

Public Consultation to Celebrate Framework Agreement on Consulting Services Artificial Intelligence

24 of May of 2019







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FRAMEWORK Values and principles of SPMS, EPE

SPMS, E.P.E. intends to conclude a Framework for the contrating of Consulting Services in Artificial Intelligence, in the image of the rest that it has conclued to this date, always based on the pursuit of its values.







FRAMEWORK Values and principels of SPMS, E.P.E.

Throughout its activities, in the scope of the conclusion of the Framework Agreement, it is also the objective of SPMS,

E.P.E., that all its employees know and internalize the principles listed below, as a refernce for conduct permanente.







FRAMEWORK The Public Consultation

Availability and scope

• This Public Consultation is advertised on the SPMS website (<u>http://www.spms.pt</u>) and in a newspaper of great circulation national in its weekend edition (25 of May of 2019).

• The entire content of this document is subject of a Public Consultation.

Interested

• SPMS, E.P.E. considers interested in this Public Consultation the citizens, companies and associations of the sector as well as the entities of the SNS.

Participation

Participation is open to all interested parties who present, in writing, by 5:00 p.m.15 of june of 2019, throught the sending to the electronic adress: <u>compras.transversais@spms.min-saude.pt</u>, of its opinion and contributions related to the proposed Framework Agreement, to be signed by SPMS, EPE. Those interested must indicate clearly in the subject of e-mail the reference "Public Consultation of Consulting Services in Artificial Intelligence" and the body of the same when applicable, the entities they represente.





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GOALS

Objectives of the Public Consultation

The experience and direct knowledge stakeholders have of the markets, practices, norms and regulations are essential to identify constraints, set priorities and seek the best solutions to the pressing needs of any public administration entity.

Thus, with this public consultation the SPMS, EPE intends to:

- Inform and involve stakeholders in the process of preparing the Framework Agreement, encouraging its constructive and creative participation;
- Encourage stakeholder participation in the preparation of the procedure, awaiting comments and suggestions from both service providers and public administration proposal for the development of the conceptual model and formation of this Framework Agreement;
- Identify the main contraints and seek the best solutions, so that the one projected in this framework agreement serves amy entity of the public administration, facilitates the processes of acquisition of the services and that it is possible that they have solutions of artificial intelligence that allow to be the main engine economic growth and productivity in the entities.





GOALS Objetives of the Frmaework Agremment

With the creation of this framework agreement, the aim is to boost competition and increase public procurement procedures, since in this framework agreement standardization and standardization of requirements of this servisse provision.

The main objectives of the framework Agreement are:

- Select suppliers that meet the characteristics defined in the Framework Agreement, with a view to disciplining future contratual relations;
- Simplify the purchasing process by any public administration entity;
- > Establish in advance the terms of service provision;
- Define maximum prices;

> Define minimum service levels

Services contracts are performed by any public administration develop procedures under article 259.° of the CCP, where they must consult all companies selected under this Framework Agreement, and this procedure results in the successful tenderers.





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FRAMEWORK AGREEMENT

Characteristics of the Framework Agreement

Objetc of the Contest	The Competition will have as its object the selection of co-contractors for the Framework Agreement, which will allow the Acquisition of Consulting Services in Artificial Intelligence.
Kind of Procedure	Public Tender with Publication in the Official Journal of the European Union (JOUE);
Validity	The Framework Agreement will have a duration of 24 (twenty-four) months , from the date of its entry in force, and the term shall be automatically extended for an equal period up to the term maximum duration of the Framework Agreement.
Criterion of Adjudication	The award will be made by lot, according to the criterion of award of the most economically advantageous tender, only the price factor being evaluated.

