

Critical and Emerging Technology Standards Development

Gordon Gillerman

Director, Standards Coordination Office

Key Messages



- NIST is stepping up coordination and leadership in critical and emerging technology standards
- Technology standards create opportunities for innovation and define future markets
- China's engagement in international standards is growing

Technology Standards and Markets

Technology standards shape the markets of the future and are key to innovation leadership



China reaches for digital dominance

by Adam Cotter 10 September 2020



From Lightbulbs to 5G, China Battles West for Control of Vital Technology Standards

Whoever has control of industrial norms for telecommunications, electricity transmission and artificial intelligence is in a position to dominate

NETWORKS / CYBER, SPACE

US Risks Losing 5G Standard Setting Battle To China, Experts Say

"We need some coherency around what we're actually doing on the public policy front, and we need some more technical coordination ... so we could at least be at the stage where we're still on the field, versus sitting on the sidelines trying to figure out how to catch up," said Brookings fellow Nicol Turner Lee.

'China Standards 2035' Aims to Write International Rules

NTD EVENING NEWS Penny Zhou | Feb 11, 2021

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The Multitier Battle Against Chinese 5G Dominance

Thomas Duesterberg Contributor Manufacturing
I research trade, manufacturing, and economics at Hudson Ins



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22 Feb 2021

US must up its game in 5G's hidden standards battlefield to counter Chinese threat, says prominent Republican lawmaker

China proposes global data security standards



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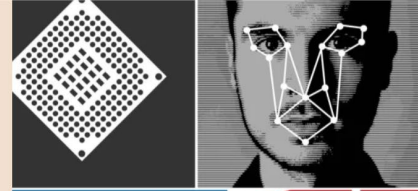
TECH

'Superpower marathon': U.S. may lead China in tech right now — but Beijing has the strength to catch up

PUBLISHED SUN, MAY 17 2020-9:13 PM EDT | UPDATED SUN, MAY 17 2020-9:43 PM EDT

From AI to facial recognition: how China is setting the rules in new tech

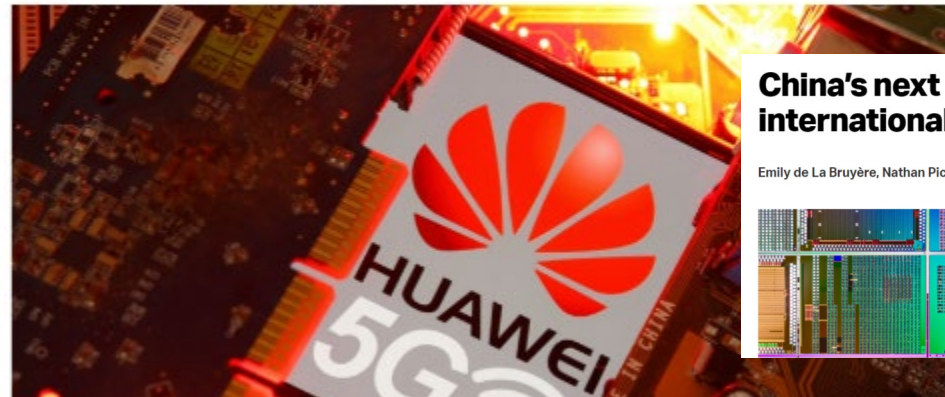
In its bid to rival the US, Beijing wants to establish the industrial standards that will shape future industries



INTERNATIONAL RELATIONS

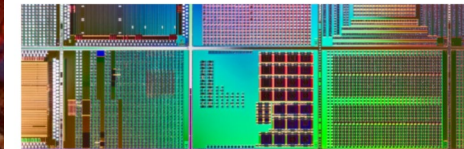
China leads the way on global standards for 5G and beyond

Huawei moves front and center as Beijing drafts strategy on rule-setting



China's next plan to dominate international tech standards

Emily de La Bruyère, Nathan Picarsic / 11:15 AM EDT • April 11, 2020



DIGITAL FRONTIERS | SEP 08 2020

Now, China wants to capture telecommunications standards

GAUTAM CHIKERMANE



China is winning the war for global tech dominance

BY SAM OLSEN, OPINION CONTRIBUTOR — 10/04/20 04:00 PM EDT
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877 COMMENTS

