

PURCHASE CONTRACT

(hereinafter referred to as the "Contract")

Contract No. of the Customer: 2025-0314

concluded in accordance with the provisions of § 2079 et seq. (purchase contract), with the appropriate application of the provisions of § 2586 et seq. (contract for work) of (Czech) Act No. 89/2012 Coll., the Civil Code (hereinafter referred to as the "Civil Code")

Contracting parties:

Name: **CESNET, zájmové sdružení právnických osob**
Registered in: the register of associations, kept by the Municipal Court in Prague, under file number L 58848
Registered office: Generála Píky 430/26, 160 00 Prague 6
ID No: 63839172
Tax ID No: CZ63839172
Bank: Komerční banka, a. s., pobočka Praha 6
Account No: 123-482240217/0100
Data mailbox ID: gn35eq
Represented by: prof. Ing. Miroslav Tůma, CSc., Chairman of the Board of Directors and
Mgr. František Potužník, Vice-Chairman of the Board of Directors

on one side as the "**Customer**"

a

Name: **TR instruments spol. s r.o.**
Registered in: the commercial register, kept by the Regional Court in Brno, under file number C 22049
Registered office: Kameníčková 28, 616 00, Brno
ID No: 15530779
Tax ID No: CZ15530779
Bank: UniCredit Bank Czech Republic and Slovakia, a.s.
Account No: 8217202005/2700, IBAN: CZ17 2700 0000 0082 1720 2005, SWIFT: BACX CZ PP
Data mailbox ID: vz3sy27
Represented by: Ing. Jiří Kalvoda, managing director

on the other side as the „**Supplier**“

Preamble

This contract is concluded on the basis of the result of the tender procedure for the public contract entitled "CESNET – Precision time distribution elements", announced by the Customer pursuant to Act No. 134/2016 Coll., on public procurement, as amended (hereinafter referred to as the "Act") and published on the profile of the contracting authority at https://zakazky.cesnet.cz/contract_display_377.html and in the (Czech) Public Contracts Bulletin under the registration number Z2025-033068 (hereinafter referred to as the "Public Contract"). The Supplier's bid for the performance of the Public Contract (technical and price part, including clarifications or additions based on the Customer's (Contracting Authority's) questions) is attached as Annex 1 to this Contract (hereinafter also referred to as "Annex 1").

In case of any ambiguity or disputes regarding the subject matter of this contract or individual contractual terms and conditions, the complete tender documentation of the Public Contract, including any clarification, amendment or supplement thereto, shall also be taken into account in the interpretation.

The Supplier acknowledges that the Public Contract is implemented within the Client's project entitled "Modernization of e-INFRA CZ II", identification code: CZ.02 .01.01/00/23_016/0008329 (hereinafter referred to as the "Project"). The Project is implemented within the framework of the Operational Programme Jan Amos Komenský (hereinafter also referred to as "OP JAK"), the managing authority of which is the Ministry of Education, Youth and Sports of the Czech Republic (hereinafter referred to as the "Ministry") and which is co-financed from the European Regional Development Fund and the state budget of the Czech Republic. For this reason, other legal regulations (e.g. Act No. 320/2001 Coll., on financial control in public administration and Act No. 130/2002 Coll., on support for research, experimental development and innovation from public funds and on amendments to certain related acts) and the Decision of the Ministry on the provision of the subsidy apply to the performance of this Contract and to the subsequent control.

1. Subject of the Contract

1.1. Under this contract, the Supplier undertakes to

- 1.1.1. to **supply** the Customer with **devices** – switches for the purposes of precision time distribution supporting the White Rabbit (WR) technology (hereinafter referred to as "Devices" or also „WR switches“) in the scope and according to the specification set out in Annex 1 to this Contract;
- 1.1.2. **provide** the Customer with **service**, within the framework of which the Supplier guarantees and ensures the proper functionality of the supplied Devices within the meaning of the provisions of § 2113 et seq. of the Civil Code (hereinafter referred to as "Service"), provided that the parameters of the Service are as follows:
 - a) the Supplier warrants to the Customer that the Devices supplied will be free from defects and will operate in accordance with the specifications offered by the Supplier, and if any defects in the Devices (see below for definition) become apparent, the Supplier undertakes to rectify them free of charge or supply replacement Device(s).
 - b) Service duration: 60 months starting on the day of acceptance.
 - c) Service covers mainly defects in materials, manufacturing defects and functional defects.
 - d) Repair or replacement of defective Device(s) is free of charge (it is already included in the price of the Service).
 - e) Service request/complaint process:
 - i. The Customer shall report a service request for repair of defective Device to the Customer Service / Technical Support contact (see below).
 - ii. The Customer shall hand over the defective equipment to the Supplier at one of the two handover points:
 - The Customer's registered office at Generála Píky 430/26, Prague 6 or
 - Customer's workplace at Královopolská 147, Brno-Královo Pole.It is also possible to send defective Device(s) by post or similar transport (courier services, etc.), at the Supplier's request and at the Supplier's responsibility and expense.
 - iii. The Supplier shall collect the defective Device(s) (or arrange/agree a form of transport) within 5 working days of the Customer's request for repair.

- iv. The Supplier is obliged to repair and deliver the repaired Device(s) to the Customer within 5 working days from the date of handover by the Supplier or from the date of handover by the Customer to the chosen transport. In the event that the Supplier is unable to meet this deadline, the Supplier is obliged to supply the Customer with other new (replacement) Device of the same type within the same period

In case that the Supplier does not repair the defect Device duly reported by the Customer within the specified period of time or does not deliver replacement equipment, the Customer is entitled to repair the defect itself or through third parties, or arrange for replacement equipment, at the Supplier's expense.

- v. Costs associated with transport to and from the repair shall be borne by the Supplier.

- f) Customer service/technical support [REDACTED] warranty assistance: Ing. Vít Kančo, [REDACTED], +420 [REDACTED]
- g) The service only covers defects under warranty. Service/warranty does not cover defects/malfunctions not caused by product defect, i.e. defects caused by improper use contrary to the Supplier's communicated manual, accidents, unauthorized repairs or modifications, etc.

