

INTERNATONAL CALL FOR BIDS
TABLETS
TECHNICAL APPENDIX

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1. Purpose

Ceibal calls for an international public bid for the acquisition of up to 75,000 tablets of 10" to be delivered to beneficiaries of the Plan,.

Products awardees shall deliver to Ceibal are:

1. Tablet with cover plus software image developed as per requirements of Ceibal and certified by Google, installed in the devices during the production process.
2. Spare parts.
3. Motherboards test-bench.
4. Documentation mentioned in section 2.2.

The bidder shall quote the development and the certification of an additional software image separately. Ceibal may request such quote because of changes in requirements or for reasons of evolution of Android versions. This image is not the one that will be included in the device during the manufacturing process, but **a maintenance software image**. See Appendix I: Quote Charts.

The bidder shall quote the spare parts in FOB Origin. At its discretion, the bidder may quote the spare parts CIF Montevideo (port or free zone).

The bid shall be submitted in accordance with provisions in section 2. BID. Ceibal Centre reserves the right to reject a bid which is not submitted in accordance with the quote and pricing scheme.

All products acquired by the bidder and/or the services provided by the bidder are governed by the confidentiality and data protection provisions specified in *Appendix III: Confidentiality and data protection*.

2. Bid.

A maximum of 2 models will be quoted. All submitted documentation shall be segmented and each product must be identified by the corresponding model in the technical and economic bids.

2.1. Submission

The technical offer will be presented segmented into the following folders.

1. Folder with specification of Factory background. It shall detail:
 - Factory that shall produce bided devices
 - General volume of production of the factory in the last 12 months
 - Volume of production of tablets of the factory in the last 12 months
 - List of clients
 - Average daily production of tablets
 - Slot time for initiation of production (acquisition of raw materials and preparation of production line)
2. Folder with background of the bidder. It shall detail:
 - Background in the provision of similar consumer electronic devices in the last 12 months
 - Background of educational projects in which it has taken part
 - Background of work with the factory that shall produce the devices indicated in 1., setting forth the time of joint work, projects and volume of devices
 - List of clients and corresponding contact details
3. Folder with all completed charts in section 6. REQUIREMENTS for each bided product.
4. Folder with the documentation requested in section 2.2 DOCUMENTATION for each bided tablet model.
5. Folder with warranty specifications in accordance with requirements of section 3. WARRANTY.
6. Folder with the specification of delivery terms in accordance with provisions in section 4. DELIVERY TERM AND CONDITIONS.
7. (Optional) Folder with the supplementary information that the bidder considers relevant to provide.

The financial offer will be submitted in a closed envelope with the following folder segmentation:

1. Folder with the complete charts of *Appendix I: Complete quote charts*.
2. (Optional) Folder with additional quote for warranty, in case of offering it.
3. (Optional) Folder with quotes additional to those specified above, if it may correspond.

2.2. Documentation

The information that must be included in the documentation of the technical bid for each bided model is the following:

DOCUMENTATION		
MANDATORY WITH THE OFFER		
2.2.1	TECHNICAL SPECIFICATIONS	Document with technical specifications of each tendered model.
2.2.2	TECHNICAL DOCUMENTATION ON DISASSEMBLING	Technical document specifying the complete disassembling procedure of the device.
2.2.3	PROVISION OF MOTHERBOARDS' COMPONENTS	Indicate if the bidder may provide the components of the motherboard that shall be detailed in the BOM (see requirements of documentation 2.2.10).
2.2.4	TECHNICAL DOCUMENTATION FOR INSTALLING AND CUSTOMIZING FIRMWARE AND OPERATING SYSTEM	Technical documentation which details the tools and procedures to customize and install the firmware and software image of the device. Specify the type of modifications that can be made at the Firmware Level. (See section 6: Requirements, as reference to the necessary customizations).
2.2.5	INSTALLATION OF OPERATING SYSTEM IN SEVERAL DEVICES	Procedure for the installation of the operating system in several devices simultaneously, for example, through a removable device or a PC. Alternatives easing the operation and minimizing the use of external resources shall be prioritized.
2.2.6	FREE SPACE	Specify the free space of internal storage for a device with a standard image certified by Google with the bided Android version.
2.2.7	SERIES NUMBER SETUP	Set up procedure and tool of the series number. Besides, it is desirable that the tool enabled to set up other parameters as MAC, IMEI, BT, etc.
2.2.8	AVAILABILITY OF OTA METHOD FOR UPDATES	Indicate if there is an OTA method to update the software images. If so, please specify it.
2.2.9	UPDATE THROUGH REMOVABLE DEVICE	Specify the procedure to update or reinstall the software image of the tablet through a removable device.

2.2.1 0	MOTHERBOARDS TEST BENCH	Document that details the characteristics of the motherboards test bench including pictures.
2.2.1 1	DEVELOPMENT OF SOFTWARE IMAGE	Specify the response time to requests and the iteration time of each development cycle. The interaction with the bidder and responses to request between 9 am and 5pm shall be required (Uruguay time). With regarding to dimensioning, see section 6. REQUIREMENTS.

