

EVALUATION REPORT OF THE BIDS RECEIVED FOR THE CONTRACT TARGETING INNOVATIVE SERVICES BASED ON THE USE OF NEW TECHNOLOGIES FOR A NEW APPROACH OF COMPREHENSIVE AND INTEGRATED MANAGEMENT OF PATIENTS WITH ARRHYTHMIAS WHO ARE IN NEED OF AN IMPLANTED PACEMAKERS (RITMOCORE). LOT 2, FUNDACIÓ DE GESTIÓ SANITARIA HOSPITAL DE LA SANTA CREU I SANT PAU (STPAU)

Exp. OBE 17/378

1. Background

1.1. Contracting entity

- a.- Body: *Fundació de Gestió Sanitària de l'Hospital de la Santa Creu i Sant Pau*
- b.- Unit in charge of the file: *Unitat de contractació* – procurement unit
- c.- Address: Sant Antoni M. Claret, 167, tel. 93.553.76.21 / fax. 93.553.76.31
- d.- Town and postal code: Barcelona 08025
- e.- Contractor profile: *Plataforma de Contractació Pública de la Generalitat de Catalunya*
- f.- email address: contractacions@santpau.cat
- g.- File number: OBE 17/378
- h.- Lot: 2

1.2. Object of the contract

- a.- Description: Innovative services based on the use of new technologies for a new approach of comprehensive and integrated management of patients with arrhythmias who are in need of a pacemakers.
- b.- Type: Service

1.3. Budget of the call for tender and estimated value of the contract

Budget of the call for tender: 19.424.635,05 € (VAT excluded).

Budget of lot 2: 6.867.402,00 € (VAT excluded).

Estimated value of the contract corresponding to lot 2: 6.867.402,00 € (VAT excluded), according to the table below:

Concept	AMOUNT (VAT excluded)
Base budget of the tender (reference for the bid)	19.424.635,05 €
% provided in modifications	Not provided
Extension	Not provided
Budget LOT 2	6.867.402,00 €
EA of the contract corresponding to LOT 2 (BB + modifications + extension)	6.867.402,00 €

2. Process of bids assessment

2.1. Bids received in lot 2 (Hospital de la Santa Creu i Sant Pau) :

- BIOTRONIK SPAIN SA
- MEDTRONIC IBERICA SA
- ABBOTT MEDICAL ESPAÑA SA.
- IMPLICITY

2.2. Result of the revision of the envelope A: general documentation

As stated in the minutes of the Tendering Board meeting of opening and revision of the administrative documentation, the Board agreed to accept the four bids received as all required administrative documentation was submitted at its due time and it was correct.

Given the above, it has been agreed to call for the opening of envelope B – documentation referred to the bid that will be assessed against the criteria subject to a value judgment-.

2.3. Evaluation of envelope B: criteria subject to a value judgment

In accordance to the PCAP, the assessment of the bids has been conducted according to the following structure:

2.3.1. Evaluation of the fulfilment of the minimum requirements

First, the Evaluation's Technical Board has assessed individually, *per se*, that the bids received fulfil the minimum requirement defined in the PPT.

Fulfilment of the common minimum requirements

Minimum requirements for the supply of pacemakers to meet the needs of each patient.
Availability of at least two devices from different manufacturers, for each patient, in normal cases.
Supply of a full range of instruments and material for implants and extractions. The supplier will cover the costs of the explantations and second implants necessary due to a malfunction of the pacemaker device.
Minimum requirements for technical support services for the implantation and explantation processes
Does the bid include a programme for technical support services?
Directly responsible for the Contract: The person directly responsible for the Contract proposed by the Bidder must have a minimum experience of five (5) years in the execution of care services that are the object of the contract. The Bidder shall present a CV indicating the jobs and hospitals that accredit this experience.
Personnel in charge of executing the service: At least 80% of the workers proposed by the Bidder as personnel assigned to perform the service must have a minimum experience of three (3) years in the execution of the care services they are the object of the contract.
Minimum requirements for supply model
Does de proposal include a programme establishing a supply model?
The successful bidder must guarantee that the hospital will have access to current technological models throughout the term of the contract.
Any cardiac stimulation device that appears from each of the providers during the term of the contract must be included automatically in the prosthesis catalogue chosen by the Technical Board for Contract Monitoring.
Minimum requirements for remote monitoring
Does de proposal include a programme for remote monitoring?
To create an Assistance Centre for Remote Monitoring to collect and review ALL transmissions.
The transmissions received by the ACRM must be classified according to the criticality level of the alarm.
The monitoring data must be accessible in a TRANSPARENT, COMPLETE and EXPLOITABLE manner by the staff assigned to this purpose by the hospital.
The information system should be enabled to interoperate with the electronic health record of the hospital and, in the case of Catalan hospitals, with the shared electronic health record in Catalonia (HC3).
The information system should allow the collection and integration of information on face-to-face visits.
The information system should be able to integrate information from any manufacturer.
Minimum requirements for coordinated care
Does de proposal include a programme for coordinated care?
Does the programme include the following aspects?
Indication of the implant, to increase the knowledge on these pathologies in the different care levels to anticipate indication, reduce the number of emergency procedures, and restrict hospital visits to the ones that are clinically relevant
Change management, to foster adoption of the new model among the health professionals of the different care levels, as it can be considered a work overload.
Patient's care path for pacemaker treatment adapted to the hospital and patient contexts.
The alerts of alarm activation protocols among care levels.
Communication channels to facilitate dialogue between the hospital and other care levels of care.
Security for data storage and communications
Minimum requirements for patient access to treatment
To offer information and support to patients and relatives regarding the patient health status to improve their perception of security

Minimum requirements for patient activation
Does de proposal include a programme to activate patients?
Does the porgrmme include the following functionalities?
Support for doubts and frequent questions in each phase of treatment, through the access to relevant information, including educational content and web-based support services.
Those services should answer relevant questions in different stages of the treatment, both before the intervention (<i>What is a pacemaker? How will my life change? Which pacemaker is the best for me? etc.</i>) and after the implant (<i>What should I keep in mind? What should I do if ...? What help will I get with remote monitoring? etc.</i>).
Improve patients' self-control through access to reliable information regarding the characteristics of pacemaker and the patient condition. The information for patents self-control should include, at least , the access to remote monitoring results reviewed and approved by the hospital; and specific educational content about pacemaker models to be used by each segment of patients.
A catalogue of devices and technologies approved by reference entities to be used to care patients at risk.
Patient networks creation aligned with existing resources, at national, regional or local level to establish links with ongoing initiatives to expand and extend them.
Development of a training and support plan for patients and their families to inform them about the advantages of the new model, facilitating their activation and involvement
Minimum requirements for Change management
Does de proposal include an implementation plan?
Does the programme include the following items?
Re-engineering of processes
Service supply management
Global evaluation and follow-up
Training for change
Does the In-service training for clinical personnel include the following items?
Training programme for medical, nursing and physiologist personnel that includes technical training with devices of all the brands offered, and technical training in remote control and the remote control information system.
A plan for the hospital to become an expert knowledge and training centre for other hospitals and health centres.
Training in extraction methodologies and techniques to those hospitals that perform those procedures.
Advanced training in techniques at accredited centres.
Fellowship training plan.
Specific training for general practitioners, nursing and physiologist personnel at primary care.
Does the Governance model include the following items (under the terms specified on page 35 of the PPT)?
The organization and functions of the governance bodies
The implementation plan, including the annual planning of meetings of each of the governing bodies.
The communication and information plan, including content, frequency, channels, key milestones and scaling, decision-making.
A model for the management of risks and complications, essential in a medium-term contract.
Please, indicate whether the bidder offers the minimum % of staff costs for your lot :
LHCH (4%); STPAU (4,24%); FAMT (n/a); HUB (7,14%)
Does the Operational plan include the following aspects on integration, interoperability and usability ?

The integration model and the plan for incorporating data from the hospital's current database.
The plan for data migration at the end of the contract.
The model for managing the interoperability between all technologies: including new technologies that will be incorporated through the contract, as well as interaction with hospital information systems and primary care during the term of the contract.
The model of interoperation or integration with other monitoring systems at the hospital or service.
The access and usability model of each user profile in the system.
The planning for the use of artificial intelligence solutions to improve the treatment of patients based on the information collected.
Does the bidder specify the resources that the implementation of the new model will require with respect to the information systems, technology equipment and hospital information systems.
Does the Operational plan include the management of technological renewal during the term of the contract
Does the bidder specify the characteristics as well as their ergonomics and usability of the different technologies they will provide?
Does the bidder specify the strategy for technological renewal?
Does the Operational plan include a model for the relationship between the hospital and the supplier
Does the bidder specify the commitment to a hospital-supplier relationship model that considers the requirements set out in this document.

Fulfilment of the minimum requirements of LOT 2 (Hospital de la Santa Creu i Sant Pau)

Minimum requirements for optimal delivery of treatment to each patient at STPAU		
Indicator	Minimum	fulfilment (Yes/No)
Number of complete ranges of pacemakers from different manufacturers (*)	2	
Capacity to respond to need for special devices (special devices absorption rate) (*)	10%	
Additional technical characteristics		Fulfilment Yes/no
Battery life guarantee	With 100% coverage cost of device	
VVI	8 YEARS	
DDD	6 YEARS	
Leadless pacemakers implanted per year	50	
Extraction systems	Fulfil the minimum requirements in all scenarios	
Technical support for implant and extraction of devices		
Indicator		fulfilment (Yes/No)

All personnel assigned to these services must be previously accepted by the Technical Board for Contract Monitoring.		
The technician assigned to technical assistance STPAU Hospital must hold the title of medicine and surgery and belong to a Scientific Society in the field of cardiac pacing		
The assignment of the same technician of reference to assist in the operating room for either an implant or an extraction. Substitutions or absences should be justified.		
Face-to-face technical assistance full-time for the implant procedures of devices in the theatre (both for first implants and replacements).		
Face-to-face technical assistance for implant extraction		
Extension of the technical assistance in implant to the follow-up consultation (face-to-face or remote) of those implanted patients in whom the care team considers it appropriate.		
Integration of the reference technician in the working groups for the development of the protocols linked to the implantation of pacemakers as those that will establish the selection of the most suitable type of device for each patient and the one that will govern the programming standards according to the type of each device and patient.		
Minimum requirements for the technical support services for implantation procedures in the STPAU		
Indicator	Minimum	Fulfilment (Yes/No)
Minimum proven experience in the provision of specialised technical support for the electrodes extraction	5 YEARS	
Technical support in the procedures	On demand and depending on the procedure complexity	
Extension of specialist care, at professional request, to monitoring consultation (face-to-face or remote) of cardiac devices	Yes	
Reaction times for emergencies	24 horas	
Minimum requirements for Provisioning of material		Fulfilment Yes/no
Does the bid include the following information?		

<p>1. The technical data of the devices detailing the equipment accrediting compliance with the minimums set out in these technical specifications. 2. Description of how the material from the different manufacturers will be supplied, as well as the technical data accrediting compliance with the minimums set out in these technical specifications. 3. Also, the tenderer must give details of the following aspects: a) the ease of use of the procurement management tools, b) the use of new technologies in the management of stocks, c) the integration of these tools in the dashboard of this project, d) the integration with the hospital's ICT systems, e) the awardee's response times to sudden increases in demand, f) other aspects that facilitate and promote greater efficiency in the treatment of this group of patients.</p>	
<p>Minimum requirements for Technical characteristics of the pacemakers.</p>	<p>Fulfilment Yes/no</p>
<p>¿do the pacemakers of the bid meet or improve the following minimum technical characteristics?</p>	
<p>Remote care compatibility with automatic wireless telemetry</p>	
<p>Active AND passive fixation electrodes (IS1 connector)</p>	
<p>Adaptors for old connectors</p>	
<p>Magnetic resonance full body compatibility, at least 1.5T</p>	
<p>Automatic atrium and ventricle threshold measurement</p>	
<p>Alerts for electrode integrity, battery depletion, impedance out of limits (possibly: warning messages or indicators of battery depletion, threshold, and impedance out of limits).</p>	
<p>Activity sensors (programmable).</p>	
<p>Electrogram storage with preevent electrogram recordings.</p>	
<p>Alert due to ERI battery depletion (alert, or indicator, or message)</p>	
<p>Battery voltage measurement and/or estimation of battery duration.</p>	
<p>Lead impedance measurement.</p>	
<p>Specifically, for dual chamber pacemakers:</p>	<p>Fulfilment Yes/no</p>
<p>Automatic switch stimulation change mode</p>	
<p>Algorithms for reduction of ventricular pacing (their efficacy must be demonstrated in articles in peer review journals and will be evaluated by a clinical board)</p>	
<p>Algorithms for prevention and treatment of PMT</p>	
<p>Programmable alerts for atrial arrhythmias</p>	
<p>Does the operational plan o the bidder plan to guarantee the supply of the VDD generators replacement?</p>	
<p>Does the operational plan detail whether it includes DDD or DDD and VDD?</p>	
<p>Technological renovation of the devices during the contract term</p>	<p>Fulfilment Yes/no</p>

Does the operational plan guarantee the provision of supplies from more than one manufacturer to cover all kind of electrodes extraction?		
		Fulfilment Yes/no
The Bidder must specify in the Operative Plan of supply in a specific section of technological renovation in detail the proposal of incorporation of these new technologies within the framework of this contract.		
It must also be specified how possible disruptive novelties that appear in the market of brands other than those proposed by the bidder will be incorporated. In the evaluation, the ease of incorporation of these novelties will be also considered		
The bidder must specify how the incorporation of technologies not currently available will be valued, as well as the inclusion of innovative patient medical communication information systems, available or not at present.		
The bidder must make explicit its commitment to review together with the Technical Board for Contract Monitoring, those technologies that appear in the market during the term of the contract.		
Remote monitoring programme		Fulfilment Yes/no
Extension of the remote monitoring		
Previously implanted patients with pacemakers compatible with remote monitoring	50%	
Patients with new implants / battery changes	85%	
Functions of the assistance centre for remote monitoring		Fulfilment Yes/no
Creation of a remote monitoring assistance centre that reviews ALL transmissions		
Transmissions classification		
Accessibility of all hospital designated personnel to all transmissions in a transparent, complete and exploitable manner.		
Does the implementation plan detail the operating model the transmission classification protocol and flowcharts, the model of verification for transmissions, and other organisation aspects that may reduce the burden of care and managerial work at the hospital?		
Functions of the assistance centre for remote monitoring		Fulfilment Yes/no
Remote monitoring assistance centre reviews all transmission from any new implanted device regardless the manufacturer.		
Technical assistance for patients must be available during office working hours (8am to 7pm) in (at least) the following languages: Catalan, Spanish, and English.		
Telephone technical assistance for doctors and nurses must be available during office working hours (8am to 7pm) in (at least) the following languages: Catalan and Spanish		
Integration and interoperability with Hospital Information Systems and Primary Care centres integrated in the RITMOCORE model.		
Possibility of recovering all the data in the case of a future change in the information system.		

Transfer of information, procedures and algorithms at the hospital's request and at the end of the contract.	
Remote monitoring minimum functional requirements	Fulfilment Yes/no
Creation of patient records with complete and auditable information.	
Management module for in-hospital follow-up consultations regarding implantable devices	
Management of documentation: (according to what is provided in Annex I.2 of the PPT page 16).	
Management of right of access and data privacy: (according to what is provided in Annex I.2 of the PPT page 16).	
Importation of data from the Hospital's previous database..	
Connectivity with the different platforms for remote monitoring of implantable cardiac devices..	
The information system must provide a single interface for both remote and in-hospital monitoring..	
The system must provide a single interface for remote monitoring regardless of the brand and device model in question..	
Retrieval of data from devices in in-hospital monitoring compatible with all the manufacturers.	
Structured storage of the information collected during both in-hospital and remote monitoring follow-ups..	
Scanning of the material used by the barcode reader	
Capacity for combining the agenda management with the hospital admission system.	
Compatibility with the DICOM image standard.	
Optimization of clinical and administrative processes.	
Technical and interoperability requirements	Fulfilment Yes/no
HL7 Integrated Server offering two-way communication with other hospital' ICT systems (EMR/HIS)	
Data exportation standards (reports in PDF documents and information tables in Microsoft Excel, ACCESS, SQL, SPSS).	
Does the operational plan include the following elements?	Fulfilment Yes/no
Home monitoring operational	
Telephone suport system for patients and physicians.	
Implementation and operating plan of the information systems focusing on the interoperability of the hospital current systems and the recovery of currently stored data in the Arrhythmias Unit database.	
The management of the transition to another information system at the end of this contract and how continuity will be guaranteed.	
The provision tool for data analysis to the clinical unit to improve organization of remote consultations, to increase the ability of the medical team to anticipate possible clinical and technical problems..	

