

Justification of Purposefulness of Public Contract

Public Contract name: Digital high-speed camera for measurements of dynamic phenomena in the atmosphere

Type of Public Contract and Procedure: below-the-threshold public contract for supplies in open procedure.

Number in the Official Information System of Public Contracts: 513574

Contracting Authority: Institute of Atmospheric Physics CAS
Registered office: Boční II 1401, 141 31 Praha 4 Spořilov
Company identification No. 68378289
Tax identification No. CZ68378289
Person authorised to act on behalf of the Contracting Authority: doc. RNDr. Zbyněk Sokol CSc., director

Statement of Reasons for Purposefulness of Public Contract Pursuant to Sec. 2 of the Decree n. 232/2012 Coll.	
The data pursuant to Sec. 1, where a modification occurred in contrast to the facts pursuant to Sec. 1 of the regulation (modifications in contrast to Justification of Purposefulness of Public Contract for Purposes of Contracting Authority Prior Information Notice):	
a) description of the needs to be accomplished through the performance of a public contract	No changes
b) description of the subject matter of a public contract	No changes
c) a mutual relationship between the subject matter of a public contract and the needs of the contracting entity	No changes
d) foreseen deadline of the performance of a public contract	No changes

The description of the risks attaching to the performance of a public contract which were taken into account by the contracting entity in setting forth tender conditions. It particularly involves the risks of failure to execute a public contract, delay with the performance of a public contract, reduced quality of the performance, expending additional financial costs	We could not perform measurements important for our investigation, if the contract is not realized.
The contracting authority may delimit the variants of the accomplishment of the need and justification of the selected variant of the public contract <i>(optional)</i>	The Contracting Authority is not aware of any other way of accomplishing its needs.
The contracting authority may delimit to what extent the public contract will influence the performance of envisaged target. <i>(optional)</i>	A successful realization of the public contract achieves a fulfilment of the Contracting Authority needs and a reaching of the envisaged target.
Supplementary information justifying the purposefulness of a public contract <i>(optional)</i>	The new measurements are very important for successful investigations

Statement of Reasons for Proportionality of the Requirements on Technical Qualifications Prerequisites for the Performance of a Public Supply Contract Pursuant to Sec. 3(1) of the Decree n. 232/2012 Coll. <i>(justification of proportionality of the requirements on technical qualifications prerequisites in relation to the subject matter of the public contract and to the risks attaching to the performance of the public contract)</i>	
Justification of proportionality of the requirements for the list of principal deliveries. <i>(The contracting entity shall fill it in compulsorily, where the required financial value of all principal deliveries amounts in the aggregate to at least three times the estimated value of the public contract.)</i>	Not relevant within this tender procedure.
Justification of proportionality of the requirement for submission of the list	Not relevant within this tender procedure.

of technicians or technical bodies. (<i>The contracting authority shall fill it in compulsorily, where it requires the submission of the list of more than three technicians or technical bodies</i>).	
Justification of proportionality of the requirement for production of the description of technical facilities and measures used by the economic operator for ensuring quality control, and description of facilities or equipment of the economic operator designed for research.	Not relevant within this tender procedure.
Justification of proportionality of the requirement on the check carried out on the production capacities by the contracting authority or on its behalf by another person and, if necessary, a check on measures relating to assurance of quality and research.	Not relevant within this tender procedure.
Justification of proportionality of the requirement for submission of samples, descriptions or photographs of the products to be supplied.	Not relevant within this tender procedure.
Justification of proportionality of the requirement for production of evidence attesting conformity of a required product issued by the relevant authority.	Not relevant within this tender procedure.

Statement of Reasons for Delimitation of Commercial Terms and Conditions for Public Supply Contracts and Public Service Contracts Pursuant to Sec. 4 of the Decree n. 232/2012 Coll.

Justification of delimitation of the commercial term setting forth maturity of invoices longer than 30 days	Not relevant within this tender procedure.
Justification of delimitation of the	Not relevant within this tender procedure.

commercial term setting forth the requirement for third party liability insurance for the damage brought about by the economic operator to third persons amounting to twice the estimated value of the public contract.	
Justification of delimitation of the commercial term setting forth the requirement for a bank guarantee higher than 5 % of the public contract value.	Not relevant within this tender procedure.
Justification of delimitation of the commercial term setting forth the requirement for a guarantee period longer than 24 months	Not relevant within this tender procedure.
Justification of delimitation of the commercial term setting forth a contractual penalty in the event of default of the economic operator higher than 0.2 % of the estimated value of the public contract for each day of delay.	Not relevant within this tender procedure.
Justification of delimitation of the commercial term setting forth a contractual penalty in the event of default of the contracting entity higher than 0.05 % of the due	Not relevant within this tender procedure.
Justification of delimitation of other commercial terms and conditions pursuant to Sec. 5(2). The contracting authority shall justify delimitation of commercial terms and conditions of a public supply contract and public service contract in proportion to its needs and to the risks attaching to the performance of the public contract.	Not relevant within this tender procedure.