Once awarded, the following documentation shall mandatorily be delivered with each shipping of devices, or with each change of hardware, as applicable:

DOCUMENTATION		
MANDATORY WITH EACH SHIPMENT and/or CHANGE OF HARDWARE, as applicable		
2.2.1 2	RoHS CERTIFICATE	RoHS standard compliance certificate. (Detailed documents with the protocols of applied tests are not required).
2.2.1 3	FCC CERTIFICATE	FCC STANDARD Compliance Certificate (Detailed documents with the protocols of applied tests are not required).
2.2.1 4	Bill of Materials (BOM):	List of all hardware components making the device, each one with an identification code, including the case and any other individual component which may be replaced in case of breakdown.
2.2.1 5	Schematic, layout and Board Assembly Information (BAI)	Schematic, layout and Board Assembly Information (BAI) of the Motherboards in digital format. This information will be submitted once the production gets started (or at least before each shipment) and every time the awardee reports a modification in the hardware.
2.2.1 6	EXPLODED VIEW DRAWING	Exploded View Drawing: technical drawing of the assembly and connection among all atomized parts of the equipment, each one identified with a code. This information will be delivered once the production gets started or at least before each shipment and every time the awardee report a modification in the hardware.
2.2.1	DATASHEETS	Datasheets of the main components of the devices, such as

7		battery, screen, camera, etc., and of the main components of the motherboard as integrated circuits and connectors.
2.2.1 8	MSDS OF BATTERIES	Material Safety Data Sheet (MSDS) of batteries.
2.2.1 9	CHARGER: RoHS CERTIFICATE	RoHS standard compliance certificate of the charger, in case it is not included in the RoHS Certificate of the device. (Detailed documents with the protocols of applied tests are not required).
2.2.2 0	CERTIFICATES EN60950	Certificate of compliance with regulation EN60950 (or its updates) Information technology equipment –Safety of the tablet and charger. (Detailed documents with the protocols of applied tests are not required).
2.2.2 1	CERTIFICATES IEC61000	Certificate of compliance of regulation IEC 61000, Electromagnetic compatibility (EMC), of tablet and charger. (Detailed documents with the protocols of applied tests are not required).
2.2.2 2	CERTIFICATES EN55022	Certificate of compliance of regulation EN55022, Information technology equipment Radio disturbance characteristics, of the tablet and the charger. (Detailed documents with the protocols of applied tests are not required).
2.2.2 3	DEVICES FORM	Information chart of the devices (see description in this section).
2.2.2 4	LOGISTICS FORM	Form of logistic information (see description in this section).

The information forms for each shipment are described below:

- DEVICES FORM (Requirement 2.2.23)
 - Part number
 - Series number
 - Pallet number / number of master box containing the device
 - MAC addresses of all network cards in the device (for example, WLAN, Ethernet, Bluetooth)
 - Part number and series number of the main components (at least motherboard, screen, touchscreen and battery)

- Identifier obtainable through software with the method specified by the bidder
- LOGISTICS FORM (Requirement 2.2.24)
 - Dimensions of individual box
 - Weight of individual box
 - Dimensions of master box
 - Weight of master box
 - Number of individual boxes per master box
 - Number of master boxes per pallet
 - Height of pallet

2.3. Samples

TEN identical samples of each tablet model bided with their chargers shall be delivered at the submission of the bid, regardless of the fact that Ceibal may already have samples delivered by the bidder in a different context (other bids, supplier records, expressions of interest, technological forecast, etc.).

An essential part of the technical assessment shall be made on these samples (see section 7. TECHNICAL ASSESSMENT CRITERIA). **The specifications and performance of the final product may not be inferior than in the sample. This aspect shall be verified in the quality controls that determine the acceptance of the product.**

In exceptional cases and when there were justified reasons at Ceibal's discretion, the bidder may defer the delivery of samples for a reasonable term to be assessed by Ceibal.

Once the bidding process is completed the awarded bidder shall provide TWENTY identical samples of the awarded model for the development of Ceibal's software image **within maximum 14 days as from the award**. The hardware of these samples should be the most similar possible to the final product. Moreover, the bidder shall also provide TWENTY other identical samples of the awarded model for training on repairs within 60 days as from the award. **These 40 samples are not part of the awarded batch and shall be borne by the supplier.**

Some tests to be performed with the samples may result in the destruction of these, and those samples which are not destroyed may be returned in different conditions from that in which these were delivered. The bidder will have a 4-week period as from the award to pick up submitted samples. If the previous term is completed and these have not been picked up, Ceibal Centre may freely dispose of them, and the bidder shall not be entitled to any claim whatsoever.

3. Warranty

The following warranty conditions are mandatory:

3.1 Dead on Arrival

Warranty for the replacement of devices with DOA flaws for a period of 90 days as from the arrival: 10 TABLETS every 1000.

3.2 System failure

Ceibal may request the awardee the necessary replacement parts or the replacement of the devices in case of detecting a system failure attributable to the design or manufacturing of the devices. Costs derived from the execution of this warranty shall be exclusively borne by the supplier.

If the bidder presents **additional** warranties, it shall detail them in the technical proposal. If the additional warranty conditions proposed by the bidder imply additional costs, these shall be presented in the economic offer, quoted independently.