The training of patients to improve the empowerment of the patient regarding his pathology. The possibility of using innovative data transmission systems that do not require the installation of additional devices in the patient's home will be positively evaluated.	
The development of information systems such as feedback for the patient through new technologies (smartphone, website for the patient, mobile Apps, etc.) that improve the empowerment of the patient	
Future plan for joint development with the Hospital of new technologies that facilitate patient communication with the hospital and vice versa. The hospital must be a priority partner in the development and implementation of these new solutions in remote control.	
Minimum requirements for Coordination of care	Fulfilment Yes/no
¿ Does the bid establishes communication protocols between the arrhythmias unit and its implantation in, at least, two primary care centres of the catchment area of STPAU?	
Minimum requirements for Patient activation	Fulfilment Yes/no
¿ Does the operational plan foresee to provide information and training to patients and relatives in different formats (on paper or digital) as well as the implementation of information systems of patient self-monitoring (according to page 18 of Annex I.2 of the PPT)?	
Minimum requirements for Change management	Fulfilment Yes/no
Does the bid include a change management project that contemplates the different stages (implementation, exploitation and return of services) adapted to the characteristics of STPAU?	
Continual training of medical and nursing staff	Fulfilment Yes/no
Does the bid include a specialised training for the medical staff? (according to the items listed in page 21 of the Annex II of the PPT).	
Plan for the incorporation and return data from patients monitoring	Fulfilment Yes/no
It is a requirement for the remote-control information system of STPAU to register the collected data in a database that allows the integration of the clinical information of the patients obtained through both on-site and remote follow-ups and facilitates the export of this data in open format to other environments for exploitation by the STPAU hospital	
The bidder must make available to the STPAU all data from patients generated and used during the execution of the contract in an open format jointly with information on the structure of the data delivered to the hospital and the documentation of the protocols developed during the execution of the contract.	
3.5.3 Minimum requirement of information system: Integration, interoperability and usability	Fulfilment Yes/no
The bidder will have to fulfil the minimum requirements and demonstrate in their bid how they will guarantee the interoperability with all the relevant information systems of the hospital.	
Minimum functional requirement of information system: Integration, interoperability and usability	Fulfilment Yes/no

Integration and extraction of existing relevant data from the databases of the hospital and the arrhythmia unit for the patient follow-up and the contract monitoring..	
The implementation of the data analysis tools aimed to assist a better organisation of the remote queries, in order to enhance clinical team capacity to anticipate both technical and clinical issues.	
Release of a dashboard aimed to monitor the activity and the level of achievement of the objectives set in the outcomes-based indicators.	
Development of patient-oriented IT systems and provision of feedback via new technologies (website for the patient, mobile apps, etc) and improve patient's empowerment	
Development of an app for patients and their relatives.	
Registry of relevant information to measure indicators: date of the diagnostic, treatment indication date, level of evidence according to the standards and European clinical practice guidelines, etc.	
Requirements for data processing	Fulfilment Yes/no
Capability to retrieve data for its exploitation through the hospital's business intelligence tools..	
Registry of user access, which guarantee the record of the information required to be compliant with the regulations in force in every country about data protection	
Generation of the necessary information to feed the public global information systems (such as Catalonia's Història Clínica Compartida (HC3)).	
Minimum service provision	Fulfilment Yes/no
Technological support to RITMOCORE technological solutions deployed during the contract lifetime..	
Documentation, training and knowledge transfer to the hospital IT team, in a way they can conduct the platform maintenance tasks (backup, monitoring, reboot process, ...).	

2.3.2. Evaluation of qualitative criteria dependent on a value judgement. Up to 80 points.

Secondly, the bids complying with the Technical Specifications will be evaluated per se and comparing them with each other, in agreement with the subjective evaluation criteria included in Annex I of the tender specifications (PCAP):

- First, the technical quality will be evaluated according to the quality of each element of the operative plan. The definition of 'technical quality' is in the Annex I of each Lot: a scoring is established in order to analyse the offers under the prism of the quality of each operative plan aimed to satisfy the objectives of the model change..
- Then the 'innovative content' of each element of the Operational Plan will be assessed. The innovative content described in Annex I of each lot: a scoring is established in order to analyse the offers under the prism of the innovative content of each of the operational plans.

For all the above, the final score of the value judgement criteria will be obtained by calculating the mean corresponding to each bid score in the sections regarding the technical quality and innovation content, as described in annex I..

Qualitative criteria dependent on a value judgement for Lot 2 (Hospital de la Santa Creu i Sant Pau): maximum score: 80.

The qualitative criteria dependent on a value judgement, according to the tender specifications of lot 2 are the following:

1.- Operational plan on personalized therapy. Up to 24 points: Offers must contain an operational plan describing the proposed personalized therapy model for patients. In particular, the personalized therapy model is described in the Technical Specifications and the relevant Annex I concerning Lot 2, in which the minimums that the proposal must contain are stated.

This operative plan is broken down into the following sub-sections:

1.1. Operational plan to provide the most appropriate pacemaker to each patient. Up to 18 POINTS.

In the Operational plan aimed to provide the most appropriate pacemaker to each patient, the bidder must describe in detail the following aspects of the service:

- The procedure for the provision of the most suitable pacemaker for the patient: its purpose is having the bidder to disclose how it will guarantee the most optimal device for each patient
- Management of special cases: its purpose is having the bidder to disclose how it will guarantee the provision of devices in special cases (paediatrics, etc.) as described in the Technical Specifications
- Incorporation of new technology: its purpose is having the bidder to disclose how it will incorporate technological innovations during the life of the contract.

1.2. Operational plan for technical support for pacemaker implantation: Up to 6 points.

The procedures for implantation and explantation are described in in the Technical Specifications and the relevant Annex concerning Lot 2, in which the minimums that the proposal must contain are stated. In addition, the bidder must describe in detail the following aspects of the service:

- How the bidder will relate to the entity (exchange of information, etc.);
- Description of the proposed team: number of members, their experience, stability of the team, knowledge of the portfolio, staff replacement procedure, etc.
- Response time;
- Specialized training for medical doctors, registered nursed and primary care staff.

2. Operational plan for remote monitoring. Up to 24 points.

2.1. Proposed strategy to include patients to the remote monitoring: first implants, replacement, and previously implanted patients: up to 6 POINTS

The bidder must provide a detailed description of how the inclusion of patients to the remote monitoring system will be carried out and how the extension of the remote monitoring to patients previously implanted will be guaranteed.

2.2. Remote monitoring platform: UP to 6 POINTS.

The bidder must provide a detailed and exhaustive description of the functioning of the monitoring or remote control platform (e.g.: technical characteristics, interoperability and data exchange model with the Electronic Medical Record and with other information systems as primary care, flowcharts to be used to classify the transmitted data)..

2.3.- Proposed model for the remote monitoring support centre: up to 12 points

The bidder must provide a detailed and exhaustive description of the remote monitoring support centre (e.g.: proposal of reports, physical location of the centre, possibility of periodic reports, proposed human resources, communication channels and possibility of multilanguage).

3.- Operational plan for healthcare coordination. Up to 8 points.

The Operational plan for healthcare coordination is described in the Technical Specifications and the relevant Annex concerning Lot 2, in which the minimums that the proposal must contain are stated. In addition, the bidder must describe in detail the following elements of the service:

- Proposal of the model aimed to guarantee the continuity of the treatment (e.g.: with primary care)
- Comprehensive description of how the bidder will relate to the entity (exchange of information, etc.)
- Comprehensive description of how the entity will relate to other healthcare providers (primary care, etc.)
- Description of the appropriate calendar of visits to the different levels of care, including a description of the proposed model to reduce hospital visits (guaranteeing the patient's condition).

4.- Operational plan for patient activation. Up to 8 points.

The Operational Plan for patient activation is described in the in the Technical Specifications and the relevant Annex concerning Lot 2, in which the minimums that the proposal must contain are stated.

This operative plan is broken down into the following sub-sections::

4.1.- Proposal of model aimed to the creation of a catalogue of useful and validated mobile APPs: up to 1,6 points.

4.2.- Proposal of model aimed to the development of an expert-patient programme: up to 3,2 points.

4.3.- Proposal of model aimed to patient training (patient's voice): up to 3,2 points.

5.- Operational plan for change management – implementation of RITMOCORE model. Up to 16 points.

The bids must contain an operative plan where all the aspects of the contract are described explaining how the model change management is going to be implemented, in accordance with what established in the Technical Specifications.

This Operational Plan is broken down into the following sub-sections:

5.1. Organization and resources: increase of operational efficiency: up to 8 points.

The organization and the resources needed for the service are described in the Technical Specifications and the relevant Annex concerning Lot 2, in which the minimums that the proposal must contain are stated. In addition, the bidder must describe the following aspects of the service:

- Organization model and the necessary resources for the correct provision of services;
- Comprehensive description of how it will be guaranteed that the hospital has the necessary healthcare resources to take on the new services;

5.2. Increase of knowledge: staff training plan by profiles: up to 4,8 POINTS.

The training requirements for the staff of the service is described in the Technical Specifications and the relevant Annex concerning Lot 2, in which the minimums that the proposal must contain are stated. In addition, the bidder must describe the following aspects related with the training:

- Training plan for medical personnel, describing the technical training plan in devices of different manufacturers, in the remote control information systems and in the information systems of the remote control support centre;
- Training plan for nursing personnel, describing the technical training plan in devices of different manufacturers, in the remote control information systems and in the information systems of the remote control support centre;
- Training plan for other levels of the healthcare services (e.g.: primary care, nursing home);
- Training plan for scholarship beneficiaries (fellowships);
- Training plan for patient and their family members and carers;
- Program for the centre to become a training centre for other centres.

5.3. Plan to return of the services at the termination of the contract: up to 1,6 points.

The bidder must complete an exhaustive description of the proposed model for the return of services at the termination of the contract, including a description of the transition plan that will make available to the hospital all the information generated and stored during the contract in digital format according to the needs of the hospital.

5.4. Management of the activity beyond the limits established in the contract: up to 1,6 points.

The proposal of the bidder to implement the use of “deep learning” algorithms to improve the patients treatment will be assessed.

3. Evaluation of the bids received in Lot 2

The score of the solutions submitted is detailed below:

3.1. BIOTRONIK Spain SA

3.1.1. Evaluation of the fulfilment of the minimum requirements

Fulfilment of the common minimum requirements

Minimum requirements for the supply of pacemakers to meet the needs of each patient	P.24 PPT
Availability of at least two devices from different manufacturers, for each patient, in normal cases.	Yes
Supply of a full range of instruments and material for implants and extractions. The supplier will cover the costs of the explantations and second implants necessary due to a malfunction of the pacemaker device.	Yes
Minimum requirements for technical support services for the implantation and explantation processes	P.28 PPT
Does the bid include a programme for technical support services?	Yes
Directly responsible for the Contract: The person directly responsible for the Contract proposed by the Bidder must have a minimum experience of five (5) years in the execution of care services that are the object of the contract. The Bidder shall present a CV indicating the jobs and hospitals that accredit this experience.	Yes
Personnel in charge of executing the service: At least 80% of the workers proposed by the Bidder as personnel assigned to perform the service must have a minimum experience of three (3) years in the execution of the care services they are the object of the contract.	Yes
Minimum requirements for supply model	P.30 PPT
Does de proposal include a programme establishing a supply model?	Yes
Any cardiac stimulation device that appears from each of the providers during the term of the contract must be included automatically in the prosthesis catalogue chosen by the Technical Board for Contract Monitoring.	Yes
Minimum requirements for remote monitoring	P.30 PPT
Does de proposal include a programme for remote monitoring?	Yes
To create an Assistance Centre for Remote Monitoring to collect and review ALL transmissions.	Yes
The transmissions received by the ACRM must be classified according to the criticality level of the alarm.	Yes
The monitoring data must be accessible in a TRANSPARENT, COMPLETE and EXPLOITABLE manner by the staff assigned to this purpose by the hospital.	Yes
The information system should be enabled to interoperate with the electronic health record of the hospital and, in the case of Catalan hospitals, with the shared electronic health record in Catalonia (HC3).	Yes
The information system should allow the collection and integration of information on face-to-face visits.	Yes
The information system should be able to integrate information from any manufacturer.	Yes
Minimum requirements for coordinated care	P. 32 PPT
Does de proposal include a programme for coordinated care?	Yes

Does the programme include the following aspects?	Yes
Indication of the implant, to increase the knowledge on these pathologies in the different care levels to anticipate indication, reduce the number of emergency procedures, and restrict hospital visits to the ones that are clinically relevant	Yes
Change management, to foster adoption of the new model among the health professionals of the different care levels, as it can be considered a work overload.	Yes
Patient's care path for pacemaker treatment adapted to the hospital and patient contexts.	Yes
The alerts of alarm activation protocols among care levels.	Yes
Communication channels to facilitate dialogue between the hospital and other care levels of care.	Yes
Security for data storage and communications	Yes
Minimum requirements for patient access to treatment	P. 35 PPT
To offer information and support to patients and relatives regarding the patient health status to improve their perception of security	Yes
Minimum requirements for patient activation	P. 35 PPT
Does de proposal include a programme to activate patients?	Yes
Does the programme include the following functionalities?	Yes
Support for doubts and frequent questions in each phase of treatment, through the access to relevant information, including educational content and web-based support services.	Yes
Those services should answer relevant questions in different stages of the treatment, both before the intervention (<i>What is a pacemaker? How will my life change? Which pacemaker is the best for me? etc.</i>) and after the implant (<i>What should I keep in mind? What should I do if ...? What help will I get with remote monitoring? etc.</i>).	Yes
Improve patients' self-control through access to reliable information regarding the characteristics of pacemaker and the patient condition. The information for patents self-control should include, at least , the access to remote monitoring results reviewed and approved by the hospital; and specific educational content about pacemaker models to be used by each segment of patients.	Yes
A catalogue of devices and technologies approved by reference entities to be used to care patients at risk.	Yes
Patient networks creation aligned with existing resources, at national, regional or local level to establish links with ongoing initiatives to expand and extend them.	Yes
Development of a training and support plan for patients and their families to inform them about the advantages of the new model, facilitating their activation and involvement	Yes
Minimum requirements for Change management	P. 36 PPT
Does de proposal include an implementation plan?	Yes
Does the porgmme include the following items?	P.36 ppt
Re-engineering of processes	Yes
Service supply management	Yes
Global evaluation and follow-up	Yes
Training for change	Yes
Does the In-service training for clinical personnel include the following items?	P.37 ppt
Training programme for medical, nursing and physiologist personnel that includes technical training with devices of all the brands offered, and technical training in remote control and the remote control information system.	Yes

A plan for the hospital to become an expert knowledge and training centre for other hospitals and health centres.	Yes
Training in extraction methodologies and techniques to those hospitals that perform those procedures.	Yes
Advanced training in techniques at accredited centres.	Yes
Fellowship training plan.	Yes
Specific training for general practitioners, nursing and physiologist personnel at primary care.	Yes
Does the Governance model include the following items (under the terms specified on page 38 of the PPT)?	P.38 ppt
The organization and functions of the governance bodies	Yes
The implementation plan, including the annual planning of meetings of each of the governing bodies.	Yes
The communication and information plan, including content, frequency, channels, key milestones and scaling, decision-making.	Yes
A model for the management of risks and complications, essential in a medium-term contract.	Yes
Please, indicate whether the bidder offers the minimum % of staff costs for your lot :	Yes
Does the Operational plan include the following aspects on integration, interoperability and usability ?	Yes
The integration model and the plan for incorporating data from the hospital's current database.	Yes
The plan for data migration at the end of the contract.	Yes
The model for managing the interoperability between all technologies: including new technologies that will be incorporated through the contract, as well as interaction with hospital information systems and primary care during the term of the contract.	Yes
The model of interoperation or integration with other monitoring systems at the hospital or service.	Yes
The access and usability model of each user profile in the system.	Yes
The planning for the use of artificial intelligence solutions to improve the treatment of patients based on the information collected.	Yes
Does the bidder specify the resources that the implementation of the new model will require with respect to the information systems, technology equipment and hospital information systems.	Yes
Does the Operational plan include the management of technological renewal during the term of the contract	P.41 PPT
Does the bidder specify the characteristics as well as their ergonomics and usability of the different technologies they will provide?	Yes
Does the bidder specify the strategy for technological renewal?	Yes
Does the Operational plan include a model for the relationship between the hospital and the supplier	P.42 PPT
Does the bidder specify the commitment to a hospital-supplier relationship model that considers the requirements set out in this document.	Yes

