



PURCHASE CONTRACT

This purchase contract ("Contract") was concluded pursuant to Sec. 2079 *et seq.* of the Act No. 89/2012 Coll., Civil Code ("Civil Code"), on the day, month and year stated below by and between:

- (1) **Institute of Physics of the Academy of Sciences of the Czech Republic, a public research institution,**
with its registered office at: Na Slovance 2, Praha 8, PSČ: 182 21,
registration No.: 68378271,
represented by: RNDr. Michael Prouza, PhD. – director
("Client"); and
- (2) **DELONG INSTRUMENTS a.s.**
with its registered office at: Palackého třída 3019/153b, Královo Pole, 612 00 Brno
registration No.: 46903879
represented by: Ing. Tomáš Papírek, member of the board
("Supplier").

(The Client and the Supplier are hereinafter jointly referred to as "Parties" and individually as "Party".)

WHEREAS

- (A) The Client is a public contracting authority and the beneficiary of grants of the Ministry of Education, Youth and Sports of the Czech Republic for different projects aimed on building and further development of international research laser facility ELI Beamlines ("Projects"), within the Operational Programme Research, Development and Education (hereinafter the "Operational Program").
- (B) For the successful realization of the Projects it is necessary to purchase the Object of Purchase (as defined below) in accordance with the Act No. 134/2016 Coll., on public contracts awarding, and binding rules of the Operational Program.
- (C) The Supplier's bid for the public contract titled "*Integrated system of vacuum chambers, optomechanical mounts and controls of the L4 Compressor Image relay System (CIS) (Reissue)*," whose purpose was to procure the Object of Purchase (hereinafter the "Bid" and "Public Contract"), was selected by the Client as the most suitable and relevant parts thereof describing the Delivery (as defined below) from the technical and quality perspective from some parts of Annex 4 (Supplier's Bid) to this Contract.



The award procedure to award the Public Contract based on which this Contract was concluded had been preceded by (later terminated) above-the-threshold open procedure titled "*Integrated system of vacuum chambers, optomechanical mounts and controls of the L4 Compressor Image relay System (CIS) (Reissue)*" in which the Supplier also had submitted a bid (hereinafter the "**Previous Public Contract**" and "**Previous Bid**"). Relevant parts of the Previous Bid describing the Delivery (as defined below) from the technical and quality perspective form some parts of Annex 4 (Supplier's Bid) to this Contract.

IT WAS AGREED AS FOLLOWS:

1. BASIC PROVISIONS

- 1.1 Under this Contract the Supplier shall design, manufacture, test, deliver and handover to the Client at the Client's facility an integrated assembly of vacuum chambers, optomechanical systems and electronic controls of the L4 Compressor Image relay System (CIS), as specified herein, mainly in Annex 1 (Summary of Deliverables, Time Schedule and Payments), Annex 2 (Detailed Technical Specifications), Annex 3 (Quality and Verification Requirements) and Annex 4 (Supplier's Bid) to this Contract ("**Object of Purchase**") and shall transfer to the Client ownership right to the Object of Purchase, and the Client shall take over the Object of Purchase and shall pay the Supplier the Purchase Price (as defined below), all under the terms and conditions stipulated herein.
- 1.2 Under this Contract the Supplier shall specifically carry out following major activities ("**Activities**"):
- a) Develop a detailed schedule of project activities and all corresponding quality plans and work procedures;
 - b) Develop a detailed engineering drawings and detailed 3D model based on the preliminary design drawings and 3D model supplied by the Client, provide structural verification of the CIS chambers, elaborate design of specific details, develop Failure Mode and Effect Analysis;
 - c) Develop production (manufacturing) drawings for major components of the CIS chambers, optical support chassis and optomechanical mounts, develop production schemes for the vacuum and optomechanical control systems;
 - d) Manufacture, assembly and factory test the CIS vacuum chambers and the optical support chassis, including functional verification of the vacuum control system;
 - e) Transport to ELI-Beamlines the CIS vacuum chambers including the optical support chassis, and the vacuum control system;
 - f) Manufacture, assembly and factory test the optomechanical mounts and the laser shutter including the motion controls, and deliver them to ELI-Beamlines.



- g) Provide optional installation technical support on a call-off basis, up to 20 man-days according to Annex 1 (*Summary of Deliverables, Time Schedule and Payments*); (hereinafter “**Option 1: Optional installation technical support**”)
- h) Provide extra technical optomechanical design and/or electronic control system design works, on a call-off basis, up to 40 man-days according to Annex 1 (*Summary of Deliverables, Time Schedule and Payments*); (hereinafter “**Option 2: Optional design works**”)

(Options 1 and 2 are referred to hereinafter together as the “Options”),

(The Object of Purchase and the Activities are hereinafter jointly referred to as the “**Delivery**”).)

- 1.3 The Supplier promises to the Client that if for the fulfilment of the requirements of the Client under this Contract or the proper operation of the Object of Purchase are necessary other deliveries and activities not expressly mentioned in this Contract, the Supplier shall procure such deliveries or shall carry out such activities at its own expense without any effect on the Purchase Price.
- 1.4 During the performance of this Contract, the Client is entitled to further specify or clarify the requirements stipulated in Annex 2 (*Detailed Technical Specification*). Such further specifications can be requested by the Client no later than one month before the scheduled completion of the D2 Deliverable, with the exception of the vacuum systems where further specifications can be requested to up to one month before the scheduled completion of the D3 Deliverable, and for respective optomechanical mounts where further specifications can be requested to up to two months before the scheduled completion of the D5, D7 and D9 Deliverable. These further specifications shall be binding for the Supplier. Under this provision, the Client is not entitled to substantially change the existing requirements stipulated in Annex 2 (*Detailed Technical Specifications*). Should any request for change result in increase of Purchase Price such request is binding for the Supplier only if the Purchase Price modification is agreed between Parties and such modification is in accordance with the Act No. 134/2016 Coll., on public contracts awarding, and binding rules of the Operational Program.
- 1.5 The Object of Purchase and its components and parts shall be delivered new (i.e. not remanufactured).
- 1.6 The final cleaning of the vacuum components and testing of vacuum performance, integration of the CIS vacuum chambers with internal optomechanical assemblies, and integration of the instrumentation with critical control systems shall not be performed by a subcontractor.
- 1.7 The Supplier shall deliver the Object of Purchase and provide the Activities in accordance with the Deliverables defined in Annex 1 (*Summary of Deliverables, Time Schedule and Payments*).



2. SUPPLIER'S DUTIES

- 2.1 The Supplier shall ensure that the Object of Purchase complies with all technical specifications and performance requirements stipulated in Annex 2 (Detailed Technical Specifications). The Supplier is responsible that the Object of Purchase and/or its subsystems meet valid safety, technical and quality Czech and EU standards.
- 2.2 During the performance of this Contract the Supplier proceeds independently, unless hereunder stated otherwise. If the Supplier receives instructions from the Client, the Supplier shall follow such instructions unless these are against the law or in contradiction to this Contract. If the Supplier finds out or should have found out by exercising professional care that the instructions are inappropriate or contradicting valid Czech or EU standards or are in contradiction to this Contract, then the Supplier must notify the Client.

3. CLIENT'S CONFIDENTIAL INFORMATION

- 3.1 For the purposes of detailed design and manufacture, the Client may provide to the Contractor conceptual drawings, 3D model, schemes and other materials related to the Object of Purchase, which are of confidential nature and which will be labelled as "Confidential and Proprietary" ("Client's Confidential Information"). The Supplier acknowledges that the Client's Confidential Information is of proprietary and confidential nature and that such information might be protected under laws that cover industrial or other intellectual property and that disclosure of such information may cause damage or other harm to the Client and/or other third persons. The Supplier may use the Client's Confidential Information only and solely for the purposes of the fulfilment of this Contract, i.e. for the manufacture and assembly of the Object of Purchase for the Client.
- 3.2 The Supplier must ensure that Client's Confidential Information will be accessed only by persons (e.g. employees and/or subcontractors) that need such access for the fulfilment of this Contract. The Supplier shall take all reasonable steps to ensure that the Client's Confidential Information will not be accessed by any third party and/or by any unauthorized person.
- 3.3 Should the Supplier breach any of his duties stipulated in this Article 3 the Client is entitled to charge him with contractual penalty in the amount of 4 000 EUR for each case of such breach.

4. DESIGN AND MANUFACTURE OF THE OBJECT OF PURCHASE

- 4.1 The detailed engineering drawings developed by the Supplier in the Deliverable D2 must comply with the requirements of this Contract and shall be approved by the Client prior to proceeding to elaboration of the production (manufacture) drawings. If the Client suggests modifications to these drawings, the Supplier shall incorporate such modifications or shall explain in writing the reason for refusing to incorporate them.
- 4.2 The Supplier must act in such a way that this Contract is performed in time and in due manner.



