OSNUTEK AMANDMAJA K POGODBI O STVARNEM PRISPEVKU - V ANGLEŠKEM JEZIKU

Amendment No1

to the FAIR In-Kind Contract

IKC2.8.6.2.1.1.2

between

Facility for Antiproton and Ion Research in Europe GmbH FAIR (Company)

and

the Ministry of Education, Science and Sport

and

TEHNODROM d.o.o.

This **Addendum** is integral part of the above named In-Kind Contract between the above named Parties.

The Parties mutually agree that

Due to design changes and new requirements from the Company as Contributions to the work packages C1, C2, C3, C5, C6 and C8 the Company will pay 798,300 EUR to the Provider for services that go beyond the original contract.

Due to design changes and new requirements from the Company as Contributions to the work packages D1, D2, D3, D4,the Company will pay 238,400EUR to the Provider for services that go beyond the original contract.

This payment will be done in partial payments for all the services provided and can be invoiced by the Provider quarterly.

For all costs that already occurred, the Provider will invoice the Company immediately upon signing of this amendment (466.051EUR for control system work packages and 238.400EUR for beam diagnostics work packages).

All Parties agree that payments will be made directly by the Company to the Provider.

The Shareholder agrees to provide the additional funds needed because of the stretched project schedule and unforeseen development costs to fulfil initial specs. This additional costs accounts to 1,986,900EUR at actual price level not including VAT, which shall be fixed in value unless major unforeseen occurrences happen.

The Shareholder is preparing the necessary steps to provide the instalment of 2019 by end of Q3 2019.

An amendment to the agreement as shown in Annex 4 and Annex 5, which shall define size and schedule of the payments beyond 2019 is envisioned to be agreed between the Shareholder and the Provider by Q3 2019.

The following changes in deliverables and effort shall take effect:

Beam Diagnostics:

* Work package D2: all installation activities with respect to the Libera units for circular machines (i.e.installation of BPM units, signal cables to patch panel, short cables, Ethernet, rf signal, SFP modules, power supplies) are dropped at an equivalent of 10 person weeks
* Work package D4b: all installation activities with respect to the Libera units for HEBT (i.e.installation of BPM units, signal cables to patch panel, short cables, Ethernet, rf signal, SFP modules, power supplies) are dropped at an equivalent of 4 person weeks.
* The planned work effort for the dropped installation works of D2 and D4b is re-assigned to the installation of a comprehensive test setup at GSI. The purpose of this test setup is to simulate and test the operation of SIS100 and HEBT libera units at an early stage, before installation on the FAIR site. We agree that the Provider takes care of the installation and cabling work, is responsible for commissioning and provides human resources for bugfixes, support of test runs and maintenance during the testing phase (scheduled for Q3-Q4/2019).
* Workpackage D5: the production of 2 water-cooled Faraday-Cups is dropped. The effort planned for the production of water-cooled Faraday-Cups is transferred to the production of the increased quantity of large-types of MWPC pocket drives.

Controls:

* Work package C4: All deliverables are cancelled. The effort planed for work package C4 shall be redistributed with 1 FTE to C2 (Diagnostic Logging), 2 FTE to C6 (Timing Receiver), 1 FTE to C7 (Motion/Serial Controllers), where the deliverables have been adapted in mutual agreement.
* Work package C5: The FESA classes Pneumatic Drives and Residual gas analyser#2 are dropped. The planned work effort for the dropped FESA software device classes is re-assigned to other FESA device classes in this work package in order to compensate for higher than expected complexity and development effort, e.g. implementation of Data Concentrator FESA classes.
The FESA classes BPM-System DSO and Switch matrix are dropped. The planned work effort for these FESA software classes is re-assigned to necessary updates for the stepper motor control and enhanced functionality of the FESA class BPM-Systems (pLinac, Libera controller).
* Work package C6: The deliverables consist of form-factor AMC, PMC and the form-factor specific gateware and firmware needs.
* Work package C8: Since the final acceptance for this work package requires tests on the actual FAIR vacuum sections, we agree that only those tests have to be performed as part of this contract, for which the vacuum sections are ready for test by the end of 2024. Vacuum sections that are ready afterwards shall also be tested by the Provider, if requested by the Company. The Provider will be reimbursed by the Company for actual costs based on 77000EUR per FTE (based on prices 2005, based on FAIR escalation rule), except otherwise agreed.
* Work package C11: All deliverables are cancelled. The effort planed for work package C11 shall be redistributed with 2 FTE to C3 (Archiving system), and with 2 FTE to C10 (Beam Transmission Monitor System), where the deliverables have been adapted in mutual agreement.