Fulfilment of the minimum requirements of LOT 2 (Hospital de la Santa Creu i Sant Pau)

Minimum requirements for optimal delivery of treatment to each patient at STPAU

Indicator	Minimum	fulfilment (Yes/No)
Number of complete ranges of pacemakers from different manufacturers (*)	2	Yes
Capacity to respond to need for special devices (special devices absorption rate) (*)	10%	Yes
Additional technical characteristics		Fulfilment Yes/no
Battery life guarantee	With 100% coverage cost of device	Yes
VVI	8 YEARS	Yes
DDD	6 YEARS	Yes
Leadless pacemakers implanted per year	50	Yes
Extraction systems	Fulfil the minimum requirements in all scenarios	Yes
Technical support for implant and extraction of devices		
Indicator		fulfilment (Yes/No)
All personnel assigned to these services must be previously accepted by the Technical Board for Contract Monitoring.		Yes
The technician assigned to technical assistance STPAU Hospital must hold the title of medicine and surgery and belong to a Scientific Society in the field of cardiac pacing		Yes
The assignment of the same technician of reference to assist in the operating room for either an implant or an extraction. Substitutions or absences should be justified.		Yes
Face-to-face technical assistance full-time for the implant procedures of devices in the theatre (both for first implants and replacements).		Yes
Face-to-face technical assistance for implant extraction		Yes
Extension of the technical assistance in implant to the follow-up consultation (face-to-face or remote) of those implanted patients in whom the care team considers it appropriate.		Yes
Integration of the reference technician in the working groups for the development of the protocols linked to the implantation of pacemakers as those that will establish the selection of the most suitable type of device for each patient and the one that will govern the programming standards according to the type of each device and patient.		Yes
Minimum requirements for the technical support services for implantation procedures in the STPAU		Fulfilment (Yes/No)
Indicator	Minimum	Fulfilment (Yes/No)
Minimum proven experience in the provision of specialised technical support for the electrodes extraction	5 YEARS	Yes
Technical support in the procedures	On demand and depending on the	Yes

	procedure complexity	
Extension of specialist care, at professional request, to monitoring consultation (face-to-face or remote) of cardiac devices	Yes	Yes
Reaction times for emergencies	24 horas	Yes
Minimum requirements for Provisioning of material		Fulfilment Yes/no
Does the bid include the following information?		
<p>1. The technical data of the devices detailing the equipment accrediting compliance with the minimums set out in these technical specifications.</p> <p>2. Description of how the material from the different manufacturers will be supplied, as well as the technical data accrediting compliance with the minimums set out in these technical specifications.</p> <p>3. Also, the tenderer must give details of the following aspects:</p> <p>a) the ease of use of the procurement management tools,</p> <p>b) the use of new technologies in the management of stocks,</p> <p>c) the integration of these tools in the dashboard of this project,</p> <p>d) the integration with the hospital's ICT systems,</p> <p>e) the awardee's response times to sudden increases in demand,</p> <p>f) other aspects that facilitate and promote greater efficiency in the treatment of this group of patients.</p>		Yes
Minimum requirements for Technical characteristics of the pacemakers.		Fulfilment Yes/no
¿do the pacemakers of the bid meet or improve the following minimum technical characteristics?		
Remote care compatibility with automatic wireless telemetry		Yes
Active AND passive fixation electrodes (IS1 connector)		Yes
Adaptors for old connectors		Yes
Magnetic resonance full body compatibility, at least 1.5T		Yes
Automatic atrium and ventricle threshold measurement		Yes
Alerts for electrode integrity, battery depletion, impedance out of limits (possibly: warning messages or indicators of battery depletion, threshold, and impedance out of limits).		Yes
Activity sensors (programmable).		Yes
Electrogram storage with preevent electrogram recordings.		Yes
Alert due to ERI battery depletion (alert, or indicator, or message)		Yes
Battery voltage measurement and/or estimation of battery duration.		Yes
Lead impedance measurement.		Yes
Specifically, for dual chamber pacemakers:		Fulfilment Yes/no
Automatic switch stimulation change mode		Yes

Algorithms for reduction of ventricular pacing (their efficacy must be demonstrated in articles in peer review journals and will be evaluated by a clinical board)	Yes	
Algorithms for prevention and treatment of PMT	Yes	
Programmable alerts for atrial arrhythmias	Yes	
Does the operational plan o the bidder plan to guarantee the supply of the VDD generators replacement?	Yes	
Does the operational plan detail wheather it includes DDD or DDD and VDD?	Yes	
Technological renovation of the devices during the contract term	Fulfilment Yes/no	
Does the operational plan guarantee the provision of supplies from more than one manufacturer to cover all kind of electrodes extraction?		
	Fulfilment Yes/no	
The Bidder must specify in the Operative Plan of supply in a specific section of technological renovation in detail the proposal of incorporation of these new technologies within the framework of this contract.	Yes	
It must also be specified how possible disruptive novelties that appear in the market of brands other than those proposed by the bidder will be incorporated. In the evaluation, the ease of incorporation of these novelties will be also considered	Yes	
The bidder must specify how the incorporation of technologies not currently available will be valued, as well as the inclusion of innovative patient medical communication information systems, available or not at present.	Yes	
The bidder must make explicit its commitment to review together with the Technical Board for Contract Monitoring, those technologies that appear in the market during the term of the contract.	Yes	
Remote monitoring programme	Fulfilment Yes/no	
Extension of the remote monitoring		
Previously implanted patients with pacemakers compatible with remote monitoring	50%	Yes
Patients with new implants / battery changes	85%	
Functions of the assistance centre for remote monitoring		Fulfilment Yes/no
Creation of a remote monitoring assistance centre that reviews ALL transmissions		Yes
Transmissions classification		Yes
Accessibility of all hospital designated personnel to all transmissions in a transparent, complete and exploitable manner.		Yes
Does the implementation plan detail the operating model the transmission classification protocol and flowcharts, the model of verification for transmissions, and other organisation aspects that may reduce the burden of care and managerial work at the hospital?		Yes
Functions of the assistance centre for remote monitoring		Fulfilment Yes/no
Remote monitoring assistance centre reviews all transmission from any new implanted device regardless the manufacturer.		Yes

Technical assistance for patients must be available during office working hours (8am to 7pm) in (at least) the following languages: Catalan, Spanish, and English.	Yes
Telephone technical assistance for doctors and nurses must be available during office working hours (8am to 7pm) in (at least) the following languages: Catalan and Spanish	Yes
Integration and interoperability with Hospital Information Systems and Primary Care centres integrated in the RITMOCORE model.	Yes
Possibility of recovering all the data in the case of a future change in the information system.	Yes
Transfer of information, procedures and algorithms at the hospital's request and at the end of the contract.	Yes
Remote monitoring minimum functional requirements	Fulfilment Yes/no
Creation of patient records with complete and auditable information.	Yes
Management module for in-hospital follow-up consultations regarding implantable devices	Yes
Management of documentation: (according to what is provided in Annex I.2 of the PPT page 16).	Yes
Management of right of access and data privacy: (according to what is provided in Annex I.2 of the PPT page 16).	Yes
Importation of data from the Hospital's previous database..	Yes
Connectivity with the different platforms for remote monitoring of implantable cardiac devices..	Yes
The information system must provide a single interface for both remote and in-hospital monitoring..	Yes
The system must provide a single interface for remote monitoring regardless of the brand and device model in question..	Yes
Retrieval of data from devices in in-hospital monitoring compatible with all the manufacturers.	Yes
Structured storage of the information collected during both in-hospital and remote monitoring follow-ups..	Yes
Scanning of the material used by the barcode reader	Yes
Capacity for combining the agenda management with the hospital admission system.	Yes
Compatibility with the DICOM image standard.	Yes
Optimization of clinical and administrative processes.	Yes
Technical and interoperability requirements	Fulfilment Yes/no
HL7 Integrated Server offering two-way communication with other hospital' ICT systems (EMR/HIS)	Yes
Data exportation standards (reports in PDF documents and information tables in Microsoft Excel, ACCESS, SQL, SPSS).	Yes
Does the operational plan include the following elements?	Fulfilment Yes/no
Home monitoring operational	Yes
Telephone suport system for patients and physicians.	Yes

Implementation and operating plan of the information systems focusing on the interoperability of the hospital current systems and the recovery of currently stored data in the Arrhythmias Unit database.	Yes
The management of the transition to another information system at the end of this contract and how continuity will be guaranteed.	Yes
The provision tool for data analysis to the clinical unit to improve organization of remote consultations, to increase the ability of the medical team to anticipate possible clinical and technical problems..	Yes
The training of patients to improve the empowerment of the patient regarding his pathology. The possibility of using innovative data transmission systems that do not require the installation of additional devices in the patient's home will be positively evaluated.	Yes
The development of information systems such as feedback for the patient through new technologies (smartphone, website for the patient, mobile Apps, etc.) that improve the empowerment of the patient	Yes
Future plan for joint development with the Hospital of new technologies that facilitate patient communication with the hospital and vice versa. The hospital must be a priority partner in the development and implementation of these new solutions in remote control.	Yes
Coordination of care	Fulfilment Yes/no
¿ Does the bid establishes communication protocols between the arrhythmias unit and its implantation in, at least, two primary care centres of the catchment area of STPAU?	Yes
Patient activation	Fulfilment Yes/no
¿ Does the operational plan foresee to provide information and training to patients and relatives in different formats (on paper or digital) as well as the implementation of information systems of patient self-monitoring (according to page 18 of Annex I.2 of the PPT)?	Yes
Change management	Fulfilment Yes/no
Does the bid include a change management project that contemplates the different stages (implementation, exploitation and return of services) adapted to the characteristics of STPAU?	Yes
Continual training of medical and nursing staff	Fulfilment Yes/no
Does the bid include a specialised training for the medical staff? (according to the items listed in page 21 of the Annex II of the PPT).	Yes
Plan for the incorporation and return data from patients monitoring	Fulfilment Yes/no
It is a requirement for the remote-control information system of STPAU to register the collected data in a database that allows the integration of the clinical information of the patients obtained through both on-site and remote follow-ups and facilitates the export of this data in open format to other environments for exploitation by the STPAU hospital	Yes
The bidder must make available to the STPAU all data from patients generated and used during the execution of the contract in an open format jointly with information on the structure of the data delivered to the hospital and the documentation of the protocols developed during the execution of the contract.	Yes

3.5.3 Minimum requirement of information system: Integration, interoperability and usability	Fulfilment Yes/no
The bidder will have to fulfil the minimum requirements and demonstrate in their bid how they will guarantee the interoperability with all the relevant information systems of the hospital.	Yes
Minimum functional requirement of information system: Integration, interoperability and usability	Fulfilment Yes/no
Integration and extraction of existing relevant data from the databases of the hospital and the arrhythmia unit for the patient follow-up and the contract monitoring..	Yes
The implementation of the data analysis tools aimed to assist a better organisation of the remote queries, in order to enhance clinical team capacity to anticipate both technical and clinical issues.	Yes
Release of a dashboard aimed to monitor the activity and the level of achievement of the objectives set in the outcomes-based indicators.	Yes
Development of patient-oriented IT systems and provision of feedback via new technologies (website for the patient, mobile apps, etc) and improve patient's empowerment	Yes
Development of an app for patients and their relatives.	Yes
Registry of relevant information to measure indicators: date of the diagnostic, treatment indication date, level of evidence according to the standards and European clinical practice guidelines, etc.	Yes
Requirements for data processing	Fulfilment Yes/no
Capability to retrieve data for its exploitation through the hospital's business intelligence tools..	Yes
Registry of user access, which guarantee the record of the information required to be compliant with the regulations in force in every country about data protection	Yes
Generation of the necessary information to feed the public global information systems (such as Catalonia's Història Clínica Compartida (HC3)).	Yes
Minimum service provision	Fulfilment Yes/no
Technological support to RITMOCORE technological solutions deployed during the contract lifetime..	Yes
Documentation, training and knowledge transfer to the hospital IT team, in a way they can conduct the platform maintenance tasks (backup, monitoring, reboot process, ...).	Yes

3.1.2. Qualitative criteria dependent on a value judgement.

BIOTRONIK Spain SA	Peso	Máxima	Calidad técnica	Innovación	TOTAL
SCORING		80,00	72	72	72
OPERATIONAL PLAN ON PERSONALIZED THERAPY	30%	24,00	18	18	18
OPERATIONAL PLAN TO PROVISION THE MOST APPROPRIATE PACEMAKER TO	75%	18,00	12	12	12

<i>EACH PATIENT</i>					
<i>OPERATIONAL PLAN FOR TECHNICAL SUPPORT (IMPLANTATION AND EXTRACTION PROCEDURES)</i>	25%	6,00	6	6	6
OPERATIONAL PLAN FOR REMOTE MONITORING	30%	24,00	22	22	22
<i>Proposed strategy to extend remote monitoring to patients implanted previously</i>	25%	6,00	4	4	4
<i>Monitoring platform</i>	25%	6,00	6	6	6
<i>Assistance Center for Remote Monitoring (ACRM)</i>	50%	12,00	12	12	12
OPERATIONAL PLAN FOR HEALTHCARE COORDINATION	10%	8,00	8	8	8
OPERATIONAL PLAN FOR PATIENT ACTIVATION	10%	8,00	8	8	8
<i>Operational plan for the creation of a menu of useful and validated ICT APPs/devices</i>	20%	1,60	1,6	1,6	1,6
<i>Proposal of model aimed to the development of an expert-patient programme</i>	40%	3,20	3,2	3,2	3,2
<i>Proposal of model aimed to patient training (patient's voice)</i>	40%	3,20	3,2	3,2	3,2
OPERATIONAL PLAN FOR CHANGE MANAGEMENT - IMPLEMENTATION OF RITMOCORE MODEL	20%	16,00	16	16	16
<i>Organization and resources: increase of operational efficiency by continuous improvement</i>	50%	8,00	8	8	8
<i>Increase of knowledge - staff training plan by profiles and training in extraction systems (in hospitals performing these procedures)</i>	30%	4,80	4,8	4,8	4,8
<i>Return plan</i>	10%	1,60	1,6	1,6	1,6
<i>Operational plan for activity management beyond the limits established in the contract</i>	10%	1,60	1,6	1,6	1,6

Total score: 72 points

Foundations

1.- Operational plan on personalized therapy. Up to 24 points.

Las ofertas deberán contener un plan operativo en el que se describa el modelo propuesto de terapia personalizada para los pacientes.

1.1. Operational plan to provide the most appropriate pacemaker to each patient. Up to 18 POINTS.

Technical quality:

The operational supply plan describes a reasonable and feasible approach appropriate to the needs and characteristics of the Sant Pau hospital. Clearly stating the bidder's commitment to our entity. However, the mechanism for incorporating patients into remote monitoring makes it difficult to incorporate devices and technologies from providers not included in the portfolio offered.

Since this last circumstance makes it difficult to implement the model for special cases, the technical score is considered and 12 points are awarded.

Innovative content:

The proposed pacemaker procurement operational plan has a high innovative content. However, the planned mechanism for incorporating disruptive or novel technologies makes it difficult to make these types of innovations available from manufacturers other than those included in the portfolio offered. Consequently, the score is penalized and 12 points are awarded.

1.2. Operational plan for technical support for pacemaker implantation: Up to 6 points.

Technical quality:

The technical support model presented is reasonable and perfectly adapted to the needs of the hospital: 1-2 expert technicians are offered for implant / extraction procedures; their presence will be determined according to the needs considered by the medical team; a response time of <24h is offered. On the other hand, they claim to have concluded prior agreements with the main suppliers of materials for extraction procedures. Therefore, the highest technical score is awarded to this criterion: 6 points.

Innovative content:

The technical support model has a high innovative content including: segmentation of procedures according to complexity, adapting the support to the particular need of each case and including technical support from the original manufacturer. Therefore, the maximum score is awarded: 6 points.

2. Operational plan for remote monitoring. Up to 24 points.

2.1. Proposed strategy to include patients to the remote monitoring: first implants, replacement, and previously implanted patients: up to 6 POINTS.

Technical quality:

The strategy for incorporating patients into remote monitoring, both for devices already implanted, spare parts and new implants, is technically reasonable and is adapted to the specific needs of Sant Pau. However, there is a lack of detail in the implementation plan, which is why the score is penalized and 4 points are awarded.

Innovative content:

Despite proposing a strategy with high innovative content, given the lack of technical detail, the score is penalized and 4 points are awarded.