5. LICENCE OF THE SUPPLIER

- 5.1 If any part of the Delivery forms an object protected by intellectual property rights laws and/or forms related know-how, the Supplier grants to the Client a right to use such part of the Delivery, including related documentation ("Supplier's Proprietary Information") in the original or modified version ("Licence") for the purposes listed in Art. 5.3.
- 5.2 The License is granted:
- a) royalty free worldwide;
 - b) for the period of validity of the rights to each of the licensed intellectual property objects, which applies adequately to the related know-how.
- 5.3 The Licence includes the right to use the Object of Purchase for purposes of the Projects as defined by grant decisions issued within the Operational Program and comprises particularly the right to use the Object of Purchase for research and development activities within operation of the International Laser Research Facility ELI Beamlines including necessary modifications to the Object of Purchase including software and limited handover of necessary documentation upon signature of a non-disclosure agreement to third parties for the purposes of operation, servicing and further development of the Object of Purchase.
- 5.4 This granted License also includes the Supplier's permission to the Client to modify and/or alter and/or otherwise change any part of the Supplier's Proprietary Information; either by itself or with assistance of any third party. This permission shall apply *mutatis mutandis* to the Client's entitlement to combine and/or merge any part of the Supplier's Proprietary Information with any other work; either by itself or with assistance of any third party.
- 5.5 The Client is entitled to transfer/ assign the License on any third party if the ownership or operation of International Laser Research Facility ELI Beamlines shall pass on such third party. The Client shall inform the Supplier within undue delay thereabout. The Client is entitled to grant wholly or partially the License to any third party (sublicense) if the right to use the Object of Purchase is granted to such third party.
- 5.6 The Client is not required to use the Licence, unless the maintaining of the right depends on the exercise thereof.
- 5.7 The Supplier hereby represents and warrants to the Client that:
- a) is entitled to use and enforce all intellectual property rights to the Supplier's Proprietary Information, in order to be ensured that the Client may use the Supplier's Proprietary Information properly and without any interference; and
 - b) is entitled to grant License to the Client in the extent specified in this Contract.
- 5.8 If the Licence is endangered or infringed, the Client shall inform the Supplier accordingly without undue delay after ascertaining this fact. The Supplier shall provide the Client with cooperation to ensure the legal protection of the Licence. It is hereby explicitly agreed



that the Supplier shall give the Client consent to enforce the industrial property rights and/or related know-how rights covered by the License.

6. MONITORING AND IMPLEMENTATION OF THE INSPECTION PLAN

- 6.1 The Supplier undertakes to enable the Client exercising inspections of the performance of this Contract. For this purpose, the Supplier shall provide to the Client all information regarding the status of the design and manufacture of the Object of Purchase at the request of the Client, anytime during performance of this Contract.
- 6.2 The Supplier shall provide to the Client all cooperation, assistance and information that the Client needs for the purposes of full evaluation of the status of the design or manufacture of the Object of Purchase.
- 6.3 If the Client, especially during an inspection, ascertains any breach of the Supplier's duties under this Contract, the Client shall notify in written the Supplier of such breaches. The Supplier has to respond to such notification and suggest, in appropriate detail, remedying the deficiencies, within fourteen (14) calendar days, unless the Parties agree otherwise.
- 6.4 Each Party shall invite the other Party to attend a meeting in writing at least 14 calendar days in advance. The Parties may upon mutual agreement replace meetings in person by other forms of communication, as long as they agree on such in writing. Each Party shall bear its expenditures related to their participation in meetings at the other Party's facility; however, cost which would arise due to error, faulty performance or breach of contractual provisions of the Parties shall be borne by that Party which caused it.
- 6.5 The Supplier shall follow the Quality and Verification Plan according to Annex 3 (Quality and Verification Requirements) and shall invite the Client at least 14 calendar days in advance to participate in all relevant activities of this Plan.
- 6.6 If the Client does not participate in an inspection and/or verification activity according to Annex 3 (Quality and Verification Requirements) at the date communicated in accordance with Art. 6.5 the Supplier is not entitled to carry out respective activities in absence of the Client. However, in such a case the Supplier is not in delay with delivery of the corresponding Deliverable and subsequent Deliverables with proven dependency on the corresponding Deliverable and delivery periods of such Deliverables shall be extended by the time of the Client's delay, unless the Parties agree otherwise.

7. THE PLACE AND TIME OF DELIVERY

The place of delivery shall be the International Research Laser Facility ELI-Beamlines located in Dolní Břežany (district Prague-west), Czech Republic (hereinafter also "ELI Beamlines" or "ELI Beamlines site").

- 7.1 The Supplier shall perform individual Deliverables in terms stipulated in Annex 1 (Summary of Deliverables, Time Schedule and Payments).
- 7.2 The Supplier shall carry out performance and verification tests of the major subsystems of the Object of Purchase at his premises (factory acceptance tests), in relation with



Deliverables D3, D5, D7 and D9, on the dates agreed with the Client in accordance with Art. 6.5, according to Annex 3 (*Quality and Verification Requirements*).

7.3 The Supplier shall deliver and handover individual parts of the Object of Purchase at the ELI-Beamlines site as stipulated in Annex 1 (*Summary of Deliverables, Time Schedule and Payments*). The Client shall provide to the Supplier for this purpose necessary cooperation.

7.4 For the purpose of determination of individual deadlines stipulated hereby the **Commencement Day** shall be the seventh calendar day after the Contract is concluded (i.e. signed by the second of the Parties).

8. PRICE AND PAYMENT TERMS

8.1 The total purchase price for the Delivery excluding Options is 28 029 000,- Czech Crowns (CZK) without value added tax ("VAT") ("Purchase Price"). The Purchase Price represents the Supplier's binding maximum price as offered in the Supplier's Bid. The Purchase Price consists of the price for the Object of Purchase and Activities excluding price of Options as stipulated in the Bid. VAT shall be imposed on top of all payments made hereunder according to valid legislation.

8.2 The Purchase Price and prices of Options cannot be exceeded.

8.3 The Purchase Price includes all costs and expenses of the Supplier related to the performance of this Contract excluding Options. The Purchase Price include especially all expenses related to the design, manufacture, assembly, factory testing and delivery to ELI-Beamlines and handover of the Object of Purchase, costs of the Licence, insurance, warranty service and any other costs and expenses connected with the performance of this Contract excluding Options. Similar provisions shall *mutatis mutandis* apply for the prices of Options.

8.4 The Purchase Price and prices of Options may be changed only in accordance with the Act No. 134/2016 Coll., on public contracts awarding, as amended.

8.5 If the Supplier performs the subject-matter hereof duly in line herewith without substantial breaches of the Contract and if there are no obvious reasons for doubts on continuing of due performance hereof by the Supplier taking into account the overall approach of the Supplier to the Contract performance (presented particularly by due preparation for performance of activities that are to come) and if it might ease further performance hereof by the Supplier the Client reserves the right fully on its discretion to provide the Supplier with the Purchase Price partial instalments (Payments) or any parts of them sooner than scheduled hereunder or in higher amount than stipulated by Annex No 1 hereto, Summary of Deliverables, Time Schedule and Payments (i.e. any Payments might be increased with proportional decreasing future payments). If the conditions stipulated above are met the Client is entitled to modify the payment schedule included in the Annex No 1 hereto anyhow in favour of the Supplier and to provide it with any prepayment.



- 8.6 The Purchase Price and prices of Options shall be paid on the basis of tax documents – invoices, to the account of the Supplier designated in the invoice. The Purchase Price shall be paid following the payment schedule set in Annex 1 (*Summary of Deliverables, Time Schedule and Payments*). The prices of Options shall be paid according to Annex 1. The Supplier is entitled to issue any invoice no sooner than on the moment the corresponding part of the Delivery, i.e. the Deliverable or Option, is duly delivered to and accepted by the Client in accordance with this Contract, as regards the Deliverables namely with its Art. 9.2 and/or 9.4.
- 8.7 The Client shall realize payments on the basis of duly issued invoices within 30 days from their receipt. If the Supplier stipulates any shorter due period in an invoice such different due period shall not be deemed relevant and the due period stipulated herein prevails. The invoice shall be considered to be paid for on the day when the invoiced amount is deducted from the Client's account on behalf of the Supplier's account.
- 8.8 The invoice issued by the Supplier as a tax document must contain all information required by the applicable laws of the Czech Republic. Invoices issued by the Supplier in accordance with this Contract shall contain in particular following information:
- a) name and registered office of the Client,
 - b) tax identification number of the Client,
 - c) name and registered office of the Supplier,
 - d) tax identification number of the Supplier,
 - e) registration number of the tax document,
 - f) Quantity (extent) and nature of performance supplied or services rendered(including the reference to this Contract),
 - g) the date of issue of the tax document,
 - h) the date of the supply of goods or services or the date of the payment on account, whichever comes sooner, in so far as they differ from the date of issue of the tax document – invoice,
 - i) due date,
 - j) the price,
 - k) registration number of this Contract, which the Client shall communicate to the Supplier based on Supplier's request before the issuance of the invoice,
 - l) declaration that the performance of the Contract is for the purposes of a Project; the Client will identify the relevant Project as a source of funding for case of any invoice;
- and must comply with the double tax avoidance agreements, if applicable.
- 8.9 In case that the invoice shall not contain the above mentioned information, the Client is entitled to return it to the Supplier during its maturity period and this shall not be



considered as a default. The new maturity period shall begin from the receipt of the supplemented or corrected invoice to the Client.

8.10 Last invoice of every calendar year must be delivered to the Client no later than December 15 of that calendar year.

