

**TOSHIBA EUROPE LIMITED**

**and**

**CESNET, zájmové sdružení  
právnických osob**

**DIRECT PURCHASING AGREEMENT**

**THIS AGREEMENT** is made on the date of its signature by both parties ("**Commencement Date**") between:

**PARTIES**

- A) **TOSHIBA EUROPE LIMITED**, a company incorporated in England & Wales Germany (registered No: 02519556), whose registered office is at 1 Pine Trees, Chertsey Road, Staines Upon Thames, TW18 3DU ("**Toshiba**"); and
- B) **CESNET, zájmové sdružení právnických osob**, a company incorporated in the Czech Republic (registered No:63839172), whose registered office is at Generála Píky 430/26, 160 00 Prague 6 ("**Purchaser**").

together "**Parties**" and individually a "**Party.**"

**WHEREAS:**

- A) Purchaser is a contracting authority according to Czech law, funded largely form public resources, and and the purchase under this Agreement is made pursuant to the Public Contract specified in clause 1.1 below.
- B) Toshiba is the manufacturer and distributor of the Items and desires to sell the Items to the Purchaser.
- C) The Items are sold to the Purchaser solely for use by the Purchaser only and not for resale, leasing or any other non Purchaser use purposes.
- D) The Purchaser wishes to purchase the Items from Toshiba and Toshiba wishes to sell the Items to the Purchaser upon the terms and conditions set out in this Agreement.

**NOW IT IS HEREBY AGREED** as follows:

**1. Definitions & Interpretation**

1.1 In this Agreement the following words have the following meanings:

**"Agreement"** – means this Agreement and its Schedules as the same may be varied or amended by written agreement between the Parties.

**"Associated Company"** - means in respect of a company, a company which is the holding company or subsidiary of that company, is a subsidiary of the same holding company as that company or is a subsidiary of any such subsidiary.

**"Confidential Information"** - means (i) the terms and conditions of this Agreement; (ii) any information delivered to any party in connection with this Agreement; (iii) all information of a confidential nature concerning the trade secrets or business dealings, methods of business, transactions, plans or affairs of a party; (iv) all technology, intellectual property or know-how of a party; (v) any document or information designated as being confidential; and (vi) all copies of the above on any media, electronic or otherwise unless, in all cases, any such item of information:

- a) is publicly available (either to the general public or to any relevant trade or industry) prior to any party's receipt of it from another party;
- b) is thereafter made publicly available (either to the general public or to any relevant trade or industry) by another party or by a third party which is entitled to make such item publicly available;
- c) becomes available to any party on a non-confidential basis from a source which has represented to such party that such source is entitled to disclose it; or
- d) was known to any party on a non-confidential basis prior to its disclosure to such party by another party.

**“Contract”** – means the individual contract entered into between Toshiba and Purchaser for the sale and purchase of specific Items pursuant to an Order. Each accepted Order is to be treated as an individual contract governed by the terms of this Agreement.

**“Control”** – means (i) in relation to a body corporate holding or being beneficially entitled to more than 50% of that body's equity share capital; (ii) possessing more than 50% of the voting power in any body; (iii) in relation to a partnership the right to a share of more than one half of the income or assets of the partnership; or (iv) the power by whatever means and whether directly or indirectly to achieve the result that the affairs of that body are conducted in accordance with the controlling person's wishes.

**“Data Protection Legislation” means**

- a) General Data Protection Regulation ((EU) 2016/679) ;
- b) Data Protection Act 2018;
- c) Law Enforcement Directive ((EU) 2016/680); and
- d) all applicable Laws about the processing of personal data and privacy.

**“Delivery Point”** - means a delivery address: Generála Píky 430/26, 160 00 Prague 6, Czech Republic.

**“Disclosing Party”** – means the Party disclosing Confidential Information.

**“Group”** - means in respect of a Party that Party and its Associated Companies.

**“Intellectual Property Rights”** - means copyright, design rights, database rights, patent rights, publicity rights, trade secrets, trademarks, trade names and service marks, protections from trademark dilution, rights in know-how, and any other intellectual property rights, whether registered or unregistered, legal or beneficial, and including applications for the grant of any such rights.

**“Items”** - means any or all of the Products, Solutions and Services.

**“Liability”**- means all liability, including liability for breach of contract, negligence, breach of statutory duty and/or other tort, any liability in relation to any indemnity and any other liability howsoever arising.

**“Normal Working Hours”** - means the hours between 09.00hrs and 17.00hrs UK time on Working Days.

**“Notice”** – means any formal communication made between the Parties, as required in this Agreement and made in compliance with Clause 28.4.

**“Order”** – means the order form template as set out in Schedule 1 which is to be used by the Purchaser for the purpose of ordering the Items.

**“Pre-loaded Software”** - means the software pre-loaded onto the hardware element of some of the Products, by Toshiba.

**“Price”** – means the amount payable by the Purchaser to Toshiba for the Items, being a price as is agreed between the Parties as set out in an accepted Order.

**“Products”** - means the Toshiba hardware products listed within the relevant product catalogue, which shall be amended from time to time.

**“Schedule”** – means any schedule attached to this Agreement, or any subsequently prepared document which the Parties agree in writing to be considered a schedule to this Agreement.

**“Services”** - shall mean any extension of warranty provision provided by Toshiba as part of its support and services product purchased by Purchaser.

**“Software”** - shall mean any software purchased by the Purchaser as part of the Solution.

**“Solution”** - shall mean any consultancy services, or maintenance services, or any Software or Software related services agreed between the Parties to be provided by Toshiba, which will be supplied with their own service specific terms, which upon being entered into shall form part of this Agreement and be deemed a Schedule to this Agreement.

**“Third-Party Additional Terms”** - shall mean terms relating to the third party software used within the Pre-Loaded Software.

**“Toshiba’s Bid Documentation”**- shall mean the documentation submitted by Toshiba in response to the Purchaser’s request for proposal, tender, or other procurement process, including but not limited to the Purchaser’s proposal, pricing information, technical specifications, and any clarifications or amendments agreed between the parties before the execution of this Agreement.

**“Working Days”** means Monday to Friday inclusive, excluding all bank and public holidays in England.

**“Public Contract”** means the public contract, including the procurement procedure, carried out by the Purchaser (as the contracting authority) and published:

- on the contracting authority's profile at the URL address [https://zakazky.cesnet.cz/contract\\_display\\_360.html](https://zakazky.cesnet.cz/contract_display_360.html)
- in the Czech Public Procurement Bulletin (<https://vvz.nipez.cz/>) under the registration number Z2024-026339 and
- in European Supplement to the Official Journal of the EU (TED – Tenders Electronic Daily) under registration number 344411-2024

- 1.2 References to any statutes or statutory provisions will unless the context otherwise requires, be construed as including orders, regulations, instruments or other subordinate legislation made under the relevant statute or statutory provision which are in force prior to the date of this Agreement, and in each case shall include any subsequent statutes and subordinate legislation and the corresponding provisions thereof directly or indirectly amending, consolidating, extending, replacing or re-enacting the same.
- 1.3 References to a person will be construed as to include a natural person, firm, body corporate, incorporated or unincorporated association, partnership, government or state, statutory authority, foundation and trust (in each case whether or not having a separate legal personality).
- 1.4 Any reference to a Recital, Clause, Sub-clause or Schedule is to the relevant recital, clause, sub-clause or schedule to this Agreement.
- 1.5 The Schedules form part of this Agreement and subject to Clause 1.10 will have the same force and effect as if expressly set out in the body of this Agreement.
- 1.6 Use of the singular includes the plural and vice versa.
- 1.7 Use of any gender includes all other genders.
- 1.8 The words “include”, “includes”, “including”, “in particular” or any similar words or any general words introduced by the word “other” do not limit the words preceding or following.
- 1.9 The headings in this Agreement are provided for convenience only and shall not be used to construe meaning or intent.
- 1.10 In the event of any conflict or inconsistency, the following order of priority shall apply, to the extent of such conflict or inconsistency:
  - 1.10.1 Toshiba's Bid Documentation , including its clarifications (the technical and price part of which is included in this Agreement as Schedule 2);
  - 1.10.2 Clause 1;
  - 1.10.3 all Clauses other than Clause 1; and
  - 1.10.4 the Schedules.

## 2. GRANT

- 2.1 Nothing in this Agreement shall entitle Purchaser to any priority in supply in relation to the Items as against other Toshiba customer.
- 2.2 Without prejudice to its other rights and remedies, Toshiba reserves the right:

2.2.1 to sell to other customers; and

2.2.2 to vary the Items, including by making such changes in the design, production or packaging of the Items as Toshiba shall think fit or by withdrawing those Items which Toshiba proposes to withdraw from its Product range, or by addition to the Items; however, the technical parameters of the changed Items shall not cause the equipment supplied to have worse properties than those offered by Toshiba in the Public Contract.

2.3 Purchaser is relying on its own skill and judgement in relation to the suitability and compatibility of the Items supplied under this Agreement and to the maximum extent permitted by applicable laws, Toshiba accepts no Liability whatsoever as to the purpose for which the Items are supplied and purchased by Purchaser.

### **3. APPLICATION OF THE TERMS AND CONDITIONS**

3.1 The Parties each acknowledge and agree that the terms and conditions of this Agreement are the only terms and conditions upon which Toshiba and Purchaser shall contract and that they shall to the maximum extent permitted by applicable laws govern the Agreement to the exclusion of all implied terms or conditions, statutory or otherwise.

3.2 Without prejudice to Clause 3.1, the Parties each acknowledge and agree that no terms or conditions endorsed upon, delivered with or contained in Purchaser's Order, acknowledgement or any similar document (excluding the Toshiba's Bid Documentation ) will form part of this Agreement and Purchaser hereby irrevocably waives any rights which it might otherwise have to rely on such terms and conditions.

3.3 The Parties each acknowledge and agree that the documents identified in Clause 3.1 above shall apply to Purchaser's Orders and any variation to any provisions thereof shall have no effect unless expressly agreed in writing and signed by an authorised representative of each of the Parties.

3.5 The Purchaser acknowledges and agrees to comply with the specific obligations set out in the Schedules appended from time to time.

### **4. TERM & TERMINATION FOR CONVENIENCE**

4.1 The Parties agree that this Agreement will commence on the Commencement Date for the term of 2 years.

4.2 Either Party may terminate this Agreement by at any time giving the other Party not less than three (03) months' prior written Notice to that effect.

4.3 Conditions set out in this article doesn't apply for the warranty, support and maintenance services, which last for the term specified in the Order.

### **5. ORDERS**

5.1 Purchaser shall order all Items under this Agreement by means of a completed Order. Orders may only be placed by such persons as are advised to Toshiba

by Purchaser in advance, as being authorised to place Orders ("**Authorised Persons**").

- 5.2 Purchaser is responsible for the accuracy of every Order placed by Authorised Persons and for ensuring that Toshiba has sufficient information in order to fulfil Orders. All Orders placed must include the part number where applicable, and the description and the quantity of the Items being ordered along with all applicable details as required in the Order form.
- 5.3 Toshiba shall be deemed to have accepted Orders submitted in accordance with this Agreement by the act of Toshiba countersigning an Order form confirming acceptance

## **6. PRICE**

- 6.1 Unless otherwise agreed, the Purchaser shall pay to Toshiba the Price for the Items ordered, in accordance with the terms of this Agreement.
- 6.2 All Prices are exclusive of value added tax (if any) or other applicable sales taxes which shall be paid by Purchaser at the rate and in the manner prescribed by law from time to time. Toshiba shall invoice Purchaser for all taxes, levies and duties for which Toshiba is responsible in consequence of its performance of its obligations under this Agreement, save in respect of taxes upon Toshiba's income.

## **7. DELIVERY**

- 7.1 Toshiba shall discharge its obligations to deliver the Items to Purchaser, by delivering them at its own risk and expense, to the Delivery Point nominated by Purchaser in the Order. Notwithstanding, Toshiba reserves the right to charge Purchaser reasonable additional delivery charges in the event that Purchaser shall request any non-standard delivery arrangements, including delivery to a different location than the Delivery Point, or delivery outside Normal Working Hours.
- 7.2 Toshiba shall be entitled to make partial deliveries or delivery by instalments. Each such delivery shall be deemed to be a separate Contract and failure to effect any delivery or part thereof under any one Contract shall not invalidate any Contract as to other deliveries.
- 7.3 If for any reason Purchaser will not accept delivery of any of the Items or Toshiba is unable to deliver the Items because Purchaser has not provided appropriate instruction, from the date Toshiba could otherwise first effect delivery, then Purchaser shall be responsible for all reasonable related costs and expenses (including storage, administration and re-delivery).
- 7.4 Purchaser shall at its sole cost and expense provide at the Delivery Point adequate and appropriate equipment and manual labour for safely and efficiently unloading the Products.



