



INSTITUTE OF ATMOSPHERIC PHYSICS
CAS

PURCHASE CONTRACT

This purchase contract ("Contract") was concluded pursuant to section 2079 et seq. of the act no. 89/2012 Coll., Civil Code ("Civil Code"), on the day, month and year stated below by and between:

Institute of Atmospheric Physics of the Academy of Sciences of the Czech Republic

Registered office: Boční II 1401, 141 31 Praha 4
Company identification No: 68378289
Tax identification No.: CZ68378289
Represented by: doc. RNDr. Zbyněk Sokol, CSc., director
Bank details: xxxxxxxxxxxxxx
Bank account No.: xxxxxxxxxxxxxx
on the one side as the buyer ("**Buyer**")

and

ENVitech Bohemia s. r. o.

Registered office: Ovocná 1021/34, 161 00 Praha 6
Company identification No: 47119209
Tax identification No.: CZ47119209
Represented by: Ing. Zdeněk Grepl, Director of the company
Registered in: Municipal Court in Prague; Reference No.: C 12701
Bank details: xxxxxxxxxxxxxx
Bank account No.: xxxxxxxxxxxxxx
on the other side as the seller ("**Seller**")

(The Buyer and the Seller are hereinafter jointly referred to as "**Parties**" and individually as "**Party**").

WHEREAS

- (A) The Buyer is a public contracting authority.
- (B) For the successful realization of the Project it is necessary to purchase the Object of Purchase (as defined below) in accordance with the act No. 134/2016 Coll., on Public Procurement Awarding.
- (C) The Seller wishes to provide the Object of Purchase to the Buyer for consideration
- (D) The Seller's bid for the public procurement entitled "**Vertical Doppler Cloud Profiler**", and whose purpose was to procure the Object of Purchase ("**Public Procurement**"), was selected by the Buyer as the most suitable.



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IT WAS AGREED AS FOLLOWS:

**I.
BASIC PROVISIONS**

- 1.1 Under this Contract the Seller shall hand over to the Buyer a **Vertical Doppler Cloud Profiler**, which shall meet requirements listed in Annex 1 (*Technical Description of the Offered Performance*) to this Contract (“Object of Purchase”) and shall transfer to the Buyer ownership right to the Object of Purchase, and the Buyer shall take over the Object of Purchase and shall pay the Seller the Purchase Price (as defined below), all under the terms and conditions stipulated in this Contract.
- 1.2 Under this Contract the Seller shall also carry out following activities (“Related Activities”):
 - a) to prepare manufacturing drawings of the Object of Purchase as further described in Annex 2 (Technical Specification);
 - b) to verify that the Object of Purchase meets all requirements stipulated in this Contract and adjust the Object of Purchase to the place of delivery, if necessary;
 - c) to elaborate and hand over to the Buyer operational, installation and maintenance manuals of the Object of Purchase and other documents that are necessary for the proper takeover and use of the Object of Purchase in English language in electronic form in the extent specified in Annex 2 (Technical Specification);
 - d) to handover the declaration of conformity of the Object of Purchase with the approved standards, if there are any;
 - e) to elaborate a list of particular items of the Object of Purchase for the purposes of control;
 - f) to provide training of competent persons, (I.) hardware training for two people and software training for two people in the extent of at least 10 hours, all maintenance servicing will be shown by Seller, Buyer is entitled to get audio and video recording; (II.) operator training in the extent of at least 8 hours which will be held after successful completion of Site Acceptance Test “SAT” at Observatory Milešovka.
- 1.3 The Seller promises to the Buyer that if for the fulfillment of the requirements of the Buyer under this Contract or the proper operation of the Object of Purchase are necessary other deliveries and activities not mentioned in this Contract, the Seller shall procure such deliveries or shall carry out such activities at its own expense without any effect on the Purchase Price.