9. ACCEPTANCE OF DELIVERABLES, HANDOVER OF INDIVIDUAL PARTS OF OBJECT OF PURCHASE, ACCEPTANCE OF COMPLETE OBJECT OF PURCHASE

9.1 Upon receiving technical reports related to Deliverables D1, D2, D3, D5 and D7 the Client shall provide the Supplier within 10 working days with his comments to the submitted reports. The Supplier shall be obliged to take the Client's comments into account, i.e. the Supplier shall accept all justified and materially correct comments and requirements for changes made by the Client. Should the Supplier consider some of the comments or requirements made by the Client as materially incorrect or unacceptable, the Supplier shall specify in writing his reasons for refusing to accept them. The Supplier will produce final technical report containing all justified and materially correct comments and requirements for changes raised by the Client.

9.2 Should the final technical reports related to Deliverables D1, D2, D3, D5, D7 and D9 comply with the requirements of the Client and contain essentials as set forth herein the Client shall issue to the Supplier, without undue delay, a confirmation on the due execution of the corresponding Deliverable (hereinafter the "Deliverable Acceptance Protocol"). Notwithstanding to it the Client shall not be obliged to verify the correctness of all calculations and/or technical solution details during the course of the acceptance of the Deliverables relating to the detailed design and fabrication process (D1, D2, D3, D5, D7 and D9). Acceptance of these individual Deliverables does not release the Supplier from his liability for the technical compliance and completeness of the entire Delivery.

9.3 Intentionally omitted.

9.4 On-site acceptance and handover and takeover of individual parts of the Object of Purchase related to Deliverables D4, D6, D8 and D9 shall be realized on the basis of a handover protocol, which shall contain the following information ("Handover Protocol"):

- a) identification of the Supplier, Client and subcontractors, if there are any;
- b) identification of the corresponding Deliverable;
- c) declaration of the Client that he received from the Supplier all technical information related to the corresponding Deliverable;
- d) statement of the Client on acceptance of the corresponding Deliverable; and
- e) date of the signature.

9.5 The Handover Protocol must contain the following annexes, which shall be provided by the Supplier:

- a) list of items (accessories) handed over in the corresponding Deliverable;



- b) protocols with full results of all design and/or manufacturing inspection and performance verification testing, carried out according to Annex 3 (*Quality and Verification Requirements*);
 - c) drawings, 3D models, software codes and other contractually required information corresponding to the specific Deliverable; and declaration of the Supplier that the respective Deliverable being part of the Object of Purchase is in accordance with this Contract, applicable laws and technical norms.
- 9.6 In case of deficiencies (i.e. defects and backlogs) of the delivered subsystems related to Deliverables D4, D6, D8 and D9, mainly if the Supplier does not hand over to the Client all the above mentioned documents, or if the respective Deliverable does not meet the Requirements Specifications according to Annex 2 (*Detailed Technical Specifications*), the Client is entitled to refuse the takeover of that Deliverable. Whenever technically possible the Supplier shall remedy the deficiencies within ten (10) working days, unless Parties agree otherwise (particularly due to the fact that period of 10 working days is technically impossible); however these periods do not imply that the Supplier is not in delay with delivery of any Deliverable. The Client is entitled at his discretion (but not obliged) to take over the respective Deliverable despite the above mentioned deficiencies, in particular if such deficiencies do not prevent the Client from the proper operation of the Object of Purchase. In such a case the Supplier and the Client shall list the deficiencies in the Handover Protocol, including the manner and the date of their removal (remedy). If the Parties do not reach agreement in the Handover Protocol regarding the date of the removal, the Supplier shall remove the deficiencies within ten (10) working days. Till the remedy of the deficiencies the Client shall be entitled to postpone the payment up to the amount corresponding to the significance of the deficiency.
- 9.7 Upon completion of Deliverable D10 namely when the delivered complete CIS system is fully complying with the requirements of Annex 2 (*Detailed Technical Specifications*) the Client shall issue to the Supplier, without undue delay, a confirmation on the due execution of the D10 Deliverable (hereinafter the "Delivery Acceptance Protocol"). Art. 9.4 – 9.6 hereof apply on the process of issuing of the Delivery Acceptance Protocol, on removal of potential detected deficiencies, on takeover of the Object of Purchase and other related matters similarly with the deadline of remedy of deficiencies being twenty (20) working days, unless Parties agree otherwise (particularly due to the fact that period of 20 working days is technically impossible).
- 9.8 Should it be necessary to modify any part of the already accepted Deliverable in order to meet any requirement stipulated herein, the Supplier undertakes to perform such modifications and accepts that the costs related thereto are included in the Purchase Price.
10. **THE OWNERSHIP RIGHT**
- The ownership right to the subsystems of the Object of Purchase, corresponding to the Deliverables D4, D6, D8 and D9, shall pass to the Client upon its acceptance and handover and takeover confirmed by the signature of the Handover Protocol by both Parties.



11. WARRANTY

- 11.1 The Supplier shall provide a warranty of quality related to any already accepted and handed over part of the Object of Purchase for the period of two (2) years upon execution of a Handover Protocol for the respective part of the Object of Purchase, except for turbomolecular pumps (TMPs), vacuum valves and other equipment specified in Annex 2 for which the warranty length is defined differently therein and except for items with different length of warranty period stipulated in Annex No 4 hereto. If on the warranty list or other document submitted by the Supplier the warranty period is of longer duration, then this longer warranty period shall have priority over the period stated in this Contract.
- 11.2 The warranty period for each part of Delivery consisting of Deliverable D4, D6, D8 and D9 shall begin on the day of the signature of the corresponding Handover Protocol by both Parties. If the Handover Protocol lists any deficiencies, the warranty period shall begin on the day, which follows the day, in which the last deficiency was removed.
- 11.3 The Supplier shall remove defects for which he is responsible according hereto that occur during the warranty period free of charge and in the terms stipulated in this Contract. The Supplier shall bear all the expenses (e.g. travelling, accommodation expenses and price of equipment rental or purchase) related with removal of the defects.
- 11.4 If the Client ascertains a defect of the Delivery during the warranty period, the Client shall notify such defect without undue delay to the Supplier. Defects may be notified on the last day of warranty period, at the latest.
- 11.5 The Client notifies defects in writing via e-mail. The Supplier shall accept notifications of defects on the following e-mail address: service@delong.cz. The Supplier shall confirm receipt of the notification within two working days.
- 11.6 In the notification the Client shall describe the defect and the manner of removal of the defect. The Client has the right to:
- a) ask for the removal of the defect by the delivery of a replacement individual part that may be required,
 - b) ask for the removal of the defect by repair, or
 - c) ask for the adequate reduction of the price, i.e. the Purchase Price or the price of Option, particularly in case of irremovable defects.
- 11.7 The Supplier shall remove the defect within 21 calendar days from its notification, unless Parties agree otherwise. The Client shall agree an extended deadline for defect removal with the Supplier if the Supplier submits evidence (e.g. subcontractors bid etc.) that removal of the defect within 21 calendar days is impossible for objective reasons (i.e. independent of the will of the Supplier), or if technical nature of the defect makes not possible its removal within 21 calendar days.
- 11.8 The Supplier shall remove the defect within terms stipulated in this Contract even if the notification of the defect is in his opinion unjustified. In such a case the Supplier is entitled



to ask for reimbursement of the costs of removal of the defect. If Parties disagree on whether the notification of the defect is justified or not, the Client shall secure an expert opinion. If the expert considers the notification to be justified, then the Supplier shall return the reimbursement amount paid to him in accordance with the second sentence of this paragraph.

- 11.9 Parties shall sign a protocol on the removal of the defect, which shall contain the description of the defect and the confirmation that the defect was removed. The warranty period shall be extended in the case of defects preventing the Client from use of the Object of Purchase for intended purpose by the period of time that elapses between the notification of the defect and its removal.
- 11.10 In case that the Supplier does not remove the defect within the stipulated or mutually agreed period or if the Supplier refuses to remove the defect, then the Client is entitled to remove the defect at his own costs and the Supplier shall reimburse these costs within 30 days after the Client's request to do so. In such a case the existing warranty remains intact.

12. REPRESENTATIONS AND WARRANTIES OF THE SUPPLIER

- 12.1 The Supplier represents and warrants to the Client that
- a) he possesses all professional qualifications to supply the Delivery, has all the professional prerequisites necessary for the proper fulfilment of this Contract and is able to carry out activities foreseen hereunder with the due care, skill and knowledge of well-experienced experts in his particular professional field,
 - b) is fully authorized to perform this Contract, and
 - c) there are no obstacles on his side that would preclude him from the due performance of this Contract.
- 12.2 The Supplier is aware of the importance to the Client of the fulfilment of this Contract in terms of quality, performance and schedule. In the event of a failure by the Supplier to meet them (e.g. in case of delay with delivery of Deliverables and/or in the case if the Object of Purchase does not meet the performance requirements), substantial damage may arise to the Client.

13. PENALTIES

- 13.1 If the Supplier is in delay with the Deliverables D1 and D2 for more than one month, the Supplier shall pay to the Client a contractual penalty in the amount of 0.05% of the Purchase Price (excl. VAT) for every even incomplete day of delay.
- 13.2 If the Supplier is in delay with the Deliverables D4, D6, D8 and D9, the Supplier shall pay to the Client a contractual penalty in the amount of 0.1% of the Purchase Price (excl. VAT) for every even incomplete day of delay.