2.2. Remote monitoring platform: UP to 6 POINTS.

Technical quality:

The remote monitoring platform offered technically covers all the hospital's needs: it is a robust platform that allows integration with any third-party system (HC3, IS3, eCAP), being also flexible and can be integrated based on standards.

Therefore, the maximum score is awarded: 6 points.

Innovative content:

The Platform offered by BIOTRONIK is an information system with a high content of innovation: it allows bidirectional access, it is accessible from any location (100% web interface), it presents friendly interfaces. It is proposed to develop personalized interfaces to the hospital both for the integration of third-party systems (HC3, IS3, eCAP) with bidirectional communication through standards, IDCO, and specific integrations outside the standards. The technological proposal will allow the integration of information in natural language through OCR techniques for subsequent processing. It is a platform with high innovative content, which is awarded the maximum score in this criterion: 6 points.

2.3.- Proposed model for the remote monitoring support centre: up to 12 points.

Technical quality:

The proposed technical proposal is adequately equipped to the specific needs of the hospital. Presenting a model of high technical quality that has a Remote Monitoring Assistance Center, which assumes the tasks of low clinical value. Therefore, the maximum score is awarded in this criterion: 12 points.

Innovative content:

The proposal has a high innovative content that is not limited to integrating existing technologies, but also incorporates improvement developments adapted to the specific needs of the hospital to have monitoring reports and alert activation, direct communication with the hospital / CAP / patient. Therefore, the maximum score of 12 points is awarded in this criterion.

3.- Operational plan for healthcare coordination. Up to 8 points.

Technical quality:

The operational care coordination plan will be supported by the technological platform that is technically adapted to the needs of the hospital, acting as a facilitator in the coordination with the other levels of care, offering them information and support.

The governance model is very adequate and includes the operational, tactical and strategic levels.

Consequently, the maximum score (8 points) has been awarded to the technical assistance coordination proposal.

Innovative content:

Through the Platform, the operational care coordination plan has a high innovative content, since the platform integrates a virtual management tool that will facilitate and make more flexible cooperation and the joint treatment of clinical cases. On the other hand, the governance model integrates the other levels of care that will participate in the exploitation of the contract and implements an innovative and viable information exchange system.

Given the high innovative content presented, the maximum score (8 points) is awarded to the operational plan presented.

4.- Operational plan for patient activation. Up to 8 points.

4.1.- Proposal of model aimed to the creation of a catalogue of useful and validated mobile APPs: up to 1,6 points.

Technical quality:

The proposal for the creation of a list of useful and validated APPs with information on the accessibility and compatibility characteristics of mobile devices shows the clear commitment of the bidder and will provide patients and their environment with reliable information that will facilitate their empowerment through training and information. The maximum technical score is awarded in this criterion: 1.6 points.

Innovative content:

Biotronik offers a solution with high innovative content that includes the creation of a quality seal "RitmoApp" to endorse applications that comply with the guidelines established by the medical team. Therefore, the maximum score is awarded in terms of the innovative content of this criterion: 1.6 points.

4.2.- Proposal of model aimed to the development of an expert-patient programme: up to 3,2 points.

Technical quality:

The proposed expert patient programme is technically consistent and tailored to the needs of hospital patients. The programme is supported by the information system, accessible from any device and location, and the remote support help centre. Therefore, the maximum technical score is awarded: 3.2 points.

Innovative content:

The development model of the expert patient programme has a high innovative content that will facilitate the sharing of experiences, experiences and content among patients and will be supported by the remote support help centre. The maximum score is awarded accordingly: 3.2 points.

4.3.- Proposal of model aimed to patient training (patient's voice): up to 3,2 points.Technical quality:

The patient training model is reasonable and adapted to the technical needs of the hospital. It includes the screening of training groups that will facilitate the empowerment and sharing of experiences between patients and their environment. Therefore, the maximum score is awarded: 3.2 points.

Innovative content:

The patient screening system to create homogeneous training groups is an innovation that will allow the training and empowerment of patients programs and activities to be adapted to the specific needs of Sant Pau patients. This innovation requires an experimental development during which candidate patients will be identified and selected to form part of the group of experts who will act as "trainers" for other patients, under the supervision of professionals who will observe the correct functioning of the patient training program. For these reasons, the solution provided is considered to be of high innovative content and the maximum score of 3.2 points is awarded..

5.- Operational plan for change management – implementation of RITMOCORE model. Up to 16 points.**5.1. Organization and resources: increase of operational efficiency: up to 8 points.**Technical quality:

The organizational model, the provision of resources (human and material) and the roadmap presented by BIOTRONIK are technically adequate and adapted to the characteristics and needs of the hospital.

Regarding the organization: it provides different levels and management profiles in the project and foresees a transition time of 2 months to the new model of 2 months.

Regarding the resources: the solution is based on the technological platform that includes functions of stock management, invoicing processing, reporting, etc.

Therefore, the maximum score of 8 points is awarded.

Innovative content:

The innovative content of the proposal presented is high, it presents elements that guarantee compliance with the planning, reducing the implementation period of the new RITMOCORE model to 2 months. A key factor of is the incorporation of consultation support to facilitate the transition to a virtual consultation model with the support of the "CAMR".

Given the high innovative content of the proposal, the maximum score is awarded: 8 points.

5.2. Increase of knowledge: staff training plan by profiles: up to 4,8 POINTS.

Technical quality:

The hospital staff training plan has a high technical quality, offering different models and plans (online and face-to-face) for each clinical profile. In a friendly and flexible platform that allows adapting the contents to the needs of Sant Pau and being able to offer a model of continuous improvement to employees.

Therefore, the maximum technical score is awarded: 4.8 points.

Innovative content:

BIOTRONIK's proposal has a high innovative content that allows defining, throughout the execution of the contract, continuous training plans combining face-to-face and online formats, both for nursing and medical personnel. It includes the use of simulation platforms and offers fellowships to staff to ensure training within the framework of the EHRA, both in the field of electrophysiology and devices.

The maximum score (8 points) is awarded at the level of innovative content, in this criterion.

5.3. Plan to return of the services at the termination of the contract: up to 1,6 points.Technical quality:

The technical quality of the service return plan at the end of the contract is reasonable, feasible and adapted to the needs of Sant Pau: a two-month transition period is foreseen in which it is offered to parallelize the systems with those of the new provider, as well such as the transfer of documentation.

The maximum technical score is awarded in this section: 1.6 points.

Innovative content:

From the point of view of innovation, the proposal guarantees a transfer of documentation and activities, of information transfer to the new supplier that will require an experimental development that will be complemented with an overlap period of 2 months with the incoming supplier. The maximum score is awarded to the innovation presented in this regard: 1.6 points.

5.4. Management of the activity beyond the limits established in the contract: up to 1,6 points.Technical quality:

The automation of the management through the platform tools will allow the activity to be managed beyond the limits established in the contract. In this sense, the bidder proposes the incorporation of information in natural language from documents for later questioning and improvement of the learning of the global system.

Therefore, the maximum technical score is awarded in this criterion: 1.6 points.

Innovative content:

The tenderer proposes a solution with a high innovative content with the incorporation of Machine learning, Deep learning and Artificial Intelligence technologies that will require industrial research and the development of specific solutions for Sant Pau.

Given the high innovative content, the maximum score is awarded: 1.6 points.

3.2. MEDTRONIC IBERICA SA

3.2.1. Evaluation of the fulfilment of the minimum requirements

Fulfilment of the common minimum requirements

Minimum requirements for the supply of pacemakers to meet the needs of each patient		P.24 PPT
Availability of at least two devices from different manufacturers, for each patient, in normal cases.		Yes
Supply of a full range of instruments and material for implants and extractions. The supplier will cover the costs of the explantations and second implants necessary due to a malfunction of the pacemaker device.		Yes
Minimum requirements for technical support services for the implantation and explantation processes		P.28 PPT
Does the bid include a programme for technical support services?		Yes
Directly responsible for the Contract: The person directly responsible for the Contract proposed by the Bidder must have a minimum experience of five (5) years in the execution of care services that are the object of the contract. The Bidder shall present a CV indicating the jobs and hospitals that accredit this experience.		Yes
Personnel in charge of executing the service: At least 80% of the workers proposed by the Bidder as personnel assigned to perform the service must have a minimum experience of three (3) years in the execution of the care services they are the object of the contract.		Yes
Minimum requirements for supply model		P.30 PPT
Does de proposal include a programme establishing a supply model?		Yes
Any cardiac stimulation device that appears from each of the providers during the term of the contract must be included automatically in the prosthesis catalogue chosen by the Technical Board for Contract Monitoring.		Yes
Minimum requirements for remote monitoring		P.30 PPT
Does de proposal include a programme for remote monitoring?		Yes
To create an Assistance Centre for Remote Monitoring to collect and review ALL transmissions.		Yes
The transmissions received by the ACRM must be classified according to the criticality level of the alarm.		Yes
The monitoring data must be accessible in a TRANSPARENT, COMPLETE and EXPLOITABLE manner by the staff assigned to this purpose by the hospital.		Yes
The information system should be enabled to interoperate with the electronic health record of the hospital and, in the case of Catalan hospitals, with the shared electronic health record in Catalonia (HC3).		Yes
The information system should allow the collection and integration of information on face-to-face visits.		Yes
The information system should be able to integrate information from any manufacturer.		Yes

Minimum requirements for coordinated care	P. 32 PPT
Does de proposal include a programme for coordinated care?	Yes
Does the programme include the following aspects?	Yes
Indication of the implant, to increase the knowledge on these pathologies in the different care levels to anticipate indication, reduce the number of emergency procedures, and restrict hospital visits to the ones that are clinically relevant	Yes
Change management, to foster adoption of the new model among the health professionals of the different care levels, as it can be considered a work overload.	Yes
Patient's care path for pacemaker treatment adapted to the hospital and patient contexts.	Yes
The alerts of alarm activation protocols among care levels.	Yes
Communication channels to facilitate dialogue between the hospital and other care levels of care.	Yes
Security for data storage and communications	Yes
Minimum requirements for patient access to treatment	P. 35 PPT
To offer information and support to patients and relatives regarding the patient health status to improve their perception of security	Yes
Minimum requirements for patient activation	P. 35 PPT
Does de proposal include a programme to activate patients?	Yes
Does the programme include the following functionalities?	Yes
Support for doubts and frequent questions in each phase of treatment, through the access to relevant information, including educational content and web-based support services.	Yes
Those services should answer relevant questions in different stages of the treatment, both before the intervention (<i>What is a pacemaker? How will my life change? Which pacemaker is the best for me? etc.</i>) and after the implant (<i>What should I keep in mind? What should I do if ...? What help will I get with remote monitoring? etc.</i>).	Yes
Improve patients' self-control through access to reliable information regarding the characteristics of pacemaker and the patient condition. The information for patents self-control should include, at least , the access to remote monitoring results reviewed and approved by the hospital; and specific educational content about pacemaker models to be used by each segment of patients.	Yes
A catalogue of devices and technologies approved by reference entities to be used to care patients at risk.	Yes
Patient networks creation aligned with existing resources, at national, regional or local level to establish links with ongoing initiatives to expand and extend them.	Yes
Development of a training and support plan for patients and their families to inform them about the advantages of the new model, facilitating their activation and involvement	Yes
Minimum requirements for Change management	P. 36 PPT
Does de proposal include an implementation plan?	Yes
Does the porgmme include the following items?	P.36 ppt
Re-engineering of processes	Yes
Service supply management	Yes
Global evaluation and follow-up	Yes
Training for change	Yes
Does the In-service training for clinical personnel include the following items?	P.37 ppt

Training programme for medical, nursing and physiologist personnel that includes technical training with devices of all the brands offered, and technical training in remote control and the remote control information system.	Yes
A plan for the hospital to become an expert knowledge and training centre for other hospitals and health centres.	Yes
Training in extraction methodologies and techniques to those hospitals that perform those procedures.	Not applicable
Advanced training in techniques at accredited centres.	Yes
Fellowship training plan.	Yes
Specific training for general practitioners, nursing and physiologist personnel at primary care.	Yes
Does the Governance model include the following items (under the terms specified on page 38 of the PPT)?	P.38 ppt
The organization and functions of the governance bodies	Yes
The implementation plan, including the annual planning of meetings of each of the governing bodies.	Yes
The communication and information plan, including content, frequency, channels, key milestones and scaling, decision-making.	Yes
A model for the management of risks and complications, essential in a medium-term contract.	Yes
Please, indicate whether the bidder offers the minimum % of staff costs for your lot :	Yes
Does the Operational plan include the following aspects on integration, interoperability and usability ?	Yes
The integration model and the plan for incorporating data from the hospital's current database.	Yes
The plan for data migration at the end of the contract.	Yes
The model for managing the interoperability between all technologies: including new technologies that will be incorporated through the contract, as well as interaction with hospital information systems and primary care during the term of the contract.	Yes
The model of interoperation or integration with other monitoring systems at the hospital or service.	Yes
The access and usability model of each user profile in the system.	Yes
The planning for the use of artificial intelligence solutions to improve the treatment of patients based on the information collected.	Yes
Does the bidder specify the resources that the implementation of the new model will require with respect to the information systems, technology equipment and hospital information systems.	Yes
Does the Operational plan include the management of technological renewal during the term of the contract	P.41 PPT
Does the bidder specify the characteristics as well as their ergonomics and usability of the different technologies they will provide?	Yes
Does the bidder specify the strategy for technological renewal?	Yes
Does the Operational plan include a model for the relationship between the hospital and the supplier	P.42 PPT
Does the bidder specify the commitment to a hospital-supplier relationship model that considers the requirements set out in this document.	Yes

Fulfilment of the minimum requirements of LOT 2 (Hospital de la Santa Creu i Sant Pau)

Minimum requirements for optimal delivery of treatment to each patient at STPAU		
Indicator	Minimum	fulfilment (Yes/No)
Number of complete ranges of pacemakers from different manufacturers (*)	2	Yes
Capacity to respond to need for special devices (special devices absorption rate) (*)	10%	Yes
Additional technical characteristics		Fulfilment Yes/no
Battery life guarantee	With 100% coverage cost of device	Yes
	VVI	8 YEARS
	DDD	6 YEARS
Leadless pacemakers implanted per year	50	Yes
Extraction systems	Fulfil the minimum requirements in all scenarios	Yes
Technical support for implant and extraction of devices		
Indicator		fulfilment (Yes/No)
All personnel assigned to these services must be previously accepted by the Technical Board for Contract Monitoring.		Yes
The technician assigned to technical assistance STPAU must hold the title of medicine and surgery and belong to a Scientific Society in the field of cardiac pacing		Yes
The assignment of the same technician of reference to assist in the operating room for either an implant or an extraction. Substitutions or absences should be justified.		Yes
Face-to-face technical assistance full-time for the implant procedures of devices in the theatre (both for first implants and replacements).		Yes
Face-to-face technical assistance for implant extraction		Yes
Extension of the technical assistance in implant to the follow-up consultation (face-to-face or remote) of those implanted patients in whom the care team considers it appropriate.		Yes
Integration of the reference technician in the working groups for the development of the protocols linked to the implantation of pacemakers as those that will establish the selection of the most suitable type of device for each patient and the one that will govern the programming standards according to the type of each device and patient.		Yes
Minimum requirements for the technical support services for implantation procedures in the STPAU		
Indicator	Minimum	Fulfilment (Yes/No)
Minimum proven experience in the provision of specialised technical support for the electrodes extraction	5 YEARS	Yes

Technical support in the procedures	On demand and depending on the procedure complexity	Yes
Extension of specialist care, at professional request, to monitoring consultation (face-to-face or remote) of cardiac devices	Yes	Yes
Reaction times for emergencies	24 horas	Yes
Minimum requirements for Provisioning of material		Fulfilment Yes/no
Does the bid include the following information?		
<p>1. The technical data of the devices detailing the equipment accrediting compliance with the minimums set out in these technical specifications.</p> <p>2. Description of how the material from the different manufacturers will be supplied, as well as the technical data accrediting compliance with the minimums set out in these technical specifications.</p> <p>3. Also, the tenderer must give details of the following aspects:</p> <p>a) the ease of use of the procurement management tools,</p> <p>b) the use of new technologies in the management of stocks,</p> <p>c) the integration of these tools in the dashboard of this project,</p> <p>d) the integration with the hospital's ICT systems,</p> <p>e) the awardee's response times to sudden increases in demand,</p> <p>f) other aspects that facilitate and promote greater efficiency in the treatment of this group of patients.</p>		Yes
Minimum requirements for Technical characteristics of the pacemakers.		Fulfilment Yes/no
¿do the pacemakers of the bid meet or improve the following minimum technical characteristics?		
Remote care compatibility with automatic wireless telemetry		Yes
Active AND passive fixation electrodes (IS1 connector)		Yes
Adaptors for old connectors		Yes
Magnetic resonance full body compatibility, at least 1.5T		Yes
Automatic atrium and ventricle threshold measurement		Yes
Alerts for electrode integrity, battery depletion, impedance out of limits (possibly: warning messages or indicators of battery depletion, threshold, and impedance out of limits).		Yes
Activity sensors (programmable).		Yes
Electrogram storage with preevent electrogram recordings.		Yes
Alert due to ERI battery depletion (alert, or indicator, or message)		Yes
Battery voltage measurement and/or estimation of battery duration.		Yes
Lead impedance measurement.		Yes
Specifically, for dual chamber pacemakers:		Fulfilment Yes/no