Schedule:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| WP | Status | Comment | Delivery to FAIR | Acceptance\* |
| D1 Pre-amplifiers | ongoing | 193 pcs. of Amplifier 110 delivered to FAIR | delivered | accepted |
| TODO: delivery of COTS material i.e. power supplies, cables and racks | Oct 2019 | Q4 2019 |
| D2 BPM for circular machines | ongoing | LIBERA units for 178 BPMs delivered to FAIR | delivered | Q4/2019 |
| TODO: delivery of COTS material i.e. racks | Oct 2019 | Q4 2019 |
| D3 Closed orbit feedback | ongoing | Development and series production completed | delivered | Q4/2019 |
| D4a BPM for p-Linac | ongoing | TODO: finalize development, series production, bug fixing & delivery | Dec 2019 | Q1/2020 |
| D4b BPM for HEBT | ongoing | LIBERA units for 36 BPMs and Active splitters delivered to FAIR | delivered | Q3/2019 |
| TODO: delivery of COTS material i.e. racks | Oct. 2019 | Q4/2019 |
| D5 Pressurized air drives | ongoing | Development in progress, production started, delivery in several batches | Q2-Q4/2019 | Q1/2020 |
| D6 Low-level rf for p-linac | ongoing | Development completedTODO: system test, series production & delivery | Oct. 2019 | Q2/2020 |
| D7 / D8 | ongoing | Slovenian cash contribution (technical responsibility with GSI) |  |  |
|  |  |  |  |  |
| C1Alarm System | closed |  | delivered | accepted |
| C2 Diagnostic Logging System | closed |  | delivered | accepted |
| C3Archiving System | ongoing |  | Sep 2019 | Dec 2019 |
| C5 FESA Classes |  |  |  |  |
| C5.1 Stepper motor control | closed |  | delivered | accepted |
| C5.2 Proton-linac RF systems | not started |  | Sep 2020 | Nov 2020 |
| C5.3 Specific classes for p-Linac ion source control (multiple) | closed |  | delivered | Accepted |
| C5.4 BPM-systems (ring machines, Libra controller | ongoing |  | Nov 2019 | Jan 2020 |
| C5.5 BPM-systems (ring machines, Closed orbit feedback) | ongoing |  | Jan 2020 | Mar 2020 |
| C5.6 BPM-Systems (HEBT, Libera controller) | not started |  | Apr 2020 | Jun 2020 |
| C5.7 BPM-Systems (pLinac, Libera controller) | not started |  | Jun 2020 | Sep 2020 |
| Stepper motor control enhancements | not started |  | Jan 2020 | Apr 2020 |
| C5.9 Residual gas analyzer #1 | closed |  | Delivered | accepted |
| C6 Timing Receiver |  |  |  |  |
| C6.1 Timing Receiver PMC | ongoing |  | Oct 2019 | Dec 2019 |
| C6.2 Timing Receiver AMC | ongoing |  | Aug 2019 | Sep 2019 |
| C7 Industrial type FEC systems | closed |  | delivered | accepted |
| C8 Vacuum Control System | ongoing |  | Oct 2022 | Dec 2024 |
| C9 Interlock System | closed |  | delivered | Accepted |
| C10 Beam Transmission Monitor | not started |  | Mar 2021 | Jun 2021 |

\* The acceptance of the work packages D1 .. D6 includes the time necessary for the Provider to fulfil the deliverables that have to be performed in situ on the site. It is the hardware acceptance of the items, but does not include installation and commissioning without beam. Installation and commissioning without beam are scheduled to be completed in 2020 for WP D4a and WP D6 and in 2022 for WP D1 and D3.