- 13.3 If the Supplier is in default with the removal of a defect of the Delivery preventing the Client from proper operation of the Object of Purchase, the Supplier shall pay to the Client a contractual penalty in the amount of 0.05% of the Purchase Price for every even incomplete day of delay. In case of defects that do not prevent the Client from proper operation of the Object of Purchase the contractual penalty shall amount to 0.02% of the Purchase Price for every even incomplete day of delay.
- 13.4 The Supplier shall pay any of the contractual penalties charged under this Contract within thirty (30) days from the day, on which the Client enumerated its claim for the contractual penalty. The payment of contractual penalties shall not affect the right of the Client to damages in the extent in which such damages exceed the contractual penalty, thus the Client shall be entitled to claim the exceeding damages.
- 13.5 Total amount of contractual penalties for delay with delivery of Deliverables D4, D6, D8 and D9 shall not exceed 2% of the Purchase Price (excl. VAT) in relation to each Deliverable D4, D6, D8 and D9, i.e. in total 8 % of the Purchase Price.
- 13.6 The Client is entitled to unilaterally set off claims arising from the contractual penalties against the claim of the Supplier for the payment of the Purchase Price or prices of Options.
14. **RIGHT OF WITHDRAWAL AND VIS MAJOR**
- 14.1 The Client is entitled to withdraw from this Contract without any penalties, if any of the following circumstances occur:
- a) the Supplier breaches this Contract in a substantial manner;
 - b) the Supplier fails to follow the mandatory activities of the Quality and Verification Requirements, stipulated in Annex 3, and/or does not allow the Client to inspect the Supplier's premises for the purposes of ascertaining status of fulfilment of the Contract;
 - c) the Supplier is in delay with any contractual Deliverable stipulated in Annex 1 for a period exceeding 3 (three) calendar months, except where the delay has been caused by the Client;
 - d) results of the factory testing, even after third testing attempt, do not meet the requirements stipulated in Annex 2 (*Detailed technical specifications*);
 - e) the expenses or the part of the expenses that will arise on the basis of this Contract will be found by the Provider of the funding of the Projects or other control body as ineligible;
 - f) the Client loses funding for the realization of the Projects;
 - g) the insolvency proceeding is initiated against the Supplier; or
 - h) the Client ascertains that the Supplier provided in its Bid for the Public Procurement or in the Previous Bid information or documents that do not



correspond to the reality and that had or could have had impact on the result of the tendering procedure, which preceded the conclusion of this Contract.

- 14.2 The Supplier is entitled to withdraw from this Contract in the following cases:
- a) the Client breaches this Contract in a substantial manner;
 - b) the Client is in delay with the payment of any Deliverable for a period longer than 3 calendar months; or
 - c) the Client repeatedly refuses his attendance at the respective activities of the Quality and Verification Requirements, stipulated in Annex 3.
- 14.3 The act of withdrawal from the Contract shall become effective on the day of delivery of the notification in writing from one Party to the other with consequences of the Contract termination effective in the "ex tunc" regime. However, in case of withdrawal from the Contract by the Client in the cases listed in par. 14.1 letters e) and f) the withdrawal shall have the "ex nunc" regime with the Supplier being eligible for payment for the actually executed part of the Delivery delivered to the Client or performed by the Supplier and for any additional documented costs of termination, if such had been executed in accordance with the terms and conditions hereof, and with ownership title to all already executed parts of the Delivery passing to the Client upon payment of the costs.
- 14.4 Circumstances precluding liability shall be deemed to have been constituted by such circumstances / obstacles which arose independently of the will of the obliged Party, and which prevent fulfilment of that Party's obligation, provided that it could not be reasonably expected that the obliged Party could overcome or avert this obstacle or its consequences, and furthermore that such Party could foresee such obstacle when it entered into the respective covenants. Liability cannot be precluded by obstacles that arose only after the obliged Party was in default with fulfilment of its obligations, or which arose in connection with its economic situation. The effects precluding liability shall be limited to the period during which the obstacles causing these effects persist.
- 14.5 Should a situation occur, which a Party could reasonably consider to constitute vis major (force majeure), and which could affect fulfilment of its obligations hereunder, such Party shall immediately notify the other Party and attempt to continue in its performance hereunder in a reasonable degree. Simultaneously, such Party shall inform the other one of any and all its proposals, including alternative modes of performance, however, without the other Party's consent, the Party shall not proceed to carry out such alternative performance. If a situation constituting vis major occurs, the deadlines imposed hereunder shall be extended by the period of the duration of the said vis major.
15. **SPECIAL PROVISIONS**
- The Supplier undertakes, under the terms and conditions hereof, in accordance with instructions issued by the Client, to
- a) Archive all written material prepared in connection with fulfilment of this Contract so that its compliance with the archiving principles required within the framework



of the Operational Programmes and to provide access to the Client to these archived documents until 2029. The Client shall be entitled to take possession of these documents after ten years from the completion of the performance hereunder from the Supplier free of charge;

- b) Cooperate during financial inspections carried out in accordance with Act No. 320/2001 Coll., on Financial Inspections, as amended, i.e. among others to allow the Ministry of Education, Youth and Sports of the Czech Republic to access also those portions of the Supplier's Bid submitted within the Public Procurement or the Previous Bid, the Contract and related documents which may be protected by special legal regulation, given that all requirements set forth by legal regulation with respect to the manner of executing such inspections will have been observed; the Supplier shall bind any of its sub-contractors to comply with this obligation accordingly; and
- c) Enable observance of any publicity obligations stemming from the rules of the Operational program.

16. CONFIDENTIALITY

Parties shall not disclose information that shall become available to them in connection with this Contract and its performance and whose disclosure could harm the other Party. Duties of the Client ensuing for the applicable legal regulations remain unaffected.

17. REPRESENTATIVES OF THE PARTIES

17.1 The Supplier appoints following representatives for the communication with the Client:

In technical matters:

Name: Ing. Tomáš Bejdák

E-mail: tomas.bejdak@delong.cz

Tel.: 549 123 506

17.2 The Client appoints following representatives for the communication with the Supplier:

In technical matters:

Name: Ing. Bedřich Rus, PhD.

E-mail: rus@fzu.cz

18. FINAL PROVISIONS

18.1 This Contract is governed by the laws of the Czech Republic, especially by the Civil Code.

18.2 All disputes arising out of this Contract or out of legal relations connected with this Contract shall be preferably settled by a mutual negotiation. In case that the dispute is not settled within sixty (60) days, such dispute shall be decided by courts of the Czech Republic in the procedure initiated by one of the Parties.



- 18.3 The Supplier takes into account that the Client is not in relation to this Contract an entrepreneur, nor the subject matter of this Contract is connected with the business activities of the Client.
- 18.4 The Supplier is not entitled to set off any of its claims or his debtor's claims against the Client's claims. The Supplier is not entitled to transfer its claims against the Client that arose on the basis or in connection with this Contract on third parties. The Supplier is not entitled to transfer rights and duties from this Contract or its part on third parties.
- 18.5 All modifications and supplements of this Contract must be in writing.
- 18.6 If any of provisions of this Contract are invalid or ineffective, then such invalidity, ineffectiveness or unenforceability shall not cause the invalidity, ineffectiveness, or unenforceability hereof as a whole and the Parties are bound to change this Contract in such a way that the invalid or ineffective provision is replaced by a new provision that is valid and effective and to the maximum possible extent correspond to the original invalid or ineffective provision as well as most closely reflects the intentions of the Contracting parties at the time of conclusion hereof, to an extent permitted by the laws and regulations of the Czech Republic.
- 18.7 If any Party breaches any duty under this Contract and knows or should have known about such breach, it shall notify it to the other Party and shall warn such Party of possible consequences of the breach.
- 18.8 This Contract is executed in four (4) counterparts and every Party shall receive two (2) counterparts.
- 18.9 An integral part of this Contract are:
Annex 1 (Summary of Deliverables, Time Schedule and Payments)
Annex 2 (Detailed Technical Specifications)
Annex 3 (Quality and Verification Requirements)
Annex 4 (Supplier's Bid).
- In case of any discrepancy between the provisions of this Contract and the provisions of its Annexes the provisions of this Contract shall prevail, except for the provisions of Annex 4 containing conditions and specifications that are more favourable to the Client (i.e. higher technical specification values and/or more technically advanced or demanding solutions etc.), in which case such provisions of Annex 4 shall prevail. In case of any discrepancy between the provisions of Annexes the provisions containing conditions and specifications that are more favourable to the Client (i.e. higher technical specification values and/or more technically advanced or demanding solutions etc.) shall prevail.
- 18.10 This Contract shall be valid on the date of the signature of both Parties and effective on the date of its publication in the Register of contracts according to special legal regulation.