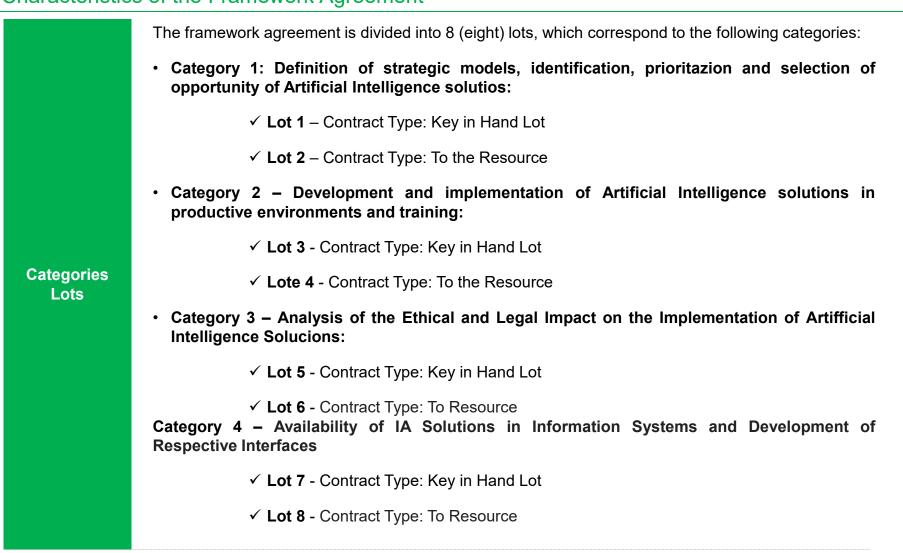
The framework agreement is structured by lot and takes into account the following types of contract:

Typology	<u>1. Key in the Hand:</u> Well defined and contextualized project and for which the competitor presents a closed price. The project will be executed using the type team that will perform all activities and tasks defined and deliverables.
туроюду	<u>2. To the Resource:</u> Project in which resources will be allocated according to the specific needs identified. For the execution of defined activities and tasks, the contracting entity will request the number of hours of work to be performed, per profile.





FRAMEWORK AGREEMENT Characteristics of the Framework Agreement







Category 1- Definition of strategic models, identification, prioritazion and selection of opportunity of Artificial Intelligence solutios: Lot 1 - Key in the Hand

In the scope of Category 1 - Definition of strategic models, identification, prioritization and selection of opportunity for the implementation of Artificial Intelligence solutions, it is intended that the services to be provided will comprise the following requirements:

- ✓ Consulting services to analyze the various applications and data that na arquiring entity has;
- ✓ Identification of current processes;
- ✓ Definition of a strategy for automation, unification and data collection;
- ✓ Identification and selection of processes for the implementation of Artificial Intelligence solutions;
- ✓ Proposal of adaptation of the current processes for possible use of the Artificial Intelligence solution;
- Design and technical specification of the necessary requirements for the implementation of Artificial Intelligence solutions in the identified processes;
- ✓ To demonstrate the advantages of the use of Artificial Intelligence, especially in systems where there is a production of large volumes and types of data (images, text and numbers) in growth, and identification of the probability that future results can make the processes more efficient.

The services to be provided under this batch include the following main activities, which are divided into two macro phases of deliverables:

- A Identification of Areas / Systems / Data for the implementation of Artificial Intelligence Solutions;
- **B** Specification of Requirements.





Category 1- Definition of strategic models, identification, prioritazion and selection of opportunity of Artificial Intelligence solutios: Lot 1 - Key in the Hand

A - In Identification of areas / systems / data for implementation Artificial Intelligence Solutions, it is intended that the following activities be performed:

- a) "AS IS" report on the current areas, initial diagnosis where the existing areas / systems should be identified, and those that are suitable for the implementation of Artificial Intelligence solutions;
- b) "TO BE" report on the application areas / systems, identifying the improvements in their areas / systems with the application of Artificial Intelligence solutions; Identification of the data collection process (relevant input in association of the expected result eg classification);
- c) Identification of process of data collection (to clean errors and inconsistencies in the data, so that the data is the best prepared);
- d) Identification of the data preparation process (cleaning of errors and inconsistencies, structure and quality standards of input data of Artificial Intelligence algorithms);
- e) Definition of a strategic initiatives plan, which identifies the path to be carried out by the acquiring entity;
- f) Workshops on the potential of Artificial Intelligence and its benefits;
- g) Documentation in the form of work instructions in order to make the use of artificial intelligence more intuitive;
- h) Identification and prioritization of possible areas or systems for the application of artificial intelligence solutions.





Category 1- Definition of strategic models, identification, prioritazion and selection of opportunity of Artificial Intelligence solutios: Lot 1 - Key in the Hand

- B In the Requirements Specification, the following activities are included:
 - a) Technical project management and coordination;
 - b) Definition of the change management model;
 - c) Final report of the areas / systems to be developed in which Artificial Intelligence solutions must be implemented, as well as the process of data collection, cleaning and preparation;
 - d) Analysis, design and functional specification, allowing to identify the best solution according to the business requirements of the acquiring entity
 - e) Analysis, design and functional specification, allowing to identify the application architecture requirements required to implement Artificial Intelligence;
 - f) Production of a Final Report, composed of technical, functional and test cases, among other relevant documents.

