

PUBLIC INTERNATIONAL TENDER

TABLETS CEIBAL 2019

TECHNICAL ANNEX

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1. Aim

Centro Ceibal calls for public international tender for the acquisition of up to 100,000 8" tablets to deliver to *Plan Ceibal* beneficiaries.

Each bidder may offer a maximum of 2 models.

2. Products

The products that the awardees must deliver to Ceibal are the following:

1. Tablet with cover
2. Image of software developed according to the requirements of Ceibal and certified by Google, installed on the devices during the production process.
3. Manual configurations: enabling of unknown origins and configuration of the Ceibal launcher as the device's default launcher.
4. Spare parts.
5. Motherboards test bench (Optional award).
6. Documentation.

The bidder must quote separately the development and certification of an additional software image, which Ceibal may request for changes in requirements or evolution of the Android versions. This image is not the one that will be included in the device at the factory, but an **image of maintenance software**. See Annex VIII: Price tables.

For the development of the software image, it is recommended the availability of technicians from the awarded bidder to visit *Centro Ceibal*, or to receive technicians from *Centro Ceibal* in the factory, in order to optimize the timing specified in the work plan (*see Annex IV: Project Plan*).

All products purchased from the bidder and / or all the services provided by the bidder are governed by the confidentiality and data protection considerations specified in *Annex VII: Confidentiality and data protection*.

3. Offer

3.1. Presentation

The technical offer will be presented segmented in the following folders:

1. Folder with factory background specification. It should be detailed:
 - The factory that will produce the offered devices.
 - General production volume of the factory in the last 36 months.
 - Factory production volume of tablets in the last 36 months.
 - List of customers.
 - Daily average of tablet production.
 - Slot time for the start of production of a standard Android tablet (acquisition of raw material and production line preparation).
2. Folder with the bidder's background. It should be detailed:
 - Provision background of tablets or similar consumer electronic devices, indicating sales volume in the last 36 months.
 - Background of educational projects in which it has participated, including sales volume, in the last 36 months.
 - Work background of the factory that will produce the devices indicated in 1, detailing work time together, projects and volume of devices.
 - List of clients and respective contacts.
3. Folder with the tables of Annex I: Complete requirements.
4. Folder with the table of Annex III: Complete spare parts.
5. Folder with the documentation requested as mandatory with the offer in section 3.2 Documentation for each device model offered. The inclusion of documentation items 3.2.11 to 3.2.21, requested as mandatory with each shipment, will be valued in the maintenance evaluation if they are delivered at the time of opening of bids.
6. Folder with the project plan as specified in Annex IV: Project Plan.
7. (Optional) Folder with warranty specifications additional to those described in section 4. *Warranty*.
8. (Optional) Folder with specification of delivery terms in case of non-compliance with the desirable delivery periods specified in section 5. *Delivery terms and conditions*.
9. (Optional) Folder with the complementary technical information that the bidder considers pertinent to provide.

The economic offer will be presented segmented in the following folders, **in a sealed envelope**:

1. Folder with the tables of Annex VIII: Complete price tables.
2. (Optional) Folder with the additional warranty quote, if offered.
3. (Optional) Folder with additional quotes to those specified above, if applicable.

3.2. Documentation

The documentation that must be included in the documentation folder of the technical offer, for each model offered, is the following:

DOCUMENTATION		
MANDATORY WITH THE OFFER		
3.2.1	TECHNICAL SPECIFICATIONS	Technical specifications of each model offered.
3.2.2	TECHNICAL DOCUMENTATION OF DISASSEMBLY	Technical document detailing the procedure of complete disassembly of the device.
3.2.3	COMPATIBILITY OF MOTHERBOARDS	Indicate if motherboard compatibility exists between the models offered, in case more than one is offered.
3.2.4	TECHNICAL DOCUMENTATION TO INSTALL AND CUSTOMIZE FIRMWARE AND OPERATING SYSTEM	Technical document detailing tool and procedures to customize and install the device's firmware and operating system. It should also specify what kind of customizations can be made (see Annex I: Requirements as a reference of the necessary customizations).
3.2.5	INSTALLATION OF OPERATING SYSTEM IN VARIOUS EQUIPMENTS	Technical document detailing the tool and procedure for installing the operating system on several computers simultaneously, for example, through a removable device or a PC. Alternatives that facilitate the operation and minimize the use of external resources are preferred.
3.2.6	FREE SPACE	Specify free space in internal storage for a device with a standard image certified by Google with the version of Android offered.
3.2.7	CONFIGURATION OF SERIAL NUMBER	Procedure and tool for configuring the serial number.
3.2.8	AVAILABILITY OF THE OTA METHOD FOR UPDATES	Indicate if there is an OTA (Over The Air) method for updating software images. If it exists, specify it.
3.2.9	UPDATES BY REMOVABLE MEANS	Specify procedure so that the end user can update or reinstall the tablet software image using removable media.
3.2.10	PROJECT PLAN	Document detailing the project plan, as described in Annex IV: Project plan.