EUROPEAN UNION
European Structural and Investing Funds
Operational Programme Research,
Development and Education



IN WITNESS WHEREOF attach Parties their handwritten signatures:

Client

Signature: M. P.
Name: RNDr. Michael Prouza, PhD
Position: Director
Date: - 4. 06. 2018

Fyzikální ústav AV ČR
veřejná výzkumná instituce
182 21 Praha 8, Na Slovance 2
- 1 -

Supplier

Signature: [Handwritten Signature]
Name: Ing. Tomáš Papírek
Position: member of the board
Date: 29.5.2018



EUROPEAN UNION
European Structural and Investing Funds
Operational Programme Research,
Development and Education



MINISTRY OF EDUCATION,
YOUTH AND SPORTS

ANNEX 1

SUMMARY OF DELIVERABLES, TIME SCHEDULE AND PAYMENTS

Annex No. 1
Summary of Deliverables,
Time Schedule and Payments

**Integrated system of vacuum chambers, optomechanical mounts
 and controls of the L4 Compressor Image relay System (CIS)**
[TP17-044]

TC ID/Revision: 00158931/A
 Confidentiality: BL - Restricted for internal use
 WBS code: 3.4 – L4 system
 PBS code: RA1.L4.CMP1.CIS

Deliverable	Description	Completion	Payment
D1	Detailed schedule of project activities and all corresponding Quality and Verification Plans, and of work procedures	1 month	10%
D2	Development of FZU concept design and 3D model and production of detailed engineering drawings for components and subsystems. Verification of structural performance of CIS chambers, resonance frequency analysis of the optical support chassis.	D2A 3 months D2B 6 months	20%
D3	Manufacturing, assembly and factory testing of the CIS1B vacuum chamber and of the optical support chassis	7 months	10%
D4	Delivery of CIS1B chamber and of the optical support chassis to ELI-Beamlines	8 months	10%
D5	Manufacturing, assembly and factory testing of the CIS1A vacuum chamber and of the optical support chassis Manufacturing, assembly and factory testing of CIS1A and CIS1B optomechanical mounts	9 months	10%
D6	Delivery of CIS1A chamber and of the optical support chassis to ELI-Beamlines Delivery of CIS1A and CIS1B optomechanical mounts to ELI-Beamlines	10 months	10%
D7	Manufacturing, assembly and factory testing of the CIS2 vacuum chamber and of the internal optical support chassis Manufacturing, assembly, and factory testing of the OM4 and OM5 optomechanical mounts	11 months	10%
D8	Delivery of CIS2 chamber and of the internal optical support chassis to ELI-Beamlines Delivery of the OM4 and OM5 optomechanical mounts to ELI-Beamlines Delivery of the vacuum and optomechanical electronic controllers to ELI-Beamlines	12 months	10%
D9	Manufacturing, assembly, factory testing and delivery of the optomechanical mount OM4.5 to ELI-Beamlines	13 months	5%
D10	Acceptance of complete CIS system installed at ELI-Beamlines, with CIS1A, CIS1B and CIS2 chambers mechanically and vacuum interconnected and with all optomechanics installed	14 months	5%

I. Contractual Deliverables description

1. Deliverable D1: Detailed schedule of project activities and all corresponding quality plans and work procedures

The supplier to whom the Public Contract will be awarded (hereinafter the “*Supplier*”) shall provide a detailed schedule of all project activities; by which is meant a schedule that defines all the activities necessary to individually define, produce or procure and deliver every component within the scope of supply. All activities shall be resourced, allocated start / finish times and linked with relevant dependencies. The amount of detail should be sufficient to identify the longest path of activities through the entire program, thus providing confidence in the overall programme for Deliverables. The scheduled activities shall not be restricted to those of the Supplier but shall include all relevant activities of sub-suppliers, the Client or relevant third parties.

Also within the first month following the Commencement Day, the Supplier shall provide a draft set of Quality and Verification Plans and associated Work Procedures detailing all the work activities and processes required for the design, procurement, fabrication, assembly and test of all products to be supplied under the contract. This shall include aspects such as design review, inspection, analysis and test procedures (Verification Plan), and configuration management, material traceability, cleanliness control, welding procedures and qualifications (Quality Plan). The provided draft set of Quality and Verification Plans shall incorporate as a minimum all required activities listed in Annex 3 (*Quality and Verification Plan*).

Completion: 1 month after Commencement Day

2. Deliverable D2: Development of FZU concept design and 3D model and production of detailed engineering drawings for components and subsystems. Verification of structural performance of CIS chambers, resonance frequency analysis of the optical support chassis.

a) The Supplier shall develop detailed engineering drawings based on the preliminary design drawings and 3D model supplied by the Client. These detailed engineering drawings produced by the Supplier will be used in the next steps (D3, D5, D7, and D9) to make production drawings. The purpose of the detailed engineering drawings is to complete the Client’s preliminary design with all necessary mechanical details and to optimize the overall design with respect to the technologies and fabrication methods that will be employed for manufacturing. The accepted detailed engineering drawings and the detailed 3D model developed in this Deliverable will be binding for the Supplier in the manufacturing phase (D3, D5, D7, and D9).

b) A part of this Deliverable D2 will be elaboration of specific details, such as:

- Closing mechanism and hinges of the CIS1A and CIS2 chamber side doors
- Mechanical handling aids for installation of the top lids of the CIS1A and CIS1B chambers
- Configuration of the optical support chassis for all the three chambers and description of the technique selected for avoiding internal thermal and mechanical stress
- Lifting mechanism / lifting points of all the three chambers, of the CIS1A and CIS2 doors and of the CIS1A and CIS1B lids
- Final design of the optical support chassis for each CIS chamber and final design of the isolation bellows legs
- Relief holes in the optical support chassis of all the three chambers and optomechanical mounts to avoid trapped air pockets
- Arrangement of the double O-ring seal of the lid of CIS1B and of the access door of CIS2 chamber
- Internal (vacuum) and external (on the outer surface) cable trays on all the three chambers

- Mechanisms for installation of the CIS2 chamber in the ELI-Beamlines facility, and for assembling and installation of the CIS2 internal support chassis and of the CIS2 optomechanics in the clean L4c laser hall (ISO Class 7 cleanliness) of ELI-Beamlines
- Determination of material thicknesses, configuration of stiffening ribs, flanges, weld locations and details, surface finishes and other similar matters necessary to optimize for fabrication

c) The Supplier shall verify the stiffness and vibrational properties of the developed detailed design of all the three chambers, of their optical support chassis, and of the optomechanical mounts, by means of FEA (Finite Element Analysis) simulations. The acceptable limit of deformations under application of vacuum (stiffness) and vibrational criteria are included in the detailed specification of performance requirements in Annex 2 to this Contract. Analysis of the concept design made by the Client shows that the specified requirements are realistic. The calculations shall also provide evidence of the factor of safety when the CIS chambers are subjected to overpressure up to a value limited by means of a passive safety device (e.g. bursting disk). Results of the analysis shall be provided by Supplier to Client for review. Status of appropriate requirements to be verified by the analysis shall be tracked by the Verification Control Document (VCD), see Annex No. 3, Section 2 (Verification Requirements for Supplier, and shall be the basis for acceptance of D2.

d) A brief technical report shall be provided by the Supplier that lists all the significant changes and enhancements between the FZU concept design and the agreed detail design. For each change there shall be a brief description of the reason for change and justification of the selected solution. This will provide a means of checking that no important features of the concept design have been inadvertently lost or corrupted.

e) The Supplier shall provide an updated detailed 3D model of the CIS1A, CIS1B and CIS2 chambers with their associated components and sub-assemblies (especially of the optical support chassis), showing the finally agreed configuration.

f) The Supplier shall provide an updated detailed 3D model of the optomechanical mounts, showing the finally agreed configuration.

g) The Supplier shall provide final Quality and Verification Plan for all the main components and other documentation will be reviewed by the Client, with reference to these Quality and Verification Plan.

The provided documentation shall be reviewed by Client by means of Critical Design Review (CDR) process and its results will be recorded in a CDR Report. The verification of the Design shall be considered complete when the Client and the Supplier mutually agree that, on the basis of the CDR Report and on the basis of the Verification Control Document (VCD) that all corresponding requirements related to the Design were closed out and that all associated verification objectives were fully achieved. The status of the requirements verified in the Review of Design shall be tracked by the Verification Control Document (VCD), see Annex No. 3, Section 2 (Verification Requirements for Supplier) and shall be the basis for acceptance of the Design.

The Supplier shall further submit a timetable of individual major steps in the manufacturing process and factory testing related to D3, D5 D7 and D9. The Client reserves the right to witness verification and testing of the individual components and subsystems at the Supplier's premises at any of the indicated steps in the manufacturing process, and to monitor implementation of the contract.

It is recognized that the lead-time for the CIS chambers will be longer than for the optomechanical mounts so to even out the effort the Deliverable completion dates are staggered:

Completion: D2A CIS vacuum chambers 3 months after Commencement Day
 D2B Optomechanical mounts 6 months after Commencement Day

3. Deliverable D3: Manufacturing, assembly and factory testing of the CIS1B vacuum chamber and of the optical support chassis

Based on the results of Deliverable D2 the Supplier shall provide a full set of final production drawings (including 3D model) for all components of the CIS1B vacuum chamber, of the CIS1B optical support chassis, and of associated components that will be manufactured under this contract.

The Supplier shall manufacture the CIS1B vacuum vessel including the lid and flanges, the optical support chassis, the isolation bellows legs, the vacuum tube connecting chambers CIS1B and CIS2, and associated components, in line with the documentation produced within the D2A Deliverable. Completion of individual major steps of the manufacturing process will be witnessed by the Client according to the Quality Plan developed in Deliverable D2A.

