2016 – TABLETS LTE/3G

TECHNICAL APPENDIX

1. OBJECTIVE

Ceibal Center calls a public international solicitation for the acquisition of up to 15,000 LTE/3G tablets. The search is for 8" tablets with Android operating systems with capacity to be compatible with LTE and 3G networks through an integrated modem, as specified in Appendix V.

2. SPECIFICATIONS

This section describes the obligatory and desired requirements of the solicited product.

The respondent should complete the tables presented in Appendices I, II, III and IV and submit his offer according to the instructions established in section 3, BID. **Ceibal Center reserves the right to reject any bid that is not submitted according to these instructions.**

2.1. OBLIGATORY REQUIREMENTS

2.1.1. SIZE
8 inches

2.1.2. PROCESSOR
Minimum: Quad Core. Specify.

2.1.3. RAM MEMORY
Minimum: 1GB.

2.1.4. INTERNAL STORAGE
Minimum: 16GB.

External devices will not be accepted as a solution for massive storage.

2.1.5. RESOLUTION
Minimum: 1280 x 800.

2.1.6 MULTIMEDIA
Integrated microphone and speakers
3.5mm Connector Jack for headphones
Front and rear camera. Specify characteristics of both cameras.
Minimum resolution of rear camera: 2MP.

2.1.7 PORTS
Micro SD card reader that supports, at a minimum, 32GB cards.

2.1.8 CONNECTIVITY
Bluetooth
WiFi: 802.11 b/g/n, or better.
LTE and 3G integrated modems to access LTE and 3G networks specified in Appendix V: CELLULAR NETWORK SPECIFICATIONS

2.1.9 BATTERY
Minimum: 3500 mAh.

2.1.10. CHARGER
Europlug Connector (CEE 7/16) with insulation on top of contact pins – 220 V AC.

2.1.11. OPERATING SYSTEM
Android 5.0 or better.

2.1.12. LANGUAGE
Operating system and all its interfaces and configuration options should be in the Spanish language.

2.1.13. ECO FRIENDLY
Comply with RoHS guidelines.

2.1.14. Ibirapitá LOGOTYPE
Clearly visible on the casing, indelible when subjected to application of alcohol, and non-removable when putting on or taking off packing tape from its surface. Specify method of imprint.

2.1.15. SERIAL NUMBER AND BAR CODE
Each device should be identified with a unique serial number (SN) that will be imprinted on the casing next to the corresponding bar code. Specify the method of impression.

Each device should also have a unique identifier (Id) obtainable with software.

It is preferable that both identifiers are the same. Specify.

2.1.16. DISK IMAGE
The devices should be delivered with software imaging certified by Google.

The tablets should be delivered to the end user with an interface especially designed for the public objective (Ibirapitá launcher) as the default setting, in addition to the Android launcher itself.

To that effect, the respondent should deliver, at the time of submitting the bid, the table in Appendix IV: Requirements for installing the Ibirapitá launcher.

The respondent should provide field technical assistance during the contract term so that future versions of IbirapitáOS will be completely functional on the devices.

2.1.17.   CONNECTION OF PERIPHERAL EQUIPMENT

The respondent should specify if the connection to the mother board of the peripheral equipment (screen, touchscreen, speakers, battery, antennas, etc.) is achieved through soldering or through connectors. **It would be helpful if these were through connectors to allow the removal of components to facilitate repairs.**

2.1.18.   SYSTEM FOR UPDATES

Specify if the device will have an OTA (Over The Air) remote update system and/or an update system through a removable device (for example, an SD card). In case the OTA system is used, the respondent should send a document with the functional description, at the latest before production confirmation or the first shipment (see requirement 2.32.1.7).

2.2. DESIRED REQUIREMENTS

2.2.1   ADDITIONAL PORTS

Video output (miniHDMI, microHDMI).

2.2.2.   TYPE OF CHARGER CONNECTOR

2.2.2.1.   Barrel jack charger connector

2.2.2.2. Micro USB type C charger connector

Should be quoted separately from the base price.

2.2.3. TABLET PROTECTION
Case, sheath or cover to protect the tablet.

Should be quoted separately from the base price.

2.2.4. MAGNETIC MICRO USB CONNECTOR

Factory installed magnetic micro USB connector.

Should be quoted separately from the base price.

2.2.5. SCREEN PROTECTION

Factory installed tempered glass for screen protection.

Should be quoted separately from the base price.