1.1.3. **provide** the Customer with **technical support** with the following parameters / services:

- h) Service duration: 60 months starting on the day of acceptance.
- i) Price for technical support is included in the price specified below.
- j) Provision of documentation for hardware and software operation.
- k) Access to technical support provided by the manufacturer (knowledge base, online support, etc.).
- l) A response time for remote support (of the Supplier) within 2 business days.
- m) Regular security patches, software / firmware updates and system upgrades to ensure ongoing security and performance.

- 1.2. The Customer undertakes to pay the Supplier the price set out below for the performance duly provided.

2. Price

- 2.1. The price is set as a single total sum for the entire subject of this contract (i.e. for delivery of all Devices to the place of performance and for the provision of the Service for the entire term) and is an amount of **215 680,- EUR excl. VAT**.
- 2.2. VAT will be charged at the statutory rate according to current and effective legislation.

3. Payment terms

- 3.1. The price will be paid by the Customer to the Supplier in one single payment on the basis of a tax document - invoice (hereinafter referred to as "invoice"), which the Supplier will be entitled to issue after delivery of the Devices and their acceptance by the Customer, i.e. after signing the acceptance protocol (see paragraph 5.2.).
- 3.2. The invoice must be accompanied by a copy of the relevant acceptance protocol (see paragraph 5.2.) signed by the Customer's technical contact person and the Supplier's technical contact person (see paragraph 9.2.), otherwise it does not give rise to the Customer's obligation to pay.

- 3.3. The invoices must be due at least 20 days from the date of delivery to the Customer. The invoice must contain all the requisites of a proper accounting and tax document within the meaning of the relevant statutory provisions. **The invoice must also contain a reference to this Contract and the identification data of the project (name: project "Modernization of e-INFRA CZ II", identification code: CZ.02.01.01/00/23_016/0008329).** In the event that the invoice does not have the appropriate requisites, the Customer is entitled to send it back to the Supplier within the due date for completion or correction without being in default of payment; the due date starts again from the date of delivery of the duly completed or corrected invoice.
- 3.4. The price for the performance of this Contract shall be paid by the Customer to the Supplier by wire transfer to the Supplier's account specified on the title page of this Contract, or to the account specified on the invoice.
- 3.5. Invoicing will be exclusively by electronic means. Contact email address of the Customer for receiving invoices: [REDACTED]
- 3.6. In the event that the Supplier is listed by the tax administrator as an "unreliable taxpayer" pursuant to Section 106a of Czech Act No. 235/2004 Coll. at the time of performance of the subject matter of this Contract, on value added tax, as amended (hereinafter referred to as the "VAT Act"), or that the Supplier's account, which the Supplier has indicated on the tax document issued by the Supplier, is not published by the tax administrator pursuant to Section 98 letter A of the VAT Act. (d) of the VAT Act, or that the Supplier's account, which the Supplier has indicated on the tax document issued by the Supplier, is an account held by a payment service provider outside the Czech Republic, the performance under this Contract shall be deemed to have been paid even if the Customer pays the Supplier only the price excluding VAT and pays the VAT directly to the account of the competent tax authority

4. Time and place of performance

4.1. **Time of performance** is set as follows:

- 4.1.1. The Supplier shall deliver the Devices under paragraph 1.1.1. within **90 days** from the date of receipt of the Customer's request for performance; (see further paragraph 4.3. of this Contract); this time does not include the acceptance testing period (see further paragraph 5.2.).
- 4.1.2. The Supplier will provide the service according to paragraph 1.1.2. for a period of 60 months starting from the date of signing the acceptance protocol (see paragraph 5.2.).

4.2. **The place of performance - delivery of the Devices** is the Customer's registered office at Generála Píky 430/26, 160 00 Prague 6.

The place / manner of performance of the service is defined in par. 1.1.2.

4.3. **Call for performance**

- 4.3.1. The Customer shall invite the Supplier to perform according to paragraph 4.1.1 of this Contract by a written call signed by the Customer's director or a person authorised by him (hereinafter referred to as the "invitation to perform"). The call for performance shall be sent by the Customer to the Supplier as follows:
- a) the call for performance shall be sent by the Customer's technical contact person to the Supplier's technical contact person (see Article 9.2 of this Contract) by e-mail and/or
 - b) the Customer will send the call for performance to the Supplier by means of a data mailbox.

- 4.3.2. The Supplier undertakes to confirm receipt of the call for performance to the Customer without undue delay. In any event, the notice shall be deemed to have been delivered:
 - a) on the date of confirmation of receipt of the e-mail, but no later than the third working day after sending in the case of sending pursuant to paragraph 4.3.1. (a)
 - b) on the date of confirmation of receipt in the mailbox, but not later than the next working day after sending in the case of a sending pursuant to paragraph 4.3.1 (b).
- 4.3.3. The Customer shall send the Call for performance to the Supplier no earlier than the date of the entry into force of this Contract, but no later than 90 days from the date of the entry into force of this Contract. In the event that the Customer fails to send the Call for Performance within the said period, the Supplier shall be obliged to deliver the Devices within 90 days from the moment of the Customer's deadline for sending the Call for performance expiring in vain (this period shall not include the acceptance testing period).

5. Manner of handover and the rights and obligations of the Parties in the performance of the Contract

- 5.1. The delivery of the Devices to the place of performance shall be confirmed by the technical contact persons (see paragraph 9.2) on the handover protocol (delivery note). The handover protocol shall be drawn up in paper form in 2 copies, one for each of the parties. The handover protocol will, inter alia, be the basis for any application of the contractual penalty pursuant to paragraph 8.2. of the Contract and the determination of its amount and for the commencement of the test operation or the signing of the acceptance protocol.
- 5.2. Upon delivery of the Devices, the Customer shall carry out a completeness check and may require acceptance test of the delivered Devices. If the acceptance test will be applied by the Customer, it may randomly test one or few of the delivered Devices, but may test any number of Devices; however, the testing will take a maximum of 15 working days from the signing of the handover protocol (delivery note). Within the framework of the tests, the Customer may verify that the Devices meet the parameters specified by the Supplier and are functioning properly. The proper completion of the delivery (and verification of functionality and declared parameters, if applied) shall be confirmed by the contact persons for technical matters of the Supplier and the Customer (see paragraph 9.2 of the Contract) on the acceptance protocol. The acceptance protocol shall be drawn up in paper form in two copies, one for each of the parties. The acceptance protocol shall be the basis for invoicing.