## 8 LOSS, DAMAGE OR NON-DELIVERY

- 8.1 Toshiba shall have no Liability for any loss, damage or non-delivery of Items (even if caused by Toshiba's negligence) unless written Notice is given to Toshiba within seven (7) days of the date when the Items would in the ordinary course of events have been received. A signature accompanied with a description of any loss or damage on any delivery note will not qualify as sufficient notice to Toshiba for the purposes of loss, damage or non-delivery.
- 8.2 Any Liability of Toshiba for loss, damage or non-delivery of Items shall be limited to replacing or (re-providing) such Items within a reasonable time.

## 9 INVOICING AND PAYMENT

- 9.1 Where payment in advance with an Order is not required, Toshiba shall tender its invoice in respect of Items delivered concurrently with delivery in accordance with this Agreement. Time of payment shall be of the essence. Unless otherwise notified by Toshiba, Purchaser shall pay the full amount of each Toshiba invoice without any deduction whether by way of set-off, counterclaim, discount or otherwise, by no later than thirty (30) days after the date of the invoice ("**Due Date**"). Payment for support services will be invoiced in arrears monthly.
- 9.2 No payment shall be deemed to have been received until Toshiba has received cleared funds.
- 9.3 All payments payable by Purchaser under the Agreement shall become due immediately upon termination of this Agreement despite any other provision.
- 9.4 Payment shall fall due on the Due Date notwithstanding that title to the Items may not have passed to Purchaser, and Toshiba shall accordingly be entitled to sue for the Price as of the Due Date, notwithstanding the fact that title to the Items may not have passed to Purchaser.
- 9.5 If Purchaser fails to pay any invoice by the Due Date, Toshiba shall without prejudice to its other rights and remedies, be entitled at its option either:
  - 9.5.1 to enter Purchaser's premises and recover the Products, in accordance with Clause 11.5 hereof; or
  - 9.5.2 to charge Purchaser interest on the sum due and unpaid from the Due Date until payment is actually received by Toshiba in full, at the annual rate of the lower of five percent (5%) per annum above the Barclays PLC minimum lending rate for the time being in force and the maximum rate permitted by applicable law. Such interest shall accrue on a daily basis both before and after any judgment.
- 9.8 Toshiba reserves the right to claim interest under the Late Payment of Commercial Debts (Interest) Act 1998.

## 10. SOLUTION SPECIFIC TERMS

Notwithstanding the provisions contained within any other Solution service documentation, in supplying the Solution, Toshiba or Toshiba authorised third party suppliers shall perform the relevant service with reasonable care and skill.



## 11. TITLE AND RISK

- 11.1. Risk in the Products and Software supplied to Purchaser shall pass to Purchaser upon delivery in accordance with the provisions of Clause 7 hereof. Purchaser shall insure all Items delivered by Toshiba for their full replacement value with a reputable Insurer until title has passed to Purchaser.
- 11.2 Title to the Products and Software shall not pass to Purchaser until Toshiba has received in full (in cash or cleared funds):
  - 11.2.1 all sums due to it in respect of the Products and Software; and
  - 11.2.2 all other sums which are then due to Toshiba from Purchaser on any account.
- 11.3 Until title to the Products and Software has passed to Purchaser, Purchaser shall:
  - 11.3.1 hold the Items on a fiduciary basis as Toshiba's bailee; and
  - 11.3.2 store the Products and Software (at no cost to Toshiba) separately from all other goods of Purchaser or any third party in such a way that they remain readily identifiable as Toshiba's property; and
  - 11.3.3 not destroy, deface or obscure any identifiable mark or packaging on or relating to the Products or Software; and
  - 11.3.4 maintain the Products and Software in satisfactory condition insured on Toshiba's behalf for their full replacement value against all risks to the reasonable satisfaction of Toshiba. On request Purchaser shall produce the insurance policy to Toshiba; and
  - 11.3.5 hold the proceeds of the insurance referred to in 11.3.4 on trust for Toshiba and not mix them with any other money, nor pay the proceeds into an overdrawn bank account.
- 11.4 Purchaser's right to possession of the Products and Software shall terminate immediately if:
  - 11.4.1 Purchaser (being a body corporate) any person takes an action or any legal procedure is commenced or other steps taken (including the presentation of a petition or the filing or service of a notice) with a view to the appointment of an administrative receiver, receiver, liquidator or a like offer, or such person is appointed or it convenes a meeting of creditors (whether formal or informal), or enters into liquidation (whether voluntary or compulsory) except a solvent voluntary liquidation for the purpose only of reconstruction or amalgamation where the emerging company assumes the obligations of Purchaser, or compounds with its creditors, or has a receiver or manager, administrator, administrative receiver or other encumbrancer appointed over its assets or undertakings or any parts thereof, or is unable to pay its debts as they fall due within the meaning of Section 123 of the Insolvency Act 1986, or ceases to trade in the normal manner, or threatens or resolves to do any of the above or takes or suffers any similar action in consequence of debt; or

11.4.2 Purchaser suffers or allows any execution, whether legal or equitable, to be levied on its property or obtained against it, or fails to observe or perform any of its obligations under this Agreement or any other agreement between Toshiba and Purchaser; or

11.4.3 Purchaser purports to encumber or in any way charge any of the Items.

11.5 Purchaser irrevocable grants Toshiba, its agents and employees the right to at any time enter any premises where the Products and Software are or may be stored in order to inspect them, or, where Purchaser's right to possession has terminated, to recover them.

## **12. ORDER CANCELLATION**

The Purchaser shall not be entitled to cancel, the whole Order or in part, any Order once Toshiba has accepted the relevant Order by countersigning the Order form.

## **13. DESCRIPTION**

All marketing or sales material issued by Toshiba, including drawings, descriptive matter, specifications, advertising, and any description or illustrations contained in Toshiba's catalogue or brochures, are issued or published for the sole purpose of giving an approximate idea of the Items described in them. They will not form part of this Agreement.

## **14. WARRANTIES**

14.1 The Products sold by Toshiba to the Purchaser may be accompanied with a Toshiba warranty as further described in the Order.

14.2 Where Toshiba is not the manufacturer of the Products or the Software, Toshiba will endeavour to transfer to Purchaser the benefit of any warranty or guarantee given to Toshiba by the third party manufacturer.

14.3 Without prejudice to Clauses 14.1 and 14.2, Toshiba warrants to Purchaser (subject to the other terms of this Agreement), that the Products actually delivered to Purchaser are believed to be free from defect in materials and workmanship arising under normal use and service.

14.4 Except as otherwise expressly provided in this Clause 14 and Section 12 of the Sales of Goods Act 1979 and Section 2 of the Supply of Goods and Services Act 1982, Toshiba makes no representations or warranties concerning the Products or Solution, and expressly excludes all implied warranties, conditions and other terms, statutory or otherwise, particularly but without limitation as to description, quality or fitness of the Products and Solution for any particular purpose.

14.5 Toshiba shall have no Liability for a breach of any warranties in this Clause 14 unless:

14.5.1 Purchaser gives written Notice of the defect to Toshiba within seven (7) days of the time when Purchaser discovers or ought to have discovered the defect; and

14.5.2 Toshiba is given a reasonable opportunity after receiving the Notice of the defect to examine such Product and Purchaser (if asked to do so by Toshiba) returns such Product to Toshiba's place of business at Purchaser's sole cost and expense for the examination to take place there.

14.6 Toshiba shall have no Liability for a breach of any warranties in this Clause 14 if:

14.6.1 Purchaser makes any further use of such Products after giving Notice of the defect; or

14.6.2 the defect arises because Purchaser failed to follow Toshiba's oral or written instructions as to the storage, installation, commissioning, use or maintenance of the Product or (if there are none) good trade practice; or

14.6.3 Purchaser alters or repairs such Product without the prior written consent of Toshiba.

## **15. PURCHASER OBLIGATIONS**

15.1 The Purchaser shall:

15.1.1 Co-operate with Toshiba in all matters relating to the Services;

15.1.2 Provide Toshiba, its agents, subcontractors, consultants and employees, in a timely manner and at no charge, access to the Purchaser's premises, office accommodation, data and other facilities as required by Toshiba; and

15.1.3 Provide in a timely manner, such information as Toshiba may require, and ensure that it is accurate and complete in all material respects.

15.2 If Toshiba's performance of its obligations under this Agreement are prevented or delayed by any act or omission of the Purchaser, its agents, subcontractors, consultants or employees, Toshiba shall:

15.2.1 Not be liable for any costs, charges or losses sustained or incurred by the Purchaser that arise directly or indirectly from such prevention or delay;

15.2.2 Be entitled to payment of the Price despite any such prevention or delay; and

15.2.3 Be entitled to recover any additional costs, charges or losses Toshiba sustains or incurs that arise directly or indirectly from such prevention or delay.

## **16. EXPORT REGULATIONS**

16.1 In performing its obligations under this Agreement, Purchaser shall comply with all applicable European Union export control laws and regulations, the domestic laws of the country where the Purchaser operates and including those

of the United States of America (“**Applicable Laws**”), in force from time to time, and including those affecting the export, or re-export, of the Items .

16.2 Purchaser confirms that it will not export, or re-export, the Products or Software whether directly or indirectly:

16.2.1 to any destination that is restricted under the Applicable Laws; or

16.2.2 to any End-User who is prohibited from receiving such Items by the Applicable Laws; or

16.2.3 to any party who Purchaser knows or ought reasonably to know may use the Products or Software directly or indirectly in any nuclear activity; or the design or development of missiles, or missile technology, bacteriological or chemical weapons.

16.3 In the event that any licence, permit or other authorisation is required for the export or re-export of any Products or Software supplied to Purchaser, it shall be the sole responsibility of Purchaser to obtain such licence from the appropriate authority and to comply strictly with its terms.

## 17. CONFIDENTIALITY

17.1 The Parties will not disclose any Confidential Information to any other person without the prior written consent of the other Party, such consent not to be unreasonably withheld or delayed provided that Toshiba may, without the consent of the other party, disclose Confidential Information:

a) to such other persons as Toshiba may reasonably believe to be required by law, by government regulation or order (including, without limitation any regulation or order of a bank regulatory agency), by subpoena or by any other legal process; or

b) to any person in relation to or in connection with a permitted assignment or transfer pursuant to Clause 28.3; or

c) to any other person owing the Disclosing Party a duty of care not to disclose such Confidential Information.

17.2 For the avoidance of doubt, this Clause 17 shall survive the termination or expiry of this Agreement in accordance with its terms.

17.3 Under the law, the Purchaser is obliged to publish this contract on its contracting authority’s profile (<https://zakazky.cesnet.cz/>). Toshiba shall notify the Purchaser of its requirements for anonymising confidential information within 5 days from the date of conclusion of the Agreement; otherwise, the Purchaser is entitled to publish the Agreement in full.

## 18. INTELLECTUAL PROPERTY & INDEMNITY

18.1 Purchaser acknowledges that all Intellectual Property Rights in and in relation to the Items shall at all times be and remain the sole property of Toshiba and Toshiba hereby reserves all Intellectual Property Rights which may subsist in the Items. In particular:

- 18.1.1 Purchaser shall not delete or remove any Intellectual Property Rights notices contained within or relating to the Items;
  - 18.1.2 the sale of the Products and / or Software by Toshiba does not convey any licence, by implication, estoppel or otherwise, under patent claims covering combinations of the Products with other devices or elements; and
  - 18.1.3 all goodwill in the use of the Items by Purchaser shall at all times be and remain the sole property of Toshiba and Purchaser shall make no claim in respect thereof.
- 18.2 Toshiba will defend at its expense, any action, suit or proceeding (“**Claim**”) brought against Purchaser to the extent that it is based on a claim that the Products and / or Software, in normal possession and use in accordance with this Agreement, infringe any third party Intellectual Property Right, and shall pay any settlements or final judgments to the extent based thereon, provided that Purchaser:
- 18.2.1 promptly notifies Toshiba in writing of the existence or threat of any such Claim; and
  - 18.2.2 gives Toshiba sole control of any such action or settlement negotiations; and
  - 18.2.3 provides all reasonable assistance in connection therewith; and
  - 18.2.4 does not make any admissions or settlement in respect of such Claim without the prior written consent of Toshiba.
- 18.3 If any of the Products and / or Software are finally adjudged to so infringe, or in the opinion of Toshiba such a Claim is likely to succeed, Toshiba may at its option:
- 18.3.1 procure for Purchaser’s right to continue using the Products and / or Software; or
  - 18.3.2 replace or modify the Products and / or Software so there is no infringement.
- If Toshiba has availed itself of its rights to modify the Products and / or Software or supply substitute Products and / or Software pursuant to Sub-clause 18.3.2 or to procure the right under Clause 18.3.1 and such exercise of the said rights has avoided any Claim, then Toshiba shall have no further liability thereafter under this Clause 18 in respect of the said Claim.
- 18.4 Toshiba will have no Liability regarding any Claim arising out of:
- 18.4.1 compliance with Purchaser’s designs, specifications or instructions;
  - 18.4.2 use of the Products and / or Software in combination with data or third party products, if the infringement was caused by such use in combination;

18.4.3 any modification of the Products and / or Software not authorised in advance in writing by Toshiba;

18.4.4 any breach by Purchaser of its obligations under this Agreement.