2.2.6. HARDWARE TEST

Functionality that allows a check of the different peripheral equipment and hardware modules to diagnose the full performance of the device. Preferably independent from the operating system.

2.3. DOCUMENTATION

2.3.1. DELIVER WITH BID

The documentation requested in this subsection should be delivered at the time of submitting the bid.

2.3.1.1.   TECHNICAL SPECIFICATIONS

Document with the technical specifications of every offered model.

2.3.1.2.   PROCEDURE FOR INSTALLATION OF IMAGING SOFTWARE

Specify the process and tools necessary for the installation of the software imaging generated. It will be valuable that the process can be completed through a removable method (SD card for example). If the process requires connection of the equipment to a PC, it will be valuable if it functions on Linux.

2.3.2. DELIVERY BEFORE CONFIRMATION OF PRODUCTION OR SHIPMENT

Obligatory documentation requested in this subsection should be sent at the latest before production confirmation or before every shipment, according to the agreement. Delivery is desirable as quickly as possible.

2.3.2.1.   OBLIGATORY DOCUMENTATION

2.3.2.1.1.   BILL OF MATERIALS (BOM)

The respondent should deliver a form with all the hardware components that comprise the device, each one with an identifying code, including the casing and whichever other individual component that can be replaced in case it breaks.

2.3.2.1.2. EXPLODED DRAWING

The respondent should deliver the exploded drawing that describes the atomized parts, each one with an identifying code, and the overall assembly.

2.3.2.1.3. SCHEMATICS

Schematics and layout of the mother board in digital format.

2.3.2.1.4. CERTIFICATIONS

All standards that the device complies with should be indicated, include whether this includes certifications, for example UL1950/IEC950/EN60950, RoHS, IEC 61000, EN55022, etc., and deliver the document showing the certifications. There is particular interest in the grade of protection of the device (IP grade) and the grade of protection from mechanical impact and being dropped.

2.3.2.1.5. INFORMATION FORM OF EACH DEVICE

In case of being awarded, the respondent should deliver an electronic form with the following information for each device:
- Part number.
- Series number.
- Pallet number / number of master box in which the device has been sent.
- MAC directions for all the network cards which are part of the device.
- Part number and series number of the principal components (minimum: mother board, screen, battery and touchscreen)
- Identifier obtainable with software (see requirement 2.1.15)

2.3.2.1.6.   Packing Conditions

The respondent should specify the following packing conditions:
- Measurement of individual box.
- Weight of individual box.
- Measurement of master box.
- Weight of master box.
- Individual boxes per master box.
- Master boxes per pallet.
- Height of the pallet.

2.3.2.1.7.   Update System

Functional description of the update system in case of OTA method (see requirement 2.1.18). In particular specify:

1. If the respondent will provide the infrastructure.
2. If the infrastructure can be housed in Uruguay.
3. If the Ceibal Center has exclusive control over the updates to send.
4. If the Ceibal Center can develop or solicit changes to software on the devices once they have been sent out for use in the field.

2.3.2.2.   DESIRABLE DOCUMENTATION

2.3.2.2.1.   PROCESS FOR RECORDING ID OBTAINABLE WITH SOFTWARE

Document that specifies tools and process for recording Id obtainable with software and maintaining the relationship between this Id and the serial number on the casing in case of repair. See requirement 2.1.15.

3. BID

To facilitate the bid evaluation it is valued that the submittal of documentation should be clearly segmented, **identifying each product by its corresponding model.**

In the Appendix, a list should be submitted verifying all that should be included, for the purposes of guaranteeing the entirety of the information provided in the bid.

3.1. SUBMITTING AND FORMAT OF PRICE QUOTATION

The respondent should complete for each model offered (Envelope 2 Technical Bid):

- Compliance Table APPENDIX 1, **with all the items completed.**
- Table of specifications of replacement parts in APPENDIX II, **except price quotation.** There is special interest in the failure rate of each component, especially the mother board, battery, screen and touchscreen.
- Table of documentation from APPENDIX III, **with all the items completed.**
- Compliance Table requirements to install the Ibirapitá launcher from APPENDIX IV, **with all the items completed** and including other information requested there.

The respondent should send technical specifications of each model offered (requirement 2.3.1.1) at the time of submitting the bid.

In case of being awarded, the respondent can differentiate the delivery from the documentation detailed in section 2.3.1.2 before shipping the devices.