The bidder shall guarantee that the products provided by virtue of the agreement are new, complete, unused and free from flaws attributable to the design, the materials, the manufacturing, the storage conditions (appropriate packing, temperature and humidity), transfer or any act or omission of the bidder that could appear in the regular use of the products in the conditions existing in the country.

4. Term and Conditions of the Delivery

4.1 Terms of Delivery

The desirable maximum terms of delivery are as follow:

- ETA of the 50% of the awarded batch: 120 calendar days after the notification of the award resolution.
- ETA of the remaining 50% of the awarded batch; within 30 calendar days after the delivery of the first 50% or April 15th, 2020, whatever happens first.

The delivery terms include the following benchmarks:

1. Development of software image. Once awarded, the bidder shall deliver samples to develop, together with Ceibal, the software image of the device. The development takes a minimum term of four weeks once the samples are available. See section 2.3. SAMPLES. Ceibal's technicians may be able to attend the factory to reduce the development times.
2. Certification of developed software image. The software image that will be installed in factory must be certified by Google.
3. Definition of hardware specifications, in case the final product presents minor changes of components, design, etc., regarding the sample presented. **As a condition to start the production, Ceibal must validate the equivalence of the final product with the samples previously presented.**
4. Production
 - 4.1. Final Product:
 - 4.1.1. Ceibal Centre shall come to an agreement with the awardee regarding the production schedule of the device. The awardee shall send Ceibal 10 golden samples of each production batch (see Section 5. QUALITY CONTROLS.)
 - 4.1.2. Quality Control in origin (see section 5. QUALITY CONTROLS).
 - 4.1.3. Verification of availability of all documentation requested of the product.
 - 4.2. Spare Parts:
 - 4.2.1. Ceibal Centre will agree with the awardee the number of spare parts the latter shall provide and the shipping method.
5. Delivery of documentation requested in the section as mandatory with each shipment and/or change of hardware in section 2.2 DOCUMENTATION.

6. Shipment and Quality Control when arriving to Uruguay (see section 5. QUALITY CONTROLS).

If it is not able to meet this desirable maximum terms, the bidder shall specify the delivery terms in its bid. **The same delivery terms shall apply for the final product (tablet + accessories) and for spare parts.**

4.2 Conditions of Delivery

All devices sent to Ceibal must be made up with the same components. If this cannot be met, the awardee shall send written notice to Ceibal at least 60 days in advance and Ceibal shall validate the new BOM.

The awardee must deliver the devices in accordance with the following specifications:

- Each pallet shall be labeled with the following information:
 - Model of the device / batch / shipment (**pallets containing more than one device model shall not be accepted**)
 - Pallet number/ total number of pallets of the batch
 - Number of master boxes in pallet
 - List of master boxes of each pallet
- Each master box shall be labeled with the following information:
 - Device model / batch / shipment
 - Number of master box / total number of master boxes of the batch
 - Series number (barcode and alphanumerical) of each device in the master box
 - Description of the product
- Each individual box shall be labeled with the following information:
 - Device model
 - Series number (barcode and alphanumerical) of the device

The design of each individual box and each master box must be customized according to the specifications to be agreed between Ceibal Centre and the awardee.

Ceibal Centre may request the addition of a printed brochure with recommendations of use and care of the device in each individual box.

5. Quality Controls

Ceibal Centre will perform three quality controls to the awarded products which may partially or totally reject the inspected batches. These three inspections are:

1. inspection at origin before shipment
2. validation of golden samples the awardee shall send to be assessed in Ceibal Centre (10 devices for each produced batch, sent through air transportation at the cost of the awardee)
3. Final inspection in Ceibal after receiving the shipment.

Ceibal Centre or a representative appointed by it may be able to visit the factory before and/or during the production of the batches for Ceibal, prior arrangement between the parties and regardless of the quality controls. Ceibal Centre may also request the visit to the manufacturer to work jointly during the development process of the software image.

6. Requirements

6.1. Tablets 10''

HARDWARE					
MANDATORY REQUIREMENTS			COMPLIES		SPECIFICATIONS AND OBSERVATIONS
			YES	NO	
6.1.1	PROCESSOR	Minimum: Quad Core.64 bits.			
6.1.2	RAM MEMORY	Minimum: 2GB DDR3.			
6.1.3	INTERNAL STORAGE	Minimum: 16GB.			
6.1.4	SCREEN	Size 10". Minimum resolution: 1280x800p.			
6.1.5	TOUCHSCREEN	P+G technology or other technology that does not imply security risks for the user. See section 7. Assessment Criteria.			
6.1.6	CONNECTIVITY	Minimum Wi-Fi: Network card 802.11 a/b/g/n 1x1.			
		Bluetooth			