18.5 This Clause 18 states the sole Liability of Toshiba and the exclusive remedy for Purchaser for Intellectual Property Rights infringement and the provisions hereof are in lieu of any other implied warranties, conditions, statutory or otherwise or other terms against infringement.

18.6 Purchaser shall indemnify and hold Toshiba harmless against any claims, proceedings, actions, costs, damages and expenses (including reasonable legal fees on a solicitor-client basis) resulting from infringement of third party Intellectual Property Rights arising from compliance with Purchaser's designs, specifications or instructions; or resulting from Purchaser's combination of the Products and / or Software with devices or elements not provided by Toshiba; or resulting from Purchaser's modification of the Products and / or Software without Toshiba's prior written consent, or resulting from Purchaser's breach of this Agreement.

## **19. PRODUCTS, ACCESSORIES AND OPTIONS**

19.1 The Products and / or Software shall comply with Toshiba's applicable specifications when sold to Purchaser.

19.2 Unless otherwise stated by Toshiba, all Products and / or Software sold to Purchaser under this Agreement shall be new and unused.

## **20. TERMINATION**

20.1 Without prejudice to its other rights and remedies, Toshiba may terminate this Agreement immediately upon written notice, if:

20.1.1 Purchaser commits a material breach of this Agreement, and if capable of remedy, shall have failed to remedy the breach within fourteen (14) days of notice from Toshiba to do so; or

20.1.2 Purchaser (being a body corporate) any person takes an action or any legal procedure is commenced or other steps taken (including the presentation of a petition or the filing or service of a notice) with a view to the appointment of an administrative receiver, receiver or liquidator or a like officer, or such person is appointed or it convenes a meeting of creditors (whether formal or informal), or enters into liquidation (whether voluntary or compulsory) except a solvent voluntary liquidation for the purpose only of reconstruction or amalgamation where the emerging company assumes the obligations of Purchaser, or compounds with its creditors, or has a receiver or manager, administrator, administrative receiver or other encumbrancer appointed over its assets or undertakings or any parts thereof, or is unable to pay its debts as they fall due within the meaning of Section 123 of the Insolvency Act 1986, or ceases to trade in the normal manner, or threatens or resolves to do any of the above or takes or suffers any similar action in consequence of debt; or

- 20.1.3 Purchaser suffers or allows any execution, whether legal or equitable, to be levied on its property or obtained against it, or fails to observe or perform any of its obligations under this Agreement or any other contract between Toshiba and Purchaser; or
- 20.1.4 Purchaser is involved in any illegal activity, financial irregularity or any other activity which, in the opinion of Toshiba could materially damage Toshiba's brands, reputation or image; or
- 20.1.5 Purchaser does or allows to be done, or omits or allows to be omitted, any act or thing, notice of which having been given to Purchaser, which in the reasonable opinion of Toshiba may jeopardise or prejudice Toshiba's rights in the Items; or
- 20.1.6 If there is any change in Control (whether direct or indirect) of Purchaser which in the reasonable opinion of Toshiba could have a material adverse effect on the ability of Purchaser to perform its obligations hereunder or if Purchaser sells, transfers or disposes of all or substantially all of its assets.

## **21. LIMITATION OF LIABILITY**

- 21.1 Nothing in the Agreement excludes or limits Toshiba's Liability for (i) death or personal injury caused by Toshiba's negligence; (ii) fraudulent misrepresentation by Toshiba; or (iii) breach of the condition implied by Section 12 of the Sale of Goods Act 1979.
- 21.2 Subject to Clause 21.1:
  - 21.2.1 Toshiba's aggregate Liability under each Contract shall not exceed the total sums paid by Purchaser in accordance with this Agreement in connection therewith;
  - 21.2.2 Toshiba's aggregate Liability under this Agreement shall not exceed an amount equal to the total sums paid to Toshiba by Purchaser; and
  - 21.2.3 Toshiba shall have no Liability to Purchaser for:
    - (i) Loss of profit.
    - (ii) Loss of sales or business.
    - (iii) Loss of revenue.
    - (iv) Loss of agreements or contracts.
    - (v) Loss of potential or anticipated savings.
    - (vi) Loss of use or corruption of software, data or information.
    - (vii) Loss of or damage to goodwill.
    - (viii) Any direct or indirect, special or consequential loss or damage, costs, expenses or other claims for consequential compensation whatsoever (howsoever caused).
    - (ix) Any breach of this Agreement to the extent caused or contributed to by Purchaser's breach of this Agreement or negligence.



## **22. EFFECT OF TERMINATION**

- 22.1 The termination of this Agreement, howsoever caused, shall not affect any rights or liabilities that have accrued before the date of termination, especially shall have no impact on the ownership of the Items already delivered under this contract (Items to which the Purchaser has already acquired ownership).
- 22.2 Unless otherwise agreed by Toshiba in writing, any Orders placed by Purchaser for Items outstanding at the date of termination shall be deemed to be cancelled by Purchaser.
- 22.3 Neither Party shall have any claim against the other arising from the termination of this Agreement in accordance with the terms hereof.
- 22.4 Each Party shall within thirty (30) days of termination of this Agreement return (or at the other's option destroy) all Confidential Information of the other and all copies of such information.
- 22.5 Notwithstanding anything contained elsewhere in this Agreement, termination of this Agreement shall not affect any provisions that expressly or impliedly survive such termination, including Clauses 1, 3, 8, 9, 11, 13, 14, 16, 17, 18, 21, 22, 23, 24, 25, 26, 27 and 28.

## **23. RIGHTS OF THIRD PARTIES**

No provision of this Agreement shall be enforceable by any third party under the Contracts (Rights of Third Parties) Act 1999 or otherwise.

## **24. DATA PROTECTION**

- 24.1 Purchaser warrants:
  - 24.1.1 that it has obtained all consents, registrations and notifications required by the Data Protection Legislation in respect of personal data; and
  - 24.1.2 that it shall at all times comply with the Data Protection Legislation.

## **25. BRAND NAMES, LABELLING AND MODIFICATIONS**

- 25.1 Purchaser shall not sell any Items supplied under this Agreement and shall not obliterate or remove any mark originally applied to the Products or their packaging or labelling, nor make any other alteration thereto.
- 25.2 Purchaser shall not in any way alter or attempt to alter any Items supplied hereunder.
- 25.3 Toshiba shall be entitled to modify the design, specification or construction, and discontinue the production of any Items and supply Items conforming to the modified design, specification or construction in fulfilment of any Order. Where possible, Toshiba shall give prior written notice of its intention to modify Items.
- 25.4 If Toshiba shall so modify the design, specification or construction of any Items, it shall be under no obligation to apply such modification to any Items previously ordered or delivered.

## **26. TRADE MARKS AND TRADE NAMES**

- 26.1 Purchaser must not use in its own name or as a trade name, the name "Toshiba", or the name of any company within the Toshiba Group or any variant, abbreviation, or the initials of any such name likely to be confused therewith.
- 26.2 Purchaser shall not adapt, attempt to adapt or to use or register any trade mark or trade name which might reasonably be confused with those which are proprietary to Toshiba or any other company within the Toshiba Group of Companies, and Purchaser warrants that it is not now using any such confusing trademarks or trade names and that it has neither effected nor applied for any registration thereof.
- 26.3 Purchaser must notify Toshiba if it becomes aware of any unauthorised use by any third party of the trade mark "Toshiba" or any other trademark which is proprietary to Toshiba or any other company within the Toshiba Group and subject to being indemnified for its costs and reasonable expenses for doing so Purchaser shall give all such assistance as Toshiba may reasonably request in any action taken by it or any other company within the Toshiba Group of Companies against any such third party.

## **27. PRE-LOADED SOFTWARE LICENCE TERMS**

- 27.1 Toshiba grants the Purchaser, or shall procure a grant to the Purchaser of, a fully paid-up, worldwide, non-exclusive, royalty-free, licence to use the Pre-Loaded Software for the full period of the copyright in the software commencing on the purchase of the Products. The details of the Pre-loaded Software licence terms are supplied with the original packaging of the Items, which may be amended from time to time.
- 27.2 Without prejudice to Clause 27.1, in relation to the scope of use:
  - 27.2.1 for the purposes of Clause 27.1, use of the Pre-Loaded Software shall be restricted to use of the Product for the normal business purposes of the Purchase.
  - 27.2.2 the Purchaser may not use the Pre-Loaded Software other than as specified in Clause 27.1 and Clause 27.2.1;
  - 27.2.3 except as expressly stated in this Clause 27, the Purchaser has no right (and shall not permit any third party) to copy, adapt, reverse engineer, decompile, disassemble, modify, adapt or make error corrections to the Pre-Loaded Software in whole or in part.
  - 27.2.4 third-party software shall be deemed to be incorporated within the Pre-Loaded Software for the purposes of this licence (except where expressly provided to the contrary) and use of the third-party software shall be subject to its own Third-Party Additional Terms.
  - 27.2.5 the Purchaser shall indemnify and hold the Supplier harmless against any loss or damage which it may suffer or incur as a result of the Purchaser's breach of any Third-Party Additional Terms howsoever arising.

27.2.6 Toshiba may treat the Purchaser's breach of any Third-Party Additional Terms as a breach of this Pre-Loaded Software licence.

- 27.3 if the Purchaser does not agree to the licence terms contained within clause 27.1 and 27.2 the Purchaser should promptly return the Products to Toshiba alongside and in no instance copy or otherwise use the Pre-Loaded Software.
- 27.4 In the event that the Purchaser wishes to customise the Pre-Loaded Software it may submit a request to Toshiba detailing its requirements in line with 27.2.3.
- 27.5 Any dates specified by Toshiba for delivery of the Solution including any customisations allowing integration/interoperability are estimates only and time of performance shall not be of the essence. If no dates are so specified, Toshiba shall use reasonable endeavours to deliver the Solution within a reasonable time.
- 27.6 If, for any reason, Purchaser will not accept delivery of any of the Solution or Toshiba is unable to deliver the Solution because Purchaser has not provided appropriate instructions, then Purchaser shall, from the date Toshiba could otherwise first effect delivery, be responsible for all reasonable related costs and expenses (including administration and re-delivery costs and expenses).

## 28. GENERAL PROVISIONS

### 28.1 Force Majeure

Toshiba shall have no Liability for any delay or failure to carry out its obligations under this Agreement caused by any cause not within its reasonable control and which it cannot reasonably prevent or overcome, and as a result of which it is unable to perform its obligations under this Agreement, including acts of God, governmental actions, war or national emergency, riot, civil commotion, fire, explosion, flood, epidemic, lock-outs, strike or other labour disputes (whether or not relating to Toshiba's workforce), or restraint or delays affecting carriers or inability or delay in obtaining supplies of adequate or suitable materials ("**Force Majeure Event**") provided that if any Force Majeure Event continues for a period in excess of ninety (90) days, Purchaser shall be entitled by Notice in writing to Toshiba to terminate any Contract then affected by that Force Majeure Event.

### 28.2 Waivers

Failure by either Party to enforce any provision of this Agreement in whole or in part shall not constitute a waiver or affect its right to require the future performance in full thereof unless made by written notice, nor shall its waiver of any breach of any provision of this Agreement constitute a waiver of any subsequent breach or nullify the effectiveness of any such provision.

### 28.3 Assignment and Transfer

28.3.1 Neither party may assign, novate, transfer, sub-contract or otherwise dispose of any of its rights or obligations under this Agreement without the prior written consent of the other except that Toshiba may do so without the prior written consent of the Purchaser:

28.3.1.1 in connection with obtaining any type of finance; or

28.3.1.2 to any company or other entity which is a member of the group of companies or entities in relation to which Toshiba is a member.

28.3.2 This Agreement shall be binding upon and enure to the benefit of and be enforceable by the successors and permitted assigns of Toshiba.

## **28.4 Notice**

Any Notice to be given by one of the Parties to the other shall be deemed sufficiently given when forwarded by pre-paid, registered first class mail, or by hand delivery to the other Party for the attention of the recipient's "Managing Director" at the address specified above or such other address as may be notified from time to time in writing. Such notices shall be deemed to have been received two (2) Working Days after mailing if mailed, and the following Working Day if forwarded by facsimile transmission or by hand. In the event of a generally prevailing labour dispute or other situation that could delay or impede the giving of Notice by such means, at either the point of despatch or receipt, the Notice shall be given by the means least affected by such dispute or situation.

## **28.5 Invalidity & Severance**

28.5.1 If any provision of this Agreement shall be found by any court, tribunal or administrative body of competent jurisdiction to be illegal, invalid or otherwise unenforceable, such illegality, invalidity or un-enforceability shall not affect the other provisions of this Agreement, which shall remain in full force and effect.