The respondent should submit the technical bid in the following format:

1. Folder with Appendices I, II, III and IV completed, for all the models offered, and the information requested in these appendices (in particular that requested in Appendix IV).
2. Folder with requested documentation in section 2.3.1 (technical specifications and installation process for imaging software) for all the models offered.
3. Folder with the information requested in 2.3.2 that the respondent can deliver at the time of the bid.
4. Folder with guarantee specifications and delivery timeframe in agreement with that requested in sections 4. GUARANTEE AND 5. TIMEFRAME AND DELIVERY CONDITIONS of this Bid Specification.
5. Folder with the complementary technical information that the respondent considers relevant to include.

The respondent should deliver in **Envelope 3 Economic Offer:**
- Price quotation according to the following volume brackets:
  - Bracket 1: less than 5,000 units
  - Bracket 2: between 5,001 and 10,000 units
  - Bracket 3: more than 10,000 units

In case the final price of equipment in the bid is specifically impacted by DESIRED items, the bid should be submitted in the same volume brackets.

- Table of specification for replacement parts in APPENDIX II, **including price quotation.**

3.2. SAMPLES

Along with the proposal, the respondent should submit FIVE samples of the models offered, or submit documentation that certifies that they will arrive at the Ceibal Center in a timeframe less than 5 days from bid opening (such documentation should be in the name of the Ceibal Center for delivery to take place). In case the Ceibal Center already has the offered models, the requirement will have been met.

The specifications and performance of the final product cannot be inferior to the sample. This aspect will be verified through quality control which will determine product acceptance.

In case of being awarded, the respondent is obligated to deliver to Ceibal Center 40 devices, equal to those awarded, in a timeframe of 10 working days from being informed of the award.

4.   GUARANTEE

The respondent guarantees that the products provided, by virtue of the contract, are new, complete, unused and free from defects attributed to design, materials, manufacturing, storage conditions (packing, appropriate temperature and humidity), transport or any act or omission that the respondent could demonstrate through normal use of the products in the prevailing conditions of the country.

Ceibal Center assumes the following guarantee conditions:

(a) **DOA Guarantee (dead on arrival):** 10 devices for every 1000 devices provided, to replace failing devices with new ones within a period of 90 days.
(b) **Guarantee for manufacturing defects for a period of 365 days from arrival:** The provider should provide information regarding the response method for failing equipment under guarantee.
(c) **Guarantee for system failure for a period of 730 days from arrival:** The provider should provide replacement parts necessary or substitute the equipment in case the quantity of failures are greater than 10 times the percentage specified in APPENDIX II: REPLACEMENT PARTS. The costs derived from executing this guarantee are the exclusive responsibility of the provider.

In case the respondent cannot satisfy such conditions, he should include in his proposal the guarantee conditions. Ceibal Center will consider these conditions in the evaluation process.

5. TIMEFRAME AND DELIVERY CONDITIONS

The respondent should specify the delivery timeframe for the equipment, which will begin from the notification of award. It is desired that the delivery timeframe of 20% of the hardware should be in the first two weeks of April, 2017, 40% in the first two weeks of May, 2017 and the rest of the lot in the first two weeks of June, 2017.

In case the respondent cannot satisfy such conditions, he should include in the proposal the delivery conditions. The Ceibal Center will consider these conditions in the evaluation process.

The viability of installing on the devices during the manufacturing process, imaging software that will be developed, will be valued. **The bid should indicate the timeframe when the imaging software will be available for factory installation, in order to comply with the specific delivery timeframe.** In addition, the respondent should indicate if a delay in the generation of imaging software will proportionally affect the delivery.

The respondent should deliver the devices according to the following directions:

- Every pallet should be marked with the following information:
    - Device model/ lot/ shipment date **(pallets that contain more than one device model will not be accepted)**
    - Pallet number / total pallets in the lot.
    - Quantity of master boxes on the pallet.
    - List of the master boxes that make up the pallet.
- Every master box should be marked with the following information:
    - Device model / lot / shipment date.
    - Master box number / total master boxes in the lot.
    - Serial number (bar code and alphanumeric) of every device in the master box.
    - Product description

- o Each individual box should be marked with the following information:
- o Device model
- o Serial number (bar code and alphanumeric) of the device.

The design of each individual box and each master box should be personalized according to the agreed upon specifications between the Ceibal Center and the awardee.