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II. TIME AND PLACE OF DELIVERY

- 2.1. The Seller shall deliver the Object of Purchase and shall carry out Related Activities within twenty-four (24) weeks from the effectiveness of this Contract.
- 2.2. The Buyer is responsible for shipping the Object of Purchase to the Place of delivery.
- 2.3. The place of delivery is the following address: Institute Atmospheric Physics CAS, Observatory Milešovka, Czech Republic.

III. THE OWNERSHIP RIGHT

- 3.1 The ownership right to the Object of Purchase shall be transferred to the Buyer upon the signature of the Handover Protocol (as defined below) by both Parties.

IV. PRICE AND PAYMENT TERMS

- 4.1. The purchase price for the Object of Purchase is 245.950,- EUR without value added tax ("VAT"), and with the VAT rate 21 % (if applicable in this case) is 297.599,50 EUR ("**Purchase Price**").
- 4.2. The Purchase Price cannot be exceeded and includes all costs and expenses of the Seller related to the performance of this Contract. The Purchase Price includes, among others, all expenses related to the handover of the Object of Purchase and execution of Related Activities, costs of copyright, insurance, warranty service and any other costs and expenses connected with the performance of this Contract.
- 4.3. The Purchase Price may be changed only if:
 - a) in the period between the conclusion of this Contract and the signature of the Handover Protocol the rates of VAT are changed (in such a case the new price for the Object of Purchase shall only reflect the new rate of VAT) or if
 - b) the change is done in accordance with the act No. 134/2016 Coll., on Public Procurement Awarding.
- 4.4. The Purchase Price for the Object of Purchase shall be paid in EUR on the basis of a tax documents – invoices, to the account of the Seller designated in the invoice.
- 4.5. The Buyer shall realize payments on the basis of duly issued invoices within 15 days from their receipt. The invoice shall be considered to be paid for on the day when the invoiced amount is deducted from the Buyer's account on behalf of the Seller's account.



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- 4.6. The invoice issued by the Seller as a tax document must contain all information required by the applicable laws of the Czech Republic. Invoices issued by the Seller in accordance with this Contract shall contain in particular following information:
- a) name and registered office of the Buyer,
 - b) tax identification number of the Buyer,
 - c) name and registered office of the Seller,
 - d) tax identification number of the Seller,
 - e) registration number of the tax document,
 - f) scope of the performance (including the reference to this Contract),
 - g) the date of the issue of the tax document,
 - h) the date of the fulfilment of the Contract,
 - i) Purchase Price,

and must comply with the double tax avoidance agreements, if applicable.

- 4.7. In case that the invoice shall not contain the above mentioned information, the Buyer is entitled to return it to the Seller during its maturity period and this shall not be considered as a default. The new maturity period shall begin from the receipt of the supplemented or corrected invoice to the Buyer.

V. SELLER'S DUTIES

- 5.1. The Seller shall ensure that the Object of Purchase and Related Activities are in compliance with this Contract including all its annexes and applicable legal (e.g. safety), technical and quality norms.
- 5.2. During the performance of this Contract the Seller proceeds independently. If the Seller receives instructions from the Buyer, the Seller shall follow such instructions unless these are against the law or in contradiction to this Contract. If the Seller finds out or should have found out if professional care was exercised that the instructions are for any reason inappropriate or illegal or in contradiction to this Contract, then the Seller must notify the Buyer.
- 5.3. All things necessary for the performance of this Contract shall procure the Seller, unless this Contract stipulates otherwise.
- 5.4. The Seller is aware that the Buyer does not have at its disposal premises for the storage of packaging and, therefore, shall not store packaging of the Object of Purchase. The absence of



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original packaging cannot be an excuse for refusal of elimination of defects of the Object of Purchase.