Automatic switch stimulation change mode		Yes
Algorithms for reduction of ventricular pacing (their efficacy must be demonstrated in articles in peer review journals and will be evaluated by a clinical board)		Yes
Algorithms for prevention and treatment of PMT		Yes
Programmable alerts for atrial arrhythmias		Yes
Does the operational plan o the bidder plan to guarantee the supply of the VDD generators replacement?		Yes
Does the operational plan detail whether it includes DDD or DDD and VDD?		Yes
Technological renovation of the devices during the contract term		Fulfilment Yes/no
Does the operational plan guarantee the provision of supplies from more than one manufacturer to cover all kind of electrodes extraction?		
		Fulfilment Yes/no
The Bidder must specify in the Operative Plan of supply in a specific section of technological renovation in detail the proposal of incorporation of these new technologies within the framework of this contract.		Yes
It must also be specified how possible disruptive novelties that appear in the market of brands other than those proposed by the bidder will be incorporated. In the evaluation, the ease of incorporation of these novelties will be also considered		Yes
The bidder must specify how the incorporation of technologies not currently available will be valued, as well as the inclusion of innovative patient medical communication information systems, available or not at present.		Yes
The bidder must make explicit its commitment to review together with the Technical Board for Contract Monitoring, those technologies that appear in the market during the term of the contract.		Yes
Remote monitoring programme		Fulfilment Yes/no
Extension of the remote monitoring		
Previously implanted patients with pacemakers compatible with remote monitoring	50%	Yes
Patients with new implants / battery changes	85%	
Functions of the assistance centre for remote monitoring		Fulfilment Yes/no
Creation of a remote monitoring assistance centre that reviews ALL transmissions		Yes
Transmissions classification		Yes
Accessibility of all hospital designated personnel to all transmissions in a transparent, complete and exploitable manner.		Yes
Does the implementation plan detail the operating model the transmission classification protocol and flowcharts, the model of verification for transmissions, and other organisation aspects that may reduce the burden of care and managerial work at the hospital?		Yes
Functions of the assistance centre for remote monitoring		Fulfilment Yes/no

Remote monitoring assistance centre reviews all transmission from any new implanted device regardless the manufacturer.	Yes
Technical assistance for patients must be available during office working hours (8am to 7pm) in (at least) the following languages: Catalan, Spanish, and English.	Yes
Telephone technical assistance for doctors and nurses must be available during office working hours (8am to 7pm) in (at least) the following languages: Catalan and Spanish	Yes
Integration and interoperability with Hospital Information Systems and Primary Care centres integrated in the RITMOCORE model.	Yes
Possibility of recovering all the data in the case of a future change in the information system.	Yes
Transfer of information, procedures and algorithms at the hospital's request and at the end of the contract.	Yes
Remote monitoring minimum functional requirements	Fulfilment Yes/no
Creation of patient records with complete and auditable information.	Yes
Management module for in-hospital follow-up consultations regarding implantable devices	Yes
Management of documentation: (according to what is provided in Annex I.2 of the PPT page 16).	Yes
Management of right of access and data privacy: (according to what is provided in Annex I.2 of the PPT page 16).	Yes
Importation of data from the Hospital's previous database..	Yes
Connectivity with the different platforms for remote monitoring of implantable cardiac devices..	Yes
The information system must provide a single interface for both remote and in-hospital monitoring..	Yes
The system must provide a single interface for remote monitoring regardless of the brand and device model in question..	Yes
Retrieval of data from devices in in-hospital monitoring compatible with all the manufacturers.	Yes
Structured storage of the information collected during both in-hospital and remote monitoring follow-ups..	Yes
Scanning of the material used by the barcode reader	Yes
Capacity for combining the agenda management with the hospital admission system.	Yes
Compatibility with the DICOM image standard.	Yes
Optimization of clinical and administrative processes.	Yes
Technical and interoperability requirements	Fulfilment Yes/no
HL7 Integrated Server offering two-way communication with other hospital' ICT systems (EMR/HIS)	Yes
Data exportation standards (reports in PDF documents and information tables in Microsoft Excel, ACCESS, SQL, SPSS).	Yes
Does the operational plan include the following elements?	Fulfilment Yes/no
Home monitoring operational	Yes
Telephone suport system for patients and physicians.	Yes

Implementation and operating plan of the information systems focusing on the interoperability of the hospital current systems and the recovery of currently stored data in the Arrhythmias Unit database.	Yes
The management of the transition to another information system at the end of this contract and how continuity will be guaranteed.	Yes
The provision tool for data analysis to the clinical unit to improve organization of remote consultations, to increase the ability of the medical team to anticipate possible clinical and technical problems..	Yes
The training of patients to improve the empowerment of the patient regarding his pathology. The possibility of using innovative data transmission systems that do not require the installation of additional devices in the patient's home will be positively evaluated.	Yes
The development of information systems such as feedback for the patient through new technologies (smartphone, website for the patient, mobile Apps, etc.) that improve the empowerment of the patient	Yes
Future plan for joint development with the Hospital of new technologies that facilitate patient communication with the hospital and vice versa. The hospital must be a priority partner in the development and implementation of these new solutions in remote control.	Yes
Coordination of care	Fulfilment Yes/no
¿ Does the bid establishes communication protocols between the arrhythmias unit and its implantation in, at least, two primary care centres of the catchment area of STPAU?	Yes
Patient activation	Fulfilment Yes/no
¿Does the operational plan foresee to provide information and training to patients and relatives in different formats (on paper or digital) as well as the implementation of information systems of patient self-monitoring (according to page 18 of Annex I.2 of the PPT)?	Yes
Requisitos mínimos en gestión del cambio	Fulfilment Yes/no
Does the bid include a change management project that contemplates the different stages (implementation, exploitation and return of services) adapted to the characteristics of STPAU?	Yes
Continual training of medical and nursing staff	Fulfilment Yes/no
Does the bid include a specialised training for the medical staff? (according to the items listed in page 21 of the Annex II of the PPT).	Yes
Plan for the incorporation and return data from patients monitoring	Fulfilment Yes/no
It is a requirement for the remote-control information system of STPAU to register the collected data in a database that allows the integration of the clinical information of the patients obtained through both on-site and remote follow-ups and facilitates the export of this data in open format to other environments for exploitation by the STPAU hospital	Yes
The bidder must make available to the STPAU all data from patients generated and used during the execution of the contract in an open format jointly with information on the structure of the data delivered to the hospital and the documentation of the protocols developed during the execution of the contract.	Yes

3.5.3 Minimum requirement of information system: Integration, interoperability and usability	Fulfilment Yes/no
The bidder will have to fulfil the minimum requirements and demonstrate in their bid how they will guarantee the interoperability with all the relevant information systems of the hospital.	Yes
Minimum functional requirement of information system: Integration, interoperability and usability	Fulfilment Yes/no
Integration and extraction of existing relevant data from the databases of the hospital and the arrhythmia unit for the patient follow-up and the contract monitoring..	Yes
The implementation of the data analysis tools aimed to assist a better organisation of the remote queries, in order to enhance clinical team capacity to anticipate both technical and clinical issues.	Yes
Release of a dashboard aimed to monitor the activity and the level of achievement of the objectives set in the outcomes-based indicators.	Yes
Development of patient-oriented IT systems and provision of feedback via new technologies (website for the patient, mobile apps, etc) and improve patient's empowerment	Yes
Development of an app for patients and their relatives.	Yes
Registry of relevant information to measure indicators: date of the diagnostic, treatment indication date, level of evidence according to the standards and European clinical practice guidelines, etc.	Yes
Requirements for data processing	Fulfilment Yes/no
Capability to retrieve data for its exploitation through the hospital's business intelligence tools..	Yes
Registry of user access, which guarantee the record of the information required to be compliant with the regulations in force in every country about data protection	Yes
Generation of the necessary information to feed the public global information systems (such as Catalonia's Història Clínica Compartida (HC3)).	Yes
Minimum service provision	Fulfilment Yes/no
Technological support to RITMOCORE technological solutions deployed during the contract lifetime..	Yes
Documentation, training and knowledge transfer to the hospital IT team, in a way they can conduct the platform maintenance tasks (backup, monitoring, reboot process, ...).	Yes

3.2.2. Qualitative criteria dependent on a value judgement.

MEDTRONIC IBERICA SA	Peso	Máxima	Calidad técnica	Innovación	TOTAL
SCORING		80,00	61,73	63,33	62,53
OPERATIONAL PLAN ON PERSONALIZED THERAPY	30%	24,00	16	16	16
OPERATIONAL PLAN TO PROVISION THE MOST APPROPRIATE PACEMAKER TO	75%	18,00	12	12	12

<i>EACH PATIENT</i>					
<i>OPERATIONAL PLAN FOR TECHNICAL SUPPORT (IMPLANTATION AND EXTRACTION PROCEDURES)</i>	25%	6,00	4	4	4
OPERATIONAL PLAN FOR REMOTE MONITORING	30%	24,00	18	18	18
<i>Proposed strategy to extend remote monitoring to patients implanted previously</i>	25%	6,00	4	4	4
<i>Monitoring platform</i>	25%	6,00	2	2	2
<i>Assistance Center for Remote Monitoring (ACRM)</i>	50%	12,00	12	12	12
OPERATIONAL PLAN FOR HEALTHCARE COORDINATION	10%	8,00	8	8	8
OPERATIONAL PLAN FOR PATIENT ACTIVATION	10%	8,00	5,87	7,47	6,67
<i>Operational plan for the creation of a menu of useful and validated ICT APPs/devices</i>	20%	1,60	0,53	1,07	0,8
<i>Proposal of model aimed to the development of an expert-patient programme</i>	40%	3,20	2,13	3,2	2.67
<i>Proposal of model aimed to patient training (patient's voice)</i>	40%	3,20	3,2	3,2	3,2
OPERATIONAL PLAN FOR CHANGE MANAGEMENT - IMPLEMENTATION OF RITMOCORE MODEL	20%	16,00	13,87	13,87	13,87
<i>Organization and resources: increase of operational efficiency by continuous improvement</i>	50%	8,00	8	8	8
<i>Increase of knowledge - staff training plan by profiles and training in extraction systems (in hospitals performing these procedures)</i>	30%	4,80	3,2	3,2	3,2
<i>Return plan</i>	10%	1,60	1,07	1,07	1,07
<i>Operational plan for activity management beyond the limits established in the contract</i>	10%	1,60	1,6	1,6	1,6

Total score: 62,53 points

Foundations

1.- Operational plan on personalized therapy. Up to 24 points.

Las ofertas deberán contener un plan operativo en el que se describa el modelo propuesto de terapia personalizada para los pacientes.

1.1. Operational plan to provide the most appropriate pacemaker to each patient. Up to 18 POINTS.

The mechanism envisaged for the incorporation of devices from non-constituent suppliers of the catalogs exceeds the minimum

Technical quality:

The operational supply plan describes a reasonable and viable approach appropriate to the needs and characteristics of the Sant Pau hospital. It is based on technical solutions already implemented in our hospital whose technical quality is very good. The mechanism for incorporating patients into remote monitoring is aimed at incorporating devices and technologies from providers included in the catalogs offered. It scores 12 points.

Innovative content:

The operational plan for the supply of pacemakers proposed is continuous with respect to other models already implanted in Sant Pau. Consequently, the score is penalized and 12 points are awarded.

1.2. Operational plan for technical support for pacemaker implantation: Up to 6 points.Technical quality:

The technical support model presented is reasonable and is based on support in place; it is technically feasible and meets the specific needs of the hospital and is perfectly adapted to the needs of the hospital. Since the dedications they propose are part-time and with a response time for the scheduled activity of a maximum of 48 hours. Therefore, the technical score for this criterion is penalized and 4 points are awarded.

Innovative content:

The improvements in the technical support model to the implantation and explantation procedures are considered of medium innovative content since it is based on a part-time "in situ" model with response time for scheduled activity up to 48 hours. Consequently, innovative content is awarded 4 points in this criterion.

2. Operational plan for remote monitoring. Up to 24 points.**2.1. Proposed strategy to include patients to the remote monitoring: first implants, replacement, and previously implanted patients: up to 6 POINTS.**Technical quality:

The strategy of incorporating patients into remote monitoring is viable and adapted to the needs of Sant Pau. However, the model presented makes it difficult to incorporate devices not included in the portfolios offered. The technical score is consequently penalized and 4 points are awarded.

Innovative content:

Given that the proposal poses certain barriers to the incorporation of external devices to the portfolios offered for remote monitoring. This makes it difficult to access disruptive innovations from manufacturers not included in the portfolios offered. Consequently, the score awarded to this criterion: 4 points..

2.2. Remote monitoring platform: UP to 6 POINTS..Technical quality:

The remote monitoring platform, although technically feasible, presents a technological solution that makes remote access to information difficult, limiting clinical use from any location. In a pandemic situation this is a fundamental requirement. Consequently, 2 points are awarded to the remote monitoring platform offered.

Innovative content:

The little flexibility of the technical solution that presents a rigid and unintuitive interface, limited for its clinical use together with the limitation to integrate into web services, lead us to award a score of 2 points to MEDTRONIC IBÉRICA in this criterion.

2.3.- Proposed model for the remote monitoring support centre: up to 12 points.Technical quality:

The proposed technical proposal is robust, effective, accessible and adequately equipped to the specific needs of the hospital. Presenting a model of high technical quality that has a Remote Monitoring Support Center, which assumes tasks of low clinical value. Therefore, the maximum score is awarded in this criterion: 12 points.

Innovative content:

The proposal has a high innovative content that is not limited to integrating existing technologies, but also incorporates developments adapted to the specific needs of the hospital to be able to track shipments and activate alerts, as well as direct communication with the hospital and the other levels of care. Therefore, the maximum score of 12 points is awarded in this criterion.

3.- Operational plan for healthcare coordination. Up to 8 points.Technical quality:

The operational care coordination plan will be supported by the technological platform that is technically adapted to the needs of the hospital, acting as a facilitator in the coordination with the other levels of care, offering them information and support. The governance model is perfectly adapted to the characteristics and needs of the hospital.

Consequently, the maximum score (8 points) has been awarded to the technical proposal for care coordination.

Innovative content:

Through the Platform, the operational care coordination plan has a high innovative content, since the platform integrates a new virtual management tool that will facilitate and make more flexible cooperation and joint treatment of clinical cases with other levels of care. The latter have been integrated into the governance model in an innovative and viable approach.

Given the high innovative content presented, the maximum score (8 points) is awarded to the operational plan presented.

4.- Operational plan for patient activation. Up to 8 points.

4.1.- Proposal of model aimed to the creation of a catalogue of useful and validated mobile APPs: up to 1,6 points.

Technical quality:

The description of this aspect is generic, giving little information about the availability or possibility of incorporating Apps from other companies. Consequently, the score for this criterion is penalized and 0.53 points are awarded.

Innovative content:

Given the lack of clarity in the technical proposal, the high innovative content of the proposal cannot be guaranteed. For this reason, this criterion is scored at 1.07 points

4.2.- Proposal of model aimed to the development of an expert-patient programme: up to 3,2 points.

Technical quality:

The proposal presented for the development of the expert patient is technically feasible and adapted to the needs of the hospital, although with lower benefits than other solutions offered. This criterion is scored at 2.13 points.

Innovative content:

The innovative content of the proposal includes an APP with a high level of innovation that can favor the implementation of the expert patient program. Consequently, the maximum score in this criterion is awarded: 3.2 points

4.3.- Proposal of model aimed to patient training (patient's voice): up to 3,2 points.

Technical quality:

MEDRTONIK IBÉRICA proposes a model for patient training that is coherent, viable and adapted to the technical needs of the hospital that will allow the empowerment of patients through the sharing of peer to peer experiences. Therefore, the maximum score is awarded: 3.2 points.