28.5.2 The Parties agree, in the circumstances referred to in sub-clause 28.5.1, to attempt to substitute for any illegal, invalid or unenforceable provision a legal, valid and enforceable provision which achieves to the greatest extent permissible the same effect as would have been achieved by the illegal, invalid or unenforceable provision.

## **28.6 Variation**

The Parties may expressly agree in writing any variation to the provisions of this Agreement (by duly authorised representatives of the Parties), provided that unless expressly so agreed, no such variation shall amend any of the provisions of this Agreement and the rights and obligations of the Parties hereunder shall remain in full force and effect.

## **28.7 Agency & Partnership**

Unless expressly provided to the contrary, nothing in this Agreement shall constitute or be deemed to constitute a partnership, joint venture or agency between the Parties, and neither Party shall have any authority nor power to bind, contract in the name of or create a liability for or against the other.

## 28.8 Entire Agreement

This Agreement sets out the entire agreement and understanding between the Parties and supersedes any previous agreement between the Parties relating to its subject matter. Unless otherwise expressly agreed in writing this Agreement applies in place of and prevails over any terms or conditions contained in or referred to in correspondence or elsewhere or implied by trade custom or course of dealing. In entering into this Agreement each Party acknowledges and agrees that it has not relied on any representations made by the other. Any such representations are excluded. Nothing in Clause 28.8 shall limit liability for any representations made fraudulently.

## 28.9 Governing Law

This Agreement shall be governed by and construed in accordance with the laws of England and Wales. Each Party irrevocably agrees to submit to the exclusive jurisdiction of the courts of England over any claim, matter or dispute arising under or in connection with this Agreement (including as to its validity) or the legal relationships established by this Agreement.

## 28.10 Further Assurance

Each Party shall at the request and reasonable cost of the other do or procure to be done all such further acts and things (including the execution of documents) as the other may reasonably require for the purpose of giving the first Party the full benefit of this Agreement.

**AS WITNESS** this Agreement has been signed on behalf of each Party by its duly authorised representatives on the Commencement Date.

SIGNED for and on behalf of:

**Toshiba Europe Limited**

Signed by:

*Andrew Shields*

Authorised Signatory:

.....3FBCA76BAC9C449...

Andrew Shields

Print Name:

.....

VICE PRESIDENT

Title:

.....

SIGNED for and on behalf of:

**CESNET, zájmové sdružení právnických osob**

prof. Ing.  
Miroslav  
Tůma, CSc.  
Datum: 2025.03.12  
22:36:01 Z

Digitálně podepsal  
prof. Ing. Miroslav  
Tůma, CSc.  
Datum: 2025.03.12  
22:36:01 Z

Authorised Signatory:

.....

Mgr. František  
Potužník  
Datum: 2025.03.12  
21:49:43 +01'00'

Digitálně podepsal  
Mgr. František Potužník  
Datum: 2025.03.12  
21:49:43 +01'00'

.....

Print Name:

prof. Ing. Miroslav Tůma, CSc.

Mgr. František Potužník

Title:

Chairman of the Board of Directors

Vice-Chairman of the Board of Directors

**Schedule 1****ORDER**

This Order is made on the terms of the Direct Purchasing and the relevant Order terms detailed below).

<b>Order No</b>	2025-0025
<b>Products</b>	1 QKD LD System (see Schedule 2)
<b>Services</b>	2 years support and maintenance as per the tender.
<b>Warranty</b>	24 months warranty on return to manufacturer basis.
<b>Order Date</b>	See signature
<b>Delivery Location</b>	Generála Píky 430/26, 160 00 Prague 6, Czech Republic
<b>Delivery Terms</b>	As soon as possible, not later than 2 months from conclusion of the Agreement / this Order
<b>Pricing</b>	205,000 Euro

**Schedule 2**

**SPECIFICATION OF THE EQUIPMENT TO BE DELIVERED**

(Technical and price part of the Toshiba's bid)



## COVER SHEET OF THE BID

<b>Public contract:</b>	<b>„CESNET - Delivery of complete quantum key distribution (QKD) system and related services“</b>
<b>Contracting authority:</b>	<b>CESNET, interest association of legal entities</b> Generála Píky 430/26, 160 00 Prague 6 ID No.: 63839172

Identification data of the supplier - participant:	
<b>Participant</b> (business name or name)	Toshiba Europe Ltd
<b>Registered seat</b> (in the case of a natural person, the place of business)	1 Pine Trees, Chertsey Road, Staines Upon Thames, TW18 3DU
<b>Legal form</b>	Limited Company
<b>ID/registration number</b>	02519556
<b>Tax ID/registration number</b>	VAT GB711518366
<b>Public register entry</b>	TOSHIBA EUROPE LIMITED is a company incorporated in England and Wales (registered No: 02519556), whose registered office address is at 1 Pine Trees, Chertsey Road, Staines Upon Thames, TW18 3DU (“TEUR”)
<b>Data box identifier</b>	--
<b>Web</b>	www.toshiba.eu/quantum/
Contact person of the participant	
<b>Name/surname</b>	Luma Musa
<b>Phone</b>	+44 [REDACTED]
<b>E-mail</b>	[REDACTED]
<b>Total bid price (excl. VAT)</b> (see paragraph 9.3. of the tender documentation)	<b>205,000 EUR</b>
<b>Maximum reach of the QKD system on standard SM optical fiber line (0.25 dB/km)</b> (see paragraph 9.4. of the tender documentation)	<b>&gt;120 km</b>
<b>Average bit rate of the QKD system at 10 dB on standard SM optical fiber line (0.25 dB/km)</b> (see paragraph 9.5. of the tender documentation)	<b>600 kb/s</b>
<b>Name of the person authorized to act on behalf of the participant</b>	Masakazu Watanabe
<b>Details of the authorisation</b>	Senior Vice President / Director
<b>Date</b>	9/7/24

A photograph of a Toshiba Quantum Key Distribution (QKD) system. The device is a rack-mounted unit with a black perforated front panel. A white horizontal band across the middle features the Toshiba logo on the left and the text 'QUANTUM KEY DISTRIBUTION' on the right. Below this band are several horizontal silver-colored ventilation slats. The background is dark with a subtle dot pattern.

**TOSHIBA**

**TOSHIBA**

QUANTUM KEY DISTRIBUTION

# Quantum Cryptography

Securing the future of a digital society

## **Toshiba Europe Limited's response to CESNET Tender for Delivery of complete quantum key distribution (QKD) system and related services**

**9th July 2024**

**TOSHIBA**

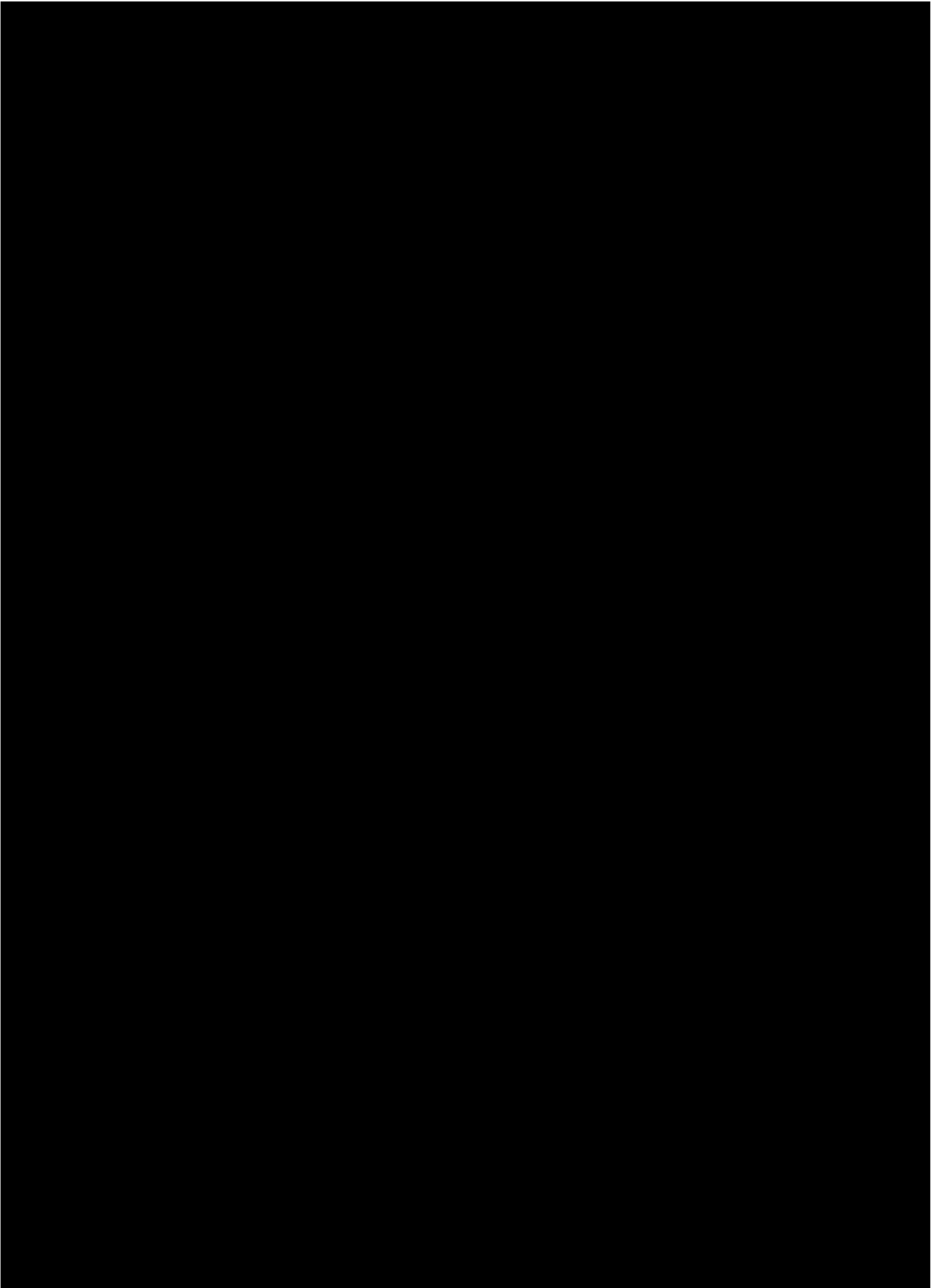
**TOSHIBA EUROPE LIMITED**  
CAMBRIDGE SCIENCE PARK  
406 MILTON ROAD  
CAMBRIDGE, CB4 0WW, UK