VI. WARRANTY

- 6.1 The Seller shall provide a warranty of quality of the Object of Purchase for the period of 36 months. If on the warranty list or other document is the warranty period of longer duration, then this longer warranty period shall have priority over the period stated in this Contract.
- 6.2 The warranty period shall begin on the day of the signature of the Handover Protocol by both Parties. If the Handover Protocol lists any deficiencies, the warranty period shall begin on the day, which follows the day, in which the last deficiency was removed.
- 6.3 The Seller shall remove defects that occur during the warranty period free of charge and in the terms stipulated in this Contract.
- 6.4 If the Buyer ascertains a defect of the Object of Purchase during the warranty period, the Buyer shall notify such defect without undue delay to the Seller. Defects may be notified on the last day of warranty period, at the latest.
- 6.5 The Buyer notifies defects in writing via e-mail. The Seller shall accept notifications of defects on the following e-mail address: XXXXXXXXXXXXX. The Seller shall confirm within 96 hours from the receipt of the notification.
- 6.6 In the notification the Buyer shall describe the defect and the manner of removal of the defect. The Buyer has the right to:
 - a) ask for the removal of the defect by the delivery of a new Object of Purchase or its individual parts, or
 - b) ask for the removal of the defect by repair, or
 - c) ask for the reasonable reduction of the Purchase Price.The choice among the above mentioned rights belongs to the Buyer. The Buyer is also entitled to withdraw from this Contract, if by delivering the Object of Purchase with defects this Contract is substantially breached.
- 6.7 The Seller shall remove the defect within 14 days from its notification, unless Parties agree otherwise.
- 6.8 The Seller shall remove the defect within terms stipulated in this Contract even if the notification of the defect is in his opinion unjustified. In such a case the Seller is entitled to ask for



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reimbursement of the costs of removal of the defect. If Parties disagree on whether the notification of the defect is justified or not, the Buyer shall ask an expert for the expert's opinion, which shall determine whether the notification of the defect was justified or not. In the case that the expert consider the notification as justified, then the Seller shall bear costs of the expert's opinion. If the expert considers the notification to be unjustified, then the Buyer shall reimburse the Seller for verifiably and effectively incurred costs of removal of the defect.

- 6.9 Parties shall execute a protocol on the removal of the defect, which shall contain the description of the defect and the confirmation that the defect was removed. The warranty period shall be extended by a period of time that elapses between the notification of the defect until its removal.
- 6.10 In case that the Seller does not remove the defect within stipulated time or if the Seller refuses to remove the defect, then the Buyer is entitled to remove the defect at his own costs and the Seller shall reimburse these costs within 10 days after the Buyer's request to do so.
- 6.11 The warranty does not cover defects caused by unprofessional manipulation or by the failure to follow Seller's instructions for the operation and maintenance of the Object of Purchase.
- 6.12 The seller will guarantee availability of spare parts for at least 5 years from the signing of the agreement.
- 6.13 Parties exclude the application of Section 1925 of the Civil Code.

VII.

REPRESENTATIONS AND WARRANTIES OF THE SELLER

- 7.1. The Seller represents and warrants to the Buyer that
- a) has all the professional prerequisites necessary for the proper fulfilment of this Contract,
 - b) is fully authorized to perform this Contract, and
 - c) there are no obstacles on the Seller's side that would preclude him from the due performance of this Contract.

VIII.

PENALTIES

- 8.1. If the Seller is in default regarding the delivery of the Object of Purchase, i.e. the Seller breaches its duty to perform this Contract in time and due manner, the Seller shall pay to the Buyer a contractual penalty in the amount of 0,1% of the Purchase Price for every (even commenced) day of default.

- 8.2. If the Seller is in delay with the removal of the defect, the Seller shall pay to the Buyer a contractual penalty in the amount of 0,05% of the Purchase Price for every (even commenced) day of default.
- 8.3. The Seller shall pay contractual penalties within fifteen (15) days from the day, on which the Buyer enumerated its claims. The payment of contractual penalties shall not affect the right of the Buyer to damages even to the extent to which such damages exceeds the contractual penalty.
- 8.4. Total amount of contractual penalties that the Buyer is entitled to claim shall not exceed 30 % of the Purchase Price.
- 8.5. The Buyer is entitled to unilaterally set off claims arising from the contractual penalties against the claim of the Seller for the payment of the Purchase Price.
- 8.6. Parties exclude the Section 2050 of the Civil Code.

