

117TH CONGRESS
1ST SESSION

S. _____

To establish an open network architecture testbed at the Institute for Telecommunication Sciences of the National Telecommunications and Information Administration to develop and demonstrate network architectures and applications, and for other purposes.

IN THE SENATE OF THE UNITED STATES

Mr. WICKER (for himself and Mr. HICKENLOOPER) introduced the following bill; which was read twice and referred to the Committee on

A BILL

To establish an open network architecture testbed at the Institute for Telecommunication Sciences of the National Telecommunications and Information Administration to develop and demonstrate network architectures and applications, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Telecommunications
5 Supply Chain Diversity Promotion Act”.

6 **SEC. 2. OPEN NETWORK ARCHITECTURE.**

7 (a) OPEN NETWORK ARCHITECTURE TESTBED.—

1 (1) DEFINITIONS.—In this subsection—

2 (A) the term “Applied Research Open-
3 RAN testbed” means the testbed established
4 under paragraph (2);

5 (B) the term “Assistant Secretary” means
6 the Assistant Secretary of Commerce for Com-
7 munications and Information; and

8 (C) the term “NTIA” means the National
9 Telecommunications and Information Adminis-
10 tration.

11 (2) ESTABLISHMENT.—The Assistant Secretary
12 shall establish an applied research open network ar-
13 chitecture testbed at the Institute for Telecommuni-
14 cation Sciences of the NTIA to develop and dem-
15 onstrate network architectures and applications,
16 equipment integration and interoperability at scale,
17 including—

18 (A) Open Radio Access Network (com-
19 monly known as “Open-RAN”) technology;

20 (B) Virtualized Radio Access Network
21 (commonly known as “vRAN”) technology; and

22 (C) cloud native technologies that replicate
23 telecommunications hardware as software-based
24 virtual network elements and functions.

1 (3) FOCUS; CONSIDERATIONS.—In establishing
2 the Applied Research Open-RAN testbed pursuant
3 to this section, the Assistant Secretary shall ensure
4 that such testbed evaluates issues related to deploy-
5 ment and operation of open network architectures in
6 rural areas.

7 (4) COOPERATIVE RESEARCH AND DEVELOP-
8 MENT AGREEMENTS.—The Assistant Secretary shall
9 enter into cooperative research and development
10 agreements as appropriate to obtain equipment, de-
11 vices, and expertise for the Applied Research Open-
12 RAN testbed, in accordance with section 12 of the
13 Stevenson-Wydler Technology Innovation Act of
14 1980 (15 U.S.C. 3710a).

15 (5) PRIVATE SECTOR CONTRIBUTIONS.—The
16 Assistant Secretary may accept private contributions
17 to the Applied Research Open-RAN testbed in the
18 form of network equipment or devices for testing
19 purposes.

20 (6) PARTNERSHIP WITH GOVERNMENT ENTI-
21 TIES.—

22 (A) ESTABLISHMENT.—In establishing the
23 Applied Research Open-RAN testbed, the As-
24 sistant Secretary shall—

1 (i) consult with the Federal Commu-
2 nications Commission, including with re-
3 spect to ongoing work by the Commission
4 to develop other testbeds, including private
5 sector testbeds, related to Open-RAN tech-
6 nologies; and

7 (ii) ensure that the work on the
8 testbed is coordinated with the responsibil-
9 ities of the Assistant Secretary under any
10 relevant memorandum of understanding
11 with the Federal Communications Commis-
12 sion and the National Science Foundation
13 related to spectrum.

14 (B) OPERATIONS.—In operating the Ap-
15 plied Research Open-RAN testbed, the Assist-
16 ant Secretary shall, in consultation with the
17 Federal Communications Commission, partner
18 with—

19 (i) the First Responder Network Au-
20 thority of the NTIA (also known as
21 “FirstNet”) and the Public Safety Com-
22 munications Research Division of the Na-
23 tional Institute of Standards and Tech-
24 nology to examine use cases and applica-

1 tions for Open-RAN technologies in a pub-
2 lic safety network;

3 (ii) other Federal agencies, as appro-
4 priate to examine use cases and applica-
5 tions for Open-RAN technologies in other
6 areas of interest to such agencies; and

7 (iii) international partners, as appro-
8 priate.

9 (7) STAKEHOLDER INPUT.—The Assistant Sec-
10 retary shall seek input from stakeholders regarding
11 the establishment and operation of the Applied Re-
12 search Open-RAN testbed.

