


**Building Resilience to Climate Related Hazards Project**  
 Lightning Location Network (Supply, Delivery, Installation and Commissioning)  
 Contract ID No: PPCR/DHM/G/ICB-24


**Clarification -1**

We received the following Clarification request through email from the Consulting Firms. Our response is as follows:

Query No	Reference to the Bid Document	Description of Queries	DHM /BRCH Clarification
1	Section VII, Schedule of Requirements, 3. Technical Specification	<i>We have gone through the technical summary that you have put together as part of the Tender document and have several questions which need's clarification. Fundamentally, the clarifications will be needed on if the current specifications meet your needs at all. Based on our experience in deploying several of these systems in many countries around the globe and also the fact that we run the world's largest lightning detection network, it looks like the specifications may not meet with the larger objectives and that these were drafted either without your knowledge or based on some one's knowledge of a just looking at specifications from one system. Today, we do not even need a sensor to be deployed in Nepal for us to meet with the DE that you seek. We could provide you the same DE with our already existing Global Lightning Network data and meet with the accuracy levels that you need!</i>	The specifications have been compiled so that they make possible bids from as many vendors as possible; yet we have to make sure that the performance of the suggested networks can be properly validated. Secondly, we once more emphasize that in these kind of procurements, the requirements are decided based on the needs of end users.

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2	<p>Section VII, Schedule of Requirements, 3. Technical Specifications, Heading-3. Technical Requirements row no.-1.</p> <p>(Ability to Detect cloud-to-ground (CG) and intra-cloud (IC) lightning in LF and VLF frequencies.</p> <p>Means of verification: Document(s) describing the method of detection and lightning type discrimination.) (Page 80)</p>	<p><i>Why is only LF and VLF included? Why not consider VLF to VHF as well? At 1Hz-12MHz, the ENTLS's detection frequency range is approximately 30 times greater than competing systems – making more complete total lightning detection (both IC and CG) over wider geographic areas possible.</i></p>	<p><i>VLF and VHF can be included by the bidders. Language is not meant to preclude the use of a broader set of frequencies, but rather to set the minimum frequency range. The VHF data has been omitted from this procurement because at this point DHM is in the need of a reliable network with as few sensors as possible. VHF technique combined with the complex terrain of Nepal is not optimal for this frequency domain (LF/VLF vs. VHF).</i></p>
3	<p>Section VII, Schedule of Requirements, 3. Technical Specifications, Heading-3. Technical Requirements, row no. 4.</p> <p>Median peak current estimation error should be less than 20%.</p> <p>Means of verification: At least three (3) peer reviewed publication indicating the peak current estimation accuracy.</p>	<p><i>Why exactly three plus papers? The next few requirements ask for exactly four plus papers? This could be favoured for a specific vendor and not conducive to open competition. Our suggestion is to change this and other such verification requests that follow to "bidder shall submit verification in the form of peer reviewed articles, verifications against satellite based lightning imaging sensor, rocket triggered lightning experiments, comparisons other lightning location networks or other scientifically sound validation techniques." This is more appropriate as it seeks a variety of different options for verification.</i></p>	<p><b>Refer Addendum-1(xi) 4.</b></p> <p><i>The relaxed requirement for papers regarding peak current comes simply from the fact that peak current validations/analysis are not as much available as, for example, analysis of the DE and LA; naturally, this does not favor any vendor as the requirement is the same for all. In this procurement, it is essential that all verifications are related to peer reviewed publications; this is to ensure that the network/data suggested has been analyzed with anonymous specialists/reviewers, and not only by the vendor itself. Furthermore, it is also essential to understand that the requirements should not come from the manufacturers/vendors of the LLS's, but from the end-user.</i></p>

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4	<p><b>Section VII, Schedule of Requirements, 3. Technical Specifications, Heading-3. Technical Requirements, row no. 8.</b></p> <p>(Have the capability to be integrated into existing national, regional, and global Lightning detection Networks (Nationwide lightning location System) through the sharing of raw sensor data. Means of verification: Document(s) indicating the different ways to share the raw sensor data.)</p>	<p><i>How does DHM plan to benefit from this? Would DMH benefit if they were supplied raw sensor data from a Lightning Detection Network in US?</i></p>	<p><b>Refer Addendum-1(xi) 8.</b></p> <p><i>This is to ensure that in the future DHM has the possibility to cooperate with the neighboring countries, which would be highly beneficial in lightning location. This of course requires that the raw sensor data can be shared.</i></p>
5	<p><b>Section VII, Schedule of Requirements, 3. Technical Specifications, Heading-3. Technical Requirements, row-10</b></p> <p>Supported by projections, scientific papers, and refereed third party papers indicating the system reliability and performance for the contents of the above items where applicable.</p> <p>Means of verification: At least four (4) peer reviewed publications.</p>	<p><i>Not clear as to what exactly this is asking to 'prove'.</i></p>	<p><b>Refer Addendum-1(xi) 10.</b></p> <p>Please see Serial no.3.</p>

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