

Wicker-1



AMENDMENT NO. \_\_\_\_\_

Calendar No. \_\_\_\_\_

Purpose: 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—117th Cong., 1st Sess.

**S. 1260**

To establish a new Directorate for Technology and Innovation in the National Science Foundation, to establish a regional technology hub program, to require a strategy and report on economic security, science, research, innovation, manufacturing, and job creation, to establish a critical supply chain resiliency program, and for other purposes.

Referred to the Committee on \_\_\_\_\_ and  
ordered to be printed

Ordered to lie on the table and to be printed

AMENDMENT intended to be proposed by Mr. WICKER

Viz:

- 1 At the appropriate place, insert the following:
- 2 **SEC. \_\_\_\_ . OPEN NETWORK ARCHITECTURE.**
- 3 (a) **OPEN NETWORK ARCHITECTURE TESTBED.—**
- 4 (1) **DEFINITIONS.—**In this subsection—
- 5 (A) the term “Applied Research Open-
- 6 RAN testbed” means the testbed established
- 7 under paragraph (2);

1 (B) the term “Assistant Secretary” means  
2 the Assistant Secretary of Commerce for Com-  
3 munications and Information; and

4 (C) the term “NTIA” means the National  
5 Telecommunications and Information Adminis-  
6 tration.

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

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

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

18 (C) cloud native technologies that replicate  
19 telecommunications hardware as software-based  
20 virtual network elements and functions.

21 (3) FOCUS; CONSIDERATIONS.—In establishing  
22 the Applied Research Open-RAN testbed pursuant  
23 to this section, the Assistant Secretary shall ensure  
24 that such testbed evaluates issues related to deploy-

1       ment and operation of open network architectures in  
2       rural areas.

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

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

16          (6) PARTNERSHIP WITH GOVERNMENT ENTI-  
17      TIES.—

18           (A) ESTABLISHMENT.—In establishing the  
19      Applied Research Open-RAN testbed, the As-  
20      sistant Secretary shall—

21           (i) consult with the Federal Commu-  
22           nications Commission, including with re-  
23           spect to ongoing work by the Commission  
24           to develop other testbeds, including private

1 sector testbeds, related to Open-RAN tech-  
2 nologies; and

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

10 (B) OPERATIONS.—In operating the Ap-  
11 plied Research Open-RAN testbed, the Assist-  
12 ant Secretary shall, in consultation with the  
13 Federal Communications Commission, partner  
14 with—

15 (i) the First Responder Network Au-  
16 thority of the NTIA (also known as  
17 “FirstNet”) and the Public Safety Com-  
18 munications Research Division of the Na-  
19 tional Institute of Standards and Tech-  
20 nology to examine use cases and applica-  
21 tions for Open-RAN technologies in a pub-  
22 lic safety network;

23 (ii) other Federal agencies, as appro-  
24 priate to examine use cases and applica-

1                   tions for Open-RAN technologies in other  
2                   areas of interest to such agencies; and

3                   (iii) international partners, as appro-  
4                   priate.

5                   (7) **STAKEHOLDER INPUT.**—The Assistant Sec-  
6                   retary shall seek input from stakeholders regarding  
7                   the establishment and operation of the Applied Re-  
8                   search Open-RAN testbed.

9                   (8) **IMPLEMENTATION DEADLINE.**—Not later  
10                  than 180 days after the date of enactment of this  
11                  Act, the Assistant Secretary shall—

12                  (A) define metrics and parameters for the  
13                  Applied Research Open-RAN testbed, including  
14                  functionality, project configuration and capac-  
15                  ity, performance, security requirements, and  
16                  quality assurance;

17                  (B) adopt any rules as necessary, in con-  
18                  sultation with the Federal Communications  
19                  Commission; and

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

23                  (9) **REPORT.**—Not later than 1 year after the  
24                  date of enactment of this Act, the Assistant Sec-  
25                  retary shall submit to the Committee on Commerce,

1 Science and Transportation of the Senate and the  
2 Committee on Energy and Commerce of the House  
3 of Representatives a report on the findings of the  
4 testbed and any recommendations for additional leg-  
5 islative or regulatory actions relating to the work of  
6 the testbed.