Innovative content:

The model presented by the tenderer has a high innovative content incorporating experimental development adapted to the specific needs of Sant Pau patients to achieve the empowerment of patients and their environment. Given the high innovative content of the solution presented by the bidder, it is awarded the maximum score of 3.2 points in this criterion.

5.- Operational plan for change management – implementation of RITMOCORE model. Up to 16 points.**5.1. Organization and resources: increase of operational efficiency: up to 8 points.**Technical quality:

The technical organization and technical quality of the resources offered by the bidder are very high, allowing a progressive implementation of the RITMOCORE model and the incorporation of patients into remote monitoring from the beginning of the execution of the contract.

Therefore, the maximum score of 8 points is awarded.

Innovative content:

The solution has a high innovative content presenting a platform to facilitate communication and information sharing among the entire team involved in the execution of the contract. Including the other levels of care. Therefore, it is considered a proposal with high innovative content, granting the maximum score: 8 points.

5.2. Increase of knowledge: staff training plan by profiles: up to 4,8 POINTS.Technical quality:

The training plan has a high technical quality and is adapted to the needs and profiles of Sant Pau. Although this score is penalized, giving 3.2 points for being based fundamentally on Medtronic's own tools.

Innovative content:

The training proposal has a high innovative content and requires ad hoc content development for the different clinical profiles of Sant Pau. However, your score is penalized as it is based primarily on Medtronic's own tools. 3.2 points are awarded to this criterion.

5.3. Plan to return of the services at the termination of the contract: up to 1,6 points.Technical quality:

Medtronic's proposal for the return of services at the end of the contract has a high technical quality and adaptability to the needs of the hospital. The transfer is guaranteed, but not the standardization of the information given the limitations in this regard of the technological platform. MEDTRONIC IBÉRICA is awarded a score of 1.07 points in this criterion.

Innovative content:

Given the technical limitation of the platform, the innovative content of the services return plan at the end of the contract is considered to have a medium level and the bidder is awarded a score of 1.07 points.

5.4. Management of the activity beyond the limits established in the contract: up to 1,6 points.

Technical quality:

The activity management proposal beyond the limits established in the specifications is highly adaptable to the needs of the hospital, proposing the development of projects that, with the use of innovative technologies, improve the management of the follow-up of patients with implanted pacemakers. Therefore, the technical quality of the activity management proposal is awarded, beyond the limits established in the contract, a maximum score of 1.6 points.

Innovative content:

The innovative content of the activity management presented by Medtronic Ibérica is very high, incorporating industrial developments of interactive analysis of processes, including self-learning and decision support tools to advance non-invasive diagnostic techniques. Therefore, the maximum score (1.6 points) is awarded to the innovative content of the proposal in this criterion.

3.3. ABBOT MEDICAL ESPAÑA SA

3.3.1. Evaluation of the fulfilment of the minimum requirements

Fulfilment of the common minimum requirements

Minimum requirements for the supply of pacemakers to meet the needs of each patient	P.24 PPT
Availability of at least two devices from different manufacturers, for each patient, in normal cases.	Yes
Supply of a full range of instruments and material for implants and extractions. The supplier will cover the costs of the explantations and second implants necessary due to a malfunction of the pacemaker device.	Yes
Minimum requirements for technical support services for the implantation and explantation processes	P.28 PPT
Does the bid include a programme for technical support services?	Yes
Directly responsible for the Contract: The person directly responsible for the Contract proposed by the Bidder must have a minimum experience of five (5) years in the execution of care services that are the object of the contract. The Bidder shall present a CV indicating the jobs and hospitals that accredit this experience.	Yes
Personnel in charge of executing the service: At least 80% of the workers proposed by the Bidder as personnel assigned to perform the service must have a minimum experience of three (3) years in the execution of the care services they are the object of the contract.	Yes
Minimum requirements for supply model	P.30 PPT
Does de proposal include a programme establishing a supply model?	Yes
Any cardiac stimulation device that appears from each of the providers during the term of the contract must be included automatically in the prosthesis catalogue chosen by the Technical Board for Contract Monitoring.	Yes
Minimum requirements for remote monitoring	P.30 PPT
Does de proposal include a programme for remote monitoring?	Yes
To create an Assistance Centre for Remote Monitoring to collect and review ALL transmissions.	Yes

The transmissions received by the ACRM must be classified according to the criticality level of the alarm.	Yes
The monitoring data must be accessible in a TRANSPARENT, COMPLETE and EXPLOITABLE manner by the staff assigned to this purpose by the hospital.	Yes
The information system should be enabled to interoperate with the electronic health record of the hospital and, in the case of Catalan hospitals, with the shared electronic health record in Catalonia (HC3).	Yes
The information system should allow the collection and integration of information on face-to-face visits.	Yes
The information system should be able to integrate information from any manufacturer.	Yes
Minimum requirements for coordinated care	P. 32 PPT
Does de proposal include a programme for coordinated care?	Yes
Does the programme include the following aspects?	Yes
Indication of the implant, to increase the knowledge on these pathologies in the different care levels to anticipate indication, reduce the number of emergency procedures, and restrict hospital visits to the ones that are clinically relevant	Yes
Change management, to foster adoption of the new model among the health professionals of the different care levels, as it can be considered a work overload.	Yes
Patient's care path for pacemaker treatment adapted to the hospital and patient contexts.	Yes
The alerts of alarm activation protocols among care levels.	Yes
Communication channels to facilitate dialogue between the hospital and other care levels of care.	Yes
Security for data storage and communications	Yes
Minimum requirements for patient access to treatment	P. 35 PPT
To offer information and support to patients and relatives regarding the patient health status to improve their perception of security	Yes
Minimum requirements for patient activation	P. 35 PPT
Does de proposal include a programme to activate patients?	Yes
Does the porgrmme include the following functionalities?	Yes
Support for doubts and frequent questions in each phase of treatment, through the access to relevant information, including educational content and web-based support services.	Yes
Those services should answer relevant questions in different stages of the treatment, both before the intervention (<i>What is a pacemaker? How will my life change? Which pacemaker is the best for me? etc.</i>) and after the implant (<i>What should I keep in mind? What should I do if ...? What help will I get with remote monitoring? etc.</i>).	Yes
Improve patients' self-control through access to reliable information regarding the characteristics of pacemaker and the patient condition. The information for patents self-control should include, at least , the access to remote monitoring results reviewed and approved by the hospital; and specific educational content about pacemaker models to be used by each segment of patients.	Yes
A catalogue of devices and technologies approved by reference entities to be used to care patients at risk.	Yes
Patient networks creation aligned with existing resources, at national, regional or local level to establish links with ongoing initiatives to expand and extend them.	Yes
Development of a training and support plan for patients and their families to inform them about the advantages of the new model, facilitating their activation and involvement	Yes

Minimum requirements for Change management		P. 36 PPT
Does de proposal include an implementation plan?		Yes
Does the programme include the following items?		P.36 ppt
Re-engineering of processes		Yes
Service supply management		Yes
Global evaluation and follow-up		Yes
Training for change		Yes
Does the In-service training for clinical personnel include the following items?		P.37 ppt
Training programme for medical, nursing and physiologist personnel that includes technical training with devices of all the brands offered, and technical training in remote control and the remote control information system.		Yes
A plan for the hospital to become an expert knowledge and training centre for other hospitals and health centres.		Yes
Training in extraction methodologies and techniques to those hospitals that perform those procedures.		Not applicable
Advanced training in techniques at accredited centres.		Yes
Fellowship training plan.		Yes
Specific training for general practitioners, nursing and physiologist personnel at primary care.		Yes
Does the Governance model include the following items (under the terms specified on page 38 of the PPT)?		P.38 ppt
The organization and functions of the governance bodies		Yes
The implementation plan, including the annual planning of meetings of each of the governing bodies.		Yes
The communication and information plan, including content, frequency, channels, key milestones and scaling, decision-making.		Yes
A model for the management of risks and complications, essential in a medium-term contract.		Yes
Please, indicate whether the bidder offers the minimum % of staff costs for your lot :		Yes
Does the Operational plan include the following aspects on integration, interoperability and usability ?		Yes
The integration model and the plan for incorporating data from the hospital's current database.		Yes
The plan for data migration at the end of the contract.		Yes
The model for managing the interoperability between all technologies: including new technologies that will be incorporated through the contract, as well as interaction with hospital information systems and primary care during the term of the contract.		Yes
The model of interoperation or integration with other monitoring systems at the hospital or service.		Yes
The access and usability model of each user profile in the system.		Yes
The planning for the use of artificial intelligence solutions to improve the treatment of patients based on the information collected.		Yes
Does the bidder specify the resources that the implementation of the new model will require with respect to the information systems, technology equipment and hospital information systems.		Yes
Does the Operational plan include the management of technological renewal during the term of the contract		P.41 PPT

Does the bidder specify the characteristics as well as their ergonomics and usability of the different technologies they will provide?	Yes
Does the bidder specify the strategy for technological renewal?	Yes
Does the Operational plan include a model for the relationship between the hospital and the supplier	P.42 PPT
Does the bidder specify the commitment to a hospital-supplier relationship model that considers the requirements set out in this document.	Yes

Fulfilment of the minimum requirements of LOT 2 (Hospital de la Santa Creu i Sant Pau)

Minimum requirements for optimal delivery of treatment to each patient at STPAU		
Indicator	Mínimum	fulfilment (Yes/No)
Number of complete ranges of pacemakers from different manufacturers (*)	2	Yes
Capacity to respond to need for special devices (special devices absorption rate) (*)	10%	Yes
Additional technical characteristics		Fulfilment Yes/no
Battery life guarantee	With 100% coverage cost of device	Yes
	VVI	8 YEARS
	DDD	6 YEARS
Leadless pacemakers implanted per year	50	Yes
Extraction systems	Fulfil the minimum requirements in all scenarios	Yes
Technical support for implant and extraction of devices		
Indicator		fulfilment (Yes/No)
All personnel assigned to these services must be previously accepted by the Technical Board for Contract Monitoring.		Yes
The technician assigned to technical assistance STPAU Hospital must hold the title of medicine and surgery and belong to a Scientific Society in the field of cardiac pacing		Yes
The assignment of the same technician of reference to assist in the operating room for either an implant or an extraction. Substitutions or absences should be justified.		Yes
Face-to-face technical assistance full-time for the implant procedures of devices in the theatre (both for first implants and replacements).		Yes
Face-to-face technical assistance for implant extraction		Yes
Extension of the technical assistance in implant to the follow-up consultation (face-to-face or remote) of those implanted patients in whom the care team considers it appropriate.		Yes

Integration of the reference technician in the working groups for the development of the protocols linked to the implantation of pacemakers as those that will establish the selection of the most suitable type of device for each patient and the one that will govern the programming standards according to the type of each device and patient.		Yes
Minimum requirements for the technical support services for implantation procedures in the STPAU		Fulfilment (Yes/No)
Indicator	Mínimum	
Minimum proven experience in the provision of specialised technical support for the electrodes extraction	5 YEARS	Yes
Technical support in the procedures	On demand and depending on the procedure complexity	Yes
Extension of specialist care, at professional request, to monitoring consultation (face-to-face or remote) of cardiac devices	Yes	Yes
Reaction times for emergencies	24 horas	Yes
Minimum requirements for Provisioning of material		Fulfilment Yes/no
Does the bid include the following information?		
<p>1. The technical data of the devices detailing the equipment accrediting compliance with the minimums set out in these technical specifications.</p> <p>2. Description of how the material from the different manufacturers will be supplied, as well as the technical data accrediting compliance with the minimums set out in these technical specifications.</p> <p>3. Also, the tenderer must give details of the following aspects:</p> <p>a) the ease of use of the procurement management tools,</p> <p>b) the use of new technologies in the management of stocks,</p> <p>c) the integration of these tools in the dashboard of this project,</p> <p>d) the integration with the hospital's ICT systems,</p> <p>e) the awardee's response times to sudden increases in demand,</p> <p>f) other aspects that facilitate and promote greater efficiency in the treatment of this group of patients.</p>		Yes
Minimum requirements for Technical characteristics of the pacemakers.		Fulfilment Yes/no
¿do the pacemakers of the bid meet or improve the following minimum technical characteristics?		
Remote care compatibility with automatic wireless telemetry		Yes
Active AND passive fixation electrodes (IS1 connector)		Yes
Adaptors for old connectors		Yes
Magnetic resonance full body compatibility, at least 1.5T		Yes
Automatic atrium and ventricle threshold measurement		Yes

Alerts for electrode integrity, battery depletion, impedance out of limits (possibly: warning messages or indicators of battery depletion, threshold, and impedance out of limits).	Yes	
Activity sensors (programmable).	Yes	
Electrogram storage with preevent electrogram recordings.	Yes	
Alert due to ERI battery depletion (alert, or indicator, or message)	Yes	
Battery voltage measurement and/or estimation of battery duration.	Yes	
Lead impedance measurement.	Yes	
Specifically, for dual chamber pacemakers:	Fulfilment Yes/no	
Automatic switch stimulation change mode	Yes	
Algorithms for reduction of ventricular pacing (their efficacy must be demonstrated in articles in peer review journals and will be evaluated by a clinical board)	Yes	
Algorithms for prevention and treatment of PMT	Yes	
Programmable alerts for atrial arrhythmias	Yes	
Does the operational plan o the bidder plan to guarantee the supply of the VDD generators replacement?	Yes	
Does the operational plan detail whether it includes DDD or DDD and VDD?	Yes	
Technological renovation of the devices during the contract term	Fulfilment Yes/no	
Does the operational plan guarantee the provision of supplies from more than one manufacturer to cover all kind of electrodes extraction?		
	Fulfilment Yes/no	
The Bidder must specify in the Operative Plan of supply in a specific section of technological renovation in detail the proposal of incorporation of these new technologies within the framework of this contract.	Yes	
It must also be specified how possible disruptive novelties that appear in the market of brands other than those proposed by the bidder will be incorporated. In the evaluation, the ease of incorporation of these novelties will be also considered	Yes	
The bidder must specify how the incorporation of technologies not currently available will be valued, as well as the inclusion of innovative patient medical communication information systems, available or not at present.	Yes	
The bidder must make explicit its commitment to review together with the Technical Board for Contract Monitoring, those technologies that appear in the market during the term of the contract.	Yes	
Remote monitoring programme	Fulfilment Yes/no	
Extension of the remote monitoring		
Previously implanted patients with pacemakers compatible with remote monitoring	50%	Yes
Patients with new implants / battery changes	85%	
Functions of the assistance centre for remote monitoring		Fulfilment Yes/no

Creation of a remote monitoring assistance centre that reviews ALL transmissions	Yes
Transmissions classification	Yes
Accessibility of all hospital designated personnel to all transmissions in a transparent, complete and exploitable manner.	Yes
Does the implementation plan detail the operating model the transmission classification protocol and flowcharts, the model of verification for transmissions, and other organisation aspects that may reduce the burden of care and managerial work at the hospital?	Yes
Functions of the assistance centre for remote monitoring	Fulfilment Yes/no
Remote monitoring assistance centre reviews all transmission from any new implanted device regardless the manufacturer.	Yes
Technical assistance for patients must be available during office working hours (8am to 7pm) in (at least) the following languages: Catalan, Spanish, and English.	Yes
Telephone technical assistance for doctors and nurses must be available during office working hours (8am to 7pm) in (at least) the following languages: Catalan and Spanish	Yes
Integration and interoperability with Hospital Information Systems and Primary Care centres integrated in the RITMOCORE model.	Yes
Possibility of recovering all the data in the case of a future change in the information system.	Yes
Transfer of information, procedures and algorithms at the hospital's request and at the end of the contract.	Yes
Remote monitoring minimum functional requirements	Fulfilment Yes/no
Creation of patient records with complete and auditable information.	Yes
Management module for in-hospital follow-up consultations regarding implantable devices	Yes
Management of documentation: (according to what is provided in Annex I.2 of the PPT page 16).	Yes
Management of right of access and data privacy: (according to what is provided in Annex I.2 of the PPT page 16).	Yes
Importation of data from the Hospital's previous database..	Yes
Connectivity with the different platforms for remote monitoring of implantable cardiac devices..	Yes
The information system must provide a single interface for both remote and in-hospital monitoring..	Yes
The system must provide a single interface for remote monitoring regardless of the brand and device model in question..	Yes
Retrieval of data from devices in in-hospital monitoring compatible with all the manufacturers.	Yes
Structured storage of the information collected during both in-hospital and remote monitoring follow-ups..	Yes
Scanning of the material used by the barcode reader	Yes
Capacity for combining the agenda management with the hospital admission system.	Yes