6.1.7	MULTIMEDIA	Built-in microphone and speaker/s.			
		3.5mm Jack connector for headphone output.			
		Front camera: minimum resolution 0.3MP.			
		Rear camera: minimum resolution 2MP.			
6.1.8	PORTS	MicroSD card reader.			
		Video output (mini HDMI or micro HDMI)			
6.1.9	ADJUSTMENT AND REMOVAL OF BATTERY	Battery should not be adhered to any element of the device, except for a support destined to such purposes.			
6.1.1 0	UNWELDED PERIPHERALS	Peripherals (screen, touchscreen, speakers, battery, antenna, etc.) UNWELDED from motherboard. Peripherals must be connected to the motherboard through removable connectors.			
6.1.1 1	REINFORCED MICRO USB CONNECTOR	Reinforced structure of metallic body of micro USB connectors, for instance, through spot welding or through its constitutive design.			
6.1.1 2	HARDWARE TEST	Software or firmware tool that enables the verification of the built-in peripherals and ports of the device. These tools must be available in Spanish and/or English languages. For more details of the desired characteristics see section 7. Technical Assessment Criteria.			
OPTIONAL REQUIREMENTS					
6.1.1 3	TYPE OF CHARGE CONNECTOR	Barrel connector. Must be quoted separately.			
		Type C micro USB charge connector. Must be quoted separately.			
6.1.1 4	CAMERAS	Front and rear camera 2MP/5MP resolution respectively. Must be quoted separately.			

SOFTWARE		
MANDATORY REQUIREMENTS	COMPLIES	SPECIFICATIONS

			YES	NO	AND OBSERVATIONS
6.1.15	OPERATING SYSTEM	Android Pie (9) or following version.			
6.1.16	LANGUAGE	Operating system and all its interfaces and setting options in Spanish language.			
6.1.17	INSTALLATION TOOLS	The bidder shall have to deliver the tools detailed in all requirements of documentation 2.2.4 and 2.2.5 for the installation of the OS in several devices.			
6.1.18	DISK IMAGE	The Tablet will be delivered to the final user with a software image developed by Ceibal, which shall be certified by Google.			
6.1.19	AVAILABILITY OF IMAGE WITH PRIVILEGES OF ROOT OR USER DEBUG	The bidder shall deliver a software image of the device that includes root or user debug privileges.			
SOFTWARE IMAGE – ANDROID SETTINGS					
6.1.20	LANGUAGE AND KEYBOARD	Spanish (Spain)			
6.1.21	LOCK SCREEN	5 minutes			
6.1.22	DATE AND TIME	Time Zone GTM-03:00, Montevideo, Uruguay			
6.1.23	WIFI	By default			
6.1.24	BROWSER	Default screen: www.ceibal.edu.uy			
6.1.25	SECURITY	Disable screen lock.			
SOFTWARE IMAGE- OTHER SETTINGS					
6.1.26	BOOT	Include image in booting.			
		Include booting animation			
6.1.27	WALLPAPER	Set up Ceibal’s wallpaper			
6.1.28	REBOOT	Add the option of restart by pressing the power button.			
6.1.29	GOOGLE APPS	Include Google Apps which are mandatory in Uruguay.			

SOFTWARE IMAGE- INSTALLED APPS					
6.1.30	APPS	Install apps of the system specified by Ceibal			
SOFTWARE IMAGE –OTHER REQUIREMENTS					
6.1.31	PRIVILEGES OF THE SYSTEM	Ceibal will be able to sign applications so as these have system privileges. This may be carried out by the user if Ceibal requests so, but it would be appreciated if Ceibal may perform it. For these purposes, indicate if it is possible to deliver the Key Platform of the system or the access to an IT system that enables the signature of application autonomously by Ceibal Centre.			

LOGISTICS					
MANDATORY REQUIREMENTS			COMPLIES		SPECIFICATIONS AND OBSERVATIONS
			YES	NO	
6.1.3 2	CEIBAL LOGOTYPE AND MODEL TRADING NAME	Ceibal shall specify the logo and trading name of the model, which shall be printed on the rear housing through laser, silkscreen or another printing method, labels SHALL NOT be accepted. Such printing must comply with the following durability criteria:			
		Clearly visible in the rear housing.			
		Indelible if applying alcohol.			
		Non-removable when sticking and unsticking sealing tape.			
6.1.3 3	SERIES NUMBER AND BARCODE	Unique series number (SN) and its corresponding barcode printed on rear housing though laser, silkscreen or another printing method. The same regulations provided for requirement 6.1.32 shall apply.			

