Sole Source Justification (SSJ)
Commercial Service Acquisition for Requirements Exceeding the Simplified Acquisition Threshold Pursuant to FAR 12.201-1, Including Sole Source Requirements

Date: 4/14/2026 PR Number: FR26RDI2000000003

Pursuant to the requirements under the authority of the test program for commercial items at 41 U.S.C. 1901 or the authority of 41 U.S.C. 1903 Special emergency authority as implemented by Federal Acquisition Regulation (FAR) Subpart 12.201-101 and consistent with the content requirements of FAR 6.303-2.

1. Agency and Contracting Activity. Identification of the agency and the contracting activity, and specific identification of the document as a "sole source justification."

The Federal Railroad Administration (FRA), Office of Acquisition Services, intends to award a sole source contract for the requirement described herein.

2. Nature and/or description of the action being approved.

FRA intends to award a sole-source, Firm-Fixed-Price (FFP) contract to BlueHalo, a part of AeroVironment (AV). Railroad safety research is called out under 49 USC § 20108 (a), 49 CFR § 1.88 (b), and 49 CFR § 1.89 (f). This congressionally mandated effort will develop a Handheld Railcar Wheelset Bearing Defect Detection Tool.

BlueHalo began development of the resonant ultrasound spectroscopy (RUS) for bearing defect detection in a previous phase funded under a 2024 Broad Agency Announcement (BAA); and because of that is the only source readily available for continuation of the development of RUS for railroad use.

3. Description of Supplies/Services. Describe the supplies or services to be acquired. Provide the estimated total value (including options, if any).

The requirement is to develop a handheld railroad vehicle wheelset bearing defect detector to preemptively detect potential catastrophic bearing defects. This work is congressionally mandated due to the nature of derailments caused by these types of defects, especially when trains are hauling poisonous and toxic inhalation hazards and other dangerous lading that put the public in loss of life and property dispositions.

Estimated Total Value: $750,000.00

4. Identification of the authority.

Railroad safety research is called out under 49 USC § 20108 (a), 49 CFR § 1.88 (b), and 49 CFR § 1.89 (f). If applicable, emergency authority under 41 U.S.C. 1903 may also apply.

5. Demonstration that the proposed contractor's unique qualifications or the nature of the acquisition requires use of the authority cited.

Wheel bearing failures cause derailments such as the one in 2023 in East Palestine OH where hazardous materials were released due to breach of the tank car and ensuing fire. When bearings fail, they can seize up and inhibit normal wheel on rail operations. The result is a wheel sliding over the top of the rail or coming off of the rail, derailing the train onto the ties. This project addresses the mandate from Congress to address these freight car wheel bearing failures.

BlueHalo's research and development is developing a new failure detection technique for bearings. It uses a technique called Resonant Ultrasound Spectroscopy (RUS). RUS imparts vibrations into a specimen and measures the natural frequencies of that specimen. If defects are present in the specimen, the frequencies produced are different. This difference is identified and causes and alarm.

Previously, under a 2024 BAA, BlueHalo developed confidence in the approach and can now develop a novel, handheld method to detect bad journal bearings in railroad car wheel bearings early before failure and catastrophic derailment can occur. The device can be employed at the end of manufacturing lines (at the manufacturing or reconditioning facility) and in the field before train departure. Identifying issues BEFORE bearing application or before train departure can eliminate possible catastrophic failures in service. This project directly addresses railroad and public safety. Without this kind of research and development, bearing caused derailments will continue, impacting train operational safety and public safety.
Key factors supporting sole source:

• Previously Developed Technology: This effort will build upon previous BlueHalo research and development.
• Required for Safety Research: Replacing this vendor would delay FRA's congressionally mandated goal of implementing wayside or on-board defect detection devices as soon as possible.

6. Description of efforts made to ensure that offers are solicited from as many potential sources

A notice of intent will be posted on SAM.gov in accordance with FAR 5.301 and 6.305(a), inviting any responsible sources to express interest.

7. Determination by the contracting officer that the anticipated cost to the Government will be fair and reasonable.

The Contracting Officer determines that the anticipated cost will be fair and reasonable based on market research, previous acquisition history on similar requirements at DOT, and a price analysis that the Contracting Officer will conduct on the Contractor's quotation using a combination of the techniques provided under FAR Subpart 15.404-1. The recommended contract type is fixed price, thus eliminating cost risk for FRA. No fee will be offered for this work.

8. Description of market research. (Market Research is required by FAR Part 10 and TAM Part 1210 – Market Research, Appendix A: Market Research Guide). Describe the results of your market research or provide a statement of the reason why market research was not conducted).

The base award was competed through Broad Agency Announcement (BAA) that was posted on January 16, 2024, on SAM.gov in accordance with FAR Part 10 and FRA guidance. The response period closes on January 16, 2024.

Findings include: After thorough analysis, FRA has determined that BlueHalo, as an expert and most qualified vendor for the development of the Health Monitoring of Roller Bearings Using Resonant Ultrasound Spectroscopy(RUS).

9. Any other facts supporting the justification. (You must explain why technical data packages, specifications, statements of work, or purchase descriptions are not suitable for enhancing competition or not available. Discuss why your requirement cannot be modified to increase competition. If you are contending only one source can meet the Government's minimum need, you must document the reason why and describe the extent to which the Government will be harmed if not acquired from that vendor. Address any potential duplication of cost, if applicable.)

- Modifying the requirement to increase competition would result in significant mission delays.
- Procuring an alternate solution would require purchasing development to get to where BlueHalo already is.

10. A listing of the sources, if any that expressed, in writing, an interest in the acquisition.

No other sources have expressed an interest, in writing, in the proposed acquisition.

11. A statement of action, if any, the agency may take to remove or overcome any barriers to competition before any subsequent acquisition of supplies or services required. (Include a statement of action taken or will be taken to increase competition for future acquisitions of the same item/service).

FRA will evaluate the outcome of the development of the Handheld Bearing Defect Detector and consider future requirements. These may include:

- Exploring industry readiness for this automated inspection technology

Technical/Requirements Personnel Certification.
I certify this requirement meets the Government's minimum need and that the supporting data, which forms a basis for this justification, is complete and accurate.

DAVID CHARLES BRABB

Digitally signed by DAVID CHARLES BRABB
Date: 2026.04.16 10:29:16 -06'00'

David C Brabb
Technical Representative/COR >$750,000 to >$75M Date

12. Contracting Officer Certification and/or Approval*

AKWASI KANKAM

Digitally signed by AKWASI KANKAM
Date: 2026.04.16 12:54:00 -04'00'

Akwasi Kankam
Contracting Officer >$250,000 to < $750,000 Date

*Note: In accordance with FAR 12.201-101(a)(2)(i), for contracts exceeding $250,000 but not exceeding $750,000, the ordering activity contracting officer's certification that the justification is accurate and complete to the best of the ordering activity contracting officer's knowledge and belief will serve as approval, unless a higher approval level is established in accordance with agency procedures.