

Invitation for Proposals

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**OVERHEAD LINE DESIGN ISSUES & WIND AND ICE STORM MITIGATION
INTEREST GROUP (WISMIG)**

CEATI PROJECT No. T123700-3387

TRANSMISSION LINE MONITORING PACKAGE FOR EXTREME EVENTS

CEATI International Inc. (CEATI) invites the submission of proposals to perform research work on the following topic:

TITLE

Transmission Line Monitoring Package for Extreme Events

INTRODUCTION

To increase the reliability of the transmission network, it is essential that the condition of and climatic load effects on transmission line components be monitored continuously so that any imminent danger to the proper functioning of any component can be recognized and appropriate action taken to withstand/safeguard against the anticipated situation with minimal damage to the transmission lines.

Transmission utilities are therefore interested in the identification of a cost effective transmission line monitoring package (to monitor conductor icing and galloping, adverse vibrations, excessive temperatures, and wind speeds, etc.). It is also desirable for the monitoring package to include sensors for detecting undesirable activities (e.g., vandalism and/or terrorism) or excessive movements near transmission support structures.

PROJECT OBJECTIVES

The objective of this project is to research, investigate, and recommend a cost-effective transmission line monitoring package (to monitor conductor icing and galloping, adverse vibrations, excessive temperatures, and wind speeds, etc.). It would be desirable for the monitoring package to include sensors for detecting undesirable activities (e.g., vandalism, terrorism) or excessive movements near transmission support structures or components (e.g., towers, wood poles, guy anchors).

SCOPE OF THE STUDY

The scope of the work will entail researching monitoring packages available from various (at least five) vendors and investigating their applicability for transmission line monitoring. The monitoring packages should be based on rapidly deployable technology and should be either battery or solar powered. The information these monitors generate must be accessible from utility offices, and actual line conditions should be able to be viewed via internet. After conducting a critical evaluation of the various commercially available packages, the successful proponent shall recommend the most cost-effective monitoring package. The recommendations would include specification of the appropriate locations for monitoring package installation.

To help address the project objectives and scope, the following tasks may be required:

1. Research and conduct a review of appropriate monitoring packages applicable for transmission line monitoring applications detailed above. The review will include gathering information from transmission utilities and vendors about field experiences

with various monitoring packages. Some of the transmission line monitoring systems available and under development are listed below:

- Non-contact RT-TLMS (Promethean Devices)
 - Ampacimon Line Monitor (University of Liege, Belgium)
 - Sagometer (EDM International)
 - Transmission Line Security Monitor (Idaho National Laboratory)
 - Power Donut 2 (USi Inc)
 - CAT-1 Transmission Line Monitoring System (Nexans)
 - Sensornet Development (Georgia Institute of Technology)
2. Critically review the information gathered to recommend a monitoring package which is cost effective, self powered, and easily deployable.
 3. Provide specifications for proper deployment of the recommended package.
 4. Prepare deliverables including a comprehensive report featuring the details of the recommended package, specifications for deployment, and other details of the investigation, and present results.

POTENTIAL BENEFITS

The project will provide specifications and estimated costs for the deployment of a cost-effective monitoring package for extreme event monitoring on transmission lines. This will greatly assist utilities in increasing the reliability of the transmission lines.

DELIVERABLES

Project Report:

The primary deliverable will be a comprehensive report including the details of the investigation and recommendations for a cost-effective monitoring package for extreme event monitoring on transmission lines, as well as specifications for proper deployment of the recommended package.

The successful proponent is expected to prepare a ready-to-publish report on the results of the investigation and present the results to funding consortium members. The completed report must be submitted for CEATI approval in editable, electronic format (Microsoft Word). In addition, the platform and version should be specified for any software or programs to be developed. Should Excel or Access files be developed, compatibility with version 2003 is required.

Progress Reports:

Progress reports, in reasonable detail, will also be required on either a quarterly or milestone basis—normally these are scheduled to coincide with the completion of the identified tasks. It is expected that the details submitted with the progress reports would also be incorporated into parts of the final project report.

Power Point Presentation:

A ten to fifteen (10-15) slide Power Point Presentation is required to summarize the work. This should be composed of three main sections:

1. The factors motivating the initiation of the work;
2. A description of the main findings;
3. Summary of the conclusions and recommendations for future research.

Technical Brief:

The successful proponent shall prepare the contents for the Project's Technical Brief. This is a summary of the report (between 1,000 and 1,500 words), which is published separately by CEATI. Proponents are not responsible for the preparation of a ready-to-print Technical Brief, but solely to provide the contents for the following 4 sections: Background, Summary, Conclusions, and Recommendations.

1. The Report Background section should be short (approximately 200 words) and should detail the reasons the work was conducted.
2. The Summary section should be approximately 700 words. It must provide a general description of the work program.
3. The Conclusions section should be about 150 words and should provide a general outline of the key results (do not include specifics).
4. The Recommendations section should be about 200 words and should include a description of the potential applications of the results.

Please note that all reporting must be submitted in English. If written English is not the author's strong suit, it is recommended that a technical writer be hired to review the document prior to submission.

BUDGET AND SCHEDULE

The proposal must contain a schedule and a quote of required remuneration for the work in US dollars. Proponents' responses to this section must include a full breakdown of the budget and schedule, including an indication of rates and hours and the task allocation for the key personnel by task and must correspond to any phases or milestones outlined above. (Please refer to the Proposal Template for more information).

It is estimated that the budget for this project would be around \$55,000 USD. It is expected that this project can be completed (draft final report submitted for review and approval) within twelve (12) months of initiation.

The proposal must include the names and qualifications of the key individuals who will be involved, as well as the name of the accountable manager.

CEATI is not bound to accept any proposal but any selection will take into account technical merit (as displayed by the description and details presented in the proposal regarding the ways in which the proponent plans to meet the scope and objective of the project), qualifications including relevance of the experience of the proposed project team in undertaking similar work, price and schedule. A proposal may be accepted in whole or in part. A commitment to proceed with the first phase of a multi-phase project does not automatically imply that the work of the subsequent phases will be undertaken.

ALTERNATIVE WORKS

Proponents shall generally follow the above description of work, but are encouraged to offer alternative works if these alternatives will meet the objectives and provide a better end product to the utilities sponsoring this work. Alternatives shall be fully described including logistics explaining why the alternate works are being offered and the benefits to be realized by the funding utilities. Where alternatives are proposed, separate budgets shall be calculated for each alternative.

SUBMISSION OF PROPOSALS

The consideration of proposals received will be limited to those who indicate their intent to employ a suitable experienced project team and who possess proper facilities to perform the work. Receipt of this "IFP" does not necessarily constitute a prior determination by CEATI that your organization has the requisite experience and facilities.

The proposal must be properly completed and executed in accordance with the CEATI guidelines available at <http://www.ceati.com/technology-providers/submission-guidelines>, and shall be submitted to CEATI as an attachment in Microsoft Word at the following website: <http://prs.ceati.com/proposals/>. Be sure to indicate project number "T123700-3387" on the submission form. For assistance, please contact us at 514-866-5377.

The successful proponent will be required to sign the CEATI Standard Agreement upon project initiation. Proponents are encouraged to download a copy of the Standard Agreement for review from <http://www.ceati.com/technology-providers/submission-guidelines> prior to submitting a proposal, if they are not already familiar with these terms. Proponents may contact CEATI at projects@ceati.com to discuss any questions or concerns regarding these terms.

CLOSING DATE FOR RECEIPT OF PROPOSALS

~~Thursday, February 9, 2012, 4:00 pm EST~~

Now: Friday, February 17, 2012, 4:00 pm EST