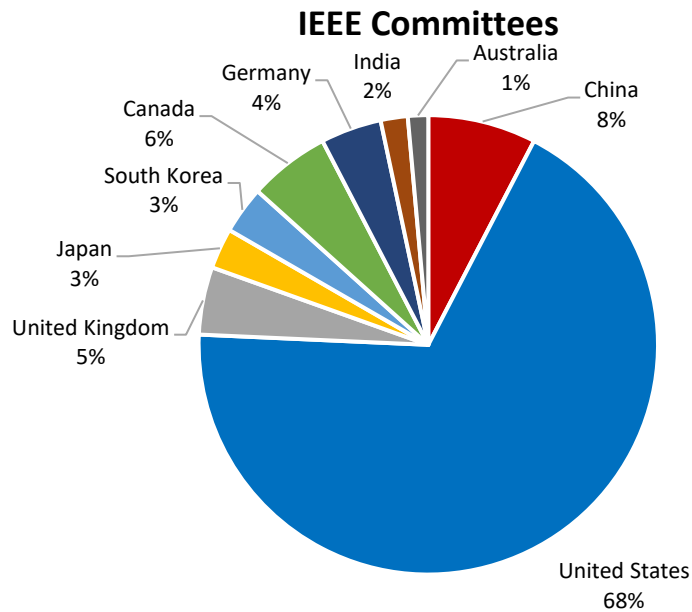
HUAWEI NEWS TECH

HUAWEI CLAIMS ITS INVOLVED IN HALF OF THE WORLD'S COMMERCIAL 5G NETWORKS

EFE UDIN FEBRUARY 20, 2021

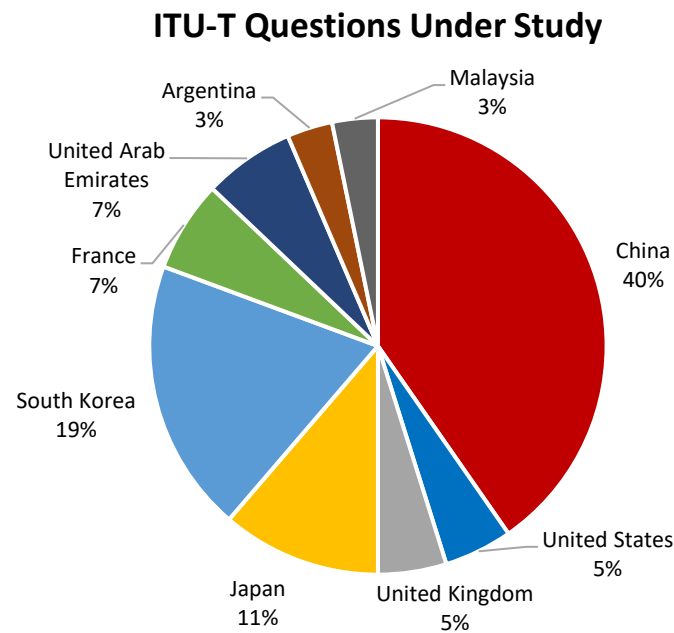


Leadership in Standards Activities: Overall Top 9 Countries Participation

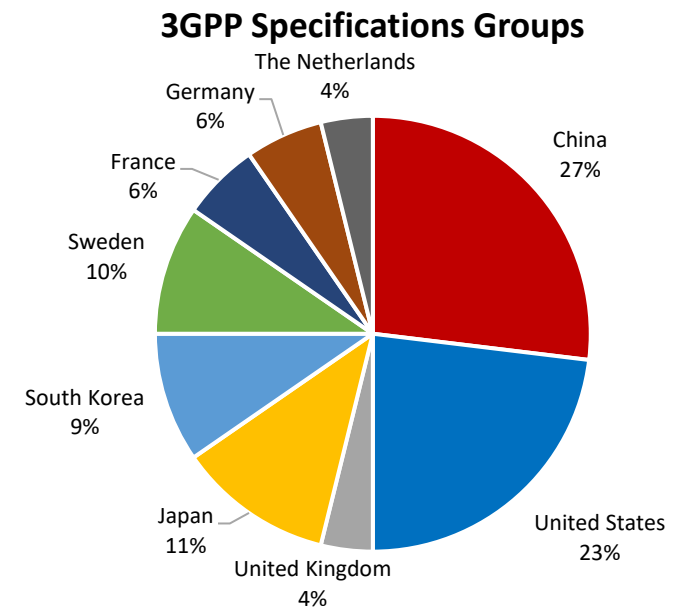


Various search terms in *IEEE Standards Association Find Projects*. Retrieved between April 10, 2019 and May 8, 2019 from <https://standards.ieee.org/project/index.html>

Leadership from Cloud Computing, Cybersecurity and Privacy, Learning Technology, Microprocessor, and Networking (LAN/MAN) in *IEEE Standards Committees*. Retrieved between April 10, 2019 and May 8, 2019 from <https://www.computer.org/volunteering/boards-and-committees/standards-activities/committees>



SG13, SG 17, and SG20 in *ITU-T Study Groups*. Retrieved April 9, 2019 from <https://www.itu.int/en/ITU-T/studygroups/2017-2020/Pages/default.aspx>



RAN1, RAN 2, RAN4, SA1, SA2, SA3, and SA 6 in *3GPP Specifications Group Home*. Retrieved April 9, 2019 from <https://www.3gpp.org/specifications-groups/specifications-groups>

Comparison of Standards “Systems”



In the U.S.

- Voluntary, decentralized and market-driven
- Public-private partnership and led by private sector
- *Differs from centralized standards systems in other countries*
- Reflects U.S. culture and public-private sector dynamics
- Relies on cooperation, communication and parity among diverse stakeholders
- ANSI is the private sector coordinator of many U.S. domiciled standards organizations and our ISO and IEC member



In China

- Central government organized
- Standards Administration of China (SAC)
- Developing a tiered standards system (national, sector, local standards)
- China Standards 2035 – launched 2018
 - developed by Standardization Administration of China (SAC)
 - research standardization strategies to inform China’s strategy
 - focused on Chinese national standards for priority areas
 - increase Chinese private sector standards development
 - increase Chinese participation and leadership in international standards

What Are We Doing Today?