The documentation that must be submitted as a validation requirement for shipments is as follows (the inclusion of part of this documentation will be assessed in the maintenance evaluation, see section 3.1 *Presentation and contribution form*):

DOCUMENTATION		
MANDATORY WITH EACH SHIPPING		
3.2.11	RoHS CERTIFICATE	Certificate of compliance with the RoHS standard. (It is NOT required to present the detailed documents with the test protocols applied).
3.2.12	FCC CERTIFICATE	Certificate of compliance with the FCC standard. (It is NOT required to present the detailed documents with the test protocols applied).
3.2.13	BILL OF MATERIALS (BOM)	Form with all the hardware components that make up the device, each with a code that identifies it, including the case and any other individual component that can be replaced in case of failure.
3.2.14	SCHEMATICS, LAYOUT and BAI	Schematics, layout and board assembly information (BAI) of the motherboard in digital format. This information will be delivered once the production begins (or at the most prior to the first shipment) and each time the successful bidder notifies a hardware change.
3.2.15	EXPLODED VIEW DRAWING	Technical drawing of the assembly and relation between all the atomized parts of the equipment, each one identified with a code. This information will be delivered once the production begins (or at the most prior to the first shipment) and each time the successful bidder notifies a hardware change.
3.2.16	DATA SHEETS	Data sheets of main components of the device such as battery, screen, camera, etc., and main components of the motherboard as integrated circuits and connectors.
3.2.17	MSDS BATTERIES	Material Safety Data Sheet (MSDS) of batteries.
3.2.18	CHARGER: RoHS CERTIFICATE	Certificate of compliance with the RoHS standard of the charger, in case it is not included in the RoHS certificate of the device. (It is NOT required to present the detailed documents with the test protocols applied).
3.2.19	CHARGER: CERTIFICATE EN60950	Certificate of compliance with standard EN60950, Information technology equipment - Safety, of the loader. (It is NOT required to present the detailed documents with the test protocols applied).
3.2.20	CHARGER: IEC61000 CERTIFICATE	Certificate of compliance with IEC 61000 standard, Electromagnetic compatibility (EMC), of the charger. (It is NOT required to present the detailed documents with the test protocols applied).
3.2.21	CHARGER: CERTIFICATE EN55022	Certificate of compliance with standard EN55022, Information technology equipment Radio disturbance characteristics, of the charger. (It is NOT required to present the detailed documents with the test protocols applied).
3.2.22	DEVICES SHEET	Information sheet of devices (see description in this section).
3.2.23	LOGISTICS SHEET	Logistical information sheet (see description in this section).

The information sheets required with each shipment are described below:

- 3.2.22. DEVICES SHEET
 - Part number.
 - Serial number.

- Number of pallet / number of master box in which the device is sent.
 - MAC addresses of all the network cards that the device has.
 - Part number and serial number of the main components (minimum: motherboard, display and battery).
 - Identifier obtainable by software with the method specified by the bidder.
 - IMEI (if applicable).
- 3.2.23 LOGISTICS SHEET
 - Individual box measures.
 - Individual box weight.
 - Master box measures.
 - Master box weight.
 - Number of individual boxes per master box.
 - Number of master boxes per pallet.
 - Pallet height.

3.3. Samples

At the moment of the presentation of the offers it is obligatory to deliver **TEN** identical samples of each tablet model offered (with or without cover) **with their corresponding chargers**. In exceptional cases, Ceibal may authorize the bidder to defer the delivery of samples for a reasonable period that Ceibal will evaluate. *Centro Ceibal* may request samples of those accessories offered for which no sample has been received at the time of submitting the offer.

A fundamental part of the technical evaluation will be carried out on the samples presented. **Samples must be submitted with Android 8 or later. It will be valued that the operating system version of the samples matches the operating system version offered, and that the samples are delivered with the available Google Mobile Services (see section 10.1.3 Evaluation of user experience).**

Once the bidding process has been completed, the awarded bidder must deliver **TWENTY** samples for the development of the Ceibal software image. The delivery times for these samples must be included in the project plan to comply with the proposed schedule. **These samples are not part of the awarded lot and are at the cost of the supplier.**

Some samples will be used in destructive tests. Those that are not destroyed may be returned in different conditions with respect to which they were delivered. The bidder will have 4 weeks from the award to withdraw the submitted samples. Upon expiration of the previous term without having withdrawn them, *Centro Ceibal* may freely dispose of them, without the right to claim by the bidder.

4. WARRANTY

4.1. The following warranty conditions are mandatory: Dead on Arrival

Guarantee for replacement of devices with a DOA concept failure for a period of 90 days from arrival: 10 devices per 1000.

4.2. Systemic Failures

Ceibal may request from the awardee the necessary spare parts or the replacement of equipment in the event that the number of faults attributable to the factory or design defects is greater than 10 times the percentage specified in the spare parts specification table (see *Annex III: Spare Parts*). The costs derived from the execution of this guarantee are the exclusive responsibility of the supplier.

In case the bidder presents **additional** guarantees, it must detail them in its technical proposal. If the additional guarantee conditions proposed by the bidder imply additional costs, they must be presented in the economic offer, quoted separately.

The bidder shall guarantee that the products supplied under the contract are new, complete, without use and that they shall be free from defects attributable to the design, materials, manufacture, storage conditions (packaging, appropriate temperature and humidity), transfer or any other act or omission of the bidder that could be manifested on the occasion of the normal use of the products in the prevailing conditions in the country.

5. Delivery time period and conditions

5.1. Delivery deadlines

The following maximum delivery terms are desirable:

- ETA of 50% of the awarded lot: 120 calendar days after the adjudication resolution has been communicated.
- ETA of the remaining 50% of the lot awarded: 60 calendar days after the delivery of the first 50%.

In case of not being able to comply with these maximum time periods, the bidder must specify the delivery deadlines in its offer. **ETD must be the same for the first lot of the final product (tablet + accessories) and for the spare parts.**

5.2. Delivery conditions

All equipment sent to Ceibal must be composed of the same components. In case this cannot be fulfilled, the awardee must notify Ceibal in writing with a period of no less than 60 days and Ceibal will validate the new BOM.

