

SPECTRUM INNOVATION INITIATIVE (SII)

Spectrum Innovation Initiative Funding ¹		
(Dollars in Millions)		
FY 2024		
Current	FY 2025	FY 2026
Plan	(TBD)	Request
\$15.30		\$3.00

¹ Funding displayed may have overlap with other topics and programs.

SII drives cutting-edge research and development that will prepare the next generation of American talent to maintain U.S. leadership in this critical economic sector. SII builds upon NSF's long history of funding groundbreaking spectrum-related advancements by making spectrum science investments in cross-cutting, multidisciplinary, and translational areas. SII is designed to "fill the gaps" in driving more efficient, intelligent, and dynamic use of the limited spectrum resource that is essential to a wide range of critical sectors, from national security to billion-dollar industries. SII leverages formal partnerships with regulatory agencies and center-scale efforts on transformational issues and technologies, including artificial intelligence/machine learning (AI/ML)-native next-generation mobile devices and networks, edge AI, distributed learning, and integrated sensing and communication. SII has served as an important means to bring together government, academic, and commercial stakeholders toward developing mutually beneficial solutions on multiple spectrum coexistence issues.

In FY 2026, SII will continue to evaluate national priorities and direct programmatic efforts toward the highest-impact activities. SII will enable use of the electromagnetic spectrum for science purposes, including passive/receive-only uses of the spectrum such as weather forecasting, space weather monitoring, and observations used for maintenance of the Celestial Reference Frame underpinning high-precision GPS. SII will continue to strengthen academic spectrum innovation and education with a focus on AI-driven spectrum management. Further integration of AI will enable dynamic sharing and access of limited spectrum, resolve interference problems automatically, and drive other use-inspired technological innovations in response to national challenges. SII will also further other aspects of fundamental research in spectrum science and engineering.