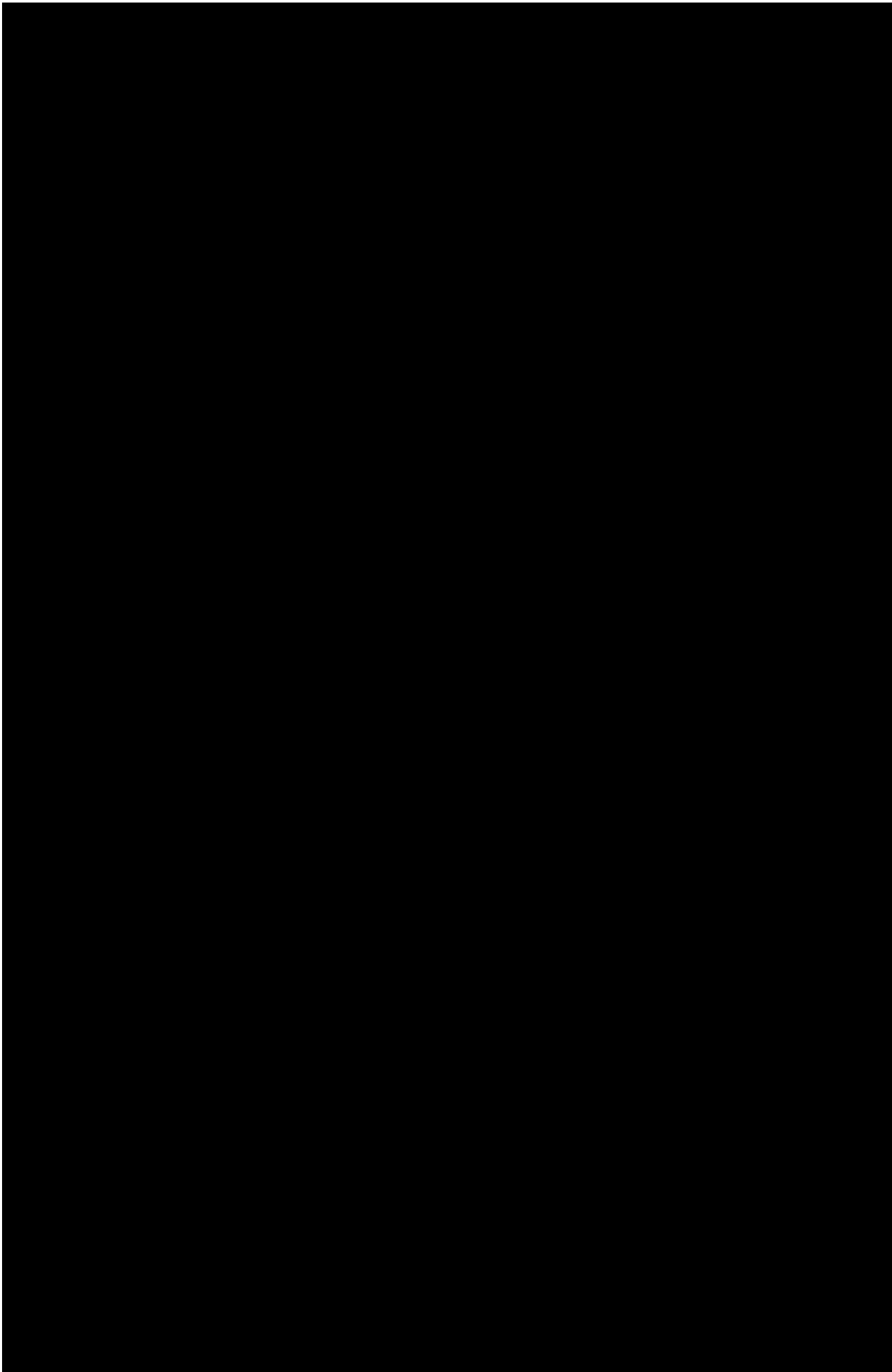
Confidential

## Contents

1. Solution description .....	2
1.1 The value Toshiba’s quantum technology provides .....	2
1.2 Toshiba’s quantum vision .....	2
1.3 Toshiba QKD – superior performance providing better business outcomes.....	3
1.4 Toshiba QKD system variants and deployment options .....	5
1.5 The Toshiba Quantum Key Management System (Q-KMS) .....	7
1.6 Performance Monitoring .....	7
1.7 Toshiba Long Distance (LD) and Multiplexed (MU) QKD system datasheet.....	8
2. Toshiba roadmap outline .....	10
3. TOSHIBA Response to CESNET Technical Specification.....	10
4. Contract Performance .....	12

**1. Solution description**



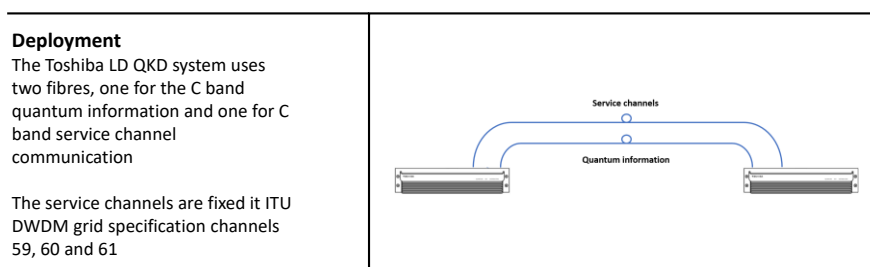




#### 1.4 Toshiba QKD system variants and deployment options

Our pioneering QKD technology provides superior performance and ease of deployment into your network architectures, we offer two main QKD products as follows: -

- Long Distance (LD) QKD system
  - Multiplexed (MU) QKD system
  - Flexible (LE) QKD system
- **The LD product** utilises a fibre pair and delivers the C band quantum channel on one fibre and C band service channels on the second fibre, as shown in Figure 2.

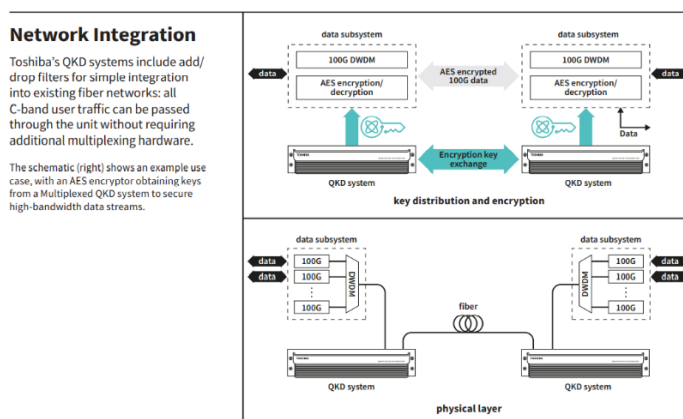


**Figure 2:** Toshiba LD variant deployment

- **The MU product** transmits the quantum information in the O band and the QKD service channels in the C band (channels 59, 60 and 61). The MU provides in-line multiplexing of the quantum channel and multiple (typically 60) operator DWDM classical data channels with high optical launch power, as shown in figure 3.

The MU system can be deployed using a pair of fibres, or alternatively, using a single fibre strand to carry both QKD service and an operator's existing classical DWDM C band data services.

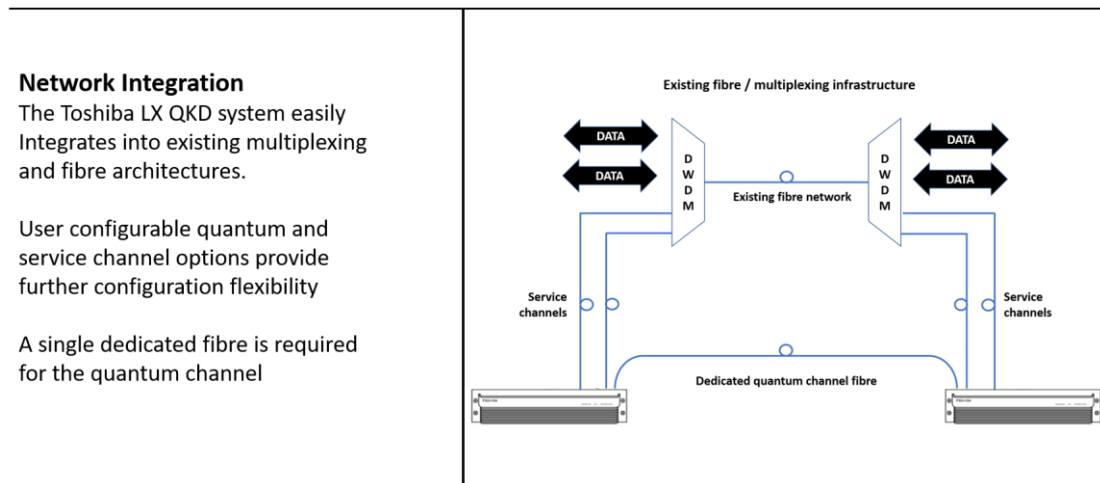
Please note, should an operator wish to deploy the MU QKD system using a single strand of fibre, the operator would need to ensure that it has the necessary configuration of the optical transport equipment to support bi-directional single fibre working.



**Figure 3:** Toshiba MU variant and in-line multiplexing scheme



- The **LE product** delivers the quantum information in the C band on one fibre and presents C band service channel interfaces towards the operators existing architecture, which enables easy and direct integration into the existing fibre network. This is shown in Figure 4. The LE also permits customer requestable customisation of the quantum and service channel wavelengths. Customisation is subject to a certain range of ITU DWDM specified channels and is set during system manufacture.



**Figure 4:** Toshiba LE variant deployment

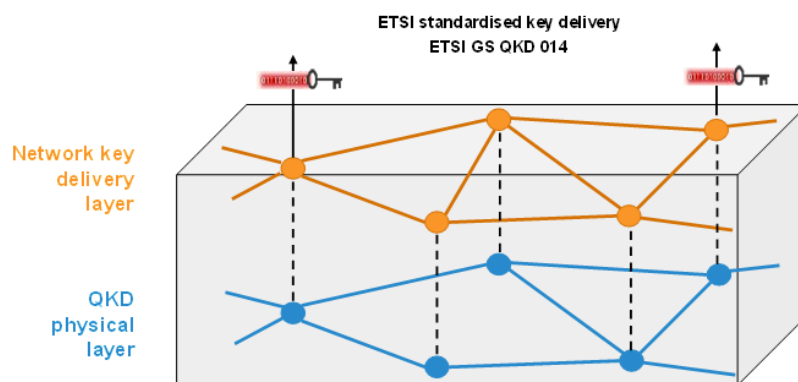
### 1.5 The Toshiba Quantum Key Management System (Q-KMS)

The Toshiba Quantum Key Management System is designed to manage and route quantum secure keys between QKD systems, enabling these keys to be reliably shared between parties.

The Q-KMS can be deployed with Toshiba QKD systems and also with other vendor QKD systems (that adhere to the ETSI GS QKD 014 standard) as part of a multi-vendor QKD network.

Toshiba abstracts the key delivery layer from the network physical layer, providing a logical key delivery layer across the QKD network (shown in figure 5). This has a number of benefits, including the ability to deliver keys between any physically connected QKD system in any network architecture (for example a point-point QKD link or a full QKD mesh network).

The Toshiba Q-KMS adheres to ETSI GS QKD 014 with an integrated REST-based key delivery API, supporting interworking with other compliant QKD systems and applications, designed in accordance with ITU-T Y.3800 high level recommendation for QKD networks. The KMS can deliver keys to any application (e.g. encryptor etc) that adheres to the ETSI QKD standard).



**Figure 5:** Key delivery layer abstraction from QKD physical layer

### 1.6 Performance Monitoring

the system includes various self-monitoring and automated optimisation features to ensure it always delivers the optimal possible secure bit rate.

This corrects for e.g. changes to polarisation and any timing delays.

SBR and QBER are continuously measured and recorded to user-accessible logs, as well as being available over e.g. SNMP.

The system includes various alarms that will be triggered when e.g. the quantum or classical channel goes down, or when a key delivery network cable is unplugged.

The alarms can be sent as SNMP traps so the user knows whenever the status changes (i.e. when the alarm is raised and cleared) and they are also recorded to user-accessible logs.

The system also has an anti-tamper feature, with a tamper resistant screw.

## 1.7 Toshiba Long Distance (LD) and Multiplexed (MU) QKD system datasheet









By adopting Quantum Key Distribution, organizations can **protect their communication infrastructure** from today's vast array of cyber-threats, as well as those of tomorrow. Already, hackers are using techniques such as harvest and decrypt, where data is scraped and stored today with the aim of decrypting it once they have the capability to do so through advances with supercomputers, the realisation of a **quantum computer**, or the discovery of new techniques for cryptanalysis. With QKD, any data which requires **long-term protection** is not only secure in today's IT landscape, but also **future-proofed** to remain protected in the impending **quantum age**.

Robust levels of security are required in many sectors. In **healthcare**, the technology has been applied to ensure

the secure transmission of genome data in Japan. Within the **public sector** QKD is used to provide government with secure communications, in the **finance industry** to **protect banking network infrastructure** and in **aerospace and pharmaceuticals** to protect high-value long-life **Intellectual Property**. Equally, in the age of IoT and smart cities, the necessity for a robust, **tamper-proof** and **ultra-sensitive infrastructure** is essential to ensure day-to-day life operates without disruption both now and in the future.

Toshiba is the world leader in high-speed quantum cryptographic systems. Based on decades of scientific research, we have taken on the challenges of this unexplored field and have pioneered the path to practical use.

 <p><b>Fully automated operation with plug &amp; play setup</b> Automated start-up and system optimization in real time, delivered through active stabilization technology that allows the system to distribute key material continuously, in even the most challenging operating conditions, without any user intervention.</p>	 <p><b>Easy-to-use graphical user interface</b> A simple web-browser-based interface provides access to both real-time and historical performance data, as well as reporting any tamper attempts, providing perfect security and peace of mind.</p>	 <p><b>Integrated key delivery interface</b> An integrated key delivery interface is provided for secure key delivery. This is compatible with leading encryptors and other applications using ETSI industry standards.</p>
 <p><b>Long range</b> Toshiba QKD offers the longest range on fibre available commercially today, and were first to demonstrate QKD over 100km of fibre in 2004, and have demonstrated in lab conditions the Twin-Field QKD protocol capable of operating over 500km of fibre</p>	 <p><b>High key rates</b> Toshiba QKD offers the highest secure key rates. In fact we were the first to demonstrate continuous secure key rates exceeding 1 Mb/s (in 2008) and 10 Mb/s (in 2017).</p>	 <p><b>Data co-existence</b> Toshiba's Multiplexed QKD solution allows QKD to be operated on fibre carrying multiple 10 Gb/s or 100 Gb/s data channels, eliminating the need for dark fibre and reducing the cost of deployment.</p>

## Product details

Two variants are available: a **Multiplexed QKD System** with O-band quantum channel, which removes the need for dark fibre when operating on a 'lit' optical fibre; and a **Long-Distance QKD System** with C-band quantum channel for the longest possible range.