The awardee must make the delivery of the devices respecting the following specifications:

- **Each pallet must be labeled with the following information:**
 - Device model / lot / departure (pallets containing more than one device model will not be accepted).
 - Pallet number / lot pallet total.
 - Quantity of master boxes in pallet.
 - List of the master boxes that make up the pallet.
- **Each master box must be labeled with the following information:**
 - Device model / lot / departure.
 - Number of master box / total of master boxes of the lot.
 - Serial number (bar code and alphanumeric) of each device in the master box.
 - Product description
- **Each individual box must be labeled with the following information:**
 - Device model.
 - Serial number (barcode and alphanumeric) of the device.

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

Centro Ceibal, or a representative designated by it, may visit the factory before and / or during the production of the lots for Ceibal, prior coordination between the parties and independent of the quality controls.

6. Annex I: Requirements

HARDWARE					
MANDATORY REQUIREMENTS			COMPLIANCE		OBSERVATIONS
			YES	NO	
6.1	PROCESSOR	Minimum: Quad Core.64 bits.			
6.2	RAM	Minimum: 2GB DDR3.			
6.3	INTERNAL STORAGE	Minimum: 16GB.			
6.4	SCREEN	Size 8 ". Minimum resolution: 1280x800p.			
6.5	TOUCHSCREEN	P+G Technology			
6.6	CONNECTIVITY	Minimum WiFi: Network card 802.11 a / b / g / n 1x1.			
		Bluetooth			
6.7	MULTIMEDIA	Microphone and speaker / s incorporated.			
		3.5mm jack connector for headphone output.			
		Front camera: minimum resolution 0.3MP.			
		Rear camera: minimum resolution 2MP.			
6.8	PORTS	MicroSD card reader.			
		Video output (miniHDMI or microHDMI)			
6.9	SECURING AND REMOVING THE BATTERY	The battery should not be stuck to any component of the equipment, except to some support designed for that purpose.			
6.10	PERIPHERALS NOT SOLDERED	Peripherals (screen, touchscreen, speakers, battery, antennas, etc.) NOT soldered to the motherboard. The peripherals must be connected to the motherboard using removable connectors.			
6.11	REINFORCED MICRO USB CONNECTOR	Reinforced structure of metallic body of micro USB connectors, for example, by means of spot welding or by the constitutive design thereof.			
6.12	HARDWARE TEST	Software or firmware tool that allows verification of the integrated peripherals and ports of the device. This tool must be available in Spanish and / or English. For detail of the characteristics sought see Annex V: Technical evaluation criteria.			
OPTIONAL REQUIREMENTS					
6.13	TYPE OF LOAD CONNECTOR	Barrel type load connector. It must be quoted separately.			

		Micro USB charging connector type C. It must be quoted separately.			
6.14	MICRO USB MAGNETIC CONNECTOR	Bi-directional magnetic micro USB connector for charging and data installed in the factory. It must be quoted separately.			
6.15	CAMERAS	Front and rear resolution cameras 2MP / 5MP respectively. It must be quoted separately.			

SOFTWARE					
MANDATORY REQUIREMENTS			COMPLIEMENT		OBSERVATIONS
			YES	NO	
6.16	OPERATING SYSTEM	Android Oreo (8) or later version.			
6.17	LANGUAGE	Operating system and all its interfaces and configuration options in Spanish language.			
6.18	PERSONALIZATION AND INSTALLATION TOOLS	The bidder must deliver the tools detailed in the documentation requirements 3.2.4 and 3.2.5 for customization of the firmware and operating system, and for the installation of the operating system on several computers.			
6.19	DISC IMAGE	The tablet will be delivered to the end user with a software image developed in conjunction with Ceibal. This software image will include an interface specially designed for the target audience as the default operating environment, in addition to having the operating system's own launcher. The software image must be certified by Google. See Annex I: Requirements for software image requirements.			
6.20	AVAILABILITY OF IMAGE WITH PRIVILEGES OF ROOT OR USER DEBUG	The bidder must deliver a software image of the device that has root or user debug privileges.			
SOFTWARE IMAGE - ANDROID CONFIGURATIONS					
6.21	LANGUAGE AND KEYBOARD	Spanish (Spain)			
6.22	SCREEN TIMEOUT	5 minutes			
6.23	DATE AND TIME	Time zone GTM-03: 00, Montevideo, Uruguay			
6.24	WIFI	Enabled by default			
6.25	BROWSER	Default page: www.ceibal.edu.uy			
6.26	SECURITY	Disable screen lock			
6.27	CEIBAL LAUNCHER	Set Ceibal launcher as the default launcher. This configuration will be done manually on the certified image. See section 2. Products.			

