Finançat per
la Unió Europea

Generalitat
de Catalunya

SPECIFICATION SHEET

SUPPLY, INSTALLATION AND COMMISSIONING OF AN *AUTOMATED CHIP SORTER SYSTEM* FOR ICFO, FINANCED BY FEDER CATALUNYA 2021 - 2027

FILE NUMBER: ICFO-2026-018

CLAUSE 1. Object of the contract

The purpose of this contract is the supply, installation and commissioning of a "**Automated Chip Sorter System**" for the ICFO, financed by FEDER Catalunya 2021-2027.

The types of items supplied are linked to the CPV (Common Public Procurement Vocabulary) **38000000-5** Laboratory, optical and precision equipment (except glasses).

CLAUSE 2. Needs to satisfy

PhotonChip is a platform project that will help bring photonic technologies, in particular integrated photonics and photonic chips, from scientific feasibility to prototype stage to be applied in, for instance, communications as 6G transceivers, sensors, quantum computing and technology platforms.

Once operational, PhotonChip will cover the whole photonic chip value chain (design, packaging, testing) and train new experts thanks to dedicated programs.

As part of the Institute of Photonic Sciences (ICFO), PhotonChip will use advanced technologies as quantum technologies for cybersecurity, virtual and augmented reality, artificial intelligence, and machine learning.

In the development of the project, ICFO needs to acquire the supply of an **Automated Chip Sorter System.**

The required equipment shall be a semi-automatic die-sorting system to be integrated into the dicing line of the ICFO packaging laboratory. Its purpose is to provide faster and more efficient die handling, enabling the selection and extraction of individual dies from diced wafers mounted on adhesive-film dicing frames and their placement into standard carriers such as waffle packs or gel-packs.

The system is essential to increase throughput, reduce manual handling, ensure consistent and controlled die manipulation, and minimize the risk of mechanical damage, particle contamination, or electrostatic discharge during the sorting process.

CLAUSE 3. Technical requirements

Technical proposal structure - minimum mandatory equipment characteristics

The system shall integrate a video inspection module, motorized axis and appropriated fixtures to enable the sorting, picking and placement of dies from diced wafers (mounted on adhesive-film dicing frames) into standard die carriers.

The system shall comply with, at minimum, the following requirements:

1. Dicing Frame. It shall be compatible with 8" and 12" dicing frames
2. Wafer Material and Size. It shall support different wafer materials, sizes and thicknesses, including 4", 6", 8" and 12" glass and silicon wafers.
3. Die size. It shall handle a wide range of die dimensions (at least from 500µm to 25mm) and shall support both top-surface die pickup and edge pickup.
4. Die Carrier. Compatible with standard 2" waffle packs and gel-packs.
5. Throughput shall be above 500 units per hour.

6. Placement accuracy ≤120µm
7. Semi-automatic operation. All components can be manually loaded into the system, while the picking and placement shall be performed automatically by the system. Manual die inspection and selection by the operator is allowed.

The system must also include:

8. Appropriated camera or cameras to inspect the die.
9. Chuck for 8” dicing frames
10. Chuck for 12” dicing frames
11. Set of grippers and ejecting needles for picking up the dies from the edge, avoiding top surface contact. The tooling shall support die-size range specified in item 3.
12. Set of vacuum tools and ejecting needles for picking up the dies form the top surface, avoiding edge contact. The tooling shall support die-size range specified in item 3.

Software requirements

The system must include the software required to manage all required functionalities described above and shall be supplied with a permanent (non-expiring) license.

Technical documentation or manuals to be delivered

A set of documentation shall be provided, covering the following topics:

- Comprehensive system user manual, including both hardware and software descriptions, routine servicing and troubleshooting.

CLAUSE 4. Power distributions and safety

The system shall include:

- Electrical Operation: 230V ±10%, 50 Hz (per UNE-EN 61010-1, Spanish adoption of IEC 61010-1)
- CE-certification

CLAUSE 5. System layout and services

The proposal shall include a set of “system layout and services documentation”, containing the following information:

- System layout, including overall footprint, weight, drawings and detailed description of the different system components.
- Installation and start-up requirements, including required utilities, service connections, and any applicable environmental specification.

CLAUSE 6. Transportation, installation, start-up.

- Contract includes the installation and start-up of the system, including system checking, functional tests and the supply of all those elements necessary for its correct operation.

- The proposal will include transportation to ICFO's facilities including insurance and all export/import and customs duties.

- Any other customs or miscellaneous expenses, unexpected and not expressly taken into account in the tender, which may arise until the equipment arrives at ICFO, must initially be borne by the Supplier and will be reimbursed by ICFO upon submission of supporting documentation proving the actual incurrence of such expenses.

- The machine will be placed in the designated location by ICFO. The contractor shall cover all costs, organization, and coordination related to the placement, including the provision of any required specialized equipment or vehicles, as well as any necessary component disassembly and reassembly for unloading and transportation inside the building, strictly following the route specified by ICFO.

- The contractor will be responsible for the removal and proper disposal of the packaging when the machine is delivered and unpacked, or its storage during the warranty period in case the original packaging needs to be kept.

Process qualification

Formal process qualification will not be required. Proper functionality of the equipment will be verified by ICFO technical team during installation, start-up and training at ICFO facilities.

CLAUSE 7. Warranty and Follow-on Support

- 1-year Full Warranty on all parts and components of the system irrespective of the manufacturer. The warranty will include the replacement of any faulty or damaged part(s) during normal use of the system, no matter the manufacturer of the component(s). It will cover any cost related with the disassembly, transportation, reparation and re-assembly of the damaged component(s), including all travelling and living costs of the required service engineer(s). An on-site repair, or a justified alternative to reduce the system down time to the minimum, will always be the first service option. A team of properly qualified and skilled service engineers will have to be available.

- System lifetime support.

- Spare parts will be available during, at least, 10 years after system supply.

CLAUSE 8. Training

- The contractor shall provide at least **one day** of training to the equipment users, scheduled on a mutually agreed date, to ensure proper and safe operation of the system.

- The training shall also include an overview of basic maintenance procedures, covering routine preventive tasks and essential troubleshooting.

- Training will take place at the ICFO facilities.

CLAUSE 9. Delivery and Installation Time

The machine should be delivered within **3 months starting from tender assignment.**

For the purpose of this tender, delivery time is defined as the period from the formalization of the contract issuance until system delivery at ICFO facilities, including manufacturing, transportation, installation, and acceptance tests.

CLAUSE 10. Target price

- The target price for the system is 130.000 € (VAT excluded).
- Payment will be made once the final acceptance certificate for the equipment has been formalized.

Castelldefels, on the date of its digital signature

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