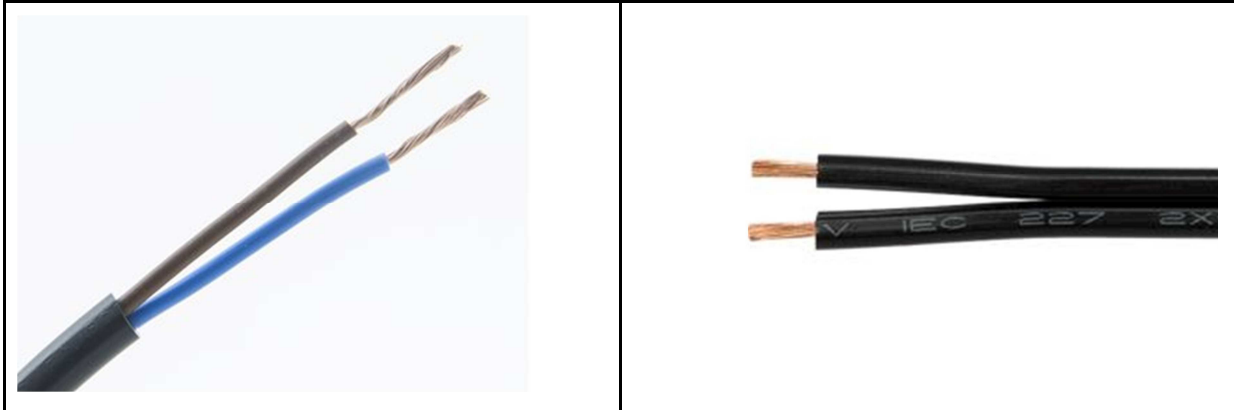
		The barcode needs to have enough contrast so as to be read by barcode readers. Labels shall NOT be accepted.			
		The series number must be obtainable through software by means of a procedure to be determined by the bidder.			
		The series number obtainable through software may be set through the tool and procedure to be specified by the bidder. This requirement is necessary so that the series number printed on the housing and the series number obtained through software match in a machine after a repair that required a change of motherboard (See requirement 2.2.7 SERIES NUMBER SETUP)			
6.1.3	IDENTIFICATION 4 OF PARTS	The following components shall have a barcode or QR code that allows to scan its part number (applies both for parts included in the device as well as for individual spare parts):			
4		Battery			
		Motherboard and Screen. These shall also have a similar label or laser or silkscreen (with scannable code) engraving with the series number information.			
		Touchscreen			
6.1.3	ECO FRIENDLY 5 PACKING	The design of the packing must be ecofriendly, in biodegradable cardboard and nylon.			

CHARGER		
MANDATORY REQUIREMENTS	COMPLIES	SPECIFICATIONS

			YES	NO	AND OBSERVATIONS
6.1.36	TYPE OF CONNECTOR	Europlug (CEE 7/16).			
6.1.37	ISOLATION IN 220V JACK PINES	The pine that connects to the power plug shall have isolation on its base.			
6.1.38	SEALED CHARGER	The charger may only be opened through a destructive process. It may not have screws that enable the user to open it.			
6.1.39	STRENGTH FOR PINE EXTRACTION	Pines may only be removed from the body of the charger if a pressure over 40 kgf is applied.			
6.1.40	CEIBAL LOGOTYPE	Ceibal shall specify the logotype and trading name of the model. Apart from this information, the production batch and the electric specifications of the charger shall be printed in the housing through laser, silkscreen or other printing method. Labels will not be accepted. Same considerations as for 6.1.32.			
6.1.41	REINFORCED DC CABLE	DC CABLE must be reinforced. See description below.			

Description Requirement 6.1.41: REINFORCED DC CABLE:

Reinforced cable (meets mandatory requirement)	NON reinforced cable (does NOT meet the mandatory requirement)
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TABLET CERTIFICATIONS					
MANDATORY REQUIREMENTS			COMPLIES		SPECIFICATIONS AND OBSERVATIONS
			YES	NO	
6.1.42	Restriction of Hazardous Substances	Document in proof of the RoHS certification of the device and all its components shall be requested as acceptance requirement for production batches.			
6.1.43	Federal Communications Commission Declaration of Conformity	Document in proof of the FCC certification shall be requested as acceptance requirement for production batches.			
6.1.44	Information technology equipment - Safety	Document in proof of compliance with regulation EN60950 (or its corresponding updates) will be requested as acceptance requirement for production batches.			
6.1.45	Electromagnetic compatibility (EMC)	Document in proof of compliance with regulation IEC61000 (or its corresponding updates) will be requested as acceptance requirement for production batches.			
6.1.46	Information technology equipment. Radio	Document in proof of compliance with regulation EN55022 (or its corresponding updates) will be requested as acceptance			

	disturbance characteristics.	requirement for production batches.			
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CHARGERS CERTIFICATION					
MANDATORY REQUIREMENTS			COMPLIES		SPECIFICATIONS AND OBSERVATIONS
			YES	NO	
6.1.4 7	Restriction of Hazardous Substances	Document in proof of the RoHS certification of the charger will be requested, in case the charger is not included in the RoHS certification of the device, as acceptance requirement for production batches.			
6.1.4 8	Information technology equipment - Safety	Document in proof of compliance with regulation EN60950 (or its corresponding updates) will be requested as acceptance requirement for production batches.			
6.1.4 9	Electromagnetic compatibility (EMC)	Document in proof of compliance with regulation IEC61000 (or its corresponding updates) will be requested as acceptance requirement for production batches.			
6.1.5 0	Information technology equipment. Radio disturbance characteristics.	Document in proof of compliance with regulation EN55022 will be requested as acceptance requirement for production batches.			

COVER					
MANDATORY REQUIREMENTS			COMPLIES		SPECIFICATIONS AND OBSERVATIONS
			YES	NO	
PROTECTION					
6.1.5	COVER	The product must include a cover in			

1		accordance with specifications of Appendix I: Cover.		
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SPARE PARTS		
Spare part	Estimated percentage of manufacturer faults	Observations (*)
Screen		
Battery		
Motherboard. All motherboards sent as Spare Parts shall be delivered with the latest version of the firmware specified by Ceibal and the MAC addresses loaded at origin.		
Touchscreen		
Charger		
...		
...		
...		
...		

