



**PUBLIC TENDER
ADAPTED PROCEDURE**

**CCTP
(Technical Specifications)**

**1550 nm Cryogenic Superconducting Single Photon Detectors Solution with temporal jitter
lower than or equal to 10 ps**

Marché n°

The adapted procedure rules this call for tenders
R2123-1 and R2131-12 of the French Public Procurement Code.

Deadline for receipt of offers: 27/11/2025 12h00

All the documents must be returned without modifications, dated, initiated, and signed.

For more details please contact :

Family Name	First Name	Address mail	Phone number
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This specification defines the requirements, specifications, and supply arrangements for a photon counting system dedicated to quantum applications at 1550 nm, based on superconducting detectors.

- **Description**

The project involves the purchase of a complete photon counting system, including the cooling system (closed-cycle cryostat and compressor), fiber optic detectors with SM or PM single-mode fibers, control and detection electronics compatible with the use of a Swabian time tagger ultra correlator (equipment previously acquired by the university), and control software. In addition, to create the vacuum in the cryostat, the supplier must supply the accessories (tubes, valves, etc.) needed to connect a Pfeiffer HiCube 80 Eco, DN 40 ISO-KF/ MVP 015-2 primary pump (equipment already acquired by the university).

The order includes supply of equipment, delivery to the site, commissioning, and a minimum 12-month warranty on parts and labor.

- **Specifications for FC/APC fiber-coupled detectors**

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Minimum technical requirements :

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|------------------------|------------------------------|
| • Temporal jitter | equal to or less than 10 ps |
| • Nombre de canaux | greater than or equal to 2 |
| • Operating Wavelength | 1550 nm Telecom C Bandwidth |
| • Efficiency | greater than or equal to 70% |
| • Dark count rate | less than 100 Hz |
| • Counting Rate | greater than 1 MHz |

Remarque: technical requirements must be validated simultaneously.

- **Electronic driver and data acquisition and transfer software**

- The driver and data acquisition software must be compatible with a Windows 10 or higher 64-bit operating system. The type of connection (USB, RJ45, etc...) must be specified, as well as the measurements and control parameters accessible via the control interface (temperature, counting rate, polarization current, etc...). The electronic system should enable the generation of electronic pulses detectable by a Swabian time tagger ultra correlator. It should also automatically limit latching problems.

- **Cryogenic cooling system**

- The cooling system must be a closed-cycle system allowing continuous operation of the detection system. The system must be able to support at least 4 FC/APC-connected fiber heads, and the compressor must be compact and air-cooled (no water or other connections). All connections between the various elements must be supplied, as well as their power supply (if not integrated into the module). In particular, the supplier must provide the accessories (tubes, valves, etc.) and a vacuum pump as well.

- ***Power Supply and other fluid and gas requirement***

Power supply characteristics (current, voltage, phase, etc.) must be supplied, as well as any other operating characteristics such as the fluids or gas requirement (compressed air, nitrogen, etc.). They must be compatible with the Laboratory's electrical limitations: 220V supply voltage, single- or three-phase supply, up to 32 A.

- **Options**

As complementary information, the applicant is invited to quote the possible purchase costs of additional detector heads (including transport) with their performances (efficiency, noise, etc....) and the costs of software as well as their updates, if any.

- **Warranty/SAV/maintenance**

A full description (duration, type, cost) of the warranty, after-sales service during and outside the warranty period, as well as the cost and recurrence of maintenance must be provided.

- **Versions**

Additional alternatives are permitted. The equipment proposed must meet the minimum technical requirements of the specifications. Applicants may, however, propose higher-performance modules or deviations from the requested system, provided that such deviations lead to an improvement in the system.

Date, cachet et signature du candidat :