6.28	UNKNOWN ORIGINS	Unknown origins enabled by default. This configuration will be done manually on the certified image. See section 2. Products.			
SOFTWARE IMAGE- OTHER CONFIGURATIONS					
6.29	BOOT	Include an image in the boot.			
		Include boot animation			
6.30	WALLPAPER	Set ceibal wallpaper			
6.31	REBOOT	Add restart option by pressing power button.			
6.32	APLICACIONES GOOGLE	Include the Google applications that are mandatory in Uruguay.			
6.33	USB PORT	Create a soft-link to the USB port under the name / sdcard / usbcad / or rename it that way.			
6.34	SD CARD	Include read and write permissions on SD card.			
SOFTWARE IMAGE - CONTENTS TO INCLUDE					
6.35	LIBRARIES	Include libraries in / system / lib			
6.36	NO APP CONTENT	Create CEIBAL folder in / sdcard and include content in it			
6.37	INITIALIZATION FILES	Copy folder with initialization content of the device in folder / sdcard that is preserved in case of performing a factory reset of the device			
SOFTWARE IMAGE - INSTALLED APPLICATIONS					
6.38	APPLICATIONS	Install applications that Centro Ceibal will specify			
SOFTWARE IMAGE - OTHER REQUIREMENTS					
6.39	SYSTEM PRIVILEGES	Ceibal must be able to sign applications so that they have system privileges. This can be done by the bidder whenever Ceibal or requested, but it will be assessed that Ceibal can do it. For this, indicate if the delivery of the Platform Key of the system is possible.			
6.40	DEVELOPMENT	Ceibal will jointly plan with the awardee the process of generating the software image based on the requirements of Ceibal, for which the relevant documentation will be provided and the delivery times will be agreed. The bidder must specify the response time to requests and the iteration time of each development cycle. In order to dimension the development cycles, these can include the following tasks:			
		* Modification of basic configurations as default language, time zone, among others.			
		* Installation of Ceibal applications as system applications.			

	* Disk partitioning			
	* Loading digital certificates in specific directories.			

LOGISTICS					
MANDATORY REQUIREMENTS			COMPLIES		OBSERVATIONS
			YES	NO	
6.41	CEIBAL LOGO AND FANTASY NAME OF THE MODEL	<p>CEibal will specify the logo and fantasy name of the model, which must be printed on the housing by laser, silkscreen or other printing method, tags will NOT be accepted. This print must meet the following durability criteria:</p>			
		Clearly visible in the case.			
		Indelible when applying alcohol.			
		Not removable when gluing and unpacking packing tapes.			
6.42	SERIAL NUMBER and BAR CODE	<p>Unique serial number (SN) and its corresponding barcode printed on the case with laser, silkscreen or other printing method. The same considerations apply as for requirement 6.41 CEIBAL LOGO AND FANTASY NAME OF THE MODEL. The bar code must have enough contrast to be read by bar code readers. NO labels will be accepted.</p>			
		<p>The serial number must be obtainable by software following the Android standard and must be accessible by means of the command 'adb shell getprop grep ro.boot.serialn '.</p>			
		<p>The serial number obtainable by software must be configurable by means of a tool and procedure that the bidder will specify. This requirement is necessary so that the serial number printed on the case and the serial number obtained by software coincide on a machine after a repair in which the motherboard was changed (See requirement 3.2.7 SERIAL NUMBER CONFIGURATION)</p>			
6.43	IDENTIFICATION OF PARTS	<p>The following components must have a barcode or QR code to scan its part number (applies both to the parts included in the tablet and to the individual parts):</p>			
		Battery			

	Screen			
	Motherboard. Additionally, the motherboard must have a similar label or engraved by laser or silkscreen (with scannable code) with the serial number information.			
	Touchscreen			

CHARGERS					
MANDATORY REQUIREMENTS			COMPLIANCE		OBSERVATIONS
			YES	NO	
6.44	TYPE OF CONNECTOR	Europlug (CEE 7/16).			
6.45	ISOLATION IN PINES OF 220v	The pines of connection to the electrical network must have insulation in the base. View photo (*)			
6.46	SEALED CHARGER	The charger can only be opened by a destructive process. It must not have screws that allow its opening by the user.			
6.47	FORCE OF EXTRACTION OF PINES	The pines can only be removed from the body of the charger if a force greater than 40kgf is exerted			
6.48	CEIBAL LOGO	Ceibal will specify logo and fantasy name of the model. In addition to this information, the production batch and the electrical specifications of the charger must be printed on the casing with laser, silkscreen or other printing method. Labels will NOT be accepted. The same considerations apply as for requirement 6.41 CEIBAL LOGO AND FANTASY NAME OF THE MODEL			

(*)Requirements 6.44 TYPE OF CONNECTOR and 6.45. ISOLATION IN PINES OF 220V:



TABLET CERTIFICATIONS					
MANDATORY REQUIREMENTS			COMPLIES		OBSERVATIONS
			YES	NO	
6.49	Restriction of Hazardous Substances	Proof of documentation of the RoHS certification of the device or of all its components will be required as a requirement for acceptance of the production lots.			
6.50	Federal Communications Commission Declaration of Conformity	Evidence of FCC certification will be required as a requirement for acceptance of production lots			

CHARGERS CERTIFICATIONS					
MANDATORY REQUIREMENTS			COMPLIES		OBSERVATIONS
			YES	NO	
6.51	Restriction of Hazardous Substances	Proof of RoHS certification of the charger will be required, in case the charger is not included in the RoHS certification of the device, as a requirement of acceptance of the production batches.			
6.52	Information technology equipment - Safety	Proof of compliance with EN60950 will be required as a requirement for acceptance of production lots			
6.53	Electromagnetic compatibility (EMC)	Proof of compliance with the IEC61000 standard will be required as a requirement for acceptance of production lots			
6.54	Information technology equipment. Radio disturbance characteristics.	Proof of compliance with EN55022 will be required as a requirement for acceptance of production lots			

COVER					
MANDATORY REQUIREMENTS			COMPLIES		OBSERVATIONS
			YES	NO	
PROTECTION					
6.55	COVER	The product must include a cover according to the specifications of Annex II: Cover.			

