds with the original goals of the Section 301 investigation.

⁶ Ministry of Industry and Information Technology of the People's Republic of China, *Three-Year Action Plan for Promoting the Development of Next Generation Artificial Intelligence Industry (2018-2020)*, January 2018

⁷ State Council of the P.R.C., *13th Five-Year Plan on Strategic and Emerging Industries (2016-2020)*, December 19, 2016

⁸ *Circular of the State Council on Distributing the "China Manufacturing 2025" Plan*, May 29, 2015

⁹ *Ericsson Mobility Report*, at 6, June 2018, <https://www.ericsson.com/assets/local/mobility-report/documents/2018/ericsson-mobility-report-june-2018.pdf>



II. **Tariffs will ultimately hurt consumers, making it more expensive to access broadband internet and impeding efforts to narrow the digital divide in the U.S.**

The first-order effect of levying double-digit tariffs will be to disrupt sales growth and decrease business visibility for the ICT companies that have slowly built out global supply chains, including in China, over decades. It is important to recognize that for many of the products that appear on the tariff list, there are few if any U.S.-manufactured alternatives. The imposition of Section 301 duties therefore will not protect American jobs, but merely raise American prices.

It is not economically feasible for ICT vendors to absorb in full price hikes of up to 25 percent in the cost of their products. In some cases companies may be able to absorb a portion of the cost, but this would reduce funds available for longer-term business investment, including in R&D. The U.S. communications technology industry is an outsized investor in R&D, which in turn generates substantial long-term economic benefits for the broader American economy. The ICT industry accounted for over 40 percent of R&D spending by companies in the United States in 2013.¹⁰ Decreasing the pool of potential funds available for U.S.-based R&D would, at the margins, provide an edge to other economies.

Moreover, tariffs are likely to negatively impact the many American consumers that use the internet for everyday work and life activities. To the extent companies cannot absorb costs themselves, they will have to raise prices. This will make American goods more expensive on the global market. It will also hurt American consumers, who will have to pay more for ICT goods like modems, routers, gateways, and Bluetooth devices. Since internet providers may potentially raise their fees to recoup higher equipment expenses, consumers may end up paying more in access fees, too.

Tariffs on core network equipment will have a disproportionate impact on lower-income Americans, who are already more likely to already lack broadband internet access, and will impede efforts to narrow the digital divide. According to the FCC, over 24 million Americans still lack fixed terrestrial broadband -- a challenge that makes it harder to access good jobs, health care and education.¹¹ The gap disproportionately affects those living outside cities – around 30% of those in rural areas don't have broadband access. Tariffs on network infrastructure stand to substantially increase the cost of network build-outs and upgrades. They would also raise costs for the FCC's nearly \$9 billion-dollar Universal Service Fund, which provides funds for broadband deployment in underserved areas.

¹⁰ Brandon Shackelford, "Information and Communications Technology Industries Account for \$133 Billion of Business R&D Performance in the United States in 2013," National Science Foundation, April 2016, <https://www.nsf.gov/statistics/2016/nsf16309/nsf16309.pdf>

¹¹ FCC, *2018 Broadband Deployment Report*, at 22, February 2, 2018, <https://www.fcc.gov/reports-research/reports/broadband-progress-reports/2018-broadband-deployment-report>



The proposed Section 301 tariffs would hit a range of products that play central, behind-the-scenes roles in powering telecom networks. To illustrate how wide-ranging the consumer impact would be, consider just one example -- what happens when a consumer sends an email through a smartphone.

- Where this process begins, at the edge of the network, the radio in a smartphone first connects to the radios in a cell tower and in turn to digital baseband units. (Or if the connection occurs via Wi-Fi, to a wireless access point). According to the third Section 301 tariff list, those radios, digital baseband units, and wireless access points have all been tagged for duties.
- Data is then routed to the core network by gateways, which are on the latest tariff list.
- The information is directed around the internet by routers, which are included on the most recent tariff list.
- For many email programs, emails will be stored in the cloud until needed, which in physical terms means they're sent to a data center. Data centers run on servers and rely on printed circuit board assemblies that are – once again - on the tariff list.
- Finally, most or all of the devices noted above include transceivers, optical transmitters, optical fiber cables, printed circuit assemblies, and network interface cards and modules. These, too, are all featured on the tariff list.