7 (10) AUTHORIZATION OF APPROPRIATIONS.—

8 (A) IN GENERAL.—There are authorized to  
9 be appropriated for the administration of the  
10 Applied Research Open-RAN testbed  
11 \$20,000,000 for fiscal year 2022, to remain  
12 available until expended.

13 (B) RULE OF CONSTRUCTION.—Nothing in  
14 paragraph (6) shall be construed to obligate  
15 FirstNet or any other Federal entity to pay for  
16 the cost of the Applied Research Open-RAN  
17 testbed created under this section in the ab-  
18 sence of the appropriation of amounts under  
19 this paragraph.

20 (C) AUTHORIZATION FOR VOLUNTARY SUP-  
21 PORT.—A Federal entity, including FirstNet,  
22 may voluntarily enter into an agreement with  
23 NTIA to provide monetary or nonmonetary sup-  
24 port for the Applied Research Open-RAN  
25 testbed.

1 (b) PARTICIPATION IN STANDARDS-SETTING BOD-  
2 IES.—

3 (1) DEFINITIONS.—In this section—

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

7 (B) the term “eligible standards *-setting*  
8 body”—

9 (i) means a standards-setting body,  
10 participation in which may be funded by a  
11 grant awarded under paragraph (2), as de-  
12 termined by the Assistant Secretary; and

13 (ii) includes—

14 (I) the 3rd Generation Partner-  
15 ship Project (commonly known as  
16 “3GPP”);

17 (II) the Alliance for Tele-  
18 communications Industry Solutions  
19 (commonly known as “ATIS”);

20 (III) the International Tele-  
21 communications Union (commonly  
22 known as “ITU”);

23 (IV) the Institute for Electrical  
24 and Electronics Engineers (commonly  
25 known as “IEEE”);

1 (V) the World  
2 Radiocommunications Conferences  
3 (commonly known as the “WRC”) of  
4 the ITU;

5 (VI) the Internet Engineering  
6 Task Force (commonly known as the  
7 “IETF”);

8 (VII) the International Organiza-  
9 tion for Standardization (commonly  
10 known as the “ISO”) and the Inter-  
11 national Electrotechnical Commission  
12 (commonly known as the “IEC”);

13 (VIII) the O-RAN Alliance;

14 (IX) the Telecommunications In-  
15 dustry Association (commonly known  
16 as “TIA”); and

17 (X) any other standards-setting  
18 body identified under paragraph (4);

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

21 (D) the term “standards-setting body”  
22 means an international body that develops the  
23 standards for open network architecture tech-  
24 nologies.

25 (2) GRANT PROGRAM.—



1 (A) IN GENERAL.—The Secretary, in col-  
2 laboration with the Assistant Secretary, shall  
3 award grants to private sector entities based in  
4 the United States to participate in eligible  
5 standards-setting bodies.

6 (B) PRIORITIZATION.—The Secretary shall  
7 prioritize grants awarded under this section to  
8 private sector entities that would not otherwise  
9 be able to participate in eligible standards-set-  
10 ting bodies without the grant.

11 (3) GRANT CRITERIA.—Not later than 180 days  
12 after the date on which amounts are appropriated  
13 under paragraph (5), the Secretary, in collaboration  
14 with the Assistant Secretary, shall establish criteria  
15 for the grants awarded under paragraph (2).

16 (4) CONSULTATION WITH FEDERAL COMMU-  
17 NICATIONS COMMISSION.—The Secretary shall con-  
18 sult with the Federal Communications Commission  
19 in—

20 (A) determining criteria for the grants  
21 awarded under paragraph (2); and

22 (B) determining which standards-setting  
23 bodies, if any, in addition to the standards-set-  
24 ting bodies listed in paragraph (1)(C)(ii) are el-  
25 igible standards-setting bodies.

## 1 (5) AUTHORIZATION OF APPROPRIATIONS.—

2 (A) IN GENERAL.—There are authorized to  
3 be appropriated for grants under paragraph (2)  
4 \$30,000,000 in total for fiscal years 2022  
5 through 2025, to remain available until ex-  
6 pended.

7 (B) ADMINISTRATIVE COSTS.—The Sec-  
8 retary may use not more than 2 percent of any  
9 funds appropriated under this paragraph for  
10 the administration of the grant program estab-  
11 lished under this subsection.