MOTHERBOARDS TEST BENCH					
MANDATORY REQUIREMENTS			COMPLIES		OBSERVATIONS
			YES	NO	
6.56	MOTHERBOARDS TEST BENCH	Equipment that allows the connection of peripherals to the motherboard and execution of hardware status tests. It must be quoted separately from the base price. The test bench must have all the necessary accessories to allow at least verification of the following functionalities:			
		Screen			
		Touchscreen			
		Power (battery and charger)			
		WiFi			
		Audio			
		Cameras			
		Buttons (power and volume)			

7. Annex II: Cover

Material

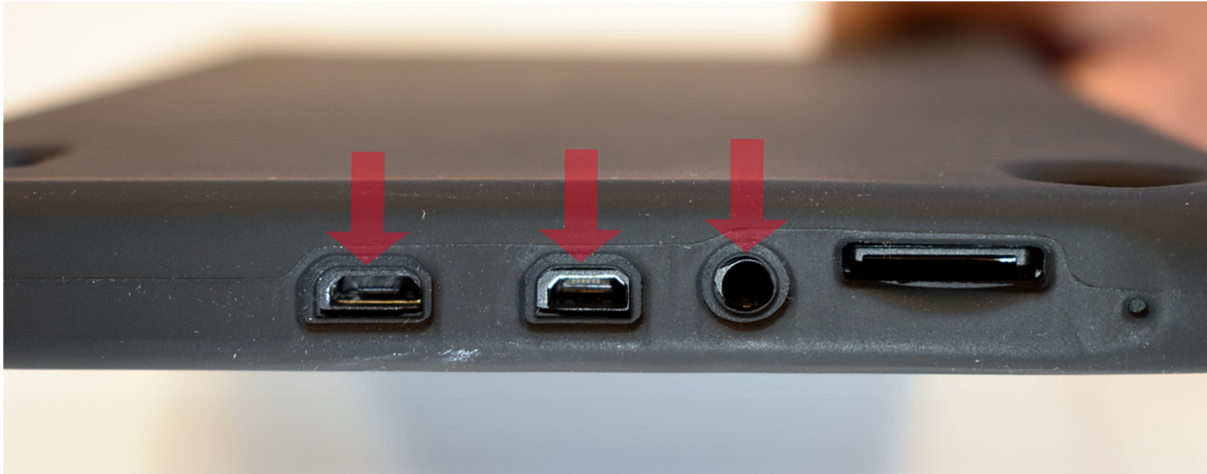
Silicone.

Color

Black.

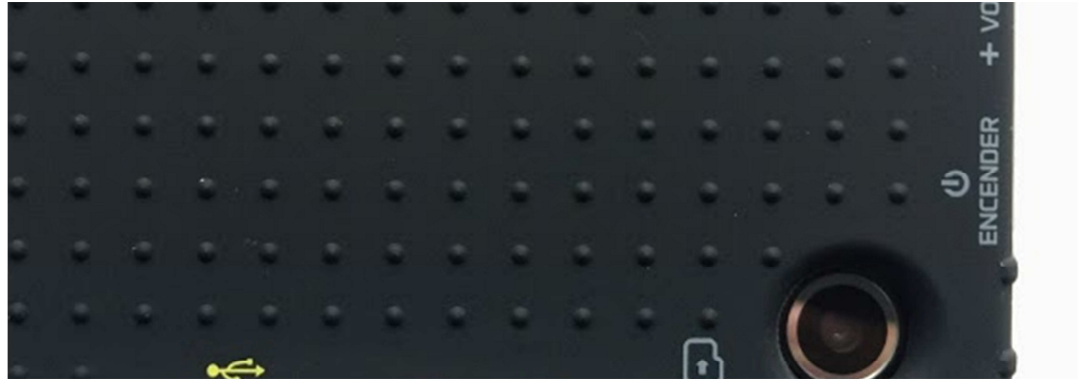
Holes for the side connectors

The opening of the holes for the side connectors of the tablet (micro USB, audio, HDMI, etc.) must be adequate to ensure that all external accessories and cables can be connected reliably.

**Connector legends**

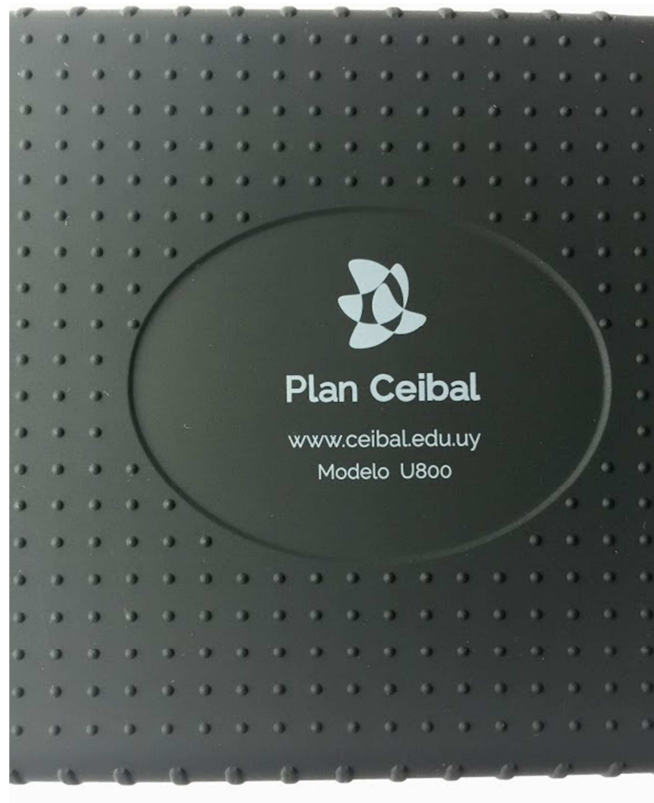
In addition to the logo on the back, the indication legends corresponding to the frequently used connectors (at least the USB charging connector) and the buttons must be incorporated.





