

SPECIFIC AND TECHNICAL CONDITIONS TO CONTRACT A COMPANY SPECIALIZED IN ARTIFICIAL INTELLIGENCE (AI) AND MEDICAL IMAGING TO PERFORM AN AUTOMATIC QUANTIFICATION OF CELLULARITY IN CEREBROSPINAL FLUID SAMPLES (CSF) WITH MELASSEZ CHAMBER IMAGES IN THE NEOSONIC PROJECT IN RABAT (MOROCCO)

(File 55/2022)

I. OBJECT

The present document (the "Pliego") to contract a company specialized in **artificial intelligence** (AI) and **medical imaging** to perform an automatic quantification of cellularity in cerebrospinal fluid samples (CSF) with Melassez chamber images in the Neosonic project in Rabat (Morocco)

All the technical specifications contained in this document are considered to be part of the minimum requirements and do not exclude any other needs for compliance with the purpose of the service contracted.

II. CONTEXT OF THE WORK

The widespread availability of laboratory services and imaging techniques which characterize the health systems of developed countries, added to the abundance of adequately trained clinicians implies that reaching an accurate precise diagnosis for most infectious diseases is seldom a problem in this part of the world. However, in resource-constrained settings, diagnosis is a daily challenge faced by the scarce practicing clinicians. These diagnostic difficulties, arising from the generalized absence of the most basic diagnostic tools, including common laboratory analyses, microbiology facilities, or imaging technologies, have historically led, in these settings, to the application of symptom-oriented clinical algorithms for the empirical diagnosis and treatment of common childhood diseases. However, such algorithm-based approaches are flawed by the symptom overlap of many paediatric infections, particularly among the youngest. As a paradigmatic example, **acute bacterial meningitis (ABM)**, a common and life-threatening bacterial infection of the meninges, is severely under recognized in resource-constrained settings, mainly due to its nonspecific symptoms (particularly blatant in the newborn and young infant), and because its diagnosis requires the examination of the **cerebrospinal fluid (CSF)**, obtained through a lumbar puncture (LP), a difficult and potentially hazardous invasive procedure not readily feasible by all clinicians; which then needs to be evaluated in a laboratory with the capacity to report biochemical and microbiological parameters. The development of a simple, easy-to-use, non-invasive tool that could rapidly inform on the diagnosis of ABM could revolutionize

the diagnosis and prognosis of this particularly devastating infection in those settings who require it most.

Neosonics, a prototype of a portable, ultrasound-based, easy-to-use device, applicable to the fontanel of the sick child, which includes the necessary analytical software for the identification and counting of CSF cells, will be used for the required **proof of concept study** to validate this methodology in humans for the purpose of ABM diagnosis.

ISGlobal is leading the study *“Non-invasive ultrasound screening and monitoring of neonatal and infant meningitis: A comparative study at the Hôpital d’Enfants de Rabat, Kingdom of Morocco”* in collaboration with NewBorn Solutions and Centre Hospitalo Universitaire Ibn Sina de Rabat. **The main objective is to determine the concordance of the non-invasive Neosonics device with the gold-standard method (laboratory evaluation of the CSF obtained through an LP) for the evaluation of CSF cellularity in neonates and infants with suspected meningeal infection.**

Scope of work

ISGlobal is looking for a company specialized in **artificial intelligence (AI)** and **medical imaging** to perform an automatic quantification of cellularity in cerebrospinal fluid samples (CSF) with Melassez chamber images.

The key deliverables are:

- (1) To provide digital technologies based on smartphones and a telemicroscopy platform for digitalization of the CSF samples which allows for standardization of counting methodology and quality control procedures.
- (2) To develop an artificial intelligence algorithm to perform an automatic quantification of cellularity in cerebrospinal fluid samples (CSF) with Melassez chamber images.

III. MANAGEMENT OF WORK AND QUALITY CONTROL

ISGlobal and the company will establish by common agreement a calendar of communications that will consist of weekly or bi-weekly progress calls.

IV. REQUIRED QUALIFICATIONS

The Company should meet these requirements:

- Experience in medical images digitalization

- Experience in Artificial Intelligence to automate medical images analysis
- Experience in low- and middle-income countries
- Validated experience in clinical trial and research studies
- Advanced knowledge in laboratory techniques and microscopy

V. PERIOD OF EXECUTION AND DELIVERY OF THE REPORT

The execution of the work will be carried out through the clinical trial period. At the end of this period the Company must deliver a final report.

VI. CONTRACT PERIOD

The duration of the contract will be of 2 months.

The estimated start date of the contract is October 24st, 2022 until December 21st 2022.

VII. BUDGET, PRICE AND ESTIMATED VALUE OF THE CONTRACT

The contract budget amounts to the maximum amount of **30.000 Euros** excluding tax

The award amount will not exceed this budget in any case. The price of the contract, consequently, will be that to which it rises plus the corresponding Value Added Tax, in the case of non-exempt bidders, which must be included in the separate item.

VIII. ADVERTISING

The present contract will be published by announcement in the Contracting Profile of the entity on the website: www.isglobal.org

IX. PLACE AND DATE OF SUBMISSION OF PROPOSALS

The economic proposals must be submitted by email to the address licitaciones@isglobal.org

The deadline for submitting proposals will end on 23th October 2022.

X. LEGAL SYSTEM OF THE CONTRACT

The contract is considered a private contract and is subject to private law, ruling by this Schedule, by the contract and documentation attached, and in everything not provided by the applicable civil and commercial legislation.

XI. EXPENDIENT OF RECRUITMENT, AWARD PROCEDURE OF THE CONTRACT AND DOCUMENTATION TO BE PROVIDED TENDERS

The contracting of the reference services will be awarded by the procedure envisaged in Section IX of the Internal Contracting Instructions of the entity. From the day of publication of the tender notice, interested companies can obtain the necessary documentation to prepare their proposals through the contractor's profile on the website www.isglobal.org.

XII. PAYMENT METHOD

Payment will always be made under invoice and 30 days invoice date by bank transfer:

- First payment 20%
- Final payment upon completion of work: 80%

Barcelona, October 7th, 2022