

Federal Register Notice: 89 FR 12871, <https://www.federalregister.gov/documents/2024/02/20/2024-03400/request-for-information-on-the-national-spectrum-research-and-development-plan>, February 20, 2023.

Request for Information on the National Spectrum Research and Development Plan

ACT | The App Association

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March 21, 2024

Submitted via SpectrumRnDplanRFI@nitrd.gov

NITRD National Coordination Office
National Science Foundation
2415 Eisenhower Avenue
Alexandria, Virginia 22314

RE: Comments of ACT | The App Association to the National Science Foundation's Networking and Information Technology Research and Development (NITRD) National Coordination Office (NCO), Notice Request for Information on the National Spectrum Research and Development Plan (89 FR 12871)

ACT | The App Association appreciates the opportunity to provide comments to the National Science Foundation's (NSF) Networking and Information Technology Research and Development National Coordination Office in response to its request for information on the National Spectrum Research and Development Plan.¹ The Plan is a critical vehicle to addressing the needs of spectrum-reliant services and missions, including fixed and mobile wireless broadband service, next-generation satellite communications, and more.

The App Association is a global trade association for small and medium-sized technology companies. Our members are entrepreneurs, innovators, and independent developers within the global app ecosystem that engage with verticals across every industry, powering an ecosystem the App Association represents approximately \$1.8 trillion and is responsible for 6.1 million American jobs, while serving as a key driver of the \$8 trillion internet of things (IoT) revolution.²

The App Association supports coordinated federal spectrum policy changes to enable next generation innovations in America. App Association economic analysis shows that deployment of 5G wireless networks will create 8.5 million jobs in the United States over the coming years, enabling improvements in economic productivity, employment, and consumer value.³ 5G will affect the labor market through direct and indirect means;

¹ 89 FR 12871.

² ACT | The App Association, State of the App Economy (2022), <https://actonline.org/wp-content/uploads/APP-Economy-Report-FINAL.pdf>.

³ James Prieger, "An Economic Analysis of 5G Wireless Deployment: Impact on U.S. and Local Economies" (Feb. 2020), *available at*

while the additional labor required to build out the network to deploy 5G will certainly create the most immediate demand for new jobs, the broadest impact on the labor market comes from new employment opportunities through the way access to 5G will enable new applications, services, ways of doing business, and general growth of businesses. Workers enabled by this will earn more than \$560 billion during that time, create \$1.7 trillion in additional output, and add over \$900 billion to U.S. gross domestic product (GDP).⁴

The App Association continues to support coordinated federal efforts to bring broadband to Americans by finding new and innovative ways to open more spectrum for both licensed and unlicensed uses, as well as supporting infrastructure deployment. The small business tech developer community we represent is committed to advancing an equitable digital ecosystem that provides the opportunities for entrepreneurship for, and enhanced access to, America's underserved communities. The App Association therefore supports NSF's efforts to develop a National Spectrum Research and Development Plan that will improve spectrum access and advance American innovation, connectivity, and competition by creating high-paying and highly skilled jobs and producing improvements to the overall quality of life.

We urge NSF's National Spectrum Research and Development Plan to align with the following:

- **Focus on Spectrum Sharing with Government Bands, Prioritizing Mid-Band and Millimeter Wave:** The prospect of countless connected devices entering our communications networks through nodes in homes, workplaces, or other last-mile connectivity endpoints will dramatically increase data flows across communications networks. The Plan should prioritize identification of new opportunities for reallocation and/or new sharing arrangements across spectrum bands, including for government-owned spectrum bands that may be ideal for commercial IoT use, particularly mid-band and millimeter wave bands. The Plan should contribute to the spectrum pipeline through a modernized process for evaluation of the most efficient uses of spectrum bands in which federal users operate, as well as in supporting a procedure for repurposement that will free up new spectrum across low, mid, and high bands consistent with sound interference protection principles. Furthermore, the Plan should embrace new artificial intelligence software-driven solutions to dynamic spectrum sharing solutions.
- **Addressing Unserved and Underserved American Communities:** The App Association urges NSF to advance diverse spectrum access opportunities including widespread, intensive, and low-cost access to spectrum-based services

<https://ecfsapi.fcc.gov/file/10417521421416/ACT%20Ex%20Parte%20Notice%20re%205G%20Economic%20Analysis%202020.pdf>.

⁴ *Id.*

that will expand availability and accessibility in unserved and underserved communities. Given the integral role of small tech firms in advancing equity and diversity in digital communication services and products, NSF's plan should prioritize helping consumers and entrepreneurs adversely affected by persistent poverty or inequality, to access, leverage, and benefit from the wide range of opportunities made possible by advanced connectivity capabilities. Many App Association members are located in, and support, underserved communities across the country. The future of the app economy will depend on the strength and density of next generation networks, which are supported by myriad spectrum bands and different types of infrastructure, including small cell deployment, that seamlessly work together.

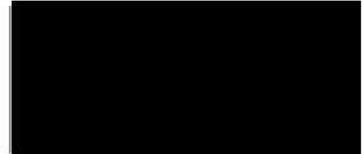
- **Building on Open Standardization Innovations:** We urge NSF to ensure the Plan maximizes the benefits of competition in next generation wireless capabilities by welcoming new entrants. For example, the strategy should prioritize leveraging the efforts of the O-RAN Alliance, which has developed an architecture for building the virtualized radio access network (RAN) on open hardware and cloud with embedded AI-powered radio control.⁵ O-RAN, and open standardization processes like it, which stand to revolutionize America's communications networks by enabling network virtualization capabilities and removing vulnerabilities in the networks.⁶

⁵ <https://www.o-ran.org/>.

⁶ See., e.g., <https://www.fcc.gov/news-events/events/forum-5g-virtual-radio-access-networks>.

The App Association appreciates the opportunity to provide its recommendations on the Plan and is committed to collaborating with NSF to expand broadband internet access and adoption in America, expand the use of spectrum by all users, and ensure that the internet remains an engine for continued innovation and economic growth.

Sincerely,



Brian Scarpelli
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