Logo and fantasy name of the model

The cover must incorporate the Ceibal logo on its back along with the identification of the device model. Ceibal will define this identification, which can be the name of the model specified by the supplier, a fantasy name selected by Ceibal, or both. Below there is an example of the cover of a



model currently in the Ceibal tablet park.

Edges

1- Protection of the contact surface

The edges of the front frame are enlarged to achieve greater protection of the touchscreen assembly in case of horizontal impacts or falls.



2- Touchscreen protection

The inner edges of the cover should advance as much as possible on the touchscreen. In this way the cover would be tighter avoiding that part of the touchscreen or the screen is lifted, or that fragments of them are detached in cases of breakage.



Corners

The cover should have thickened corners, in order to have greater resistance to shocks in these sectors of the device that are the most frequent.



Back Texture

The back of the cover should incorporate a texture that prevents the device from sliding.



8. Annex III: Spare parts

The life cycle of the product in the Ceibal park will be 3 years. During this period, the awardee must guarantee the support of its product and, in case of End of Life (EOL) of a spare part, it must inform *Centro Ceibal* with 120 days in advance.

The bidder must complete the following spare parts specification table for each model offered:

SPARE PARTS					
Spare part	Part Number	Estimated percentage of factory failures	Minimum lot	Delivery period	Observations (*)
Touchscreen					
Screen					
Battery					
Motherboard					
Charger					
...					
...					
...					
AVAILABILITY OF SPARE PARTS IN MONTEVIDEO					
Indicate if the bidder can place in Montevideo (being able to be in free zone), a stock of spare parts to be agreed with Ceibal, additional to those awarded, between 3 and 6 months after the delivery of the devices to Ceibal. During the operation, Ceibal will evaluate the convenience of this service, so it MUST NOT AFFECT THE PRICE QUOTE OF THE DEVICE OR OF THE SPARE PARTS IN THE TENDERING INSTANCE.					

(*) Specify if the spare parts include other parts of the device. For example, touchscreen with / without frame, motherboard with / without integrated peripherals, etc.

9. Annex IV: Project plan

The bidder must deliver, as part of the offer, a project plan for the definition, development, production and delivery of the final product awarded (tablet + accessories + development and certification of software image + manual configuration + spare parts).

The plan must contemplate at least the following stages:

1. Definition of hardware specifications. The awardee must deliver at this stage the information requested in Annex VI: Specifications of the final product. In case the final product presents minor changes of components, internal design, etc., with respect to the samples presented, Ceibal must validate the equivalence of the final product with the submitted samples, prior to production.
2. Development of software image. Once awarded, the bidder must submit samples to develop, in conjunction with Ceibal, the software image of the device. See section 3.3 Samples.
3. Certification of developed software image. The software image that will be installed in the factory must be an image certified by Google.
4. Production
 - 4.1. Final product:
 - 4.1.1. *Centro Ceibal* will agree with the awardee the production schedule of the device and all its accessories (cover, magnetic connector in case of adjudication, etc.). Of each batch produced, the successful bidder will send *Centro Ceibal* 10 golden samples for quality control. This quality control may totally or partially reject the lots inspected. For the first batch, you will also send 20 additional golden samples for repairing training. *The shipment of the golden samples is by air freight at the cost of Centro Ceibal.*
 - 4.1.2. Quality control at origin. Each lot produced will be subject to quality control at source by inspectors sent by *Centro Ceibal*. This quality control may totally or partially reject the lots inspected.
 - 4.1.3. Verification of availability of all the requested documentation of the product.
 - 4.2. Spare parts:
 - 4.2.1. *Centro Ceibal* will agree with the awardee the quantity of spare parts of each part that the latter must provide and how they should be sent.
5. Delivery of documentation requested in the section *as mandatory with each shipment in section 3.2 Documentation.*
6. Shipping and quality control upon arrival in Uruguay: Each lot produced will be inspected upon arrival in Uruguay. This quality control may totally or partially reject the lots inspected.

10. Annex V: Technical evaluation criteria

The evaluation of the technical offer includes the following evaluation criteria of devices:

- Background evaluation. It will be evaluated:
 - Factory backgrounds
 - Bidder backgrounds
- Verification of compliance with mandatory requirements.
- Hardware evaluation of the samples:
 - Performance evaluation
 - Maintenance evaluation
 - User experience evaluation
- Software evaluation. The ability of the bidder to develop the software image will be evaluated. **Centro Ceibal may request the prototype of the development of an image for the samples delivered to those suppliers with whom it has no previous development experience.**

10.1 Hardware evaluation of the samples

10.1.1 Performance

The performance of the device will be evaluated with CPU benchmarking tests, disk read / write, autonomy, WiFi (throughput and roaming), among others.

10.1.2 Maintenance

The maintenance evaluation analyzes the suitability of the device to the user and the characteristics of the support service provided by Ceibal, and the quality of the documentation associated with maintenance that is requested in section 3.2 DOCUMENTATION,

As general characteristics, a robust and easy to repair device is sought, both in terms of the time it takes to repair and its technical complexity.