After finishing the individual phases of fabrication and cleaning, the Supplier shall install the CIS1B chamber in ISO Class 7 or better cleanroom at his premises, where all operations and factory testing will be made. Upon assembling the individual components and sub-systems this phase shall verify key parameters of the CIS1B chamber assembly, namely:

- Vacuum performance and ability to achieve a pressure of 10^{-6} mbar within no more than 1 hour, 10^{-7} mbar in time comparable to 4 hours and then maintain this vacuum for a further 24 hours, using a turbomolecular pump with pumping speed 2,300 l/s;
- Stability of the CIS1B chamber structure during pump down, quantitative measurements of deformations of the vacuum chamber body;
- Validation of the vacuum cleanliness (contaminants-free vacuum) by mass spectroscopy measurements and by another independent verification technique provided by the Client (e.g. sol-gel technique and/or non-volatile residua analysis);
- Determination of the leak rate of the assembled chamber with the lid, port covers, and blank flanges;
- Mechanical stability of the optical support chassis in different states of the system, especially upon pump down from atmospheric pressure to low pressure (verified for example by sighting a mirror with a high precision auto-collimator);
- Functioning of integrated vacuum control system (VCS) with the CIS1B chamber.

The verification of the CIS1B assembly performance shall be made according to the Verification Plan. The results of this performance verification and testing will be a Protocol on Factory Testing of the CIS1B chamber and of the optical support chassis. The verification shall be considered complete when the Client and the Supplier mutually agree that, on the basis of the VCD and of the Protocol on Factory Testing of the CIS1B chamber and of the optical support chassis, all corresponding requirements were closed out and the associated verification objectives were fully achieved. The status of the requirements verified in this phase of Inspection and Testing shall be tracked by the Verification Control Document (VCD), see Annex No. 3, Section 2 (Verification Requirements for Supplier) and shall be the basis for acceptance of D3.

Completion: 7 months and after Commencement Day

4. Deliverable D4: Delivery of CIS1B chamber and of the optical support chassis to ELI-Beamlines

The Supplier shall prepare for transport of the CIS1B vacuum chamber, the optical support chassis, all elements interconnecting the chamber and the chassis including the isolation legs, vacuum gauges, valves and all auxiliary vacuum components, and the vacuum tube connecting the chambers CIS1B and CIS2. The CIS1B chamber and components of the optical support chassis shall be packed separately.

For the duration of its transport the vacuum chamber shall be hermetically sealed under dry air or nitrogen. The initial wrapping of all parts shall be in multiple layers of plastic film (as sheet or bags) of type specifically for use in contamination controlled areas. This clean conditions wrapping will be further enclosed in robust outer packaging and transport crates as necessary for protection and handling during shipping to the ELI-Beamlines site.

The Supplier will transport the components to the ELI-Beamlines facility and will remain responsible for them (with appropriate insurance cover) until acceptance of D4. Offloading of the CIS1B chamber at the ELI-Beamlines building entrance will be made by fork lift truck.

On the ELI-Beamlines site, the CIS1B chamber, the optical support chassis and other delivered components will be unpacked by Supplier in ISO Class 7 cleanroom and will be inspected for absence of any damage due to transport, according to the Verification Control Document (VCD). This inspection shall be the basis for acceptance of D4.

Completion: 8 months after Commencement Day

5. Deliverable D5: Manufacturing, assembly and factory testing of the CIS1A vacuum chamber and of the optical support chassis. Manufacturing, assembly and factory testing of CIS1A and CIS1B optomechanical mounts.

Based on the results of Deliverable D2A the Supplier shall provide a full set of final production drawings (including 3D model) for all components of the CIS1A vacuum chamber, of CIS1A optical support chassis and associated components that will be manufactured under this contract.

The Supplier shall manufacture the CIS1A vacuum chamber including the side doors, the upper lid and flanges, the optical support chassis, the isolation bellows legs, and the interconnecting vacuum square tube between CIS1A and CIS1B chambers, in line with the documentation produced within the D2A Deliverable. Completion of individual major steps of the manufacturing process will be witnessed by the Client according to the Quality Plan developed in Deliverable D2.

After finishing the individual phases of fabrication and cleaning, the Supplier shall install the CIS1A chamber in ISO Class 7 or better cleanroom at his premises, where all operations and factory testing will be made. Upon assembling the individual components and sub-systems this phase shall verify key parameters of the CIS1A chamber assembly, namely:

- Vacuum performance and ability to achieve a pressure of 10^{-6} mbar within no more than 1 hour, 10^{-7} mbar in time comparable to 4 hours and then maintain this vacuum for a further 24 hours, using a turbomolecular pump with pumping speed 2,300 l/s;
- Stability of the CIS1A chamber structure during pump down, quantitative measurements of deformations of the vacuum chamber body;
- Validation of the vacuum cleanliness (contaminants-free vacuum) by mass spectroscopy measurements and by another independent verification technique provided by the Client (e.g. sol-gel technique and/or non-volatile residua analysis);
- Determination of the leak rate of the assembled chamber with doors, port covers, blank flanges and isolation valves fitted;
- Mechanical stability of the optical support chassis in different states of the system, especially upon pump down from atmospheric pressure to low pressure (verified for example by sighting a mirror with a high precision auto-collimator).

The verification of the CIS1A assembly shall be made according to the Verification Plan. The results of this performance verification and testing will be a Protocol on Factory Testing of the CIS1A chamber and of the CIS1A optical support chassis. The verification shall be considered complete when the Client and the Supplier mutually agree that, on the basis of the VCD and of the Protocol on Factory Testing of the CIS1A chamber and of the optical support chassis, all corresponding requirements were closed out and the associated verification objectives were fully achieved.

As part of this Deliverable the Supplier shall also develop detailed engineering drawings of the individual optomechanics in CIS1A and CIS1B (except OM4) in line with the documentation produced within the D2B Deliverable.

The Supplier shall manufacture the mounts OM1, OM2, OMBD, OM3, OAP1, OM3.5, and OM3SA. The supplier shall also manufacture the laser shutter. The Supplier shall install the integrated optomechanical components in an ISO Class 5 or better cleanroom at his premises, where all assembly operations and testing shall be made. The Supplier shall integrate the mechanical components of the mounts with the respective manual and electrical actuators and other sensors. Upon integration with vacuum-compatible cabling and connectors, all electrically actuated optomechanical mounts shall be connected to corresponding electronic drivers.

The Supplier shall provide all equipment for the required testing of the optomechanical mounts.

The Supplier shall validate key performance parameters of the mounts at their works, namely:

- Demonstration of precision on individual movements of the mounts, achievement of required minimal step, demonstration of stability of each mount
- Vacuum testing showing ability to achieve pressure 10^{-7} mbar
- Validation of the vacuum cleanliness (contaminants-free vacuum) by mass spectroscopy measurements
- Determination of the outgassing rate of each mount
- Functioning of the motion control system with all electrical actuators.

The verification of the optomechanical mounts performance shall be made according to the Verification Plan. The results of this performance verification and testing will be a Protocol on Factory Testing of the CIS1A and CIS1B optomechanical mounts.

The statuses of the requirements verified in this phase for the CIS1A chamber assembly and for the CIS1A and CIS1B optomechanical mounts shall be tracked by the Verification Control Document (VCD), see Annex No. 3, Section 2 (Verification Requirements for Supplier) and shall be the basis for acceptance of D5.

Completion: 9 months and after Commencement Day

6. Deliverable D6: Delivery of CIS1A chamber and of the optical support chassis to ELI-Beamlines. Delivery of CIS1A and CIS1B optomechanical mounts to ELI-Beamlines

The Supplier shall prepare for transport of the CIS1A vacuum chamber, the optical support chassis, all elements interconnecting the chamber and the chassis including the isolation legs, all auxiliary CIS1A vacuum components, and the interconnecting vacuum tube between CIS1A and CIS1B chambers. The CIS1A chamber and components of the optical support chassis shall be packed separately.

For the duration of its transport the vacuum chamber shall be hermetically sealed under dry air or nitrogen. The initial wrapping of all parts shall be in multiple layers of plastic film (as sheet or bags) of type specifically for use in contamination controlled areas. This clean conditions wrapping will be further enclosed in robust outer packaging and transport crates as necessary for protection and handling during shipping to the ELI-Beamlines site.

The Supplier will transport the components to the ELI-Beamlines facility and will remain responsible for them (with appropriate insurance cover) until acceptance of D6. Offloading of the CIS1A chamber at the ELI-Beamlines building entrance will be made by fork lift truck.

On the ELI-Beamlines site, the CIS1A chamber, the optical support chassis and other delivered components will be unpacked by Supplier in ISO Class 7 cleanroom and will be inspected for absence of any damage due to transport, according to the Verification Control Document (VCD). This inspection shall be the basis for acceptance of D6.

The Supplier shall also pack the CIS1A and CIS1B optomechanical mounts (OM1, OM2, OMBD, OM3, OAP1, OM3.5, and OM3SA) and all related equipment (wiring, connectors, drivers, etc.). All mounts and components that will be installed in vacuum shall be hermetically sealed under dry air or nitrogen.

The Supplier shall transport the optomechanical mounts to the ELI-Beamlines facility.

On the ELI-Beamlines site, the mounts will be unpacked by Supplier in ISO Class 5 cleanroom, and will be tested according to the Protocol on Reception Testing of the optomechanical mounts.

All required tests associated with on-site verification of the delivered optomechanics shall be identified in the Verification Plan. The results of this deliverable will be an Handover Protocol of the optomechanical mounts to the ELI-Beamlines facility.

The status of requirements verified in this phase shall be tracked by the Verification Control Document (VCD), see Annex No. 3, Section 2 (Verification Requirements for Supplier) and shall be the basis for acceptance of D6.

Completion: 10 months after Commencement Day

7. Deliverable D7: Manufacturing, assembly and factory testing of the CIS2 vacuum chamber and of the internal optical support chassis. Manufacturing, assembly, and factory testing of the OM4 and OM5 optomechanical mounts.