(*). Specify if the origin spare part includes other parts of the device. For example, motherboard with/without integrated peripheral devices, etc. In the case of the boards, indicate if the spare parts contain accessories as: diverters, pads, panels, insulation or similar.

Motherboards test bench – Mandatory quote

B TEST BENCH OF MOTHERBOARDS		
MANDATORY REQUIREMENTS	COMPLIANCE	SPECIFICATIONS AND

			YES	NO	OBSERVATIONS
6.2.1	TEST BENCH OF MOTHERBOARDS	This device may be connected to the motherboard and allows the diagnosis of the following peripherals: Screen, touchscreen, battery and charger, Wi-Fi, audio and cameras.			
		Accessories: the test bench shall be delivered with all the accessories that are necessary for the connection of peripherals.			

7. Technical Assessment Criteria

The assessment of the technical offer includes the following criteria for the assessment of the devices:

- Assessment of background
- Assessment of compliance with requirements
- Assessment of development time (item 2.2.11)
- Assessment of samples:
 - Assessment of performances
 - Assessment of user experience
 - Assessment of maintenance

7.1. Background assessment

The following shall be assessed:

- Background of the factory. Ceibal may request a visit to the factory during the bid assessment process.
- Background of the bidder.

7.2. Compliance with mandatory requirements

All offers that do not meet the mandatory requirements set forth in the corresponding category of section 6. REQUIREMENTS shall be dismissed.

7.3. Assessment of development times

Response and iteration times shall be assessed to obtain versions during the software image development process.

7.4. Assessment of samples

7.4.1 Performance and experience of user

The hardware performance and the global use experience of the device shall be assessed. The assessed aspects are camera, definition of screen, audio, video, Wi-Fi (throughput and roaming), response of the device to the interaction with the user, autonomy of the device regarding battery, reading/writing in memory, CPU performance, among others.

7.4.2 Maintenance

The maintenance is an essential aspect in the life cycle of the device, having important consequences in the effective procedures of repair and its associated costs, and in the availability timings of the device when in hands of the final user.

The maintenance assessment analyses the adaptation of the device to the user and to the characteristics of the support device offered by Ceibal, and the quality of the documentation associated to the maintenance that is required in section 2.2 DOCUMENTATION, for instance, description of the disassembling procedures, specification of compatibility of motherboards if any, and the procedures for the installation and setup of the firmware and operating system. Besides, the maintenance of the devices also requires the submission of additional documentation, which will be requested AT the moment of production of devices (BOM, Exploded-view drawing, schematic, etc.)

As overall characteristics, we are looking for a robust and easy to repair device, both regarding the time the repairing takes and the technical complexity.

The following are some of the most relevant aspects to be assessed:

Hardware test

The adaptation of the presented software or firmware tool to the operation procedures of Ceibal shall also be assessed (see mandatory requirement 6.1.12 *Hardware Test*).

Some of the expected characteristics of the tool are described below, **by way of illustration**:

- Features:
 - Sequential mode where all Tests are executed
 - Manual mode which allows the execution of a specific Test
 - By the end of each Test it allows the technician to decide if the result is acceptable or not
 - It allows to skip Test or go back to previous one manually
 - Have a LOG with the results of all Tests.
- Tests:
 - Touchscreen Test: It allows the operational verification as well as operational range and sensitivity to touch over the whole surface of the touchscreen.
 - Bluetooth Test: Activates Bluetooth and recognizes nearby devices
 - Wi-Fi Test: Activates Wi-Fi, recognizes nearby access points and connects to it
 - Display Test: It shows the sequence of colors and patterns in full screen to detect image flaws
 - Audio Test: It allows the verification of the following components:
 - Speakers
 - Headphones
 - Microphone
 - Backlight Test: It shows a variation in the brightness of the screen
 - Buttons Test: It enables to verify the operation of the power and volume buttons
 - Camera Test: It activates the camera(s) allowing to take and save a picture
 - Battery Test: It displays the relevant information to get to know the health of the Battery. Some parameters are:
 - Tension
 - Level and status of charge or discharge
 - Current capacity and design capacity
 - Current flow from and to the battery
 - Test of SD card and USB ports: Verifies correct read/write in removable media
 - Video Output Test: It generates video patterns through the HDMI port to verify its operation.
 - Storage Test: Verifies the correct read and write in the Internal Disk

- Information of the device: Displays manufacturing information of the device, such as:
 - Name of the device
 - Firmware version
 - Series number
- Flash Test (if applicable to model): It enables the activation of the LED used as camera flash

Assembly of fragile modules

Easy disassembling of fragile modules, for example, screen, internal battery, antenna, etc. to minimize the breaking risk. It is desirable that the assembly of these modules is not made with adhesive materials.

Assembly and disassembly complexity

Design that enables a simple assembly and disassembly process, with minimum risks of the components which are removed and replaced. For instance, the following considerations contribute to making the process easier:

- Presence of guides for the conduction of internal wires, avoiding the use of adhesive tapes.
- Little diversity and easily identifiable screws, for instance, through color codes and/or printing of the size of the screw in PCB.
- Modules: design that enables the removal and replacement of modules with no need of removing other modules.