Among the aspects to be evaluated, the following stand out:

Hardware Test

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The adaptation to Ceibal's operating procedures of the software tool or firmware presented will be evaluated (see mandatory requirement 6.12 Hardware Test). The following is a description of the desired features of the tool:

- Functionalities:
 - Sequential mode where all the tests are executed.
 - Manual mode where a punctual test is allowed to run.
 - At the end of each Test, it should allow the technician to decide if the result is acceptable or not.
 - It allows you to skip Test or go back to the previous one manually.
 - It has a LOG with the results of all the Tests.

- Tests:
 - Keyboard test: It allows verification of the following keys:
 - Volume +
 - Volume -
 - Power
 - Bluetooth test: It enables Bluetooth and recognizes nearby devices.
 - Volume +
 - Volume -
 - Power
 - WiFi test: It activates WiFi, recognizes nearby access points and it connects.
 - Display Test: It shows color sequence in full screen.
 - Audio Test: It allows verification of the following components:
 - Speakers
 - Headphones
 - Microphone.
 - Backlight Test: It shows variation in the brightness of the screen.
 - Touchscreen test: It displays a matrix to touch-sensitively review.
 - Camera Test: It activates the cameras and allows you to take and save a photo.
 - Battery Test: It displays the Battery information
 - Tension
 - Load level
 - Current capacity and design capacity
 - Storage test
 - It checks microSD card
 - It checks storage read by OTG adapter
 - Device information:
 - Name of the team
 - Firmware Version
 - Serial number
 - SIM test (on 3G / LTE models): It allows detection and validation of the SIM
 - Flash test (if applied to the model): It allows the LED to be used as a camera flash

Assembly of fragile modules

Easy to remove fragile modules, for example screen, internal battery, antennas, etc., in order to minimize the risk of breakage. It is desirable that the assembly of these modules is not done with adhesive materials.

Complexity of assembly and disassembly

Design that allows a simple assembly and disassembly process, with minimum risks on the components that are removed and replaced. For example, the following considerations contribute to the ease of the process:

- Presence of guides for the conduction of internal cables that avoid the use of adhesive tapes.
- Little diversity of screws and easily identifiable, for example, by means of color codes and / or printing of the screw size in PCB.
- Modularity: design that allows removal and replacement of modules without the need to remove other modules.

Screw connections

Robust screw connections to withstand the wear of multiple removals.

Security

Design that prioritizes the security of the user. For example, security mechanisms for excess temperature of batteries.

Length of internal cables

Appropriate length of internal cables in order to avoid unnecessary tension in the connection to the motherboard or excessive dispersion of the cables inside the equipment.

External connectors

External connectors are accessible by the user so it is important that they are robust to withstand external pressure. Some aspects to consider are:

- Connectors fully contained inside the device to avoid more pressure than necessary, or even reinforced by the plastic of the case.
- Assembly of the connectors in independent boards that are connected to the motherboard, so that, in the event of a break in the connector, it is not necessary to remove and replace the entire motherboard.
- Small SMD connectors such as micro USB, audio connectors, micro HDMI, etc., with four anchor points to the motherboard.

- Connectors assembled in board-cut configuration that make contact with the motherboard on the back of the connector, which gives an additional point of support to the connector.
- Reversible connectors, such as type C micro USB (see optional requirements in Annex I. Requirements)

External buttons

The external buttons are prone to breakage, so it is desirable that they are not mounted to the motherboard but a separate module.

On the other hand, external plastic parts, such as the power and volume buttons, are desirable to remain mounted on the plastic case of the device so that they are not lost during repairs.

Internal assembly

To avoid breakage during the process of repairing tablets, it is desirable:

- Speakers not mounted on removable parts of the case. This avoids cable tensions when opening the devices.
- Components of the motherboard separated from the opening points of the device, so that when using tools to open the device there is no risk of component breakage.
- PCB shielding not welded to the board so that it can be removed during repairs.

Cards

Some tablets have removable plastic parts in the case to hide cards (SIM, microSD, etc.) prone to breakage or loss, which generates a direct impact on the operation of the equipment. It is desirable that the device does not include this type of parts.

10.1.3 User experience evaluation

The samples delivered will be evaluated in terms of user experience. The following aspects will be evaluated: camera, screen sharpness, audio, video, response of the device in the interaction with the user (swipe, scroll, physical buttons, transition between screens, etc.), among others. Therefore, it will be valued that the samples are delivered with the version of Android offered and with the available Google Mobile Services (see section 3.3 Samples).

10.2 Software evaluation

The ability of the provider to meet the development requirements of a software image will be evaluated. This evaluation also includes the assessment of compliance with other

requirements that are associated with the image, for example, some logistical aspects (serial number, procedures, etc.).

Centro Ceibal may request the prototype of a software image from those suppliers with whom it does not have previous development experience. **This process may not exceed 3 weeks.**

The development process will be iterative and incremental, so the bidder must specify in its offer the estimated prototype time as requested in Annex I: Requirements.

The joint work schedules will be agreed in the final work plan.