As illustrated in the example above, proposed tariffs of up to 25 percent will hit a significant portion of the ICT products fundamental to the functioning of broadband internet.

To conclude, tariffs on network equipment stand to hinder the U.S. expansion of high-speed internet and next-generation network technologies. Far from helping to achieve the dismantling of problematic Chinese policies, tariffs will damage our technological and economic competitiveness and hurt our economy. For these reasons, we urge the administration to refrain from imposing Section 301 duties on telecom products.



Annex of HTSUS Codes
Proposed for Exemption from Round 3 Section 301 Tariffs
(please note - highest-priority tariff line is highlighted in red)

HTSUS Code	Product Description
3923210095	Sacks and bags (including cones) for the conveyance or packing of goods, of polymers of ethylene; Other
3926904590	Gaskets, washers and other seals, of plastics; Other
44152080	Packing cases, boxes, crates, drums and similar packings, of wood; cable-drums, of wood; pallets, box-pallets and other load boards, of wood; pallet collars of wood: Pallets, box-pallets and other load boards; pallet collars: Other
4819100040	Cartons, boxes and cases of corrugated paper or paperboard; Other
4819200040	Folding cartons, boxes and cases of noncorrugated paper or paperboard; Other
4821102000	Paper and paperboard labels, printed in whole or part by a lithographic process; Printed in whole or in part by a lithographic process
5806102400	Narrow woven pile fastener fabric tapes (other than goods of heading 5807) of man-made fibers; Fastener fabric tapes (229)
5911900080	Textile products and articles, of a kind used in machinery or plants for technical uses, specified in note 7 to chapter 59, nesoi; Other
6914908000	Ceramic (o/than porcelain or china) arts. (o/than tableware/kitchenware/household & ornament. arts), nesoi; Other
7318141060	Iron or steel, self-tapping screws, w/shanks or threads less than 6 mm in diameter; Other
7318145080	Iron or steel, self-tapping screws, w/shanks or threads 6 mm or more in diameter; Other
7318154000	Iron or steel, machine screws (o/than cap screws), 9.5 mm or more in length and 3.2 mm in diameter; Machine screws 9.5 mm or more in length and 3.2 mm or more in diameter (not including cap screws)
7318156010	Iron or steel, screws and bolts, nesoi, having shanks or threads less than 6 mm in diameter; Of stainless steel
7318156070	Iron or steel, screws and bolts, nesoi, having shanks or threads less than 6 mm in diameter; Of stainless steel
7318156080	Iron or steel, screws and bolts, nesoi, having shanks or threads less than 6 mm in diameter; Other
7318158030	Iron or steel, screws and bolts, nesoi, having shanks or threads 6 mm or more in diameter; Of stainless steel
7318158082	Iron or steel, screws and bolts, nesoi, having shanks or threads 6 mm or more in diameter; Of stainless steel
7318158085	Iron or steel, screws and bolts, nesoi, having shanks or threads 6 mm or more in diameter; Other
7318220000	Iron or steel, washers (o/than spring washers and other lock washers); Other washers