Based on the results of Deliverable D2A the Supplier shall provide a full set of final production drawings (including 3D model) for all components of the CIS2 vacuum chamber, of CIS2 optical support chassis and associated components that will be manufactured under this contract.

The Supplier shall manufacture the CIS2 vacuum vessel including the side door and flanges, the optical support chassis, the isolation bellows legs, in line with the documentation produced within the D2A Deliverable. Completion of individual major steps of the manufacturing process will be witnessed by the Client according to the Quality Plan developed in Deliverable D2A.

After finishing the individual phases of fabrication and cleaning, the Supplier shall install the CIS2 chamber in ISO Class 7 or better cleanroom at his premises, where all operations and factory testing will be made. Upon assembling the individual components and sub-systems this phase shall verify key parameters of the CIS2 chamber assembly, namely:

- Vacuum performance and ability to achieve a pressure of 10^{-6} mbar within no more than 2 hours, 10^{-7} mbar in time comparable to 6 hours and then maintain this vacuum for a further 24 hours, using a turbomolecular pump with pumping speed 2,300 l/s;
- Stability of the CIS2 chamber structure during pump down, quantitative measurements of deformations of the vacuum chamber body;
- Validation of the vacuum cleanliness (contaminants-free vacuum) by mass spectroscopy measurements and by another independent verification technique provided by the Client (e.g. sol-gel technique and/or non-volatile residua analysis);
- Determination of the leak rate of the assembled chamber with door, port covers, and blank flanges;
- Mechanical stability of the CIS2 optical support chassis in different states of the system, especially upon pump down from atmospheric pressure to low pressure (verified for example by sighting a mirror with a high precision auto-collimator).

The verification of the CIS2 assembly shall be made according to the Verification Plan. The results of this performance verification and testing will be a Protocol on Factory Testing of the CIS2 chamber and of the optical support chassis. The verification shall be considered complete when the Client and the Supplier mutually agree that, on the basis of the VCD and of the Protocol on Factory Testing of the CIS2 chamber and of the optical support chassis, all corresponding requirements were closed out and the associated verification objectives were fully achieved.

As part of this Deliverable the Supplier shall also develop detailed engineering drawings of the optomechanics OM4 and OM5 in line with the documentation produced within the D2B Deliverable.

The Supplier shall manufacture the mounts OM4 and OM5. The Supplier shall install the integrated optomechanical mounts in an ISO Class 5 or better cleanroom at his premises, where all assembly operations and testing shall be made. The Supplier shall integrate the mechanical components of the mounts with the respective

manual and electrical actuators and other sensors. Upon integration with vacuum-compatible cabling and connectors, all electrically actuated optomechanical mounts shall be connected to corresponding electronic drivers.

The Supplier shall provide all equipment for the required testing of these optomechanical mounts.

The Supplier shall validate key performance parameters of the mounts at their works, namely:

- Demonstration of precision on individual movements of the mounts, achievement of required minimal step, demonstration of stability of each mount
- Vacuum testing showing ability to achieve pressure 10^{-7} mbar
- Validation of the vacuum cleanliness (contaminants-free vacuum) by mass spectroscopy measurements
- Determination of the outgassing rate of each mount
- Functioning of the motion control system with all OM4 and OM5 electrical actuators.

The verification of the optomechanical mounts performance shall be made according to the Verification Plan. The results of this performance verification and testing will be a Protocol on Factory Testing of the optomechanical mounts OM4 and OM5.

The statuses of the requirements verified in this phase for the CIS2 chamber assembly and for the OM4 and OM5 optomechanical mounts shall be tracked by the Verification Control Document (VCD), see Annex No. 3, Section 2 (Verification Requirements for Supplier) and shall be the basis for acceptance of D7.

Completion: 11 months and after Commencement Day

- 8. Deliverable D8: Delivery of CIS2 chamber and of the internal optical support chassis to ELI-Beamlines. Delivery of the OM4 and OM5 optomechanical mounts to ELI-Beamlines. Delivery of the vacuum and optomechanical electronic controllers to ELI-Beamlines.**

The Supplier shall prepare for transport of the CIS2 vacuum chamber, the optical support chassis, all elements interconnecting the chamber and the chassis including the isolation legs, and all auxiliary CIS2 vacuum components. The CIS2 chamber and components of the optical support chassis shall be packed separately.

For the duration of its transport the CIS2 vacuum chamber shall be hermetically sealed under dry air or nitrogen. The initial wrapping of all parts shall be in multiple layers of plastic film (as sheet or bags) of type specifically for use in contamination controlled areas. This clean conditions wrapping will be further enclosed in robust outer packaging and transport crates as necessary for protection and handling during shipping to the ELI-Beamlines site.

The Supplier will transport the components to the ELI-Beamlines facility and will remain responsible for them (with appropriate insurance cover) until acceptance of D8. Offloading of the CIS2 chamber at the ELI-Beamlines building entrance will be made by fork lift truck.

On the ELI-Beamlines site, the CIS2 chamber, the optical support chassis and other delivered components will be unpacked by Supplier in ISO Class 7 cleanroom and will be inspected for absence of any damage due to transport, according to the Verification Control Document (VCD). This inspection shall be the basis for acceptance of D8.

The Supplier shall also pack the OM4 and OM5 optomechanical mounts and all related equipment (wiring, connectors, drivers, etc.). All mounts and components that will be installed in vacuum shall be hermetically sealed under dry air or nitrogen.

The Supplier shall transport the optomechanical mounts to the ELI-Beamlines facility.

On the ELI-Beamlines site, the mounts will be unpacked by Supplier in ISO Class 5 cleanroom, and will be tested according to the Protocol on Reception Testing of the optomechanical mounts.

All required tests associated with on-site verification of the delivered optomechanics shall be identified in the Verification Plan. The results of this deliverable will be an Handover Protocol of the optomechanical mounts to the ELI-Beamlines facility.

The status of requirements verified in this phase shall be tracked by the Verification Control Document (VCD), see Annex No. 3, Section 2 (Verification Requirements for Supplier) and shall be the basis for acceptance of D8.

Completion: 12 months after Commencement Day

9. Deliverable D9: Manufacturing, assembly, factory testing and delivery of the optomechanical mount OM4.5 to ELI-Beamlines

As part of this Deliverable the Supplier shall develop detailed engineering drawings of the optomechanics OM4.5 in line with the documentation produced within the D2B Deliverable.

The Supplier shall manufacture the OM4.5 mount. The Supplier shall install the integrated optomechanical mount in an ISO Class 5 or better cleanroom at his premises, where all assembly operations and testing shall be made. The Supplier shall integrate the mechanical components of the mount with the respective manual and electrical actuators and other sensors. The mount will be integrated with vacuum-compatible cabling and connectors, and shall be connected to an electronic driver for demonstrating functionality of the electrical actuators.

The Supplier shall provide all equipment for the required testing of this OM4.5 optomechanical mount.

The Supplier shall validate key performance parameters of the mount at their works, namely:

- Demonstration of precision on individual movements of the mount, achievement of required minimal step, demonstration of stability of the mount
- Vacuum testing showing ability to achieve pressure 10^{-7} mbar
- Validation of the vacuum cleanliness (contaminants-free vacuum) by mass spectroscopy measurements
- Determination of the outgassing rate of the mount.

The verification of this optomechanical mount performance shall be made according to the Verification Plan. The results of this performance verification and testing will be a Protocol on Factory Testing of the optomechanical mount OM4.5.

Upon completion of the factory testing the Supplier shall pack the OM4.5 optomechanical mount and all related equipment (wiring, connectors, etc.). The mount and components that will be installed in vacuum shall be hermetically sealed under dry air or nitrogen.

The Supplier shall transport the optomechanical mounts to the ELI-Beamlines facility.

On the ELI-Beamlines site, the mount will be unpacked by Supplier in ISO Class 5 cleanroom, and will be tested according to the Protocol on Reception Testing of the optomechanical mounts.

All required tests associated with on-site verification of the delivered OM4.5 mount shall be identified in the Verification Plan. The results of this deliverable will be an Handover Protocol of the OM4.5 optomechanical mount to the ELI-Beamlines facility.

The status of requirements verified in this phase shall be tracked by the Verification Control Document (VCD), see Annex No. 3, Section 2 (Verification Requirements for Supplier) and shall be the basis for acceptance of D9.

Completion: 13 months after Commencement Day

10. Deliverable D10: Acceptance of complete CIS system installed at ELI-Beamlines, with CIS1A, CIS1B and CIS2 chambers mechanically and vacuum interconnected and with all optomechanics installed

After all the three CIS vacuum chambers will be installed, interconnected, connected to the ELI-Beamlines services (central vacuum, compressed air, cooling water) and connected to the vacuum electronic controller, and after all

optomechanical mounts will be installed and connected to the optomechanical electronic controllers, the Client will verify functionality of the complete CIS. The status of requirements verified in this phase shall be tracked by the Verification Control Document (VCD), see Annex No. 3, Section 2 (Verification Requirements for Supplier), and will be basis of the Acceptance Protocol of complete CIS system and acceptance of D10.