Compatibility with the DICOM image standard.	Yes
Optimization of clinical and administrative processes.	Yes
Technical and interoperability requirements	Fulfilment Yes/no
HL7 Integrated Server offering two-way communication with other hospital' ICT systems (EMR/HIS)	Yes
Data exportation standards (reports in PDF documents and information tables in Microsoft Excel, ACCESS, SQL, SPSS).	Yes
Does the operational plan include the following elements?	Fulfilment Yes/no
Home monitoring operational	Yes
Telephone suport system for patients and physicians.	Yes
Implementation and operating plan of the information systems focusing on the interoperability of the hospital current systems and the recovery of currently stored data in the Arrhythmias Unit database.	Yes
The management of the transition to another information system at the end of this contract and how continuity will be guaranteed.	Yes
The provision tool for data analysis to the clinical unit to improve organization of remote consultations, to increase the ability of the medical team to anticipate possible clinical and technical problems..	Yes
The training of patients to improve the empowerment of the patient regarding his pathology. The possibility of using innovative data transmission systems that do not require the installation of additional devices in the patient's home will be positively evaluated.	Yes
The development of information systems such as feedback for the patient through new technologies (smartphone, website for the patient, mobile Apps, etc.) that improve the empowerment of the patient	Yes
Future plan for joint development with the Hospital of new technologies that facilitate patient communication with the hospital and vice versa. The hospital must be a priority partner in the development and implementation of these new solutions in remote control.	Yes
Coordination of care	Fulfilment Yes/no
¿ Does the bid establishes communication protocols between the arrhythmias unit and its implantation in, at least, two primary care centres of the catchment area of STPAU?	Yes
Patient activation	Fulfilment Yes/no
¿Does the operational plan foresee to provide information and training to patients and relatives in different formats (on paper or digital) as well as the implementation of information systems of patient self-monitoring (according to page 18 of Annex I.2 of the PPT)?	Yes
Change management	Fulfilment Yes/no
Does the bid include a change management project that contemplates the different stages (implementation, exploitation and return of services) adapted to the characteristics of STPAU?	Yes
Continual training of medical and nursing staff	Fulfilment Yes/no

Does the bid include a specialised training for the medical staff? (according to the items listed in page 21 of the Annex II of the PPT).	Yes
Plan for the incorporation and return data from patients monitoring	Fulfilment Yes/no
It is a requirement for the remote-control information system of STPAU to register the collected data in a database that allows the integration of the clinical information of the patients obtained through both on-site and remote follow-ups and facilitates the export of this data in open format to other environments for exploitation by the STPAU hospital	Yes
The bidder must make available to the STPAU all data from patients generated and used during the execution of the contract in an open format jointly with information on the structure of the data delivered to the hospital and the documentation of the protocols developed during the execution of the contract.	Yes
3.5.3 Minimum requirement of information system: Integration, interoperability and usability	Fulfilment Yes/no
The bidder will have to fulfil the minimum requirements and demonstrate in their bid how they will guarantee the interoperability with all the relevant information systems of the hospital.	Yes
Minimum functional requirement of information system: Integration, interoperability and usability	Fulfilment Yes/no
Integration and extraction of existing relevant data from the databases of the hospital and the arrhythmia unit for the patient follow-up and the contract monitoring..	Yes
The implementation of the data analysis tools aimed to assist a better organisation of the remote queries, in order to enhance clinical team capacity to anticipate both technical and clinical issues.	Yes
Release of a dashboard aimed to monitor the activity and the level of achievement of the objectives set in the outcomes-based indicators.	Yes
Development of patient-oriented IT systems and provision of feedback via new technologies (website for the patient, mobile apps, etc) and improve patient's empowerment	Yes
Development of an app for patients and their relatives.	Yes
Registry of relevant information to measure indicators: date of the diagnostic, treatment indication date, level of evidence according to the standards and European clinical practice guidelines, etc.	Yes
Requirements for data processing	Fulfilment Yes/no
Capability to retrieve data for its exploitation through the hospital's business intelligence tools..	Yes
Registry of user access, which guarantee the record of the information required to be compliant with the regulations in force in every country about data protection	Yes
Generation of the necessary information to feed the public global information systems (such as Catalonia's Història Clínica Compartida (HC3)).	Yes
Minimum service provision	Fulfilment Yes/no
Technological support to RITMOCORE technological solutions deployed during the contract lifetime..	Yes

Documentation, training and knowledge transfer to the hospital IT team, in a way they can conduct the platform maintenance tasks (backup, monitoring, reboot process, ...).

Yes

3.3.2. Qualitative criteria dependent on a value judgement.

ABBOT MEDICAL ESPAÑA SA	Peso	Máxima	Calidad técnica	Innovación	TOTAL
SCORING		80,00	44,13	44,13	44,13
OPERATIONAL PLAN ON PERSONALIZED THERAPY	30%	24,00	16	16	16
OPERATIONAL PLAN TO PROVISION THE MOST APPROPRIATE PACEMAKER TO EACH PATIENT	75%	18,00	12	12	12
OPERATIONAL PLAN FOR TECHNICAL SUPPORT (IMPLANTATION AND EXTRACTION PROCEDURES)	25%	6,00	4	4	4
OPERATIONAL PLAN FOR REMOTE MONITORING	30%	24,00	10	10	10
<i>Proposed strategy to extend remote monitoring to patients implanted previously</i>	25%	6,00	2	2	2
<i>Monitoring platform</i>	25%	6,00	4	4	4
<i>Assistance Center for Remote Monitoring (ACRM)</i>	50%	12,00	4	4	4
OPERATIONAL PLAN FOR HEALTHCARE COORDINATION	10%	8,00	2,67	2,67	2,67
OPERATIONAL PLAN FOR PATIENT ACTIVATION	10%	8,00	5,33	5,33	5,33
<i>Operational plan for the creation of a menu of useful and validated ICT APPs/devices</i>	20%	1,60	1,07	1,07	1,07
<i>Proposal of model aimed to the development of an expert-patient programme</i>	40%	3,20	2,13	2,13	2,13
<i>Proposal of model aimed to patient training (patient's voice)</i>	40%	3,20	2,13	2,13	2,13
OPERATIONAL PLAN FOR CHANGE MANAGEMENT - IMPLEMENTATION OF RITMOCORE MODEL	20%	16,00	10,33	10,33	10,33
<i>Organization and resources: increase of operational efficiency by continuous improvement</i>	50%	8,00	5,33	5,33	5,33
<i>Increase of knowledge - staff training plan by profiles and training in extraction systems (in hospitals performing these procedures)</i>	30%	4,80	3,2	3,2	3,2
<i>Return plan</i>	10%	1,60	1,07	1,07	1,07
<i>Operational plan for activity management beyond the limits established in the contract</i>	10%	1,60	0,53	0,53	0,53

Total score: 44,13 points.

Foundations

1.- Operational plan on personalized therapy. Up to 24 points

1.1. Operational plan to provide the most appropriate pacemaker to each patient. Up to 18 points

Technical quality:

The operational supply plan describes a reasonable and feasible approach appropriate to the needs and characteristics of the Sant Pau hospital. The approach clearly sets out the bidder's commitment to our entity. However, the mechanism for incorporating patients into remote monitoring makes it difficult to incorporate devices and technologies from providers not included in the portfolios offered.

Since this last circumstance makes it difficult to implement the model for special cases, the technical score is penalized and 12 points are awarded.

Innovative content:

The proposed pacemaker procurement operational plan has a high innovative content. However, the planned mechanism for incorporating disruptive or novel technologies is ambiguous. Consequently, the score is penalized and 12 points are awarded.

1.2. Operational plan for technical support for pacemaker implantation: Up to 6 points.

Technical quality:

The technical support model presented is reasonable and technically adapted to the needs of the hospital: expert technical support is offered in implant / extraction procedures; their presence will be determined according to the needs considered by the medical team; a response time of <24h is offered. Lack of specificity in the statement of commitment. Therefore, the technical score for this criterion is penalized and 4 points are awarded.

Innovative content:

The technical support model has a high innovative content including, although the lack of specificity in the model makes it difficult to assess at the innovative content level. Therefore, a score of 4 points is awarded.

2. Operational plan for remote monitoring. Up to 24 points.

2.1. Proposed strategy to include patients to the remote monitoring: first implants, replacement, and previously implanted patients: up to 6 POINTS.

Technical quality:

The proposal presented is ambiguous in terms of the inclusion plan for patients currently with pacemakers under remote monitoring. It is therefore difficult to assess the commitment and

technical quality of the proposal. Therefore, this criterion is penalized by giving a score of 2 points.

Innovative content:

Given the ambiguity of the proposal regarding the inclusion plan for patients currently with pacemakers under remote monitoring. Innovative content score is penalized and 2 points are awarded in this criterion.

2.2. Remote monitoring platform: UP to 6 POINTS.

Technical quality:

The tenderer presents a reasonable technical proposal adapted to the hospital's needs, although it requires installation in the hospital's IT infrastructure and does not have remote services. Therefore, the technical quality of the solution is deemed to have an average level and 4 points are awarded in this criterion.

Innovative content:

The innovative content of the submitted proposal is considered medium given that, despite including specific developments to meet the needs of the hospital, these are based on technologies already developed and do not include secure remote access services. The score is penalized and the bidder is awarded 4 points in this criterion.

2.3.- Proposed model for the remote monitoring support centre: up to 12 points.

Technical quality:

The proposal for technical assistance for remote monitoring is considered to be of low innovative content since the provider does not detail some aspects of remote monitoring that are relevant for the management of these services: generation of reports, periodicity, possibility of multilanguage, communication channels. Therefore 4 points are awarded on this criterion.

Innovative content:

Given the lack of specificity of the technical proposal, it is difficult to assess its innovative content. Lack of specificity on the reporting model, periodicity, possibility of multilanguage, communication channels. For these reasons it is considered that the innovative content of the proposal is medium-low and it is awarded 4 points.

3.- Operational plan for healthcare coordination. Up to 8 points.

Technical quality:

The technical quality of the operational care coordination plan is considered low, given the ambiguity in the description of the characteristics and the implementation schedule. Therefore 2.67 points are awarded to this criterion.

Innovative content:

Given the ambiguity in the technical description of the proposed care coordination model, the proposal with low innovative content is considered. Consequently, 2.67 points are awarded.

4.- Operational plan for patient activation. Up to 8 points.

4.1.- Proposal of model aimed to the creation of a catalogue of useful and validated mobile APPs: up to 1,6 points.

Technical quality:

Selection of validated and useful Apps is proposed by a committee included in the technical table of the contract that will be in charge of evaluating and validating applications already created by other entities. It is an approach adjusted to the needs of the hospital and that provides great flexibility to the incorporation of new content and applications throughout the contract. However, the composition of the committee, the profiles and who would contribute the experts in usability, technology, security and quality of content are not detailed. These areas of knowledge are outside the mission of the technical table for monitoring the contract have. Consequently, the technical quality of the proposal is penalized, giving 1.07 points.

Innovative content:

The lack of technical specification of the composition of the committee makes it difficult to assess the level of innovation offered. Consequently, the evaluation of innovative content is penalized, giving a score of 1.07 points.

4.2.- Proposal of model aimed to the development of an expert-patient programme: up to 3,2 points.

Technical quality:

The technical quality of the proposal for the development of the expert patient program is technically reasonable and is adapted to the needs of the hospital. The proposal includes participation and complementation in the Expert Patient Program in Catalonia for patients with implanted devices and incorporates the figure of the virtual advisor in the different formats to be used. However, the information provided is lacking in sufficient detail to be able to evaluate the proposal as technically excellent. Consequently, the score is penalized and 2.13 points are awarded.

Innovative content:

The approach raises highly innovative elements such as the figure of a virtual advisor for the patient and their environment, which is valued as highly useful. However, the lack of technical detail of the solution presented leads us to penalize the score of this criterion and award 2.13 points.

4.3.- Proposal of model aimed to patient training (patient's voice): up to 3,2 points.

Technical quality:

The training model for patients and their environment will be customized through the App, CAMR and the clinical staff, to the profile of each patient. It is planned to create an e-learn page to complement patient training. Although the management model and additional content to include is not detailed. Given this last circumstance, the score is penalized and 2.13 points are awarded.

Innovative content:

The training model contemplates a complete set of channels and tools, although it does not foresee experimental developments of new technologies. According to the evaluation model established in the specifications of this tender, it is considered that the innovative content of the proposal is medium and 2.13 points are awarded to the patient training model presented by ABBOTT.

5.- Operational plan for change management – implementation of RITMOCORE model. Up to 16 points.

5.1. Organization and resources: increase of operational efficiency: up to 8 points.

Technical quality:

The organizational model and resource management proposed by ABBOTT is valued as technically feasible and adapted to the needs of the hospital for the implementation of the RITMOCORE model. The composition of committees to achieve the objective is technically adequate and a very adequate roadmap for the implementation in 3 phases is included. Consequently, the maximum score (8 points) is awarded in this criterion.

Innovative content:

The governance structure presented has a high innovative content since it presents an ad hoc organization to guarantee the success in the implementation of the RITMOCORE model as well as the execution and monitoring of the contract. Therefore, the maximum score (8 points) is awarded to this criterion.

5.2. Increase of knowledge: staff training plan by profiles: up to 4,8 POINTS.

Technical quality:

The technical proposal has a high technical quality and includes the different professional profiles and areas of knowledge of the different levels of care. Although it lacks specificity in terms of the duration, number of sessions and format (face-to-face or online) of them. Therefore, the score is penalized and 3.2 points are awarded.

Innovative content:

The proposal has a medium innovative content since it lacks advanced innovations such as simulation systems. This aspect, together with the lack of technical precision, leads us to establish the innovative content of a medium type and give the proposal a score of 3.2 points.

5.3. Plan to return of the services at the termination of the contract: up to 1,6 points.

Technical quality:

The return plan for the services offered by ABBOT is divided into various phases, including risk management and risk mitigation measures. However, given the lack of specificity regarding the time horizon of this process, the score is penalized, awarding 1.07 points.

Innovative content:

Given the lack of temporal concretion of the technical proposal, it penalizes the evaluation of its innovative content. Innovative content is determined to have an average level and 1.07 points are awarded.

5.4. Management of the activity beyond the limits established in the contract: up to 1,6 points.

Technical quality:

The technical proposal for the management of the activity beyond the limits established in the contract is of a lower technical quality than those presented by other bidders: it only contemplates natural language processing for automated processes and the exploitation of large volumes of information. Consequently, it is awarded a score of 0,53 points on this criterion.

Innovative content:

The innovative content offered by ABBOTT is less ambitious to that presented by other bidders, which is why it is awarded a score of 0,53 points in this criterion.

