**Annex 1 of the Tender Documentation**

**Specification of the required subject of performance**

**Public contract "CESNET - Delivery of a complex QKD system"**

**The subject of the public contract** is the supply of a QKD system. The subject matter of the tender is defined in detail in the technical, commercial and other contractual terms and conditions included in the Tender Documentation.

1. Table 1 - Mandatory requirements for the subject-matter ('must be fulfilled')

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| --- | --- |
|  | **Complete technical and commercial parameters and requirements** |
| 1 | Complex QKD system solution including transmitter (Alice) and receiver (Bob) |
| 2 | Possibility of external (customer based) multiplexing for service channels |
| 3 | Possibility to multiplex service channels with customer data in C-band |
| 4 | Range of QKD system at least **110 km** |
| 5 | Total power budget of the quantum channel line: **>28.00 dB** |
| 6 | Quantum channel optical fibre type: SMF-28 |
| 7 | Typical secret key rate: at least **200 kb/s @ 10 dB loss** |
| 8 | Key Exchange Protocol: published protocol description with sufficient security proof |
| 9 | Physical ports and logical interfaces: * Quantum channel connector type: optical connector with angled ferrule (SC/APC or FC/APC or E2000)
* Interface to external encryptors: Ethernet
* service channel/-s: SFP
 |
| 10 | Management: Built-in system management module with alarms, console connection and Ethernet network interface  |
| 11 | Graphical interface (permanent licence): system configuration, display of alarms, fast software/hardware based key distillation, visualisation of parameters and QKD processes |
| 12 | Support of protocol and API for REST (Representational State Transfer) based key delivery |
| 13 | Dimension: max 5U (19” rack compatible) |
| 14 | Power supply: 230 VAC/50 Hz (possibility of redundancy) |
| 15 | Warranty including technical support (“Warranty”): at least 36 monthsRequirements for the Warranty: see Annex 2 of the Tender Documentation (binding draft contract) |
| 16 | Training |
| 17 | Software Update during the warranty period |
| 18 | Technical assistance within 2 business days by phone/email |