In case that delivered work packages are complete and free of defects and are not accepted until above specified dates, acceptance shall be deemed to have been completed according to Chapter 5 of Annex 2 to the FAIR In-Kind Contract IKC2.8.6.2.1.1.2.

The Parties agree that these changes in scope and schedule cover all necessary changes to finish the Project. The Provider is not obliged to accept any further changes in scope or schedule.

For the work packages where the specifications don’t exist yet (C5.2, C5.6, C5.7), the provider is obliged to deliver only to the extent that preliminary cost estimates (of 101 person weeks for the three work packages) allow. The company and the provider agree that the specifications for work packages C5.2, C5.6, C5.7 will be provided by the Company by Feb 5th 2020, August 30th 2019, and Sept 20th 2019 respectively in order to perform the respective work within the agreed upon deadlines and effort. In case of delayed submission of specifications which will result in increased overhead at the provider, such overhead will be covered from the above mentioned 101 person-weeks.

The Parties also agree that with the Payments mentioned above all expenses of the Provider are covered and no further financial claims can be raised.

**Authorised to sign on behalf of COMPANY**

Name: Jörg Blaurock

Position: Technical Managing Director

Date:

Signature:

Name: Ursula Weyrich

Position: Administrative Managing Director

Date:

Signature:

**Authorised to sign on behalf of Shareholder**

Name: Dr. Jernej Pikalo

Position: Minister of Education, Science and Sport

Date:

Signature:

**Authorised to sign on behalf of PROVIDER**

Name: Dr. Mark Pleško

Position: Director of Tehnodrom d.o.o.

Date:

Signature:

Name: Rok Uršič

Position: Director of Tehnodrom d.o.o.

Date:

Signature:

**OSNUTEK AMANDMAJA K POGODBI O STVARNEM PRISPEVKU - SLOVENSKI PREVOD**

Spremeba št. 1

k pogodbi o stvarnem prispevku za center FAIR

IKC2.8.6.2.1.1.2

med

Centrom za raziskave z antiprotoni in ioni v Evropi GmbH (FAIR),

in

Ministrstvom za izobraževanje, znanost in šport,

in

TEHNODROM d.o.o.

Sprememba je sestavni del zgoraj navedene pogodbe o stvarnem prispevku med naštetimi strankami.

Stranke so se dogovorile, kot sledi:

Zaradi sprememb zasnove in novih zahtevkov družbe v zvezi s prispevki k delovnim paketom C1, C2, C3, C5, C6 in C8 bo družba za storitve, ki presegajo dogovor iz izvirne pogodbe, izvajalcu plačala 798.300 EUR.

Zaradi sprememb zasnove in novih zahtevkov družbe v zvezi s prispevki k delovnim paketom D1, D2, D3, D4bo družba za storitve, ki presegajo dogovor iz izvirne pogodbe, izvajalcu plačala 238.400 EUR.

Plačilo za vse zagotovljene storitve bo izvedeno v obrokih, izvajalec lahko račun izstavi četrtletno.

Za vse že nastale stroške bo izvajalec družbi izstavil račun takoj po podpisu te spremembe (466.051 EUR za delovne pakete v okviru kontrolnega sistema in 238.400 EUR za delovne pakete v okviru diagnostike žarka).

Stranke soglašajo z neposrednim plačilom družbe izvajalcu.

Družbenik soglaša, da bo zagotovil dodatna sredstva, ki so potrebna zaradi podaljšanja trajanja projekta in zaradi nepričakovanih stroškov razvoja za izpolnitev izhodiščnih specifikacij. Dodatni stroški v skladu s trenutnimi cenami znašajo 1,986.900 EUR brez DDV, znesek bo fiksno določen, razen če pride do večjih nepričakovanih sprememb.