The **Type Team** to be made available under this batch comprises at least the resources, according to the following profiles:

- Project Manager;
- Data Analyst;
- Functional Analyst.

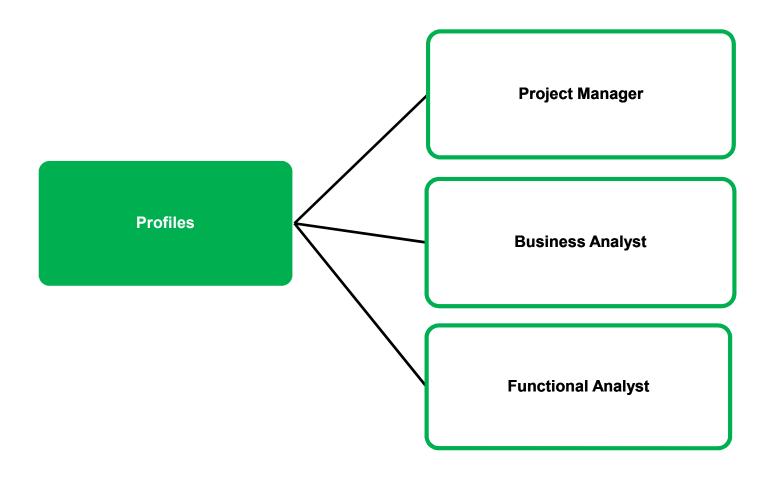




Categoria 1- Definition of strategic models, identification, prioritazion and selection of opportunity of

Artificial Intelligence solutios: Lot 2 – To the Resource

In the Category 1 the following profiles are expected:







Categoria 1- Definition of strategic models, identification, prioritazion and selection of opportunity of

Artificial Intelligence solutios: Lot 2 – To the Resource

Project Manager

Minimum requirements:

- a) Degree in Management, Engineering, Economics, Information Technology or equivalent;
- b) Specific training in Project Management;
- c) Proven experience (\geq 1 year) in:
 - Project management of information systems;
 - Project Management of Artificial Intelligence;
 - Project monitoring;
 - Team management.

Business Analyst

- a) Degree in Engineering, Computer Science, Information Technology or equivalent;
- b) Proven experience (≥ 2 years) in:
 - Advanced Analytics, whether at the compilation, analysis and interpretation of data;
 - Pyton;
 - Projects related to Deep Learning Models, Computer Vision, NLP (Natural Language Processing) and Text Mining.





Categoria 1- Definition of strategic models, identification, prioritazion and selection of opportunity of

Artificial Intelligence solutios: Lot 2 – To the Resource

Functional Analyst

- a) Degree in Computer Engineering or equivalent;
- b) Specific training in Functional Analysis and Quality and business modeling and reengineering;
- c) Proven experience (≥ 2 years) in:
 - Functional analysis of applications;
 - Methodologies for analyzing requirements and testing of information systems;
 - Creation of functional documentation of the application of artificial intelligence systems to be developed or implemented.





Category 2 – Development and implementation of Artificial Intelligence solutions in productive environments and training: Lot 3 – Key in the Hand

The services to be provided under Category 2 - Development and implementation of Artificial Intelligence solutions in productive environments and training, consist of:

- ✓ Services for definition, development and validation of algorithms and respective technical-scientific documentation;
- ✓ Services for implementation and development of projects of Artificial Intelligence solutions;
- ✓ Training on the solutions implemented or to be implemented, in order to equip the resources with technical skills.

The services to be provided will include the following main activities, which are divided into three macro phases of deliverable:

A- Technical and Functional Specification of the requirements to develop the identified Artificial Intelligence solution and definition of the respective test and validation plans;

B- Programming, testing and implementation of the identified solution or Artificial Intelligence Prototype;

C- Training.





environments and training: Lot 3 - Key in the Hand

A - In the **Technical and Functional Specification of the requirements to develop the identified Artificial Intelligence solution and definition of test plans**, there are some of the following activities:

