

EarthScope Consortium Inc

Request for Quotation

for

Telecommunication Services to Global Geophysical Stations

June 12, 2023

RFQ
for
Telecommunication Services to Global Geophysical Stations

Table of Contents

I.	Background.....	1
A.	Information about EarthScope	1
II.	Description of Need (Product or Services Desired).....	1
III.	Tasks and Deliverables	2
A.	Service Technical Requirements.....	2
B.	Service Technical Preferences	3
C.	Other Criteria	3
D.	Hardware, Software and Management Deliverables	3
E.	EarthScope Responsibilities.....	4
IV.	Contract Conditions	4
A.	Bid Evaluation Criteria	4
B.	References	5
C.	Transmittal Information	5
D.	Rights of Retention	5
E.	Clarification of RFQ	5
F.	Cost of Proposal.....	6
G.	Confidentiality	6
H.	Submission.....	6
I.	Other	6
V.	Vendor Selection.....	6
VI.	Preliminary Schedule.....	7
	Appendix A: Service Locations by Country.....	8
	Appendix B: Contract Example.....	9

Request for Quotations for Telecommunication Services to Global Geophysical Stations

I. Background

A. Information about EarthScope

The EarthScope Consortium Inc (EarthScope) is a consortium of U.S. educational and not-for-profit organizations dedicated to exploring the Earth's surface and interior through the collection and distribution of a variety of geophysical data.

EarthScope programs contribute to scholarly research, education, earthquake hazard mitigation, geodetic measurements, earthquake early warning, and the verification of the Comprehensive Test Ban Treaty, in addition to the long-term stewardship of collected data.

Support for EarthScope comes from the National Science Foundation (NSF), other federal agencies, universities, and private foundations.

EarthScope operates a portion of the US National Science Foundation funded Global Seismographic Network (GSN). This portion of the network comprises 42 seismic monitoring stations in 29 countries. These stations are mostly in remote locations. EarthScope provides the seismic data real-time 24/7/365 to tsunami warning centers, the Comprehensive Test Ban Treaty Organization (CTBTO) of the United Nations and the EarthScope cloud-based Data Services infrastructure. Additional GSN stations operated by the United State Geological Survey (USGS) and other stations operated by EarthScope may also be considered for such services. All GSN data is freely/publicly accessible to anyone.

EarthScope is a 501 (c) (3) nonprofit organization incorporated in the state of Delaware with offices in Washington DC and Boulder CO.

II. Description of Need (Product or Services Desired)

EarthScope is looking to obtain IP-based streaming telecommunication service for geophysical and state of health data for 37 remote locations (see *Appendix A* for the Lat/Lon and country of each location). EarthScope prefers that the service solution proposed be the same for all locations in so far as possible. EarthScope does understand that this may not be possible, and therefore will accept proposals for different solutions at a minority of locations. *Regardless of solution technology, having a single*

operations/management interface that provides access to the current link status and traffic statistics for all locations is desired.

The locations requiring service vary greatly, from equatorial coral atolls to near-polar/arctic and middle eastern desert locations. Due to the challenges of supporting such far-ranging locations, it is expected that deployment will occur at approximately 5 locations per calendar quarter over a period of 24-30 months. Pricing must take into account this measured implementation approach.

While 37 locations are listed in Appendix A, due to external factors, such as regulatory constraints or prohibitions, EarthScope may limit service provided under this contract to fewer than 37 locations.

III. Tasks and Deliverables

A. Service Technical Requirements

- **Highly reliable streaming IP service**
Must be available 24/7/365 (within SLA guarantees). Data streams are both long running TCP connections and UDP traffic. There will be connections to and from multiple network devices at the remote locations. Traffic and connections may originate from both EarthScope data center or the remote locations.
- **Bandwidth**
 - UP (Mobile Originated) bandwidth minimum of 256 kbps
 - Down (Mobile Terminated) bandwidth minimum of 128 kbpsIn typical operation, traffic will stream at rates of about 100kbps up with 10 kbps down and continuous real-time streaming performance is a goal. The system will automatically buffer and forward latent data, utilizing higher bandwidth.
- **Data Volume:** minimum of three (3) GB per month of data from each location
- **Latency:** <1500ms to EarthScope cloud and/or data center network boundary.
- **Power:** Hardware powered by nominal 12 Volts DC (48vDC is an option)
- **Networking & Cyber Security:**
All traffic is on a closed/private network until it reaches EarthScope infrastructure. Alternatively, locations can use a public routable IP address space that is protected by the Vendor from external and undesirable network traffic. The security architecture shall be based on a AAA model (Authentication, Access, and Accounting) using industry standards.