Družbenik pripravi vse potrebne korake, da se zagotovi plačilo za leto 2019 do konca tretjega četrtletja 2019.

O spremembi Priloge 4 in Priloge 5 k pogodbi, v katerih se opredelita obseg in časovni načrt plačil po letu 2019, se družbenik in izvajalec dogovorita do tretjega četrtletja 2019.

Upoštevajo se naslednje spremembe izdelkov in delovnih obremenitev:

Diagnostika žarka:

* Delovni paket D2: vse dejavnosti namestitve v zvezi z enotami Libera za krožne naprave (tj. namestitev enot BPM, signalni kabli do priključne omarice, kratki kabli, Ethernet, signal RF, moduli SFP, napajalni sistemi) se znižajo na ekvivalent 10 človek/teden.
* Delovni paket D4b: vse dejavnosti namestitve v zvezi z enotami Libera za HEBT (tj. namestitev enot BPM, signalni kabli do priključne omarice, kratki kabli, Ethernet, signal RF, moduli SFP, napajalni sistemi) se znižajo na ekvivalent 4 človek/teden.
* Načrtovane delovne obremenitve za opuščene namestitve v okviru D2 in D4b se dodelijo GSI za namestitev sistema za celovito testiranje. Namen tega testnega sistema je simulacija in preizkus delovanja enot SIS100 in HEBT Libera v zgodnji fazi pred dokončno namestitvijo v centru FAIR. Strinjamo se, da izvajalec poskrbi za namestitev in kable, da je odgovoren za izvedbo in zagotavlja kadrovsko pomoč za odpravljanje napak, podporo pri testiranju in vzdrževanje med testiranjem (načrtovano za tretje oz. četrto četrtletje 2019).
* Delovni paket D5: proizvodnja 2 vodno hlajenih Faradayevih čaš se opusti. Načrtovane delovne obremenitve za proizvodnjo vodno hlajenih Faradayevih čaš se prenesejo na proizvodnjo povečane količine velikih gonilnikov za MWPC.

Kontrolni sistemi:

* Delovni paket C4: Vsi izdelki se prekličejo. Načrtovane delovne obremenitve za delovni paket C4 se prerazporedijo, in sicer 1 ekvivalent polnega delovnega časa na delovni paket C2 (Beleženje diagnostike), 2 ekvivalenta polnega delovnega časa na delovni paket C6 (Časovni sprejemnik), 1 ekvivalent polnega delovnega časa na delovni paket C7 (Kontrolni sistemi za gibanje/serije), pri katerih je bila soglasno sprejeta prilagoditev izdelkov.
* Delovni paket C5: Pnevmatski pogoni in analizator preostalega plina št. 2 razreda FESA se opustijo. Načrtovane delovne obremenitve v zvezi z opuščenimi razredi programskih naprav FESA se prerazporedijo na druge razrede naprav FESA v tem delovnem paketu, da se pokrijejo višje obremenitve od pričakovanih zaradi kompleksnosti in razvoja, npr. izvedba podatkovnega koncentratorja razredov FESA.
* DSO in preklopna matrika sistema merilno procesorske enote pozicije žarka razredov FESA se opustijo. Načrtovane delovne obremenitve za te razrede programske opreme FESA se prerazporedijo in prenesejo na nujne posodobitve krmiljenja koračnega motorja in izboljšano delovanje sistema merilno procesorske enote pozicije žarka FESA (pLinac, krmilnik Libera).
* Delovni paket C6: Dogovorjeni izdelki so AMC in PMC faktorja oblike ter skladno s faktorjem oblike zasnovani prehod in vdelana programska oprema.
* Delovni paket C8: Ker je za končni prevzem tega delovnega paketa potrebno testiranje v dejanskih vakuumih v centru FAIR, se strinjamo, da je v sklopu te pogodbe treba opraviti le tista testiranja, za katera bodo vakuumi dokončani do konca leta 2024. Če bo družba tako zahtevala, bo izvajalec testiranja opravil tudi v vakuumih, ki bodo dokončani pozneje. Družba bo izvajalcu plačala dejanske stroške na podlagi zneska 77.000 EUR za ekvivalent polnega delovnega časa (na podlagi cen iz leta 2005 v skladu s pravili eskalacije FAIR), razen če se sklene drugačen dogovor.
* Delovni paket C11: Vsi izdelki se prekličejo. Načrtovane delovne obremenitve za delovni paket C11 se prerazporedijo, in sicer 2 ekvivalenta polnega delovnega časa na delovni paket C3 (Sistem arhiviranja) in 2 ekvivalenta polnega delovnega časa na delovni paket C10 (Sistem spremljanja prenosa žarka), pri katerih je bila soglasno sprejeta prilagoditev izdelkov.