Completion: 14 months after Commencement Day

II. Contractual options

Contractual option 1 (Optional installation technical support)

The following services are agreed as contractual option herewith. The Client is entitled to require provision of Supplier's technical support during installation of the CIS chambers and/or the CIS optomechanics. The Client is entitled (but has no duty to do so) to ask the Supplier for the support at its full discretion at any time starting by D4 and up to 2 months after D9. The maximum extent of this contractual option is 20 man days. Detailed conditions of provision of the support (extent, time of provision, profession of specialists etc.) shall be agreed between Contractual parties. However, the Supplier will commence provision of the support no later than 10 working days after written request by the Client. The price of optional support (as man-day price) is stipulated separately by the Bid and shall be paid if any optional support is provided after its due provision.

Contractual option 2 (Optional design works)

The following services are agreed as contractual option herewith. The Client is entitled to require provision of optional design works. The Client is entitled (but has no duty to do so) to ask the Supplier for the services at its full discretion before or at the time of acceptance of the D8 Deliverable. The maximum extent of this contractual option is 40 man days. Detailed conditions of provision of the services (extent, subject matter of design works etc.) shall be agreed between Contractual parties. However, the Supplier will commence provision of the support no later than 10 working days after written request by the Client. The price of optional services (as man-day price) is stipulated separately by the Bid and shall be paid if any optional services are provided after their due provision.



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ANNEX 2

DETAILED TECHNICAL SPECIFICATIONS



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ANNEX 3

QUALITY AND VERIFICATION REQUIREMENTS



ANNEX 4

SUPPLIER'S BID

In case of any discrepancy between the following specifications and information on nature of performing the Delivery and any other provision of this Contract including all its Annexes the provisions of this Annex 4 shall prevail if and in the extent in which they are containing specifications and conditions that are more favourable to the Client (i.e. higher technical specification values or standards and/or more technically advanced or demanding solutions etc.).

A) Offer of the Supplier reflecting partial quality evaluation criteria

Annex No. 4 to the procurement documentation issued for purposes of Public Contract award (Partial Quality Evaluation Criteria table) in the form the Supplier made it a part of its Bid to be inserted here before final signature of the Contract after conclusion of Public Contract awarding procedure.

B) Qualification prerequisites

The Supplier shall carry out assembly and testing works hereunder in its cleanroom space described within the Previous Bid as follows:

Affidavit according to Art. 3.3 letter b) of the procurement documentation issued for purposes of the Previous Public Contract award in the form the Supplier made it a part of its Previous Bid to be inserted here before final signature of the Contract after conclusion of Public Contract awarding procedure.

The Supplier shall use the following persons it identified within its Previous Bid for performing this Contract while carrying out all the relevant activities hereunder:

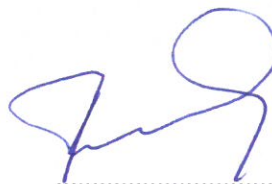
The list of technicians elaborated according to art. 3.3 letter c) of the procurement documentation issued for purposes of the Previous Public Contract award in the form the Supplier made it a part of its Previous Bid to be inserted here before final signature of the Contract after conclusion of Public Contract awarding procedure.

The Supplier is allowed to use another person only if it proves such person possesses qualification and abilities conforming with requirements for each relevant position listed in the procurement documentation issued for purposes of the Previous Public Contract award.

Price Bid Table

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>	<u>Number</u>	<u>Price CZK excl. VAT per unit</u>	<u>Price CZK excl. VAT per item</u>
1	Purchase Price according to art. 8.1 of the Purchase contract	28 029 000,00			
2	Option 1: Optional installation technical support	man day (including travel)	20	10 000,00	200 000,00
3	Option 2: Optional design works	man day	40	6 400,00	256 000,00
Total Bid Price excl. VAT CZK		28 485 000,00			

In Brno on April 18, 2018



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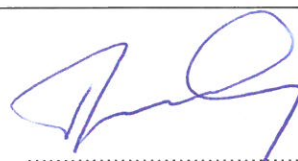
Ing. Tomáš Papírek, člen představenstva

Purchase Price cost structure (breakdown)

Cost breakdown of the Purchase Price according to art. 8.1 of the Purchase contract (excluding options):

	Sub-system	Cost without VAT (in CZK)
1	CIS1A vacuum chamber including all doors and flanges, vacuum cleaning, assembly and testing	3 118 000
2	CIS1A internal optical support chassis, isolation bellows legs, optomechanical mounts OM1, OM2 and MBD, laser shutter, vacuum cleaning, assembly and testing	2 860 000
3	CIS1B vacuum chamber including the lid and all flanges, vacuum cleaning, assembly and testing	3 822 000
4	CIS1B internal optical support chassis, isolation bellows legs, optomechanical mounts OM3, OAP1, OM3.5, OM3SA and OM4, vacuum cleaning, assembly and testing	3 933 000
5	CIS2 vacuum chamber including the door and all flanges, vacuum cleaning, assembly and testing	4 541 000
6	CIS2 internal optical support chassis, isolation bellows legs, optomechanical mounts, vacuum cleaning, assembly and testing	1 868 000
7	Interconnecting square tube between CIS1A and CIS1B chambers, optical window mount, ISO-K 500 vacuum tube between CIS1B and CIS2	748 000
8	Vacuum components (gauges, valves, indicators) and related components (pipes, cables, etc.) excluding turbomolecular pump	1 055 000
9	Turbomolecular vacuum pump according to technical specifications and requirements in Annex 2 (<i>Detailed technical specifications</i>)	384 000
10	Vacuum control electronics including adjacent systems (power supplies, control cabinet, etc.) according to technical specifications and requirements in Annex 2 (<i>Detailed technical specifications</i>)	1 760 000
11	Optomechanical control electronics including adjacent systems (power supplies, control cabinet, etc.) according to technical specifications and requirements in Annex 2 (<i>Detailed technical specifications</i>)	3 300 000
12	Transport to ELI-Beamlines as defined in Annex 1 (<i>Summary of Deliverables, Time Schedule and Payments</i>)	640 000

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Partial quality evaluation criteria table

<u>Criterion No.</u>	<u>Basic value according to tender conditions</u>	<u>Value offered by the bidder</u>	<u>Unit</u>	<u>Limited to</u>	<u>Partial criterion value (%)</u>
<u>Art. 5b) of the TD:</u> Remaining warranty duration on the TMP	12	24	months	max 24	5
<u>Art. 5c) of the TD:</u> Remaining warranty duration of the control systems (vacuum control system and optomechanical electronic controls)	12	24	months	max 24	10
<u>Art. 5d) of the TD:</u> Cleanliness of the cleanroom for assembling and testing	ISO 7	ISO 7	ISO 14644 classes	min ISO 5	5

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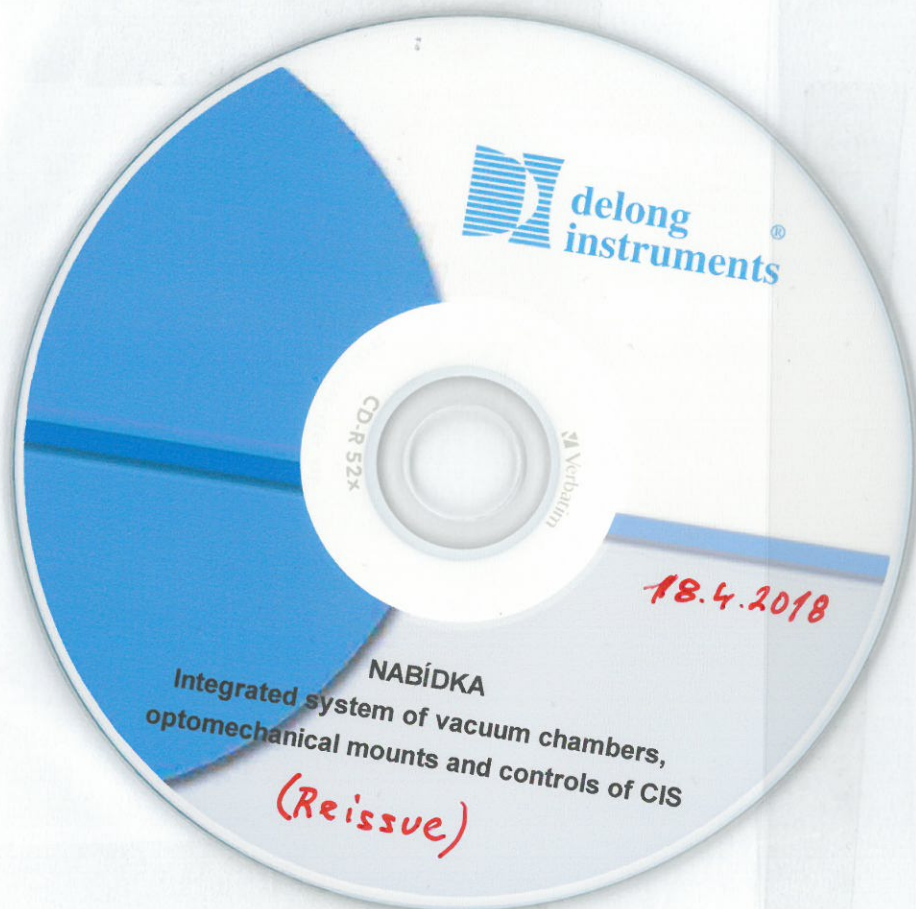


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Bid on CD

Format: Bid DELONG CIS L4 System (Reissue).pdf



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Statement of the number of sheets

Number of sheets: 17

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