In the event of demonstrable deficiencies found during acceptance procedure, the Supplier shall be obliged to remedy them immediately and no later than within 15 working days of being notified of such deficiencies by the Customer. The Devices may also be remedied by the additional delivery of replacement Devices. In the event of deficiencies that are proven to be in fundamental contradiction with the Client's requirements set out in the tender documentation for the Public Contract, or set out in the Supplier's bid, and which cannot be removed within a reasonable period of time, the Supplier shall be deemed to have misrepresented in its offer and the provisions of this Contract (Article 7 and Article 8) and the Civil Code (Sections 2099 et seq. and 2894 et seq.) relating to defective performance and compensation for damages shall apply.

Minor defects that do not substantially limit the functionality of the delivered devices are not grounds for refusal of acceptance by the Customer. Such defects shall be indicated in the acceptance protocol and shall be deemed to have been duly rebuked. The Supplier shall rectify minor defects so pointed out without undue delay and by agreement with the Customer.

- 5.3. In the case of the Service, proper performance means the proper and timely provision of performance in accordance with the terms and conditions set out in this Contract.

- 5.4. The Service shall commence on the date of signing of the acceptance protocol (see paragraph 5.2.).
- 5.5. Rights arising from defective performance are governed by the provisions of Sections 2099 et seq. of the Civil Code, unless otherwise provided in this Contract.
- 5.6. The content of the acceptance protocol shall be based on the Client's requirements set out in Annex 1 of the tender documentation and the Supplier's bid (Annex 1 to the Contract)
- 5.7. The Customer undertakes to provide the Supplier with proper cooperation in the delivery of the Devices. In the event of the Client's failure to provide cooperation, the time limits for performance shall be extended by the period during which the Supplier was unable to fulfil its obligations as a result of the failure to provide cooperation.
- 5.8. The Supplier is obliged to deliver only original and new Devices, fully functional and meeting the requirements of the Customer set out in the tender documentation of the Public Contract. The Supplier shall also be obliged to prove their origin at any time upon the Customer's request. The Supplier shall furthermore be obliged to promptly provide, upon the Customer's request, the relevant certificates and attestations for the supplied devices, for example (but not limited to) that they comply with the relevant technical standards and legal regulations applicable in the Czech Republic and that they are authorised to supply them to the Czech Republic under this Contract.
- 5.9. The Supplier undertakes to provide the Customer with services also in the event that component failures (defects) are caused by improper storage or placement, unprofessional intervention or handling, mechanical damage by the Customer, or application of the Devices in violation of the manufacturer's technical conditions or as a result of a natural disaster; the price for servicing interventions in the aforementioned cases is not part of the price for the performance of this Contract and shall be agreed by the Parties in advance, if the situation permits.
- 5.10. The delivery of part of the goods/provision of performance by any subcontractor does not relieve the Supplier of its exclusive responsibility for the proper delivery of performance to the Customer. The Supplier shall be liable to the Customer for the performance (or part thereof) entrusted to a subcontractor to the same extent as if it had provided it itself.
- 5.11. By signing this Contract, the Supplier further undertakes:
 - 5.11.1. to keep confidential any confidential information that it becomes aware of during or in connection with the performance of the Public Contract;
 - 5.11.2. to indemnify the Customer against any damage caused by any subcontractor;
 - 5.11.3. ensure the archiving of documents on the performance of the Public Contract for a period of time not less than until the end of 2035;
 - 5.11.4. ensure the protection of personal data in accordance with legal regulations.
- 5.12. The Supplier is aware of the fact that the Customer is interested in the implementation of the subject of this Contract in accordance with the principles of responsible procurement pursuant to Section 6(4) of the Act. In view of this, the Supplier undertakes to:
 - to ensure compliance throughout the term of this Contract and in relation to all persons involved in the performance of the subject matter of this Contract with all relevant valid and effective, in particular labour laws of the Czech Republic (legal employment, prohibition of child and forced labour, decent and fair working conditions, fair remuneration, working hours, rest periods, paid overtime, etc.), employment and occupational health and safety legislation and environmental legislation;
 - ensure compliance with Act No 541/2020 on waste, insofar as it applies to its activities;

- ensure environmentally sound disposal of packaging from delivered goods and unwanted materials and goods (in particular through recycling and circular economy practices where possible);
- in the performance of the Contract, to the extent permitted by proper performance, use electronic means of communication and correspondence and minimise the consumption of office supplies;
- ensure proper and timely performance of financial obligations to its subcontractors through which it provides performance of the subject of the Contract, or part thereof, under this Contract; proper and timely performance under the preceding sentence shall be deemed to be full payment by the subcontractor of duly issued invoices for the subject of the Contract, respectively. part thereof, always within the due date agreed with the subcontractor, whereby the agreed due date shall not exceed 30 days, and if the due date is not agreed with the subcontractor, not later than 30 days from the date of receipt of payment by the Customer for the specific performance of the subject of the Contract, or part thereof;
- to ensure that the level of contractual conditions for its subcontractors is no worse than that provided for the Supplier in this Contract

6. Ownership, risk of damage to property and regulation of intellectual property rights

- 6.1. The ownership right shall pass to the Customer at the moment of signing the acceptance protocol (see paragraph 5.2 of the Contract).
- 6.2. The risk of damage shall pass to the Customer at the moment when the equipment is delivered and handed over to the Customer (see paragraph 5.1 of the Contract) at the place of performance.
- 6.3. In the event that a work protected by intellectual property regulations is created or provided by the Supplier in the course of the Supplier's performance under this Contract, and the author or owner (executor) of the rights is the Supplier, the Customer shall be entitled to use such work to the extent necessary to fulfil the purpose for which the relevant supply is provided, for the entire period of protection of the rights to such work (even after the termination of the Contract). The fee for the said licence shall be part of the price for the performance of this Contract. The Customer shall be entitled to use the results of the activities under the Contract (e.g. works of authorship) in their original or otherwise processed or otherwise altered form, alone or in a set or in conjunction with another work or elements. The licence is granted to the Customer with the right to sub-license or is also sub-assignable to any third party without the need for any further consent of the Supplier. The licence shall also apply automatically to all new versions, modifications and translations of the respective copyright works. The Customer is not obliged to use the licence, even in part.
- 6.4. If the Supplier's performance under this Contract involves the provision of any third-party software, the Supplier shall ensure that all necessary rights (licenses) to use such software are transferred to the Customer in order to fulfil the purpose of this Contract, subject to the following conditions:
 - 6.4.1. the Customer shall be entitled to exercise the right to use all SW to the extent necessary for the proper use of the subject matter of performance under this Contract;
 - 6.4.2. the authorization (license) must be granted for the duration of the author's proprietary rights (even after the termination of this Contract);
 - 6.4.3. the price of the license is included in the price of performance under Article 2 of this Contract.