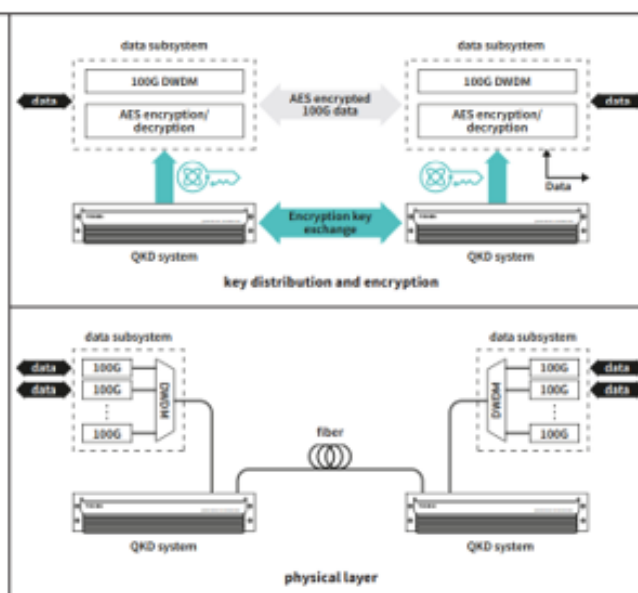


	Multiplexed QKD System	Long-Distance QKD System
Key Exchange Protocol	Toshiba T12 protocol (efficient BB84 phase encoding)	protocol with decoy states and phase encoding
Quantum Wavelength	1310 nm	1550 nm
Fibre Requirement	Single fibre pair or single bidirectional fibre	Two fibres required
Multiplexing Capability	Option to multiplex high-bandwidth customer data in C-band (with up to +20 dBm total launch power)	Limited bandwidth multiplexing supported
Secure Key Rate	300 kb/s at 10 dB channel loss	300 kb/s at 10 dB channel loss
Maximum Loss (using ideal SM fibre)	30 dB (1310 nm) specified	30 dB (1550 nm) specified
Detection Technology	Proprietary self-differencing semiconductor detectors	
Security Parameter	Key failure probability $< 10^{-10}$ , corresponding to less than once in 30,000 years	
Monitoring functions	SNMP v2 & v3, GUI, CLI	
Key Delivery Interface	Integrated Key Delivery Interface to provide keys to encryptors and other applications supporting ETSI GS QKD 014 industry standard key delivery API	
Standards	CE: EN 55032:2015+A11, EN 55035:2017+A11, EN61000-3-2:2014, EN61000-3-3:2013, IEC 62638-1:2014, EN IEC 60825-1:2014, EN IEC 63000:2018 FCC: 47 CFR, Part 15 FDA: 21 CFR, Part J	
Dimensions	Standard 19" rack mount (3U height)	

## Network Integration

Toshiba's QKD systems include add/drop filters for simple integration into existing fiber networks: all C-band user traffic can be passed through the unit without requiring additional multiplexing hardware.

The schematic (right) shows an example use case, with an AES encryptor obtaining keys from a Multiplexed QKD system to secure high-bandwidth data streams.

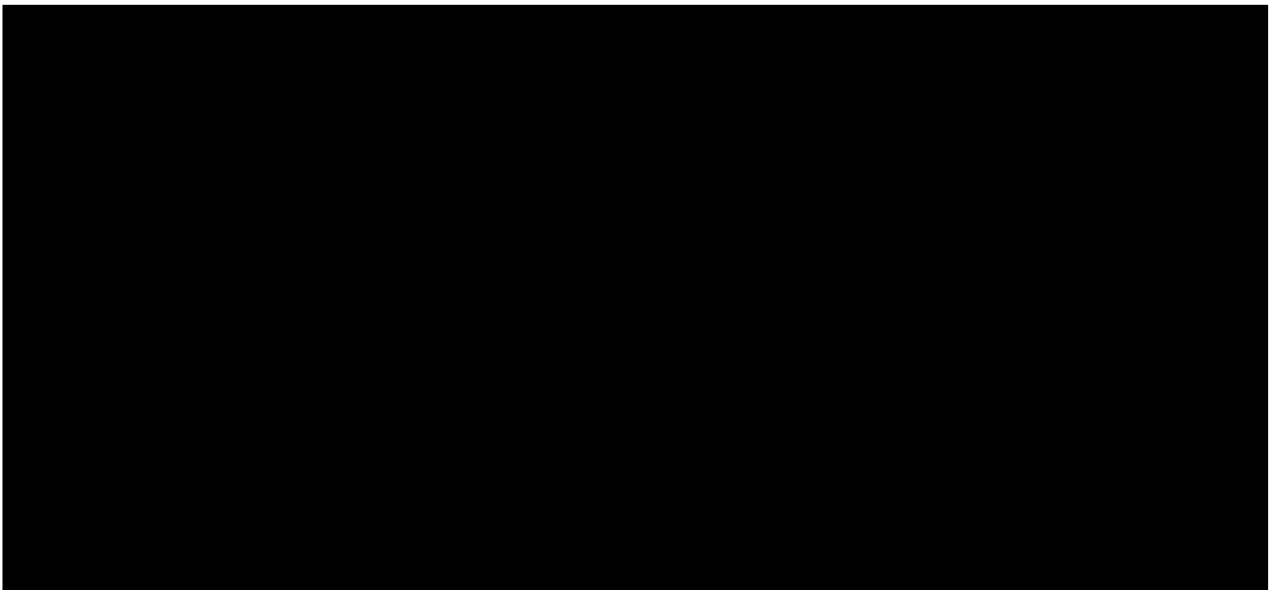


## TOSHIBA

Toshiba Europe Limited, 406 Cambridge Science Park  
Milton Road, Cambridge CB4 0WW, UK | Tel: +44 1223 436900

<https://www.toshiba.eu/quantum/>  
[quantum@toshiba.eu](mailto:quantum@toshiba.eu)

For this project we propose to use our Long Distance QKD system.



### 3. TOSHIBA Response to CESNET Technical Specification

Requirement	Toshiba proposed responses
<b>3.3 Technical requirements of the contracting authority for the QKD system</b>	
3.3.1 A Complete QKD system including two or three nodes, housed in rack boxes smaller than 5U (compatible with a 19-inch rack) with a 230 VAC/50 Hz power supply.	Each QKD unit is 2U, each server is 1U Total 3U per end
3.3.2 Quantum channel compatible with SMF-26 optical fiber with SC, FC, or E2000 connectors.	Compliant
3.3.3 The central wavelength of the quantum channel and its bandwidth must fall within the optical C band region (1530 nm – 1565 nm).	Compliant. Quantum Channel wavelength is 1550nm
3.3.4 The bandwidth of the quantum channel must be less than 7 nm.	Compliant. Bandwidth for quantum channel is <1nm
3.3.5 The quantum channel must have at least 20 dB power budget on a standard single-mode optical fiber line (0.25 dB/km).	Our product has an optical quantum channel loss of a minimum of 30dB
3.3.6 The quantum bit rate must be greater than 5 kb/s on a 10 dB standard single-mode optical fiber line (0.25 dB/km).	Our Product has Secret Key Rate of 600 kbit/s (typical) at 10 dB loss.
3.3.7 The QKD protocol must have a published description with sufficient proof of security.	BB84 Protocol with decoy states. Attacks on finite key length and photon number splitting attacks are covered by the security proof together with the use of decoy states. Blinding attacks on the internal single photon detectors are covered by best practice outlined in this paper (see: <a href="https://journals.aps.org/prapplied/abstract/10.1103/PhysRevApplied.9.044027">https://journals.aps.org/prapplied/abstract/10.1103/PhysRevApplied.9.044027</a> )



3.3.8 If any external optical components are necessary for the successful operation of the QKD system for point-to-point communication, regardless of the distance, these components must be included in the bid, and their price must be included in the total bid price for the system (e.g., dispersion compensation fiber/module, tunable delay line, WDM, etc.).	All components are included in the QKD unit. No external components are needed.
3.3.9 The software should include GUI or API for controlling and monitoring the operation of the QKD system, as well as the extraction of secret symmetric keys at Alice's and Bob's nodes.	Compliant.
<b>Warranty</b>	
3.4.1 The contracting authority requires warranty for at least 2 years starting on the day of delivery (handover). Price for warranty must be included in the total bid price.	Compliant. 2 year warranty is included in the price.
3.4.2 Within the warranty, the contracting authority requires a guarantee of the proper functionality of the equipment according to the information declared by the supplier / manufacturer of the QKD system. In the event of a manufacturing defect that arises or becomes apparent during the warranty period, the contracting authority requires: – defect diagnosis and solution proposal within 30 days from reporting of the defect / malfunction at the latest – repair within 45 days from reporting of the defect / malfunction at the latest and, if it is not carried out within this period, a free loan of spare QKD system of the same type for the duration of the repair. The warranty shall not run (shall be suspended) from the time of reporting the defect/malfunction until delivery of the repaired equipment.	Compliant
3.4.3 Defected / malfunctioning QKD system shall be handed over in the registered seat of the contracting authority or shall be send by the contracting authority to any address provided by the supplier.	Compliant
3.4.4 The supplier shall bear all the costs related to the repair and provision of the spare QKD system.	Compliant
<b>Technical support</b>	
3.5.1 The contracting authority also requires technical support for at least 2 years starting on the day of delivery (handover). Price for technical support must be included in the total bid price.	Compliant
3.5.2 Within technical support, the contracting authority requires:	
3.5.2.1. Provision of comprehensive documentation for hardware and software operation	Compliant
3.5.2.2. A response time for remote support within 5 business days.	Compliant
3.5.2.3. Remote support for the initialization of the system and operator training for at least one workday.	Compliant

3.5.2.4. Regular security patches, software updates and system upgrades to ensure ongoing security and performance.	Compliant
3.5.2.5. The option of chargeable remote diagnostics and reconfiguration, or on-site visit from a supplier technician.	Compliant

#### 4. Contract Performance

Toshiba will ensure compliance with waste disposal obligations

Toshiba QKD Platform complies with health and safety standards and quality assurance and analytical protocol. ISO9001.

Delivery will be before the end of year 2024 to the specified CESNET premises.

Advance payment will not be more than 10% of the total price of the equipment.

Warranty price is included in the purchase price.

Technical support payment will be paid in arrears (monthly, quarterly or annually).

Support and maintenance services are provided as described in the tables above, and the document Service and Support included in our response, and under a Service level agreement.

Toshiba has a Sustainability and Environmental Policy, please see detailed and comprehensive information here <https://www.global.toshiba/ww/sustainability/corporate.html>  
<https://www.global.toshiba/ww/environment/corporate.html>



A photograph of a Toshiba Quantum Key Distribution (QKD) system. The device is a rack-mounted unit with a black perforated front panel. A white horizontal band across the middle features the Toshiba logo on the left and the text 'QUANTUM KEY DISTRIBUTION' on the right. Below this band are several horizontal silver-colored ventilation slats. The top of the unit also has a black perforated section with the 'TOSHIBA' logo in white. The bottom section of the unit has a large red 'Quantum Cryptography' logo and the tagline 'Securing the future of a digital society' in white.