11. Annex VI: Final product specifications

SPECIFICATIONS	
Bidder:	
Model	
Processor	
Brand	
Model	
Frequency	
Architecture (ARM / X86)	
No. of physical nuclei	
RAM	
Brand	
Model or Part number	
Capacity (GB)	
Technology (LPDDR2 / LPDDR3 / others)	
Assembly (Removable / OnBoard)	
Internal storage	
Brand	
Model or Part number	
Technology (eMMC / SSD)	
Capacity (GB)	
Assembly (Removable / OnBoard)	
GPU	
Brand	
Model	
Screen	
Size (inches)	
Brand	
Technology (LCD / IPS / OLED)	
Resolution (Px)	
Interface (EDP / LVDS / other)	

Fastening to the case (glued / inserts / brackets / other)	
Touchscreen	
Touchscreen (Number of recognized points: 5/10)	
Camera	
Front Resolution (Mpix)	
Rear Resolution (Mpix)	
Audio	
Integrated microphone (Yes / No, Onboard / Removable)	
Integrated loudspeakers (Yes / No, Quantity, Mounting: Glued / With support / With screws)	
Connectivity	
Bluetooth (Version)	
WIFI (Brand and model or Part number of the module)	
No. of antennas	
Ports I / O	
USB (2.0 / 3.0, Type B / Type C, Mini / Micro, quantity)	
SD (uSDHC)	
HDMI (Connector size: Mini / Micro)	
Integrated microphone with headphones (Yes / No)	
Others	
Battery	
Voltage (V)	
Capacity (mAh)	
Brand	
With thermal protection terminal to the PCB (Yes / No)	
Fixing method (Tapes / Screws / Support)	
AC / DC source (Charger)	
Cable length (cm)	
Voltage and Input Frequency (VAC, Hz)	
Output voltage (VDC)	
Intensity / Output power (A, W)	

Charger: DC Connector (Barrel, USB)	
Heat Dissipation System	
Heatsink Shielding (Yes / No)	
Pad / Thermal paste / None	

12. ANNEX VII: Confidentiality and data protection

The Company that is the successful bidder expressly undertakes to keep in the strictest confidentiality all the information that it processes or uses during its relationship with *Centro Ceibal*. The Confidential Information includes, among others and by way of example, the following information: any strategy, business plan and procedure, proprietary information, software, tool, process, images, personal data, methodology, information and trade secret, and other information and material of Ceibal, as well as of the students, beneficiaries, teachers, study centers, that could be obtained by the Company from any source or could be developed as a consequence of this contract.

The Company undertakes to process the personal data to which it has access under this contract, in accordance with Law No. 18.331, of August 11, 2008 and Decree No. 414/2009, of August 31, 2009, solely for the benefit and in the framework of the contracted service, not being able to use them for another purpose, neither for their own benefit, free or expensive, nor to assign them, communicate them or transfer them to third parties, except with previous authorization from *Centro Ceibal*.

In no case may the access to personal data be understood as assignment or permission for its free use by the Company.

The Company is obliged to adopt the necessary security measures to guarantee the security and confidentiality of personal data and to prevent its adulteration, loss, consultation or unauthorized treatment, as well as to detect deviations of information.

In the event that the personal data is hosted, even temporarily, outside the national territory, the Company is obliged that the importer is in countries considered to have levels adequate to European data protection standards, in accordance with the General Protection Regulation of Data 2016/679, of the European Parliament and of the Council, amending, concordant and complementary. Otherwise, the Company undertakes to have the data holder's consent for the transfer to an unsuitable territory, or for the importer to adhere to the Privacy Shield framework, to subscribe standard contractual clauses with the exporter or to have a Code of registered Conduct, with the consequent authorization of international transfer of data processed before the Regulatory Unit and Control of Personal Data, in the last two cases.

Upon termination of this agreement, the Company undertakes to return or delete from all its physical and logical systems and files, whether owned or contracted to third parties, the personal data accessed, obtained or processed under this contract, as well as the associated metadata, in case of correspondence and without prejudice to the particularities of each service, which will be considered by *Centro Ceibal* in the specific case to consider this obligation fulfilled.

For the purposes of this agreement, personal information is considered information of any type referring to individuals or legal entities determined or determinable, by way of example, any numerical, alphabetical, graphic, photographic, acoustic or any other information that refers to them directly or indirectly, in accordance with the provisions of article 4 of Law No. 18,331 and articles 1 and 4 of Decree No. 414/009. 4.3.

13. Annex VIII: Price tables

PRODUCT: TABLET WITH COVER + IMAGE OF CERTIFIED SOFTWARE + MANUAL CONFIGURATIONS				
PRODUCT: TABLET WITH COVER + IMAGE OF CERTIFIED SOFTWARE + MANUAL CONFIGURATIONS	TABLET MODEL	VOLUME	UNIT PRICE, US \$ CIF MVD	OBSERVATIONS
		Up to 10.000		
		Between 10.001 and 50.000		
		Between 50.001 and 100.000		
		More than 100.000		
OPTIONAL REQUIREMENTS		VOLUME	UNIT PRICE, US \$ CIF MVD	OBSERVATIONS
6.13	Barrel type load connector	Up to 10.000		
		Between 10.001 and 50.000		
		Between 50.001 and 100.000		
		More than 100.000		
6.13	Micro USB charging connector type C	Up to 10.000		
		Between 10.001 and 50.000		
		Between 50.001 and 100.000		
		More than 100.000		
6.14	Magnetic micro USB connector	Up to 10.000		
		Between 10.001 and 50.000		
		Between 50.001 and 100.000		
		More than 100.000		
6.15	2MP / 5MP front / rear cameras	Up to 10.000		
		Between 10.001 and 50.000		
		Between 50.001 and 100.000		

		More than 100.000	
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PRODUCT: MOTHERBOARDS TEST BENCH (CIF MVD)				
6.56	Motherboards test bench	Up to 10		
		between 10 and 30		
		More than 30		

DEVELOPMENT AND IMAGE CERTIFICATION OF SOFTWARE MAINTENANCE	
PRICE US\$	

SPARE PARTS		
SPARE PARTS	UNIT PRICE, US\$ FOB MVD	MINIMUM LOT
Touchscreen		
Screen		
Battery		
Motherboard		
Charger		
...		
...		
...		