7. Liability

- 7.1. Each party to this contract shall be liable for delay, defects and damages. The conditions and consequences of liability shall be based on this Contract and generally binding legal regulations, in particular the Civil Code. The Parties undertake to use their best endeavours to prevent damage and to minimise the damage caused.
- 7.2. Neither party to this Contract shall be liable for damage caused by circumstances excluding liability within the meaning of the Civil Code. The Parties undertake to notify the other Party without undue delay of the occurrence of circumstances precluding liability preventing the proper performance of the Contract and undertake to use their best efforts to avert and overcome them.
- 7.3. The Supplier acknowledges that the Customer is an obliged person within the meaning of Act No. 181/2014 Coll., on Cyber Security and on Amendments to Related Acts, as amended (hereinafter referred to as "ZoKB"), and that it is obliged under Section 4(4) of ZoKB to take into account the requirements resulting from the security measures issued by the National Authority for Cyber and Information Security (hereinafter referred to as "NACIS") when selecting suppliers for its information or communication system and to include the requirements in the contract. The Supplier further acknowledges the security measure issued by the NUCIB - Warning dated 21 March 2022, ref. 350 - 401/2022, ref. 3381/2022-NUCIB-E/350 against a cybersecurity threat consisting in non-compliance with contractual obligations by suppliers of ICT services and products with significant relationship to the Russian Federation (hereinafter referred to as the "Warning"). As the performance under this Contract will become part of the Customer's information and communication system, the Parties agree that any delay by the Supplier in performing its obligations under this Contract or inability to perform them, originating from or related to the threats addressed in the Warning, shall not constitute a reason for allowing a change in the obligation under the Contract pursuant to Section 222 of the Civil Code, shall not constitute a circumstance excluding the Supplier's liability within the meaning of Section 2913(1) of the Civil Code. 2 of the Civil Code, and the Supplier shall not be entitled to request the renegotiation of the Contract as a result of a material change of circumstances pursuant to Section 1765 of the Civil Code
- 7.4. The Supplier shall be responsible for the fact that it has been authorised to provide the software licence to the extent required under paragraph 6.4 of this Contract.

8. Damages, contractual penalties and withdrawal from the Contract

- 8.1. Compensation for damages incurred by one of the contracting parties by the other contracting party shall be governed by the provisions of the Civil Code.
- 8.2. If the Supplier is in default in the delivery of the Devices pursuant to paragraph 1.1.1 of the Contract:
 - 8.2.1. shorter than 31 days, the Customer shall be entitled to a contractual penalty of 0.05% of the price for delivery pursuant to Paragraph 2.1. excluding VAT for each commenced day of delay, in delivering the Devices within the performance period pursuant to Paragraph 4.1.1;
 - 8.2.2. longer than 30 days, the Customer shall be entitled to a contractual penalty of 0.1% of the price for the delivery pursuant to paragraph 2.1. excluding VAT for each day of delay in handing over on the delivery date pursuant to paragraph 4.1.1,
- 8.3. This is without prejudice to the right to compensation for any damages, which may consist, inter alia, in the fact that the Customer will not be entitled to draw on the subsidy intended to finance the Public Contract. The Customer shall be entitled to set off any claim for

liquidated damages under this paragraph against the price it is obliged to pay under this Contract. The Client shall have the right to withdraw from or terminate this Contract with immediate effect in the event of a delay of more than 30 days by the Supplier in the delivery of performance

- 8.4. The Customer shall be entitled to a contractual penalty of CZK 5,000 or 200 EUR for each day of delay in the performance of its obligations under paragraph 1.1.2. of this Contract, for each individual delay, but not more than 5% of the price for delivery under paragraph 2.1. This paragraph shall not affect the Customer's rights under paragraph 1.1.2(e) of this Contract. The Customer shall have the right to withdraw from or terminate this Contract with immediate effect in the event of default by the Supplier in the performance of its obligations under the warranty for a period of more than 30 days.
- 8.5. In the event that during the course of performance it becomes apparent that the characteristics (especially technical) of the supplies and/or services are demonstrably contrary to the information provided by the Supplier in its offer (Annex 1 to the Contract), the Customer shall be entitled to a contractual penalty of CZK 100,000 or 4 000 EUR. At the same time, the Client shall have the right to withdraw from this Contract; however, such withdrawal shall not affect the Client's right to payment of the contractual penalty and the claim for damages.
- 8.6. In the event that during the course of performance it becomes apparent that the Supplier has provided the Customer with software whose author or rights owner is a third party, whereby the Supplier was not entitled to such provision, the Customer shall be entitled to a contractual penalty of CZK 100,000 or 4 000 EUR for each individual breach of this obligation and a claim for damages. In this case, the Customer shall also be obliged to provide licenses to the necessary extent (without additional payments by the Customer) upon the Customer's request, and if such obligation is not fulfilled by the Supplier within 30 days from the date of receipt of the request, the Customer shall be entitled to withdraw from the Contract. However, the Customer's right to damages and liquidated damages referred to in this paragraph shall remain unaffected.
- 8.7. In the event of a breach of any of the Supplier's obligations under paragraph 5.8, second and/or third sentence, 5.11.1 and/or 9.7 of the Contract, the Customer shall be entitled to a contractual penalty of CZK 50,000 or 2 000 EUR for each individual case of such breach.
- 8.8. In the event that the Supplier or its subcontractor is found guilty by a public authority of an offence or administrative offence, or other similar offence, in a proceeding for a violation of the legal regulations affected by the provisions of clause 5.12 of the Contract, of which the Customer becomes aware and which occurred during or in connection with the performance of this Contract, the Customer shall be entitled to withdraw from this Contract. The Customer shall be entitled to a contractual penalty of CZK 10,000 or 400 EUR for each individual case of breach of the Supplier's obligations under paragraph 5.12 of the Contract; any withdrawal by the Customer from the Contract shall not affect the Customer's right to payment of such contractual penalty by the Supplier
- 8.9. If the Customer is in default in the payment of any invoice duly issued by the Supplier under this Contract on the due date, the Supplier shall be entitled to interest on the overdue amount at the rate of 0.1% of the unpaid amount for each day of delay in payment. The Supplier shall be entitled to withdraw from this Contract if the Customer is in default of payment of the purchase price (part thereof) for more than 30 days.
- 8.10. Both Parties shall have the right to withdraw from this Contract in the event of repeated default by the other Party in the performance of any obligation under this Contract. The right to compensation for damages and contractual penalties until the date of withdrawal (termination) shall remain unaffected (damages may include, but are not limited to, costs incurred by the Customer for the implementation of a new tender/tender procedure).