**TOSHIBA**

**TOSHIBA**

QUANTUM KEY DISTRIBUTION

# Quantum Cryptography

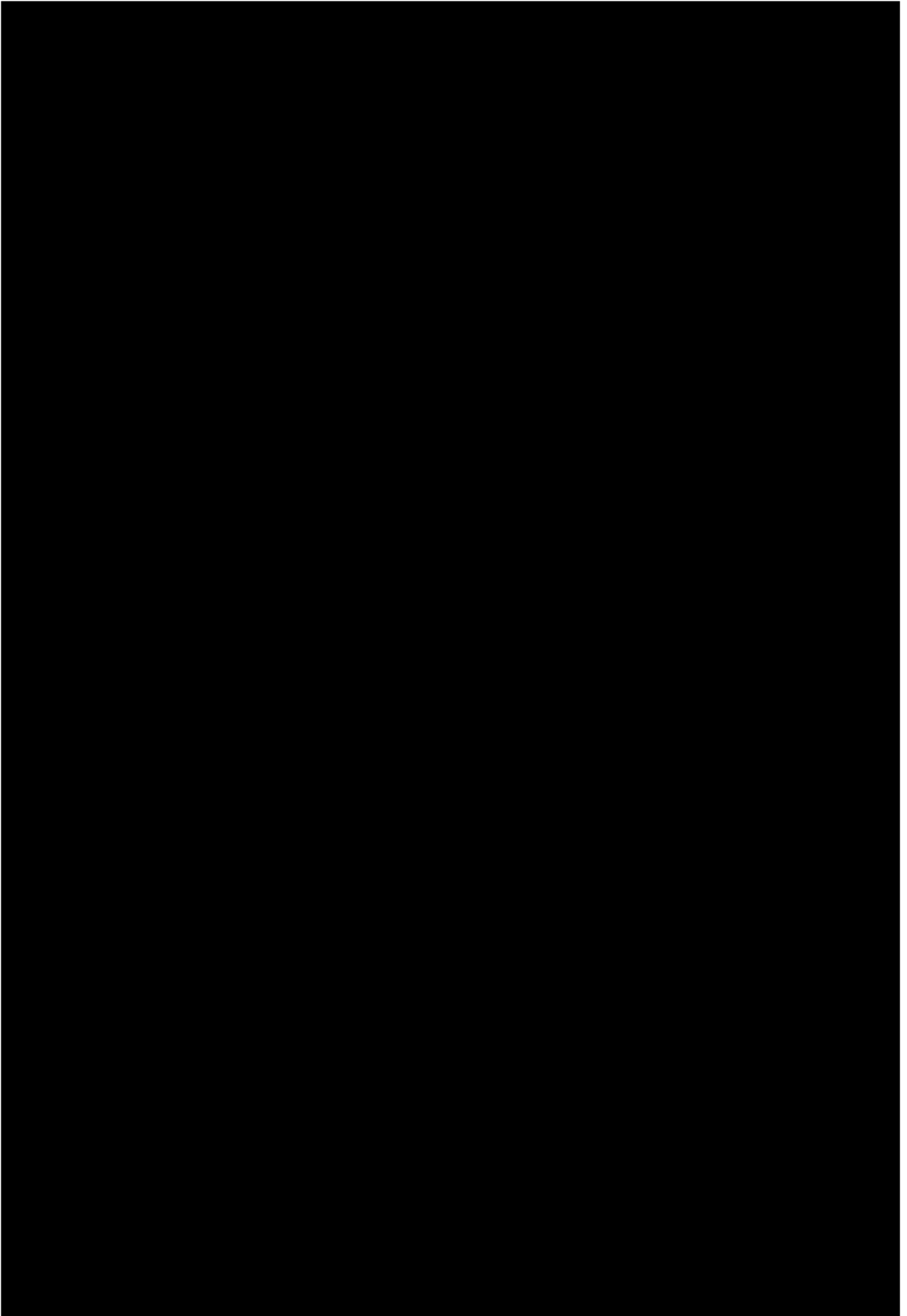
Securing the future of a digital society

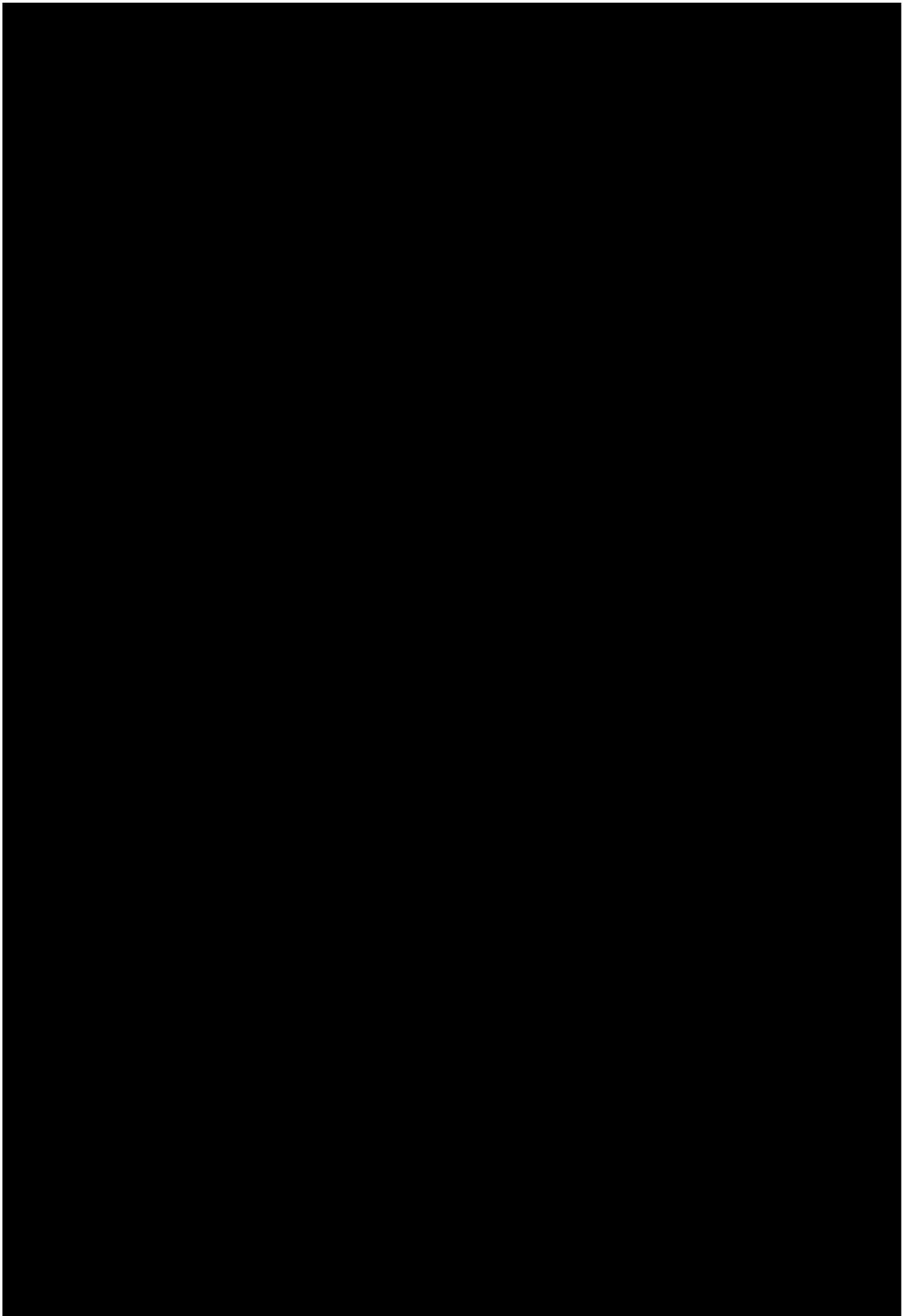
## **Toshiba Europe Limited's response to CESNET Tender for the Delivery of Complete Quantum Key Distribution (QKD) System and Related Services**

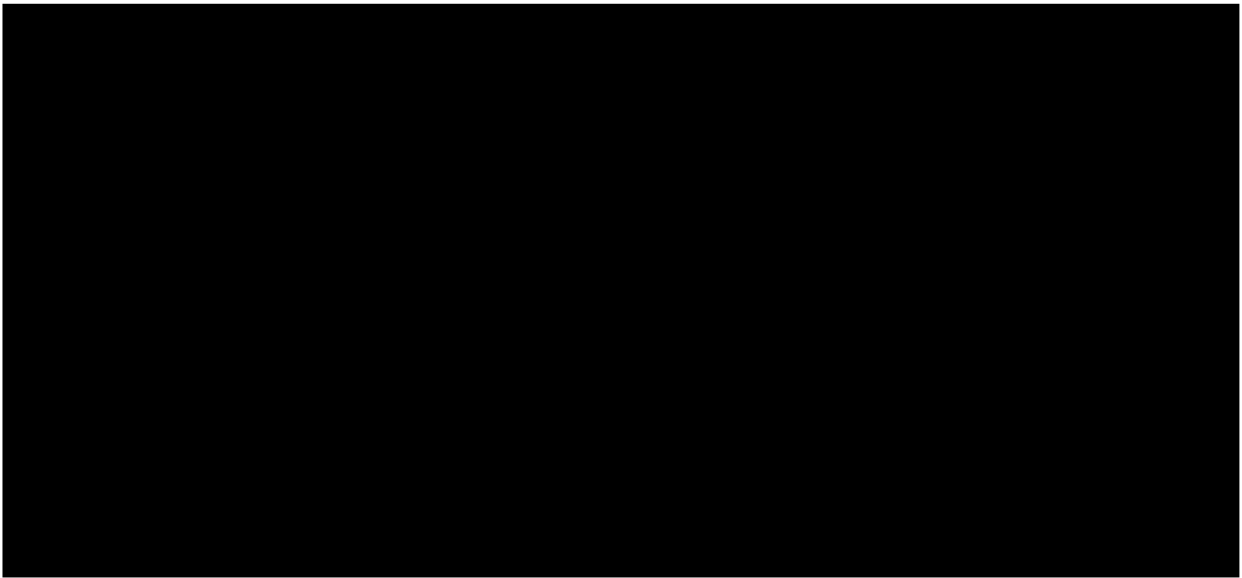
### **Toshiba QKD Service and Support**

**TOSHIBA**

**TOSHIBA EUROPE LIMITED**  
CAMBRIDGE SCIENCE PARK  
406 MILTON ROAD  
CAMBRIDGE, CB4 0WW, UK  
[WWW.TOSHIBA.EU/QUANTUM](http://WWW.TOSHIBA.EU/QUANTUM)