73269086	Articles of iron or steel: Other
7318290000	Iron or steel, nonthreaded articles similar to rivets, cotters, cotter pins, washers and spring washers; Other
7326908688	Iron or steel, articles, nesoi; Other
7419995050	Copper, articles nesoi, not coated or plated with precious metal; Other
76169951	Other articles of aluminum: Nails, tacks, staples (other than those of heading 8305), screws, bolts, nuts, screw hooks, rivets, cotters, cotter pins, washers and similar articles; Other
7616995190	Aluminum, articles, nesoi; Other
8205400000	Screwdrivers and base metal parts thereof; Screwdrivers, and parts thereof
8205906000	Sets of articles (handtools and other specified tools) of two or more foregoing subheadings; Sets of articles of two or more of the foregoing subheadings
8302500000	Base metal hat-racks, hat pegs, brackets and similar fixtures, and base metal parts thereof; Hat-racks, hat pegs, brackets and similar fixtures, and parts thereof
8311306000	Coated rods and cored wire of base metal (o/than lead-tin solders), for soldering, brazing or welding by flame; Other
8414591500	Fans used for cooling microprocessors, telecommunications equipment, or computers; Fans of a kind used solely or principally for cooling microprocessors, telecommunications apparatus, automatic data processing machines or units of automatic data processing machines
84145965	Air or vacuum pumps, air or other gas compressors and fans; ventilating or recycling hoods incorporating a fan, whether or not fitted with filters; parts thereof: Other: Other
8414901080	Parts of fans (including blowers) and ventilating or recycling hoods; Other
84715001	Processing units other than those of subheading 8471.41 or 8471.49, whether or not containing in the same housing one or two of the following types of unit: storage units, input units, output units
8471500150	Processing units other than those of subheading 8471.41 and 8471.49, nesoi; Other
8471601050	Combined input/output units for automatic data processing machines not entered with the rest of a system; Other
84716090	Automatic data processing machines and units thereof; magnetic or optical readers, machines for transcribing data onto data media in coded form and machines for processing such data, not elsewhere specified or included: Input or output units, whether or not containing storage units in the same housing: Other
8471609050	Other input or output units of digital ADP machines, nesoi, not entered with the rest of a system; Other
8471705065	ADP magnetic disk drive storage units, disk dia. n/ov 21 cm, nesoi, not entered with the rest of a system; Hard magnetic disk drive units
8471801000	Control or adapter units for automatic data processing machines not entered with rest of a system; Control or adapter units



84733011	Parts and accessories of the machines of heading 8471: Not incorporating a cathode ray tube: Printed circuit assemblies
84733051	Parts and accessories of the machines of heading 8471: Other
8473301140	Printed circuit assemblies, not incorporating a cathode ray tube, of the machines of 8471; Memory modules suitable for use solely or principally with machines of heading 8471
8473305100	Parts and accessories of the ADP machines of heading 8471, not incorporating a CRT, nesoi; Other
8504314065	Electrical transformers other than liquid dielectric, having a power handling capacity less than 1 kVA; Having a power handling capacity 40 VA or greater
850440	Electrical transformers, static converters (for example, rectifiers) and inductors; parts thereof: Static converters
85044060	Electrical transformers, static converters (for example, rectifiers) and inductors; parts thereof: Static converters; Suitable for physical incorporation into automatic data processing machines or units thereof of heading 8471
8504406007	Power supplies suitable for physical incorporation into automatic data processing machines or units thereof of heading 8471; With a power output exceeding 50 W but not exceeding 150 W
8504407001	Power supplies for automatic data processing machines or units thereof of heading 8471, nesoi; With a power output not exceeding 50 W
8504407012	Power supplies for automatic data processing machines or units thereof of heading 8471, nesoi; With a power output exceeding 150 W but not exceeding 500 W
8504408500	Static converters (for example, rectifiers) for telecommunication apparatus; For telecommunication apparatus
8504409510	Static converters (for example, rectifiers), nesoi; With a power output not exceeding 50 W
8504409520	Static converters (for example, rectifiers), nesoi; With a power output exceeding 50 W but not exceeding 150 W
8504409530	Static converters (for example, rectifiers), nesoi; With a power output exceeding 150 W but not exceeding 500 W
8504409540	Static converters (for example, rectifiers), nesoi; Other
8504504000	Other inductors for power supplies for ADP machines and units of heading 8471 or for telecommunication apparatus; For power supplies for automatic data processing machines or units thereof of heading 8471; power supplies for goods of subheading 8443.31 or 8443.32; power supplies for monitors of subheading 8528.42 or 8528.52 or projectors of subheading 8528.62; for telecommunication apparatus
8504508000	Other inductors, nesoi; Other
8507208041	Lead-acid storage batteries other than of a kind used for starting piston engines or as the primary source of power for electric vehicles; 12 V batteries
85176200	Machines for the reception, conversion and transmission or regeneration of voice, images or other data, including switching and routing apparatus