- a) Technical project management and coordination;
- b) Analysis, design and functional specification of the areas to be intervened;
- c) Analysis, design and technical specification of the architecture of support the application of Artificial Intelligence;
- d) Business Cases of the solution, where you can see the expected return of the use of Artificial Intelligence;
- e) Comparison between the predictions of the model to be applied and the true outputs of the data (so that the solutions are adequate to the task);
- f) Documentation associated to the project, detailed description of the solution support algorithm, technical and functional notebooks of the solution, test book, and other relevant documents;
- g) Definition of tests for using the solution.
- B In the **Programming, testing and implementation of the Artificial Intelligence solution identified:**
 - h) Programming of the Artificial Intelligence solution;
 - i) Testing in test environment;
 - j) Installation and configuration of the solution in productive environment.





environments and training: Lot 3 – Key in the Hand

C – In Training:

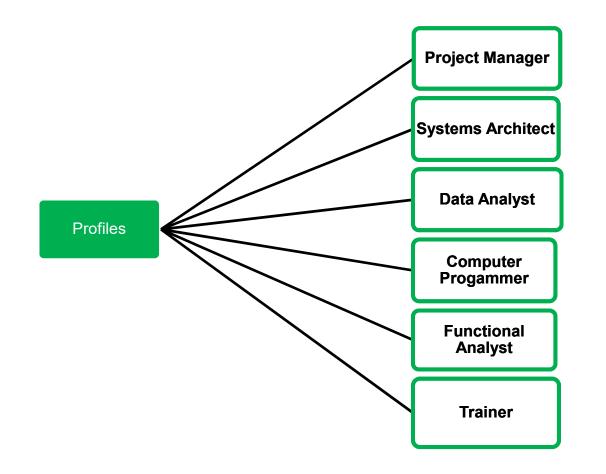
- k) Transfer of knowledge, to provide employees with autonomy in the use, configuration and maintenance;
- I) Training in the classroom;
- m) Hands-on training, in practical project contexts or in daily operation.





environments and training: Lot 4 - To the Resource

Under Category 2 it is intended that the resources have the following profiles :







environments and training: Lot 4 - To the Resource

Project Manager

Minimus requirements:

- a) Degree in Management, Engineering, Economics, Information Technology or equivalent;
- b) Specific training in the area of health (preferential);
- c) Specific training in Project Management;
- d) Proven experience (\geq 1 year) in:
 - Project management of information systems;
 - Project Management of Artificial Intelligence;
 - Project monitoring;
 - Team management.

Systems Architect

- a) Degree in Computer Engineering, Information Technology Management, Information Technology or equivalente;
- b) Proven experience (≥ 2 years) in:
 - Characterization of existing architectures for the development of Artificial Intelligence solutions;
 - Characterization of information flows, processes, architectures of components / applications and technology platforms.





environments and training: Lot 4 - To the Resource

Data Analyst

Minimus requirements:

- a) Degree in Engineering, Computer Science, Information Technology or equivalent;
- b) Proven experience (≥ 2 years) in:
 - Advanced Analytics, whether at the compilation, analysis and interpretation of data;
 - Pyton;
 - Projects related to Machine Learning Models in the area of Natural Language Processing (NPL) and Text Mining.

Functional Analyst

- a) Degree in Computer Engineering or equivalent;
- b) Specific training in Functional Analysis and Quality and business modeling and reengineering;
- c) Proven experience (\geq 2 years) in:
 - Functional analysis of applications;
 - Methodologies for analyzing requirements and testing of information systems;
 - Creation of functional documentation of the application of artificial intelligence systems to be developed or implemented.





environments and training: Lot 4 - To the Resource

Computer Progammer

Minimus requirements:

- a) Degree in Computer Engineering, Computer Management or similar;
- b) Specific training in JavaScript, jQuery and SPA (single page application) frameworks such as Angular, React and Vue, with knowledge of the most relevant computer languages, such as Java, C #, Python, PHP, Swift, Javascrip, TypeScript and Ruby on Rails as well as good knowledge in Web Services.
- c) Proven experience (\geq 2 years) in:
 - Full Stack development, ie, back-end (server, database, modeling, programming, data structuring and implementation) and front-end (UX, cut) of AI solutions;
 - Program the backend using a language like C #, Java or PHP (in addition to the database), how much they build and maintain the front end with HTML, CSS, JavaScript (in addition to the frameworks.

Trainer

- a) Degree in the areas of Information Technology or equivalent;
- b) Proven experience (\geq 1 year) in:
 - Implementation Projects of Artificial Intelligence Solutions;
 - Projects in which he has participated, delivered in-room training, Hands-on, in practical project contexts or in daily operation and prepared documentation, namely, user manuals, films and images to support face-to-face training and eLearning.