3.4. IMPLICITY

3.4.1. Evaluation of the fulfilment of the minimum requirements

Fulfilment of the common minimum requirements

Minimum requirements for the supply of pacemakers to meet the needs of each patient		P.24 PPT
Availability of at least two devices from different manufacturers, for each patient, in normal cases.		No
Supply of a full range of instruments and material for implants and extractions. The supplier will cover the costs of the explantations and second implants necessary due to a malfunction of the pacemaker device.		No
Minimum requirements for technical support services for the implantation and explantation processes		P.28 PPT
Does the bid include a programme for technical support services?		No
Directly responsible for the Contract: The person directly responsible for the Contract proposed by the Bidder must have a minimum experience of five (5) years in the execution of care services that are the object of the contract. The Bidder shall present a CV indicating the jobs and hospitals that accredit this experience.		No

Personnel in charge of executing the service: At least 80% of the workers proposed by the Bidder as personnel assigned to perform the service must have a minimum experience of three (3) years in the execution of the care services they are the object of the contract.	No
Minimum requirements for supply model	P.30 PPT
Does de proposal include a programme establishing a supply model?	No
Any cardiac stimulation device that appears from each of the providers during the term of the contract must be included automatically in the prosthesis catalogue chosen by the Technical Board for Contract Monitoring.	No
Minimum requirements for remote monitoring	P.30 PPT
Does de proposal include a programme for remote monitoring?	Yes
To create an Assistance Centre for Remote Monitoring to collect and review ALL transmissions.	Yes
The transmissions received by the ACRM must be classified according to the criticality level of the alarm.	Yes
The monitoring data must be accessible in a TRANSPARENT, COMPLETE and EXPLOITABLE manner by the staff assigned to this purpose by the hospital.	Yes
The information system should be enabled to interoperate with the electronic health record of the hospital and, in the case of Catalan hospitals, with the shared electronic health record in Catalonia (HC3).	No
The information system should allow the collection and integration of information on face-to-face visits.	Yes
The information system should be able to integrate information from any manufacturer.	Yes
Minimum requirements for coordinated care	P. 32 PPT
Does de proposal include a programme for coordinated care?	Yes
Does the programme include the following aspects?	No
Indication of the implant, to increase the knowledge on these pathologies in the different care levels to anticipate indication, reduce the number of emergency procedures, and restrict hospital visits to the ones that are clinically relevant	Yes
Change management, to foster adoption of the new model among the health professionals of the different care levels, as it can be considered a work overload.	Yes
Patient's care path for pacemaker treatment adapted to the hospital and patient contexts.	Yes
The alerts of alarm activation protocols among care levels.	Yes
Communication channels to facilitate dialogue between the hospital and other care levels of care.	Yes
Security for data storage and communications	Yes
Minimum requirements for patient access to treatment	P. 35 PPT
To offer information and support to patients and relatives regarding the patient health status to improve their perception of security	Yes
Minimum requirements for patient activation	P. 35 PPT
Does de proposal include a programme to activate patients?	Yes
Does the programme include the following functionalities?	Yes
Support for doubts and frequent questions in each phase of treatment, through the access to relevant information, including educational content and web-based support services.	Yes

Those services should answer relevant questions in different stages of the treatment, both before the intervention (<i>What is a pacemaker? How will my life change? Which pacemaker is the best for me? etc.</i>) and after the implant (<i>What should I keep in mind? What should I do if ...? What help will I get with remote monitoring? etc.</i>).	Yes
Improve patients' self-control through access to reliable information regarding the characteristics of pacemaker and the patient condition. The information for patients self-control should include, at least , the access to remote monitoring results reviewed and approved by the hospital; and specific educational content about pacemaker models to be used by each segment of patients.	Yes
A catalogue of devices and technologies approved by reference entities to be used to care patients at risk.	Yes
Patient networks creation aligned with existing resources, at national, regional or local level to establish links with ongoing initiatives to expand and extend them.	Yes
Development of a training and support plan for patients and their families to inform them about the advantages of the new model, facilitating their activation and involvement	Yes
Minimum requirements for Change management	P. 36 PPT
Does de proposal include an implementation plan?	Yes
Does the programme include the following items?	P.36 ppt
Re-engineering of processes	No
Service supply management	No
Global evaluation and follow-up	No
Training for change	No
Does the In-service training for clinical personnel include the following items?	P.37 ppt
Training programme for medical, nursing and physiologist personnel that includes technical training with devices of all the brands offered, and technical training in remote control and the remote control information system.	Yes
A plan for the hospital to become an expert knowledge and training centre for other hospitals and health centres.	No
Training in extraction methodologies and techniques to those hospitals that perform those procedures.	No
Advanced training in techniques at accredited centres.	No
Fellowship training plan.	No
Specific training for general practitioners, nursing and physiologist personnel at primary care.	Yes
Does the Governance model include the following items (under the terms specified on page 38 of the PPT)?	P.38 ppt
The organization and functions of the governance bodies	No
The implementation plan, including the annual planning of meetings of each of the governing bodies.	No
The communication and information plan, including content, frequency, channels, key milestones and scaling, decision-making.	No
A model for the management of risks and complications, essential in a medium-term contract.	No
Please, indicate whether the bidder offers the minimum % of staff costs for your lot :	No No
Does the Operational plan include the following aspects on integration, interoperability and usability ?	
The integration model and the plan for incorporating data from the hospital's current database.	No

The plan for data migration at the end of the contract.	No
The model for managing the interoperability between all technologies: including new technologies that will be incorporated through the contract, as well as interaction with hospital information systems and primary care during the term of the contract.	Yes
The model of interoperation or integration with other monitoring systems at the hospital or service.	No
The access and usability model of each user profile in the system.	No
The planning for the use of artificial intelligence solutions to improve the treatment of patients based on the information collected.	Yes
Does the bidder specify the resources that the implementation of the new model will require with respect to the information systems, technology equipment and hospital information systems.	Yes
Does the Operational plan include the management of technological renewal during the term of the contract	P.41 PPT
Does the bidder specify the characteristics as well as their ergonomics and usability of the different technologies they will provide?	Yes
Does the bidder specify the strategy for technological renewal?	No
Does the Operational plan include a model for the relationship between the hospital and the supplier	P.42 PPT
Does the bidder specify the commitment to a hospital-supplier relationship model that considers the requirements set out in this document.	No

Fulfilment of the minimum requirements of LOT 2 (Hospital de la Santa Creu i Sant Pau)

Minimum requirements for optimal delivery of treatment to each patient at STPAU		
Indicator	Minimum	fulfilment (Yes/No)
Number of complete ranges of pacemakers from different manufacturers (*)	2	No
Capacity to respond to need for special devices (special devices absorption rate) (*)	10%	No
Additional technical characteristics		Fulfilment Yes/no
Battery life guarantee	With 100% coverage cost of device	No
VVI	8 YEARS	No
DDD	6 YEARS	No
Leadless pacemakers implanted per year	50	No
Extraction systems	Fulfil the minimum requirements in all scenarios	No
Technical support for implant and extraction of devices		
Indicator		fulfilment (Yes/No)

All personnel assigned to these services must be previously accepted by the Technical Board for Contract Monitoring.		No
The technician assigned to technical assistance STPAU Hospital must hold the title of medicine and surgery and belong to a Scientific Society in the field of cardiac pacing		No
The assignment of the same technician of reference to assist in the operating room for either an implant or an extraction. Substitutions or absences should be justified.		No
Face-to-face technical assistance full-time for the implant procedures of devices in the theatre (both for first implants and replacements).		No
Face-to-face technical assistance for implant extraction		No
Extension of the technical assistance in implant to the follow-up consultation (face-to-face or remote) of those implanted patients in whom the care team considers it appropriate.		No
Integration of the reference technician in the working groups for the development of the protocols linked to the implantation of pacemakers as those that will establish the selection of the most suitable type of device for each patient and the one that will govern the programming standards according to the type of each device and patient.		No
Minimum requirements for the technical support services for implantation procedures in the STPAU		Fulfilment (Yes/No)
Indicator	Mínimum	
Minimum proven experience in the provision of specialised technical support for the electrodes extraction	5 YEARS	No
Technical support in the procedures	On demand and depending on the procedure complexity	No
Extension of specialist care, at professional request, to monitoring consultation (face-to-face or remote) of cardiac devices	Yes	No
Reaction times for emergencies	24 hoous	Yes
Reaction times in scheduled interventions	48 hours	Yes
Minimum requirements for Provisioning of material		Fulfilment Yes/no
Does the bid include the following information?		

<p>1. The technical data of the devices detailing the equipment accrediting compliance with the minimums set out in these technical specifications.</p> <p>2. Description of how the material from the different manufacturers will be supplied, as well as the technical data accrediting compliance with the minimums set out in these technical specifications.</p> <p>3. Also, the tenderer must give details of the following aspects:</p> <p>a) the ease of use of the procurement management tools,</p> <p>b) the use of new technologies in the management of stocks,</p> <p>c) the integration of these tools in the dashboard of this project,</p> <p>d) the integration with the hospital's ICT systems,</p> <p>e) the awardee's response times to sudden increases in demand,</p> <p>f) other aspects that facilitate and promote greater efficiency in the treatment of this group of patients.</p>	No
Minimum requirements for Technical characteristics of the pacemakers.	Fulfilment Yes/no
¿do the pacemakers of the bid meet or improve the following minimum technical characteristics?	
Remote care compatibility with automatic wireless telemetry	No
Active AND passive fixation electrodes (IS1 connector)	No
Adaptors for old connectors	No
Magnetic resonance full body compatibility, at least 1.5T	No
Automatic atrium and ventricle threshold measurement	No
Alerts for electrode integrity, battery depletion, impedance out of limits (possibly: warning messages or indicators of battery depletion, threshold, and impedance out of limits).	No
Activity sensors (programmable).	No
Electrogram storage with preevent electrogram recordings.	No
Alert due to ERI battery depletion (alert, or indicator, or message)	No
Battery voltage measurement and/or estimation of battery duration.	No
Lead impedance measurement.	No
Specifically, for dual chamber pacemakers:	Fulfilment Yes/no
Automatic switch stimulation change mode	No
Algorithms for reduction of ventricular pacing (their efficacy must be demonstrated in articles in peer review journals and will be evaluated by a clinical board)	No
Algorithms for prevention and treatment of PMT	No
Programmable alerts for atrial arrhythmias	No
Does the operational plan o the bidder plan to guarantee the supply of the VDD generators replacement?	No
Does the operational plan detail wheather it includes DDD or DDD and VDD?	No
Technological renovation of the devices during the contract term	Fulfilment Yes/no

Does the operational plan guarantee the provision of supplies from more than one manufacturer to cover all kind of electrodes extraction?		No
		Fulfilment Yes/no
The Bidder must specify in the Operative Plan of supply in a specific section of technological renovation in detail the proposal of incorporation of these new technologies within the framework of this contract.		No
It must also be specified how possible disruptive novelties that appear in the market of brands other than those proposed by the bidder will be incorporated. In the evaluation, the ease of incorporation of these novelties will be also considered		No
The bidder must specify how the incorporation of technologies not currently available will be valued, as well as the inclusion of innovative patient medical communication information systems, available or not at present.		No
The bidder must make explicit its commitment to review together with the Technical Board for Contract Monitoring, those technologies that appear in the market during the term of the contract.		No
Remote monitoring programme		Fulfilment Yes/no
Extension of the remote monitoring		
Previously implanted patients with pacemakers compatible with remote monitoring	50%	No
Patients with new implants / battery changes	85%	No
Functions of the assistance centre for remote monitoring		Fulfilment Yes/no
Creation of a remote monitoring assistance centre that reviews ALL transmissions		No
Transmissions classification		No
Accessibility of all hospital designated personnel to all transmissions in a transparent, complete and exploitable manner.		No
Does the implementation plan detail the operating model the transmission classification protocol and flowcharts, the model of verification for transmissions, and other organisation aspects that may reduce the burden of care and managerial work at the hospital?		No
Functions of the assistance centre for remote monitoring		Fulfilment Yes/no
Remote monitoring assistance centre reviews all transmission from any new implanted device regardless the manufacturer.		Yes
Technical assistance for patients must be available during office working hours (8am to 7pm) in (at least) the following languages: Catalan, Spanish, and English.		No
Telephone technical assistance for doctors and nurses must be available during office working hours (8am to 7pm) in (at least) the following languages: Catalan and Spanish		No
Integration and interoperability with Hospital Information Systems and Primary Care centres integrated in the RITMOCORE model.		No
Possibility of recovering all the data in the case of a future change in the information system.		No

Transfer of information, procedures and algorithms at the hospital's request and at the end of the contract.	No
Remote monitoring minimum functional requirements	Fulfilment Yes/no
Creation of patient records with complete and auditable information.	No
Management module for in-hospital follow-up consultations regarding implantable devices	No
Management of documentation: (according to what is provided in Annex I.2 of the PPT page 16).	No
Management of right of access and data privacy: (according to what is provided in Annex I.2 of the PPT page 16).	No
Importation of data from the Hospital's previous database..	No
Connectivity with the different platforms for remote monitoring of implantable cardiac devices..	No
The information system must provide a single interface for both remote and in-hospital monitoring..	No
The system must provide a single interface for remote monitoring regardless of the brand and device model in question..	No
Retrieval of data from devices in in-hospital monitoring compatible with all the manufacturers.	Yes
Structured storage of the information collected during both in-hospital and remote monitoring follow-ups..	Yes
Scanning of the material used by the barcode reader	No
Capacity for combining the agenda management with the hospital admission system.	No
Compatibility with the DICOM image standard.	Yes
Optimization of clinical and administrative processes.	No
Technical and interoperability requirements	Fulfilment Yes/no
HL7 Integrated Server offering two-way communication with other hospital' ICT systems (EMR/HIS)	No
Data exportation standards (reports in PDF documents and information tables in Microsoft Excel, ACCESS, SQL, SPSS).	Yes
Does the operational plan include the following elements?	Fulfilment Yes/no
Home monitoring operational	No
Telephone suport system for patients and physicians.	No
Implementation and operating plan of the information systems focusing on the interoperability of the hospital current systems and the recovery of currently stored data in the Arrhythmias Unit database.	No
The management of the transition to another information system at the end of this contract and how continuity will be guaranteed.	Yes
The provision tool for data analysis to the clinical unit to improve organization of remote consultations, to increase the ability of the medical team to anticipate possible clinical and technical problems..	Yes

The training of patients to improve the empowerment of the patient regarding his pathology. The possibility of using innovative data transmission systems that do not require the installation of additional devices in the patient's home will be positively evaluated.	Yes
The development of information systems such as feedback for the patient through new technologies (smartphone, website for the patient, mobile Apps, etc.) that improve the empowerment of the patient	Yes
Future plan for joint development with the Hospital of new technologies that facilitate patient communication with the hospital and vice versa. The hospital must be a priority partner in the development and implementation of these new solutions in remote control.	No
Coordination of care	Fulfilment Yes/no
¿ Does the bid establishes communication protocols between the arrhythmias unit and its implantation in, at least, two primary care centres of the catchment area of STPAU?	No
Patient activation	Fulfilment Yes/no
¿ Does the operational plan foresee to provide information and training to patients and relatives in different formats (on paper or digital) as well as the implementation of information systems of patient self-monitoring (according to page 18 of Annex I.2 of the PPT)?	No
Change management	Fulfilment Yes/no
Does the bid include a change management project that contemplates the different stages (implementation, exploitation and return of services) adapted to the characteristics of STPAU?	No
Continual training of medical and nursing staff	Fulfilment Yes/no
Does the bid include a specialised training for the medical staff? (according to the items listed in page 21 of the Annex II of the PPT).	No
Plan for the incorporation and return data from patients monitoring	Fulfilment Yes/no
It is a requirement for the remote-control information system of STPAU to register the collected data in a database that allows the integration of the clinical information of the patients obtained through both on-site and remote follow-ups and facilitates the export of this data in open format to other environments for exploitation by the STPAU hospital	Yes
The bidder must make available to the STPAU all data from patients generated and used during the execution of the contract in an open format jointly with information on the structure of the data delivered to the hospital and the documentation of the protocols developed during the execution of the contract.	No
3.5.3 Minimum requirement of information system: Integration, interoperability and usability	Fulfilment Yes/no
The bidder will have to fulfil the minimum requirements and demonstrate in their bid how they will guarantee the interoperability with all the relevant information systems of the hospital.	No
Minimum functional requirement of information system: Integration, interoperability and usability	Fulfilment Yes/no

Integration and extraction of existing relevant data from the databases of the hospital and the arrhythmia unit for the patient follow-up and the contract monitoring..	No
The implementation of the data analysis tools aimed to assist a better organisation of the remote queries, in order to enhance clinical team capacity to anticipate both technical and clinical issues.	No
Release of a dashboard aimed to monitor the activity and the level of achievement of the objectives set in the outcomes-based indicators.	No
Development of patient-oriented IT systems and provision of feedback via new technologies (website for the patient, mobile apps, etc) and improve patient's empowerment	Yes
Development of an app for patients and their relatives.	Yes
Registry of relevant information to measure indicators: date of the diagnostic, treatment indication date, level of evidence according to the standards and European clinical practice guidelines, etc.	Yes
Requirements for data processing	Fulfilment Yes/no
Capability to retrieve data for its exploitation through the hospital's business intelligence tools..	Yes
Registry of user access, which guarantee the record of the information required to be compliant with the regulations in force in every country about data protection	Yes
Generation of the necessary information to feed the public global information systems (such as Catalonia's Història Clínica Compartida (HC3)).	Yes
Minimum service provision	Fulfilment Yes/no
Technological support to RITMOCORE technological solutions deployed during the contract lifetime..	Yes
Documentation, training and knowledge transfer to the hospital IT team, in a way they can conduct the platform maintenance tasks (backup, monitoring, reboot process, ...).	No

3.4.2. Qualitative criteria dependent on a value judgement.

The bidder has presented a proposal that is restricted to the multi-manufacturer remote monitoring cloud technology solution with a billing model per user and use that does not comply with the requirements and components established in the RITMOCORE model and included in the tender documents.

3.5. Conclusions

In accordance with the assessment made and detailed in this document, the result of the technical evaluation (envelope B) of the bids received in lot 2 is as follows:

BIDDER	SCORE
BIOTRONIK SPAIN SA	72
MEDTRONIC IBERICA SA	62,53
ABBOT MEDICAL ESPAÑA SA	44,13

IMPLICITY	Not meeting the minimum requirements
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NOTE: It is simply a translation of the report in Spanish version.