**Toshiba Europe Ltd**

Luma Musa

1 Pine Trees, Chertsey Road, Staines Upon Thames, TW18 3DU

United Kingdom

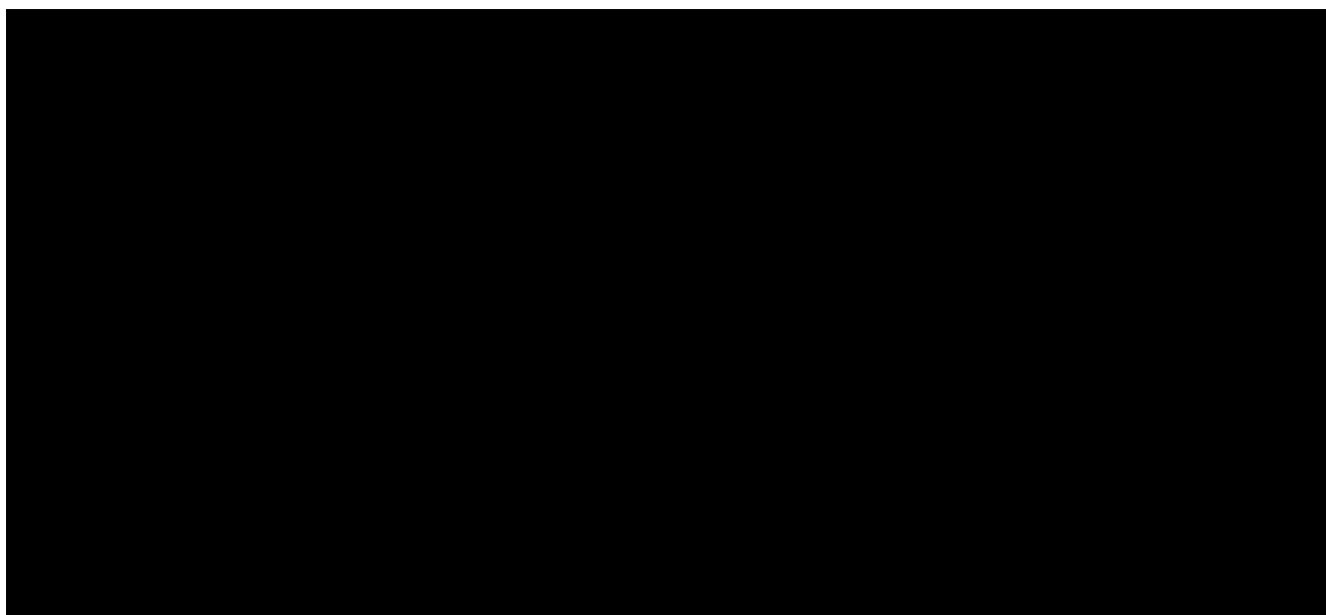
Ref.No.: VZ-2024-007

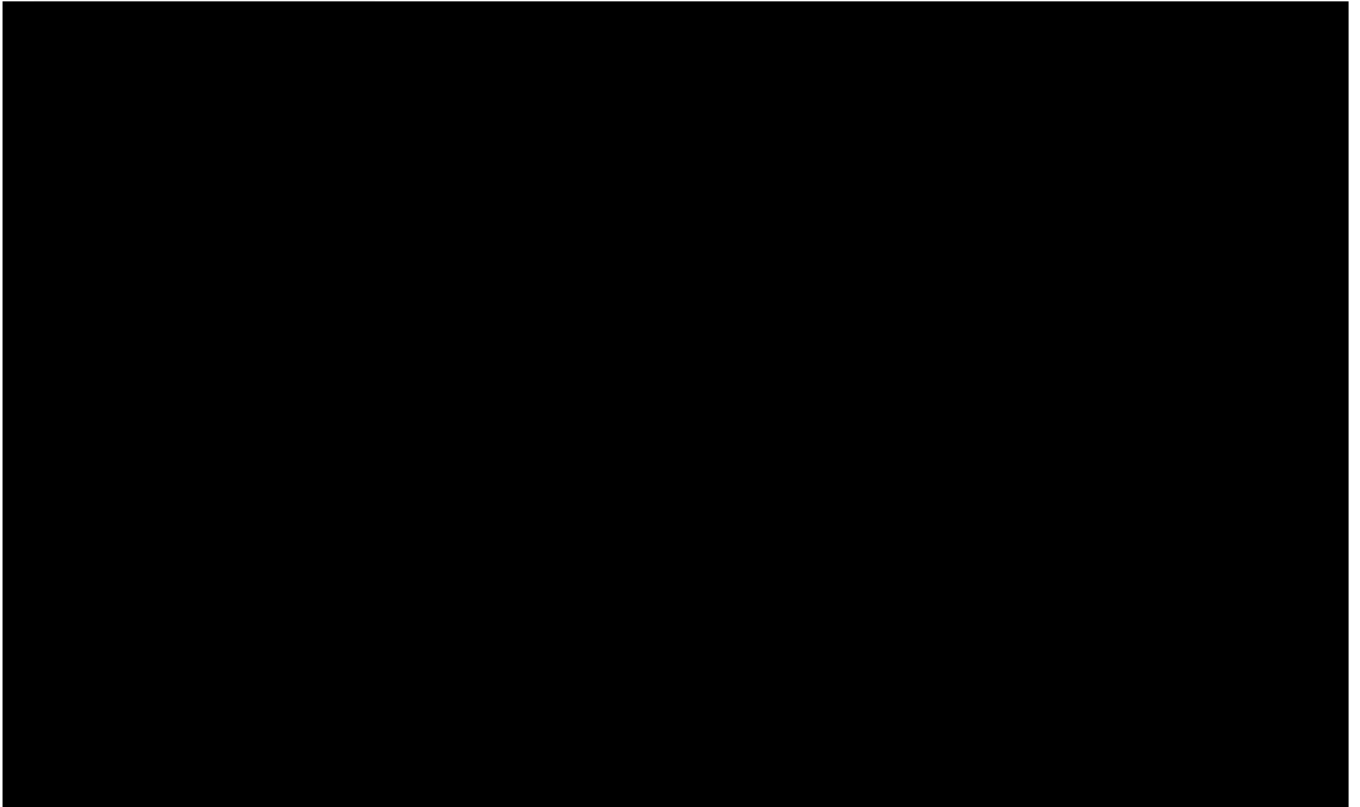
**Request for clarification of the information provided in the bid**

pursuant to § 46 of (Czech) Act No. 134/2016 Coll., on Public Procurement, as amended (hereinafter referred to as the "Act")

<b>Public Contract ("PC"):</b>	
Name:	<b>CESNET - Delivery of complete quantum key distribution (QKD) system and related services</b>
Type of PC:	Over-the-threshold public contract for supplies
Type of Procurement:	Open procedure
Ev. No. in Czech Public Procurement Journal:	Z2024-026339 <a href="https://vvz.nipez.cz/vyhledat-formular/dc2df1b1-855f-4e07-a176-baff61bbf484">https://vvz.nipez.cz/vyhledat-formular/dc2df1b1-855f-4e07-a176-baff61bbf484</a>
Ev. No. in TED:	344411-2024 <a href="https://ted.europa.eu/cs/notice/-/detail/344411-2024">https://ted.europa.eu/cs/notice/-/detail/344411-2024</a>
Date of commencement:	8. 6. 2024
Address on Contracting Authority's Profile:	<a href="https://zakazky.cesnet.cz/contract_display_360.html">https://zakazky.cesnet.cz/contract_display_360.html</a>

<b>Contracting Authority:</b>	
Name:	CESNET, zájmové sdružení právnických osob
Address:	Generála Píky 430/26, 160 00 Praha 6
ID No:	63839172





The background of the top section is a dark, textured surface with a grid of small dots. In the top left corner, there is a small graphic element consisting of a red triangle and a blue triangle. A Toshiba Quantum Key Distribution (QKD) device is shown in the center, featuring a white front panel with the Toshiba logo and the text "QUANTUM KEY DISTRIBUTION".

**TOSHIBA**

**TOSHIBA**

QUANTUM KEY DISTRIBUTION

# Quantum Cryptography

Securing the future of a digital society

**Toshiba Europe Limited's Response to  
CESNET Tender Clarification to Information Provided  
in the Bid**

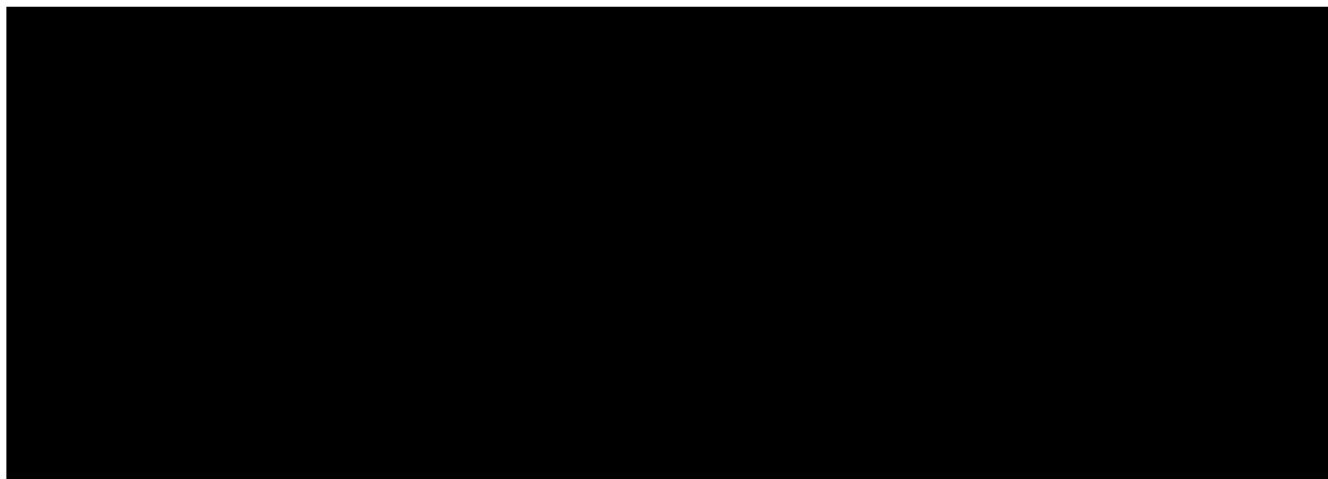
**Ref.No.: VZ-2024-007**

**Delivery of complete quantum key distribution (QKD)  
system and related services**

**23rd August 2024**

# **TOSHIBA**

**TOSHIBA EUROPE LIMITED**  
CAMBRIDGE SCIENCE PARK  
406 MILTON ROAD  
CAMBRIDGE, CB4 0WW, UK  
[WWW.TOSHIBA.EU/QUANTUM](http://WWW.TOSHIBA.EU/QUANTUM)





**Toshiba Europe Ltd**  
Luma Musa  
1 Pine Trees, Chertsey Road  
Staines Upon Thames, TW18 3DU  
United Kingdom

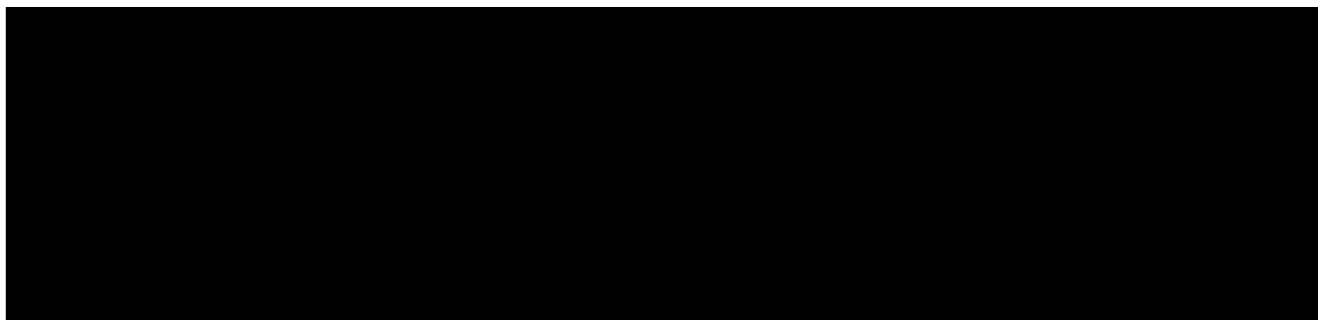
Ref.No.: VZ-2024-007

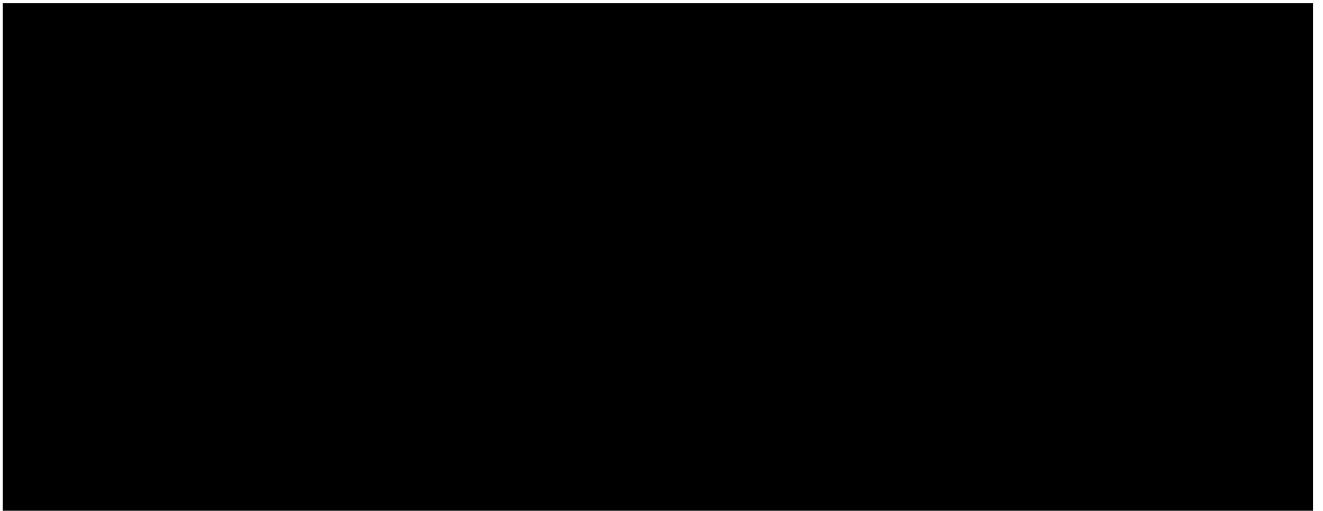
**Request No. 4 for additional clarification of the information provided in the bid and in previous clarifications**

pursuant to § 46 of (Czech) Act No. 134/2016 Coll., on Public Procurement, as amended (hereinafter referred to as the "Act")

<b>Public Contract ("PC"):</b>	
Name:	<b>CESNET - Delivery of complete quantum key distribution (QKD) system and related services</b>
Type of PC:	Over-the-threshold public contract for supplies
Type of Procurement:	Open procedure
Ev. No. in Czech Public Procurement Journal:	Z2024-026339 <a href="https://vvz.nipez.cz/vyhledat-formular/dc2df1b1-855f-4e07-a176-baff61bbf484">https://vvz.nipez.cz/vyhledat-formular/dc2df1b1-855f-4e07-a176-baff61bbf484</a>
Ev. No. in TED:	344411-2024 <a href="https://ted.europa.eu/cs/notice/-/detail/344411-2024">https://ted.europa.eu/cs/notice/-/detail/344411-2024</a>
Date of commencement:	8. 6. 2024
Address on Contracting Authority's Profile:	<a href="https://zakazky.cesnet.cz/contract_display_360.html">https://zakazky.cesnet.cz/contract_display_360.html</a>

<b>Contracting Authority:</b>	
Name:	CESNET, zájmové sdružení právnických osob
Address:	Generála Píky 430/26, 160 00 Praha 6
ID No:	63839172





A banner image featuring a Toshiba Quantum Key Distribution (QKD) system. The system is a rack-mounted unit with a white top section and a black perforated front panel. The Toshiba logo is visible in the top right corner of the banner, and the words "QUANTUM KEY DISTRIBUTION" are printed on the white section. The main title "Quantum Cryptography" is written in large red letters across the middle, with the tagline "Securing the future of a digital society" below it.

**TOSHIBA**

**TOSHIBA**

QUANTUM KEY DISTRIBUTION

# Quantum Cryptography

Securing the future of a digital society

**Toshiba Europe Limited's Response to  
CESNET Tender Clarification to Information Provided  
in the Bid**

**Ref.No.: VZ-2024-007 request no. 4**

**Delivery of complete quantum key distribution (QKD)  
system and related services**

**2<sup>nd</sup> Sept 2024**



**TOSHIBA EUROPE LIMITED**  
CAMBRIDGE SCIENCE PARK  
406 MILTON ROAD  
CAMBRIDGE, CB4 0WW, UK  
[WWW.TOSHIBA.EU/QUANTUM](http://WWW.TOSHIBA.EU/QUANTUM)

## **Toshiba Europe Response**