Category 3 – Analysis of the Ethical and Legal Impact on the Implementation of Artifficial Intelligence Solucions: Lot 5 - Key in the Hand

Within the scope of Category 2 - Evaluation of the Ethical and Legal Impact in the Implementation of Artificial Intelligence Solutions, it is intended that the services to be provided will comprise the following activities:

- Analysis and drafting of opinions on the legal and ethical implications of implementing an artificial intelligence solution, with an indication of the best way to implement it, based on ethical and societal values as indicated in the Charter of Fundamental Rights and other applicable regulations;
- ✓ Analysis of the legislation and regulations applicable to data protection, whether national or Community, and the issuance of its opinion;
- ✓ Adequate national and international legal framework, in the implementation of Artificial Intelligence solutions, when applied in health information systems;
- ✓ Development of guidelines or internal documents taking into account the European Commission's ethics and data protection guidelines for artificial intelligence;
- ✓ Compilation of legislation and doctrine;
- ✓ Ensure the organization and improvement of processes in strict compliance with the values and regulations applicable to the implementation of Artificial Intelligence solutions in the health area.

The **Type Team** to be made available under this batch comprises at least the resources, according to the following profiles:

- Senior Adviser
- Junior Adviser.

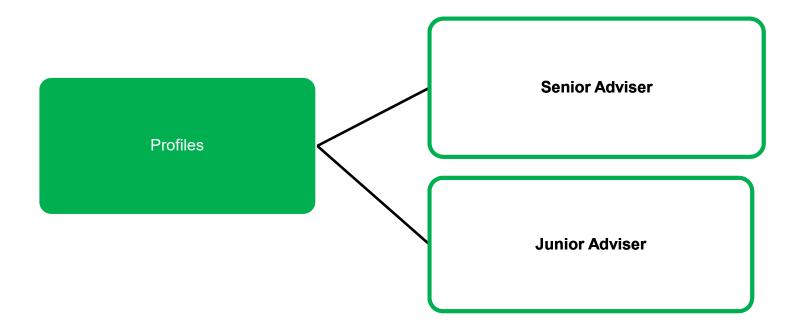




Category 3 – Analysis of the Ethical and Legal Impact on the Implementation of Artifficial Intelligence

Solucions: Lot 6 - To the Resource

Under **Category 3** it is intended that the resources have the following profiles:







Category 3 – Analysis of the Ethical and Legal Impact on the Implementation of Artifficial Intelligence

Solucions: Lot 6 - To the Resource

Senior Adviser

Minimus requirements:

- a) Degree in Law;
- b) Subscription in the Order of Lawyers;
- c) Proven experience (\geq 2 years) in:
 - Data Privacy Advisor;
 - Total domain of the General Regulation of Protection of Data;
 - Experience in conducting privacy assessments and / or security gaps;
 - Experience in interpreting legal regulations on privacy;
 - Experience in projects implementing Artificial Intelligence solutions.

Junior Adviser

- a) Degree in Law;
- b) Subscription in the Order of Lawyers;
- c) Proven experience (\geq 1 years) in:
 - Data Privacy Advisor;
 - Total domain of issues related to RGPD policies and their impacts on the business model;
 - Experience in projects implementing artificial intelligence solutions;
 - Certification Information Privacy Professional (CIPP).





Category 4 - Availability of IA Solutions in Information Systems and Development of Respective Interfaces: Lot 7 – Key in Hand Lot

Within the scope of **Category 4 - Availability of IA Solutions in Information and Development Systems of the Respective Interfaces**, it is intended to make IA solutions available in already developed information systems, and to design the necessary interfaces, thus allowing the end user to provide the solution of Artificial Intelligence.

The services to be provided consist of the following main activities:

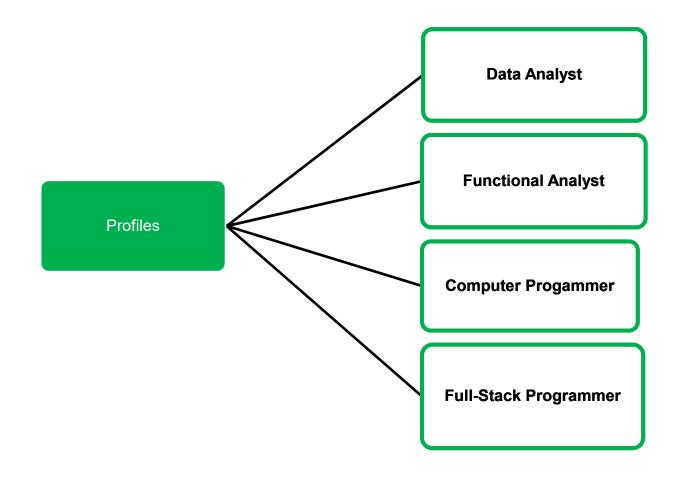
- Design and development of interfaces for the provision of Artificial Intelligence solutions;
- Implementation of Artificial Intelligence solutions in a quality environment;
- Execution of tests in the quality environment and respective validity of the implemented Artificial Intelligence solutions;
- Implementation of the solutions of Artificial Intelligence in production environment and its respective training to the actors in the project;
- For the definition of technical specifications and digital formats: in accordance with the provisions of the National Digital Interoperability Regulation (NDIR);
- Adoption of security mechanisms, access, safeguarding data and information of the solution, which should be properly documented, as well as maintained a security update policy of the software used;
- The solution must comply with the accessibility rules defined in www.acessibilidade.gov.pt (WCAG 2.0) and work in the following internet browsers (browsers), in the most updated versions available at the time of service execution: Apple Safari, Google Chrome, Microsoft Internet and Mozilla Firefox.





Category 4 - Availability of IA Solutions in Information Systems and Development of Respective Interfaces: Lot 8 – To The Resource

In Category 4 it is intended that the resources have the following profiles:







Category 4 - Availability of IA Solutions in Information Systems and Development of Respective Interfaces: Lot 8 – To The Resource

Data Analyst

Minimum requirements:

- a) Degree in Engineering, Computer Science, Information Technology or equivalent;
- b) Proven experience (≥ 2 years) in:
 - Advanced Analytics, whether at the compilation, analysis and interpretation of data;
 - Pyton;
 - Projects related to Machine Learning Models in the area of Natural Language Processing (NPL)
 - and Text Mining.

Functional Analyst

- a) Degree in Computer Engineering or equivalent;
- b) Specific training in Functional Analysis and Quality and business modeling and reengineering;
- c) Proven experience (≥ 2 years) in:
 - Functional analysis of applications;
 - Methodologies for analyzing requirements and testing of information systems;
 - Creation of functional documentation of the application of artificial intelligence systems to be developed or implemented.





Category 4 - Availability of IA Solutions in Information Systems and Development of Respective Interfaces: Lot 8 – To The Resource

Computer Progammer

Minimum requirements:

- a) Degree in Computer Engineering, Information Technology Management, Information Systems or similar;
- b) Specific training in JavaScript, jQuery and SPA (single page application) frameworks such as Angular, React and Vue, with knowledge of the most relevant computer languages, such as Java, C #, Python, PHP, Swift, Javascrip, TypeScript and Ruby on Rails as well as good knowledge in Web Services.
- c) Proven experience (\geq 2 years) in:
 - Full Stack development, that is to act in back-end (server, database, modeling, programming, data structuring and implementation) and front-end (interface, UX, cut) of the site or portal.
 - Program the backend using a language like C #, Java or PHP (in addition to the database), how much they build and maintain the front end with HTML, CSS, JavaScript (in addition to the frameworks).

Full-Stack Programmer

- a) Degree in Computer Engineering, Informatics Management, Information Systems, Marketing Management or similar;
- b) Specific training in development of services and the front-end of the website, app or portal;
- c) Proven experience (\geq 2 years) in:
 - Full Stack development, that is to act in back-end (server, database, modeling, programming, data structuring and implementation) and front-end (interface, UX, cut) of the site or portal.





FRAME AGREEMENT Criterion of Adjucation: Category 1 (Lots 1 and 2)

- Category 1- Definition of strategic models, identification, prioritazion and selection of opportunity of Artificial Intelligence solutios:
 - Lot 1 Contract Type: Key in Hand Lot

Contrat Type	Factor	Description	Weight
Key in Hand	A	Monthly Service Price (Emphasize defined activities and availability of a team consisting of: project manager / data analyst / functional analyst)	100%

• Lot 2 – Contract Type: To the Resource

Contrat Type	Factor	Subfacto r	Description	Partial Weight	Total Weight
To the	A1	Hour Price/man price (Project Manager)	33%		
Resourc	1 1	A2	Hour Price/man price (Data Analyst)	34%	100%
e		A3	Hour Price/man price (Fuctional Analyst)	33%	