8517620050	Machines for the reception, conversion and transmission or regeneration of voice, images or other data, including switching and routing appa; Other
8517690000	Other apparatus for transmission or reception of voice, images or other data, nesoi, but not apparatus of 8443, 8525, 8527 or 8528; Other
8523520010	Semiconductor media, "smart cards"; Unrecorded
85258030	Transmission apparatus for radio-broadcasting or television, whether or not incorporating reception apparatus or sound recording or reproducing apparatus; television cameras, digital cameras and video camera recorders; Television cameras, digital cameras and video camera recorders: Television cameras: Other
85259030	Television cameras, digital cameras and video camera recorders: other
8529908600	Parts suitable for use solely or principally with the apparatus of 8525 and 8527 (except television apparatus or cellular phones), nesoi; Other
8531200040	Indicator panels incorporating liquid crystal devices (LCD's) or light emitting diodes (LED's); Other
85319030	Electric sound or visual signaling apparatus (for example, bells, sirens, indicator panels, burglar or fire alarms), other than those of heading 8512 or 8530; parts thereof: Parts: Other
85340000	Printed circuits
8534000020	Printed circuits, without elements (other than connecting elements) fitted thereon; With 3 or more layers of conducting materials
8534000040	Printed circuits, without elements (other than connecting elements) fitted thereon; Other
8534000095	Printed circuits, without elements (other than connecting elements) fitted thereon; Other
8536698000	Plugs and sockets for making connections to or in electrical circuits, for a voltage not exceeding 1,000 V, nesoi; Other
85371091	Boards, panels, consoles, desks, cabinets and other bases, equipped with two or more apparatus of heading 8535 or 8536, for electric control or the distribution of electricity, including those incorporating instruments or apparatus of chapter 90, and numerical control apparatus, other than switching apparatus of heading 8517: For a voltage not exceeding 1,000 V: Other
8537109150	Other boards, panels, consoles, desks, cabinets, etc., equipped with apparatus for electric control, for a voltage not exceeding 1,000, nesoi; Panel boards and distribution boards
8537109160	Other boards, panels, consoles, desks, cabinets, etc., equipped with apparatus for electric control, for a voltage not exceeding 1,000, nesoi; Programmable controllers
8537109170	Other boards, panels, consoles, desks, cabinets, etc., equipped with apparatus for electric control, for a voltage not exceeding 1,000, nesoi; Other Insulated (including enameled or anodized) coaxial cable and other coaxial conductors; Coaxial cable and other coaxial electric conductors



8544200000	Insulated (including enameled or anodized) coaxial cable and other coaxial conductors; Coaxial cable and other coaxial electric conductors
8544421000	Insulated electric conductors nesoi, for a voltage not exceeding 1,000 V, fitted with modular telephone connectors; Fitted with modular telephone connectors
8544422000	Insulated electric conductors nesoi, used for telecommunications, for a voltage not exceeding 1,000 V, fitted with connectors; Of a kind used for telecommunications
85444290	Insulated (including enameled or anodized) wire, cable (including coaxial cable) and other insulated electric conductors, whether or not fitted with connectors; optical fiber cables, made up of individually sheathed fibers, whether or not assembled with electric conductors or fitted with connectors: (con.) 8544 (con.) Other electric conductors, for a voltage not exceeding 1,000 V: 8544.42 Fitted with connectors: Other
8544429010	Insulated electric conductors nesoi, for a voltage not exceeding 1,000 V, fitted with connectors, nesoi; Extension cords as defined in statistical note 6 to this chapter
8544429090	Insulated electric conductors nesoi, for a voltage not exceeding 1,000 V, fitted with connectors, nesoi; Other
8548900100	Electrical parts of machinery or apparatus not specified or included elsewhere in chapter 85; Other
87168050	Trailers and semi-trailers; other vehicles, not mechanically propelled; and parts thereof; Other vehicles: Other
9001904000	Lenses nesoi, unmounted; Lenses
9001906000	Mirrors, unmounted; Mirrors
9001909000	Optical elements nesoi, unmounted; Other
9013809000	Liquid crystal devices nesoi, and optical appliances and instruments, nesoi; Other
9023000000	Instruments, apparatus and models, designed for demonstrational purposes, unsuitable for other uses, and parts and accessories thereof; Instruments, apparatus and models, designed for demonstrational purposes (for example, in education or exhibitions), unsuitable for other uses, and parts and accessories thereof
9403200050	Furniture (o/than seats) of metal nesoi, o/than of a kind used in offices; Other
9403908041	Parts of furniture (o/than seats or o/than of 9402) nesoi; Other