- **WiFi:** If WiFi service is possible with the hardware proposed for each location, it must be possible to disabled and enabled remotely or by an on-site technician.

B. Service Technical Preferences

- **Power**
 - Equipment has low power requirements: prefer < 10 watts.
 - Please describe expected power when streaming 100kbps in steady state operation
 - Hardware can be powered by DC (12 – 48 volts)
- **Latency:** <1500ms to EarthScope cloud and/or data center network boundary.
- **Networking:** Remote locations will be able to see the public internet.

C. Other Criteria

- Minimizing power consumption is important. Power is constrained at most locations.
- All equipment must be customer installable (modest training / certification of EarthScope field engineers, if necessary, is acceptable). Any training costs should be included in the vendor quotation.
- Vendor will provide technical support point of contact that is available 24/7.
- Vendor shall have a response time to system anomalies causing data transport interruptions of no more than four hours after the anomaly is discovered or reported.
- EarthScope will establish the order in which locations have equipment installed and service activated in consultation with vendor.

D. Hardware, Software and Management Deliverables

- Vendor will provide satellite communications service meeting, at minimum, the Service Technical Requirements, as stated in item A above.
- Vendor will provide all necessary hardware and service activation at the minimum rate of 5 locations per calendar quarter with initial deployments possibly at a lower rate beginning no later than Oct 1, 2023, or the contract effective date, whichever is later.
- Contract terms will specify minimum duration of service contract, and terminations requirements (if any) following the minimum duration as well as any provision to suspend the service within the contract period.
- Vendor will provide hardware support for all vendor supplied hardware.
- Vendor will ship required hardware (as well as SIM cards, if appropriate) to a US location specified by EarthScope. For locations

where regulatory constraints require in-country delivery, EarthScope will provide appropriate destination and local contact info. For locations where regulatory requirements demand hardware be acquired and or shipped to the final destination, that is acceptable.

- Access (24/7) to operations console/management platform for a small number of EarthScope personnel.
- Vendor will provide in writing to EarthScope:
 - summary statement outlining the Vendor's cyber security practices and protocols.
 - SLA and technical support guarantees

E. EarthScope Responsibilities

- For any hardware that EarthScope accepts delivery of in the US, EarthScope will be responsible for the cost of shipping to the final deployment location.
- Costs of physical installation of the equipment will be EarthScope responsibility.
- Vendor is not responsible for hardware or configuration of each location's internal LAN.

IV. Contract Conditions

This Contract will be issued as a Fixed Price Contract. Funding for this activity is provided to EarthScope through a Cooperative Agreement from the National Science Foundation. Contractor(s) must comply with all applicable federal, state, local laws and regulations and all applicable orders and regulations of the executive and other departments, agencies, and instrumentalities of the United States as stipulated in the Sample Contract (*Appendix B*).

Invoicing for Services will occur at monthly intervals and will clearly itemize the costs per station.

EarthScope expects to commit to an initial 12-month service contract and intends, but does not guarantee, that such contracts will be renewed for multiple years.

Vendor will be able to provide hardware and service for first deployments within **45** days of contract acceptance and receipt of purchase order.

A. Bid Evaluation Criteria

Bids will be evaluated on the basis of both the written proposal and any written responses to questions EarthScope may receive. However, EarthScope may use information other than that provided by the Respondent in its evaluation.

The following criteria (not listed in order of priority) will be used to determine the prevailing bid:

- Sophistication and ease of use of a web-based service management platform
- Initial capital costs and ongoing annual service cost
- Ability to integrate with EarthScope cloud (AWS) infrastructure
- SLA and technical support response time guarantees
- Standards based cybersecurity capabilities.
- Customer support capabilities
- Power requirements of station hardware
- Ease of installation of the deployed antenna.
- Reputation and responsiveness of the vendor
- Ability to cover the highest number of locations with the same service technology and management platform
- Time required between issuance of contract and first implementation activities

Respondents must be sure to address all criteria specified in this RFQ.

