Sole Source Justification Form

Bulletin Reference Number:

Requesting Agency/University: Illinois Department of Transportation - IPI

Sole Source Justification Form - Part I

Section I - General Information

Department/Bureau/Section: Illinois Department of Transportation - IPI

Need Identified Date: Oct 4, 2019 Supply/Service Need By Date: Oct 25, 2019

Project Title: Passenger Rail Improvement Program - Grade Crossing Shunt Enhancer

Vendor: Unipart Rail (Via Westcode in North America)

Provide a description of the supplies or services required: Fit and Install Unipart Rail Shunt Enhancer Product to IDTX Charger Locomotive

Value: Estimated Value of Initial Term, this Change Order or Amendment: 600,000

Will this Sole Source amend a Professional or Artistic Services contract? ☐ Yes ☒ No

*Sole Source may not be used for amendments for Professional or Artistic Services if the amendment would increase the value by more than 5% of the initial award or extend the term by more than 60 days.

Type: New Sole Source

Section II - Proposed Term

☒ One-Time Purchase ☐ Term Contract

Section III - Funding Source

Select the type of funding to be used (Check all that apply): ☐ State Appropriate Funds ☐ Federal Funds ☒ Other (Explain):

The Illinois Commerce Commission has Research & Development Funds available to fund the purchase and testing activities

Section IV - Sole Source Justification

This purchase is economically only available from a single source **primarily** because it is: (If "Other" explain in one sentence)

Items are Copyrighted or Patented and the Items are Only Available from the Holder

Are there secondary justification(s) for this sole source? ☒ Yes ☐ No

Another justification that this purchase is only available from a sole source is because it is:

Railroad Crossing/Facilities Alterations

Another justification that this purchase is only available from a sole source is because it is:

Items are Needed for Trial Use or Testing

Section V - Purchase History

Has the Agency or University Purchased these supplies or services in the past? ☐ Yes ☒ No

Section VI - Business Rationale

Sole Source Justification Form

Bulletin Reference Number	2020-12
Requesting Agency/University	Illinois Department of Transportation - IPI

1. Provide a detailed explanation of the need for the supplies or services:

The location or presence of a train is detected by shorting (also called "shunting") of low-voltage track circuits. The shunt is created when the electrical path between one rail and the other is bridged by one or more wheelsets of a passing train. This happens with both wayside signals and those at a grade crossing. Preliminary data has shown that because of the light weight and smaller number of cars in a train, passenger rail does not reliably shunt the circuit needed to deploy the crossing gates or signals. Problems with reliable grade crossing signal shunting have become more apparent on implementation of Positive Train Control (PTC) on rail lines throughout the US. The shunt enhancer is the only identified product (following a 1.5 year search for suitable products by both Canadian National and the Federal Railroad Administration) that has been demonstrated to enhance shunting of grade crossing signals in applications to Diesel Multiple-Unit cars operating in Australia, Ireland and the United Kingdom. The need to enhance grade crossing signal shunting is a public safety issue, that has the potential to affect passenger rail operations throughout the US. The shunt enhancer must be custom-fitted to the Charger locomotive's truck and the research and development required to accomplish those tasks will also be included in this improvement program. IDOT has taken an active and leading role in addressing this concern and the planned procurement/shunt enhancing test program will put IDOT and the ICC at the forefront of working to resolve this issue.

2. Provide a list and describe in detail the specifications required to satisfy the need:

The Unipart Rail shunt enhancer will include a tuner unit and an antenna installed on the test locomotive. The antenna is unique to each vehicle type (it will be custom-fitted/designed for the Charger locomotive installation). The tuner unit is tuned to match the antenna installation on the locomotive. In addition, a control unit will be fitted to the IDOT-owned Charger locomotive. Nearly 1200 of these shunt enhancers have been installed and are operating since 1997. These products have been found to have a reliability of 99.998%. The shunt enhancer induces a current into the rail to overcome the high resistance between the rail and the wheel in order to reliably enhance the grade crossing signal. Since the Unipart Rail shunt enhancer was specifically developed to deal with poor shunting associated with the lighter diesel multiple-unit vehicles, shorter overall passenger train lengths and for trains operating on corridors with mixed passenger and freight traffic (these are conditions similar to those found on the routes making up the IDOT-supported passenger rail network), it is hoped that the Unipart Rail product will produce similar, positive results in this application. The test program is however, fundamental to determining if the product will be successful or not in the North America.

3. Provide detail explaining the justification selected in Section IV to explain why the requested supplies or services are the only ones available that can satisfy the agency or university requirements?

The Unipart Rail shunt enhancer is a copyrighted/patented design and is the only product on the market that is anticipated to provide the required shunt enhancement. The Canadian National and the Federal Railroad Administration both conducted worldwide product and approach reviews to discover any and all possible products that might provide the enhanced shunting. These efforts extended for more than a year and the Unipart Rail product was the only one that was found that had the required demonstrated successful performance in a railroad environment that could effectively enhance the shunting of the grade crossing signals required for continued, safe operation.