IX.

RIGHT OF WITHDRAWAL

- 9.1. The Buyer is entitled to withdraw from this Contract without any penalties, if any of the following circumstances occur:
 - a) the Seller shall be in delay with the fulfilment of this Contract and such delay lasts more than two (2) months;
 - b) the Object of Purchase shall not fulfil the requirements stipulated in this Contract, in particular in Annex 1 (Technical Specification);
 - c) the insolvency proceeding is initiated against the Seller; or
 - d) the Buyer ascertains that the Seller provided in its bid for the Public Procurement information or documents that do not correspond to the reality and that had or could have had impact on the result of the tendering procedure, which preceded the conclusion of this Contract.

X.

CONFIDENTIALITY

- 10.1. Parties shall not disclose information that shall become available to them in connection with this Contract and its performance and whose disclosure could harm the other Party. Duties of the Buyer ensuing from the applicable legal regulations remain unaffected.



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XI. REPRESENTATIVES OF THE PARTIES

11.1 The Seller appoints following representatives for the communication with the Buyer:

In technical matters:

Name: xxxxxxxxxxxxxx

E-mail: xxxxxxxxxxxxxx

Tel.: xxxxxxxxxxxxxx

In contractual matters:

Name: xxxxxxxxxxxxxx

E-mail: xxxxxxxxxxxxxx

Tel.: xxxxxxxxxxxxxx

11.2 The Buyer appoints following representatives for the communication with the Seller:

In technical matters:

Name: xxxxxxxxxxxxxx

E-mail: xxxxxxxxxxxxxx

In contractual matters:

Name: xxxxxxxxxxxxxx

E-mail: xxxxxxxxxxxxxx

XII. FINAL PROVISIONS

- 12.1 This Contract is governed by the laws of the Czech Republic, especially by the Civil Code.
- 12.2 All disputes arising out of this Contract or out of legal relations connected with this Contract shall be preferable settled by a mutual negotiation. In case that the dispute is not settled within sixty (60) days, such dispute shall be decided by courts of the Czech Republic in the procedure initiated by one of the Parties.
- 12.3 The Seller bears the risk of changed circumstances within the meaning of Section 1765 of the Civil Code.
- 12.4 The Seller takes into account that the Buyer is not in relation to this Contract an entrepreneur, nor the subject matter of this Contract is connected with the business activities of the Buyer.
- 12.5 The Seller is not entitled to set off any of its claims or his debtor's claims against the Buyer's claims. The Seller is not entitled to transfer its claims against Buyer that arose on the basis or in connection with this Contract on third parties. The Seller is not entitled to transfer rights and duties from this Contract or its part on third parties.
- 12.6 All modifications and supplements of this Contract must be in writing.



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- 12.7 If any of provisions of this Contract are invalid or ineffective, the Parties are bound to change this Contract in such a way that the invalid or ineffective provision is replaced by a new provision that is valid and effective and to the maximum possible extent correspond to the original invalid or ineffective provision.
- 12.8 If any Party breaches any duty under this Contract and knows or should have known about such breach, it shall notify it to the other Party and shall warn such Party of possible consequences of the breach.
- 12.9 This Contract is executed in four (4) counterparts and every Party shall receive two (2) counterparts.
- 12.10 An integral part of this Contract is Annex 1 (Technical Description of the Offered Performance) and Annex 2 (Technical specifications). In case of any discrepancy between the provisions of this Contract and the provisions of Annex 1 (Technical Description of the Offered Performance) the provisions of this Contract shall prevail.
- 12.11 This Contract shall be valid and effective on the date of the signature of both Parties.

In Prague, on.....

In Prague, on

.....