B. References

Quotations must include two (2) client references. The minimum information that must be provided about each reference is:

- Name of individual or company
- Address of individual or company
- Name and phone number of contact person
- Type of services or materials provided to reference and date provided

C. Transmittal Information

The bid should include a cover page with the following information:

- Name, mailing address, telephone # and email address of the responding organization
- Name, Title and Contact Information of the responding organization,

D. Rights of Retention

Following submission of bids and final evaluation, EarthScope will have the right to retain the quotations, maintaining them in confidence. All documents submitted in response to this RFQ shall become the property of EarthScope.

E. Clarification of RFQ

Any questions, requests for clarification or requests for data in connection with this RFQ

shall be made no later than **June 22**, at **5:00PM** EST via email to:

sponsoredprojects@earthscope.org

Questions and all responses will be publicly posted at EarthScope Procurements.

F. Cost of Proposal

EarthScope will not reimburse the Respondent for their cost of preparation and submission of a bid.

G. Confidentiality

The recipient of this Request for Quotation acknowledges that this RFQ, including without limitation any addenda to this RFQ, or oral information about this RFQ, are EarthScope' proprietary and confidential property (hereinafter "Proprietary and Confidential Information"). News or other information releases pertaining to this RFQ shall not be made without prior written approval from EarthScope.

H. Submission

The submission deadline is **5:00PM EST July 7**. Submit one electronic copy to:

sponsoredprojects@earthscope.org

The bid must be received by the submission deadline to be considered for this contract.

I. Other

By submitting a bid, Respondent agrees to all applicable provisions, terms and conditions associated with this Request for Quotation.

V. Vendor Selection

EarthScope reserves the right to issue a contract based solely on the information provided, to reject any or all bids, to accept any bids, or to affect any combination of bids. EarthScope reserves the right to conduct discussion or request bid revisions, if deemed necessary.

The vendor selected for the contract will be chosen on the basis of EarthScope evaluation and determination of which vendor will provide the greatest benefit to EarthScope, not necessarily on the basis of lowest price. EarthScope has no obligation to reveal how bids were assessed. Therefore, bids should contain your best terms within the proposed functional and technical approach.

EarthScope reserves the right to reject any or all bids that are deemed to be non-responsive, late in submission or unsatisfactory in any way. EarthScope shall have no

obligation to award a contract for work, goods and/or services as a result of this RFQ.

Contracts will be contingent upon the availability of funds and EarthScope will solely be responsible for determining which, if any, bids will be awarded a contract.

VI. Preliminary Schedule

The following schedule may be changed or modified by EarthScope:

- | | |
|---|---------------|
| 1. RFQ issued: | June 12, 2023 |
| 2. Respondents' requests for clarification of RFQ due: | June 22, 2023 |
| 3. EarthScope response to request for clarification of RFQ due: | June 26, 2023 |
| 4. Bids due: | July 7, 2023 |
| 5. Selection made: | July 15, 2023 |
| 6. Respondents notified of determination: | July 16, 2023 |
| 7. Contract/Purchase Order issued: | Aug 16, 2023 |
| 8. Hardware delivered for initial batch of locations: | Sept 15, 2023 |

Appendix A: Service Locations by Country

High Priority

Medium Priority

Low Priority

Site Code	Country, location	(approximate) LAT	& LONG
COCO	Australia, Cocos (Keeling) Islands	-12.19	96.83
TAU	Australia, Hobart, Tasmania	-42.90	147.32
WRAB	Australia, Tennant Creek	-19.93	134.36
ALE	Canada, Alert, NU	82.50	-62.35
FFC	Canada, Flin Flon, Saskatchewan	54.72	-101.97
SACV	Cape Verde, Santiago Island, Cape Verde	14.97	-23.60
RPN	Chile, Rapanui (Easter Island)	-27.12	-109.33
JTS	Costa Rica, Las Juntas	10.29	-84.95
MSVF	Fiji, Monasavu	-17.74	178.05
BFO	Germany, Black Forest	8.33	8.32
BORG	Iceland, Borgarfjordur, Asbjarnarstadir	4.74	-21.32
KAPI	Indonesia, Kappang, Sulawesi	-5.01	119.75
ERM	Japan, Erimo, Hokkaido Island	42.01	143.15
BORK	Kazakhstan, Burabay	53.04	70.31
KURK	Kazakhstan, Kurchatov	50.71	78.62
AAK	Kyrgystan, Ala Archa	2.63	74.49
ABPO	Madagascar, Ambohimpanompo	-19.01	47.22
NIL	Pakistan, Nilore	3.65	73.26
NNA	Peru, Naña	-11.98	-76.84
CMLA	Portugal (Azores), Sao Miguel Island	37.76	-25.52
RAYN	Saudi Arabia, Ar Rayn	23.52	45.50
MSEY	Seychelles	-4.67	55.47
SUR	South Africa, (South African Astronomical Observatory, SAAO)	-32.37	20.81
PALK	Sri Lanka, Pallekele	7.27	80.70
SHEL	St. Helena, Horse Pasture	-15.95	-5.74
SIMI	Tajikistan, Simiganj	38.65	69.00
UOSS	UAE, Sharjah	24.94	56.20
MBAR	Uganda, Mbarara	-0.60	30.73
EFI	UK (Falkland Islands, British Overseas Territory)	-51.67	-58.06
ESK	UK (Scotland)	55.31	-3.20
HOPE	UK (South Georgia Island, British Overseas Territory)	-54.28	-36.48
ASCN	UK (Ascension Island)	-7.93	-14.36
DGAR	USA (Diego Garcia), Chagos Islands, Indian Ocean (US DoD)	-7.41	72.45
KWJN	USA, Gagan Island, Kwajalein Atoll, Marshall Islands (US DoD)	9.28	167.53
KDAK	USA, Kodiak, Alaska	57.78	-152.58
PFO	USA, Piñon Flats, California	33.61	-116.45
JZAX	Uzbekistan, Jizzakh	40.09	67.71