Justification for Technical Conditions specification of Public Contract Pursuant to Sec. 5 of the Decree	
Technical Condition	Justification for Technical Condition
<u>A. High-speed camera requirements</u>	

Nominal frame rate of at least 40 000 fps at resolution at least 640 x 460	Needed to capture fast atmospheric phenomena
Higher frame rates at reduced resolutions with similar values of pixels per second	Needed to capture fast atmospheric phenomena
Store at least 3 seconds of video at nominal frame rate and resolution	Needed to capture full duration of fast atmospheric phenomena
Possibility to partition internal memory to smaller segments to increase number of events captured during one recording session	Needed to capture multiple fast atmospheric phenomena
Sensor sensitivity better than ISO 25000 daylight for raw monochrome 12 bit per pixel encoded images	Needed to capture fast atmospheric phenomena in low-light conditions
User defined image data look-up table either in camera HW or during post processing	Needed to capture fast atmospheric phenomena in low-light conditions
User access to Automatic Exposure Control (AGC) settings	Needed to capture fast atmospheric phenomena in low-light conditions
Lens settings control from camera SW	Needed to operate the device remotely
Hardware internal (from actual camera image) or external (photometer based) image triggering	Needed to trigger the device in order to capture fast atmospheric phenomena
Pre and Post trigger recording	Needed to capture the history or continuation of the fast atmospheric phenomena
External TTL trigger input and output signal, SW control of parameters: falling/rising edge selection, hold-off time	Needed to capture the electromagnetic counterparts of fast atmospheric phenomena
GPS timing input (IRIG-B)	Needed to compare with other measurements of fast atmospheric phenomena
Battery backup, camera must be able to run without AC power	Needed to capture fast atmospheric phenomena during power-outs or in remote locations
Required image output formats: TIFF,	Needed to process recordings of fast

RAW	atmospheric phenomena
SDK with platform independent API with access to: image settings (resolution, frame rate, exposure time), recordings (delete, store to an external storage), trigger settings and camera management	Needed to operate the device remotely
At least two-year warranty	Needed to guarantee flawless measurements of fast atmospheric phenomena
<u>B. Accessories</u>	
1. Lensing	
Wide angle lenses, one of them with 18-25mm focus and max. aperture at least f/1.8, matched to camera's frame rate in low light conditions	Needed to capture fast atmospheric phenomena in low-light conditions
Adapter for Nikon F mount lenses to be able to use existing lenses	Needed to use existing lenses
Remote focus and aperture control by the Ethernet connection through the camera interface	Needed to operate the device remotely
2. Pan & Tilt rig	
At least 180 deg pan and 45 deg tilt	Needed to operate the device remotely
Safely hold camera inc. lens in any position	Needed to guarantee flawless measurements of fast atmospheric phenomena
Remote control over USB or Ethernet	Needed to operate the device remotely
3. Data server	
Control camera using a custom application (developed by the IAP) utilizing camera's SDK	Needed to operate the device remotely
Control camera using a custom application (developed by the IAP) utilizing camera's SDK	Needed to operate the device remotely
Store recordings from camera for later use	Needed to operate the device remotely

Minimal HW parameters: • 8 CPU cores at 2GHz • 32GB RAM • 256GB SATA3/SAS SSD • 32TB RAID video data storage • 2x 1Gbit Ethernet • 2x USB2 • A high speed connection to the camera matching the fastest image data interface of the camera • Tower case • Compatible with GNU/Linux	Needed to operate the device remotely and store the data
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Justification for Basic and Partial Evaluation Criteria setting pursuant to Sec. 6 of the Decree	
Evaluation Criterion	Justification for Evaluation Criterion
Bids shall be evaluated pursuant to Section 78 paragraph 1 b) of the Act based on the total bid price.	Contracting Authority decided to evaluate the bids based on the submitted bid price. Seeking technical solution can be thoroughly specified in the technical specification annex of the Tender Documentation allowing only qualified bidders to pass the assessment stage of the Public Contract awarding. Remaining bids thus can be evaluated based on their submitted price since all of them will comply with technical conditions.