.....

for the Buyer
doc. RNDr. Zbyněk Sokol, CSc.,
director

for the Seller
Ing. Zdeněk Gepl
Director of the company



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ANNEX 1
TECHNICAL DESCRIPTION OF THE OFFERED PERFORMANCE

Text přílohy obsahuje obchodní tajemství - není určen ke zveřejnění



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ANNEX 2

TECHNICAL SPECIFICATIONS

Technical parameters

The Contracting authority requires supplying the equipment which complies with the following minimum parameters:

Delivery specifications:

The delivery will include cloud profiler (hereinafter the "**radar**") located at the IAP observatory IAP Milešovka. Radar must be operated in a fully unattended and remotely controlled regime from the IAP workplace in Prague.

As part of the radar the uninterruptible power supply (UPS) is required, allowing in case of the electricity failure to maintain operation of the radar and the necessary related technologies (eg. transmission line) for at least 30 minutes.

The protection against lightning must be part of the delivery either in passive or active implementation.

The delivery will include computer server to run Contractor applications installed at observatory Milešovka; a set of recommended spare parts for radar; further supply of appropriate computer hardware and software for radar - to monitor and control the various components of the radar, radar data generation and software for signal processing and evaluation of radar measurements; installation and testing work (installation of the radar station, acceptance tests, software configuration, supply of the appropriate documentation for radar; appropriate training of radar operators).

Further specifications of the public tender are specified lower in technical parameters and in a Contract draft, which is annexed to this tender documentation.

The following technical conditions of the equipment are considered as minimum requirements that must be fulfilled by the equipment. In the event that the bidder will offer equipment that does not conform to the technical conditions below or does not contain all the components described below, the bidder will be excluded from the tender on the basis of failure to comply with the terms and conditions specified by Contracting authority tender.

The Contracting Authority requires that the equipment was brand new, fully functional and complete.

Technical parameters:

A) The radar system - general characteristics:



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- Delivered must be fully doppler radar system operating in the Ka-band (24-40 GHz) or W-band (75-110 GHz) operated in pulse mode or FMCW;
- Radar must allow simultaneous polarimetric measurements (STAR - Simultaneous Transmission And Reception) or LDR (Linear Depolarization Ratio - the signal is transmitted in only one polarization, accepted both polarizations) mode;
- Radar must perform digital signal processing starting from the intermediate frequency;
- Contract authority requires a digital receiver and signal processing systems from the same manufacturer;
- Data output and consumer products must be in digital form;
- The technical parameters of radar must provide the detection of clouds and vertical profile of hydrometeors above the radar and the evaluation of fall velocity of hydrometeors to a height of at least 15 km.
- The supplied equipment will meet the EMC and its operation will not disturb experimental devices, digital data collection and microwave links located at the observatory Milešovka.

B) Construction of the radar system:

- All components of the device must be brand new and their age should not exceed 12 months at the date of the completion of acceptance test SAT. Contract authority expressly notes that prototypes and remanufactured components of the older equipment are not permitted;
- Maximum input power of all equipment ensuring 24-hour operation of the radar cannot exceed 3 kW;
- Equipment must be adapted to the supply network, which comply with DIN EN 50160. The supply voltage is 230 V 50 Hz, single phase connection;
- All electrical equipment must meet the following legislation or regulations;
 - Act no. 205/2002 Coll., (on technical requirements for products, as amended), and Government Regulation no. 616/2006 Coll., (on technical requirements for products relating to their electromagnetic compatibility);
 - EN 62305 (for lightning protection);
 - Government Regulation no. 106/2010 Coll. (On Non-Ionizing Radiation Protection);
- Total size of all radar boxes may not exceed 2000 mm in height, 2000 mm in width and 2000 mm in depth;