440+

NIST STAFF PARTICIPATE
IN **1750+** STANDARDS ACTIVITIES

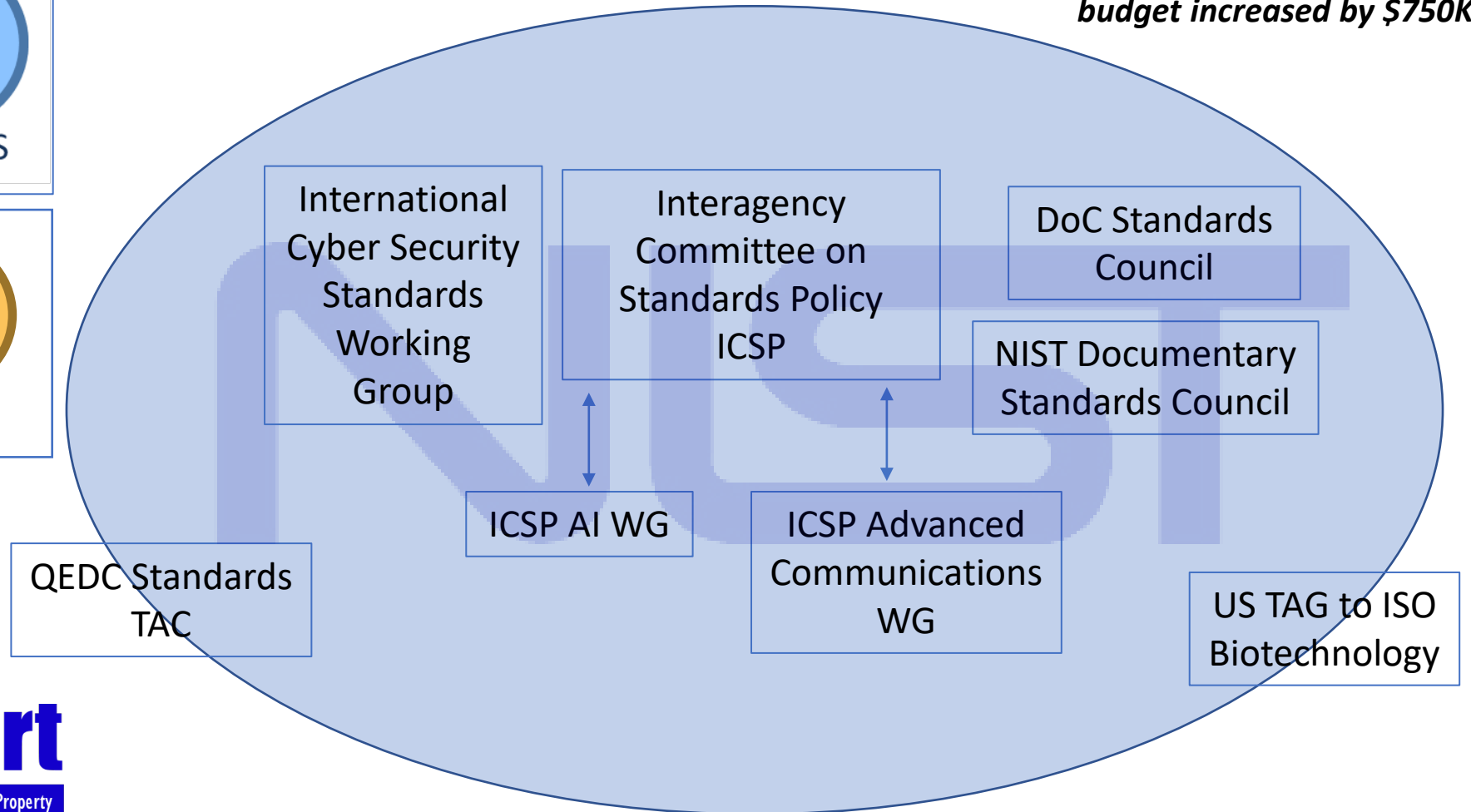


6000+

PARTICIPANTS IN
STANDARDS TRAINING
EVENTS



*FY 21 Standards Coordination
budget increased by \$750K*



INTERNATIONAL
Standards Alert

NIST Standards Coordination Office - ITA Office of Standards and Intellectual Property

For US Government awareness of significant standards activities. This information is not exhaustive and focuses on activities where USG agencies may want to influence standards in support of their mission.

- 2021 National Defense Authorization Act (NDAA)
 - SEC. 9414. *Study on Chinese Policies and Influence in the Development of International Standards for Emerging Technologies*
- U.S. Innovation and Competition Act of 2021
 - Endless Frontiers Act
 - Strategic Competition Act
- National Standards Strategy for Critical and Emerging Technology (draft)
- NSTC subcommittees in relevant areas for key emerging technology standardization
- OMB A-119 *Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities* – revised 2016
- National Technology Transfer and Advancement Act of 1995

What Do We Need to Do Next?

- Increase NIST standards participation and influence in critical and emerging technology standards development
- Raise competence and ability of federal employees to influence standards development and enhance interagency coordination
- Lead effort with DOC bureaus and Dept. of State to provide timely, clear and actionable information on international standards threats and opportunities, and work with like-minded countries to support industry-led open consensus standards development
- Plan for future roles
 1. get critical standards information to U.S. industry with a focus on emerging technologies
 2. enhance U.S. emerging technology U.S. experts influence in international standards
- Work with Dept. of State to increase messaging about the importance of open consensus international standards

Key Take-Aways



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