Screw Anchor

A robust screw anchor that support the wear of multiple removals.

Security

Design that prioritizes the security of the user. For example, security mechanisms if the temperature of the battery is exceeded, protections to avoid the scattering of splinters if the screen or touchscreen is broken.

Length of internal wires

Appropriate length of internal wires so as to avoid unnecessary tensions in the connection to the motherboard or excessive dispersion of wires in the interior of the device.

External Connectors:

Users will have access to the external connectors, so it is important for such connectors to be robust enough to resist the external pressure. Some aspects to be considered are:

- Connectors that are totally contained in the interior of the device to avoid more pressure than needed, or even reinforced by the plastic of the housing or supports for such purpose.
- Connectors in independent modules which are connected to the motherboard, so in case of break of a connector, it is not necessary to remove and replace the whole motherboard.
- Small SMD connectors such as micro USB, the audio connectors, the micro HDMI, etc., with four anchor spots in the Motherboard.
- Assembled connectors in board-cut display that makes contact with the motherboard on the rear part of the connector, which provides an additional support spot to the connector.
- Reversible connectors, such as micro USB type C (see optional requirements in Appendix I. Requirements)

External Buttons

The external buttons are prone to breaking, so it is desirable that these are not mounted on the motherboard but onto a separate module.

On the other hand, it is desirable that the external plastic pieces, as the power and volume buttons, remain mounted on the plastic housing of the device so that these do not get lost during the repairs.

Internal Assembly

To avoid breaks during the repair process of the tablets, it is desirable:

- Speakers not mounted on removable parts of the housing. This avoids tensions of wires when opening the devices.
- Motherboard components separate from the opening points of the device, so that when using tools to open the device there is no risk of breaking the components.
- Sealing of the PCB which is not welded to the board so that it can be removed during the repairs.

Cards

Some tablets present removable plastic pieces in the housing to hide cards (SIM, microSD, etc.) prone to breaking or getting lost, what generates a direct impact on the operation of the device. It is desirable that the device does not include this kind of pieces.

8. Appendix I: Cover

Material

Silicone.

Color

Black.

Connector holes

The cut-out of the holes destined to the Tablet lateral connectors (micro USB, audio, HDMI, etc.) must be appropriate to make sure that all the accessories and the external wires fit and are connected in a reliable way.



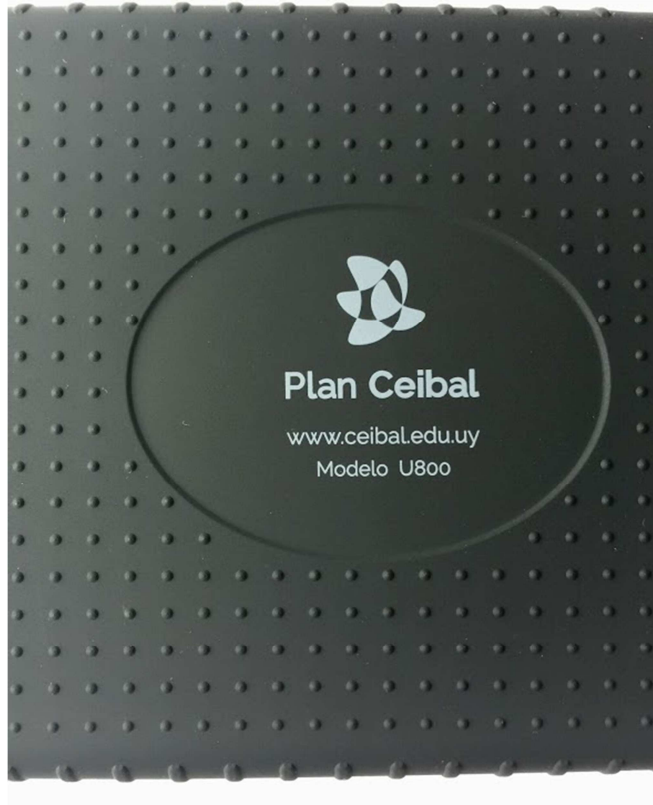
Connector Readers

As well as the logo on the rear part, it shall be required to include the indication of the inscription corresponding to the frequent use connectors (at least the charging USB connector) and of the buttons.



Logo and Model Trading Name

The cover must have the logo of Ceibal on the rear part together with the identification of the model of the device. Ceibal shall define this identification, which can be the name of the model specified by the provider, a trading name selected by Ceibal, or both. Below there is an example of a cover in a model currently existing for Ceibal tablets.



Edges

1- Avoiding the contact surface

The edges of the front frame are thickened to reduce the contact surface of the screen-touchscreen set in case of impacts or horizontal drop.



2- Retention of Touchscreen

The internal edges must cover as much as possible over the surface touchscreen/screen. The cover would therefore be more adjusted, avoiding part of the detachment of the touchscreen or screen or the release of fragments thereof in case of breaking.



Corners

The cover must have thickened corners, so as to provide greater drop resistance in these areas of the device which are the ones that get affected most frequently.



Texturization of the rear part

The rear part of the cover must include a texturization that hinders the slipping of the device.