Časovni načrt

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Delovni paket | Status | Pripombe | Dobava centru FAIR | Prevzem\* |
| D1 predojačevalniki | v teku | ojačevalnik 110, 193 kosov, dobavljeno FAIR | dobavljeno | prevzeto |
| NAREDITI: dobava standardnega materiala, tj. napajalniki, kabli, nosilci | okt 2019 | Q4 2019 |
| D2 Merilno procesorska enota pozicije žarka (BPM) za krožne naprave | v teku | enote LIBERA za 178 BPM, dobavljeno FAIR | dobavljeno | Q4 2019 |
| NAREDITI: dobava standardnega materiala, tj. nosilci | okt 2019 | Q4 2019 |
| D3 Povratna zanka orbite | v teku | razvoj in dokončana serijska proizvodnja | dobavljeno | Q4 2019 |
| D4a Merilno procesorska enota pozicije žarka (BPM) za p-Linac | v teku | NAREDITI: dokončanje razvoja, serijska proizvodnja, odprava napak in dobava | dec 2019 | Q1 2020 |
| D4a Merilno procesorska enota pozicije žarka (BPM) za p-Linac | v teku | enote LIBERA za 36 BPM in aktivni razdelilniki dobavljeni FAIR | dobavljeno | Q3 2019 |
| NAREDITI: dobava standardnega materiala, tj. nosilci | okt 2019 | Q4 2019 |
| D5 Pnevmatske komponente | v teku | razvoj v teku, proizvodnja se je začela, dobava v serijah | Q2-Q4 2019 | Q1 2020 |
| D6 Sistem za nadzor in stabilizacijo RF polja za p-Linac | v teku | razvoj dokončanNAREDITI: testiranje sistema, serijska proizvodnja in dobava | okt 2019 | Q2 2020 |
| D7/D8 | v teku | Slovenski prispevek v denarju (tehnična odgovornost pri GSI) |  |  |
|  |  |  |  |  |
| C1 Alarmni sistem | zaključeno |  | dobavljeno | prevzeto |
| C2 Sistem beleženja diagnostike | zaključeno |  | dobavljeno | prevzeto |
| C3 Sistem arhiviranja | v teku |  | sep 2019 | dec 2019 |
| C5 Razredi naprav FESA |  |  |  |  |
| C5.1 Krmiljenje koračnega motorja | zaključeno |  | dobavljeno | prevzeto |
| C5.2 RF sistemi za Proton-linac | se še ni začelo |  | sept 2020 | nov 2020 |
| C5.3 Posebni razredi za nadzor vira ionov za p-Linac (več) | zaključeno |  | dobavljeno | prevzeto |
| C5.4 Sistemi merilno procesorske enote pozicije žarka (obročne naprave, krmilnik Libera) | v teku |  | nov 2019 | jan 2020 |
| C5.5 Sistemi merilno procesorske enote pozicije žarka (obročne naprave, povratna zanke orbite) | v teku |  | jan 2020 | mar 2020 |
| C5.6 Sistemi merilno procesorske enote pozicije žarka (HEBT, krmilnik Libera) | se še ni začelo |  | apr 2020 | jun 2020 |
| C5.7 Sistemi merilno procesorske enote pozicije žarka (p-Linac, krmilnik Libera) | se še ni začelo |  | jun 2020 | sept 2020 |
| Izboljšave krmiljenja koračnega motorja FESA | se še ni začelo |  | jan 2020 | apr 2020 |
| C5.9 Analizator preostalega plina št. 1 | zaključeno |  | dobavljeno | prevzeto |
| C6 Časovni sprejemnik |  |  |  |  |
| C6.1 Časovni sprejemnik PMC | v teku |  | okt 2019 | dec 2019 |
| C6.2 Časovni sprejemnik AMC | v teku |  | avg 2019 | sept 2019 |
| C7 Industrijski sistemi FEC (Front-End Control) | zaključeno |  | dobavljeno | prevzeto |
| C8 Sistem za nadzor vakuuma | v teku |  | okt 2022 | dec 2024 |
| C9 Zaščitni sistem | zaključeno |  | dobavljeno | prevzeto |
| C10 Sistem spremljanja prenosa žarka | se še ni začelo |  | mar 2021 | jun 2021 |