Appendix B: Example Fixed Price Contract terms

THIS INDEPENDENT CONTRACTOR AGREEMENT (“Agreement”) is entered into as of _____, by and between **EARTHSCOPE, Inc.**, a Delaware Nonprofit Corporation (hereinafter “EARTHSCOPE”) and _____ (hereinafter “Contractor”).

RESPONSIBILITIES.

a. CONTRACTOR AGREES TO:

- 1) _____ as shown in the Statement of Work (“SOW”) as required under this Agreement.
- 2) Disclose any potential Conflict of Interest (“COI”) to EARTHSCOPE prior to executing this Agreement. A COI refers to any potential situation in which financial or other personal considerations may compromise, or have the appearance of compromising, Contractor's professional judgment in advising, consulting, directing, or performing any work under this Agreement on behalf of EARTHSCOPE.
- 3) Provide EARTHSCOPE with a completed W-8BEN form and a completed Contractor Certifications and Representations form. Contractor agrees that Contractor shall not receive any payments under this Agreement until EARTHSCOPE receives these completed forms.
- 4) Abide by EARTHSCOPE’s Code of Conduct as attached to this Agreement (Exhibit B).

b. EARTHSCOPE AGREES TO:

- 1) Provide required assistance and materials, as agreed upon, to Contractor in order to complete the tasks/deliverables on time and in a professional manner, including, but not limited to, access to EARTHSCOPE’s sites, instrumentation, and enclosures required to complete work under this Agreement.
- 2) Provide to Contractor detailed Statements of Work, including sites to visit, work required, and pay rates.
- 3) Provide direct access to EARTHSCOPE personnel and materials as necessary to complete the work as required.
- 4) EARTHSCOPE requires an inspection and approval of submitted invoices. Once an invoice is deemed acceptable, EARTHSCOPE shall pay invoices weekly, and under the payment guidelines set forth in the SOW.

TERMS.

- a. This Agreement becomes binding upon the signature of EARTHSCOPE and Contractor. The work under this Agreement shall be completed in a timely manner. This Agreement shall remain in effect until _____.
- b. For the work performed under this Agreement, EARTHSCOPE shall pay to Contractor a rate specified in each mutually agreed upon Statement of Work. Any invoices exceeding the total amount listed in each Statement of Work will not be paid by EARTHSCOPE unless prior, written authorization has been received from EARTHSCOPE.
- c. This Agreement may be extended or amended upon written request of either EARTHSCOPE or Contractor. Any such amendment or extension must be signed and executed by EARTHSCOPE and Contractor. Either EARTHSCOPE or Contractor may terminate this Agreement with written notice to the other Party.

LIABILITIES.

Contractor shall indemnify and hold harmless EARTHSCOPE and its directors, officers, employees, and authorized representatives from and against all allegations, claims, actions, suits, demands, damages, liabilities, obligations, losses, settlements, judgments, costs, and expenses, including without limitation attorneys' fees and costs, which arise out of, relate to, or result from any negligent act or omission of Contractor under this Agreement.

GENERAL PROVISIONS.