9. Appendix II: Quote charts

TABLET WITH COVER + CERTIFIED SOFTWARE IMAGE				
PRODUCT: TABLET WITH COVER + CERTIFIED SOFTWARE IMAGE	TABLET MODEL	VOLUME	UNIT PRICE, US\$ CIF MVD	OBSERVATIONS
		Up to 10.000		
		between 10.001 and 50.000		
		between 50.001 and 70.000		
		more than 70.000		
OPTIONAL REQUIREMENTS		VOLUME	UNIT PRICE, US\$ CIF MVD	OBSERVATIONS
6.1.13	Barrel charging connector	Up to 10.000		
		between 10.001 and 50.000		
		between 50.001 and 70.000		
		more than 70.000		
	Charging connector micro USB Type-C	Up to 10.000		
		between 10.001 and 50.000		
		between 50.001 are 70.000		
		more than 70.000		
6.1.14	Front and rear camera 2MP/5MP resolution	Up to 10.000		
		between 10.001 and 50.000		

	respectively	between 50.001 are 70.000		
		more than 70.000		

MOTHERBOARDS TEST BENCH (CIF MVD) – MANDATORY QUOTE				
6.2.1	Motherboards test bench	Up to 10		
		between 10 and 30		
		more than 30		

DEVELOPMENT AND CERTIFICATION OF MAINTENANCE SOFTWARE IMAGE – MANDATORY QUOTE	
PRICE US\$	

SPARE PARTS – MANDATORY QUOTE		
SPARE PARTS	UNIT PRICE, US\$ FOB MVD	MINIMUM BATCH
Screen		
Battery		
Motherboard. All motherboards sent as spare parts shall be delivered with the firmware version specified by Ceibal and the MAC addresses loaded at origin.		
Touchscreen		
Charger		

...		
...		
...		

SPARE PARTS – OPTIONAL QUOTE

This spare part quote method is optional. It adds value to the spare part service of Ceibal as it adapts to the evolution of the demand of spare parts. In case of being awarded, the operation shall have the following characteristics:

1. Ceibal Centre shall acquire the amount of spare parts estimate to cover the first 6 months of operation.
2. According to the evolution of the demands, which shall be informed monthly, Ceibal Centre will buy the amount of Spare Parts considered sufficient to cover the following 3 months of operations. This batch should be delivered in a Port or Free Zone of Montevideo, in a maximum term of 45 days.
3. Step 2 will be repeated depending on the evolution of the demand. Once operations are started, a frequency of request of parts every 3 months approximately is expected.

SPARE PART	UNIT PRICE, US\$, CIF MVD	MINIMUM BATCH
Screen		
Battery		
Motherboard. All motherboards sent as spare parts shall be delivered with the firmware version specified by Ceibal and the MAC addresses loaded at origin.		
Touchscreen		
Charger		
...		
...		
...		

8. 10. APPENDIX III: Confidentiality and data protection

The awarded company is expressly obliged to keep under strict confidentiality all the information processed or used while its bond with Ceibal lasts. Confidential information includes, among other things, for instance, the following: all commercial strategies, plans and procedures, proprietary information, software, tools, process,,,,, images, personal data, methodology, commercial information and secrets, and other Ceibal's information and material, as well as that of the students, beneficiaries, teachers, study centers, that may be obtained by the Company from any source or that may be developed as a consequence of the agreement hereof.

The Company agrees to treat the personal data it may have access to in accordance with Law number 18.331 of August 11th, 2008, and Decree number 414/2009 of August 31st, 2009, only in the rendering and within the frame of the hired service, and shall not be entitled to use it for a different purpose nor for its own benefit, whether for free or for valuable consideration, nor assign, communicate or transfer it to third parties, unless previous authorization by Ceibal Centre.

In no case shall the access to personal data be interpreted as an assignment or authorization for its free use by the Company.

The Company agrees to adopt the necessary security measures so as to guarantee the security and confidentiality of the personal data and avoid the adulteration, loss, and non-authorized search or treatment, as well as to identify information leaks.

If personal data is hosted, even temporarily, outside the national territory, the Company must secure that the importer is located in countries that comply with appropriate levels as per European standards of data protection, according to the General Regulations on Data Protection 2016/679 of the European Parliament and of the Council, and its amendments, elaborative and supplementary regulations. Otherwise, the Company agrees to seek the consent of the data's holder to be able to make the transfer to a non-adequate territory, or to make sure the importer complies with the regulations of the Privacy Shield, has subscribed standard contractual clauses with the exporter or has registered the Code of Conduct, with the corresponding authorization for international data transfer obtained from the Personal Data Control and Regulatory Entity, in these last two cases.

Upon termination of this agreement, bidders agree to return or delete in all its systems and physical and logic files, whether own or hired to third parties, all accessed personal data obtained or treated by virtue of this agreement, as well as the associated metadata, if applicable, and without prejudice to the particular conditions of each service which shall be considered by Ceibal Center in the specific case for the performance of this obligation.

Personal data refers to all information of any kind making reference to natural persons or legal entities, determined or to be determined, including any kind of numeric, alphabetic, graphic, photographic,

acoustic or any other type of information that refers directly or indirectly to them, as per dispositions of Article 4, Law no. 18.331 and articles 1 and 4 of Decree no. 414/009.