4. What are the unique features of the supplies or services that are not available in any other product or by any other vendor? Provide specific quantifiable factors/qualifications:

The railroad environment requires that products be both robust and when safety issues are involved (as is the case with reliable shunting of grade crossing signals), this makes the requirements on a vendor's product particularly daunting. The extensive product search conducted by both the Canadian National and the Federal Railroad Administration revealed that only the Unipart Rail shunt enhancer product would meet these stringent requirements. Unipart Rail's product also had a demonstrated, successful performance record on passenger rail trains in Australia, Ireland and the United Kingdom. This track record makes all the stakeholders hopeful that the product will produce similar results in the North American rail market, but the only way to establish this is to conduct a rigorous test program on the IDOT-owned passenger rail equipment.

5. Has the Agency or University considered alternative supplies or services to satisfy their need? ☒ Yes ☐ No

Sole Source Justification Form

Bulletin Reference Number	2020-12
Requesting Agency/University	Illinois Department of Transportation - IPI

5a. If yes, name the alternative vendors whose supplies or services were evaluated:

As noted in previous sections of this form, no other products were found suitable for this market/available following a 1.5 year search of possible, suitable products for application in the railroad environment.

5b. If yes, what were the alternatives for each vendor and why were they unacceptable? Be specific with regard to features, characteristics, requirements, capabilities and compatibility:

The railroad environment is a particularly-demanding one and when a safety issue is involved, as is the case with providing reliable shunting of grade crossing signals, the requirements for a product to be both robust and flexible are particularly daunting. The Unipart product was the only one found to meet these demanding requirements.

5c. Explain how the market evaluation was conducted?
**This evaluation is to determine available options within a market. If the evaluation is to determine quality or best suited option, this is not the appropriate source selection. Under no circumstances shall the evaluation consist of testing alternative options. These activities must be conducted in a competitive transparent environment (i.e. IFB or RFP).*

The worldwide market research was conducted by the Canadian National and the Federal Railroad Administration. IDOT and the ICC are in a position to take advantage of this extensive research by others and to move quickly to implement the proposed solution to this potentially significant safety issue.

6. Are there resellers or distributors?

☐ Yes ☐ No ☒ N/A

7. What efforts were made to get the best possible price (i.e. did the agency/university negotiate) and how did you determine the price for this purchase is considered fair and reasonable?

Negotiations have not yet been conducted; this will occur in the next phase of the procurement. However, the reality is that there is no other product available on the worldwide market that has the demonstrated successful performance in the railroad environment and offers the required reliability of grade crossing signal shunt enhancing, so opportunities for negotiating a better price or more-favorable terms are limited. However, North America represents a new market for the Unipart product, so this position may be leveraged in upcoming negotiations.

8. Will this purchase obligate the State to this vendor for future purchases such as maintenance, licensing or continuing need?

☒ Yes ☐ No

8a. If yes, please provide details regarding future obligations and/or needs:

This must be determined - discussions with Unipart Rail (Westcode) as to maintenance or licensing requirements will be discussed in the upcoming negotiations.

9. What will be the financial or other impact to the State if this sole source is not approved and a competitive bid is required?

Significant delay in implementing the proposed product is likely and will result in continued exposure of rail passengers, crews, motorists and pedestrians to potential grade crossing accidents due to poor on non-continuous shunting of grade crossing signals. The potential for continued exposure/accidents is a major concern to IDOT, the ICC and the FRA, as well as Amtrak and host rail carriers.

10. Is there any additional information you would like to add to justify this sole source?

As noted previously, the magnitude of the problem has been brought into greater awareness by the industry due to the implementation of Positive Train Control on the nation's rail lines. The risk of not expediting a solution to the signal problem could lead to a serious rail incident that may jeopardize lives. By implementing this product testing program, IDOT and the ICC will be at the forefront of the industry's efforts to solve this significant operating and safety concern.

Sole Source Justification Form

Bulletin Reference Number	2020-12
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Section VII

Requesting Department Signature Required

I know and understand the contents of this Sole Source Justification and attest that all statements are true and correct and the fairness and reasonableness of the price was adequately confirmed.

Requesting Department Representative	Jennifer Bastian Digitally signed by Jennifer Bastian Date: 2019.10.07 13:12:34 -05'00'	Phone Number	312-793-4803	Date	Oct 4, 2019
Printed Name	Jennifer Bastian	E-mail Address	jennifer.bastian@illinois.gov		

State Agency Bureau/Division Head or University Purchasing Director Approval and Signature Required

I know and understand the contents of this Sole Source Justification and attest that all statements are true and correct and the fairness and reasonableness of the price was adequately confirmed. (All prior form fields will lock once this e-signature is completed)

Agency Bureau/Division Head or University Purchasing Director and Not a Designee	John Oimoen Digitally signed by John Oimoen Date: 2019.10.07 15:34:02 -05'00'	Phone Number	312-793-4222	Date	Oct 7, 2019
Printed Name	John Oimoen	E-mail Address	john.oimoen@illinois.gov		

SPO Approval and Signature Required

☑ I have reviewed and understand the contents of this Sole Source Justification and agree with the State Agency or University determination.

☐ I have reviewed and understand the contents of this Sole Source Justification and do not agree with the State Agency or University determination. As a result, the State Agency or University must explore other sourcing methods to satisfy their need.

State Purchasing Officer Signature	Colleen Caton	Phone Number	217-558-5432	Date	10/7/19
Printed Name	Colleen Caton	E-mail Address	colleen.caton@illinois.gov		