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- Radar cabinets and installed technology must meet the operating temperature range of -10°C to $+35^{\circ}\text{C}$ and humidity of 10% - 90%;
- Radar must be constructed as a modular system so that it will allow future upgrade of the parts, at least the antenna, transmitter, receiver, signal processing and PC for processing;
- The connectors must be differentiated according to the key so that they cannot be connected by mistake;
- The connectors must be capable of withstanding repeated engagement and disengagement (in the framework of service requirements) without damage and degradation;
- All connectors and measuring points must have granted access, which must be described in the technical documentation;
- All components of radar including connectors, cables, circuit boards, etc. must be clearly identified and described. Client requires that the labels of all components are in English;
- After an interruption of the power supply system shall allow automatic sequential switching (soft start) and start of operational measurement;
- Safety precautions - all the equipment which could be damaged by inappropriate handling or which endanger the health of operators, must include security protection (safety interlock);
- Noise level of radar cabinets should not exceed 70 dBA when measured one meter in front of cabinets. Contractor at SAT performs the necessary measurements and prepares a report of the measurement;
- Radar must be designed for continuous 24-hour operation;
- Manufacturer's recommended maintenance shutdowns must not cause outages of radar measurements exceeding 1% of the total operational time of measurement, i.e. maximum of 7 hours per month;
- The contractor must guarantee availability of spare parts for at least 5 years from the signing of the agreement;
- The contract authority requires to deliver a service tools that are required to access all measuring points and forced replacement of any components;
- Radar must contain a "network power switch" which enables remote switching on and off of critical blocks of the radar via commands transmitted over a network.

C) Transmitter:

- The transmitter must be of type magnetron with solid state modulator, or semiconductor;
- RF magnetron must have a minimum life time of 50,000 hours;

- transmitting frequency must be in the Ka-band, adjustable in the range 35 to 37 GHz, or in the W band in the range of 93 to 97 GHz;
- The pulse transmit power must be at least 25 kW, the stability of the transmitted power must be 0.2 dB in the normal operating conditions and the time interval of one month, in case of FMCW solution the transmitter power must be at least 0.5 W;
- The length of the pulse transmitter pulse mode must be within the range of 150 to 300 ns;
- Repetition rate (pulse repetition frequency, PRF) for pulse mode must be user-adjustable from a minimum of 3-10 kHz, switching frequency must be possible by software settings within the measurement scenarios without hardware intervention;

D) Antenna:

- The antenna must be parabolic with a gain of at least 40 dBi;
- beam width should be within 1 °;
- Cross-polarization of the antenna must be greater than 35 dB;
- The Contractor shall define a safe distance for work and the incidence of people from all devices that emit radiation exposure;
- The Contractor shall provide the diagram of supplied antenna radiation characteristic parameters measured by a certified company;

E) Receiver:

- Radar delivery must contain a digital receiver (full digitization to an intermediate frequency, at least 14 bit A / D converter);
- The receiver must allow polarimetric measurements;
- Dynamic range shall not be less than 99 dB and linearity better than 0.2 dB;
- The receiver must be low noise, the noise figure maximum 2.5 dB;
- Time stability calibration of the receiver should not exceed 0.2 dB at normal operating conditions and the time interval of one month;
- Overall phase stability of radar system (including a transmitter, receiver and digitalization) must be better than 0.6 ° rms.

F) Signal Processor:

- Signal processor must ensure evaluating at least the following quantities:
 - uncorrected reflectivity of both polarizations
 - radial Doppler velocity V ;
 - the width of the Doppler spectrum speed W ;
 - a signal quality index SQI;

- linear depolarization ratio LDR;
- Radial resolution of data must be at least 50 m;
- Number of averaged samples (pulses) for evaluating the radar parameters in the radar beam to be adjustable at least in the range 20-512;
- Data resolution of output data must be at least 8bit (256 levels), reflectance data in increments of at least 0.5 DBZ, radial velocity data should linearly cover Nyquist range of velocity.

G) PC SW and HW:

- PC SW and HW must be delivered at least in the following configuration:
 - a computing server with installed software for manual (interactive) control and monitoring radar and software for administration and management of regular measurement and processing / sending of measured data;
- SW licenses for remote manual (interactive) control and monitoring of radar
- The part of delivery must be the installation media and instructions for installing the software.
- SW and HW must be able to operate in current configuration of Contract authority data networks.