- a. Work under this Agreement, and all associated Statements of Work, will be under the direction of EARTHSCOPE.
- b. In the event any activity undertaken by EARTHSCOPE and Contractor to implement the purposes of this Agreement involves access to and sharing or transfer of technology subject to patents or other intellectual property rights, such access and sharing or transfer will be provided on terms which recognize and are consistent with adequate and effective intellectual property rights protection.
- c. All content created under and for this Agreement shall be the property of EARTHSCOPE. All content shall be submitted to EARTHSCOPE upon completion or termination of this Agreement and shall remain the property of EARTHSCOPE.
- d. This Agreement in no way restricts EARTHSCOPE or Contractor from participating in any activity with other public or private agencies, organizations, or individuals.
- e. Should any clause in this Agreement be held illegal, unenforceable, or otherwise unlawful, the remainder of this Agreement shall still remain in full force and effect.
- f. This Agreement is subject to, and shall be carried out in compliance with, all applicable laws, regulations, and other legal requirements, as well as EARTHSCOPE's Procurement Terms and Conditions as posted at <https://www.EarthScope.org/contact/procurement/T1-FFPSUPPLY.pdf>. In the event that Contractor is found to have violated such laws, resulting in a liability for EARTHSCOPE, including but not limited to defense costs, a settlement, or judgment, Contractor agrees to further indemnify EARTHSCOPE for resulting costs and/or liabilities, and this Agreement may be subject to early termination.

IN WITNESS WHEREOF

This Agreement sets forth the entire Agreement between the Parties hereto and cannot be modified or amended, except in writing duly executed by the respective Parties.

EARTHSCOPE, Inc.

Contractor

Signature

Date

Signature

Date

Rebecca Bendick
Chief Executive Officer

Contractor

EXHIBIT A

Statement of Work

Position Description

Essential Job Functions

- _____.

Working Relationships

Internal

- Reports to _____ of EarthScope Consortium.

Schedule

- _____

Supervision

- _____ will give final acceptance of products.

Fees

- Terms for payment are Net 30.
- Payment shall be made _____.
- Not to exceed \$ _____.

EXHIBIT B
EARTHSCOPE's Code of Conduct:

EARTHSCOPE is committed to providing a safe, productive, and welcoming environment for all participants in EARTHSCOPE sponsored or organized activities. All persons affiliated with or participating in activities are expected to adhere to the highest standards of conduct and to maintain personal and professional integrity outlined in this Code of Conduct. This statement is meant to cover all programming of EARTHSCOPE including meetings and events as well as those sponsored by organizations or entities other than EARTHSCOPE but held in conjunction with EARTHSCOPE events, in public or private facilities. This includes activities such as internship programs, workshops, field trips, and short courses as well as receptions and other informal or formal gatherings associated with EARTHSCOPE. Similarly, participants shall adhere to this code of conduct in online spaces related to the meeting and meeting-associated events, including Facebook, Twitter, and other online venues.

Expected Behavior

- Treat others with respect and consideration, value a diversity of views and opinions.
- Be considerate, inclusive, respectful, and collaborative.
- Be kind to others. Avoid personal attacks.
- Communicate openly with respect for others, critiquing ideas rather than individuals.
- Be mindful of your surroundings and of your fellow participants.
- Respect the rules and policies of meeting venues, hotels, contracted facilities, or any other venue.
- All communication should be appropriate for a professional audience including people of many different backgrounds. Do not insult or put down others.

Unacceptable Behavior

- Harassment, intimidation, or discrimination in any form will not be tolerated.
- Sexist, racist, homophobic, transphobic, or exclusionary jokes are not appropriate.
- Physical or verbal abuse of any participant or guest will not be tolerated.
- Other examples of unacceptable behavior include, but are not limited to, verbal comments related to gender, sexual orientation, disability, physical appearance, body size, race, religion, national origin, inappropriate use of nudity and/or sexual images in public spaces or in presentations, or threatening or stalking any participant or guest.

Consequences

- Any person, vendor, or entity engaged with EARTHSCOPE requested to stop unacceptable behavior is expected to comply immediately.
- Those who violate the standards of professional and respectful conduct may be asked to cease participation in any EARTHSCOPE activity without warning, and may be grounds for termination of agreements.
- EARTHSCOPE reserves the right to prohibit attendance or participation at any future meeting, event, contract, engagement, or activity.

Contractor acknowledges, understands, and agrees to abide by this Code of Conduct while contractually engaged with EARTHSCOPE by initialing below.

Contractor Initials