FRAME AGREEMENT

Criterion of Adjucation: Category 2 (Lots 3 and 4)

- Category 2 Development and implementation of Artificial Intelligence solutions in productive environments and training:
 - Lot 3 Contract Type: Key in Hand Lot

Contrat Type	Factor	Description	Weight
Key in Hand		Monthly Service Price (Compliance with defined activities)	100%

• Lote 4 - Contract Type: To the Resource

Contrat Type	Factor	Subfactor	Description	Partial Weight	Total Weight
		A1	Hour price/man price (Project Manager)	16%	
		A2	Hour price/man price (Data Analyst)	18%	
To the		A3	Hour price/man price (Fuctional Analyst)	16%	100%
Resource		44	Hour price/man price (Systems Architect)	16%	100%
		A5	Hour price/man price (Computer Progammer)	18%	
		A6	Hour price/man price (Trainer)	16%	





FRAME AGREEMENT

Criterion of Adjucation: Category 3 (Lots 5 and 6)

- Category 3 –Analysis of the Ethical and Legal Impact on the Implementation of Artifficial Intelligence Solucions:
- Lot 5 Contract Type: Key in Hand Lot

Contrat Type	Factor	Description	Weight
Key in Hand	А	Monthly Service Price (Emphasize defined activities and availability of a team consisting of: senior consultant / junior consultant)	100%

• Lot 6 - Contract Type: To Resource

Contract Type	Factor	Subfactor	Description	Partial Weight	Total Weight	
To the Resource	eA	he	Δ	Hour price/man price (Senior Adviser)	50%	100%
		Δ)	Hour price/man price (Junior Adviser)	50%	100%	





FRAME AGREEMENT Criterion of Adjucation: Category 4 (Lot 7)

Category 4 – Availability of IA Solutions in Information Systems and Development of Respective Interfaces:

• Lot 7 - Contract Type: Key in Hand Lot

Contrat Type	Factor	Description	Weight
Key in Hand		Monthly Service Price (Compliance with defined activities)	100%

• Lot 8 - Contrat Type: To the Resource

Contrat Type	Factor	Subfactor	Description	Partial Weight	Total Weight
		A1	Hour price/man price (Data Analyst)	25%	
To the Resource	A	Δ)	Hour price/man price (Fuctional Analyst)	25%	
		A3	Hour price/man price (Computer Progammer)	25%	100%
		44	Hour price/man price (Full Stack Progammer)	25%	





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PROCEDURES UNDER THE FRAMEWORK AGREEMENT

Criterion of Adjucation

The award criterion is that of the most economically advantageous tender, determined by one of the following modalities:

- a) Price Evaluation;
- b) Best Value for Money.

In Recruitment of resources, the following factors may be taken into account:

Factors	Weight
Weight	60%
Level of Experience of the Resources presented in terms of Qualifications and Professional Experience	40%

The acquiring entity may define other factors that it considers relevant to evaluate the proposals in accordance with the object of this framework agreement.





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CONTRIBUTIONS REQUESTED

SPMS, E.P.E. thus intends to promote the participation of all stakeholders (stakeholders, citizens, companies and associations of the sector, as well as NHS entities and MS institutions) are, can contribute inputs to the specifications of the Artificial Intelligence Consulting Services Framework Agreement, which is intended to be celebrated in order to enhance its effectiveness and efficiency.

Among others, contributions are also made on:

- □ If all the resource profiles necessary for the diagnosis, ethical / legal analysis and development of artificial intelligence solutions and for the provision of AI solutions are mentioned, namely the level:
 - o Graduation;
 - Experience;
 - Number of years of experience.
- □ If the factors that make up the award criterion, whether under the framework agreement or in the procedures developed under it, reflect what is currently practiced in the market.
- □ Identification of the main constraints and indication of the best solutions for the projected to serve any entity of the public administration in the field of Consulting Services in Artificial Intelligence.





CONTRIBUTIONS REQUESTED

- Designate the price range:
 - Lots 1, 4, 6 and 7 in which the monthly cost of the service decreases, depending on a particular package of months acquired, such as a package consisting of 3 months, 6 months, 9 months, 12 months, among others;
 - Lots 2, 3, 5 and 8 in which the unit hourly cost per man decreases, depending on a particular package of hours, acquired for example a package consisting of 100h, 200h, 300h, among others.

A solução está na partilha!

Obrigado