13 (8) IMPLEMENTATION DEADLINE.—Not later
14 than 180 days after the date of enactment of this
15 Act, the Assistant Secretary shall—

16 (A) define metrics and parameters for the
17 Applied Research Open-RAN testbed, including
18 functionality, project configuration and capac-
19 ity, performance, security requirements, and
20 quality assurance;

21 (B) adopt any rules as necessary, in con-
22 sultation with the Federal Communications
23 Commission; and

1 (C) begin the development of the Applied
2 Research Open-RAN testbed, including seeking
3 stakeholder input as required by paragraph (7).

4 (9) REPORT.—Not later than 1 year after the
5 date of enactment of this Act, the Assistant Sec-
6 retary shall submit to the Committee on Commerce,
7 Science and Transportation of the Senate and the
8 Committee on Energy and Commerce of the House
9 of Representatives a report on the findings of the
10 testbed and any recommendations for additional leg-
11 islative or regulatory actions relating to the work of
12 the testbed.

13 (10) AUTHORIZATION OF APPROPRIATIONS.—

14 (A) IN GENERAL.—There are authorized to
15 be appropriated for the administration of the
16 Applied Research Open-RAN testbed
17 \$20,000,000 for fiscal year 2022, to remain
18 available until expended.

19 (B) RULE OF CONSTRUCTION.—Nothing in
20 paragraph (6) shall be construed to obligate
21 FirstNet or any other Federal entity to pay for
22 the cost of the Applied Research Open-RAN
23 testbed created under this section in the ab-
24 sence of the appropriation of amounts under
25 this paragraph.

1 (III) the International Tele-
2 communications Union (commonly
3 known as “ITU”);

4 (IV) the Institute for Electrical
5 and Electronics Engineers (commonly
6 known as “IEEE”);

7 (V) the World
8 Radiocommunications Conferences
9 (commonly known as the “WRC”) of
10 the ITU;

11 (VI) the Internet Engineering
12 Task Force (commonly known as the
13 “IETF”);

14 (VII) the International Organiza-
15 tion for Standardization (commonly
16 known as the “ISO”) and the Inter-
17 national Electrotechnical Commission
18 (commonly known as the “IEC”);

19 (VIII) the O-RAN Alliance;

20 (IX) the Telecommunications In-
21 dustry Association (commonly known
22 as “TIA”); and

23 (X) any other standards-setting
24 body identified under paragraph (4);

1 (C) the term “Secretary” means the Sec-
2 retary of Commerce; and

3 (D) the term “standards-setting body”
4 means an international body that develops the
5 standards for open network architecture tech-
6 nologies.

7 (2) GRANT PROGRAM.—

8 (A) IN GENERAL.—The Secretary, in col-
9 laboration with the Assistant Secretary, shall
10 award grants to private sector entities based in
11 the United States to participate in eligible
12 standards-setting bodies.

13 (B) PRIORITIZATION.—The Secretary shall
14 prioritize grants awarded under this section to
15 private sector entities that would not otherwise
16 be able to participate in eligible standards-set-
17 ting bodies without the grant.

18 (3) GRANT CRITERIA.—Not later than 180 days
19 after the date on which amounts are appropriated
20 under paragraph (5), the Secretary, in collaboration
21 with the Assistant Secretary, shall establish criteria
22 for the grants awarded under paragraph (2).

23 (4) CONSULTATION WITH FEDERAL COMMU-
24 NICATIONS COMMISSION.—The Secretary shall con-

1 sult with the Federal Communications Commission
2 in—

3 (A) determining criteria for the grants
4 awarded under paragraph (2); and

5 (B) determining which standards-setting
6 bodies, if any, in addition to the standards-set-
7 ting bodies listed in paragraph (1)(B)(ii) are el-
8 igible standards-setting bodies.

9 (5) AUTHORIZATION OF APPROPRIATIONS.—

10 (A) IN GENERAL.—There are authorized to
11 be appropriated for grants under paragraph (2)
12 \$30,000,000 in total for fiscal years 2022
13 through 2025, to remain available until ex-
14 pended.

15 (B) ADMINISTRATIVE COSTS.—The Sec-
16 retary may use not more than 2 percent of any
17 funds appropriated under this paragraph for
18 the administration of the grant program estab-
19 lished under this subsection.