H) Software for both local and remote manual (interactive) control and monitoring of radar:

- SW for manual control and monitoring of radar must allow at least the following functions:
 - switching off and on of individual parts of the radar;
 - setting of measurement parameters and signal processing;
 - display of actual measured data;
- Logging of all errors must be made in text files. Description of the format of these log files must be available.

I) Software for the creation of advanced products:

- Software for creating advanced products must allow at least the following functions:
 - processing of data from the radar;
 - the possibility of generating products from all evaluated radar measurements;
 - creation of at least the following products: reflectance versus time graph, doppler velocity of the cloud particles in dependence on time;
 - LDR versus time graph;

J) Backup Power Supply UPS:



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- The UPS must be of on-line type;
- The UPS must be able to provide 30 minutes of running radar and all the equipment necessary for processing and distribution of radar data;
- Information on the status of the UPS must be available on a data interface via SNMP protocol;

K) Requirements for spare parts for radar:

- set of spare parts for radar must be a part of delivery in the total cost of at least 1.5% of the total contract price;
- The contractor is obliged to specify a set of spare parts in the Appendix. 1;
- The supplier is obligated to assemble a set of spare parts with regard to the MTBF of individual parts.

L) Documentation Requirements:

- Contracting authority declares that all documentation for the device must be in English and delivered in printed and electronic form (including schematics). It must contain at least the following elements:
 - Operator manual - contains instructions and operations necessary for complete control of radar;
 - instructions for basic system settings and data processing and given specific values of important parameters;
 - operation workflow for control of the system and the accuracy of measurements;
 - Technical manual - containing a detailed description of the individual facilities and their maintenance;
 - description and principle of operation of each functional block;
 - detailed and clear description of electrical circuits, including diagrams, control-measuring points, values and their histories;
 - description of the implementation of the functional blocks including detailed wiring diagrams, in case of black boxes description of the internal functions and definitions of input and output values and variables;
 - description of the installation, setup, operation, operational instructions, periodic maintenance and periodic diagnosis;
 - description of the solution of typical problems;
 - Software Guide - contains a description of the programs and data algorithms for signal processing, data collection, product formation and control radar;



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- complete description of the features, structures, control environment, flow and organization of data;
 - detailed description of algorithms for data processing;
 - detailed description of the file formats for crude, product, control and auxiliary data so that it can be handled by own software;
 - interface description of individual software modules;
 - in case of modification of the software the documentation must be updated;
- A draft copy of all documentation in both printed and electronic form will be delivered to the Client at least one month before the SAT. The final version of the document in three hard copies and electronic form must be received prior to installing the radar;
 - Approval of the documentation will be part of the approval process;
 - Contracting authority reserves the right to reproduce the entire technical documentation or part thereof in electronic and paper form for internal use;
 - Contracting authority will be entitled to require the update of documentation that occurs:
 - about the same time as any change in hardware or software;
 - in the case of its evident inaccuracy or incompleteness, to which the Contracting authority notifies the applicant;

M) Requirements for acceptance tests:

- The Contractor shall ensure the successful completion of acceptance test SAT (Site acceptance Test):
 - contractor performs all measurements of transceiver and receiver (eg. transmitted power, frequency stability, intermediate frequency stability, stability of local oscillators, dynamic receiver, LNA gain, signal-to-noise ratio, MDS, etc.).
 - contractor will check the antenna (gain measurement, beam width);
 - contractor will check the functionality of all software components;
- Part of the SAT acceptance will be a 48-hour trouble-free operation of the radar, simulating normal operating conditions and expected external infrastructure problems (e.g. Power interruption or failure data networks);
- The contractor is obliged to provide a list and description of all basic operations and measurement performed during the SAT in Appendix no. 1.

N) Requirements for Installation:



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- The contractor must ensure the assembly and installation of the radar at the observatory Milešovka. The survey of the physical space available for radar installation for the smooth transport and installation of individual components is the responsibility of the contractor. Contracting Authority warns that for the transport of the equipment to Observatory Milešovka only cargo lift with a load capacity of 250 kg can be used and access by persons performing installation is only possible by hike to the observatory.



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