\* Prevzem delovnih paketov D1 .. D6 vsebuje čas, ki ga izvajalec potrebuje za dokončanje izdelkov na kraju samem. Gre za fizični prevzem izdelkov, ki ne vključuje namestitve in izvedbe brez žarka. Za delovna paketa D4a in D6 se namestitev in izvedba brez žarka predvidoma opravita leta 2020, za D1 in D3 pa se opravita leta 2022.

Če bodo dobavljeni delovni paketi popolni, brez napak in ne bodo prevzeti do zgoraj navedenih datumov, se šteje, da je prevzem opravljen v skladu s 5. poglavjem Priloge 2 Pogodbe o stvarnem prispevku FAIR IKC2.8.6.2.1.1.2.

Stranke se strinjajo, da te spremembe obsega in časovnega načrta zajemajo vse spremembe, ki so potrebne za zaključek projekta. Izvajalec ni dolžan sprejeti dodatnih sprememb obsega ali časovnega načrta.

Za delovne pakete, pri katerih še ni specifikacij (C5.2, C5.6, C5.7), je izvajalec dolžan dobaviti izdelke le do te mere, kolikor je mogoče po predhodni oceni stroškov (101 človek/teden za navedene tri delovne pakete). Družba in izvajalec se dogovorita, da bo družba zagotovila specifikacije za delovni paket C5.2 do 5. februarja 2020, za C5.6 do 30. avgusta 2019 in za C5.7 do 20. septembra 2019, da se predvideno delo opravi v okviru zastavljenih rokov in delovnih obremenitev. V primeru zamude pri posredovanju specifikacij, zaradi česar bi izvajalec utrpel povečan obseg stroškov, se ti stroški krijejo iz naslova zgoraj navedenih 101 človek/teden.

Stranke se dogovorijo, da so z zgoraj navedenimi plačili pokriti vsi stroški izvajalca in da dodatni finančni zahtevki niso možni.

**Oseba, pooblaščena za podpis v imenu DRUŽBE**

Ime: Jörg Blaurock

Položaj: Tehnični direktor

Datum:

Podpis:

Ime: Ursula Weyrich

Položaj: Upravna direktorica

Datum:

Podpis:

**Oseba, pooblaščena za podpis v imenu DRUŽBENIKA**

Ime: dr. Jernej Pikalo

Položaj: Minister za izobraževanje, znanost in šport

Datum:

Podpis:

**Oseba, pooblaščena za podpis v imenu IZVAJALCA**

Ime: dr. Mark Pleško

Položaj: Direktor Tehnodrom d.o.o.

Datum:

Podpis:

Ime: Rok Uršič

Položaj: Direktor Tehnodrom d.o.o.

Datum:

Podpis: