Request for Tender

Tender closing time: see Contract notice

PREFACE

This Pre-Commercial Procurement (PCP) call invites entrepreneurs, start-ups, companies, academia, and other relevant stakeholders to present their proposal for designing, developing and testing their solution that will be provided during this PCP.

The PCP is run as a competition where multiple suppliers go through three different R&D phases: Phase 1 – Solution design, Phase 2 – Prototyping, and Phase 3 – Prototype testing. Ownership of the resulting solutions will remain with the suppliers, not the Buyer group. Annex 2 presents a more detailed overview of the PCP approach.

TENDER DOCUMENTS (TD)
TD 1 – Request for Tender, incl. Appendices
TD 2 – Framework Agreement [template]
TD 3 – Specific Contract [template]

This Request for Tenders, designated as Tender Document 1, should be read in conjunction with other documents related to this Pre-Commercial Procurement (PCP), listed hereunder:

- Tender Document 2: The Framework Agreement
- Tender Document 3: The Specific Contract
- Forms A through H

To submit an eligible Tender, the Tenderer shall sign and submit the Forms to the Request for Tender. The use of these Forms is mandatory.

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GLOSSARY – DEFINITIONS

Words beginning with a capital letter have the meaning defined either in this 'Request for Tender' (TD 1) or in the Framework Agreement (TD 2)

TERMS/ACRONYMS	DEFINITIONS
Administrative Evaluation Committee	The Administrative Evaluation Committee is a supporting body of the Lead Procurer in charge, among others, of: (i) assessing the Administrative documentation as well as the financial proposals (ii) ranking the bids on the basis of the final assessment and scoring of the technical offers and reports made by the Evaluation Committee as well as of the financial proposals automatically made and (iii) submitting the award recommendation resulting from that ranking to the Lead Procurer in each phase of the oncNGS PCP Procedure.
Awarding Criteria	Awarding Criteria are the criteria used to identify the most advantageous Bid for each Phase
Background	Any intellectual property rights, data, software, know-how or information, whatever its form or nature (tangible or intangible), including any attached rights such as intellectual property rights ('background IPRs') that is held by any Buyers Group member or the Supplier prior to the award of the Framework Agreement, which is needed to perform the R&D Services or exploit the Results of the PCP.
Buyers Group	The entities procuring the R&D services under the oncNGS project, same as oncNGS consortium.
Call-off	The procedure organised by the Lead Procurer to select the successful Supplier(s) who will participate in the next phase of the Project under the Framework Agreement.
Challenge brief	Challenge brief, means the document containing the Functional and Technical Specifications of the oncNGS pre-commercial procurement contracts
Evaluation Committee	Composed by members from the Buyers Group supported by external experts with relevant knowledge about NGS panels, molecular biology, molecular pathology, wet lab analysis, bioinformatics, molecular interpretation, medical oncology, CE-IVD, GDPR, ICT interoperability, market access and/or general business knowledge, waste/recycling material, process design, business angels and philanthropic social impact investors. The Evaluation Committee will assess the technical offers in agreement with oncNGS awarding criteria. Each member will be requested to sign a declaration of non-conflict of interest, confidentiality and code of conduct.
Fair and Reasonable Conditions	Appropriate conditions, including financial terms or royalty-free conditions, taking into account the specific circumstances of the request for access, including in particular the actual or potential value of the Results, Sideground or Background to which access is requested and/or the scope, duration or other characteristics of the exploitation envisaged.
Foreground Intellectual Property	Any intellectual property created by either party as a result of their involvement in the oncNGS Framework Agreement.
Framework Agreement	The contract between the Lead Procurer and the Supplier concerning the delivery of the R&D services under this PCP, covering Phases 1 through 3.
Generated in the PCP	In activities described in the PCP framework agreement or specific contracts.
Intellectual Property	Patents, inventions (patentable or capable of registration or otherwise), trademarks, service marks, copyrights, topography rights, design rights and database rights (either registered or registerable or otherwise, and including applications for registration, renewal or extension), trade secrets and rights of confidence, trade or business names and domain names and all rights or forms of protection of a similar nature which have an equivalent effect and which may now or in the future exist anywhere in the world.

Lead Procurer	The entity within the Buyers Group, appointed to coordinate and lead the joint PCP and to award and sign the Framework Agreements and Specific Contracts for all phases of the PCP, on behalf of the Buyers Group. The Lead Procurer is Sciensano, situated in Brussels, Belgium.
Monitoring Team	Composed by members from the Buyers Group supported by external experts with relevant knowledge about NGS panels, molecular biology, molecular pathology, wet lab analysis, bioinformatics, molecular interpretation, medical oncology, CE-IVD, GDPR, ICT interoperability, market access and/or general business knowledge, waste/recycling material, process design, business angels and philanthropic social impact investors. The Monitoring Team will supervise the progresses of the Contractors in agreement with oncNGS Framework Agreement and Phase Contracts. Each member will be requested to sign a declaration of non-conflict of interest, confidentiality and code of conduct.
Not generated in the PCP	Not generated in activities described in the PCP framework agreement or specific contracts
Offer	The proposal of the Supplier for the following phase.
oncNGS consortium	The entities procuring the R&D services under the oncNGS project, same as Buyers Group
Preferred Partner	An entity that is not a member of the Buyers Group, but which has a special interest in closely following the PCP and therefore has access to oncNGS project- related information, as determined by the Buyers Group.
Request for Tenders	The oncNGS invitation to tender on the basis of which the Tenders for the award of the Framework Agreement and the Specific Contract for Phase 1 are submitted, and the subsequently issued invitations to tender for the Phase 2 and Phase 3.
Result	Any tangible or intangible output such as data, software, knowledge or information generated under the Framework Agreement, whatever its form or nature, whether or not it can be rpotected, including any intellectual property rights or other rights therein. The Results expected to be generated under the Framework Agreement are identified in the relevant Specific Contract(s).
Sideground	Any tangible or intangible output, such as data, software, knowhow or information whatever its form or nature, including any intellectual property rights or other rights therein generated during the timespan of the Framework Agremeent but which does not constitute part of the Results expected to be delivered thereunder and is needed to perform the R&D services or to exploit the Results.
Specific Contract	The Contract for each phase of the R&D services under the Framework Agreement to be concluded between the Lead Procurer and the Supplier in addition to the Framework Agreement.
Subsidiary, affiliate or subsidiary	Refers to any legal entity under the direct or indirect control of the contracting persons, "control" being understood as: • directly or indirectly holding 50% or more of the nominal value of the capital of the legal entity in question; or • holding a majority of the rights of the legal entity in question. • holding a majority of the voting rights of the shareholders or associates of that entity; or • owning, directly or indirectly, a majority of the voting rights of the shareholders or associates of that entity; or • owning, directly or indirectly, in fact, or legally, the decision-making powers in that legal entity, or • having the power to appoint or remove corporate directors.
Supplier	A Tenderer that is awarded a contract to execute the R&D services.
Subcontractor	A subcontractor is a third party contributing to the provision of the services reffered to in the procurement contract.
Tender	The formal and commercial bid/offer submitted by the Tenderer on the basis of the Tender Documents.
Tender Documents	The PCP documents on the basis of which a Tenderer submits a Tender.

Tenderer	A company or consortium that is going to or has already submitted a Tender but has not yet been awarded a contract tot execute the R&D services.

ABBREVIATIONS - ACRONYMS

AI	Artificial Intelligence
CNA	Copy Number alterations
ComPerMed	Commission of Personalized Medicine
CPV	Common public Procurement Vocabulary
CTC	Circulating Tumour Cells
ctDNA	Circulating Deoxyribonucleic Acid
DNA	Deoxyribonucleic Acid
E18	ICH Efficacy Guidelines 18 Genomic Sampling
EC-IVD	European Commission in Vitro Diagnosis
EEA	European Economic Area
EES	Electronic Exchange System
EQA	External Quality Assurance
FDA	Food and Drug Administration
FHIR	Fast Healthcare Interoperability Resources
FN	False Negative
FP	False Positive
FTO	Freedom to Operate
GA	Grant Agreement
GDPR	General Data Protection Regulation
germ DNA	Germline Deoxyribonucleic Acid
GPA	Government Procurement Agreement
HRD	Homologous Recombination Deficiency
ICH	The International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use
ICT	Information and Communication Technology
IPR	Intellectual Property Rights
KPI	Key Performance Indicator
LB	Liquid Biopsy
Mb	Megabyte
miRNA	MicroRNA
MMR	Mismatched Repair
MSI	Microsatellite Instability
ng	nanograms
NGO	Non-governmental Organisation
NGS	Next Generation Sequencing
NPV	Negative Predictive Value
NUTS	Nomenclature of Territorial Units for Statistics

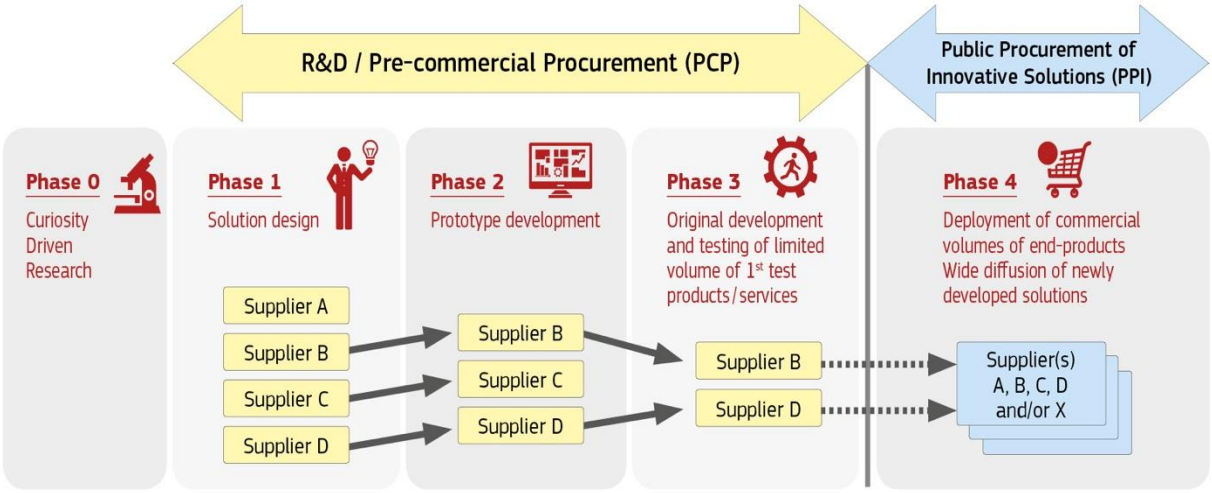
OJEU	Official Journal of the European Union
OMC	Open Market Consultation
PCP	Pre-commercial Procurement
EHR	Electronic Health Records
PIN	Prior Information Notice
PPI	Public Procurement of Innovation
PPV	Positive Predictive Value
QA	Quality Assurance
QC	Quality Control
R&D	Research and development
RfT	Request for Tender
RNA	Ribonucleic acid
SME	Small Medium Enterprise
SNV	Single Nucleotide Variant
TED	Tenders Electronic Daily
TFEU	Treaty on the Functioning of the European Union
TJCB	Total Joint Commitment Budget
TMB	Tumour Mutation Burden
TRL	Technology Readiness Level
VAF	Variant Allele Frequency
VAT	Value Added Tax
VCF	Variant Calling File
WGS	Whole Genome Sequencing
WTO	World Trade Organization

1. GENERAL CONTEXT & BACKGROUND – PRECOMMERCIAL PROCUREMENT

1.1. Pre-commercial procurement (PCP)

This procurement is a **pre-commercial procurement (PCP)**.

PCP means that public procurers challenge innovative players on the market, via an open, transparent and competitive process, to develop new solutions for a technologically demanding mid- to long-term challenge that is in the public interest and requires new R&D services.



PCP is characterised by the following four **features**:

- ✕ Competitive development in phases to identify the solutions offering the best value for money

  PCP targets situations that require radical innovation or R&D and for which there are typically no solutions on or close to the market yet. Different competing providers may have different ideas for solutions to the problem. As R&D is yet to take place, there is not yet any proof as to which of these potential alternative solutions would best meet customers' needs.

  PCP therefore awards R&D contracts to a number of competing Suppliers at the same time, in order to compare different approaches to solving the problem. It thus offers innovators an opportunity to show how well their solution compares with others. It also allows a first customer test reference to be obtained from countries of the procurers that will test the solutions.

  The R&D is split into **3 phases** (solution design, prototyping, original development and testing of a limited set of 'first' products or services). Evaluations after each phase progressively identify the solutions that offer the best value for money and meet the customers' needs. This phased approach allows successful Suppliers to improve their offers for the next phase based on lessons learnt and feedback from procurers in the previous phase. Using a phased approach with gradually growing contract sizes per phase also makes it easier for smaller companies to participate in the PCP and enables SMEs to grow their business step-by-step with each phase.

Depending on the outcome of the PCP, procurers may or may not decide to follow-up the PCP with a public procurement to deploy the innovative solutions (PPI).

✕ Public procurement of R&D services

PCP addresses mid- to long-term public procurement needs for which either no commercially stable solutions yet exist on the market, or existing solutions exhibit structural shortcomings that it requires further R&D to resolve. PCP is a way for procurers to trigger the market to develop new solutions that address these shortcomings. PCP focuses on specific identified needs and provides customer feedback to businesses from the early stages of R&D. This improves the likelihood of commercial exploitation of the newly developed solutions.

PCP is explained in the PCP communication COM/2007/799 and the associated staff working document SEC/2007/1668. The R&D services can cover research and development activities ranging from solution exploration and design, to prototyping, right through to the original development of a limited set of 'first' products or services in the form of a test series. Original development of a first product or service may include limited production or supply in order to incorporate the results of field-testing and demonstrate that the product or service is suitable for production or supply in quantity to acceptable quality standards. R&D does not include quantity production or supply to establish the commercial viability or to recover R&D costs.[1] It also excludes commercial development activities such as incremental adaptations or routine or periodic changes to existing products, services, production lines, processes or other operations in progress, even if such changes may constitute improvements. The purchase of commercial volumes of products or services is not permitted.

✕ Open, transparent, non-discriminatory approach — No large-scale deployments

PCP is open to all operators on equal terms, regardless of the size, geographical location or governance structure. There is, however, a place of performance requirement that they must perform a predefined minimum percentage of 51% of the contracted R&D services in EU Member States or Horizon 2020 associated countries.

Any subsequent public procurement of innovative solutions (PPI), for the supply of commercial volumes of the solutions, will be carried out under a separate procurement procedure. Providers that did not take part in this PCP (or were not chosen to go through as far as the last phase) will thus still be able to compete on an equal basis in any subsequent procurement looking for Suppliers to provide a solution on a commercial scale.

✕ Sharing of IPR-related risks and benefits under market conditions

PCP procures R&D services at market price, thus providing Suppliers with a transparent, competitive and reliable source of financing for the early stages of their research and development. Giving each Supplier the ownership of the IPRs attached to the results it generates during the PCP means that they can widely exploit the newly developed solutions commercially.

In return, the tendered price must contain a financial compensation for keeping the IPR ownership compared to the case where the IPRs would be transferred to the procurers (the tendered price must be the 'non-exclusive development price'). Moreover, the procurers must receive rights to use the R&D results for internal use and licensing rights subject to certain conditions.

ⓘ For more general information on IPR, *see PCP on the Europa website* – http://ec.europa.eu/digital-agenda/en/innovation-procurement.

[1] See also Article XV(1)(e) WTO GPA 1994 and the Article XIII(1)(f) of the revised WTO GPA 2014.

- ✕ Exemption from EU public procurement directives, the WTO Government Procurement Agreement (GPA) and EU state aid rules

  PCP procurements are exempted from the **EU public procurement directives** because the procurers do not retain all the benefits of the R&D (the IPR ownership stays with the Suppliers).[2] Nor is the service wholly remunerated by the procurers/contracting authority.

  Application will be made of **Article 14 of the Directive 2014/24/EU** of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC, which states:

  > *"This Directive shall only apply to public service contracts for research and development services which are covered by CPV codes 73000000-2 to 73120000-9, 73300000-5, 73420000-2 and 73430000-5 provided that both of the following conditions are fulfilled:*
  > *(a) the benefits accrue exclusively to the contracting authority for its use in the conduct of its own affairs, and*
  > *(b) the service provided is wholly remunerated by the contracting authority."*

  Forementioned article has been transposed into Belgian law in **Article 32 of the Law of 17 June 2016 on public procurement** (Wet van 17 juni 2016 inzake overheidsopdrachten, *BS* 14 juni 2016; Loi du 17 juin 2016 relative aux marchés publics, *MB* 14 juillet 2016).

  They are also exempted from the **WTO Government Procurement Agreement (GPA)** because this Agreement does not cover R&D services[3] (the PCP being limited to such services — and any subsequent PPI procurements relating to commercial-scale supply of such solutions not being part of the PCP procurement).

  PCP procurements do not constitute state aid under the **EU state aid rules**[4] if they are implemented as defined in the PCP communication[5], namely by following an open, transparent, competitive procedure with risk- and benefit-sharing at market price. (The division of all rights and obligations *(including IPRs)* and the selection and award criteria for all phases must be published at the outset; the PCP must be limited to R&D services and clearly separated from any potential follow-up PPI procurements; PCP Suppliers may not be given any preferential treatment in a subsequent procurement for provision of the final products or services on a commercial scale.)

1.2. Open market consultation & OncNGS Suppliers Information Day

In order to collect feedback from potential ~~bidders~~Tenderers and interested parties on the Common needs and the functional requirements identified by the project's Buyers' Group, two **Open Market Consultations (OMC)** have taken place sixty days after the publication of the Prior Information Notice (PIN).

The OMC's have been held by means of online open online events on the 11 May and 12 May 2021. During the OMC the following was presented:

- A general introduction to the oncNGC PCP;

[2] See Article 14 of Directive 2014/24/EU, Article 32 of Directive 2014/25/EU and Article 13(f)(j) of Directive 2009/81/EC.
[3] See the EU's Annex IV of Appendix I to the WTO GPA.
[4] See Point 33 of the Commission Communication on a framework for state aid for research and development and innovation (C(2014) 3282).
[5] Commission Communication: Pre-Commercial Procurement: driving innovation to ensure sustainable, high quality public services (COM(2007) 799) and PCP staff working document (SEC(2007)1668).

- The benefits (for patient, health professionals, healthcare systems);
- The technical challenges;
- The oncNGS Pre-Commercial Procurement procedure

23 companies attended the OMC.

A **questionnaire** was created to collect feedback form the participants in the different OMC and also from those who could not participate but could be interested in understanding the needs of the procurers.

Respondents were able to book a **bilateral meeting** to discuss more in details the answers given in the questionnaire. The meetings were held on 25 and 26 May 2021. The meeting was limited to 30 minutes per economic operator.

14 completed the questionnaire and 10 requested for an bilateral meeting with the oncNGS consortium.

On 29 June 2022 an **OncNGS Suppliers Information Day (SID)** was organized to discuss the progress of the CfT documents and the project in whole. Possible Tenderers could participate in this meeting by registering on the oncNGS website. This information was widely spread.

21 companies attended the SID.

The **summary and Q&A**, which was adapted after the SID, are published on the Project website: http://oncngs.eu.

1.3. EU funding

This PCP procurement is part of a project that is funded by the European Union's Horizon 2020 Research and Innovation Programme, under grant agreement No 874467 — oncNGS *(see http://oncngs.eu)*.

The contracts will therefore be subject to additional rules that come from the EU grant(s).

ⓘ For more information, *see 'innovation procurement' and 'links to regional policy' in the Funding & Tenders Portal Online Manual*.

⚠ **Attention:** The EU is not participating as a contracting authority in this procurement.

2. DESCRIPTION OF THE NEEDS AND BACKGROUND

The mutational profiling of tumours requires complex, invasive and expensive procedures but is rapidly becoming essential for an efficient and adequate provision of care for cancer patients, especially when the disease has already advanced to metastatic conditions, in which the identification of tumour biomarkers is relevant to identify the best targeted therapy. However, access to tumour tissue remains a limiting factor for the assessment of biomarkers, and mounting evidence suggests that may even be inadequate to capture the clonal heterogeneity that often drives resistance. The assessment of circulating biomarkers is rapidly gaining ground as a non-invasive alternative that offers the additional possibility of serially monitoring disease evolution and the potential to obtain a more comprehensive picture of the tumour genetic heterogeneity. However, the current development trajectory for large cfDNA tests is heavily reliant on costly, high throughput centralized sequencing and appears ill-suited for European common practice.

The oncNGS PCP aims at developing an integrated solution for predictive, prognostic and diagnostic analysis in liquid biopsies of solid tumours (including appropriate haematological indications) based on NGS technology.

This PCP tackles the common global unmet need in oncology to profile multiple tumours at the molecular level in the broadest possible way, promoting an economically sustainable and de-centralised model that allows a secure and transparent access to sensitive data. All partners in this consortium do agree that they face a common challenge in providing **'the best NGS tests, for all solid and lymphoid tumours, forever**'. They agree that a commonly identified procurement meets a need that is shared by all procurers in the Buyers Group of the project that forms the object of the here proposed PCP procurement '**oncNGS'**.

More information regarding the goal of the oncNGS PCP and the PCP Challenge can be found in Annex 2 – Challenge Brief, as well as the technical and functional specifications.

3. DESCRIPTION OF THE PCP PHASES AND EXPECTED OUTCOMES

The PCP Request for Tender will be closed on the date and hour mentioned in the contract notice

The oncNGC PCP contract is structured in three phases:

- Phase 1: Design of the oncNGS solution;
- Phase 2: Technical, analytical and clinical performance validation of the oncNGS complete solution prototype at the Supplier's site;
- Phase 3: Technical, analytical and clinical performance validation of the oncNGS solution in the clinical samples in Supplier's sites and real clinical settings.

In this chapter are described the goals of each of the three PCP phases and the expected Deliverables and Milestones to be fulfilled by the Suppliers for each phase are described. The Buyers Group and the Evaluation Committee will evaluate all the proposals using the same criteria.

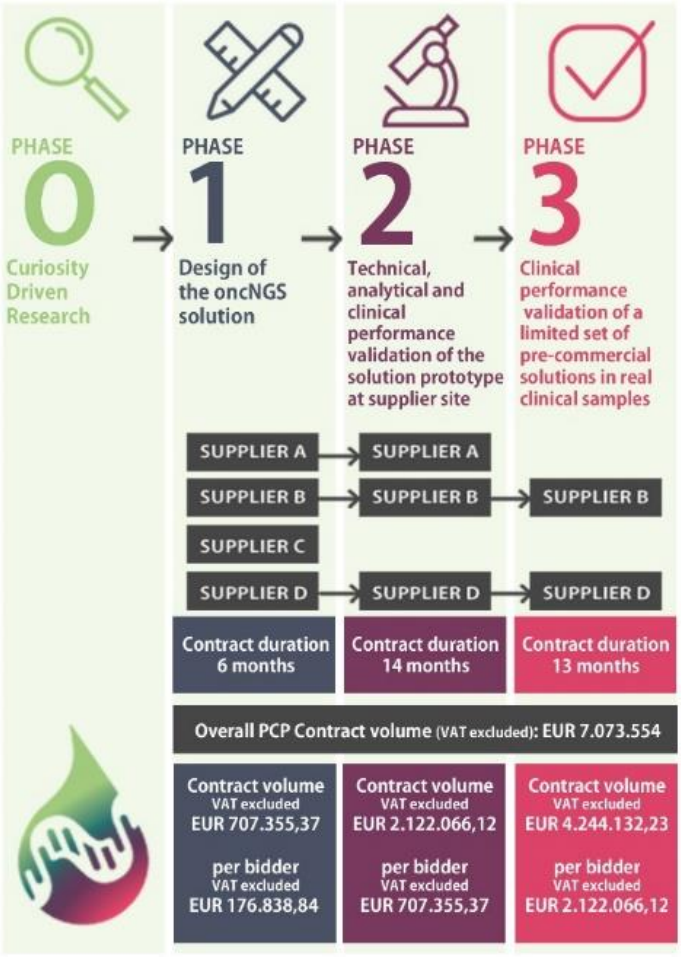
In order to stimulate the possibility of more radical approaches being proposed and out-of-the-box thinking being used, the initial challenge description is considered more of an open challenge without a detailed specification of a sought-after product. A great emphasis will be given on the proposed solutions' impact, ease of deployment and scalability.

There is no predetermined requirement for developing and delivering under a specific model, but in general it is expected that the solutions will be provided following proper planning and definition of internal tasks and stages.

The Tenderers must propose their process steps according to the requirements of each of the three PCP stages. A professional approach and understanding the whole lifecycle of the process are important elements in the Tender evaluation.

3.1. Total budget and budget distribution

The total joint procurement budget for the PCP is 7073554.00 EUR (VAT excluded). The distribution of the PCP joint procurement budget will be as follows:


PHASE 0
Curiosity Driven Research
PHASE 1
Design of the oncNGS solution
PHASE 2
Technical, analytical and clinical performance validation of the solution prototype at supplier site
PHASE 3
Clinical performance validation of a limited set of pre-commercial solutions in real clinical samples
SUPPLIER A
SUPPLIER B
SUPPLIER C
SUPPLIER D
SUPPLIER A
SUPPLIER B
SUPPLIER D
SUPPLIER B
SUPPLIER D
Contract duration 6 months
Contract duration 14 months
Contract duration 13 months
Overall PCP Contract volume (VAT excluded): EUR 7.073.554
Contract volume VAT excluded EUR 707.355,37
per bidder VAT excluded EUR 176.838,84
Contract volume VAT excluded EUR 2.122.066,12
per bidder VAT excluded EUR 707.355,37
Contract volume VAT excluded EUR 4.244.132,23
per bidder VAT excluded EUR 2.122.066,12

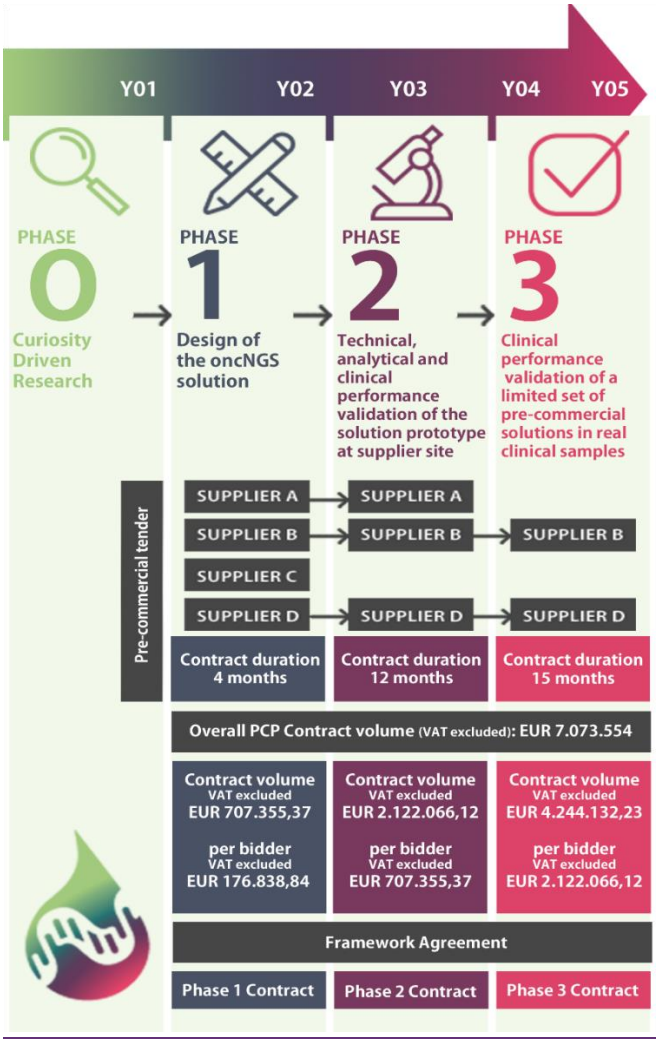


Figure: oncNGS PCP procedure

	Phase 1: Design of the oncNGS solution	Phase 2: Technical, analytical and clinical performance validation of the oncNGS complete solution prototype at the Supplier's site	Phase 3: Technical, analytical and clinical performance validation of the oncNGS solution prototype in the clinical samples in Supplier's sites and real clinical settings. Proof of concept and solution test
Maximum budget per phase	707355,37 €	2122066,12 €	4244132,23 €
Maximum budget per Supplier per phase	176838,84 €	707355,37 €	2122066,12 €
Number of Suppliers that are expected to be selected per phase	Four	Three	Two
Maximum duration per phase	~~6~~4 months	~~14~~12 months	~~13~~15 months

For Phases 1 and 2, contracts will be financed until the remaining budget is insufficient to fund the next best tender. The exact number of contracts finally awarded will thus depend on the prices offered and the number of tenders passing the evaluation. The number of Suppliers that are expected to be selected in Phase 1 is four.

As any leftover budget from the previous phase can be transferred to the next phase, the total budget available for Phases 2 and 3 may eventually be higher than stated here (but the maximum budget per Supplier for Phases 2 and 3 will remain the same). The lower the average price of tenders, the more Suppliers could be awarded. However, the total value of the contracts awarded can also be lower than initially expected if there are fewer tenders than expected.

Since all Suppliers will be paid by the Lead Procurer (centralised payments), and as Sciensano is the Lead Procurer in the oncNGS PCP, the valid Belgian and EU VAT legislation (see Code on value added tax, *OJ* 17 july 1969 – Wetboek van de belasting over de toegevoegde waarde, *BS* 17 juli 1969 – Code de la taxe sur la valeur ajoutée, *MB* 17 juillet 1969) will be applied in the project.

3.2. Phase 1: Design of the oncNGS solution – overview and expected outcomes

Duration ~~6~~4 months. Estimated procurement budget: 707355,37 EUR in total and 176838,84 EUR maximum per Supplier.

The time schedule and the duration mentioned here is purely indicative and can be subject of changes/refinements. No rights may be derived from the proposed timeschedule.

In Phase 1, suppliers will perform concise research in order to describe the design of the onNGS solution (including the gene panels and the validation plan) that will fulfill a listed set of requirements. The Suppliers will also determine the technological approach to be taken to develop this solution and will demonstrate the technical, financial and commercial feasibility of the proposed concept and plans to meet the procurements need.

During this phase, suppliers will deliver the Analytical (including statistical model) and Clinical validation protocol that will be used in Phase 2.

The table below presents the expected outcomes for Phase 1 in more detail.

Expected outcomes				
Phase 1: Design of the oncNGS solution				
Objective:	Perform research to: 1. elaborate the solution design and determine the approach to be taken to develop the new solutions and 2. demonstrate the technical, financial and commercial feasibility of the proposed concepts and approach to meet the procurement need			
Output and results:				
Milestones and deliverables		**By when?**	**How?**	**Output and results**
Milestones:	**M1.1** Interim Solution design completed	M2	Sent by eMail	Notice to coordinator
	M1.2 Technical, Analytical and Clinical performance testing protocol designed	M2	Sent by eMail	Notice to coordinator
	M1.3 Solution design completed	~~M5~~ M4	Sent by eMail	Notice to coordinator
Deliverables:	**D1.1** Update pre-existing rights, including SoA.	~~M3~~ M2	Sent by eMail	Document
	D1.2 Design Project Abstracts	~~M3~~ M2	Sent by eMail	Document

	D1.3 Design Interim Outcome Report (including 1st draft analytical testing protocol, SoA, justification of the R&D and innovation)	~~M4~~ M2	Sent by eMail	Document
	D1.4 Design Final Outcome Report (including final analytical testing protocol addressing Monitoring Team recommendations)	~~M6~~ M4	Sent by eMail	Document
	D1.5 Solution Design Presentation	~~M6~~ M4	Meeting	Video, PPT presentation
	D1.6 Solution Design Publishable Summary	~~M6~~ M4	Sent by eMail	Document

The oncNGS solution should be designed to run using samples in compliance with the following characteristics and without further limitations:

1. Starting material is ctDNA/RNA obtained from blood/plasma,
2. The analyte concentration measurement should be determined by Qubit or equivalent method.
3. The level of degradation of the analyte should be determined by a bioanalyzer or equivalent method.

For the different ctDNA amounts, low-medium-high, the information on LOD (% VAF), sensitivity and specificity should be be described (as shown in te table below).

Amount of ctDNA	LOD (% VAF)	Sensitivity	Specificity
Low :3-5ng			
Medium: 5- 25ng			
High 25-50ng			

At the end of the phase 1, the following aspects should present:

- oncNGS solution Prototype description
- Business plan
- IP strategy
- IVD strategy
- Analytical Performance strategy (including statistical model)
- Clinical Performance strategy (including statistical model)
- Local deployment strategy
- Development plan
- Project Management Plan

3.3. Phase 2: Technical, analytical and clinical performance validation of the oncNGS complete solution prototype at the Supplier's site – overview and expected outcomes

Duration ~~14~~12 months. Estimated procurement budget: 2122066,12- EUR in total and 707355,37 EUR maximum per Supplier

The time schedule and the duration mentioned here is purely indicative and can be subject of changes/refinements. No rights may be derived from the proposed timeschedule.

The objective of Phase 2 is to get a working prototype, including protocols and full description of the different parts of the oncNGS solution (wetlab, bioinformatics, molecular interpretation and reporting) by the Suppliers. This includes the workflow of the different steps using different type of samples, technology sequencing platforms, architecture of data processing, used data bases, interoperability protocols and report template.

In this Phase, technical excellence description should be included together with the testing results for synthetic ctDNA samples and, at least, three real clinical samples (one from a patient with a solid tumour, one from a patient with an haemato malignance and one from a patient with an hereditary tumour). Analytical and clinical performance testing methodology and protocols used for the quality control of the outputs of the oncNGS solution should be described as well.

Finally, this phase will imply a presentation of the prototype and a real demonstration of the operational prototype during an on site visit by the monitoring team to the Supplier's facilities or by an organized virtual showroom in case of travel restrictions (e.g. due to corona).

Phase 2 covers thus the R&D to be performed to develop and assemble the different elements of the oncNGS solution into an integrated in-vitro diagnostic device. It covers R&D at the wetlab, bioinformatics analysis, result interpretation and reporting and the different parameters to be documented for each element and their required performance are listed below.

Thus, the Suppliers should by the end of Phase 2 be able to demonstrate to the Buyers Group that the prototype they have developed matches:

1°) the required scope as set by the Buyers Group (biomarkers detected, bioinformatics pipeline, variant calling, reporting)

2°) the overall level of analytical performance (Limit of detection (LOD), robustness, sensitivity, specificity, reproducibility) of their solution for the respective applications as requested by the buyers (SNV, indels, CNV, fusions)

- Note: the synthetic DNA/RNA samples used for analytical perfomrnce assessment (spiked human DNA/RNA, synthetic DNA/RNA,..) should be clearly described.

3°) the level of clinical performance (sensitivity, specificity, reproducibility) on priority level I biomarkers from at least three of the "core" Priority Level I gene (ALK, BRAF, EGFR, ERBB2, PIK3CA, RET, TP53) for at least the elementary applications (SNV, indels)

- For clinical performance assessment in this phase, at least three different clinical samples should be used: one sample from a patient with a solid tumour, one sample from a patient with an haemato malignance and one sample from a patient with an hereditary tumour. Variant sequence confirmation should be provided and described in detail .

The table below presents the expected outcomes for Phase 2 in more detail. These are indicative and to be further refined with more detailed information to be provided with the Phase 2 Call-off.

Expected outcomes	
Phase 2: Technical, analytical and clinical performance validation of the oncNGS complete solution prototype at the suppliers site	
Objective:	Develop, demonstrate and validate prototypes in lab conditions
Output and results:	

Milestones and deliverables		By when?	How?	Output and results
Milestones:	**M2.1** Prototyping completed	~~M3~~M4	Sent by eMail	Document
	M2.2 Demonstration protocol design to buyers	~~M3~~M4	Sent by eMail	Document
	M2.3 Prototyping and Analytical/clinical Testing Interim Outcome Report (including 1st draft demonstration protocol to buyers)	M8	Sent by eMail	Document
	M2.4 Analytical/clinical Testing* completed	~~M11~~M12	Sent by eMail	Document
Deliverables:	**D2.1** Update pre-existing rights	~~M6~~M4	Sent by eMail	Document
	D2.2 Prototyping and Analytical Testing protocols	~~M6~~M4	Sent by eMail	Document
	D2.3 Panels design architecture, in-silico analysis (% coverage, regions, etc..)	~~M6~~M4	Sent by eMail	Files/Documents
	D2.4 Prototyping, analytical, technical and clinical performance Interim Outcome Report (including 1st draft demonstration protocol)	~~M7~~M8	Sent by eMail	Document
	D2.5 Prototyping, analytical, technical and clinical Testing Final Outcome Report (including demonstration protocol at the pilot sites addressing Monitoring Team recommendations)	~~M14~~M12	Sent by eMail	Document
	D2.5 Prototyping, analytical, technical and clinical Testing Presentation	~~M14~~M12	Meeting (FtF or TC)	Video, PPT presentation
	D2.6 Prototyping, analytical, technical and clinical Testing Publishable Summary	~~M14~~M12	Sent by eMail	Document

* Analytical/clinical testing: buyers expect the full analytical performance assessment to be finalised in Phase 2 while for clinical performance assessment in Phase 2 only for a limited set of markers and variant types the clinical performance has to be demonstrated (see further details below)

Analytical and Clinical Performance assessment

Principle: demonstrate uniformity of wetlab/seq performance to allow inductive inference from limited assessment to general acceptance

- acceptable overall coverage % (technical performance)
- min. overall read depth - up to 3000x - 20000x
- Within-run/between run variability testing
- indicate sensitivity at different AF levels, considering the read depth applied

For the different ctDNA amounts, low-medium-high, the information on LOD (% VAF), sensitivity and specificity should be determined (Table below).

Amount of ctDNA	LOD (% VAF)	Sensitivity	Specificity
Low :3-5ng			
Medium: 5- 25ng			
High 25-50ng			

Marker-specific technical and analytical performance indicators:

oncNGS-INDI-001 The minimum oncNGS solution turn-around time (in days)

oncNGS -INDI-002: Limit of Detection of the oncNGS prototype solution (% VAF)
oncNGS -INDI-003: The maximum oncNGS prototype solution **analytical sensitivity (%)**
oncNGS -INDI-004: The maximum oncNGS prototype solution **analytical specificity (%)**
oncNGS -INDI-005: The maximum **analytical accuracy (%)**
oncNGS -INDI-006: **Measuring interval** for the oncNGS solution (interval in %VAF),
oncNGS -INDI-007: **Limit of Quantifiaction** of the oncNGS prototype solution (% VAF)
oncNGS -INDI-010: The maximum oncNGS prototype solution **repeatability index** (%)
oncNGS -INDI-011: The maximum oncNGS prototype solution **reproducibility index** (%)
oncNGS -INDI-012: Interference substances. Description of all main interferences substances that could be present in the matrix of the sample.

3.4. Phase 3: Development and testing – overview and expected outcomes

Duration ~~13~~15 months. Estimated procurement budget: 4244132,23 EUR in total and 2122066,12 EUR maximum per Supplier

The time schedule and the duration mentioned here is purely indicative and can be subject of changes/refinements. No rights may be derived from the proposed timeschedule.

The objective of Phase 3 is to get a working prototype with real clinical samples and in a clinical setting that constitutes the pilot site, including protocols, personnel capacitation, and analytical and technical performance evaluation of the different parts of the oncNGS solution (wetlab, bioinformatics, molecular interpretation and reporting) provided by the Suppliers. This includes the workflow of the different steps using different type of samples, technology-sequencing platforms, architecture of data processing, used data bases, interoperability protocols, report template.

Expected Phase 3 results:
At the end of the prototyping within Phase 2, two Suppliers will be selected for PCP Phase 3, the development and testing. They have to have successfully completed the previous phase, and will be selected and funded to do a prototype testing phase.

Phase 3 is thus basically dedicated only to clinical performance assessment and covers further in-house R&D at the supplier's side to document the level of clinical performance for:

1°) all requested applications (SNP, indels, CNV, TMB, MSI, fusions, amplifications …) for all the "core" Priority Level I biomarkers

2°) the elementary applications (SNV, indels) for at least 5 priority Level II biomarkers

In addition, the suppliers will be requested to transfer their prototype at the buyers'site in order to assess the feasibility of deployment of their prototype in a real-life environment. The buyers will then perform analysis on a set of their samples in order to evaluate the local implemenatation and performance of the Suppliers' oncNGS protype(s).
Each pilot site commits to test at least 25 (max 50) real clinical samples at their premises with primarily focus on Priority Level I biomarkers. Each oncNGS solutions will be tested in at least four pilot sites. This means that minimaly 100 (max 200) clinical samples will be tested on each solution. All samples will have had prior profiling on the tumour biopsy. In case a gold standard for LB is available at the time of analysis, buyers could foresee to perform this analysis if technically feasible (amount of material available) and logistically realistic (accreditation, cost, time).

During this Phase, it is intended to verify and compare the full feature set and performance of each solution, in operational conditions, and provide meaningful feedback to the Suppliers for their prototype's continuous

development. It will also offer the opportunity to all Buyer Group members to interact with and test the various solutions.
In summary, at the end of phase 3, the buyers wish to obtain a Proof of Concept' for the suppliers' oncNGS prototype that reaches up to about Step 4 in the scheme on clinical evidence compilation for an in-vitro diagnosis test device.

These descriptions are indicative and will be further refined with more detailed information to be provided with the Phase 3 Call-off.

The table below presents the expected outcomes for Phase 3.

Expected outcomes				
Phase 3: Technical, analytical and clinical performance validation of the oncNGS solution prototype in the clinical samples in suppliers sites and real clinical settings Proof of concept and solution test				
Objective:	Prototype technical, analytical and clinical demonstration and validation with real samples Prototype deployment in the pilot sites. Technical, analytical and clinical demonstration and validation prototypes in clinical setting with real samples			
Output and results:				
Milestones and deliverables		**By when?**	**How?**	**Output and results**
Milestones:	**M3.1** Prototypes adaptation	M1	Sent by eMail	Document
	M3. 2 Protype Clinical performance (add.markers)	~~M3~~M5	Sent by eMail	Document
	M3.3 Prototype installation at buyers site	~~M6~~M8	Sent by eMail Installation at sites	Document
	M3.4 Completion Corrobation at buyers site	~~M14~~M15	Sent by eMail	Document
Deliverables:	**D3.1** Update pre-existing rights	M2	Sent by eMail	Document
	D3.2 Prototyping; analytical, technical and clinical performance study protocols on real samples	~~M2~~M3	Sent by eMail	Document
	D3.3 Analytical and cliinical performance interim report results on real samples	~~M5~~M7	Sent by eMail	Document
	D3.4 Transfer prototype to buyers, including reference sample run and analytical, technical and clinical Testing Outcome Report	~~M6~~M8	Sent by eMail	Document
	D3.5 Definition of the strategy to comply with EC-IVD	M8	Sent by eMail	Document
	D3.~~5~~6 Prototyping and clinical Testing at buyers site - Outcome Report (including addressing demonstration protocol at the pilot sites and Monitoring Team recommendations)	~~M13~~M15	Sent by eMail	Document
	D3.~~6~~7 Update pre-existing rights	~~M13~~M15	Sent by eMail	Document
	D3.~~7~~8 Prototyping and Analytical/Clinical Testing Publishable Summary	~~M13~~M15	Sent by eMail	Document
	D3.~~8~~9 Complete Prototyping and Analytical/clinical performance testing report with real samples (including corroboration on pilot sites)	~~M13~~M15	Sent by eMail	Document

In the absence of a reference method, the parametrs that should be used for comparison of NGS clinical performances results by the approximation of the result to the NGS of the biopsy on solid tumors are shown in the Table 1.

Table 1*: Parameters for comparison of NGS clinical performance results, in the absence of a reference method by the approximation of the results to the NGS of the biopsy on solid tumor*

Biomarker X		orthogonal in-house test			
		Positive	Negative		
oncNGS solution	Positive	a	c	a/(a+c)%	PPV
	Negative	b	d	d/(b+d)%	NPV
		a/(a+b)%	d/(c+d)%		
		sensitivity	specificity		

Marker-specific technical, analytical and clinical performance parameters:

oncNGS-INDI-001 The minimum oncNGS solution **turn-around time** (in days))
oncNGS -INDI-002: **Limit of Detection** of the oncNGS prototype solution (% VAF)
oncNGS -INDI-008: The maximum oncNGS prototype solution relative **clinical sensitivity (%)**:
oncNGS -INDI-009: The maximum oncNGS prototype solution **clinical specificity (%)**:
oncNGS -INDI-005: The maximum **analytical accuracy (%)**
oncNGS -INDI-006: **Measuring interval** for the oncNGS solution (interval in %VAF),
oncNGS -INDI-007: **Limit of Quantifiaction** of the oncNGS prototype solution (% VAF)
oncNGS -INDI-010: The maximum oncNGS prototype solution **repeatability index** (%)
oncNGS -INDI-011: The maximum oncNGS prototype solution **reproducibility index** (%)
oncNGS -INDI-012: Interference substances. Description of all main interferences substances that could be present in the matrix of the sample.

3.5. Contracting approach

3.5.1. General contracting approach

The PCP Procedure shall follow the **Phased PCP model** described by the European PCP communication COM/2007/799 and the associated staff working document SEC/2007/1668, aiming at conducting R&D services up to the development of a limited volume of first products in the form of a test series.

The PCP will be implemented by means of a **Framework Agreement** with call-offs for **Specific Contracts** for each of the three (3) R&D phases:

Following the tendering stage, a Framework Agreement and a Specific Contract for **Phase 1** will be awarded to a minimum of four (4) Suppliers, if possible. In the case that the minimum amount of four (4) Suppliers could not be reached, the PCP Procedure may be canceled with application of Article 7.7 of this Request for Tenders.

The Framework Agreement will set all the framework conditions for the entire duration of the PCP (covering all the phases). There will be no renegotiation. The Framework Agreement will remain binding for the duration of all phases for which Suppliers remain in the PCP.

Suppliers that are awarded a Framework Agreement will also be awarded a Specific Contract for Phase 1 (evaluation of tenders for the Framework Agreement and Phase 1 are combined).

Tenderers are therefore asked not only to submit their detailed offer for Phase 1, but also to state their goals, and to outline their plans *(including price conditions)* for Phases 2 and 3 — thus giving specific details of the steps that would lead to commercial exploitation of the R&D results.

A **first Call-off** will be organised for **Phase 2**, with the aim of awarding a minimum of 3 phase 2 Specific Contracts. Only offers from Suppliers that successfully completed phase 1 will be eligible for phase 2. The procurers will validate the phase 2 prototypes.

A **second Call-off** will be organised for **Phase 3**, with the aim of awarding a minimum of 2 phase 3 Specific Contracts. Only offers from Suppliers that successfully completed phase 2 will be eligible for phase 3. Phase 3 field-testing is expected to take place at the buyers sites.

The offers for the next Phases (2 and 3) will be requested together with the end-of-phase deliverables for the previous Phase. However, the successful completion of the previous phase is evaluated before evaluating the offers for the next phase, to determine which offers are eligible to proceed to the evaluation of offers for the next phase.

Consequently, if a Supplier's phase results are not considered successful, its offer for the next phase will not be evaluated.

3.5.2. Eligibility for the next phase based on successful completion of the phase

Eligibility for participation in the next phase will be subject to *successful* completion of the current phase.
Successful completion of a phase will be assessed by the Evaluation Committee against the following requirements:

- if all milestones have been successfully completed
- if the R&D results meet the minimum functionality/performance requirements of the challenge description *(i.e. the minimum quality/efficiency improvements which the procurers set forward for the innovative solutions to achieve)*
- if the results of the R&D are considered to be promising
- …

'Promising' means:

- for phase 1, that the feasibility is convincing
- for phase 2, that the feasibility, the applicability in an operational setting and the potential impact of the product is convincing

Note: There is a difference between satisfactory completion (requirement for payment) and successful completion (prerequisite for passing from one phase to the next).

3.6. IPR issues

3.6.1. Ownership of results (foreground)

Each Supplier will keep ownership of the IPRs attached to the results they generate during the PCP implementation. The tendered price is expected to take this into account.

The ownership of the IPRs will be subject to the following:

- the Buyers Group has the right to:

- access results of the PCP, on a royalty-free basis, for their own use
- grant (or to require the Suppliers to grant) non-exclusive licences to third parties to exploit the results under Fair and Reasonable Conditions (without the right to sub-license)
- the Buyers Group has the right to require the Suppliers to transfer ownership of the IPRs if the Suppliers fail to comply with their obligation to commercially exploit the results (see below) or use the results to the detriment of the public interest (including security interests).

3.6.2. Commercial exploitation of results

Commercial exploitation is an important part of a Pre-Commercial Procurement process. The Suppliers need to make a credible plan to secure access for the Buyers Group to the solutions resulting from the R&D work done within the oncNGS Project.

It should be ensured that the Buyers Group can continue to benefit from the solutions after the project has ended. Therefore, Suppliers are expected to protect their Intellectual Property and commercially exploit the results of the Research and Development undertaken in the PCP within a period of four (4) years after the end of the Framework Agreement.

The business and commercialisation plan should explain the proposed approach to commercially exploit the results of the PCP and to bring a viable product or service to market.

The feasibility of the business plan to commercially exploit the R&D results will be assessed as part of the award criteria. Furthermore, the commercialisation plan will be part of the End-of-Phase reports of all three phases, as well as of the offers for the Phases 2 and 3.

In addition to the commercialisation activities performed by the suppliers, the oncNGS Buyers Group will promote the R&D results via its network of Preferred Partners, which consists of several other public procurers and related organisations. Preferred partners will be national and international policymakers in the health and other relevant sectors such as economy and research departments, national and/or international health professional organisations, national and international patient organisations, health technology and innovation agencies, etc. The Buyers Group will also actively disseminate the Suppliers' results at the end of each phase via relevant public and industry related events. It is the goal of the Buyers Group to help develop a working market for such types of solutions in order to ensure their usability and sustainability and to help to overcome possible, commonly defined deployment barriers.

3.6.3. Declaration of pre-existing rights (background)

The ownership of pre-existing rights will remain unchanged.
In order to be able to distinguish clearly between results and pre-existing rights (and to establish which pre-existing rights are held by whom):

- Tenderers are requested to list the pre-existing rights for their proposed solution in their Tenders, in order to allow IPR dependencies to be assessed.

- Suppliers will be requested to establish a list of pre-existing rights to be used before the start of the contract.

The Buyers Group does not hold any pre-existing rights relevant to the PCP contracts.

The Framework Agreement will contain a provision that describes in more detail the rights and obligations of the different parties regarding the pre-existing rights and results.

4. PARTIES

4.1. Procurers

This procurement relates to a joint PCP that will be carried out by the following **Lead Procurer**:

SCIENSANO (Sciensano), established in JULIETTE WYTSMANSTRAAT 14, ELSENE 1050, Belgium, VAT number: BE0693876830.

The **Lead Procurer** will be considered the Contracting Authority of the procedure and was appointed to coordinate and lead the joint PCP, to select the Tenderers, to sign and award the Framework Agreement and the Phase Contracts in the name and on behalf of the following buyers (together the **Buyers Group**):

ALLEANZA CONTRO IL CANCRO (ACC), established in VIA GIORGIO RIBOTTA 5, ROMA 00144, Italy, VAT number: IT09127781004,

INSTITUT CURIE (INSTITUT CURIE), established in rue d'Ulm 26, PARIS 75231, France, VAT number: FR32784257164,

INSTITUT CATALA D'ONCOLOGIA (ICO), established in AV GRAN VIA DE L'HOSPITALET 199-203, L'HOSPITALET DEL LLOBREGAT 08908, Spain, VAT number: ESQ5856383D,

INSTITUT JULES BORDET (IJB), established in RUE HEGER BORDET 1, BRUXELLES 1000, Belgium, VAT number: BE0257981101,

LUDWIG-MAXIMILIANS-UNIVERSITAET MUENCHEN (LMU MUENCHEN), established in GESCHWISTER SCHOLL PLATZ 1, MUENCHEN 80539, Germany, VAT number: DE811205325,

CHARITE – UNIVERSITAETSMEDIZIN BERLIN (Charite), established in Chariteplatz 1, BERLIN 10117, Germany, VAT number: DE228847810,

HOSPICES CIVILS DE LYON (HCL), established in QUE DES CELESTINS 3, LYON 69002, France,

The Lead Procurer is part of the Buyers Group.

In the PCP the Buyers Group is the decision-maker and drivers of the Request for Tenders challenge setting and key users of the PCP results. Each member of the Buyers Group has one representative and voting right. The Buyers Group will validate all key steps to be taken in the preparation of the request for Tenders, and in the performance of the 3 Phases of the PCP process.

Annex 1 provides the background of the Buyers Group in relation to for example their role with regard to the project are described.

4.2. Tenderers

4.2.1. Individual Tenderers

Participation in the tendering procedure is **open** on equal terms to **all types of economic operators, natural persons and legal entities from any country**, regardless of their geographic location, size or governance structure.

Tenders may be submitted by **autonomous investigators and entities**, individually or in collaboration with others. The latter can involve either submitting a **joint tender** or subcontracting, as provided below.

4.2.2. Consortia

A Consortium (a combination of entities) may submit a joint Tender. Any type of natural or legal person (including non-profit entities properly registered such as universities) shall be entitled to submit a Tender either individually or by way of an association or consortium comprising several Suppliers, set up temporarily for the purposes of the oncNGS PCP.

A joint Tender must specify the role, qualification and experience of each member of the consortium. A single authorized representative of the association or consortium, with sufficient powers to exercise the rights and comply with the obligations that arise from the oncNGS PCP procedure shall be appointed and be mandated as the Lead Tenderer (further named as Tenderer).

The Lead Tenderer shall sign the Tender and the contracts in the name and on behalf of all members, and shall be responsible for all aspects and execution of the contracts without prejudice to the existence of joint powers that they may grant for receiving and making payments of a significant amount.

All members of the consortium shall be jointly and separately bound to fulfil the terms of the contracts. The Lead Tenderer shall be mandated to act on behalf of the consortium for the purposes of the contracts and shall have the authority to bind the consortium. The composition of the consortium shall not be altered without the prior consent of the Lead Procurer. Any alteration in the composition of the consortium without the prior consent of the Lead Procurer may result in the termination of the contracts.

A consortium statement should be signed by all suppliers who have agreed to set up a team to participate jointly in the oncNGS procedure, and to form a temporary Consortium of Suppliers which will comply jointly with the purposes of the PCP procedure and with the contracts. This should provide a statement from the supplier declaring that it is aware of the provisions set out in the Tender Documents (in particular in relation to IPRs).

Contact details of the Lead Tenderers must be stated in Form A. The names, circumstances and participation of the members of the association or consortium should be properly described.

4.2.3. Subcontractors

A subcontractor is a third party which has entered into an agreement on business conditions with one or more beneficiaries, in order to carry out part of the work of the project without the direct supervision of the beneficiary and without a relationship of subordination.

Subcontracting is permitted in each phase of the oncNGS PCP procedure. No essential parts of the contracts can be subcontracted, nor the management of the PCP.

The Supplier shall state in the Tender Submission Form (Form A) which part of the PCP obligations and contract performance, if any, is intended to be subcontracted to other Suppliers. The Supplier shall describe its approach in selecting and managing its subcontractors. Also in this form, the Supplier will identify who the subcontractor(s) is/are and which services they will deliver in the project. The Supplier shall provide a statement from the subcontractor declaring that it is aware of the provisions set out in the Tender Documents, that it meets the qualification requirements for the subcontracted service, and that it has its resources at the Supplier's disposal for the full duration of the contract.

The Suppliers remain fully liable to the procurers for the performance of the contract. This is the reason why subcontracts must reflect the rules of the H2020 grant agreement, including as relates to the place of performance, the definition of R&D services, confidentiality, results and IPRs, the visibility of EU funding,

conflicts of interest, language, obligation to provide information and keep records, audits and checks by the EU, the processing of personal data, liability for damages and ethics and security requirements.

Furthermore, the Supplier undertakes not to subcontract more than a maximum of 50% of the services to any sub-contractors, *cf.* the provisions as set out in the Framework Agreement.

4.2.4. Replacement of a subcontractor

If, subsequently, the Supplier needs to change or add new subcontractors (Phases 1 through 3), these new subcontractors must provide a statement with the same content described in the above section and following the same form. Nevertheless, no change in subcontractor shall be possible if:

- It leads to IPR/confidentiality issues (i.e. if associated participants selected for Phase 1 decide to continue as subcontractor for another Supplier)
- It does not allow the Supplier to maintain the technical and financial capacity required

Notwithstanding the grant of any subcontract, the Supplier remains responsible to the Buyers Group for the performance and observance of all its obligations under the Framework Agreement and the Specific Contracts and for the consequences of any negligent acts of the subcontractors.

4.2.5. Replacement of a member of the Consortium

In the case a Consortium wants to change and/or remove and/or add a member to the Consortium. The Supplier (which consist of all the members of the Consortium) may request the Lead Procurer for an amendment of the Framework Agreement, whereby the composition of the Supplier will be changed accordingly.

In all cases the original members of the Consortium will be liable for the execution of the entire Contract vis-à-vis the Lead Procurer.

A member of the Consortium can not be removed or replaced in the following cases:

- It leads to IPR/confidentiality issues (i.e. if associated participants selected for Phase 1 decide to continue as a member/subcontractor for another Supplier);
- It does not allow the Supplier to maintain the technical and financial capacity required;
- The Consortium – as a Supplier – does not longer comply with the selection criteria as stated in this document;

A member of the Consortium can not be added in the following cases:

- It leads to IPR/confidentiality issues (i.e. if associated participants selected for Phase 1 decide to continue as a member/subcontractor for another Supplier);

5. TENDERING PROCEDURE

5.1. Content and format of Tenders

The general conditions of the Tender are presented in Tender Document 1.

Technical requirements are provided in the Annexes (e.g. Annex 2) and in Form E: Technical Offer.

Tender Document 2 contains the Framework Agreement for oncNGS PCP and Tender Document 3 is the Specific Contract.

More detailed information regarding Phases 2 and 3 will be provided at the Phase 2 and 3 Call-offs.

5.2. Submission of the Tender

All Tenderers must use the oncNGS Tender forms, which can be accessed along with all of the Tender Documents by following the instructions in the Contract Notice on TED and on BDA. The Tender documents are published on and can be downloaded from the oncNGS-website (http://oncngs.eu).

The Tender may only be sent **via the e-Tendering website** https://eten.publicprocurement.be/.

By submitting all or part of its Tender by electronic means, the tenderer accepts that the information generated via the system for receiving its tender is recorded.

The tender must reach the contracting authority by the hour and date as provided in the Contract Notice (Tender Closing Time).

More information can be found on the following website: http://www.publicprocurement.be or via the e-procurement helpdesk at: +32 (0)2 740 80 00.

Tenders may not be submitted on paper or via e-mail.

By submitting a tender, Tenderers unconditionally accept the content of this Request for Tender and the details of the procedure as described in the Tender Documents, and accept to be bound by the provisions thereof. The tenderer waives all other conditions.

A signed tender will be considered to constitute a firm, irrevocable, unchangeable and binding offer from the tenderer.

Each Supplier carries the sole responsibility for the accurate, timely and complete uploading of its unique and only tender. Tenders which are not compliant to the above-mentioned conditions will be regarded as irregular and will not be retained. The Supplier is by its Tender bound by a validity period of 180 calendar days, starting from the Tender Closing Time.

If a Tenderer has any objections in this respect, it must inform the Lead Procurer in writing within seven calendar days of receipt of these specifications, stating the reason. If this is not the case, the Tenderer shall be deemed not to have any objections.

If any contradictions, ambiguities, omissions and/or illegality, etc. are detected in this tender document, tenderers are requested to immediately inform the Lead Procurer in writing and in any event no later than the 10th calendar day prior to the Tender Closing Time.

Not receiving notification of any contradictions, ambiguities, omissions and/or illegality within the stated period shall be deemed to be the express confirmation by the tenderers that these specifications do not contain any contradictions, ambiguities, omissions and/or illegality.

If a Tenderer has any objections in this respect, it must inform the contracting authority in writing and by registered mail within seven calendar days of publication, stating the reason.

A Tenderer may only submit one tender. Every participant in a group of unincorporated economic operators shall be considered as a tenderer. As such, a tenderer cannot submit one tender individually and another tender as a member of a consortium.

Tenders must be submitted in PDF format. Visuals can be added in attachment at JPG or PNG. Attached publications like brochures and promotional material are allowed, but will not be taken into account as part of the evaluation.

If the Tender exceeds a page limit then all words and/or pages in excess of the specified limit may not be considered further. Suppliers will use a minimum font size of 10 and will respect the page limits if specified.

The Lead Procurer may request clarification or additional evidence or amplification of details provided. In accordance with the principle of equal treatment, no alterations to Tenders are to be sought or accepted through requests for clarifications. In case the provided clarification is found not compliant with what was requested, the Tender will be excluded from further evaluation.

Where it is stated that Suppliers are to comply with the administrative instructions, those that do not comply will be excluded from further participation in the Tender procedure. Tenders that do not comply with the selection and compliance criteria will automatically be rejected. The Lead Procurer's decision as to whether or not a Tender complies with these instructions will be final.

More specific information about the requirements for the Phase 2 and 3 Tenders will be provided in the Phase 2 and 3 Call-offs.

5.2.1. Signature of the Tender

The Tenderer shall sign its Tender and the submission report electronically via e-tendering with a **qualified electronic signature**.

This electronic signature must be provided by the **person or persons competent or authorized to bind the Tenderer.** Tenderers **must enclose with their tenders all documents providing the competence of the signatory(ies),** including:

- Extract form the articles of association (with an indication of. The relevant passages concerning the power of representation);
- Appointment decision(s) of the signatory (if applicable)
- Proxy(s) to represent the tenderer (if applicable)

5.2.2. Forms

In order to be eligible, Tenderers must submit the following documents and declarations as listed in the indicated order below:

Document	Content
Form A – General Tender Submission Form	Legal information and signatures of the consortium and subcontractors
Form B – Exclusion Criteria (declaration)	Evaluate the individual situation of a Tenderer
Form C – Selection Criteria	Determine whether a Tenderer has the financial, technical and professional capacity necessary to carry out and perform the work
Form D – Compliance Criteria (declaration)	Evaluate if the submitted Tender is compliant with the principles of PCP, public financing, place of performance, research integrity and security
Form E – Technical Offer	The main tender document, the description of execution
Form F – Financial Offer and Cost Breakdown	Description of financial offer covering Phases 1-3
Form G – Financial Offer Phase 1	Confirmation of the financial offer for Phase 1
Form H – Executive Summary	Summary of the solution for possible pre-evaluation

Responses to the questions in the Forms B (Exclusion Criteria), C (Selection Criteria), and D (Compliance Criteria) will be assessed as pass/fail. Only Tenderers achieving a "pass" for all criteria will be put forward for further evaluation.

5.2.3. Irregularities/non-compliancies

If a Tender contains a formal irregularity and/or non-substantial irregularities/non-compliancies, the Lead Procurer may have that irregularity / those irregularities / non-compliancies regularized before the award of the contract.

However, a late submitted Tender cannot be regularized.

6. EVALUATION OF TENDERS

Participation in the tendering procedure is **open** on equal terms to **all types of organizations from any country**, regardless of their geographic location, size or governace structure. The participants/Tenderers need however take into account that a majority of the contract has to be executed in a H2020-country.

Tenders may be submitted by a single entity or in collaboration with others. The latter can involve either submitting a joint tender or subcontracting, or a combination of the two approaches.

6.1. Overview

The process to award the Framework Agreements and the Specific Contracts is based on four main categories:

- The **exclusion criteria:** evaluate the individual situation of a Tenderer;
- The **selection criteria:** determine whether a Tenderer has the financial, technical and professional capacity necessary to carry out and perform the work;
- The **compliance criteria:** evaluate if the submitted Tender is compliant with the principles of PCP, public financing, place of performance, research integrity and security;
- The **award criteria:** award contracts to the best-ranked Tenders.

6.2. Exclusion criteria

The purpose of the exclusion criteria is to determine the situation of the Suppliers and subcontractors. The situation of the economic operator will be assessed based on responses to questions in Form B on a pass/fail basis.

A Supplier will be excluded from further participation in the oncNGS PCP if it, or any subcontractor on whose resources it relies upon in this procurement, does not meet one or several of the exclusion criteria unless proof of self cleaning.

The exclusion criteria are as follows:

EXCLUSION CRITERIA	REQUIRED EVIDENCE
Conflict of Interest	A declaration of honour stating the absence of Conflict of Interest, Bankruptcy and professional misconduct or Criminal offences
Criminal offences	
Bankryptcy and professional misconduct	

Suppliers must confirm, by signing a declaration of honour, that they are not subject to any of the exclusion criteria listed below.

Suppliers that do not comply with these criteria will be excluded.

6.2.1. Conflict of Interest (A)

Suppliers that are subject to a conflict of interest may be excluded. If there is a potential conflict of interest, Suppliers must immediately notify the lead procurer in writing.

A conflict of interest covers both personal and professional conflicts.

Personal conflicts are any situation where the impartial and objective evaluation of tenders and/or implementation of the contract is compromised for reasons relating to economic interests, political or national affinity, family, personal life (e.g. family of emotional ties) or any other shared interest.

Professional conflicts are any situation in which the Supplier's (previous or ongoing) professional activities affect the impartial and objective evaluation of tenders and/or implementation of the contract.

If an actual or potential conflict of interest arises at a later stage (i.e. during the implementation of the contract), the Supplier must contact the lead procurer, who is required to notify the EU and to take steps to rectify the situation. The EU may verify the measures taken and require additional information to be provided and/or further measures to be taken.

Suppliers shall - for each of the PCP phases - explicitly confirm that they are not subject to any of the exclusion criteria listed above and shall sign a declaration of honour stating the 'absence of a conflict of interest'.

See Declaration confirming the absence of any conflict of interest in Form B, Part B.

6.2.2. Criminal offences (B)

Suppliers must confirm, by signing a declaration of honour, that they are not subject to any of the exclusion criteria listed below, see Form B, Part A1:

- Criminal offences referred to in Article 2 of Council Framework Decision 2008/841/JHA of 24 October 2008 on combating organized crime;
- Corruption as defined in Article 3 of Council Act of 26 May 1997 preparation on the basis of Article K.3.2 c Treaty on European Union, the Convention on the fight against corruption involving officials of the European Communities or officials of Member States, and Article 3.1 Council Joint Action 98/742/JHA of 22 December 1998 adopted by the Council on the basis of Article K.3 of the Treaty on European Union, on corruption in the private sector;
- Fraud within the meaning of Article 1 of the Convention drawn up on the basis of Article K.3 of the Treaty on European Union for the Protection of the Communities' financial interests;
- Money laundering as defined in Article 1 of Council Directive 91/308/EEC of 10 June 1991 on measures to prevent the financial system for money laundering, amended by European Parliament and Council Directive 2001/97/EC;
- Terrorist offences or offences linked to terrorist activities as defined in Articles 1 and 3 of Council Framework Decision of 13 June 2002 on combating terrorism;
- Child labour and other forms of trafficking in human beings as defined in Article 2 of Directive 2011/36/EU of the European Parliament and of the Council of 5 April 2011 on preventing and combating trafficking in human beings and protecting its victims, and replacing Council Framework Decision 2002/629/JHA;
- Declared guilty of serious misrepresentation in supplying the information required under this Section or has not supplied such information.

If the Buyers Group becomes aware that a Supplier or a representative of the Supplier or subcontractor, under a judgment that has entered into final legal force has been sentenced for a criminal offence listed above, such Supplier or subcontractor, will be excluded from the oncNGS PCP unless proof of self cleaning.

6.2.3. Bankruptcy and professional misconduct (C)

A Supplier will be excluded unless proof of self cleaning from participation if they:

- Are bankrupt or being wound up, are under compulsory administration or are the subject of a composition or have indefinitely stopped its payments or are subject to a prohibition on conducting business;
- Are the subject of proceedings for a declaration of bankruptcy, for an order for compulsory winding up or administration by the court or composition or any other similar proceedings;
- Have been convicted by a judgement which has the force of res judicata for an offence relating to professional practive;
- Have been guilty of grave professional misconduct and the procurers can prove this;
- Have not fulfilled its obligations relating to social insurance charges or tax in its own country;
- In some material respect has failed to provide information requested or provided incorrect information required pursuant to this invitation to tender document.

6.3. Selection criteria

The purpose of the selection criteria is to determine whether a Supplier has the financial, economic, technical and professional capacity necessary to carry out and perform the work.

Each Supplier shall describe, present and confirm the required references and competences in Form C. Should there be any doubt as to any of these criteria, the Supplier may be requested to provide additional information.

These selection criteria will be evaluated on a pass/fail basis.

“Fail” means that the evidence given does not provide sufficient indication of the Supplier’s expertise, ability and/or equipment to meet the project’s objectives. Any Supplier that cannot meet all requirements in this Section will not be selected.

Selection criteria

The Tenderer can be selected if he proves the following:

- The Tenderer has relevant **experience** with performing R&D services:
    - The Tenderer provides a **list of references/previous-ongoing projects** which reflect his competence to provide R&D services or supplies related to the PCP objectives. These references can be provided based on previous projects of the Tenderer or one or several of the Consortium partners and/or subcontractors who will be working on the project.
        - The projects should be ongoing or completed in the past three years;
        - The total value (sum of projects) of the services/supplies provided in the forementioned projects must be at least 500.000,00 EUR.
        - In describing these reference projects the Tenderer will provide:
            - The name of the client(s) (with a description wheter it is public or private party);
            - The date of execution (and if applicable completion);
            - The value of the services/supplies provided by the Tenderer or subcontractor;
                - The value of the services/supplies provided by the Tenderer or subcontractor must be at least 200.000,00 EUR on **one** specific reference project;
                - The value of the services/supplies provided by the Tenderer or subcontractor must be proven by invoices or any other document;
            - Any kind of mean of evidence of the execution or ability to develop the most important services; at least one mean of evidence meeting these requirements must be provided (e.g.: declarations from customers, papers, patents, public financed R&D projects, released products, pilots)
            - The name(s) of the team that was involved in the project
    - The Tenderer has to prove his experience by providing the **CV's of key personnel and competences** which he deems necessary to complete the project.
        - The Tenderer must prove that he has at least three members that have over five (5) years of experience in R&D in the relevant field of the PCP.
        - The Tenderer shall use those members in the execution of the Framework Agreement and the Specific Contracts.

- The Tenderer possesses the necessary **economic and financial capacity** to perform the contract:
    - The Tenderer delivers a bank declaration proving evidence of sound financial standing;
    - The Tenderer has to prove that he has a professional risk indemnity Insurance which covers damages for at least 300.000,00 EUR;

If the Tenderer has used the capacity of another entity/s to prove its solvency, evidence of that, such entities will place at the Tenderer's disposal the necessary resources for the execution of the contract shall be provided by means of the declaration signed by all the parties.

⚠ Tenderers that do not comply with these criteria will be excluded.

6.4. Compliance criteria

The purpose of the compliance criteria is to determine whether the Tender is compliant with the principles of PCP, public financing, place of performance, research integrity and security.

These compliance criteria will be evaluated on a pass/fail basis, according to the responses to the questions in Form D. The offers for each phase will be evaluated against these criteria.

Suppliers and their Tenders must comply with all of the following compliance criteria (this also applies to the call-off for Phases 2 and 3):

- Compliance with the definition of R&D services
- Compatibility with other public financing
- Compliance with the requirements regarding the place of performance of the contract
- Compliance with ethics requirements
- Compliance with security requirements

⚠ Tenders that do not comply with these criteria will be excluded.

6.4.1. Compliance with the definition of R&D services

Tenders that go beyond the provision of R&D services will be excluded.

R&D covers fundamental research, industrial research and experimental development, as per the definition given in the EU R&D&I state aid framework[6]. It may include exploration and design of solutions and prototyping up to the original development of a limited volume of first products or services in the form of a test series. Original development of a first product or service may include limited production or supply in order to incorporate the results of field-testing and to demonstrate that the product or service is suitable for production or supply in quantity to acceptable quality standards.[7] R&D does not include quantity production or supply to establish commercial viability or to recover R&D costs. It also excludes commercial development activities such as incremental adaptations or routine or periodic changes to existing products, services, production lines, processes or other operations in progress, even if such changes may constitute improvements. The purchase of commercial volumes of products or services is not permitted.
The definition of services means that the value of the total amount of products covered by the contract must be less than 50 % of the total value of the PCP framework agreement.

The following evidence is required:

[6] See Point 15 of the Commission Communication on a framework for state aid for research and development and innovation (C(2014) 3282).
[7] See Article XV(1)(e) WTO GPA 1994 and the Article XIII(1)(f) of the revised WTO GPA 2014.

- the financial part of the offer for the framework agreement must provide binding unit prices for all foreseeable items for the duration of the whole framework agreement
- the financial part of the offer for each phase must give a breakdown of the price for that phase in terms of units and unit prices for every type of item in the contract, distinguishing clearly the units and unit prices for items that concern products
- the offers for all 3 phases may include only items needed to address the challenge in question and to deliver the R&D services described in the request for tenders
- the offers for all 3 phases must offer services matching the R&D definition above
- the total value of products offered in phase 1 respectively phase 2 must be less than 50 % of the value of the phase 1 respectively phase 2 contract and the total value of products offered in phase 3 must be so that the total value of products offered in all phases (1,2 and 3) is less than 50% of the total value of the PCP framework agreement.

6.4.2. Compatibility with other public financing

Tenders that receive public funding from other sources will be excluded if this leads to double public financing or an accumulation of different types of public financing that is not permitted by EU legislation, *including EU state aid rules*.

6.4.3. Complance with requirements relating to the place of performance of the contract

Tenders will be excluded if they do not meet the following requirements relating to the place of performance of the contract:

- at least 51% of the total value of activities covered by each specific contract for PCP phase 1 and 2 must be performed in the EU Member States or in H2020 associated countries. The principal R&D staff working on each specific contract must be located in the EU Member States or H2020 associated countries.*

- at least 51% the total value of activities covered by the framework agreement *(i.e. the total value of the activities covered by phase 1 + the total value of the activities covered by phase 2 + the total value of the activities covered by phase 3)* must be performed in the EU Member States or H2020 associated countries. The principal R&D staff working on the PCP must be located in the EU Member States or H2020 associated countries.

The percentage is calculated as the part of the total monetary value of the contract that is allocated to activities performed in the EU Member States or in other countries associated to Horizon 2020. All activities covered by the contract are included in the calculation *(i.e. all R&D and operational activities that are needed to perform the R&D services, e.g. research, development, testing and certifying solutions)*. This includes all activities performed under the contract by Suppliers and, if applicable, their subcontractors.

The principal R&D staff are the main researchers, developers and testers responsible for leading the R&D activities covered by the contract.

The countries associated to Horizon 2020 are those listed as associated countries in the Funding & Tenders Portal Online Manual[8].

The following evidence is required:

- the financial part of the offer must provide binding unit prices for all foreseeable items for the duration of the whole framework agreement and give a breakdown of the price for the current phase in terms of units and unit prices *(hours and unit price per hour)*, for every type of item in the contract *(e.g. junior and senior researchers)*
- a list of staff working on the Specific Contract *(including for subcontractors)*, indicating clearly their role in performing the contract *(i.e. whether they are principal R&D staff or not)* and the location *(country)* where they will carry out their tasks under the contract

8 List of H2020 associated countries.

- a confirmation or declaration of honour that, where certain activities forming part of the contract are subcontracted, subcontractors will be required to comply with the place of performance obligation to ensure that the minimum percentage of the total amount of activities that has to be performed in the EU Member States or in countries participating in Horizon 2020 is respected.

6.4.4. Ethics and research integrity

Tenders will be excluded if they:

- do not comply with the following rules:
  - ethical principles *(including the highest standards of research integrity, notably as set out in the European Code of Conduct for Research Integrity[9], and, in particular, avoiding fabrication, falsification, plagiarism and other research misconduct)*
  - applicable international, EU and national law
- include plans to carry out activities in a country outside the EU if they are prohibited in all Member States or plans to destroy human embryos

- include activities whose aim is to:
  - carry out human cloning for reproductive purposes
  - modify the genetic heritage of human beings in such a way as could make such changes heritable (with the exception of research relating to cancer treatment of the gonads)
  - create human embryos solely for the purpose of research or for the purpose of stem cell procurement, *including by means of somatic cell nuclear transfer*
- include activities that do not focus exclusively on civil applications

If the tender involves activities that raise ethical issues, the tenderer must submit an ethics self-assessment that:

- describes how the tender meets the legal and ethical requirements of the country or countries where the tasks raising ethical issues are to be carried out
- explains in detail how the tenderer intends to address the ethical issues identified, in particular as regards:
  - objectives *(e.g. dealing with vulnerable populations and dual-use goods[10])*
  - methodology *(e.g. involvement of children and related consent procedure and protection of data collected)*
  - the potential impact *(e.g. issues relating to the dual use of goods, environmental damage, stigmatisation of particular social groups, political or financial retaliation, benefit-sharing and malevolent use of results)*.

ⓘ For information on ethics issues, *see the guidance for EU grant beneficiaries How to complete your ethics self-assessment*.

⚠ Attention:
Call-offs for Phases 2 and 3 may request that this information be updated in the Offers submitted for these phases.

Before starting the particular task that raises ethical issues, Suppliers must provide a copy of:

- any ethics committee opinion required under national law; and
- any notification or authorisation for activities raising ethical issues required under national law.

The Framework Agreement contains a provision on ethics.

[9] The European Code of Conduct for Research Integrity of ALLEA (All European Academies).
[10] See Article 2(1) EU Export Control Regulation No 428/2009.

6.5. Award Criteria

The oncNGS buyer's group do not expect tenderers to already have all these features in place when submitting their tender; this work is part of the R&D process. In the Technical Offer (via Form E), Suppliers need to make clear how they intend to achieve the must haves and (if any) how they will implement the nice to haves. These explanations will be appraised by the Evaluation Committee, assisted by a panel of external experts.

The evaluation will be assessed based on the following criteria:

~~Price~~

1- Technical feasibility

Elements to assess:

- Technical excellence
    - Description of the **background** the R&D will be based upon (current technology the Tenderers have access to and will be used as basis for the proposed R&D, specifying the actual gene panels and the analytical and clinical performance indicators (from oncNGS-INDI-001 to oncNGS-INDI-012) they reach with the specified gene panels
    - Analysis of the **state of the art** (existing out of shell solutions and the ongoing developments) for the needs/goals described in the oncNGS Challenge Brief.
    - Description of the **overall proposed solution** addressing oncNGS Challenge and how far it goes beyond the current state of the art (including the use of novel algorithms, concepts, approaches, methodologies, tools or technologies, advances in generic approaches for capturing, transmitting, storing, retrieving, manipulating or displaying information, image processing, data management and presentation, intelligent systems, secure systems and interoperable systems) and explanation of the offered research and development (R&D) services with regard to the CB and according to the OECD Frascati Manual standard definition mentioned, 2015 Edition, as well as to the definition provided by Article 2.1 (22) of new Directive 2014/24/EC.
    - Explanation on how the **MUST HAVE specifications and requirements** are **addressed and assessed** along the three contract phases taking into consideration the background the Tenderer has access to, including:
        - the *Level I genes of both the Pan-cancer oncNGS LB panel and Hemato and Lymphoma oncNGS LB panel* (if the Tenderer strategy is proposing to omit any Level I genes from the panels, a clear argumentation shall be given)
        - *the description of the clinical performance assessment to be carried out in Phase 3 for the core Level I genes ~~of the Pan-cancer oncNGS LB panel~~ (identified by a '*' in the Challenge Brief)*
        - all MUST HAVE *GENERAL DESCRIPTION, WETLAB, BIOINFORMATICS, MOLECULAR INTERPRETATION, REPORT* requirements,
        - the values of the *Analytical and Clinical Performance Indicators* (from oncNGS-INDI-001 to oncNGS-INDI-012) the Tenderer commits to achieve and prove during Phase 3
        - ~~and the values of the *User Experience Performance Indicators* (from oncNGS-INDI-013 to oncNGS-INDI-016) the Tenderer commits to achieve and prove during Phase 3~~

Tenderers may vary the offered values of the Performance Indicators (from oncNGS-INDI-001 to oncNGS-INDI-~~016~~012) across the different phases, so that they can always improve them but they cannot worsen them.

- (in case the Tenderer commits to address ~~one or more~~ NICE TO HAVE ~~requirements)~~ *Level II genes of both the Pan-cancer oncNGS LB panel and Hemato and Lymphoma oncNGS LB panel*)
  - Explanation on how the ~~NICE TO HAVE specifications and requirements~~"***Level II genes*** *of both the Pan-cancer oncNGS LB panel and Hemato and Lymphoma oncNGS LB panel*" are **addressed and assessed** along the three contract phases taking into consideration the background the Tenderer has access to, including:
    - the coverage of the *Level II genes of both the Pan-cancer oncNGS LB panel and Hemato and Lymphoma oncNGS LB panel*
    - *the description of the clinical performance assessment to be carried out in Phase 3 for the set of included Level II genes ~~of the Pan-cancer oncNGS LB panel (identified by a '*' in the Challenge Brief)~~*
  - ~~the two NICE TO HAVE requirements (either OUTCOME.04 or WETLAB.USE.AV.01 or both)~~
    - the values of the *Analytical and Clinical Performance Indicators* (from oncNGS-INDI-001 to oncNGS-INDI-012) the Tenderer commits to achieve and prove during Phase 3 in case ~~NICE TO HAVE requirements~~of *Level II genes of both the Pan-cancer oncNGS LB panel and Hemato and Lymphoma oncNGS LB panel* are addressed
  - ~~and the values of the *User Experience Performance Indicators* (from oncNGS-INDI-013 to oncNGS-INDI-016) the Tenderer commits to achieve and prove during Phase 3 in case NICE TO HAVE requirements are addressed~~

Tenderers may vary the offered values of the Performance Indicators (from oncNGS-INDI-001 to oncNGS-INDI-~~016~~012) across the different phases, so that they can always improve them but they cannot worsen them.

- (in case the Tenderer commits to address **one or more remaining NICE TO HAVE requirements** (WETLAB.USE.PERF.05, WETLAB.USE.UF.01, WETLAB.USE.UF.02, WETLAB.USE.UF.03, WETLAB.USE.UF.05, WETLAB.USE.UF.06, SUST.02, SUST.05, OUTCOME.02, OUTCOME.04, WETLAB.USE.AV.01, BIOINFOR.USE.FUNCT.03, BIOINFOR.USE.FUNCT.04, BIOINFOR.USE.UF.01 and MOLECBIO.USE.OUT.01))
  - Explanation on how the NICE TO HAVE specifications and requirements the Tenderer commits to address are addressed and assessed along the three contract phases taking into consideration the background the Tenderer has access to

- **Development plan**
  - Description of the technological development plan covering the full PCP procedure from Phase 1 to Phase 3, deliverables, milestones and project schedule (including the assessment of ~~User experience~~the Technical, analytical and clinical Performance indicators (from oncNGS-INDI-012 to oncNGS-INDI-016)).
  - Identification and management of technological risks (for example: selection of a technology that later is identified as limiting to the achievement of given requirements and the mitigation methodology applied during subsequent solutions explorations and prototyping development phases aimed to reduce gradually the risk of the technological failure)

2- Business Case Alignment

Elements to assess:

- Description of the **compliancy with the regulations and standards** identified in the Challenge Brief and any additional one identified by the Tenderer and considered relevant, as the:
    - Guideline on good pharmacogenomic practice
    - Genomic sampling and management of genomic data
    - ~~EC IVD compliance~~
- Description of the envisioned **business plan** (including marketing & sales plans) that explains the proposed approach to commercially exploit the results of the PCP and to bring a viable product or service onto the market (e.g.: target markets and customers, pricing strategy, partnerships, commercial alliances, distribution)
- Analysis of the identified **exploitability costs** (Freedom to Operate (FTO) and IPR strategy, plan to protect the resulting technologies, third parties dependencies, patents, licenses, maintenance cost, sales, internationalisation, clinical validation of the solution, certification in the target geographical markets, scale up production costs).

3- Quality and efficiency of the implementation

Elements to assess:

- Description of the **Ethics protocol**: by answering to the question "Does this tender involve ethical issues? (YES/NO)" with an ethics self-assessment, that explains how the ethical issues will be addressed across the three contract phases
- Description of the **Security issue protocol**: by answering to the question: "Does this tender involve: activities or results that may raise security issues and/or EU-classified information as background or results? (YES/NO)" (See Decision 2015/444/EC, Euratom on the provisions on security of EU-classified information) with a security self-assessment, that explains how EU, national and international law on dual-use goods or dangerous materials and substances will be addressed, in case the tender involves activities or results that may raise security issues and/or EU-classified information as background or results
- Description of **Quality** plan across the three contract phases, with special reference to the verification and validation of the proposed technology, the work planning, personal and material resources, and the identification and management of logistic and legal aspects, as well as:
    - Description of the **analysis of the research and development costs structure** of the proposed solution, comparing the allocations of the different types of expenditures and investments (e.g.: like comparing the percentage of human resource costs with the percentage of the subcontracting costs or comparing the percentage of the total direct costs with the percentage of the indirect costs or comparing the percentage of the total expenditures with the percentage of the investments the Tenderer is planning to do according to its offer) **and of the financing plan** of the proposed R&D services (if any)
    - Description of the **Risk management plan** (including oncNGS PCP contracts delivery, clinical, market/business and regulatory risks (the technological risks are addressed within the Technical excellence and feasibility criteria)

4- Planning for valuing the benefits for procurers and soundness of the approach to integrate with procurer systems

- Description on how the Tenderer proposes to get ready to future value-based oncNGS public procurements of innovation researching, developing and assessing across the three phases the proposed solution to contribute to different factors, as: following clinical response and inspiring adaptive therapies at each (chemo)therapy cycle; more agile decision making process; boosting International collaboration; increasing experience and knowledge of healthcare professionals; applicability or external validity of the studies available at the national/European health and social care systems; boosting healthcare professionals involvement in design process for future collaboration in R&D.

5- Price

The complete model of the award criteria and subcriteria, the maximum scores and the weight of each (sub)criterion can be found in Annex 5.

⚠ Attention:
Additional sub-criteria may be added or sub-criteria may be deleted for the Call-offs for Phases 2 and 3, as a way of making the award criteria more precise or consistent at that stage, provided that they do not substantially change the existing main criteria.
Should there be any doubt as to any of these criteria, Tenderers may be requested to provide additional information.

⚠ Attention:
In the case that two or more Tenderers/Suppliers are given the same amount of points (*ex aequo*), the ranking will be determined based on the price. The Tenderer/Supplier with the lower price will be ranked higher than the other.

6.6. Evaluation procedure: Opening of tenders & evaluation

6.6.1. Opening of tenders

Tender submission takes place electronically. The Tenders will be opened after the Tender Closing Time. Tenderers cannot be present.

For the opening of the Tenders, the Lead Procurer will appoint **an Administrative Evaluation Committee**.

The Administrative Evaluation Committee will be in charge of opening the Tenders and checking their general administrative compliance with the conditions on the content and format of the Tender.

The Lead Procurer will receive the proposals filed before the corresponding deadline in each phase of the oncNGS PCP Procedure, opening them in the term described in this Request for Tenders, as well as in the Specific Contract call-offs.

A report is compiled of this opening session. This report contains all the information about the opening. All submitted Tenders are automatically included in the report.

The report is then signed by at least two representatives of the Administrative Evaluation Committee.

Tenders not complying with the formal and procedural requirements will be excluded from the Tender evaluation.

6.6.2. Examination of the tender

At the request of the Lead Procurer, the Tenderer must, before the contract is awarded, provide all the information necessary for the examination of prices.

If, during the examination of the tender by the Lead Procurer, it is ascertained that the tenderer has added conditions which make it unclear whether the tenderer unreservedly accepts the conditions of the contract documents, the Lead Procurer reserves the right to reject the tender as substantially irregular and therefore invalid.

The Lead Procurer shall correct calculation errors and purely substantive errors in tenders without being liable for undetected errors. To this end, the Lead Procurer may ask the tenderer to clarify or supplement the scope of its tender, without altering it, within a time limit which it shall specify, in order to ascertain the Tenderer's actual intention.

6.6.3. Evaluation process in Phase 1

The evaluation process in Phase 1 will be conducted as follows:

Step 1 – Checking whether the exclusion criteria apply to the tenderer (pass/fail; based on Form B)
Step 2 — For tenderers passing Step 1, assessing whether the tenderer has the capacities necessary to perform the contract, on the basis of the selection criteria (based on Form C)
Step 3 — For tenderers passing Step 2, evaluating the tender based on the compliance criteria (pass/fail; based on Form D)
Step 4 — For tenders passing Step 3, evaluating the Tender based on the weighted award criteria by the Evaluation Committee (Technical Offer, Form E).

Members of the Evaluation Committee will assess all Tenders. Based on the evaluators' assessments, which are all equally weighted, a ranking of the Tenders will be made. The more points a Tender scores in total, the higher it is ranked. In the case that two or more Tenderers/Suppliers are given the same amount of points (*ex aequo*), the ranking will be determined based on the price. The Tenderer/Supplier with the lower price will be ranked higher than the other.

The Buyers Group holds the right to replace evaluators during the project provided that the replacement evaluator has the necessary skills and represents the same member of the Buyers Group.
The Buyers Group have the right to ask external experts with specific expertise on (elements of) the challenges for support.

6.6.4. Evaluation of Phases 2 and 3

The Tenders will be evaluated on the weighted award criteria (Technical Offer, Form E).

The Form E for Phases 2 and 3 will be published in the call-offs of those Phases.

The criteria for evaluating the tenders in Phases 2 and 3 are shown in the award criteria tables in this document and elaborated in Annex. The method for evaluating the tenders in Phases 2 and 3 will be the same as the method used in evaluating the original tenders as set out in this chapter, but may be elaborated or developed in further detail within those frames. The weighting of each award criterion may differ from the initial weight in Phase 1 or Phase 2.

For Phase 2 and Phase 3, the composition of the Evaluation Committee and evaluation process up to the award decision will, as much as possible, remain the same as for Phase 1. Nonetheless, the evaluation process may be described in more detail in the Call-offs of Phase 2 and 3.

6.6.5. End of Phases evaluation

Solutions will be evaluated in a non-discriminatory and transparent manner. In order to achieve this, the oncNGS project structure has foreseen an Evaluation Committee of the Buyers Group.

The Buyers Group will evaluate the technical and non-technical milestones and deliverables comprised in the End of Phase Reports. All Milestones and Deliverables will be scored according to the stipulations in the Tender Documents, and the Scoring Model for the Award Criteria and end of Phases' Evaluation in Annex 5.

The weights for the evaluation of the Phase 1 are the same as those of the Contract Awarding. The weights in Phase 2 and Phase 3 will be determined in the Call-offs.

The End-of-Phase evaluation is intended to assess and score the developed solutions. The End-of-Phase evaluation will decide upon the Satisfactory and/or Successful completion of the Phase. A consolidated End-of-Phase Evaluation Report and a final Supplier ranking will be approved by the Steering Committee and will be delivered to the European Commission.

The oncNGS consortium will provide the end of Phase templates to all selected Suppliers within 1 month after the start of each phase. These elaborate on the Specific Deliverables and Evaluation of phases. They provide guidelines to the Suppliers in order to prepare for a successful delivery of the Phase Results and the consequent Evaluation process.

All competing Suppliers will receive the Call-off for the next phase and are expected to provide an offer based on these call-off documents as a part of the End-of-Phase report. However, the successful completion of the phase, including the final report validation and the solution approval, is a prerequisite to have your tender for the next phase evaluated.

Payments corresponding to each PCP phase will be subject to the satisfactory completion of the deliverables and milestones for that phase. Satisfactory completion will be assessed by the Evaluation Committee. They will take the final decision on the acceptance or rejection of the milestones/deliverables/tests. Satisfactory completion in each of the phases does not mean successful completion.

7. MISCELLANIOUS

7.1. Language

All communication (relating to either the tender procedure or the implementation of the contract) must be carried out in English, French or Dutch.

Tenders as well as offers for Phase 2 and 3 call-offs must be submitted in English.

The Tenderer can also opt to submit the tender/offer in Dutch and/or French. In that case the tenderer also provides an English translation which will be the version that will be examined. In the case a tenderer does not provide an English translation, the Tender will be not compliant.

Deliverables must be submitted in English.

7.2. Unauthorized communication – Questions

The Q&A from the open market consultation can be found on http://oncngs.eu/.

For further questions, you may contact the lead procurer via e-mail and via the forum of e-Procurement.

Questions may be asked in English, Dutch and French.

Questions can be asked until ten days before the tender close.

If answering the question in question from a particular tenderer to all tenderers would have the consequence that a proposed solution or confidential information from the author of the question would be communicated to all tenderers, the contracting authority will communicate the answer to the question only to the questioner.

The summary of all questions and answers will be presented in an anonymised Q&A document that will be published on http://oncngs.eu in English (a version in Dutch and/or French can be made available on request) (the final version of the Q&A will be published at least seven days before the tender close).

For Phases 2 and 3, the answers will not be published, but distributed to all Suppliers that successfully completed the previous Phase.

⚠ **Attention:** All other contacts (or attempted contacts) can be considered unauthorised and may lead to the exclusion of your Tender.

7.3. Contract implementation

Successful Tenderers will be requested to sign both a Framework Agreement and Specific Contracts for Phases 1, and if awarded Phases 2 and 3.

7.3.1. Monitoring

During each Phase, contract implementation will be monitored periodically and reviewed against the expected outcomes *(milestones, deliverables and output or results)* for the Phase.

Each Supplier will be assigned a main contact person (their Supervisor).

There will be regular monitoring meetings between the Supplier and the Supervisor. The Supervisor will receive the support of a Monitoring Team if needed with the necessary expertise. Each meeting or visit will follow the same evaluation criteria and procedures.

The Supervisor will provide regular feedback to Suppliers after meetings or visits. Detailed information on the role of the Supervisor will be provided after the awarding of the contract.

7.3.2. Payments based on satisfactory completion of milestones and deliverables of the phase

Payments corresponding to each PCP phase will be subject to the *satisfactory* completion of the deliverables and milestones for that phase.
Satisfactory completion will be assessed by an Evaluation Committee.

Satisfactory completion will be assessed according to the following requirements:

- if the work corresponding to that milestone / deliverable has been carried out
- if a reasonable minimum quality has been delivered
- if the reports have been submitted on time
- if the monies have been allocated to the planned objectives
- if the monies have been allocated and the work has been carried out according to the compliance criteria (place of performance, public funding and R&D definition criteria)

and

- if the work has been carried out in compliance with the provisions of the contract *(including in particular verification if the Supplier has duly protected and managed IPRs generated in the respective phase)*.

'Reasonable minimum quality' of a report means that:

- the report can be read by somebody who is familiar with the topic, but not an expert
- the report gives insight in the tasks performed in and the results
- the report is made using the end of phase report form or (if applicable) the milestone report form and the requirements of this form have been met
- …

'Reasonable minimum quality' of a demonstration (for phase 2 or 3) means:

- the demonstration can be understood by somebody who is familiar with the topic, but not an expert (for instance, somebody with operational but not technical knowledge)
- the demonstration shows how the innovation works, how it can be used and (if applicable) how it is operated and maintained
- the demonstration is accessible to parties appointed by the procurers, unless these are direct competitors of the Supplier
- …

Satisfactory completion in each of the phases does not mean successful completion.

The assessment will consider the efforts made by Suppliers to take into account the feedback from the supervisor or the monitoring team. The Lead Procurer will approve or reject the submitted deliverables as 'satisfactory' within 30 calendar days of their submission.

Where the Evaluation Committee judges the completion of deliverables or milestones to be unsatisfactory, the Lead Procurer may decide to reduce or withdraw payments for that deliverable and/or may terminate the Contract.

Invoices must be submitted to the Lead Procurer
Suppliers' invoices must provide:

- a **price breakdown** showing the price for R&D services and the price for supplies of products (in order to demonstrate compliance with the definition of R&D in compliance criterion A)
- a **price breakdown** showing the location or country in which the different categories of activities were performed *(e.g. x hours of senior researchers in country L at y euro/hour, a hours of junior developers in country M at b euro/hour)* (in order to demonstrate compliance with the requirement relating to the place of performance in compliance criterion C).

7.3.3. Payment schedule

oncNGS will adopt the following general payment schedule:

- A 25% upfront payment at the start of the phase calculated based on the proposed Tenderer's offer. Payment will be made to the tenderer within 30 days after the signature of the contract.
- Payment of the remaining 75% after completion of the R&D activities agreed on in the contract for the particular phase and approval by the Evaluation Committee of the reported R&D activities. Payment will be made to the tenderer within 30 days after the approval of the Evaluation Committee.
- Phase 2: A 40% upfront payment at the start of the phase calculated based on the proposed offer. The payment of the remaining 60% will be made after completion of the R&D activities agreed on in the contract for phase 2 and approval by the Evaluation Committee of the reported R&D activities.

- Phase 3: A 70% upfront payment at the start of the phase calculated based on the proposed offer. The payment of the remaining 30% will be made after completion of the R&D activities agreed on in the contract for phase 3 and approval by the Evaluation Committee of the reported R&D activities.

7.3.4. Finalisation of phase 3: Possible follow-up PPI procurements

Follow-up PPI procurements for a *limited* set of prototypes and/or test products developed during this PCP procurement *('limited follow-up PPIs')* may be awarded by negotiated procedure *(with invitation to at least 3 potential providers, including those that successfully completed this PCP)*.

Follow-up PPI procurements fora *commercial volume* of the innovative solutions developed in this PCP procurement will be subject to a new call for tenders.

7.4. Confidentiality

Tenderers must keep confidential any information obtained in the context of the tender procedure *(including EU-classified information[11])*.

Without prejudice to the information which shall be provided to the Tenderers regarding the decisions reached by the Lead Procurer concerning the assessment of their respective bids and the award of the Framework Agreement and the different Phase Contracts including the legal duty to state reasons, **the Lead Procurer shall in principle be bound by the following confidentiality obligations:**

All documentation, data, statistics, drawings, information, samples or material disclosed or furnished by the procurers to Tenderers during the course of this procedure:

1) are furnished for the sole purpose of replying to this PCP only;
2) may not be used, communicated, reproduced or published for any other purpose without the prior written permission of the Lead Procurer;
3) shall be treated as confidential by the Tenderer and by any third parties (including subcontractors) engaged or consulted by the Tenderer; and
4) must be returned immediately to the procurers upon cancellation or completion of this PCP if so required by the Lead Procurer.

In respect of any Trade Secrets, such as business plans, R&D maps or trajectories, customer lists etc. that it may receive from the Tenderer, the Lead Procurer undertakes actions to keep secret and strictly confidential and to ensure that all members of the Buyers' Group will be bound by the same confidentiality obligations towards the Tenderers/Supplier(s).

7.5. Data Protection

In the design of solutions and prototypes and/or the proof testing corresponding to different PCP Procedure Phases, the Suppliers shall take into account the obligations set out in the Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC.

Security measures applicable to health data under article 31 of such Regulation shall be particularly considered for the abovementioned purposes.

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[11] Commission Decision 2015/444/EC, Euratom of 13 March 2015 on the security rules for protecting EU-classified information.

7.6. Freedom of Information

The principle of public access to official documents means that public documents and records (with a few exceptions) should be made available to whoever asks for them. The principle is balanced by the obligation of professional secrecy, that stipulates that public authorities are obliged to protect business secrets of others, if disclosure may seriously harm their interests.

Without prejudice to the confidentiality rules as provided in the Framework Agreement, Tenderers are asked to consider if any of the information supplied by them in their Tender should not be disclosed because of its confidentiality or commercial sensitivity.

If Tenderers consider that certain information is not to be disclosed because of its confidentiality or commercial sensitivity, Tenderers must, when providing such information, clearly identify the specific sections of their Tender containing such information and specify the reasons for its confidentiality or commercial sensitivity.

Tenderers should however be aware that the Lead Procurer reserves the right to publish public summaries of the results of the PCP (Phase 1, 2 and 3), including information of the key R&D results attained and lessons learned by the Consortium. Details will not be disclosed that will harm the legitimate business interest of the Suppliers involved in the PCP or that would distort fair competition on the market. The Lead Procurer will also distribute and publish the following information about the Supplires that are awarded with contracts:

- The name of the organisation
- Their location
- The title of the Project
- A short summary of the Project

The above award information will be sent to the “contact information details” stated in the Tender. Experts, employees of the Lead Procurer and other persons contracted to aid in the tendering and award process will handle all information confidentially in compliance with the above procedure. Experts with a conflict of interest with one or more of the tenders will not assess these Tenders.

7.7. Ethical and research integrity

Tenderers will have to comply with the ethical principles (including the highest standards of research integrity, notably as set out in the European Code of Conduct for Research Integrity, and, in particular, avoiding fabrication, falsification, plagiarism and other research misconduct) and the applicable international, EU and national law.

The Framework Agreement and the specific Contract signed for each Phase will determine detail how the tenderer will address the ethical issues identified, in particular as regards the objectives, methodology and potential impact.

7.8. Applicable law

The entire PCP procedure will be carried out under Belgian law.

7.9. Antibribery

The Tenderers shall take the necessary measures to ensure that their employees and directors comply, at any moment during the oncNGS PCP Procedure, with all applicable local, regional, national an international anti-bribery laws and, specially, with the Belgian Criminal Code, as well as by the OECD Convention on Combating bribery of Foreign Public Officials of November 21, 1997.

7.10. Disclaimer

While the information given in this document is believed to be correct at the time of issue, the procurers will not accept any liability for its accuracy, adequacy or completeness, nor will any express or implied warranty be given.

This exclusion extends to liability in relation to any statement, opinion or conclusion contained or any omission from, this document and in respect of any other written or oral communication made available to any Tenderer.

In case of using electronic communication systems, particularly for the submission of bids, Tenderers assume all risks associated to such use, including the risk of that the system may become unavailable at any time without prior notice, or that e-mail notifications sent by the system may be blocked or delayed by causes beyond the control of the procurers.

The tenderers are obliged to examine all parts of the procurement and contract documents. In case contradictions or other ambiguities should arise from the review of the procurement and contract documents, the tenderers must inform the contracting authority thereof in writing.

7.11. Cancellation of the tender procedure

The procurers may, at any moment, cease to proceed with the tender procedure and cancel it.

The procurers reserve the right not to award any contracts at the end of the tender procedure.

The procurers are not liable for any expense or loss the tenderers may have incurred in preparing their offer.

7.12. Procedures for appeal

The Lead Procurer will incorporate a voluntary standstill period. The standstill period of not less than fifteen days for each phase begins from the award decision and notification.

Any legal claim, petition or application for judicial review with regard to the oncNGSPCP Procedure, whether before civil law courts or administrative courts, shall be made only before the Belgian courts. By submitting a Tender, the Tenderer accepts the exclusive jurisdiction of Belgian courts.

Decisions taken with regard to the selection of tenders may be challenged only by means of an administrative remedy before the Council of State.[12]

Wetenschapsstraat 34, 1040 Brussels
Tel: +32(0)2 234 96 11
Mail: info@raadvanstate.be
Website: www.raadvanstate.be

Tenderers are referred to the Framework Agreement on the subject of dispute resolution in the performance of a Framework Agreement.

[12] "Raad van State" in Dutch or "Conseil d'Etat" in French.

ANNEXES

Annex 1. – Description of the Buyers Group;
Annex 2. – Challenge brief;
Annex 3. – Technical Glossary;
Annex 4. – Time schedule for Phases 1-3;
Annex 5. – Award criteria and scoring model;
Annex 6. – Scoring model for the Price;
Annex 7. – Contract Monitoring;
Annex 8. – Whole Innovation Process Overview;
Annex 9. – End of Phase Reporting [sample]
Annex 10. – Project abstract for Phase 1 [sample]

Annex 1 – Description of the Buyers Group

Below a brief description of all byers, their relevant experience for the project and their particular interest in the PCP.

Who: National Institute of Public health

Role: Sciensano acts as the coordinator of the implementation of the Roadbook on NGS diagnostics in oncology, is the organizer of national EQA program and chair of the 'Commission on Personalised Medicine' (ComPerMed).
Interest: Sciensano is particularly interested in standardized testing and reporting guaranteeing high-quality NGS test performance for all patients and exploring a single procurement for complex NGS profiling in support of HCS sustainability

Who: Institut Jules Bordet is an OECI-accredited Comprehensive Cancer Center and the only multidisciplinary and integrated hospital in Belgium fully dedicated to patients with cancer.

Role: For more than 75 years, our teams have been offering patients leading-edge diagnostic and therapeutic strategies in the prevention, screening and active treatment of all types of cancer.
The Institut Bordet also carries out important research activities which every year lead to major discoveries, as well as providing high-level, specialized university training.

Interest: A key feature of the Institut Jules Bordet is the close integration of research and medical practice,which enables patients to take part in clinical studies of all the latest therapeutic modalities and to benefit as quickly as possible from the latest discoveries made in research laboratories. Numerous clinical research programs are conducted in cooperation with other cancer centers and national and international networks.

Who: Alliance Against Cancer (ACC), the largest Italian organization for cancer research, was established in 2002 by the Italian Ministry of Health as a network of six high standard institutes for comprehensive cancer

patient care and research (IRCCS). The network is currently composed of 28 IRCCS (Istituti di Ricovero e Cura a Carattere Scientifico), the Italian National Institute of Health, the Italian Association of Cancer Patients (AIMaC), the Italian Sarcoma Group and the National Centre of Oncological Hadrontherapy (CNAO).

Role: The primary aim of ACC is to promote the network among oncologic institutes pursuing mainly clinical and translational research in order to bring state of the art diagnostics and advanced therapeutics to patient care.

Interest: ACC is focusing on major cancer types as well as clinical research. The mainstream of the activities is the genomic characterization of tumours, which offers an enormous number of opportunities in clinical applications: ACC points to fortify and improve the role of high-quality personalized medicine in Italian oncology, generating a more efficient approach toward the patient in order to provide new and significant perspectives in cancer research and, more importantly, the swift application of the resulting knowledge to the diagnosis and therapy of cancer patients.

Who: The Institut Curie is composed of 1 cancer hospital and 1 research center located in 3 sites (Paris, Saint-Cloud and Orsay). Early phase clinical trials for adults are run within the Department of Drug Development and Innovation (D3i), which also manages the Molecular Tumor Board (MTB).

Role: The Institut Curie has been a pioneer in the field of precision medicine with the first randomized trial worldwide (SHIVA01) that evaluated the efficacy of matched targeted therapy based on a specific treatment algorithm, followed by the ongoing SHIVA02 trial (NCT03084757). IC has been labelled by the French National Cancer Institute (INCa) as a Comprehensive Cancer Center. The Institut Curie is highly involved in the SEQOIA platform, one of the two pioneer platforms that were selected at the national level in the context of the national program France Medecine Genomique 2025 that aim at developing high throughput sequencing in patients with cancer and rare diseases

Interest: The Genetic Molecular Platform of the Institut Curie has been granted by the INCa to perform next generation sequencing for clinical use. The MTB, launched in October 2014, aims at molecularly characterizing patient tumors in order to guide them to early phase clinical trials.

Who: As a Public Centre of Excellence, «Hospices Civils de Lyon» (HCL) make up the second-largest University Hospital Network in France. Today, HCL comprise 14 multidisciplinary or specialized establishments providing a diverse range of services.

Role: For over 200 years, as a network providing expertise in all disciplines – both medical and surgical – Hospices Civils de Lyon have offered a wide range of human, technical and logistical resources to ensure that they provide care, training, research, medical innovation as well as disease prevention and health education.

Interest: The HCL have an INCa labelled platform for the molecular diagnosis of tumours, including haematological malignancies. HCL are one of the biggest centre in Europe for the treatment of haematological malignancies, and especially for lymphomas, The network devotes itself daily to its mission: contributing towards the constant improvement of the health of the French and Europeans.

ICO
Institut Català d'Oncologia

Who: The **Catalan Institute of Oncology (ICO)** (www.iconcologia.net) is a public non-profit institute assigned to the Catalan Health Service (CatSalutAccording to the SCImago 2018 report, ICO-L'Hospitalet ranks percentile 18th in overall research and innovation at worldwide level and ranks in the 1st quartile at country level. The average annual number of publications between 2013 and 2017 is around 400.

Role: ICO's approach to the disease is comprehensive, combining, all in one organization, prevention, care, specialized training and research. ICO comprises five centres (L'Hospitalet, Badalona, Girona and Tarragona i Terres de l'Ebre) and provides cancer care for almost 45% of the adult population of Catalonia. Research and innovation is one of its main values.

Interest: ICO is a leader in cancer care in Catalonia, with a high international recognition. ICO is structured in 4 research programmes (Cancer Epidemiology, Hereditary Cancer, Translational Research/ProCURE Programme and Cancer Prevention and Control Program), and each program is fully equipped in order meet with the basic need of the investigators.

CHARITÉ
UNIVERSITÄTSMEDIZIN BERLIN

Who: Charité is one of the largest university hospitals in Europe. All of our clinical care, research and teaching is delivered by physicians and researchers of the highest international standard. Charité is internationally renowned for its excellence in teaching and training.

Role: The Charité oncology and haematology medical centre specialises in the treatment of leukaemia, lymphoma and solid tumours. For cancer diagnostics, the centre has the most modern, university-medical methods available. The treatment always takes place in close cooperation of all departments necessary to ensure best interdisciplinary care. The goal is to ensure an individual therapy for every patient. In particular, the latest methods of immunotherapy are used here.

Interest: Innovative capacity and responsible governance, for the benefit of patients and society - these are the central tenets behind all of Charité research endeavours. Committed to the highest standards of quality and sustainability, with a particular focus on the interface between basic and patient-oriented research, which seeks to foster interdisciplinary collaborations with both national and international partners.

Who: The Ludwig-Maximilians University (LMU) LMU is the leading teaching and research university in Germany, ranking 1st in Germany in the latest Times Higher Education World University Ranking. LMU is a distinguished beneficiary of the German excellence initiative, and has hosted in total more than 90 ERC grants.

Role: With more than 2.000 beds, the **University Hospital of Munich (LMU)** is a highly advanced hospital with 47 clinics, institutes and departments covering all fields of medicine. With its two campuses in Grosshadern and in the city centre, it is one of the largest hospitals in Europe

Interest: Special interest is on the molecular pathogenesis of leukemia and lymphoma as well as innovative treatment strategies including novel antibodies and molecular targeted approaches like inhibitors of the B-cell receptor pathway. Within that scope, LMU played a leading role in the establishment of the international standards of care for MCL patients.

Annex 2 – The oncNGS Challenge Brief

The main goal of the oncNGS PCP is to develop an integrated solution for diagnostic, predictive, prognostic and theranostic analysis of liquid biopsies from solid tumours (including appropriate haematological indications such as lymphoma) using NGS technology.

The challenge that oncNGS will address consists in providing: (1) efficient molecular DNA/RNA profiling of tumour-derived material in liquid biopsies by means of (2) pan-cancer tumour marker analysis kit including NGS analysis integrated with (3) an ICT decision support system including analytical test interpretation and reporting.

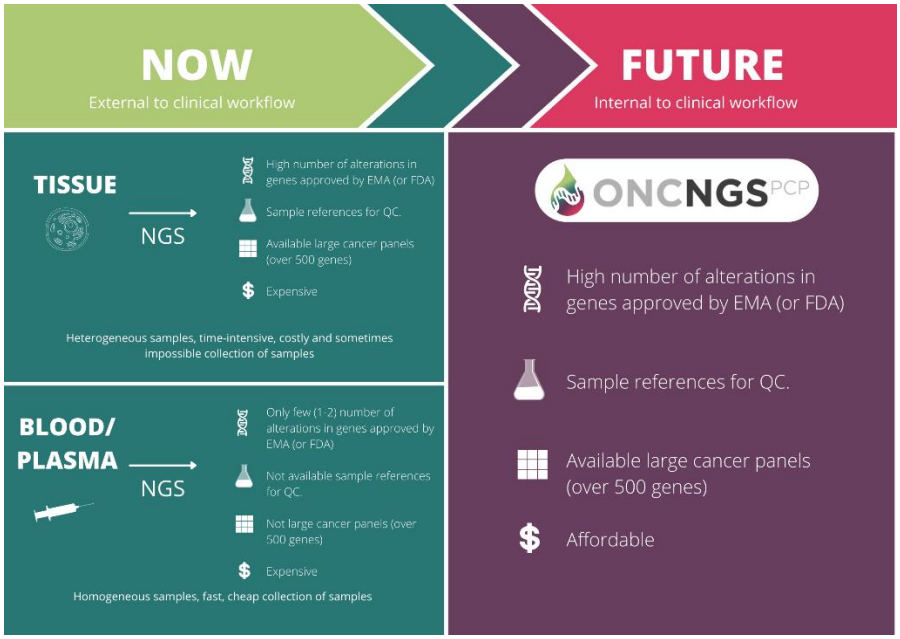


Figure 1: Present of the NGS in oncology and future of the NGS in oncology after oncNGS PCP

The oncNGS solution should be fastly performing, sustainable and user and environmental friendly. This implies that the total workflow turn-around time should not exceed 7 days, but also proposing the detailed manuals and eficace training procedures for end users. ~~It could be reasonably to predict~~oncNGS Buyers Group envisions that ~~the fruits~~NGS of ~~oncNGS may eventually lead to improvements, such as simply lower costs, even for~~ biopsies from tissue samples~~.~~ could benefit as well from the oncNGS results (e.g: increasing their affordability).

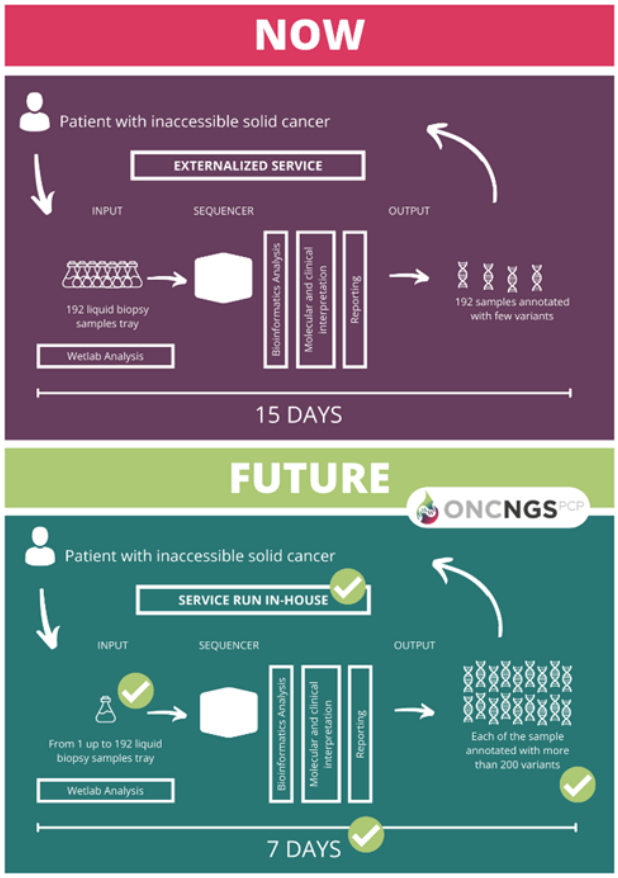


Figure 2: The present of the NGS in the oncology clinical workflow and its future after oncNGS PCP

The pre-analytical phase, consisting in isolation of DNA/RNA analyte from samples (blood/plasma) is out of scope of the oncNGS solution (Figure 2). OncNGS starts with the *wetlab* steps for preparation of the NGS analysis of purified DNA/RNA. The generated sequences are then bioinformatically compiled *(drylab*) and different types of variants are being identified using available public/private databases. All relevant variants are then integrated into a report that will be used by the clinicians in their interpretation and diagnosis of the tumor. Finally, the format of the reports of the oncNGS solution that allows the integration with the existing electronic health records (EHRs) of the buyers group should help to promote the benefits of patient-centered care.

The **oncNGS solution will be composed of the following parts**:

- **NGS kit,** including the of pan-cancer gene panel(s) for liquid biopsies.
- The **building blocks of the ICT solution** including the bioinformatics pipeline, the variant interpretation and the variant reporting.
- **Protocols** and **manuals** with the detailed guidelines for use of the oncNGS solution prototype.

The functional and non functional oncNGS specifications are further grouped into five differnts parts: clinical workflow, *wetlab* analysis, bioinformatics analysis, molecular & clinical interpretation and reporting (Figure 2).

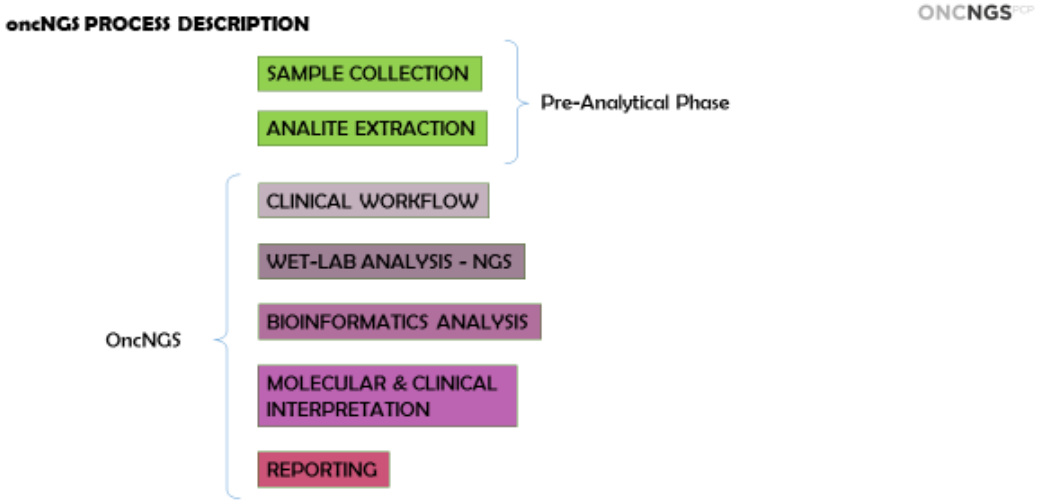


Figure 2: *Scheme of the oncNGS process description*

Samples

The oncNGS solution should be designed to analyse samples with the following characteristics and without further limitations:

1. Starting material is ctDNA/RNA obtained from blood/plasma,
2. The analyte concentration measurement should be determined by Qubit or equivalent method.
3. The level of degradation of the analyte should be determined by a bioanalyzer or equivalent method.

Wet Lab

The wet lab in the oncnGS solution is the laboratory part of the process starting from the DNA/RNA sample until the sequencing and includes DNA library preparation, normalisation, clonal amplification and prepartion of the sample for sequencing.

The DNA library preparation method may include the following critical steps:

- Library preparation from circulating DNA and/or RNA
- cDNA synthesis/amplification
- Target enrichment (at any stage, if any)
- Adapter/ barcoding ligation and/or tagmentation

Tagmentation/barcoding is particularly important for ctDNA, since this is diluted in large amounts of cfDNA.

Normalisation

If DNA samples are pooled, normalisation should be performed in order to have equal representation of each sample.

Clonal amplification (if applicable)

An accurate estimation of the purified library quantity (e.g. DNA fragments with proper ligated adaptors and indexes) is crucial to obtain the optimal clonal amplification.

Suppliers are requested to provide concise protocols for these steps.

The oncNGS solution to be developped should include **two Liqud biopsy (LB) NGS panels** designed by the consortium. One is a pan-cancer LB gene panel designated to be used for both solid tumors and solid hematological malignancies (such as lymphomas), while the other LB panel focuses on the genes relevant for solid hematological malignancies (= hemato/lymphomas panel). Although two distinct gene panels are to be developed, the results of the sequencing analysis by both gene panels are to be integrated in the same ICT decision support system, including analytical and molecular test interpretation and reporting system.

Designed OncNGS LB panels include genes classified either as "Priority Level I" or "Priority Level II".

Pan-cancer oncNGS LB panel *(=Panel 1)*

- **Priority level I**: Genes included in the list **MUST BE** included in the developed panel (~~159~~158 genes).

Table 1. Priority level I genes in panel 1

ALK*	MYC	ID3	BARD1	ERBB4	HRAS	NBN	RAD51
ARID1A	NOTCH1	IRF4	BRCA1	ERCC2	IGF1R	NF1	RAD51B
ATM	NOTCH2	JAK3	BRCA2	ESR1	JAK2	NOTCH3	RAD51C
BRAF*	NRAS	KLF2	BRD4	FANCA	KDM6A	NOTCH4	RAD51D
CCND1	RHOA	MYD88	BRIP1	FANCB	KDR	NTRK1	RAD54L
CCND2	SF3B1	PIM1	CCNE1	FANCC	KEAP1	NTRK2	~~*RAF1*~~
CCND3	TET2	STAT3	CCNE2	FANCD2	KIT	NTRK3	*RB1*
CD79B	TP53*	STAT5B	CD274	FANCE	MAP2K2	PALB2	RBM10
CDKN2A	XPO1	STAT6	CDH1	FANCF	MAP2K4	PBRM1	RET*
CDKN2B	ASXL1	TCF3	CDK12	FANCG	MAP3K1	PDGFB	ROS1
CREBBP	BCL2	TNFRSF14	CDK4	FANCI	MDM2	PDGFRA	SLX4
DNMT3A	BCL6	TRAF2	CDK6	FANCL	MET	PDGFRB	SMARCA4
EP300	BIRC3	AKAP9	CDK8	FANCM	MLH1	PIK3CA*	SMARCB1
EZH2	CARD11	AKT1	CHEK1	FBXW7	MLH3	PIK3R1	*SMO*
FOXA1	CD58	AKT2	CHEK2	FGFR1	MRE11A	PMS2	STK11
IDH1	CD79A	APC	CTNNB1	FGFR2	MSH2	POLD1	TERT
IDH2	CIITA	ARAF	DPYD	FGFR3	MSH3	POLE	TSC1
KMT2D	CTSS	ATR	EGFR*	FGFR4	MSH6	PTCH1	TSC2
KRAS	CXCR4	ATRX	ERBB2*	FLT1	MUTYH	PTEN	XRCC2

MAP2K1	GNA13	BAP1	ERBB3	FLT4	MYCN	RAD50

(*): "Core" Priority level I biomarkers that should be used during clinical perfomarnce assessment for different types of the atertions of the oncNGS solution in Phase 3

- **Priority level II**: Genes included in the list are **NICE TO HAVE** (~~271~~272 genes).

Table 2. Priority level II genes in Pane 1

A2ML1	CD28	EP400	GNAS	MGA	POLH	RPL22	SRSF2
ABHD5	CDC73	EPCAM	GOT2	MITF*	POLR2D	RPS15	STAG2
ABL1	CDKN1A	EPHA2	GPC3	MN1	POT1	RPTOR	STMN2
ACVR1	CDKN1B	EPHA3	GRB2	MPL	PPM1D	RRAS	SUFU
ACVR2A	CDKN1C	EPHA5	GRIN2A	MPSH/GREM1*	PPP1CB	SARAF	SYF2
ADGRG6	CDKN2C	EPHA7	H3F3A	MTAP	PPP2R1A	SBDS	TCF12
AGTR2	CHD1	EPHB2	H3F3B	MTOR	PRDM1	SDHA	TDG
AJUBA	CHD2	ERCC3	HIST1H3B	MYB	PREX2	SDHAF2	TDP2
AKT3	CHD3	ERCC4	HIST1H3C	MYCL	PRIM2	SDHB	TET1
AMER1	CHD4	ERCC5	HIST2H3C	MYO3A	PRKAR1A	SDHC	TET3
APAF1	CHD6	ERCC6	HOXB13	MYOD1	PRKD2	SDHD	TGFBR2
AR	*CHD8*	*ERCC8*	*IKZF1*	*NAV3*	*PRKN*	*SETD2*	*THBS1*
ARID2	CIC	ETV6	IL4R	NCOR1	PTPN1	SGK1	TMEM127
AURKA	COQ6	EXO1	INPP4B	NCOR2	PTPN11	SH2B3	TNFAIP3 (A20)
AXIN1	CSF1R	EXT1	JUNB	NF2	PTPRD	SHOC2	~~*TP53BP1*~~BP1
AXIN2	CSF3R	EXT2	KIF1B	NFKB2	RAB40A	SLC1A2	TP63
B2M	CSNK1A1	FADD	KLLN	NFKBIA	RAC1	SLC2A9	TP73
BC040327	CTCF	FAM213A	KMT2A	NFKBIE	RAD21	SMAD4	TPMT
BCOR	CTNNA1	FAN1	KMT2B	NPM1	RAF1	SMARCA2	TRRAP
BCORL1	CUX1	FAS	KMT2C	NR2F2	RASA1	SMARCC1	TSHR
BIRC2	CYLD	FAT2	LDLRAP1	NRG1	RASA2	SMARCC2	U2AF1
BLM	DAXX	FH	LZTR1	NSD1	RBBP8	SMARCD1	UBE2K
BMI1	DDB1	FLCN	MAD2L2	NTHL1	RECQL	SMARCD2	UBE2T/FANCT

BMPR1A	DDB2	FLT3	MAPK1	NUP93	RECQL4	SMARCD3	VHL
BMPR2	DDR2	FSHR	MAX	PAX5	RECQL5	SMARCE1	WRN
BRD7	DDX3X	FUBP1	MBD4	PGR	RHEB	SMUG1	WT1
BRD9	DICER1	GATA1	MCPH1	PHF6	RICTOR	SNAI2	XPA
BTG1	DUSP2	GATA2	MDH2	PHOX2B	RIMS1	SNCAIP	XPC
BTK	EDC4	GATA3	MDM4	PIK3CB	RIT1	SOCS1	ZDHHC19
BUB1B	EGLN1	GFI1	MED1	PIK3CG	RNASEL	SOS1	ZFHX3
CALR	EGLN2	GLI1	MED12	PIK3R2	RNF169	SOS2	ZNF292
CAND1.11	EGR2	GLI2	MED16	PLCG1	RNF43	SOX10	ZNF750
CASP8	ELAC2	GNA11	MEF2B	PLCG2	ROBO1	SPOP	ZRSR2
CBL	ELF3	GNAQ	MEN1	POLE2	ROBO2	SPRED1	FOXO 1

Hemato/Lymphoma oncNGS LB panel (= Panel 2)

- **Priority level I**: Genes included in the list **MUST BE** included in the developed panel (~~51~~50 genes).

Table 3. Priority level I genes in Panel 2

ALK	*BRAF*	*CD79B*	*DNMT3A*	*IDH1*	*KRAS*	*PIM1*	*TCF3*
ARID1A	*CARD11*	*CDKN2A*	*EP300*	*IDH2*	*MYC*	*RHOA*	*TET2*
ASXL1	*CCND1*	*CDKN2B*	*EZH2*	*IRF4*	*MYD88*	*SF3B1*	*TNFRSF14*
ATM	*CCND2*	*CIITA*	~~*FOXO1*~~	*JAK3*	*NOTCH1*	*STAT3*	*TP53*
BCL2	*CCND3*	*CREBBP*	*GNA13*	*KLF2*	*NOTCH2*	*STAT5B*	*TRAF2*
BCL6	*CD58*	*CTSS*	*ID3*	*KMT2D*	*NRAS*	*STAT6*	*XPO1*
BIRC3	*CD79A*	*CXCR4*					

- **Priority level II**: Genes included in the list are **NICE TO HAVE inclusion of them in the final solution would be awarded with the following scoring system** (~~29~~30 genes).

Table 4. Priority level II genes in Panel 2

B2M	*DUSP2*	*IKZF1*	*MEF2B*	*NFKBIE*	*PRDM1*	*PTPRD*	*SOCS1*
BTG1	*EGR2*	*IL4R*	*MYB*	*PAX5*	*PTPN1*	*RPS15*	*TNFAIP3 (A20)*
BTK	*ETV6*	*JUNB*	*NFKB2*	*PLCG1*	*PTPN11*	*SGK1*	*TP63*
CD28	*FAS*	*MAP2K1*	*NFKBIA*	*PLCG2*	*FOXO 1*		

ALL MUST HAVE genes have to be included in the developed panels. In case of exclusion of any gene from this list, a referenced justification has to be provided for its exclusion.

Inclusion of the NICE TO HAVE genes will contribute to the final awarding scoring of the panel.

The *wetlab* block of the oncNGS solution strives to have a high grade of automatization with a turn-around-time of 48h (= 2 working days). This technical turn-around-time is calculated from the first nucleic acid manipulation (library preparation) in the above wetlab phase to final diagnostic reporting. The technical turn-around-time does thus not include DNA/RNA isolation time.
OncNGS solution should have a simple and easy protocol allowing one highly qualified technical operator to complete the wetlab procedure (from library preparation to upload onto the sequencing device) working no more than 8h per day within two working days.

For the internal quality control, a single or multiple reference sample(s) should be included that will allow to check that reproducible results or outcomes are obtained when the test or procedure is performed on different occasions (between-run), or when running the same sample several times in the same run (within –run).

Finally, the application of error suppressing technology, such as molecular tagging or barcoding, to avoid inherent biases and errors is to be foreseen.

The oncNGS solution should take into consideration, in as far as possible, the diversity existing on the NGS technology market.

BIOINFORMATICS AND MOLECULAR INTREPERTATION (*DRY LAB*)

The *dry lab*/ bio-informatics part of the process after the sequencing includes three steps (primary analysis, secondary analysis and tertiary analysis) going from base calling, alignment/mapping to variant calling and annotation with the necessary quality controls.

All raw data of the outputs of the *Bioinformatics* (primary and *secondary analysis*), FASTQ files, SAM (Sequence Alignment/Map), BAM file (sequence alignment data) and VCF files, should be accessible, exportable and reproducible outside the IT environment of the sequencing machine. Importantly, installation of the oncNGS solution should not require major investments at the user's site in terms of CPU or RAM capacity.

In the *Molecular interpretation (Tertiary analysis),* each variant should be annotated through a dedicated software application that annotates each variant in relation to its position in the gene (exonic, coding, amino acid change, etc.), classified into biologic and clinical classes and annotated with their clinical utilities (diagnostic, prognostic or therapeutic). Databases used for alteration annotations and classifications should be indicated, declaring its limitations and technical inaccurancies.

REPORTING

As a final result of the oncNGS solution, NGS report should be fully automatized, available on-line, querable and interactive. The harmonized reports lay-outs should be structured in a way to be easily integrated with FHIR clinical reports.
Having a push notifications system connected with portable devices and/or institutional intranet, easily accessible to the Medical Oncologist and other health professionals in real-time. This faciliates monitoring the progress of the NGS diagnostic procedures, alert for possible delays or technical failure, and expedite communication of the results to the medical team, the patient, and repeating blood draw, if needed'.

The oncNGS solution should be deployed locally to avoid any sample and data transfer. Finally, the solution should be economically sustainable by the European Healthcare systems to allow equal access to best patient care for all.

Within the PCP a **performance study** of the oncNGS prototype solution is to be executed during Phase 2 and Phase 3 of the PCP, in order to establish and confirm the full analytical performance of the provided solution and to progress in the clinical performance towards a compliance with the EC-IVD regulation that will entering into force in May 2022.

The Performance study as described in within the Phase description (see 3. Description of the PCP in TD1), consists of:

1. **Technical performance** of the oncNGS solution to prove the ability to fulfil ALL MUST HAVE requirements listed in the tables below (Table 5) and the NICE TO HAVE requirements the Tenderer commits to address (Table 6)
2. **Analytical performance** of the oncNGS solution to prove the ability of the solution to correctly detect or measure the biomarkers included in the MUST HAVE genes (Tables 1 & 3) and the NICE TO HAVE genes the Tenderer is committing to detect, described by the performance indicators in the technical specification
3. **Clinical performance progress** of the oncNGS solution to prove the ability of the oncNGS solution to yield results that are correlated with a particular clinical condition or a physiological or pathological process or state in accordance with the target population and intended user, described by the the performance indicators in the technical specification

Tabular overview of the requirements set by the Consortium for the oncNGS solution

The oncNGS solution should fulfil a set of well defined requirements, listed in the ~~table~~tables 5. (MUST HAVE requirements for all three phases), 6. (NICE TO HAVE requirements for all three phases) below:

Table 5. *oncNGS solution MUST requirements for Phase 1, Phase 2 and Phase 3*

GENERAL DESCRIPTION	Evaluation
GD1. Versatility and Flexibility	
CLINICAL WORKFLOW.01 - oncNGS Tenderer SHALL define how far their oncNGS solution ~~SHALL~~will be versatile and scalable~~,~~ (e.g. a variable number of test samples will be accomodated in a single run (~~ideally~~ from a single sample to full chip ~~occupacy),~~occupancy) , maintaining consumable cost per sample low and similar, ~~and~~ preventing undue waste of reagents and resources in case of low-throughput runs), define the strategy to achieve the defined level of ambition, implement and execute	MUST HAVE
GD2. Sustainability	
SUST.01 - OncNGS ~~SHALL provide a~~ solution SHALL be affordable in agreement with the business case to be applied in routine basis, at each (chemo)therapy cycle to follow clinical response and inspire adaptive therapies. ~~The~~OncNGS price per sample should ~~fall between 500~~ be below 1500 euro~~ per analysis~~.	MUST HAVE
~~**SUST.02** - OncNGS SHALL provide a protocol for benchmarking analysis of the solution with other commercial solutions~~	~~MUST HAVE~~
SUST.03 - To avoid sample and data transfer, which could infringe on privacy issues, oncNGS solution SHALL be deployable locally and interfaced with existing both local tools ~~to avoid sample and data transfer, which could infringe on privacy issues~~and software applications for interpretation and reporting that could be provided through secure, restricted-access, GDPR-compliant fully validated cloud services or equivalent.	MUST HAVE
SUST.04 - ~~OncNGS~~oncNGS Tenderer SHALL define, implement and execute the strategy to provide ~~with an~~oncNGS solution as upgradable technology that may include a single panel or modular and/or scalable panel configurations. Being upgradable the inclusion of: - new genes and/or sequences within covered genes, and new multigene markers may be incorporated by successive upgrades to cope with new/improved therapeutic - new bioinformatic pipelines and interpretation tools while maintaining the performance of the technique and cost and available in the proposed solution	MUST HAVE
~~**SUST. 05** - OncNGS solution SHALL enable the use of vendor neutral consumables (e.g. plastic tubes, reagents), for vendor neutral commercial solution~~	~~MUST HAVE~~
~~**1. Outcomes**~~	
~~**OUTCOME.02** - OncNGS SHALL provide a common technical NGS protocol (that ensure harmonization of the technique) for DNA/RNA libraries prep (guidelines) for LB for detection of at least the following : Single Nucleotide Variation (SNV), TMB, MSI and mutations altogether: Translocations, Fusion, Splice variants, Large deletions/insertions, Copy nº variations - Clonotypic rearrangement of BCR and TCR genes,, (reference samples for each indication)~~	~~MUST HAVE~~
~~**OUTCOME.04** - oncNGS solution COULD demonstrate to be environmentally friendly in the overall solution design including all components in comparison with current commercial solution and more precisely by reducing the amount of unrecyclable waste per sample~~	~~NICE TO HAVE~~

WETLAB	Evaluation
WET1. Library preparation and laboratory workflow	
WETLAB.USE.PERF.01 - OncNGS solution SHALL reduce NGS time, particularly for library preparation. The turnaround time for the entire diagnostic workflow (from nucleic acid to molecular report) SHALL be 5-7 days maximum	MUST HAVE
WETLAB.USE.PERF.02 - OncNGS solution SHALL reduce and optimize the protocol's hands-on and hands-off times taking into account a typical working day of 8 hours maximum, and convenient breaks allowing a single unit of personnel to carry out the entire procedures within two working days in compliance with statutory EU working rules	MUST HAVE
WETLAB.USE.PERF.04 - OncNGS ~~solution~~Tenderer SHALL ~~simplify~~define, implement and execute the strategy for simplifying libraries preparation (e.g. ~~reducing~~minimize the	MUST HAVE

number of steps in the wetlab protocol, the number of primers pools and the number of tubes needed).	
~~**WETLAB.USE.PERF.05** - The OncNGS solution will enforce the easiest and most convenient handling and storage of the reagents. Reducing the storage space and avoiding as far as possible demanding storage conditions (80ºC)~~	~~MUST HAVE~~
~~**WETLAB.USE.UF.01** - OncNGS solution protocols SHALL be easy to learn in a way that skilled technical personnel running NGS should have a steep learning curve: 3 days training at most.~~	~~MUST HAVE~~
~~**WETLAB.USE.UF.02** - OncNGS provider SHALL measure and demonstrate their solution is understandable by skilled technical personnel in accordance to a questionnaire (preferably validated)~~	~~MUST HAVE~~
~~**WETLAB.USE.UF.03** - OncNGS provider SHALL measure and demonstrate their solution is task efficient in terms of protocol design and hands-on and hands-off time~~	~~MUST HAVE~~
~~**WETLAB.USE.UF.05** - OncNGS provider SHALL measure and demonstrate users satisfaction while end users make use of their solutions in accordance to a user's satisfaction questionnaire (preferably validated)~~	~~MUST HAVE~~
~~**WETLAB.USE.UF.06** - OncNGS provider SHALL measure and demonstrate their solution is easy to remember, based on a user's questionnaire (preferably validated)~~	~~MUST HAVE~~
WET2. Traceability, automatization and error detection mechanisms	
WETLAB.USE.PERF.~~05~~06 - OncNGS solution SHALL ensure the traceability of the sample and data along the whole workflow (from the wetlab to the reporting)	MUST HAVE
WET3. Quality performance and outputs	
~~**WETLAB.USE.AV.01** - OncNGS solution SHALL allow data output that is compatible with external QA (i.e proposal by European Liquid Biopsy Society, and National framework, other references https://pubmed.ncbi.nlm.nih.gov/28841569/ or https://pubmed.ncbi.nlm.nih.gov/30092778/)~~	~~NICE TO HAVE~~
WETLAB.USE.UF.08 - ~~Onc NGS~~OncNGS solution SHALL provide with complete wetlab protocol with an internal reference sample	MUST HAVE
~~**WETLAB.USE.OUT.07** - OncNGS solution altogether (kits and analysis pipline) SHALL be CE-IVD complient~~	~~MUST HAVE~~
WETLAB.QC.01 - OncNGS solution SHALL provide a Quality check for samples to be analysed with the oncNGS solution (e.g. analyte concentration, level of degradation, inteferents, etc…)	MUST HAVE

BIOINFORMATICS	**Evaluation**
BIO1. Data formats and data accessibility	
BIOINFOR.USE.FUNCT.01 - OncNGS Solution SHALL provide with a detailed description of data formats and file structure: - FASTQ, BAM and VCF files - Raw data of this files - Version and structure used - Genome used for alignment using real samples in the pilot sites	MUST HAVE
BIOINFOR.USE.FUNCT.02 - ~~All~~oncNGS solution SHALL ensure that all the provided information and raw data (FASTQ, BAM & VCF files) ~~SHALL be~~are accessible~~,~~ and exportable ~~data and reproducible results outside the sequencer machine or oncNGs solution. Must demonstrate the possibility to analyse the data externally hardware no dependent in the oncNGS solution.~~	MUST HAVE
BIOINFOR.SUST.MAINT.01 - ~~OncNGS solution bioinformatics pipeline~~oncNGS Tenderer SHALL ~~be executed with minimal~~define, implement and execute the strategy for minimizing the computational ~~requirement as~~requirements to run the oncNGS solution (example measured by required RAM and CPUs)	MUST HAVE
BIO2. Interoperability performance	
BIOINFOR.USE.INT.01 - OncNGS solution SHALL allow the interoperability with typical or standards bioinformatics software used for interpretation (own software) in any hardware machine (vendor neutral hardware machine) on the pilot site	MUST HAVE
BIOINFOR.USE.INT.02 - OncNGS solution SHALL allow the interoperability of the bioinformatics system with different databases used for clinical interpretation	MUST HAVE

BIOINFOR.USE.INT.04 - OncNGS solution SHALL make use of FHIR interoperability standard	MUST HAVE
BIO3. Quality of the outputs	
BIOINFOR.USE.PERF.02 - OncNGS solution SHALL provide a software solution that enables an automatic bioinformatics pipeline for interpretation and to customize the reporting (to include logos, graphics, others).	MUST HAVE
BIOINFOR.USE.OUT.01 - OncNGS solution SHALL provide for each genetic alterations, a declared corresponding pipeline for its interpretation.	MUST HAVE
BIO4. Quality performance	
BIOINFOR.USE.PERF.01 - OncNGS solution SHALL provide a quality control and assessment in the bioinformatics pipeline. FASTQ QC statistics; BAM QC statistics reference file for quality assessment (standardization)	MUST HAVE
BIOINFOR.USE.PERF.04 - OncNGS solution SHALL demonstrate that generated bioinformatic data and data processing are: - robust, as described in the Technical Glossary - accurate, as described in the Technical Glossary - reproducible , as described in the Technical Glossary - traceable, as described in the Technical Glossary	MUST HAVE
~~**BIOINFOR.USE.UF.01** - OncNGS solution SHALL provide with training for bioinformaticians and/or a basic bioinformatic training package~~	~~MUST HAVE~~

MOLECULAR INTERPRETATION	**Evaluation**
MI1. Data formats, interpretation, processing and storage	
MOLECBIO.USE.PERF.01 - OncNGS ~~solution~~Tenderer SHALL indicate the databases used for the alteration annotations and classifications and declare their limitations.	MUST HAVE
MOLECBIO.USE.PERF.02 - OncNGS solution SHALL automatically report the variants identified and propose their biological and clinical interpretation.	MUST HAVE
MOLECBIO.USE.FUNCT.01 - OncNGS solution SHALL ensure that all results are stored, processed and edited independently from clinical data although in a traceably manner allowing further local analysis	MUST HAVE
MI2. Interoperability performance	
MOLECBIO.USE.UF.03 - OncNGS solution SHALL interrogate up-to-date databases (public and private, national or international) for the molecular interpretation.	MUST HAVE
MI3. Quality performance and outputs	
NGS.USE.INT.03 - oncNGS solution SHALL have a predictive value (see Technical Glossary) higher than 90% correlation equivalence for the validation of all types of alterations included priority level I in the gene panel.	MUST HAVE
MOLECBIO.USE.PERF.04 - OncNGS solution SHALL provide with evidence-based variant categorization (e.g. tiers and level of evidence).	MUST HAVE
~~**MOLECBIO.USE.OUT.01** - OncNGS solution SHALL be able to allow the oncNGS solution data output format (e.g csv) to be uploadable to already existing European initiatives (such as Harmony) to build a knowledgebase in NGS Liquid Biopsy.~~	~~MUST HAVE~~
MOLECBIO.USE.UF.01 - OncNGS solution SHALL provide with a metadata that describe position on DNA, reference genome nomenclature; in a format compliant with international standards (VCF file).	MUST HAVE
MOLECBIO.USE.UF.~~04~~02 - OncNGS solution SHALL provide with a molecular interpretation report that includes information about the automated process, consulted (public) data bases and molecular interpretation.	MUST HAVE

REPORT	**Evaluation**
R1. Content and Format	
REPORT.USE.INT.01 - OncNGS solution SHALL provide a final report (molecular and interpretation) in (different) formats that can be easily convertible to local need in order to append it with the patient electronic health report.	MUST HAVE
R2. Access and Automatization	

REPORT.USE.REP.01 - OncNGS solution SHALL provide options to provide to users with individualized roles, different access rights settings to ensure GDPR compliance. Reporting content level (personal information and non-personal) and type of information access (bioinformatics, molecular or clinical data) needs to be differentiated amongst users according to their access rights.	MUST HAVE
REPORT.USE.REP.02 - OncNGS solution SHALL allow a fully automatized filing, available on line with remote downloading and consulting, querable and interactive, according to user access privileges	MUST HAVE
R3. Harmonization and Quality	
REPORT.USE.REP.03 - OncNGS solution SHALL provide with a harmonized reporting structure compliant and based on international guidelines, with list the content (e.g. order of items, highlight strategies, etc...)	MUST HAVE
REPORT.USE.REP.04 - OncNGS solution SHALL include a statement appointing that the information provided in the report has passed the QC and the norm/test followed. Full QC information shall be available on request. Description of molecular findings must be consistent with international criteria. The description of molecular results should include the frequency of occurrence, the relationship with the clinical and prognostic variant.	MUST HAVE

Table 6. *oncNGS solution NICE TO HAVE requirements for Phase 1, Phase 2 and Phase 3*

GENERAL DESCRIPTION	Evaluation
GD2. Sustainability	
SUST.02 - OncNGS solution COULD ~~SHALL~~ provide a protocol for benchmarking analysis of the solution with other commercial solutions	NICE TO HAVE
SUST. 05 - OncNGS solution COULD ~~SHALL~~ enable the use of vendor neutral consumables (e.g. plastic tubes, reagents), for vendor neutral commercial solution	NICE TO HAVE
GD3.Outcomes	
OUTCOME.02 - OncNGS solution COULD ~~SHALL~~ provide a common technical NGS protocol (that ensure harmonization of the technique) for DNA/RNA libraries prep (guidelines) for LB for detection of, for example, the following : Single Nucleotide Variation (SNV), TMB, MSI and mutations altogether (Translocations, Fusion, Splice variants, Large deletions/insertions, Copy nº variations – Clonotypic rearrangement of BCR and TCR genes (reference samples for each indication))	NICE TO HAVE
OUTCOME.04 - oncNGS solution COULD demonstrate to be environmentally friendly in the overall solution design including all components in comparison with current commercial solution and more precisely by reducing the amount of unrecyclable waste per sample	NICE TO HAVE

WETLAB	Evaluation
WET1. Library preparation and laboratory workflow	
WETLAB.USE.PERF.05 - The OncNGS solution COULD ~~SHALL~~ enforce the easiest and most convenient handling and storage of the reagents. Reducing the storage space and avoiding as far as possible demanding storage conditions (-80ºC)	NICE TO HAVE
WETLAB.USE.UF.01 - OncNGS solution protocols COULD ~~SHALL~~ be easy to learn in a way that skilled technical personnel running NGS should have a steep learning curve: 3 days training at most.	NICE TO HAVE
WETLAB.USE.UF.02 - OncNGS Tenderer COULD ~~SHALL~~ measure and demonstrate its solution is understandable by skilled technical personnel in accordance to a questionnaire (preferably validated)	NICE TO HAVE
WETLAB.USE.UF.03 - OncNGS Tenderer COULD ~~SHALL~~ measure and demonstrate its solution is task efficient in terms of protocol design and hands-on and hands-off time	NICE TO HAVE
WETLAB.USE.UF.05 - OncNGS Tenderer COULD ~~SHALL~~ measure and demonstrate users satisfaction while end users make use of their solutions in accordance to a user's satisfaction questionnaire (preferably validated)	NICE TO HAVE
WETLAB.USE.UF.06 - OncNGS Tenderer COULD ~~SHALL~~ measure and demonstrate its solution is easy to remember, based on a user's questionnaire (preferably validated)	NICE TO HAVE
WET3. Quality performance and outputs	

WETLAB.USE.AV.01 - OncNGS solution COULD ~~SHALL~~ allow data output that is compatible with external QA (i.e proposal by European Liquid Biopsy Society, and National framework, other references https://pubmed.ncbi.nlm.nih.gov/28841569/ or https://pubmed.ncbi.nlm.nih.gov/30092778/)	NICE TO HAVE

BIOINFORMATICS	Evaluation
BIO1. Data formats and data accessibility	
BIOINFOR.USE.FUNCT.03 - oncNGS Tenderer COULD demonstrate the possibility to analyse the data without relying on the proprietary hardware	NICE TO HAVE
BIOINFOR.USE.FUNCT.04 - oncNGS Tenderer COULD demonstrate the possibility to analyse the data without relying on the proprietary software–cloud based solution	NICE TO HAVE
BIO4. Quality performance	
BIOINFOR.USE.UF.01 - OncNGS solution ~~SHALL~~ COULD provide with training for bioinformaticians and/or a basic bioinformatic training package	NICE TO HAVE

MOLECULAR INTERPRETATION	Evaluation
MI3. Quality performance and outputs	
MOLECBIO.USE.OUT.01 - OncNGS solution COULD ~~SHALL~~ enable data output format (e.g csv) to be uploadable to already existing European initiatives (such as Harmony) to build a knowledgebase in NGS Liquid Biopsy.	NICE TO HAVE

Analitycal and clinical performance study

Liquid biopsy is a rapidly emerging tool of precision oncology enabling minimally invasive molecular diagnostics and longitudinal monitoring of the treatment response. Nevertheles, tissue biopsies still remain essential and provide a gold standard information regarding tumor molecular characterization.

For the oncNGS solution, that will be based on the plasma-derived ctDNA, at the moment of the writing of this Request for Tender, no golden standards are known. There are several CE-IVD test kits of this kind commercially available in EU to test plasma EGFR, ALL-RAS and BRAF. However, to the best of our knowledge EMA has so far approved only PCR Mutation assays for a small set of EGFR alterations. Thus, liquid biopsies are widely adopted in EU (often under expert MOLECULAR TUMOR BOARD supervision), but not reimbursed. Therefore, in order to assess the developed oncNGS prototype solution that will be in a compliance with the upcoming EC-IVD regulation, the analytical and clinical performance study will have to be carried out making the assumption that 90% of the main alterations in genes found in NGS done on a tissue biopsy are present in the liquid biopsy.

A continuous revision of the State of the Art, should be done prior to the execution of Phase 3 in order to incorporate new evidences and gold standards for liquid biopsy.

In Phase 2, the full analytical performance of the developed solution prototype will be determined. During this phase, statistically significant number of synthetic samples should be tested and analyzed using a statistical model developed and presented during the execution of the Phase 1 contract of this PCP. The analytical performance should cover all markers and all variation types. Besides analytical performance, in this phase 2, an initial evaluation of the clinical performace of the prototype solution should be done on three of the ”core” Priority Level I genes (ALK, BRAF, EGFR, ERBB2, PIK3CA, RET, TP53) and include at least one sample from a patient with a solid tumour, one sample from a patient with an haemato malignance and one sample from a patient with an

hereditary tumour), covering in as much as possible the different variant types (SNV, indels, CNV and fusions).

In Phase 3, clinical performance of the solutions should be determined for all variant types and covering all markers using a statistically significant number of real clinical samples. After the clinical performance will be determined, the Pilot sites (identifed among the buyers group of the oncNGS consortium), will do the corroboration of the solutions clinical performance at their premises using fixed number of previously annotated real clinical samples.

Key Performance indicators

Performance indicators that will be monitored during the contract implementation to assess progress toward oncNGS objectives, are:

Technical, analytical and clinical Performance indicators

- **oncNGS-INDI-001** The minimum oncNGS solution **turn-around time** (in days)): Turn-around time of the whole process of the oncNGS solution including the *wetlab* and the drylab to get to the final report.

Table ~~6~~7: Correlation table of the LOD (%VAF), sensitivity and specificity for low, medium and high amounts of ctDNA in the sample.

Amount of ctDNA	LOD (%VAF)	Sensitivity	Specificity
Low [3-5 ng]			
Medium [5- 25 ng]			
High [25 – 50 ng]			

- **oncNGS -INDI-002: Limit of Detection** of the oncNGS prototype solution (% VAF). Is defined as the lowest actual percentage of variants that can be consistently detected. This indicator has to be calculated for each of the 3 ranges of amount of ctDNA in table ~~6~~7.

- **oncNGS -INDI-003:** The maximum oncNGS prototype solution **analytical sensitivity (%)**: Analytical sensitivity is defined as the ratio TP/(TP + FP)% (table ~~7~~8) and describes likelihood that the assay will detect the targeted sequence variations if present (true positive rate) for different amounts of ctDNA content in a sample at a certain LOD, described in table ~~6~~7.

- **oncNGS -INDI-004**: The maximum oncNGS prototype solution **analytical specificity (%)** : Analytical specificity is defined as the ratio TN/(TN + FP)% (table ~~7~~8) and describes the probability that the assay will not detect a sequence variation when none are present (true negative rate) for different amounts of ctDNA content in a sample at a certain LOD, described in table ~~6~~7.

- **oncNGS -INDI-005**: The máximum **analytical accuracy (%):** is defined as the ratio (TP + TN)/(TP + TN + FP + FN) and describes the proportion of all correctly identified samples among all samples. If no FN and FP are detected, then it is 100%. In all other cases, this value is lower than 100%. From the relative accuracy is also possible to determine the analytical error using the formula: analytical_error=1-analytical_accuracy

- **oncNGS -INDI-006**: **Measuring interval** for the oncNGS solution (interval in %VAF), defined by the limit of Quantification (LoQ) as the lower limit and limit of linearity as upper limit.

- **oncNGS -INDI-007**: **Limit of Quantifiaction** of the oncNGS prototype solution (% VAF): is the lowest concentration at which the analyte can not only be reliably detected but at which some predefined goals for bias and imprecision are met.

- **oncNGS -INDI-008:** The maximum oncNGS prototype solution relative **clinical sensitivity (%)**: Clinical sensitivity is defined as the ratio TP/(TP + FN)% (table ~~7~~8) and describes likelihood that the assay will

detect the targeted sequence variations if present (true positive rate) in real samples relative to the results of NGS in tissue biopsy

- **oncNGS -INDI-009**: The maximum oncNGS prototype solution **clinical specificity (%)**: Clinical specificity is defined as the ratio TN/(TN + FP)% (table ~~7~~8) and describes the probability that the assay will not detect a sequence variation when none are present (true negative rate) in real samples relative to the results of NGS in tissue biopsy.

- **oncNGS -INDI-010**: The maximum oncNGS prototype solution **repeatability index** (%): is defined as the degree of agreement between replicate measurements of the same material under the same conditions (within runs). It is calculated as the standard deviation of the mean.

- **oncNGS -INDI-011**: The maximum oncNGS prototype solution **reproducibility index** (%): is defined as the degree of agreement between replicate measurements of the same material under different conditions (between runs). It is calculated as the standard deviation of the mean.

- **oncNGS -INDI-012**: Interference substances. Description of all main interferences substances that could be present in the matrix of the sample.

Table ~~7~~8: *Parameters for comparison of NGS clinical performance results, in the absence of a reference method by the approximation of the results to the NGS of the biopsy on solid tumor*

Biomarker X		**orthogonal in-house test**			
		Positive	**Negative**		
oncNGS solution	**Positive**	a	c	a/(a+c)%	**PPV**
	Negative	b	d	d/(b+d)%	**NPV**
		a/(a+b)%	d/(c+d)%		
		sensitivity	**specificity**		

PPV—Positive predictive value—Positive sample, according to evaluated test, correctly identified as positive, accoding to reference test.

NPV—Negative predictive value—Negative sample, accordingb to evaluated test, correctly identified as negative, according to reference test.

- PPV – Positive predicitive value is percentage (%) chance that a positive test result is a true positive (e.g., % chance that a patient with a positive test results actually has the disease)
  - PPV= TP/(TP+FP)
- NPV – Negative predictive value is a percentage (%) chance that a negative tet-st result is a true negative (e.g., % chance that a patient with a negative result is actually desseasse free)
  - NPV=TN/(TN+FN)
- Robustness measures a test capacity to remain unaffected by a small but deliberate variations in method parameters, e.g. using two different pieces of equipment located in two different premises

~~**User experience Performance indicators**~~

~~- **oncNGS -INDI-013**: Degree of usability of reagents handling.~~

- ~~oncNGS -INDI-014: Degree of effectiveness in learning and remembering solution protocols~~
- ~~oncNGS -INDI-015: Degree of satisfaction of the solution for skilled technical personnel~~
- ~~oncNGS -INDI-016: Degree of task efficiency of the solution for skilled technical personnel~~

Technical regulation (including EC-IVD compliance and GDPR)

Guideline on good pharmacogenomic practice

In 2018 the European Medicine Agency released the 'Guideline on good pharmacogenomic practice'[13] The documents provides guidance on methods of evaluation of genetic variation related to pharmacokinetics and response.
oncNGS PCP resulting solutions should ensure compliancy with this Guideline in case used to analyse genomic germline DNA to conduct genomic studies in relation to medical therapy in order to provide high quality information on the impact of genomic variability on drug response.

Genomic sampling and management of genomic data

In 2017 the ICH released the 'ICH guideline E18 on genomic sampling and management of genomic data'[14].
oncNGS solutions addressing oncNGS Buyers Group challenge will consider that the genomic sampling (collection, processing, storage and curation) will be responsibility of the buyers.
At the same time oncNGS PCP resulting solutions should ensure compliancy with this guideline in case of the management of samples and data coding and in case of genomic samples and data access.

EC-IVD compliance

EC-IVD compliance, entering into force by **2022**, for the use of medical devices including testing and analysing human material by techniques as NGS will fall under the EC-IVD regulating, requesting a clinical validation of devices before authorisation (Figure 3).

Regulation (EU) 2017/746 of the European Parliament and of the Council of 5 April 2017 on in vitro diagnostic medical devices and repealing Directive 98/79/EC and Commission Decision 2010/227/EU

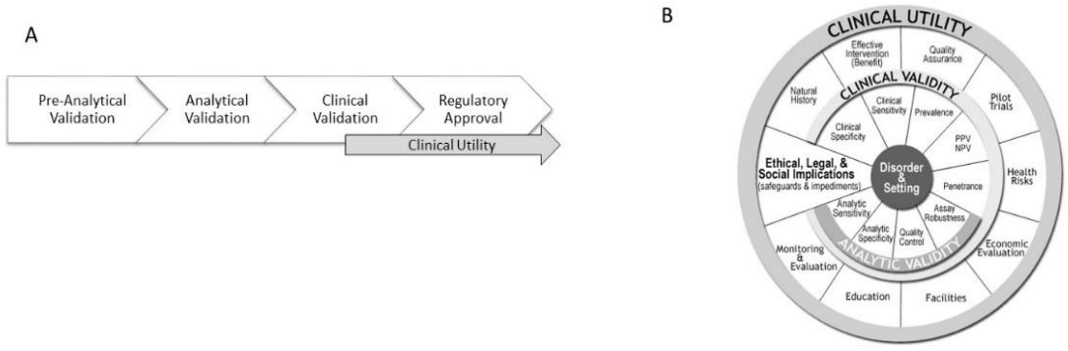


***Figure 3**: Validation of in vitro diagnostic tests for clinical use (A: Different steps in the validation process; B: ACCE[15] scheme on multiple dimensions in the validation process)*

[13] https://www.ema.europa.eu/en/documents/scientific-guideline/guideline-good-pharmacogenomic-practice-first-version_en.pdf
[14] https://database.ich.org/sites/default/files/E18_Guideline.pdf
[15] https://www.cdc.gov/genomics/gtesting/acce/index.htm

IVD shall achieve the performances, as stated by the manufacturer and in particular, where applicable:

(a) **the analytical performance**, such as, analytical sensitivity, analytical specificity, trueness (bias), precision (repeatability and reproducibility), accuracy (resulting from trueness and precision), limits of detection and quantitation, measuring range, linearity, cut-off, including determination of appropriate criteria for specimen collection and handling and control of known relevant endogenous and exogenous interference, cross- reactions;

b) **the clinical performance**, such as diagnostic sensitivity, diagnostic specificity, positive predictive value, negative predictive value, likelihood ratio, expected values in normal and affected populations.

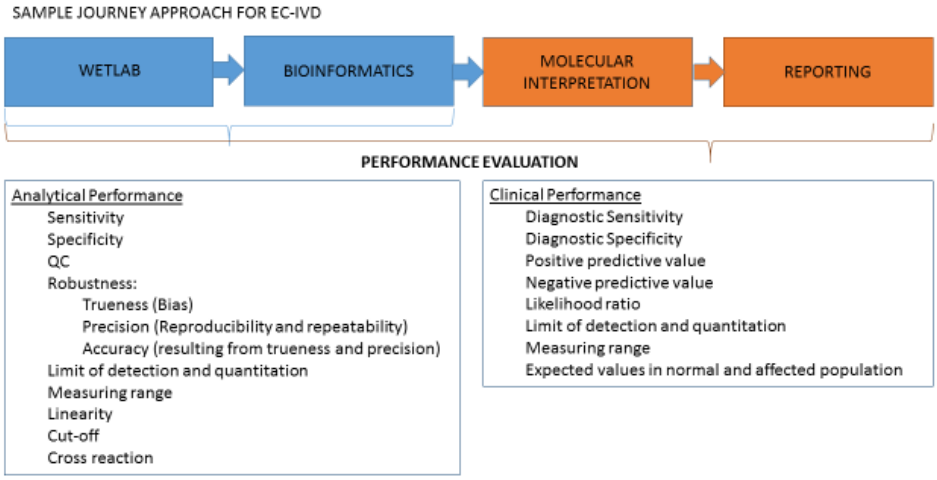


Figure 4: *Scheme of the initial approach of the combination of the validation framework of oncNGS and the EC-IVD validation regulation.*

Business case

The Consortium demands the suppliers to provide their business development for future deployment of the oncNGS solution in routine oncological healthcare.

Below we describe the business case as from the buyer's point of view.

We demand the Suppliers to take the elements we have integrated into our business case into consideration when presenting their approach.

As of today, NGS analyses are out-sourced in many of the Buyers' sites. With oncNGS the procurers will increase their internal costs by performing the analyses in-house, while procuring: the kits (pan-cancer tumour marker analysis kit including NGS analysis), integrated with an ICT decision support system including analytical test interpretation, reporting, and maintenance. With this PCP, the aim is to ensure that taking into account the resources needed to run an integrated solution that expenses for the Buyer's health care systems are cost-effective.

As of today, our target price per kit is at arroud 0-1500€ notwithstanding the analysis and reporting would be carried out in-house with the OncNGS solution. The tenderers should consider a 1, 3, 5, 10 year time horizon and demonstrate the added-value for running the new solution, based on he

number of cases of the most prevalent cancers and their forecast, as well the net costs after reimbursement from national health insurance funds.

In particular the tenderes should include in their proposed business model not only their price per kit for the integrated OncNGS solution, but also estimate the number of QALYs gained by the Buyers' in Belgium, France, Italy, Germany, Spain given a standard threshold of 80000€ per QALY (as part of their offer).

- *Quality-adjusted life year (QALY)*[16]*:* A measure of the state of health of a person or group in which the benefits, in terms of length of life, are adjusted to reflect the quality of life. One quality-adjusted life year (QALY) is equal to 1 year of life in perfect health. QALYs are calculated by estimating the years of life remaining for a patient following a particular treatment or intervention and weighting each year with a quality-of-life score (on a 0 to 1 scale). It is often measured in terms of the person's ability to carry out the activities of daily life, and freedom from pain and mental disturbance.

Prognostic/predictive gene panels are commercially available, but are still only limited used in routine in Europe, due to a lack of agreed utility and their relative high price.[17] By means of this PCP, OncNGS Buyers group wants to support the attribution of the most efficient treatment to well defined patient groups. In case of OncNGS the biomarkers relevant to the procurement are:

- *Diagnostic* biomarkers[18] that detect or confirm the presence of a disease or condition of interest, or identify an individual with a subtype of the disease
- *Prognostic* markers[19] that are measured before treatment and identify tumour-specific molecular or histopathological characteristics including somatic or germline mutations, changes in DNA methylation, micro-RNA levels, or circulating tumour cells in blood that are associated with long-term outcome or course of a disease. Prognostic biomarkers allow for the selection of patients who need more intensive surveillance or adjuvant therapy.
- *Predictive or Therapeutic* biomarkers[20] usually measured before treatment and provide information on the probability of response to a particular therapy. For patients who are biomarker negative, OncNGS could support *Theranostic*[21] procedures that develop more personalized measures able to identify cancer cells, selectively reach and treat them, and to assess drug delivery and uptake in real-time in order to perform adjustments in the treatment being delivered.

Considering the three of the most common cancer sites In agreement with the International Agency for Research on Cancer 2020:

CANCER SITE	NO. OF NEW CASES (worldwide)	(% OF ALL SITES)
Female breast	2,261,419	(11.7 %)
Lung	2,206,771	(11.4 %)
Colon	1,148,515	(6.0 %)

[16] https://www.nice.org.uk/Glossary?letter=Q#Quality-adjusted life year
[17] https://www.mdpi.com/2072-6694/12/2/319/htm
[18] ~~https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5813875/~~ https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5813875/
[19] https://oncologypro.esmo.org/education-library/esmo-handbooks/translational-research/prognostic-biomarkers
[20] https://oncologypro.esmo.org/education-library/esmo-handbooks/translational-research/Predictive-Biomarkers
[21] https://www.frontiersin.org/articles/10.3389/fphar.2019.00450/full

OncNGS could address clinical scenarios as the following ones:

- a reduction in cancer stage at first diagnosis has the potential to reduce death rates. Thus, Clarke et al.[22] calculated that if all stage IV cancers were diagnosed at stage III, this would result in a reduction of 15% of all cancer-related deaths
- In case of colorectal cancer, fifty percent of stage III patients are cured by surgery, whereas 20% of patients will survive due to the addition of adjuvant chemotherapy and 30% will relapse within 2–3 years. Altogether, only 20% of stage III patients benefit from chemotherapy, exposing 80% of patients to unnecessary toxicity[23]

Mainly OncNGS Buyers Group wants to facilitate the clinical use of the clinically validated biomarkers through the solutions resulting from this PCP and this would be only possible by demonstrating their Clinical Utility in agreement with Buyers Group requirements. The Clinical Utility will not be demonstrated during oncNGS PCP procedure but it will be considered the main driver for the following public procurement of innovation procedure.

As initial framework the Clinical Utility from ACCE[24] is taken into consideration. For the business case, items 35 and 36 should be addressed in the tenderer's offer and include provisions on health benefits as well (i.e. QALYS).

Clinical Utility	Intervention	26. What is the natural history of the disorder?
	Intervention	27. What is the impact of a positive (or negative) test on patient care?
	Intervention	28. If applicable, are diagnostic tests available?
	Intervention	29. Is there an effective remedy, acceptable action, or other measurable benefit?
	Intervention	30. Is there general access to that remedy or action?
		31. Is the test being offered to a socially vulnerable population?
	Quality Assurance	32. What quality assurance measures are in place?
	Pilot Trials	33. What are the results of pilot trials?
	Health Risks	34. What health risks can be identified for follow-up testing and/or intervention?
		35. What are the financial costs associated with testing?
	Economic	36. What are the economic benefits associated with actions resulting from testing?

[22] https://doi.org/10.1158/1055-9965.epi-19-1366
[23] https://www.mdpi.com/2072-6694/12/2/319/htm#B6-cancers-12-00319
[24] ~~https://www.cdc.gov/genomics/gtesting/acce/acce_proj.htm~~ https://www.cdc.gov/genomics/gtesting/acce/acce_proj.htm

	Facilities	37. What facilities/personnel are available or easily put in place?
	Education	38. What educational materials have been developed and validated and which of these are available?
		39. Are there informed consent requirements?
	Monitoring	40. What methods exist for long term monitoring?
		41. What guidelines have been developed for evaluating program performance?

Freedom to Operate (FTO) and IP strategy considerations

The purpose of the OncNGS PCP project is to procure the research and development that will eventually lead to a future OncNGS solution.

The future OncNGS solution can be expected to comprise on the one hand the aspect of which genes (or 'assets') are subjected to the analysis, and on the other hand the technological or methodological aspects, i.e., how precisely genetic or genomic alterations are detected in circulating tumour nucleic acids by NGS and any accompanying bioinformatics package.

With this in mind, the OncNGS Tenderers should critically analyse their proposed solution and methodology, in view of their own IP estate or position, and in view of potentially existing third party patent rights in Europe.

In particular, the Tenderers are welcome to comment on the robustness of their IP position in the field of genetic diagnostics, including liquid biopsy diagnostics, and in NGS-related technologies, expected to be of value for the later commercialization of the OncNGS solution.
Furthermore, the Tenderers need to clarify what strategies they intend to employ to allow for inclusion of the desired genes into their proposed multi-gene panels, while respecting or gaining lawful access to third party patent rights that may exist on the evaluation of such individual genes, gene combinations (such as, for example, EP2438197B1 of Myriad Genetics, Inc., and EP3301446B1 of Caris MPI), and genotype-based companion diagnostics.

Additionally, the Tenderers need to comment on how their proposed technological solutions and sequencing methodologies (including those relating to the individual steps involved in the process, such as library preparation and barcoding, NGS sequencing, and data analysis) respect or enjoy lawful access to third party patent rights, especially when used for the purpose of commercial *in vitro* genetic diagnostics.

Annex 3 – Technical Glossary

The following definitions has been extracted from the document *Regulation (EU) 2017/746 of the European Parliament and of the Council of 5 April 2017 on in vitro diagnostic medical devices and repealing Directive 98/79/EC and Commission Decision 2010/227/EU*
For the purposes of this Regulation, the following definitions apply:

(1) '***medical device***' means 'medical device' as defined in point (1) of Article 2 of Regulation (EU) 2017/745;
(2) '***in vitro diagnostic medical device***' means any medical device which is a reagent, reagent product, calibrator, control material, kit, instrument, apparatus, piece of equipment, software or system, whether used alone or in combination, intended by the manufacturer to be used in vitro for the examination of specimens, including blood and tissue donations, derived from the human body, solely or principally for the purpose of providing information on one or more of the following:

(a) concerning a physiological or pathological process or state;
(b) concerning congenital physical or mental impairments;
(c) concerning the predisposition to a medical condition or a disease;
(d) to determine the safety and compatibility with potential recipients;
(e) to predict treatment response or reactions;
(f) to define or monitoring therapeutic measures. Specimen receptacles shall also be deemed to be in vitro diagnostic medical devices;

(3) '***accessory for an in vitro diagnostic medical device***' means an article which, whilst not being itself an in vitro diagnostic medical device, is intended by its manufacturer to be used together with one or several particular in vitro diagnostic medical device(s) to specifically enable the in vitro diagnostic medical device(s) to be used in accordance with its/their intended purpose(s) or to specifically and directly assist the medical functionality of the in vitro diagnostic medical device(s) in terms of its/their intended purpose(s);
(4) '***companion diagnostic***' means a device which is essential for the safe and effective use of a corresponding medicinal product to: (a) identify, before and/or during treatment, patients who are most likely to benefit from the corresponding medicinal product; or (b) identify, before and/or during treatment, patients likely to be at increased risk of serious adverse reactions as a result of treatment with the corresponding medicinal product;
(5) '***single-use device***' means a device that is intended to be used during a single procedure;
(6) '***kit***' means a set of components that are packaged together and intended to be used to perform a specific in vitro diagnostic examination, or a part thereof;
(7) '***intended purpose***' means the use for which a device is intended according to the data supplied by the manufacturer on the label, in the instructions for use or in promotional or sales materials or statements or as specified by the manufacturer in the performance evaluation;
(8) '***instructions for use***' means the information provided by the manufacturer to inform the user of a device's intended purpose and proper use and of any precautions to be taken;
(9) '***Unique Device Identifier***' ('UDI') means a series of numeric or alphanumeric characters that is created through internationally accepted device identification and coding standards and that allows unambiguous identification of specific devices on the market;
(10) '***risk***' means the combination of the probability of occurrence of harm and the severity of that harm;
(11) '***benefit-risk determination***' means the analysis of all assessments of benefit and risk of possible relevance for the use of the device for the intended purpose, when used in accordance with the intended purpose given by the manufacturer;

(12) '***compatibility***' is the ability of a device, including software, when used together with one or more other devices in accordance with its intended purpose, to:

(a) perform without losing or compromising the ability to perform as intended, and/or

(b) integrate and/or operate without the need for modification or adaption of any part of the combined devices, and/or

(c) be used together without conflict/interference or adverse reaction;

(13) '***interoperability***' is the ability of two or more devices, including software, from the same manufacturer or from different manufacturers, to:

(a) exchange information and use the information that has been exchanged for the correct execution of a specified function without changing the content of the data, and/or

(b) communicate with each other, and/or

(c) work together as intended;

(14) '**making available on the market**' means any supply of a device, other than a device for performance study, for distribution, consumption or use on the Union market in the course of a commercial activity, whether in return for payment or free of charge;

(15) '***placing on the market***' means the first making available of a device, other than a device for performance study, on the Union market;

(16) '***putting into service***' means the stage at which a device, other than a device for performance study, has been made available to the final user as being ready for use on the Union market for the first time for its intended purpose;

(17) '***economic operator***' means a manufacturer, an authorised representative, an importer or a distributor;

(18) '***health institution***' means an organisation the primary purpose of which is the care or treatment of patients or the promotion of public health;

(19) '***user***' means any healthcare professional or lay person who uses a device;

(20) '***conformity assessment***' means the process demonstrating whether the requirements of this Regulation relating to a device have been fulfilled;

(21) '***conformity assessment body***' means a body that performs third-party conformity assessment activities including calibration, testing, certification and inspection;

(22) '***notified body***' means a conformity assessment body designated in accordance with this Regulation;

(23) '***CE marking of conformity***' or '***CE marking***' means a marking by which a manufacturer indicates that a device is in conformity with the applicable requirements set out in this Regulation and other applicable Union harmonisation legislation providing for its affixing;

(24) '***clinical evidence***' means clinical data and performance evaluation results, pertaining to a device of a sufficient amount and quality to allow a qualified assessment of whether the device is safe and achieves the intended clinical benefit(s), when used as intended by the manufacturer;

(25) '***clinical benefit***' means the positive impact of a device related to its function, such as that of screening, monitoring, diagnosis or aid to diagnosis of patients, or a positive impact on patient management or public health;

(26) '***scientific validity of an analyte***' means the association of an analyte with a clinical condition or a physiological state;

(27) '***performance of a device***' means the ability of a device to achieve its intended purpose as claimed by the manufacturer. It consists of the analytical and, where applicable, the clinical performance supporting that intended purpose;

(28) '***analytical performance***' means the ability of a device to correctly detect or measure a particular analyte. The analytical performance, such as, analytical sensitivity, analytical specificity, trueness (bias), precision (repeatability and reproducibility), accuracy (resulting from trueness and precision), limits of detection and quantitation, measurement range, linearity, cut-off, including determination of

appropriate criteria for specimen collection and handling and control of known relevant endogenous and exogenous interference, cross-reactions.
(29) '***clinical performance***' means the ability of a device to yield results that are correlated with a particular clinical condition or a physiological or pathological process or state in accordance with the target population and intended user;
(30) '***performance study***' means a study undertaken to establish or confirm the analytical or clinical performance of a device;
(31) '***performance study plan***' means a document that describes the rationale, objectives, design methodology, monitoring, statistical considerations, organisation and conduct of a performance study;
(32) '***performance evaluation***' means an assessment and analysis of data to establish or verify the scientific validity, the analytical and, where applicable, the clinical performance of a device;
(33) '***device for performance study***' means a device intended by the manufacturer to be used in a performance study. A device intended to be used for research purposes, without any medical objective, shall not be deemed to be a device for performance study; L 117/190 EN Official Journal of the European Union 5.5.2017
(34) '***interventional clinical performance study***' means a clinical performance study where the test results may influence patient management decisions and/or may be used to guide treatment;
(35) '***diagnostic specificity***' means the ability of a device to recognise the absence of a target marker associated with a particular disease or condition;
(36) '***diagnostic sensitivity***' means the ability of a device to identify the presence of a target marker associated with a particular disease or condition;
(37) '***predictive value***' means the probability that a person with a positive device test result has a given condition under investigation, or that a person with a negative device test result does not have a given condition;
(38) '***positive predictive value***' means the ability of a device to separate true positive results from false positive results for a given attribute in a given population;
(39) '***negative predictive value***' means the ability of a device to separate true negative results from false negative results for a given attribute in a given population;
(40) '***likelihood ratio***' means the likelihood of a given result arising in an individual with the target clinical condition or physiological state compared to the likelihood of the same result arising in an individual without that clinical condition or physiological state;
(41) '***calibrator***' means a measurement reference material used in the calibration of a device; (56) 'control material' means a substance, material or article intended by its manufacturer to be used to verify the performance characteristics of a device;
(42) '***sponsor***' means any individual, company, institution or organisation which takes responsibility for the initiation, for the management and setting up of the financing of the performance study;
(43) '***informed consent***' means a subject's free and voluntary expression of his or her willingness to participate in a particular performance study, after having been informed of all aspects of the performance study that are relevant to the subject's decision to participate or, in the case of minors and of incapacitated subjects, an authorisation or agreement from their legally designated representative to include them in the performance study;
(44) '***ethics committee***' means an independent body established in a Member State in accordance with the law of that Member State and empowered to give opinions for the purposes of this Regulation, taking into account the views of laypersons, in particular patients or patients' organisations;
(45) '***post-market surveillance***' means all activities carried out by manufacturers in cooperation with other economic operators to institute and keep up to date a systematic procedure to proactively collect and review experience gained from devices they place on the market, make available on the market or

put into service for the purpose of identifying any need to immediately apply any necessary corrective or preventive actions;
(46) '***market surveillance***' means the activities carried out and measures taken by public authorities to check and ensure that devices comply with the requirements set out in the relevant Union harmonisation legislation and do not endanger health, safety or any other aspect of public interest protection;
(47) '***serious public health threat***' means an event which could result in imminent risk of death, serious deterioration in a person's state of health, or serious illness, that may require prompt remedial action, and that may cause significant morbidity or mortality in humans, or that is unusual or unexpected for the given place and time;
(48) '***corrective action***' means action taken to eliminate the cause of a potential or actual non-conformity or other undesirable situation;
(49) '***field safety corrective action***' means corrective action taken by a manufacturer for technical or medical reasons to prevent or reduce the risk of a serious incident in relation to a device made available on the market;
(50) '***field safety notice***' means a communication sent by a manufacturer to users or customers in relation to a field safety corrective action;
(51) '***harmonised standard***' means a European standard as defined in point (1)(c) of Article 2 of Regulation (EU) No 1025/2012;
(52) '***common specifications***' (CS) means a set of technical and/or clinical requirements, other than a standard, that provides a means of complying with the legal obligations applicable to a device, process or system.
(53) '***scientific validity***' means the association of an analyte with a clinical condition or a physiological state

Analytical performance indicators

- ***Measuring interval*** – defined by the limit of Quantification (LoQ) as the lower limit and limit of linearity as upper limit.
- ***Limit of Detection (LoD)*** **-** is the lowest actual percentage of variants that can be consistently detected.
- ***Analytical sensitivity:*** likelihood that the assay will detect the targeted sequence variations if present (true positive rate)
- ***Analytical specificity***: probability that the assay will not detect a sequence variation when none are present (true negative rate).
- ***Limit of Quantification (LoQ)*** is the lowest concentration at which the analyte can not only be reliably detected but at which some predefined goals for bias and imprecision are met.

Precision: degree of agreement between replicate measurements of the same material that can be determined by assessing the reproducibility (between-run precision, the consistency of results from the same sample under different conditions) and repeatability (within-run precision, the consistency of results from the same sample under the same condition).
Analytical accuracy: measurement of the discrepancy between the measured value and the true value. Can be established by analysing well-characterised reference samples with known confirmed sequence variants.
Robustness*:* measure of the assay capacity to remain unaffected by small but deliberate changes in test conditions. Robustness provides an indication of the ability of the assay to perform under normal usage. Robustness measures the effect of deliberate changes (incubation time, temperature, sample preparation, buffer pH) that can be controlled through specifications in the assay protocol.

Interference substances – declared including maximum amount of genomic DNA in the total ctDNA obtained after isolation from the sample

Clinical performance indicators

Due to the lack of a gold standard technique the **diagnosis sensitivity and specificity** for screening, diagnosis, therapeutic and disease monitoring, would be calculated as follow:

Biomarker X		~~oncNGS solution~~orthogonal in-house test			
		Positive	**Negative**		
~~orthogonal in-house test~~oncNGS solution	**Positive**	a	c	a/(a+c)%	**PPV – Positive Predictive Value**
	Negative	b	d	d/(b+d) %	**NPV - Negative Predictive Value**
		a/(a+b)%	d/(c+d)%		
		sensitivity	**specificity**		

Technical performance files

FASTQ format: is a text-based format for storing nucleotide sequence and its corresponding quality scores (encoded with a single ASCII character).

BAM files *(Binary Alignment Map)* is the compressed binary version of a SAM file that is used to represent aligned sequences up to 128 Mb.

VCF files *(variant calling files):* is a tab-delimited text file that is used to describe single nucleotide variants (SNVs) as well as insertions, deletions, and other sequence variations.

BED files *(Browser Extensible Data)*: format is a text file format used to store genomic regions as coordinates and associated annotations

Turn-around time: elapsed time between two specified points through pre-examination, examination and post-examination processes

User Experience and Performance

The following definitions has been extracted from the document *ISO 9241- 11:2018(en) Ergonomics of human-system interaction — Part 11: Usability: Definitions and concepts*
For the purposes of this Regulation, the following definitions apply:

Effectiveness: accuracy and completeness with which users achieve specified goals

Efficiency: resources used in relation to the results achieved

Satisfaction: extent to which the user's physical, cognitive and emotional responses that result from the use of a system, product or service meet the user's needs and expectations

Usability: extent to which a system, product or service can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use

Annex 4 – Time schedule for Phases 1 – 3

The time schedule mentioned in this Annex is purely indicative and can be subject of changes/refinements. No rights may be derived from the information presented in this Annex.

Estimated time schedule for entering the oncNGS PCP competition	
Request for Tender Phase: Framework agreement and Phase 1 Contracts	
Date	Activity/Event
~~01/03/2021~~11/07/2022	Publication of contract notice in TED
~~15/04/2021~~	~~Update of the Prior Information notice in TED~~
~~11/05/2021~~	~~OMC event 1~~
~~12/05/2021~~	~~OMC event 2~~
~~13/05/2021~~	~~OMC questionnaire open~~
~~20/05/2021~~	~~OMC questionnaire closes~~
~~21/05/2021~~	~~On-line meetings open~~
~~28/05/2021~~	~~On-line meetings closes~~
No later than 10 days before submitting the bid	Deadline for submitting questions about tender documents
~~30/05/2021~~12/07/2022	Deadline for lead procurer to publish replies to questions (Q&A document)
90 days from the RfT notice	Deadline for submission of tenders for the framework agreement and phase 1
Any moment after the deadline for submitting tenders for Phase 1	Opening of tenders
60 days after the final date for receipt of tenders	Tenderers notified of decision on awarding contracts
15 days from the notification of the award decision (Stand still)	Signing of framework agreements and Phase 1 specific contracts
Within 48 days after the signature of the Framework Agreement and Phase 1 contracts	Publication of contract award notice in TED
Execution of Phase 1: Solution design	
Date	**Activity/Event**
60 days after Phase 1 tenders submission deadline	Start of the execution of Phase 1
Day of start	Names of winning phase 1 Suppliers and their project abstracts sent to EU and published on oncNGS PCP project website
~~90~~60 days after the signature of the FA and Phase 1 contract	Delivery of: **D1.1** Update pre-existing rights, including SoA. **D1.2** Design Project Abstracts **D1.3** Design Interim Outcome Report (including 1st draft analytical testing protocol, SoA, justification of the R&D and innovation)

15 days after delivery of D1.3	Feedback on ~~the~~D1.1, D1.2 and D1.3 IOR (interim outcome report) by the Monitoring team
~~180~~120 days after the signature of the FA and Phase 1 contract	Delivery of: **D1.4** Design Final Outcome Report (including final analytical testing protocol addressing Monitoring Team recommendations) **D1.5** Solution Design Presentation **D1.6** Solution Design Publishable Summary
21 days after the submission of the End of Phase 1 Report	• Monitoring Team assessment of Phase 1 final milestone(s)/final report/deliverable(s) and notification to Phase 1 Suppliers as to whether they have completed this phase satisfactorily and successfully. • Payment of balance for Phase 1 to Suppliers that completed this phase satisfactorily. • End of Phase 1.
Invitation to Phase 2	
Date	**Activity/Event**
22 days after the submission of the End of Phase 1 Report	Launch Invitation for Phase 2 (only offers from Suppliers that satisfactory and successfully completed phase 1 are eligible)
Up to 10 days before submitting the bid for phase 2	Deadline for submitting questions on Invitation for Phase 2 documents
15 days after the Invitation for bidding in Phase 2	Deadline for submitting Phase 2 offers
The day after the deadline for submitting Phase 2 offers	Opening of Phase 2 offers
15 days after the opening of the Phase 2 offers and envelopes	Suppliers notified of decision on awarding Phase 2 contracts
15 days from the awarding (Stand still period)	Signing of Phase 2 specific contracts
Execution of Phase 2: Analytical and technical performance of the prototype	
Date	**Activity/Event**
35 days after Phase 2 bid submission deadline	Start of the execution of Phase 2
Day of start	Names of winning phase 2 Suppliers and their project abstracts sent to EU and published on oncNGS PCP project website
~~180~~120 days after the signature of the Phase 2 contract	Delivery of: **D2.1** Update pre-existing rights **D2.2** Prototyping, analytical, technical and clinical testing protocols description **D2.3** Panels design architecture, *in-silico* analysis (% coverage, regions, etc..)
30 days after delivery of D2.3	Feedback on ~~the~~D2.1, D2.2. and D2.3 Panel design architecture by the Monitoring team
~~210~~240 days after the signature of the Phase 2 contract	Delivery of:

	D2.4 Prototyping, analytical, technical and clinical performance Interim Outcome Report (including 1st draft demonstration protocol)
15 days after delivery of D2.4	Feedback on the IOR (interim outcome report) by the Monitoring team
	Visit of the phase 2 monitoring team to the Supplier's premises to check completion of interim milestone(s)/deliverable(s)
~~420~~360 days after the signature of the Phase 2 contract	Delivery of: **D2.5** Prototyping, analytical, technical and clinical Testing Final Outcome Report (including demonstration protocol at the pilot sites addressing Monitoring Team recommendations) **D2.6** Prototyping, analytical, technical and clinical Testing Presentation **D2.7** Prototyping, analytical, technical and clinical Testing Publishable Summary
21 days after the submission of the End of Phase 2 Report	• Monitoring Team assessment of Phase 2 final milestone(s)/final report/deliverable(s) and notification to Phase 2 Suppliers as to whether they have completed this phase satisfactorily and successfully. • Payment of balance for Phase 2 to Suppliers that completed this phase satisfactorily. • End of Phase 2.
Invitation to Phase 3	
Date	**Activity/Event**
15 days after the submission of the End of Phase 2 Report	Launch Invitation for Phase 3 (only offers from Suppliers that satisfactory and successfully completed phase 2 are eligible)
Up to 10 days before submitting the bid for phase 3	Deadline for submitting questions on Invitation for Phase 3 documents
15 days after the Invitation for bidding in Phase 3	Deadline for submitting Phase 3 offers
The day after the deadline for submitting Phase 3 offers	Opening of Phase 3 offers
15 days after the opening of the Phase 2 offers and envelopes	Suppliers notified of decision on awarding Phase 3 contracts
15 days from the awarding (Stand still period)	Signing of Phase 3 specific contracts
Execution of Phase 3: Technical, analytical and clinical performance validation of the oncNGS solution prototype in the clinical samples in suppliers sites and real clinical settings Proof of concept and solution test	
Date	**Activity/Event**
35 days after Phase 3 bid submission deadline	Start of the execution of Phase 3
Day of start	Names of winning phase 3 Suppliers and their updated project abstracts sent to EU and published on oncNGS PCP project website
~~60~~90 days after the signature of the Phase 3 contract	Delivery of: D3.1 Update pre-existing rights

	D3.2 Prototyping; analytical, technical and clinical performance study protocols on real samples
~~150~~210 days after the signature of the Phase 3 contract	Delivery of: D3.3 Analytical and clinical performance interim report results on real samples
~~180~~240 days after the signature of the Phase 3 contract	D3.4 Transfer prototype to buyers, including reference sample run and analytical, technical and clinical Testing Outcome Report
During pilot site implementation	Visit of the Phase 3 monitoring team to the buyer's premises to check the completion of milestones and deliverables
During pilot site implementation	Feedback from Phase 3 supervisor/monitoring team on D3.1, D3.2, D3.3 and D3.4 field-testing of the products/services
~~390~~450 days after the signature of the Phase 3 contract	Delivery of: **D3.5** Prototyping and clinical Testing at buyers site - Outcome Report (including addressing demonstration protocol at the pilot sites and Monitoring Team recommendations)
~~390~~450 days after the signature of the Phase 3 contract	Delivery of: **D3.6** Update pre-existing rights **D3.7** Prototyping and Analytical/Clinical Testing Publishable Summary **D3.8** Complete Prototyping and Analytical/clinical performance testing report with real samples (including corroboration on pilot sites)
15 days after the submission of the End of Phase 3 Report	Final event in Brussels with demonstration of products/services developed during Phase 3 (including to EU representatives) Summary of the lessons learnt and the results achieved by each Suppliers during the PCP sent to EU for publication purposes.
21 days after the submission of the End of Phase 3 Report	• Monitoring Team assessment of Phase 3 final milestone(s)/final report/deliverable(s) and notification to Phase 3 Suppliers as to whether they have completed this phase satisfactorily and successfully. • Payment of balance for Phase 3 to Suppliers that completed this phase satisfactorily. • End of Phase 3.

Annex 5 – Awarding criteria

The awarding criteria are assessed using the following model:

1- **Technical excellence of oncNGS solution**: explanation on how the ***Level I genes of both the Pan-cancer oncNGS LB panel and Hemato and Lymphoma oncNGS LB panel*** are addressed and assessed

Elements to assess:

(1) Description of the background the R&D will be based upon (current technology the Tenderers have access to and will be used as basis for the proposed R&D, specifying the actual gene panels and the analytical and clinical performance indicators (from oncNGS-INDI-001 to oncNGS-INDI-012) they reach with the specified gene panels

(2) Analysis of the state of the art (existing out of shell solutions and the ongoing developments) for the needs/goals described in the oncNGS Challenge Brief.

(3) Description of the overall proposed solution addressing oncNGS Challenge and how far it goes beyond the current state of the art (including the use of novel algorithms, concepts, approaches, methodologies, tools or technologies, advances in generic approaches for capturing, transmitting, storing, retrieving, manipulating or displaying information, image processing, data management and presentation, intelligent systems, secure systems and interoperable systems) and explanation of the offered research and development (R&D) services with regard to the CB and according to the OECD Frascati Manual standard definition mentioned, 2015 Edition, as well as to the definition provided by Article 2.1 (22) of new Directive 2014/24/EC. (if the Tenderer strategy is proposing to omit any Level I genes from the panels, a clear argumentation shall be given).

Fail. The criterion fails to be addressed	0
Poor. The criterion is inadequately addressed or there are serious inherent weaknesses and not all the assessment elements are addressed.	0,5
Fair. The proposal broadly addresses the criterion, but there are significant weaknesses and not all the assessment elements are addressed.	2,5
Good. The proposal addresses the criterion well as a whole (all the assessment elements are addressed), but a number of shortcomings are present.	5
Very good. The proposal addresses the criterion very well as a whole (all the assessment elements are addressed), but a small number of shortcomings are present.	7,5
Excellent. The proposal successfully addresses all relevant aspects of the criterion. Any shortcomings are minor.	10

2- **Technical excellence of oncNGS solution: Core Level I genes** of the Pan-cancer oncNGS LB panel (identified by a '*' in the Challenge Brief) **assessment**

Elements to assess:

(1) description of the clinical performance assessment to be carried out in Phase 3

Fail. The criterion fails to be addressed	0
Poor. The criterion is inadequately addressed or there are serious inherent weaknesses.	0,5
Fair. The proposal broadly addresses the criterion, but there are significant weaknesses.	2,5
Good. The proposal addresses the criterion well, but a number of shortcomings are present.	5
Very good. The proposal addresses the criterion very well, but a small number of shortcomings are present.	7,5
Excellent. The proposal successfully addresses all relevant aspects of the criterion. Any shortcomings are minor.	10

3- **Technical excellence of oncNGS solution:** explanation on **ALL MUST HAVE** ***GENERAL DESCRIPTION, WETLAB, BIOINFORMATICS, MOLECULAR INTERPRETATION, REPORT*** **requirements** are addressed and assessed

Elements to assess:

(1) Description of the background the R&D will be based upon (current technology the Tenderers have access to and will be used as basis for the proposed R&D, specifying the actual gene panels and the analytical and clinical performance indicators (from oncNGS-INDI-001 to oncNGS-INDI-012) they reach with the specified gene panels

(2) Analysis of the state of the art (existing out of shell solutions and the ongoing developments) for the needs/goals described in the oncNGS Challenge Brief.

(3) Description of the overall proposed solution addressing oncNGS Challenge and how far it goes beyond the current state of the art (including the use of novel algorithms, concepts, approaches, methodologies, tools or technologies, advances in generic approaches for capturing, transmitting, storing, retrieving, manipulating or displaying information, image processing, data management and presentation, intelligent systems, secure systems and interoperable systems) and explanation of the offered research and development (R&D) services with regard to the CB and according to the OECD Frascati Manual standard definition mentioned, 2015 Edition, as well as to the definition provided by Article 2.1 (22) of new Directive 2014/24/EC.

Fail. The criterion fails to be addressed	0
Poor. The criterion is inadequately addressed or there are serious inherent weaknesses and not all the assessment elements are addressed.	0,5
Fair. The proposal broadly addresses the criterion, but there are significant weaknesses and not all the assessment elements are addressed.	2,5
Good. The proposal addresses the criterion well as a whole (all the assessment elements are addressed), but a number of shortcomings are present.	5
Very good. The proposal addresses the criterion very well as a whole (all the assessment elements are addressed), but a small number of shortcomings are present.	7,5
Excellent. The proposal successfully addresses all relevant aspects of the criterion. Any shortcomings are minor.	10

4- **Technical excellence of oncNGS solution:** explanation on the ***Analytical and Clinical Performance Indicators*** **values (from oncNGS-INDI-001 to oncNGS-INDI-012)** the Tenderer commits to achieve and prove during Phase 3

Elements to assess:

(1) Description of the background the R&D will be based upon (current technology the Tenderers have access to and will be used as basis for the proposed R&D, specifying the actual gene panels and the analytical and clinical performance indicators (from oncNGS-INDI-001 to oncNGS-INDI-012) they reach with the specified gene panels

(2) Analysis of the state of the art (existing out of shell solutions and the ongoing developments) for the needs/goals described in the oncNGS Challenge Brief.

(3) Description of the overall proposed solution addressing oncNGS Challenge and how far it goes beyond the current state of the art (including the use of novel algorithms, concepts, approaches, methodologies, tools or technologies, advances in generic approaches for capturing, transmitting, storing, retrieving, manipulating or displaying information, image processing, data management and presentation, intelligent systems, secure systems and interoperable systems) and explanation of the offered research and development (R&D) services with regard to the CB and according to the OECD Frascati Manual standard definition mentioned, 2015 Edition, as well as to the definition provided by Article 2.1 (22) of new Directive 2014/24/EC.

Fail. The criterion fails to be addressed	0
Fail. The criterion fails to be addressed	0,5
Poor. The criterion is inadequately addressed or there are serious inherent weaknesses and not all the assessment elements are addressed.	2,5
Fair. The proposal broadly addresses the criterion, but there are significant weaknesses and not all the assessment elements are addressed.	5
Good. The proposal addresses the criterion well as a whole (all the assessment elements are addressed), but a number of shortcomings are present.	7,5
Very good. The proposal addresses the criterion very well as a whole (all the assessment elements are addressed), but a small number of shortcomings are present.	10

5- **Technical excellence of oncNGS solution: explanation on the** *User Experience Performance Indicators* values (from oncNGS-INDI-013 to oncNGS-INDI-016) the Tenderer commits to achieve and prove during Phase 3

Elements to assess:

(1) Description of the background the R&D will be based upon (current technology the Tenderers have access to and will be used as basis for the proposed R&D, specifying the actual gene panels and the analytical and clinical performance indicators (from oncNGS-INDI-013 to oncNGS-INDI-016) they reach with the specified gene panels

(2) Analysis of the state of the art (existing out of shell solutions and the ongoing developments) for the needs/goals described in the oncNGS Challenge Brief.

(3) Description of the overall proposed solution addressing oncNGS Challenge and how far it goes beyond the current state of the art (including the use of novel algorithms, concepts, approaches, methodologies, tools or technologies, advances in generic approaches for capturing, transmitting, storing, retrieving, manipulating or displaying information, image processing, data management and presentation, intelligent systems, secure systems and interoperable systems) and explanation of the offered research and development (R&D) services with regard to the CB and according to the OECD Frascati Manual standard definition mentioned, 2015 Edition, as well as to the definition provided by Article 2.1 (22) of new Directive 2014/24/EC.

Fail. The criterion fails to be addressed	**0**
Poor. The criterion is inadequately addressed or there are serious inherent weaknesses and not all the assessment elements are addressed.	**0,5**
Fair. The proposal broadly addresses the criterion, but there are significant weaknesses and not all the assessment elements are addressed.	**2,5**
Good. The proposal addresses the criterion well as a whole (all the assessment elements are addressed), but a number of shortcomings are present.	**5**
Very good. The proposal addresses the criterion very well as a whole (all the assessment elements are addressed), but a small number of shortcomings are present.	**7,5**
Excellent. The proposal successfully addresses all relevant aspects of the criterion. Any shortcomings are minor.	**10**

5- (in case the Tenderer commits to address NICE TO HAVE *Level II genes of both the Pan-cancer oncNGS LB panel and Hemato and Lymphoma oncNGS LB panel*)

Technical excellence of oncNGS solution: Explanation on the coverage of the ***Level II genes of both the Pan-cancer oncNGS LB panel and Hemato and Lymphoma oncNGS LB panel*** the Tenderer commits to achieve and prove along the three Phases and how they are addressed and assessed

Elements to assess:

(1) Description of the background the R&D will be based upon (current technology the Tenderers have access to and will be used as basis for the proposed R&D, specifying the actual gene panels and the analytical and clinical performance indicators (from oncNGS-INDI-001 to oncNGS-INDI-012) they reach with the specified gene panels

(2) Analysis of the state of the art (existing out of shell solutions and the ongoing developments) for the needs/goals described in the oncNGS Challenge Brief.

(3) Description of the overall proposed solution addressing oncNGS Challenge and how far it goes beyond the current state of the art (including the use of novel algorithms, concepts, approaches, methodologies, tools or technologies, advances in generic approaches for capturing, transmitting, storing, retrieving, manipulating or displaying information, image processing, data management and presentation, intelligent systems, secure systems and interoperable systems) and explanation of the offered research and development (R&D) services with regard to the CB and according to the OECD Frascati Manual standard definition mentioned, 2015 Edition, as well as to the definition provided by Article 2.1 (22) of new Directive 2014/24/EC.

Fail. The criterion fails to be addressed	0
Poor. The criterion is inadequately addressed or there are serious inherent weaknesses and not all the assessment elements are addressed.	0,5
Fair. The proposal broadly addresses the criterion, but there are significant weaknesses and not all the assessment elements are addressed.	2,5
Good. The proposal addresses the criterion well as a whole (all the assessment elements are addressed), but a number of shortcomings are present.	5
Very good. The proposal addresses the criterion very well as a whole (all the assessment elements are addressed), but a small number of shortcomings are present.	7,5
Excellent. The proposal successfully addresses all relevant aspects of the criterion. Any shortcomings are minor.	10

5.1- (in case the Tenderer commits to address NICE TO HAVE *Level II genes of both the Pan-cancer oncNGS LB panel and Hemato and Lymphoma oncNGS LB panel*)

Technical excellence of oncNGS solution: Coverage of the *Level II genes* *of both the Pan-cancer oncNGS LB panel and Hemato and Lymphoma oncNGS LB panel* the Tenderer commits to achieve and prove along the three Phases

Elements to be assessed only in case criterion 5- scores 2,5 or higher:

% of coverage

<25%	2
25%	4
50%	6
75%	8

5.1- (in case the Tenderer commits to address NICE TO HAVE *Level II genes of both the Pan-cancer oncNGS LB panel and Hemato and Lymphoma oncNGS LB panel*) **Technical excellence of oncNGS solution: Coverage of the *Level II genes* *of both the Pan-cancer oncNGS LB panel and Hemato and Lymphoma oncNGS LB panel* the Tenderer commits to achieve and prove along the three Phases** **Elements to be assessed only in case criterion 5- scores 2,5 or higher:** **% of coverage**	
>90%	10

5.2- (in case the Tenderer commits to address NICE TO HAVE *Level II genes of both the Pan-cancer oncNGS LB panel and Hemato and Lymphoma oncNGS LB panel*) **Technical excellence of oncNGS solution: Level II genes** of the Pan-cancer oncNGS LB panel assessment **Elements to assess:** **(1) description of the clinical performance assessment to be carried out in Phase**	
Fail. The criterion fails to be addressed	0
Poor. The criterion is inadequately addressed or there are serious inherent weaknesses.	0,5
Fair. The proposal broadly addresses the criterion, but there are significant weaknesses.	2,5
Good. The proposal addresses the criterion well, but a number of shortcomings are present.	5
Very good. The proposal addresses the criterion very well, but a small number of shortcomings are present.	7,5
Excellent. The proposal successfully addresses all relevant aspects of the criterion. Any shortcomings are minor.	10

~~5.1~~ ~~5.3-~~ (in case the Tenderer commits to address NICE TO HAVE *Level II genes of both the Pan-cancer oncNGS LB panel and Hemato and Lymphoma oncNGS LB panel*)

Technical excellence of oncNGS solution: explanation on the ***Analytical and Clinical Performance Indicators*** **values (from oncNGS-INDI-001 to oncNGS-INDI-012)** the Tenderer commits to achieve and prove during Phase 3 in case of **Level II genes**

Elements to assess:

(1) Description of the background the R&D will be based upon (current technology the Tenderers have access to and will be used as basis for the proposed R&D, specifying the actual gene panels and the analytical and clinical performance indicators (from oncNGS-INDI-001 to oncNGS-INDI-012) they reach with the specified gene panels

(2) Analysis of the state of the art (existing out of shell solutions and the ongoing developments) for the needs/goals described in the oncNGS Challenge Brief.

(3) Description of the overall proposed solution addressing oncNGS Challenge and how far it goes beyond the current state of the art (including the use of novel algorithms, concepts, approaches, methodologies, tools or technologies, advances in generic approaches for capturing, transmitting, storing, retrieving, manipulating or displaying information, image processing, data management and presentation, intelligent systems, secure systems and interoperable systems) and explanation of the offered research and development (R&D) services with regard to the CB and according to the OECD Frascati Manual standard definition mentioned, 2015 Edition, as well as to the definition provided by Article 2.1 (22) of new Directive 2014/24/EC.

Fail. The criterion fails to be addressed	0
Poor. The criterion is inadequately addressed or there are serious inherent weaknesses and not all the assessment elements are addressed.	0,5
Fair. The proposal broadly addresses the criterion, but there are significant weaknesses and not all the assessment elements are addressed.	2,5
Good. The proposal addresses the criterion well as a whole (all the assessment elements are addressed), but a number of shortcomings are present.	5
Very good. The proposal addresses the criterion very well as a whole (all the assessment elements are addressed), but a small number of shortcomings are present.	7,5
Excellent. The proposal successfully addresses all relevant aspects of the criterion. Any shortcomings are minor.	10

6. (in case the Tenderer commits to address one or more remaining NICE TO HAVE requirements (WETLAB.USE.PERF.05, WETLAB.USE.UF.01, WETLAB.USE.UF.02, WETLAB.USE.UF.03, WETLAB.USE.UF.05, WETLAB.USE.UF.06, SUST.02, SUST.05, OUTCOME.02, OUTCOME.04, WETLAB.USE.AV.01, BIOINFOR.USE.FUNCT.03, BIOINFOR.USE.FUNCT.04, BIOINFOR.USE.UF.01 and MOLECBIO.USE.OUT.01)

Explanation on the NICE TO HAVE specifications **and requirements** the Tenderer commits to achieve and prove along the three Phases and how such specifications and requirements are addressed and assessed

Elements to assess:

(1) Description of the background the R&D will be based upon (current technology the Tenderers have access to and will be used as basis for the proposed R&D, specifying the actual gene panels and the analytical and clinical performance indicators they reach with the specified gene panels

(2) Analysis of the state of the art (existing out of shell solutions and the ongoing developments) for the needs/goals described in the oncNGS Challenge Brief.

(3) Description of the overall proposed solution addressing oncNGS Challenge and how far it goes beyond the current state of the art (including the use of novel algorithms, concepts, approaches, methodologies, tools or technologies, advances in generic approaches for capturing, transmitting, storing, retrieving, manipulating or displaying information, image processing, data management and presentation, intelligent systems, secure systems and interoperable systems) and explanation of the offered research and development (R&D) services with regard to the CB and according to the OECD Frascati Manual standard definition mentioned, 2015 Edition, as well as to the definition provided by Article 2.1 (22) of new Directive 2014/24/EC.

Fail. The criterion fails to be addressed	0
Poor. The criterion is inadequately addressed or there are serious inherent weaknesses and not all the assessment elements are addressed.	0,5
Fair. The proposal broadly addresses the criterion, but there are significant weaknesses and not all the assessment elements are addressed.	2,5
Good. The proposal successfully addresses all relevant aspects of the criterion ~~well as~~for less than half of NICE TO HAVE requirements and a ~~whole (all the assessment elements are addressed), but a~~small number of shortcomings are present.	5
Very good. The proposal successfully addresses all relevant aspects of the criterion ~~very well as a whole (all the assessment elements are addressed), but~~for for more than half of NICE TO HAVE requirements and a small number of shortcomings are present.	7,5
Excellent. The proposal successfully addresses all relevant aspects of the criterion for more than half of NICE TO HAVE requirements. Any shortcomings are minor.	10

~~6.~~7. Development plan of oncNGS solution

Elements to assess:

(1) Description of the technological development plan covering the full PCP procedure from Phase 1 to Phase 3, deliverables, milestones and project schedule (including the assessment of the committed indicators)

(2) Identification and management of technological risks (for example: selection of a technology that later is identified as limiting to the achievement of given requirements and the mitigation methodology applied during subsequent solutions explorations and prototyping development phases aimed to reduce gradually the risk of the technological failure)

Fail. The criterion fails to be addressed	0
Poor. The criterion is inadequately addressed or there are serious inherent weaknesses and not all the assessment elements are addressed.	0,5
Fair. The proposal broadly addresses the criterion, but there are significant weaknesses and not all the assessment elements are addressed.	2,5
Good. The proposal addresses the criterion well as a whole (all the assessment elements are addressed), but a number of shortcomings are present.	5
Very good. The proposal addresses the criterion very well as a whole (all the assessment elements are addressed), but a small number of shortcomings are present.	7,5
Excellent. The proposal successfully addresses all relevant aspects of the criterion. Any shortcomings are minor.	10

8. Business Case Alignment

Elements to assess:

(1) Description of the compliancy with the regulations and standards identified in the Challenge Brief and any additional one identified by the Tenderer and considered relevant, as:

- Guideline on good pharmacogenomic practice
- Genomic sampling and management of genomic data

(2) Description of the envisioned business plan (including marketing & sales plans) that explains the proposed approach to commercially exploit the results of the PCP and to bring a viable product or service onto the market (e.g.: target markets and customers, pricing strategy, partnerships, commercial alliances, distribution)

(3)Analysis of the identified exploitability costs (Freedom to Operate (FTO) and IPR strategy, plan to protect the resulting technologies, third parties dependencies, patents, licenses, maintenance cost, sales, internationalisation, clinical validation of the solution, certification in the target geographical markets, scale up production costs).

Fail. The criterion fails to be addressed	0
Poor. The criterion is inadequately addressed or there are serious inherent weaknesses and not all the assessment elements are addressed.	0,5
Fair. The proposal broadly addresses the criterion, but there are significant weaknesses and not all the assessment elements are addressed.	2,5
Good. The proposal addresses the criterion well as a whole (all the assessment elements are addressed), but a number of shortcomings are present.	5
Very good. The proposal addresses the criterion very well as a whole (all the assessment elements are addressed), but a small number of shortcomings are present.	7,5

8. Business Case Alignment

Elements to assess:

(1) Description of the compliancy with the regulations and standards identified in the Challenge Brief and any additional one identified by the Tenderer and considered relevant, as:

- o Guideline on good pharmacogenomic practice
- o Genomic sampling and management of genomic data

(2) Description of the envisioned business plan (including marketing & sales plans) that explains the proposed approach to commercially exploit the results of the PCP and to bring a viable product or service onto the market (e.g.: target markets and customers, pricing strategy, partnerships, commercial alliances, distribution)

(3)Analysis of the identified exploitability costs (Freedom to Operate (FTO) and IPR strategy, plan to protect the resulting technologies, third parties dependencies, patents, licenses, maintenance cost, sales, internationalisation, clinical validation of the solution, certification in the target geographical markets, scale up production costs).

Excellent. The proposal successfully addresses all relevant aspects of the criterion. Any shortcomings are minor.	10

~~7.~~9. Quality and efficiency of the implementation

Elements to assess:

(1) Description of the Ethics protocol: by answering to the question "Does this tender involve ethical issues? (YES/NO) with an ethics self-assessment, that explains how the ethical issues will be addressed across the three contract phases (2) Description of the envisioned business plan (including marketing & sales plans) that explains the proposed approach to commercially exploit the results of the PCP and to bring a viable product or service onto the market (e.g.: target markets and customers, pricing strategy, partnerships, commercial alliances, distribution)

(2) Description of the Security issue protocol: by answering to the question: "Does this tender involve: activities or results that may raise security issues and/or EU-classified information as background or results? (YES/NO)" (See Decision 2015/444/EC, Euratom on the provisions on security of EU-classified information) with a security self-assessment, that explains how EU, national and international law on dual-use goods or dangerous materials and substances will be addressed, in case the tender involves activities or results that may raise security issues and/or EU-classified information as background or results

(3) Description of Quality plan across the three contract phases, with special reference to the verification and validation of the proposed technology, the work planning, personal and material resources, and the identification and management of logistic and legal aspects, as well as:

- Description of the analysis of the research and development costs structure of the proposed solution, comparing the allocations of the different types of expenditures and investments (e.g.: like comparing the percentage of human resource costs with the percentage of the subcontracting costs or comparing the percentage of the total direct costs with the percentage of the indirect costs or comparing the percentage of the total expenditures with the percentage of the investments the Tenderer is planning to do according to its offer) and of the financing plan of the proposed R&D services (if any)
- Description of the Risk management plan (including oncNGS PCP contracts delivery, clinical, market/business and regulatory risks (the technological risks are addressed within the Technical excellence and feasibility criteria)

Fail. The criterion fails to be addressed	0

~~7.~~9. Quality and efficiency of the implementation

Elements to assess:

(1) Description of the Ethics protocol: by answering to the question "Does this tender involve ethical issues? (YES/NO) with an ethics self-assessment, that explains how the ethical issues will be addressed across the three contract phases (2) Description of the envisioned business plan (including marketing & sales plans) that explains the proposed approach to commercially exploit the results of the PCP and to bring a viable product or service onto the market (e.g.: target markets and customers, pricing strategy, partnerships, commercial alliances, distribution)

(2) Description of the Security issue protocol: by answering to the question: "Does this tender involve: activities or results that may raise security issues and/or EU-classified information as background or results? (YES/NO)" (See Decision 2015/444/EC, Euratom on the provisions on security of EU-classified information) with a security self-assessment, that explains how EU, national and international law on dual-use goods or dangerous materials and substances will be addressed, in case the tender involves activities or results that may raise security issues and/or EU-classified information as background or results

(3) Description of Quality plan across the three contract phases, with special reference to the verification and validation of the proposed technology, the work planning, personal and material resources, and the identification and management of logistic and legal aspects, as well as:

- Description of the analysis of the research and development costs structure of the proposed solution, comparing the allocations of the different types of expenditures and investments (e.g.: like comparing the percentage of human resource costs with the percentage of the subcontracting costs or comparing the percentage of the total direct costs with the percentage of the indirect costs or comparing the percentage of the total expenditures with the percentage of the investments the Tenderer is planning to do according to its offer) and of the financing plan of the proposed R&D services (if any)
- Description of the Risk management plan (including oncNGS PCP contracts delivery, clinical, market/business and regulatory risks (the technological risks are addressed within the Technical excellence and feasibility criteria)

Poor. The criterion is inadequately addressed or there are serious inherent weaknesses and not all the assessment elements are addressed.	0,5
Fair. The proposal broadly addresses the criterion, but there are significant weaknesses and not all the assessment elements are addressed.	2,5
Good. The proposal addresses the criterion well as a whole (all the assessment elements are addressed), but a number of shortcomings are present.	5
Very good. The proposal addresses the criterion very well as a whole (all the assessment elements are addressed), but a small number of shortcomings are present.	7,5
Excellent. The proposal successfully addresses all relevant aspects of the criterion. Any shortcomings are minor.	10

~~8.~~10. Planning for valuing the benefits for procurers and soundness of the approach to integrate with procurer systems: getting ready to future value-based oncNGS public procurements of innovation

Elements to assess:

(1) Description on how the Tenderer proposes to get ready to future value-based oncNGS public procurements of innovation researching, developing and assessing across the three phases how the proposed solution will contribute to different factors, as: following clinical response and inspiring adaptive therapies at each (chemo)therapy cycle; more agile decision making process; boosting International collaboration; increasing experience and knowledge of healthcare professionals; applicability or external validity of the studies available at the national/European health and social care systems; boosting healthcare professionals involvement in design process for future collaboration in R&D.

Fail. The criterion fails to be addressed	0
Poor. The criterion is inadequately addressed or there are serious inherent weaknesses.	0,5

~~8.~~10. **Planning for valuing the benefits for procurers and soundness of the approach to integrate with procurer systems:** getting ready to future value-based oncNGS public procurements of innovation Elements to assess: **(1)** Description on how the Tenderer proposes to get ready to future value-based oncNGS public procurements of innovation researching, developing and assessing across the three phases how the proposed solution will contribute to different factors, as: following clinical response and inspiring adaptive therapies at each (chemo)therapy cycle; more agile decision making process; boosting International collaboration; increasing experience and knowledge of healthcare professionals; applicability or external validity of the studies available at the national/European health and social care systems; boosting healthcare professionals involvement in design process for future collaboration in R&D.	
Fair. The proposal broadly addresses the criterion, but there are significant weaknesses.	2,5
Good. The proposal addresses the criterion well, but a number of shortcomings are present.	5
Very good. The proposal addresses the criterion very well, but a small number of shortcomings are present.	7,5
Excellent. The proposal successfully addresses all relevant aspects of the criterion. Any shortcomings are minor.	10

The scored awarding criteria are then weighted against the following scoring table:

	Phase 1		Phase 2		Phase 3	
	Score	Min Points	Score	Min Points	Score	Min Points
Technical feasibility	8179,00	38	70,068,00	31	5657,00	23
Technical excellence	7369,00	29,50	60,057,00	25,00	4445,00	20,50
1 MUST HAVE Level 1 genes of both the Pan-cancer oncNGS LB panel and Hemato and Lymphoma oncNGS LB panel	1517,00	10,85	13,015,00	10,75	1013,00	10,65
2 MUST HAVE Core Level 1 genes of the Pan-cancer oncNGS LB panel	10,00	10,50	9,000	10,45	78,00	10,40
3 ALL MUST HAVE GENERAL DESCRIPTION, WETLAB, BIOINFORMATICS, MOLECULAR INTERPRETATION, REPORT requirements	20,00	1,00	16,000	10,80	12,00	10,60
4 MUST HAVE Analytical and Clinical Performance Indicators values (from oncNGS-INDI-001 to oncNGS-INDI-012)	812,00	10,60	7,010,00	10,50	48,00	10,40
~~5 User Experience Performance Indicators values (from oncNGS-INDI-013 to oncNGS-INDI-016)~~	~~8~~	~~1~~	~~6,0~~	~~1~~	~~5~~	~~1~~
65 NICE TO HAVE-: explanation of coverage of the Level 2 genes of both the Pan-cancer oncNGS LB panel and Hemato and Lymphoma oncNGS LB panel	21,50	0,00	1,500	0,00	10,50	0,00
75.1 NICE TO HAVE-: coverage of the Level 2 genes of both the Pan-cancer oncNGS LB panel and Hemato and Lymphoma oncNGS LB panel	21,50	0,00	1,500	0,00	10,50	0,00
85.2 NICE TO HAVE-Core: Level 2 genes of the Pan-cancer oncNGS LB panel assesment	21,50	0,00	1,500	0,00	10,50	0,00
5.3 NICE TO HAVE: in case of Level 2 genes Analytical and Clinical Performance Indicators values (from oncNGS-INDI-001 to oncNGS-INDI-012)	1,50	0,00	1,00	0,00	0,50	0,00

6 NICE TO HAVE: one or more one or more remaining NICE TO HAVE requirements (WETLAB.USE.PERF.05, WETLAB.USE.UF.01, WETLAB.USE.UF.02, WETLAB.USE.UF.03, WETLAB.USE.UF.05, WETLAB.USE.UF.06, SUST.02, SUST.05, OUTCOME.02, OUTCOME.04, WETLAB.USE.AV.01, BIOINFOR.USE.FUNCT.03, BIOINFOR.USE.FUNCT.04, BIOINFOR.USE.UF.01 and MOLECBIO.USE.OUT.01)	24,00	0,00	1,53,00	0,00	12,00	0,00
10 NICE TO HAVE - Analytical and Clinical Performance Indicators values in case NICE TO HAVE requirements are addressed	2	0	1,5	0	1	0
11 NICE TO HAVE - User Experience Performance Indicators values in case NICE TO HAVE requirements are addressed	2	0	1,5	0	1	0
7 Development plan	810,00	10,50	10,011,00	10,55	12,00	10,50
8 Business Case Alignment	34,00	10,20	5,07,00	10,35	10,00	10,50
9 Quality and efficiency of the implementation	34,00	10,20	6,900	10,30	98,00	10,40
10 Planning for valuing the benefits for procurers and soundness of the approach to integrate with procurer systems: getting ready to future value-based oncNGS public procurements of innovation	3,00	10,15	4,900	10,20	5,00	10,25
Price (automatic formula)	10,00		15,900		20,00	
	100,00		100,900		100,00	

Annex 6 – Scoring Model for the Price

1. Total PCP Price overview

Tenderers are required to submit an overview of their foreseeable costs for the all 3 PCP phases (Form F). The total PCP costs provided by the Tenderer is an estimate only and will not be used for the tender scoring. Only the Phase specific price and budget breakdown presented is binding (see Form F and G). However, all unit prices presented by the Tenderer are binding for the duration of the Framework Agreement, i.e. they may not be changed in between phases.

2. Scoring of the Price for PCP Phase 1

The Price will be evaluated using the formula below:

Points awarded = Weight awarded to Price * (Price lowest tender/Price Tender Phase 1)

Note: **Price Tender Phase 1 = the Actual Price (not the Virtual Price!) that the Tenderer has submitted for Phase 1.**

Weight awarded to Price = the maximum points the Tenderer can get on the Price award criterion (see Overview of the award criteria of the Request for Tenders).

Annex 7 – Contract Monitoring

GENERAL DESCRIPTION	Phase 1	Phase 2	Phase 3
GD1. Versatility and Flexibility			
CLINICAL WORKFLOW.01 - oncNGS Tenderer SHALL define how far their oncNGS solution ~~SHALL~~will be versatile and scalable~~,~~ (e.g. a variable number of test samples will be accomodated in a single run (~~ideally~~ from a single sample to full chip ~~occupacy~~occupancy), maintaining consumable cost per sample low and similar, ~~and~~ preventing undue waste of reagents and resources in case of low-throughput runs), define the strategy to achieve the defined level of ambition, implement and execute	Description of the multiplexing strategy, and how the number of samples impact the overall cost of the technique	Demonstration that the solution is performant (sensitivity, specificity, time to result) ~~for single or multiple samples~~independently of the number of	~~Experimental test with samples sent at prespecified time points (either 1 in a week or many samples the same day)~~Demonstarte the solution performance (sensitivity, specificity, time to result,..) independently of the number of samples at pilot sites
GD2. Sustainability			
SUST.01 - OncNGS SHALL ~~provide a solution~~be affordable in agreement with the business case to be applied in routine basis, at each (chemo)therapy cycle to follow clinical response and inspire adaptive therapies. OncNGS price per sample should be below 1500 euro.	Evaluation of the informatively of the panel (how many patients with the specified type of cancer have at least 1/2/3 or more mutation within this panel, using patient level information from cancer exome databases or personal cohorts)	Up-dated in silico simulation of the panel. Sufficient and homogeneous coverage of all the targets of the panel	Up-dated version of the in silico simulation of the panel.
~~**SUST.02** - OncNGS SHALL provide a protocol for benchmarking analysis of the solution with other commercial solutions~~	~~Description of the technical protocol for benchmarking analysis (what kind of sample, what criteria of comparison, with statistical considerations).~~ ~~Advantages of their solution and approach~~	~~Up-date the technical benchmarking protocol and solution in the market.~~ ~~Results of the benchmark study (analytical performance) with synthetic and real samples.~~ ~~How they compare in the analytical performance with other solutions already available.~~	~~Up-date the technical benchmarking protocol and solution in the market.~~ ~~Results of the benchmark study (analytical and clinical performance) with real samples in the pilot sites.~~
SUST.03 - To avoid sample and data transfer, which could infringe on privacy issues, oncNGS solution SHALL be deployable locally and interfaced with existing both local tools ~~to avoid sample and data transfer, which could infringe on privacy issues~~and software applications for interpretation and reporting that could be provided through secure, restricted-access, GDPR-compliant fully validated cloud services or equivalent	Description of the informatics structure, and its interoperability with local informatics architectures	More technical detailed of the way it could be deployed locally the solution inclusion into the internal clinical workflow in the hospitals.	Assessment of the feasibility of local deployment of the solution
SUST.04 - OncNGS Tenderer SHALL define, implement and execute the strategy to provide ~~with an~~oncNGS solution as upgradable technology that may include a single panel or modular and/or scalable panel configurations. Being upgradable the inclusion of: - new genes and/or sequences within covered genes, and new multigene markers may be incorporated by successive upgrades to cope with new/improved therapeutic - new bioinformatic pipelines and interpretation tools while maintaining the performance of the technique and cost and available in the proposed solution	Description for the ~~plan~~strategy for upgradable technology upgrading and inclusion in the Business model	~~Updated~~Demostration the strategy is implemented and updated description for the plan for upgrading and inclusion in the Business model, based on the prototyping results and SoA during Phase 2	~~Updated~~Demostration the strategy is executed and updated description for the plan for upgrading and inclusion in the Business model, based on the pilot results and SoA during Phase 3
SUST. 05 - OncNGS solution SHALL enable the use of vendor neutral consumables (e.g. plastic tubes, reagents), for vendor neutral commercial solution	Description of the different consumables and characteristics, not only the commercial brand name	Demonstrate the absence of impact of consumables changes on the performances of the solution	Check the absence of impact of consumables changes on the performances of the solution
In case Tenderer commits to address: **SUST.02 -** OncNGS COULD provide a protocol for benchmarking analysis of the solution with other commercial solutions	Description of the technical protocol for benchmarking analysis (what kind of sample, what criteria of comparison, with statistical considerations). Advantages of their solution and approach	Up-date the technical benchmarking protocol and solution in the market. Results of the benchmark study (analytical performance) with synthetic and real samples. How they compare in the analytical performance with other solutions already available.	Up-date the technical benchmarking protocol and solution in the market. Results of the benchmark study (analytical and clinical performance) with real samples in the pilot sites.

In case Tenderer commits to address: **SUST. 05** - OncNGS solution COULD enable the use of vendor neutral consumables (e.g. plastic tubes, reagents), for vendor neutral commercial solution	Description of the different consumables and characteristics, not only the commercial brand name	Demonstrate the absence of impact of consumables changes on the performances of the solution	Check the absence of impact of consumables changes on the performances of the solution
GD3. Outcomes			
In case Tenderer commits to address: **OUTCOME.02 -** OncNGS ~~SHALL~~solution COULD provide a common technical NGS protocol (that ensure harmonization of the technique) for DNA/RNA libraries prep (guidelines) for LB for detection of ~~at least~~, for example, the following : Single Nucleotide Variation (SNV~~)~~), TMB, MSI and mutations altogether~~:~~ (Translocations, Fusion, Splice variants, Large deletions/insertions, Copy nº variations – Clonotypic rearrangement of BCR and TCR genes, (reference samples for each indication~~)~~))	Description of the design strategy explaining the specificity (if any) for each type of genomic alteration	What are the analytical results of the solutions on the different types of genomic alterations (at least sensitivity, specificity) In silico analysis	Assessment of the performance of the solution to detect the different types of genomic alterations in "real life" settings
In case Tenderer commits to address: **OUTCOME.04** - oncNGS solution COULD demonstrate to be environmentally friendly in the overall solution design including all components in comparison with current commercial solution and more precisely by reducing the amount of unrecyclable waste per sample	Description of the design production and delivable of consumables to achieve this objective	Demonstration that the design work effectively in the prototype decrease the environmental impact (quantity of plastic…)	Demonstration that the design work effectively in the prototype decrease the environmental impact (quantity of plastic…)

WETLAB	Phase 1	Phase 2	Phase 3
WET1. Library preparation and laboratory workflow			
WETLAB.USE.PERF.01 - OncNGS solution SHALL reduce NGS time, particularly for library preparation. The turnaround time for the entire diagnostic workflow (from nucleic acid to molecular report) SHALL be ~~2~~5-7 days ~~(48h)~~ maximum	Description of the process/protocol and the design of the libraries preparation Is it feasible to reduce the actual time of preparation (48h)?	Time for the library preparation, steps, hands-off time, and machine use time following the protocol defined.	On site, time for library preparation by personnel experienced following protocol defined by EO
WETLAB.USE.PERF.02 - OncNGS solution SHALL reduce and optimize the protocol's hands-on and hands-off times taking into account a typical working day of 8 hours maximum, and convenient breaks allowing a single unit of personnel to carry out the entire procedures within two working days in compliance with statutory EU working rules	Description of the process/protocol and the design of the libraries preparation Does it contains the specific hands-on and hands-off time? Does it allows achieving the maximum of 2 days turn-around time? Does it allows to follow the protocols within a working day of 8 hours?	Time for the library preparation, steps, hands-off time, and machine use time following the protocol defined.	On site, time for library preparation by personnel experienced following protocol defined by EO
WETLAB.USE.PERF.04 - OncNGS ~~solution~~Tenderer/Supplier SHALL ~~simplify~~define, implement and execute the strategy for simplifying libraries preparation (e.g. ~~reducing~~minimize the number of steps in the wetlab protocol, the number of primers pools and the number of tubes needed).	Description of the process/protocol and the design of the libraries preparation	Time for the library preparation, steps, hands-off time, and a reduced number of steps or primers pools following the protocol defined.	On site, time for library preparation by personnel experienced following protocol defined by EO
In case Tenderer commits to address: **WETLAB.USE.PERF.05 -** The OncNGS solution ~~will~~COULD enforce the easiest and most convenient handling and storage of the reagents. Reducing the storage space and avoiding as far as possible demanding storage conditions (-80ºC)	Description of the process/protocol and the design of the libraries preparation. Does the solution foresee an easy way of conditions and handling of the reagents?	Conditions for storage or handling of reagents for the library preparation.	On site, conditions for storage or handling of reagents for the library preparation.
In case Tenderer commits to address: **WETLAB.USE.UF.01** - OncNGS solution protocols ~~SHALL~~COULD be easy to learn in a way that skilled technical personnel running NGS should have a steep learning curve: 3 days training at most.	Description on how the oncNGS solution would meet this requirement (manual with final test for checking if it has been understood, help line)	Description on how it would meet this in the prototype (manual with final test for checking if it has been understood, help line)	Qualitative Questionnaire
In case Tenderer commits to address: **WETLAB.USE.UF.02** - OncNGS ~~provider~~ ~~SHALL~~Tenderer/Supplier COULD measure and demonstrate their solution is understandable by skilled	Description of the questionnaires used for this assessment (preferably a validated questionnaire)	Results of internal questionnaires on technical personnel on suppliers site	Qualitative Questionnaire

technical personnel in accordance to a questionnaire (preferably validated)			
In case Tenderer commits to address: **WETLAB.USE.UF.03** - OncNGS ~~provider SHALL~~Tenderer/Supplier COULD measure and demonstrate their solution is task efficient in terms of protocol design and hands-on and hands-off time	Description of the questionnaires used for this assessment (preferably a validated questionnaire)	Results of internal questionnaires on technical personnel on suppliers site	Qualitative Questionnaire
In case Tenderer commits to address: **WETLAB.USE.UF.05** - OncNGS ~~provider SHALL~~Tenderer/Supplier COULD measure and demonstrate users satisfaction while end users make use of their solutions in accordance to a user's satisfaction questionnaire (preferably validated)	Description of the questionnaires used for this assessment (preferably a validated questionnaire)	Results of internal questionnaires on technical personnel on suppliers site	Qualitative Questionnaire
In case Tenderer commits to address: **WETLAB.USE.UF.06** - OncNGS ~~provider SHALL~~Tenderer/Supplier COULD measure and demonstrate their solution is easy to remember, based on a user's questionnaire (preferably validated)	Description of the questionnaires used for this assessment (preferably a validated questionnaire)	Results of internal questionnaires on technical personnel on suppliers site	Qualitative Questionnaire
WET2. Traceability, automatization and error detection mechanisms			
WETLAB.USE.PERF.~~05~~06 - OncNGS solution SHALL ensure the traceability of the sample and data along the whole workflow (from the wetlab to the reporting)	Description of the process to ensure traceability of the samples, during wetlab. This process has to be a part of the full sample traceability process in the oncNGS solution.	Description of the traceability system used in the oncNGS solution. Means of verification: Traceability mechanism working and correct traceability with 5 random samples	On site, traceability system used by personnel experienced Qualitative report as compared to existing systems
WET3. Quality performance and outputs			
~~**WETLAB.USE.AV.01** - OncNGS solution SHALL allow data output that is compatible with external QA (i.e proposal by European Liquid Biopsy Society, and National framework, other references https://pubmed.ncbi.nlm.nih.gov/28841569/ or~~	~~Description of data output format~~	~~Feasibility demonstration using reference sample or equivalent~~	~~Qualitative demonstrataion upon testing in buyers sites~~
WETLAB.USE.UF.08 - Onc NGS solution SHALL provide with complete wetlab protocol with an internal reference sample	Description of the process/protocol and the design of the libraries preparation and reference samples design and description	Report from technical, analytical and clinical performance testing and reference samples results	Availability if clear protocol for buyers wetlab
WETLAB.~~USE.OUT.07~~QC.01 - OncNGS solution ~~all together (kits and analysis pipeline)~~ SHALL provide a Quality check for samples to be ~~CE-IVD compliant~~analysed with the oncNGS solution (e.g. analyte concentration, level of degradation, inteferents, etc…)	~~Description of the key points for getting the CE-IVD certificate. Do they have an international certification? How it is envisage, roadmap to get the certification?~~Provide protocols for internal QA	~~Description of the advancement in the certification process for the prototypes~~Demonstrate QA using synthetic samples (as controls) or different raw data to assess full oncnGS solution	~~Kits CE-IVD certified for the clinical use~~Demonstrate QA at the pilot sites
In case Tenderer commits to address: **WETLAB.~~QC~~USE.AV.01** - OncNGS solution ~~SHALL provide a Quality check for samples to be analysed~~COULD allow data output that is compatible with ~~the oncNGS solution (~~external QA (i.e~~.g. analyte concentration, level of degradation, inteferents, etc…)~~ proposal by European Liquid Biopsy Society, and National framework, other references https://pubmed.ncbi.nlm.nih.gov/28841569/ or	Description of data output format~~Provide protocols for internal QA~~	Feasibility demonstration using reference sample or equivalent~~Demonstrate QA using synthetic samples (as controls) or different raw data to assess full oncnGS solution~~	Qualitative demonstrataion upon testing in buyers sites

BIOINFORMATICS	**Phase 1**	**Phase 2**	**Phase 3**
BIO1. Data formats and data accessibility			
BIOINFOR.USE.FUNCT.01 - OncNGS Solution SHALL provide with a detailed description of data formats and file structure: - FASTQ, BAM and VCF files - Raw data of this files - Version and structure used	In which format is the data provided? Does the description includes type of files, version used, structured used, against which genome is aligned?	The prototype is confirmed that provides: - FASTQ, BAM and VCF files - Raw data of this files - Version and structure used - Genome used for alignment	The oncNGS solution is confirmed that provides: - FASTQ, BAM and VCF files - Raw data of this files - Version and structure used - Genome used for alignment using real samples in the pilot sites

- Genome used for alignment using real samples in the pilot sites			
BIOINFOR.USE.FUNCT.02 - ~~All~~oncNGS solution SHALL ensure that all the provided information and raw data (FASTQ, BAM & VCF files) ~~SHALL be~~are accessible~~,~~ and exportable ~~data and reproducible results outside the sequencer machine or oncNGS solution. Must demonstrate the possibility to analyse the data externally hardware not dependent in the oncNGS solution.~~	Describe exportability of raw data produced with oncNGS solution	Demonstrate exportability of raw data produced by oncNGS (suppliers)	Evaluate exportability of raw data produced by oncNGS (buyers-on site) (optional)
BIOINFOR.SUST.MAINT.01 - ~~OncNGS solution bioinformatics pipeline~~oncNGS Tenderer/Supplier SHALL ~~be executed with minimal~~define, implement and execute the strategy for minimizing the computational ~~requirement as~~requirements to run the oncNGS solution (example measured ~~e.g.~~ by required RAM and CPUs~~)~~	Detailed description of technical specifications required for computing resources	Update of the detailed description of required computing resources	Final description of required computing resources. A feedback could be provided by the byers upon site testing
In case Tenderer commits to address: **BIOINFOR.USE.FUNCT.03 -** oncNGS Tenderer COULD demonstrate the possibility to analyse the data without relying on the proprietary hardware	Describe the process of the data analysis without relying on the proprietary hardware	Demonstate in laboratory the possibility of data analysis without relying on the proprietary hardware	Demonstrate at the pilot sites
In case Tenderer commits to address: **BIOINFOR.USE.FUNCT.04** - oncNGS Tenderer COULD demonstrate the possibility to analyse the data without relying on the proprietary software –cloud based solution	Describe the process of the data analysis without relying on the proprietary software –cloud based solution	Demonstate in laboratory the possibility of data analysis without relying on the proprietary software –cloud based solution	Demonstrate at the pilot sites
BIO2. Interoperability performance			
BIOINFOR.USE.INT.01 - OncNGS solution SHALL allow the interoperability with typical or standards bioinformatics software used for interpretation (own software) in any hardware machine (vendor neutral hardware machine) on the pilot site	Describe interoperability formats between oncNGS and external platforms specify with which bioinformatics software, public databases	The prototype is confirmed that allows interoperability with standard software for bioinformatics interpretation and linkage to public databases	The oncNGS solution is confirmed that is interoperable with the standard bioinformatics software for interpretation and linkage to public databases at the pilot site.
BIOINFOR.USE.INT.02 - OncNGS solution SHALL allow the interoperability of the bioinformatics system with different databases used for clinical interpretation	Do they provide for the VCF file and associated panel region file in BED format? How it is explained the interoperability protocol? Which one they will used?	The prototype is confirmed that is interoperable with other data bases used for clinical interpretation.	The oncNGS solution is confirmed that is interoperable with the standard bioinformatics software for interpretation in the pilot site. The oncNGS solution is confirmed that is interoperable with other data bases used for clinical interpretation in the pilot site
BIOINFOR.USE.INT.04 - OncNGS solution SHALL make use of FHIR interoperability standard	Does the oncNGS solution contemplate data formats used in the current FIHR standards? Explain which ones.	The prototype is confirmed that contains data formats used in the current FIHR standards and describe with ones are used.	The oncNGS solution is confirmed that contains data formats used in the current FIHR standards and describe with ones are used in the pilot site and how it is done the compatibility test with the FIHR platform in the pilot site.
BIO3. Quality of the outputs			
BIOINFOR.USE.PERF.02 - OncNGS solution SHALL provide a software solution that enables an automatic bioinformatics pipeline for interpretation and to customize the reporting (to include logos, graphics, others).	Description of customizable items for self-reporting in the different centres	Draft of report based on pre-analytical testing	Check at pilot sites Qualitative report from buyers following phase 3 testing and generation of report using patients samples
BIOINFOR.USE.OUT.01 - OncNGS solution SHALL provide for each genetic alterations, a declared corresponding pipeline for its interpretation.	Detailed description of the different pipelines. Ensure pipeline is implemented using technologies that enhance reproducibility (Docker/Singularity, Nextflow, Bioconda, or other similar alternatives)	Detailed description of the different pipelines with updates if relevant after phase 1	Qualitative report after testing, which may include delays of interpretations
BIO4. Quality performance			
BIOINFOR.USE.PERF.01 - OncNGS solution SHALL provide a quality control and assessment in the bioinformatics	Describe metrics. How this metrics describe the quality?	The prototype shows the FASTQ QC and BAM QC metrics	The oncNGS solution shows the FASTQ QC and BAM QC metrics in

pipeline. FASTQ QC statistics; BAM QC statistics reference file for quality assessment (standardization)	Type: nº of reads, alignments, etc...		the pilot sites performance study (analytical and clinical).
BIOINFOR.USE.PERF.04 - OncNGS solution SHALL demonstrate that generated bioinformatic data and data processing are: - robust, as described in the Technical Glossary (Annex 3) - accurate, as described in the Technical Glossary (Annex 3) - reproducible , as described in the Technical Glossary (Annex 3) - traceable, as described in the Technical Glossary (Annex 3)	Describe Quality Control reports that will be generated. Detailed pipeline specification. Ensure pipeline is implemented using technologies that enhance reproducibility (Docker/Singularity, Nextflow, Bioconda, or other similar alternatives)	Economic operators to provide analytical data of their standard samples of their pipeline run on different operation systems and computers. Alternatively the company decide how to show they can demonstrate it during the analytical performance with the prototype	Economic operators to provide analytical data of the real samples of their pipeline run on different operation systems and computers. Alternatively the company decide how to show they can demonstrate it during the clinical performance in the pilot site. Check using Phase 3 data
In case Tenderer commits to address: **BIOINFOR.USE.UF.01 -** OncNGS solution ~~SHALL~~COULD provide with training for bioinformaticians and/or a basic bioinformatic training package	Detailed description of the training activities	Manual for the prototype	Execution of the training at the pilot sites