- 8.11. The amount of compensation for damages in accordance with this Contract in any direction and by any contracting party is limited to a maximum amount of CZK 1,000,000 or 40 000 EUR. No stipulation of liquidated damages, or actual payment thereof, shall prejudice the Parties' entitlement to damages up to that limit
- 8.12. Either party may withdraw from only part of the Contract under the terms of this Contract, unless precluded by the nature of the performance.
- 8.13. The effects of withdrawal from the Contract (or termination) shall commence upon delivery of a written expression of will expressing withdrawal from the Contract (termination) to the other Party.
- 8.14. In accordance with the provisions of Section 1998 of the Civil Code, the Supplier shall not be entitled to terminate its obligation to provide the Service until at least the end of the period specified in paragraph 1.1.2. b); in the event of a breach of this provision by the Supplier, the Customer shall be entitled to demand a contractual penalty from the Supplier in the amount of 1/3 of the price that the Customer would have been obliged to pay for the Service pursuant to paragraph 2.2. until the end of the agreed minimum period of provision of the Service.
- 8.15. The Supplier may withdraw from the Contract only under the conditions set out in the Civil Code and this Contract

9. Final Provisions

- 9.1. The Parties shall cooperate with each other and provide each other with all information necessary for the proper performance of their obligations. The Parties shall inform the other Party of any facts that will, are or may be relevant for the proper performance of the Contract.
- 9.2. The Parties have designated the following contact persons to act on technical matters related to the performance of this Contract (also referred to in this Contract as the "Technical Contact Persons") as of the effective date of this Contract:
 - 9.2.1. on the Customer's side: **Ing. Jan Růžička**, tel.: +420 [REDACTED], email: [REDACTED]
[REDACTED]
representatives for signing the handover / acceptance protocols (par. 5.1. and 5.2.):
RNDr. Ing. Vladimír Smotlacha, Ph.D., email: [REDACTED] tel.: +420 [REDACTED]
 - 9.2.2. On the Supplier's side: **Ing. Vít Kančo**, Product manager, +420 [REDACTED]
[REDACTED]
representatives for signing handover / acceptance protocols (par. 5.1. and 5.2.):
Ing. Vít Kančo, Product manager, +420 [REDACTED] [REDACTED]
- 9.3. The Parties undertake to notify the other Party in writing of any change in the contact details of the contact persons for technical matters at the latest 48 hours before the start of use of the new contacts. Such a change may be a unilateral act of the Party concerned, i.e. e.g. in the form of a communication signed by an authorised representative of the Party. The change may be made in electronic form (e.g. via a data mailbox, digitally signed e-mail or e-mail with a digitally signed communication attached).
- 9.4. The Parties shall inform each other of any organisational change (e.g. change of telephone numbers, change of address, change of bank connection, etc.) without undue delay.
- 9.5. The Parties are obliged to fulfil their obligations under this Contract in such a way as to avoid unnecessary delays in the fulfilment of individual deadlines and in the maturity of individual monetary obligations.

- 9.6. All notices between the Parties relating to the Contract or to be given pursuant to the Contract shall be in writing and shall be delivered to the other Party at the contacts specified in the Contract unless otherwise specified or agreed between the Parties
- 9.7. By signing this Contract, the Supplier acknowledges and agrees that:
- 9.7.1. by signing the Contract, the Supplier becomes, in accordance with Section 2(e) of Act No. 320/2001 Coll., on Financial Control in Public Administration, as amended, a person obliged to cooperate in the performance of financial control. Within the framework of this control, the Supplier is obliged to allow the representatives of the grant provider (the Ministry of Education and Science of the Czech Republic), or other authorised persons, to carry out the control in accordance with the conditions set out in the aforementioned Act;
 - 9.7.2. is obliged to allow the representatives of the grant provider and, where applicable, other authorised persons access to those parts of the offer, the Contract and related documents which are subject to protection under special legal regulations (e.g. as trade secrets, classified information), provided that the requirements set out in the legal regulations (e.g. Act No. 255/2012 Coll., on Control (hereinafter referred to as the "Control Regulations"), as amended) are met;
- 9.8. The Client is obliged to comply with the requirements for mandatory publicity within the Structural Funds programmes set out in the relevant current rules for publicity within the OP JAK, in all relevant documents relating to the performance of this Contract.
- 9.9. The Client is obliged to comply with the relevant current rules for the selection of suppliers under the OP JAK, some of which also apply to the Supplier, in the performance of this Contract.
- 9.10. The Supplier acknowledges that pursuant to the provisions of Section 219 of the Public Procurement Act, the Client is obliged to publish this Contract on its procurement profile.
- 9.11. The contractual relationship established by this Contract is governed by the applicable laws of the Czech Republic, in particular the Civil Code.
- 9.12. If any provision of the Contract is or becomes invalid, the validity of the other provisions shall not be affected. The Parties undertake to replace the invalid provision with a valid provision that comes as close as possible to the economic purpose of the invalid provision. If the Contract has a gap that requires modification, the Parties shall fill the gap with a supplementary provision that takes into account the economic purpose of the Contract.
- 9.13. The Contract shall come into force and effect on the date of signature by the last of the Parties.
- 9.14. This Contract is executed in electronic form and signed by representatives of the Parties by digital signatures based on qualified certificates. Each of the Parties shall receive a mutually signed electronic copy of this Contract.
- 9.15. The Parties declare that the Contract is entered into according to their true and free will, have read the Contract, agree with its contents, and affix the signatures of their responsible representatives in proof thereof.

Annexes:

Annex 1: Specification of equipment delivery - technical and price part of the Supplier's bid

On behalf of the Customer:

Date: see digital signatures

prof. Ing. Miroslav
Tůma, CSc.