MOLECULAR INTERPRETATION	Phase 1	Phase 2	Phase 3
MI1. Data formats, interpretation, processing and storage			
MOLECBIO.USE.PERF.01 - OncNGS ~~solution~~Tenderer /Supplier SHALL indicate the databases used for the alteration annotations and classifications and declare their limitations.	How is the VCF file provided? Format, etc... How is the process for linking it with biological and clinical interpretation? What additional information is included? (OncoKB, CIVIC, ClinVar, VarSome...)	Is the VCF file provided and in which format?, CNV signatures,.. Is the process for linking it with biological and clinical interpretation provided?. Additional information included such as...OncoKB, ESCAT levels	Test at the pilot sites.
MOLECBIO.USE.PERF.02 - OncNGS solution SHALL automatically report the variants identified and propose their biological and clinical interpretation.	Describe the databases that will be used for annotation and classification and the process of automatization for the report	Check in the process of annotation and classification which databases are used and reports are provided automatically	Test at the pilot sites.
MOLECBIO.USE.FUNCT.01 - OncNGS solution SHALL ensure that all results are stored, processed and edited independently from clinical data although in a traceably manner allowing further local analysis	Description of the storage and data management plan for compliance with GDPR rules while ensure traceability. Assessment of feasibility and coherence	Check the GDPR compliance Test traceability with a sample and the pathway	Test at the pilot sites and compare results with internal reports
MI2. Interoperability performance			
MOLECBIO.USE.UF.03 - OncNGS solution SHALL interrogate up-to-date databases (public and private, national or international) for the molecular interpretation.	Describe the process how to include the updated versions of the databases used for annotation	Check if the process of automatic updates of the databases is foreseen and how the used version is mentioned	Test at pilot site and to be compared with internal reports
MI3. Quality performance and outputs			
NGS.USE.INT.03 - oncNGS solution SHALL have a predictive value (see Technical Glossary - Annex 3) higher than 90% correlation equivalence for the validation of all types of alterations included priority level I in the gene panel.	Describe statistical model that suppliers apply to demonstrate the predictive value of their solution	Demonstrate predictive value on synthetic DNA samples	Demonstrate predictive value on clinical specimen and using the corrobation study outcomes
MOLECBIO.USE.PERF.04 - OncNGS solution SHALL provide with evidence-based variant categorization (tiers and level of evidence)	Describe the process of categorization. Which test level scales will be used?	Check in the report if evidence-based categorization is present	Test at pilot site and to be compared with internal reports
~~**MOLECBIO.USE.OUT.01 -** OncNGS solution SHALL be able to allow the oncNGS solution data output format (e.g csv,) to be up-loadable to already existing European initiatives (such as Harmony) to build a knowledgebase in NGS Liquid Biopsy.~~	~~Describe the formats of the data output. Are these standards?~~	~~Check the format of the data output (VCF...?) Are these standards? Compatible with European initiatives (Harmony, 1+MGenomes,...)~~	~~Test at pilot site~~
MOLECBIO.USE.UF.01 - OncNGS solution SHALL provide with a metadata that describe position on DNA, reference genome nomenclature; in a format compliant with international standards (VCF file).	Describe which guidelines for nomenclature (HGVS?) is used	Check the nomenclature of the data output	Test at pilot site and to be compared with internal reports
MOLECBIO.USE.UF.02 - OncNGS solution SHALL provide with a molecular interpretation report that includes	Describe the process of the molecular interpretation report (which databases, which algorithm	Check if molecular interpretation report is available. Is all the information	Test at pilot site and to be compared with internal reports

information about the automated process, consulted data bases and molecular interpretation.	for biological and clinical interpretation, automatization present?)	included (the process, databases, molecular interpretation...)? Is standard VCF (Variant calling file) available? Are files with the analysed regions (BED files) available (and genome used for alignment)? Is NGS registration in (Health data) Health data platform possible?	
In case Tenderer commits to address: **MOLECBIO.USE.OUT.01 -** OncNGS solution COULD enable data output format (e.g csv,) to be uploadable to already existing European initiatives (such as Harmony) to build a knowledgebase in NGS Liquid Biopsy.	Describe the formats of the data output. Are these standards?	Check the format of the data output (VCF...?) Are these standards? Compatible with European initiatives (Harmony, 1+MGenomes,...)	Test at pilot site

REPORT	Phase 1	Phase 2	Phase 3
R1. Content and Format			
REPORT.USE.INT.01 - OncNGS solution SHALL provide a final report (molecular and interpretation) in different formats that can be easily convertible to local need in order to append it with the patient electronic health report.	Describe which format(s) of the report will be available. Are the selected format part of the most standard formats?	Check the available report format(s)	Assess the way to append it with PEHR at pilot site. Can it be done?
R2. Access and Automatization			
REPORT.USE.REP.01 - OncNGS solution SHALL provide user's with individualized roles, different access privileges settings to ensure GDPR. Reporting content level (personal information and non-personal) and type of information access (bioinformatics, molecular or clinical data)	Define the process and how it would be addressed, data set needed, input from different centre, guidelines in harmonization, standardized roles, etc....	Check if the process and GDPR rules are respected as described	Test at pilot site
REPORT.USE.REP.02 - OncNGS solution SHALL allow a fully automatized filing, available on line with remote downloading and consulting, querable and interactive, according to user access privileges	Define the process and how it would be addressed, protocols, security, ...	Verify operationability	Test at pilot site
R3. Harmonization and Quality			
REPORT.USE.REP.03 - OncNGS solution SHALL provide with a harmonized reporting structure compliant and based on international guidelines, with list the content (e.g. order of items, highlight strategies, etc...)	Describe the content of the report and describe which guideline will used. Include the QC will be used and where it is mentioned. Provide a template of the clinical report	Check the template of the clinical report	Test at pilot site
REPORT.USE.REP.04 - OncNGS solution SHALL include a statement appointing that the information provided in the report has passed the QC and the norm/test followed. Full QC information shall be available on request. Description of molecular findings must be consistent with international criteria. The description of molecular results should include the frequency of occurrence, the relationship with the clinical and prognostic variant	Describe the content of the report and describe which guideline will used. Include the QC will be used and where it is mentioned. Provide a template of the clinical report	Check the template of the clinical report	Test at pilot site

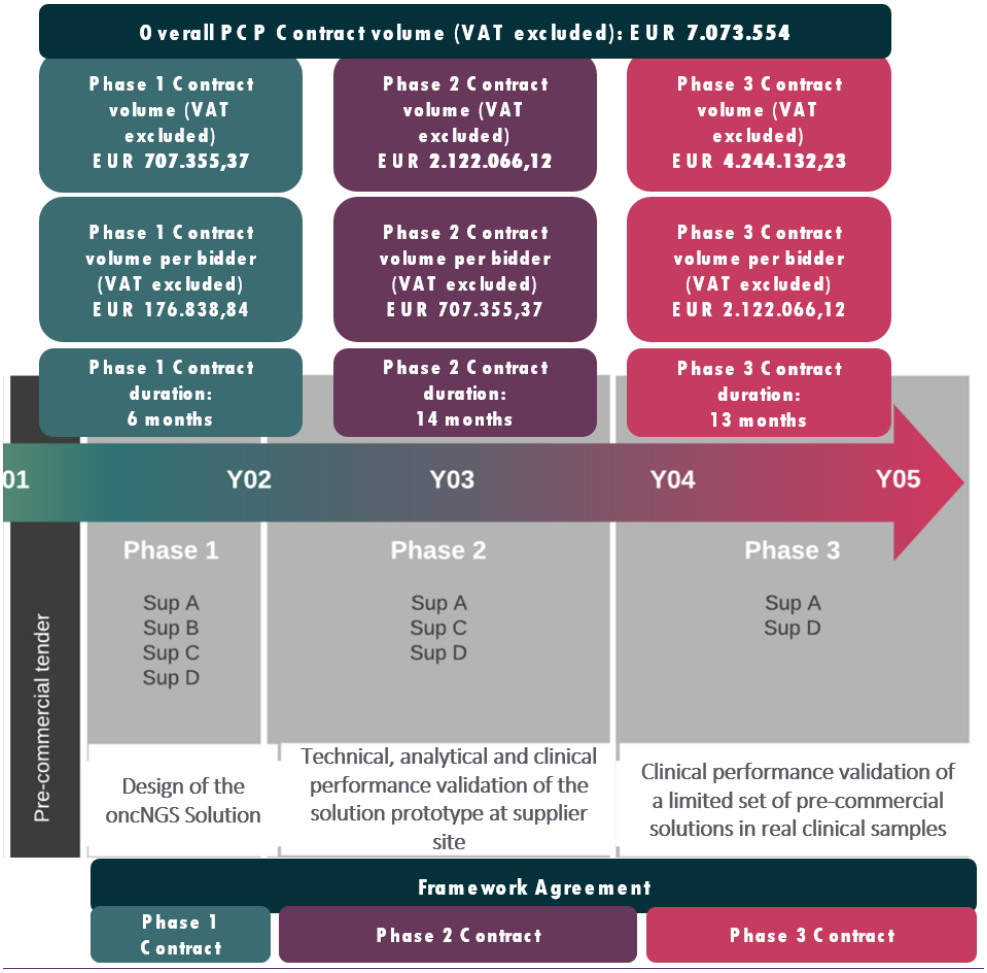
Non- technical requirements			
Regulatory fulfilment (analysis of applicable regulations and laws related with Privacy and security and description of the strategy to comply with EC-IVD and the description on how the Tenderers solutions ~~comply with EC-IVD~~ and GDPR specifying aspects (but not limited to) as data-storage optimization for compliancy opportunities within legal	Qualitative follow up, across the Phase progresses, of regulatory fulfilment	Qualitative follow up, across the Phase progresses, of regulatory fulfilment	Qualitative follow up, across the Phase progresses, of regulatory fulfilment

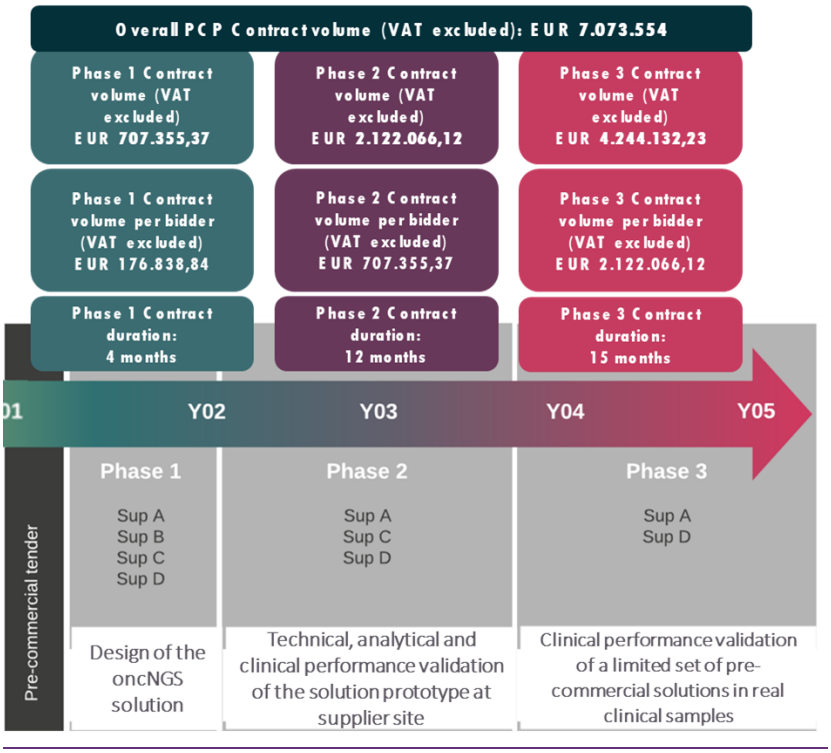
obligations, User's and roles access privileges and data safety)			
Business Case Alignment ((1) analysis of the value of benefits for patients (QALYs, novel treatment opportunity, avoidance unnecessary treatment), pricing & business model taking into consideration sustainability, maintenance costs, affordability, Sustainable purchase of expensive diagnostics, Facilitating value for money strategies with respect to expensive treatments in oncology, Access to innovation, increased opportunities to provide care to patients; (2) Business model definition: (e.g.: analysis of the business model canvas, SWOT analysis, definition of the competitive advantage and value proposition); (3) Preliminary business plan (including FTO analysis, marketing & sales plans) that explains the proposed approach to commercially exploit the results of the PCP and to bring a viable product or service onto the market (e.g.: target markets and customers, pricing strategy (taking into consideration the resulting the business cases) branding, partnerships, commercial alliances, distribution); (4) Analysis of the exploitability costs (e.g.: plan to protect the resulting technologies, third parties dependencies, patents, licenses, maintenance cost, sales, internationalisation, clinical validation of the solution, certification in the target geographical markets, scale up production costs). (5) Description of the analysis of the business, marketing and sales plan costs structure)	Qualitative follow up, across the Phase progresses, of Business Case Alignment	Qualitative follow up, across the Phase progresses, of Business Case Alignment	Qualitative follow up, across the Phase progresses, of Business Case Alignment
Value of benefits for procurers and soundness of the approach to integrate with procurer systems (description how the proposed development is expected to achieve: low-turnaround time (from sample availability to molecular report) for routine basis (7 days maximum), at each (chemo)therapy cycle to follow clinical response and inspire adaptive therapies, more agile decision making process, whole oncNGS row data availability, International collaboration, increase experience and knowledge of HCP, applicability or external validity of the studies in the national/European health and social care system, Level of involvement in design process for future collaboration in R&D, Training effectiveness for HCP, Team/organization culture, efficient use of staff (for each of the relevant type of staff))	Qualitative follow up, across the Phase progresses, of Value of benefits for procurers and soundness of the approach to integrate with procurer systems	Qualitative follow up, across the Phase progresses, of Value of benefits for procurers and soundness of the approach to integrate with procurer systems	Qualitative follow up, across the Phase progresses, of Value of benefits for procurers and soundness of the approach to integrate with procurer systems
Quality and efficiency of the implementation (1) Description of project governance, the project management and the change management; (2) Description of quality aspects of the solution design and development, with special reference to the verification and validation of the proposed technology, the work planning, personal and material resources, and the identification and management of logistic and legal aspects, as well as: (2.1) Description of the analysis of the research and development costs structure of the proposed solution, comparing the allocations of the different types of expenditures and investments (e.g.: like comparing the percentage of human resource costs	Qualitative follow up, across the Phase progresses, of Quality and efficiency of the implementation	Qualitative follow up, across the Phase progresses, of Quality and efficiency of the implementation	Qualitative follow up, across the Phase progresses, of Quality and efficiency of the implementation

with the percentage of the subcontracting costs or comparing the percentage of the total direct costs with the percentage of the indirect costs or comparing the percentage of the total expenditures with the percentage of the investments the ~~Bidder~~Tenderer is planning to do according to its proposal). (2.2)Description of the financing plan of the proposed R&D (if any) (3) The risk assessment and the risk mitigation strategy (including oncNGS PCP contracts delivery, clinical, market/business and regulatory risks (the technological risks are addressed within the Technical Feasibility topic))			
Further content (IPR, ethics & security issues and % R&D)	Qualitative follow up, across the Phase progresses, of IPR, ethics & security issues and % R&D	Qualitative follow up, across the Phase progresses, of IPR, ethics & security issues and % R&D	Qualitative follow up, across the Phase progresses, of IPR, ethics & security issues and % R&D

Annex 8 – Whole Innovation Process Overview

OncNGS
R&D PHASE (from 2021 to 2025)





Buyers Investment

Name	Own resources	EC grant	Tot
Sciensano (Belgium)	180.500,00 €	1.624.500,00 €	1.805.000,00 €
Alleanza Contro il Cancro (Italy)	156.000,00 €	1.404.000,00 €	1.560.000,00 €
Institut Curie (France)	106.100,00 €	954.900,00 €	1.061.000,00 €
Institut Català Oncologia (Spain)	106.100,00 €	954.900,00 €	1.061.000,00 €
Institut Jules Bordet (Belgium)	106.100,00 €	954.900,00 €	1.061.000,00 €
Ludwig Maximilians Universitaet Muenchen (Germany)	73.000,00 €	657.000,00 €	730.000,00 €
Charite Universitaetsmedizin (Germany)	22.000,00 €	198.000,00 €	220.000,00 €
Hospices Civils de Lyon (France)	106.100,00 €	954.900,00 €	1.061.000,00 €

From prototype to product (2026/2027)

OncNGS providers will need to go through all the regulatory processes necessary for the commercialization of their solutions.

If satisfied with the outcomes of the R&D Phase, OncNGS buyers will prepare the Public Procurement of Innovation procedure and will issue the corresponding Request for Tender

OncNGS buyers will prepare the Public Procurement of Innovation procedure and will issue the corresponding Request for Tender.

COMMERCIALIZATION PHASE (from 2026/2027 on)

Public Procurement of Innovation procedure and contract

Current project buyers can launch the Request for Tender either in consortium (adding as well new

buyers if considered appropriate) or individually

In case of a joint procurement the contracts are then signed by each procurer with the awarded entity

OncNGS technological solutions will need to comply with EC regulations to be selected

The duration of the contract could be minimum 4 years
Buyers willing to pay will depend on:
- the alignment of the business case
- payers reimbursement level

the achievement of the defined outcomes & outputs

Expected Impact of the commercialized OncNGS solutions

Elements identified as Long-term outcome/impact – to be defined with quantitative/qualitative indicators once intervention will scale beyond given agreed sample size during the Commercialization

Category	Subcategory	Long Term Result
Patient	Patient-Reported Outcome Measures	• Health-related Quality of Life (QoL) • Access to Diagnostic markers, Prognostics markers, Predictive markers and Theranostic markers • Standardization results is increased equality in cancer care • Symptom severity • ACCE Clinical Utility: Is there an effective remedy, acceptable action, or other measurable benefit?
Patient	Patient-Reported Experience Measures	• Understanding of care plan/treatment/pathways • Avoid unnecessary treatment • International collaboration, capitalizes experience, better advice for patient treatment • Confidence in the treatment • Access to Diagnostic markers, Prognostics markers, Predictive markers and Theranostic markers • ACCE Clinical Utility: What is the impact of a positive (or negative) test on patient care?
Patient	Determinants of health	• Access to Diagnostic markers, Prognostics markers, Predictive markers and Theranostic markers • Improve Quality Adjusted Life Years (QALY) • Improve diagnostic accuracy • Improve diagnosis ability • Access to new diagnostic markers • ACCE Clinical Utility: If applicable, are diagnostic tests available? • Novel treatment opportunities • Overtreatment cases identification • Reduction of variability in patient results • Standardization results is increased equality in cancer care • (Elaboration from ACCE Clinical Utility) Reduction of impact/probability of health risks • Access to Diagnostic markers, Prognostics markers, Predictive markers and Theranostic markers

		• Affordable and low-turn around time solution for routine basis, at each (chemo)therapy cycle to follow clinical response and inspire adaptive therapies • Improve sensitivity for a reliable detection of low amounts of ctDNA and low frequency mutations from a routine blood draw. Overcome limits of low ctDNA, low VAF.
Patient	Long-Term treatment improvement	For patients receiving accurate diagnosis and accessing the appropriate therapies (thanks to the access to Diagnostic markers, Predictive markers and Theranostic markers): • Impact on Mortality • Impact on Disability • Impact on Morbidity
Healthcare Professionals	Benefits for the HCP	• Proportion of professional with opportunities to provide care to patients • Access to innovation, increased opportunities to provide care to patients • Proportion of professional with access to medical Evidence-Based information, and training to benefit from their use • International collaboration, increase experience and knowledge of Health professionals
Healthcare provider	Organisational aspects	• Reduction in medication consumption because access to Prognostics markers, Predictive markers and Theranostic markers • Evidence-based guidelines
Health system	Long-Term treatment improvement	For patients receiving accurate diagnosis and accessing the appropriate therapies (thanks to the access to Diagnostic markers, Predictive markers and Theranostic markers): • Impact on Mortality • Impact on Disability • Impact on Morbidity
Health system	Economic Sustainability	• Investments in equipment, hardware and software/digital services • oncNGS Outcome • Affordable and low turn-around time solution for routine basis, at each (chemo)therapy cycle to follow clinical response and inspire adaptive therapies • Sustainable budget management for complex diagnostics • ACCE Clinical Utility: If applicable, are diagnostic tests available? • Prognosis • Prognostics markers • Foresight prognosis based on evidence gathered in routine diagnostics in multiple EU countries (higher prognostic power)

Socio-economic impact	Economic Evaluation and HTA	• Cost Utility Analysis; Cost Effectiveness Analysis
		• Cost Benefit analysis
		• Cost minimization analysis
		• Equalities considerations
		• Standardization results is increased equality in cancer care
		• Health benefit in PROMs per health care dollar
		• ACCE Clinical utility:
		  ○ Is there general access to that remedy or action?
		  ○ Is the test being offered to a socially vulnerable population?

		○ What are the economic benefits associated with actions resulting from testing?

Expected Impact for the suppliers to develop OncNGS solutions

A solution that is close to get an approval from the EMA (or FDA) on genetic alterations encountered in Liquid Biopsy for diagnostic, therapeutic and prognosis purposes.
Solution for clinical oncology in late-stage cancer, for precision medicine, diagnosis, therapy assignment and profile tumor evolution. Increase the number of patients that can be reached out, include non-biopsy tumors.
Flexible, adaptable and sustainable solution that could allow the use of different kits of panel designs. The two developed panels in the oncNGS-PCP could be used to demonstrate the modularity of the oncNGS solution towards tailored application for a broad range of tumors, for diverse types of applications (diagnostic, monitoring, screening) and eventually for providing evidence through a 'Learning by doing' approach that does not impose nor major additional costs nor resources.
Get an accreditation on the EC-IVD regulation.
Possibility to run a multicenter technical, analytical and clinical performance study of the oncNGS solution (at least 4 pilot sites)

Annex 9 – End of Phase Reporting [sample]

Below is a sample template of an End-of-Phase Report to be used throughout the project to document progress. It is
provided here as an example for your information. The actual form will be provided with the requirement specification
of the relevant phase.

BUYERS GROUP *Complete this box only one time with the joint conclusions from all procurers in the Buyers Group*
1. Procurement need *Describe briefly (in a way that is suitable for publication purposes):* **The problem / challenge** you were trying to address with the procurement **What type of innovative solutions and which functionality / performance / price requirements** you requested in the tender specifications (specify the minimum and target quality / efficiency improvements that you wanted the innovative solutions to achieve).
2. Impact on public sector modernization *Describe briefly (in a way that is suitable for publication purposes):* **To what extent the innovative solutions managed to meet the procurement need so far (which tender requirements were the innovative solutions not able / able / more than able to meet)?** For PCPs, specify whether all participating Suppliers managed to complete the previous phase successfully. Did their solutions all meet the procurement need / the tender requirements? What is the current impact of the innovative solution on end-users? **What level of quality / efficiency improvements do the innovative solutions enable to achieve** (use measurable indicators to quantify the impact achieved on the operation of your public service, e.g. 25% reduction in maintenance costs, 30% reduction in mortality rate of patients in your hospital)
3. Other benefits obtained *Describe briefly any other benefits obtained from the procurement, not only for the public procurers involved but also wider benefits for society (in a way that is suitable for publication purposes), e.g.:* **Reducing vendor lock-in:** e.g. the procurement delivers more open (standardised) solutions and/or opens a route to the market for new innovative players which creates a more competitive supply chain. **Wider benefits to society:** e.g. contribution to CO2 reduction, improved public safety / health **Contribution to growth and jobs:** For PCPs, specify the percentage of the R&D that the Suppliers actually performed in the Member States or countries associated with Horizon 2020. For PPIs, specify the percentage of the total PPI contract value that was awarded to Suppliers from Member States or countries associated with Horizon 2020.* ***UK counts as a Horizon2020 associated country.** See more on section 1 of this document.

Triggering other innovation procurements: This PCP/PPI triggered management commitment to start new innovation procurements in the future in organisations xyz.

Other benefits / lessons learnt: complete if applicable.

4. Scalability – Wider deployment

Describe briefly (in a way that is suitable for publication purposes):

How easy it would be for other procurers to deploy the solutions resulting from the procurement (which parts of the solution are generic / can be replicated by other procurers across Europe versus which parts would still need adaptation / modification to other markets etc.)

What actions did you already take to help diffuse the innovative solutions to wider markets e.g.
- did you / the suppliers in your procurement contribute to standardisation
- did you / the suppliers publish results / lessons learnt of the procurement
- did you require the solutions for your procurement to be based on open interfaces / open source?
- did your dissemination activities promote results / impacts achieved to other procurers?
- did you help the suppliers to go for wider commercialisation of the innovative solutions (e.g. via joint supplier-procurer presentations of the solutions/impacts at trade fairs, actively acting as first customer reference to other customers, introducing the suppliers to investors, etc.)
- at the end of the project: did you update the initial tender specifications with the lessons learnt during the procurement and did you publish these updated tender specifications so that other procurers can use them in future procurements?

Which aspects of the initial tender specifications (in particular functionality / performance / price requirements) you would change / update after this procurement based on the lessons learnt, to make sure that later procurements that go for wider deployment would run as smoothly as possible.

Suppliers

For PCPs: complete this box for each Supplier that was awarded a PCP Phase 1, 2 or 3 contract.
For PPIs: complete this box for each Supplier that was awarded a PPI contract

1. The innovative solution

Provide a short description (that is suitable for publication purposes) of:

The innovative solution (in its current form)

Where exactly lies the innovativeness in the solution: In which ways and to which extent does the solution go beyond what existing solutions can achieve.

The degree of innovation: indicate if your innovative solution is (a) a totally new product / service / process / method; (b) an improvement to an existing product / service / process / method; (c) a new combination of existing products / services / processes / methods (d) a new use for existing products / services / processes / methods).

2. Commercialisation success

Provide a short description (mark parts that are not suitable for publication purposes) of:

How mature is the innovative solution in terms of its readiness to commercialise widely: Which steps towards wide scale commercialisation have been completed by now (don't forget: IPR protection, certification, CE marking, attracting additional investors to grow the business, setting up sales / distribution channels / marketing activities to expand sales to other countries etc.).

What is the current commercialisation success of the solution: e.g. awards / other forms of recognitions obtained, sales / increase in market share already achieved, licensing agreements already concluded, collaboration agreements with other partners (e.g. retailers) to commercialise the solutions already signed, additional investments attracted to further commercialise the solution.

3. Other benefits obtained

Provide a short description (mark parts that are not suitable for publication purposes) of any other benefits that you obtained from participating in the procurement, e.g.

Getting easier access to (a new segment of) the public procurement market (did the procurement enable you to work with procurers/end-users that you were not working with beforehand).

Growing your business across borders and/or to other markets (e.g. private markets) thanks to the first customer references provided by the procurement.

Shortening the time-to-market for your innovation thanks to early customer/end-user feedback

Other benefits / lessons learnt: complete if applicable

4. Business growth

Provide a short description (mark parts that are not suitable for publication purposes) of:

How much has your business already grown during the procurement

In terms of (a) personnel growth; (b) turnover growth; (c) growth in market share etc.

What are the prospects to grow your business via wider commercialisation of the solution:
- how large is the potential market for your solution? is it a growing / steady / declining market?
- by when can commercialisation start (now / in 1 / in 3 / in 5 / in more than 5 years)
- is competition patchy (no major players) / established (but no comparable offering) / fierce

Which future steps do you plan to take to further grow your business (e.g. attracting additional investors to grow your business, mergers / acquisitions / joint ventures / spin-offs / IPO, setting up sales / distribution channels / marketing activities, expanding to other countries etc.)

5. Final remarks (not for publication purposes, to assess how further EU support could best help you)

What are remaining bottlenecks to commercialise your solution (e.g. certification, legislation etc.)

What type(s) of assistance do you need to address those bottlenecks and grow your business / commercialise your solution more widely (e.g. EU regulation on x, finding investors, IPR help etc.)

How important was the procurement for your business (w/could you have done it on your own?)

Annex 10 – Project abstract for Phase 1 [sample]

Supplier Details	Type/size of legal entity	Place of performance of contract activities	Logo
Main Supplier Name legal entity Address legal entity Name contact person Phone number contact person E-mail address contact person	SME, larger company, natural person ,university / research institute, other	% of contract value allocated to main Supplier: [complete] % % of activities for the contract performed by the main Supplier in EU Member States or countries associated with Horizon 2020: [complete] %	Logo main Supplier
Other consortium member(s) (if applicable) Name legal entity Address legal entity Name contact person Phone number contact person E-mail address contact person	SME, larger company, natural person, university / research institute, other	% of contract value allocated to Supplier: [complete] % % of activities for the contract performed by the Supplier in EU Member States or countries associated with Horizon 2020: [complete] %	Logo(s) other Supplier(s)
Subcontractors (if applicable) Name legal entity Address legal entity Name contact person Phone nr. contact person E-mail address contact person Complete as many times as there are subcontractors	SME, larger company, natural person, university / research institute, other	% of contract value allocated to subcontractor: [complete] % % of activities for the contract performed by the subcontractor in EU Member States or countries associated with Horizon 2020: [complete] %	
Project abstract (+/- 1000 characters maximum) [Add an abstract of the winning tender, giving a brief project description agreed with the Supplier that is suitable for publication purposes]			
Previous EU funding Is the project based on / a continuation of R&D activities that were previously funded by the EU?: YES/NO If yes, identify this EU funding: [name EU funding programme] — [project name] — [grant number]			

Measures to protect Results (IPR)
Provide a current list of the pre-existing rights (Background) relevant to the Tenderer's proposed solution, in order to allow IPR dependencies to be assessed. Explain the measures, if any, you are still implementing internally (towards your own employees) and externally (towards business and competitors) to protect the Results during the project. Our company: - just started with the identification of potential IPRs - made a Patent search to make sure the innovation is new - set-up Employee Internal Controls - submitted Confidentiality policy to employees and described the policy in a company manual - drafted non-disclosure agreements with employees - signed non-competition agreements with employees By means of an example - External Measures: - Non-competition agreements with Suppliers, consortium members or subcontractors - Apply for a Trademark, Copyright, or Patent See also the Framework Agreement. The Supplier shall, within 30 days of the signature of the Framework Agreement, provide the Lead Procurer with a list of its Background, including but not limited to, a list of the software necessary for the operation of the prototype and pilot services that will be developed as part of the R&D Services, specifying which software is closed source software, as well as a list of prior obligations that may apply to Results. The Supplier shall provide an updated list of its Background at each Phase.

Supplier Identification	
Declaring companies/entity	- Lead Supplier; - Other supplier(s); - Subcontractor(s); - …
Contact person of the declaring companies/entity	Name: E-mail address:
List of items included in this Background declaration	1. Item #1 2. Item #2 3. Item #3
List of Confidential items included in this Background declaration	1. Item #1 2. Item #2 3. Item #3
In case there would be no Background Intellectual Property to be declared	I declare that I have no background intellectual property to declare for this PCP Phase 1 contract
Signature of the present Background declaration by the Lead Supplier **Signature:**	

Name and position of the Undersigned: Date and place of the signature:	