Digitálně podepsal prof.
Ing. Miroslav Tůma, CSc.
Datum: 2025.11.11
19:00:07 +01'00'

prof. Ing. Miroslav Tůma, CSc.
předseda představenstva

Mgr. František
Potužník

Digitálně podepsal
Mgr. František Potužník
Datum: 2025.11.11
22:22:24 +01'00'

Mgr. František Potužník
místopředseda představenstva

On behalf of the Supplier:

Date: see digital signatures

Ing. Jiří
Kalvoda

Digitálně podepsal
Ing. Jiří Kalvoda
Datum: 2025.11.06
14:35:30 +01'00'

Ing. Jiří Kalvoda
managing director

Annex 1 of the Contract

Specification of equipment delivery - Technical and price part of the Supplier's bid

(including clarifications or additions based on questions from the contracting authority)



TR instruments spol. s r.o.

Měřicí přístroje a systémy

Křižíkova 70, 612 00 Brno | Česká republika

Tel.: +420 541 633 670 | Fax: +420 541 212 413

E-mail: tri@trinstruments.cz

COVER SHEET OF THE BID

Public contract:	„CESNET – Precision time distribution elements“ https://zakazky.cesnet.cz/contract_display_377.html
Contracting authority:	CESNET, interest association of legal entities Generála Píky 430/26, 160 00 Prague 6 ID No.: 63839172

Identification data of the supplier - participant:	
Participant (business name or name)	TR instruments spol. s r.o.
Registered seat (in the case of a natural person, the place of business)	Kameníčková 28, 616 00, Brno
Legal form	Společnost s ručením omezeným
ID/registration number	15530779
Tax ID/registration number	CZ15530779
Public register entry	Obchodní rejstřík u Krajského soudu v Brně, oddíl C, vložka 22049
Data box identifier	vz3sy27
Web	www.trinstruments.cz
Contact person of the participant	
Name/surname	Ing. Vít Kančo
Phone	+420 [REDACTED]
E-mail	[REDACTED]
Evaluated criteria	
Total bid price (excl. VAT) (see also sections 8. and 9. of the tender documentation)	215 680,- EUR
Name of the person authorized to act on behalf of the participant	Ing. Jiří Kalvoda
Details of the authorisation	jednatel
Date	14.07.2025

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Annex 1 to the tender documentation

Public procurement: “CESNET - Precision time distribution elements”

Technical parameters and requirements

For all relevant points in this Annex, please indicate whether the offer meets them (yes/no). If additional information beyond the yes/no answer is required, this shall be included in the text of the relevant requirement.

For requirements, the supplier may also refer to a specific place in the offer where the parameter can be verified (e.g. attached product datasheet, etc.).

CESNET as the Czech NREN operates own optical network and provides accurate time and frequency to its partners and customers. Our primary time sources are atomic clocks traceable to the national approximation of the UTC time scale. We intend to deploy new infrastructure for time and frequency distribution based on the White Rabbit technology distribution elements, that will be deployed in geographically distributed locations (CZ, AT (Vienna)).

Subject of this public contract is the delivery of 20 pieces of White Rabbit (WR) devices – switches satisfying following parameters.

A. Requirements for WR switches (precise time distribution elements)

- 20pc of identical devices
Number of offered devices [pc]: 20.
- Interoperability with Open Hardware White Rabbit switches
Offered devices meet: YES/NO: YES, Z16 devices can be included in architectures interoperating with Open Hardware White Rabbit switches.
- Accuracy of time transfer better than 1 ns once devices are locked
Offered devices meet: YES/NO: YES.
- Basic support for default PTP protocol according to IEEE 1588-2019
Offered devices meet: YES/NO, number of ports: YES, 16 ports.
- Support for unrestricted PTP protocol according to IEEE 1588-2019 on at least two delivered devices (in case of required license, it shall be transferable to any of supplied devices)
Offered devices meet: YES/NO, number of ports: YES, 16 ports.
PTP unrestricted capability is possible under license. The licenses are generated for the specific device and can be transferred via a license portal. The portal allows the modification of existing licenses to enable the transfer between different units.
Manufacturer (Safran) provides access to a License Portal directly to the customer.
- Low jitter functionality, i.e. device use precise phase comparator and stable ovenized oscillator
Offered devices meet: YES/NO YES.
- 10 MHz and 1 PPS inputs for external reference with standardized connectors e.g. SMA
Offered devices meet: YES/NO, specify type of connectors: YES, SMA.
- 10 MHz and 1 PPS outputs with standardized connectors e.g. SMA
Offered devices meet: YES/NO, specify type of connectors: YES, SMA.
- At least 10 available SFP interfaces compatible with valid SFP standards – the supplier shall provide the list of these SFP standards
Offered devices meet: YES/NO, number of ports and specify SFP standards: YES, 16 interfaces for 1GbE SMF SFP
- All SFP interfaces are configurable in either master or slave WhiteRabbit mode
Offered devices meet: YES/NO: YES
- All SFP interfaces must be compatible with DWDM SFP modules working in both C and L bands (participant will specify standards that the SFP transceivers must meet or provide list of compatible SFP transceivers),

Offered devices meet: YES/NO, specify SFP standards or list of compatible transceivers: YES, all SFP models compatible with the Open Hardware WR Switch are also compatible with the WR-Z16. Standard DWDM SFPs are compatible with the solution. E.g: [1000BASE-ZX DWDM SFP 1528.77nm-1563.86nm 80km Transceiver Datasheet | FS](#)

- At least 4 SFP ports must allow simultaneous use of Class 3 power consumption type transceivers without limiting of available/usable SFP ports
Offered devices meet: YES/NO, number of ports YES, user has to pay attention to the number of deployed Class 3 SFPs as the overall power available to all 16 SFPs has to taken into account.
- Support for monitoring of operational parameters at all SFP ports (e.g. temperature, TX/RX power, link state)
Offered devices meet: YES/NO YES.
- Fully documented method of user calibration of every SFP port and optical path available to customer (availability under NDA is acceptable)
Offered devices meet: YES/NO YES.
- Possibility of configuring multiple time sources, including redundant master WR and 1PPS+10MHz with automatic fail-over algorithm. Two master WR signals are the intended use at most sites. Requested is resilience against occasional optical line flapping - the device has to synchronize without the operator intervention when optical connection is again stable.
Offered devices meet: YES/NO YES.
- Standard 19" rack mountable design capable of continuous operation in a hot and cold aisle system and maximum height is 2U (rack units)
Offered devices meet: YES/NO YES, 19" 1U.
- Redundant hot-swap power supply, AC 230V or 48 V DC option, all units will be delivered with two AC power supplies
Offered devices meet: YES/NO YES.
- At least dedicated 1x Ethernet (RJ-45) port for remote device management over IP network
Offered devices meet: YES/NO YES, 2x Ethernet RJ-45 management ports.
- Local console for device setup via USB or RJ-45 port
Offered devices meet: YES/NO YES.
- Remote device configuration (at least Web/HTTPS and CLI/SSHv2) and monitoring (SNMPv3, and another advanced protocol, e.g. REST API, RESTCONF, or NETCONF)
Offered devices meet: YES/NO, type of advanced protocol YES, HTTP/HTTPS, SSHv2 + SFTP/SCP, SNMPv2, SNMPv3, SNMP Traps, REST-API, Smart-Alerts.
- External authentication and authorization using RADIUS/TACACS+
Offered devices meet: YES/NO YES.
- Remote logging to syslog server
Offered devices meet: YES/NO YES.
- Internal firewall/ACL at least to limit access to management protocols in IP address/prefix basis
Offered devices meet: YES/NO YES, iptables are supported on the management interfaces to restrict traffic from specific IP addresses, similarly to an internal firewall.
- In case any of required parameters are subject of a license, all necessary licenses shall be included in the offer and licenses must not be time limited (perpetual).
Offered meets requirement: YES/NO YES.

B. Warranty and related services

The parameters of the warranty and related services required by the contracting authority are set out in the contracting authority's terms and conditions - in the binding draft of the Purchase Contract (Annex 2 of the tender documentation).

C. Testing of the samples - devices (before conclusion of the contract)

The selected supplier will be obliged, before conclusion of the contract, to provide at least two samples of WR devices to run tests by the contracting authority. Applicants can nominate a representative to participate in these tests. Testing will take a maximum of 15 working days from submitting of the samples.

Within the tests, the contracting authority will mainly verify the following functionalities/parameters. However, the contracting authority also reserves the possibility to verify any other parameter required in the tender documentation (in this annex).

	Tested parameter	Test result • OK • Limited functionality • Not functional	Comment
1	power supply hot swapping		
2	remote configuration and monitoring of operational status		
3	connection of multiple sources of input timing signal (multiple WR signals and RF signal 10MHz and 1 PPS)		
4	connection of outputs (WR and RF signal 10MHz and 1 PPS)		
5	hot swapping of input timing signal as a reaction to discontinued external reference or optical link break		
6	resilience against occasional optical line flapping - the device has to synchronize without the operator intervention when optical connection is again stable		
7	DWDM long-range SFP module compatibility (particularly DWDM channels 6-9)		
8	verification of suggested calibration method		

Cenová nabídka: COM250709

Datum vyhotovení: 14.07.2025

Zákazník: CESNET, z. s. p. o. Generála Píky 430/26 Praha 6 160 00 Česká republika	Dodavatel: TR instruments spol. s r. o. Kameníčková 28 Brno 616 00 Česká republika
Kontaktní osoba:	Kontaktní osoba: Ing. Vít Kančo + 420 606 723 403 vkanco@trstruments.cz

Platební podmínky: Fakturou se splatností 20 dní.

Záruční podmínky: 60 měsíců.

Pol.	Typ	Popis	Cena bez DPH	Ks	Celkem bez DPH
1	EQP-WR-Z16-LJ-01	White Rabbit Z16 1U White Rabbit precise time fan-out distribution clock with low-jitter enhancement. 16x 1GbE SFP connectors (no SFP transceivers included) . 4x SMA 3.3V/50ohm (PPS In, 10Mhz In, PPS Out, CLK Out). Dual hot-swap AC supplies.		20	
2	WR PTP License	PTP license for White Rabbit Zen Family products. Unlock additional PTP profiles (G.8265.1, G.8275.1, C37.238-2011), PTP message ratios, unicast mode.		2	
3	Shipping	All shipping, packing, handling fees			

Cena celkem bez DPH: 215 680 €

Tato cenová nabídka je dokumentem, na který se vztahuje obchodní tajemství a nesmí být předána třetí osobě.

WHITE RABBIT Z16

The reliable precise time fan-out for
White Rabbit distribution



hw version >v5.0 (Low Jitter version)

The WR-Z16 is the reliable precise time fan-out for White Rabbit distribution on 1G Ethernet-based networks. It is a standalone device with 16 SFP connectors which provides sub-nanosecond accuracy time over plug-and-play fiber links.

The WR-Z16 provides White Rabbit, Synchronous Ethernet (SyncE) and very precise IEEE 1588 (PTP) in all its optical interfaces and supports NTP interoperability. Picosecond-level frequency distribution is available through digital clock.

The WR-Z16 incorporates seamless failover mechanisms which combine multi-source redundancy and holdover capabilities to ensure continued operation.

- Sub-nanosecond time accuracy
- 16 optical timing ports for WR, PTPv2 and NTP
- Multi-source time references
- Distance range over 80 km using fiber
- Linux-based WRZ OS
- Datacenter Optimized design
- Seamless Failover mechanisms
- Holdover capability
- Extended monitoring and management
- Redundant hot swappable power supply & fans
- Low jitter/phase noise frequency dissemination
- Built-in precise timing sources monitoring
- Support for HAT1

Safran Electronics & Defense is with you every step of the way, building in the intelligence that gives you a critical advantage in observation, decision-making and guidance.

High Accuracy

The WR-Z16 implements the White Rabbit (WR) protocol, an high-accuracy extension of PTP based on SyncE, that allows to easily distribute sub-nanoseconds timing within Metro Area Network distances and beyond.

Interoperability

Placed at the top of the rack the WR-Z16 can distribute standard PTP IEEE 1588-2008 and Synchronous Ethernet for the last hop through its 16x fiber ports using the most common profiles such as Telecoms profiles (G.8265.1, G.8275.1) & Power profiles (IEEE C37.238-2011 and IEEE/IEC 61850-9-3). It also provides NTP interoperability and 10MHz/PPS distribution.

Resiliency

The WR-Z16 incorporates seamless failover mechanisms to switch between multiple timing sources when a failure is detected, ensuring maximum availability and optimal synchronization performance even during the transitions. Additionally, an optional Holdover oscillator can be included to maintain high accuracy (1.5us < 24h) even if all timing references are down.

Low jitter enhancement

The low jitter/low phase noise version of the WR-Z16 includes improved clock circuitry in order to enhance the stability and accuracy of the timing outputs. As result of the improved performance, the WR-Z16 is able to meet the most demanding requirements in terms of time and frequency distribution.

Technical Specifications

Timing & Synchronization	
Multi-sources	<i>Failover mechanism to ensure continuous operation by switching over multiple timing sources in case of failure:</i> <ul style="list-style-type: none">White Rabbit (accuracy <1ns)External references (GNSS, Atomic Clocks)PTPNTP (Time of Day only) <i>Precise timing sources monitoring to evaluate the synchronization performance of multiple sources.</i>
WR	Supports HATI (Safran's High Accuracy IP Core)/ GM/ Master/ BC/ Slave modes
PTP IEEE 1588-2008	Supports GM/ Master/ BC/ Slave modes, E2E/P2P, L2/L3, Multicast/Unicast. Support for using PTP timing sources for WR fanout Supported Profiles: <ul style="list-style-type: none">DefaultG.8265.1[1]G.8275.1 [1]IEEE C37.238-2011[1]IEEE/IEC 61850-9-3[1]
SyncE	<ul style="list-style-type: none">Available in all PTP portsSupports key sections of the ITU-T G.8261, G.8262 & G.8264
NTP	Supports Client & Server modes Supports NTP v2, v3 & v4 Supports hardware timestamping
Holdover (optional)	Accuracy (learning 3 days from GNSS) below 1.5us @ 24h

Advanced Management

The WR-Z16 enables extensive monitoring via REST-API and SNMP, including the combination of smart alerts with traps. By providing templates, it facilitates its integration with third-party networking and monitoring tools. Moreover, it allows automatic topology discovery via LLDP and comprehensible remote logging through rsyslog.

Precise timing sources monitoring

The WRZ-OS incorporates a precise timing sources monitoring system which allow to evaluate the synchronization performance of multiple timing sources (WR, PTP, 1PPS+10MHz) received in the unit. Relevant metrics are computed and can be visualized in the WebUI. The monitoring data is collected and stored in a built-in database that can be exported using the integrated management tools

Enhanced Security

TACACS+/RADIUS have been integrated to enable remote authentication for networked access control through a centralized server. The secure version of most of the protocols such as SFTP, HTTPS, SNMPv3 has been implemented and a firewall has been incorporated to provide a robust system against malicious users.

Intuitive configuration

The new version of WRZ-OS introduces a complete web interface redesigned to provide an excellent user experience: By the means of timing presets, a complex configuration can be done in a few clicks. Simultaneously, the CLI tool has also been rethought to allow straightforward configuration from the terminal to advanced users.

Management & Communications	
Control	CLI & Web-GUI: HTTP(s)
Authentication	<ul style="list-style-type: none">RADIUSTACACS+
Monitoring	<ul style="list-style-type: none">SNMPv3 (SNMPv2) + Traps with enterprise MIBSmart-AlertsREST-API
Network	<ul style="list-style-type: none">SSHv2 + SFTP/SCPHTTP(s)DHCPLLDPRsyslog
Security Features	
<ul style="list-style-type: none">Configurable Password PolicyAuthentication: RADIUS; TACACS+Enable/Block protocolsSFTP/SCP: Securely transfers files to and from the device over an SSH sessionSNMP v3: Remotely configure and manage over an encrypted connectionHTTPS supportFirewall configurationAlert notifications via SNMP traps and emailSigned software updates	

[1]: PTP License not included in default package

Specifications: 10MHz output		
Phase noise (dBc/Hz)	GM	Slave
1 Hz	-97.4	-95.8
10 Hz	-111.6	-109.8
100 Hz	-131.4	-131.5
1 kHz	-145.1	-145.2
10 kHz	-151.0	-150.9
100 kHz	-152.8	-153.0
ADEV		
@1s	8.52E-13	1.23E-12
@10s	1.09E-13	1.39E-13
@100s	1.55E-14	1.71E-14
@1000s	2.24E-15	2.95E-15
Signal waveform & Levels: LVTTTL into 50 ohm, SMA		

Specifications: 1PPS output	
Accuracy when locked (WR or ext. reference)	< 1ns
Holdover (after 3 days locked to GNSS reference) *requires Holdover option	
After 4 hours	< 100 ns
After 8 hours	< 500 ns
After 24 hours	< 1.5us
Signal waveform & Levels: LVTTTL into 50 ohm, SMA	

Front Panel	
UART	RS232 Serial (RJ45 connector)
Ethernet	2x 100/1000 Base-T RJ45 (Management, NTP)
SFP Ports	16x 1GbE for timing distribution (WR/PTPv2/NTP selectable)
Timing I/O	4x SMA connectors (3V @50Ω, TTL compatible): <ul style="list-style-type: none">• 10MHz OUT (LVTTTL)• PPS OUT (LVTTTL)• PPS IN (LVTTTL)• 10MHz IN (TTL/CMOS/ECL/clipped sine)
Leds	<ul style="list-style-type: none">• 3xLEDs for status information
Physical Specification	
Dimension	431 mm x 44 mm x 330 mm (Designed for EIA 19" rack)
Weight	3.0 kg
Color	White (Metallic)
Environmental Conditions	
Temperature	Operational: -10 to +50 °C Storage: -30 to +70 °C
Humidity	0% ~ 90% RH

Back Panel Modules	
Power Supply	2x Redundant & Hot-swappable <ul style="list-style-type: none">• 100-240VAC, 50-60 Hz• 50W (max. 80W)• -48 VDC modules available (optional)
Fan	2 x Swappable fan modules Airflow: blowing out

Agency approvals	
Certifications:	CE, TUV, FCC part 15 class A, RoHS, REACH, WEEE

Ordering information	
Base unit	P/N: EQP-WR-Z16-LJ-01
Product configuration	P/N
WR-Z16-LJ WR-Z16-LJ with Holdover WR-Z16-LJ with -48 VDC	EQP-WR-Z16-LJ-01 EQP-WR-Z16-LJ-02 EQP-WR-Z16-LJ-100

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April 21, 2025

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