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6. APPENDIX I: COMPLIANCE TABLE

SPECIFICATIONS			COMPLIANCE		OBSERVATIONS
OBLIGATORY REQUIREMENTS			Yes	No	
2.1.1	SIZE	8 inches			
2.1.2	PROCESSOR	Processor specifications			
		Minimum: quad core			
2.1.3	RAM MEMORY	Minimum: 1 GB			
2.1.4	INTERNAL STORAGE	Minimum: 16GB			
2.1.5	RESOLUTION	Minimum: 1280 x 800			
2.1.6	MULTIMEDIA	Incorporated microphone and speakers			
		3.5mm connector jack for headphones port			
		Front and rear camera			
		Rear camera minimum resolution: 2 MP			
		Specifications for both cameras.			
2.1.7	PORTS	Micro SD card reader that supports at a minimum 32 GB cards.			
2.1.8	CONNECTIVITY	Bluetooth			
		WiFi: 802.11 b/g/n or greater			
		LTE integrated modem for access to the network specified in Appendix V			
		3G modem integrated to access the 3G network specified in Appendix V			
2.1.9	BATTERY	Minimum: 3500 mAh.			
2.1.10	CHARGER	Europlug connector (CEE 7/16).			
		Insulation in the upper part of the contact pins - 220 V AC			

2.1.11	OPERATING SYSTEM	Specify version of Android.			
		Minimum: Android 5.0.			
2.1.12	LANGUAGE	Spanish.			
2.1.13	ECO FRIENDLY	Comply with RoHS directive.			
2.1.14	CEIBAL LOGOTYPE	Clearly visible on the casing.			
		Indelible when subjected to application of alcohol.			
		Non-removable when sticking and unsticking packing tape.			
		Specify the impression method.			
2.1.15	SERIAL NUMBER AND BAR CODE	Unique serial number (SN) and bar code.			
		Specify the impression method on the casing.			
		Unique identifier (Id) obtainable through software.			
		Specify if Id and SN are the same.			
2.1.16	DISK IMAGING	Delivery with certified disk imaging			
		Delivery of required Appendix for the installation of the complete Ibirapitá launcher			
		Provide technical assistance during the term of your product in the field.			
2.1.17	CONNECTIONS FOR PERIPHERAL PRODUCTS	Specify if the connection for peripheral products to the mother board is through solder or through connections			
2.1.18	UPDATE SYSTEM	Specify if the devices will have a remote OTA (Over the Air) update system and/or update through a removable device (for example, an SD card)			
DESIRABLE REQUIREMENTS					

2.2.1	ADDITIONAL PORTS		Video output (miniHDMI, microHDMI)			
2.2.2	TYPE OF CHARGER CONNECTOR	2.2.2.1	Barrel jack connector. Specify the impact on the final price			
		2.2.2.2	Type C micro USB connector. Specify the impact on the final price			
2.2.3	TABLET PROTECTION		Cover, casing, or sheath to protect the tablet. Specify the impact on the final price			
2.2.4	MAGNETIC MICRO USB CONNECTOR		Factory installed magnetic micro USB connector. Specify the impact on the final price			
2.2.5	SCREEN PROTECTION		Factory installed tempered glass to protect the screen. Specify the impact on the final price			
2.2.6	HARDWARE TEST		Peripheral diagnostic tools and hardware modules			

7. APPENDIX II: REPLACEMENT PARTS

Replacement Part	Part Number	% of Estimated Failures	Unit Price (US$) - EXW Factory (*)	Minimum Lot	Delivery Timeframe
Mother Board					
Battery					
Screen					
Touchscreen					

(*) Complete this column only in Envelope 2 Economic Bid (the rest of the information should be completed in Envelope 1 Technical Bid and Envelope 2 Economic Bid)

8. APPENDIX III: DOCUMENTATION

DOCUMENTATION			COMPLIANCE		OBSERVATIONS
			Yes	No	
DELIVERY AT THE TIME OF BID SUBMITTAL					
2.3.1.1	TECHNICAL SPECIFICATIONS	Document with technical specifications of every model offered.			
2.3.1.2	PROCESS FOR INSTALLATION OF IMAGING SOFTWARE	Document with process and tools necessary for installation of imaging software.			
DELIVERY BEFORE PRODUCTION CONFIRMATION OR SHIPPING, ACCORDING TO AGREEMENT					
OBLIGATORY DOCUMENTATION					
2.3.2.1.1	BILL OF MATERIALS	BOM: form with a components list and corresponding code.			
2.3.2.1.2	EXPLODED DRAWING	Exploded drawing with identifying code for every part.			
2.3.2.1.3	SCHEMATICS	Schematics and layout of the mother board in digital format.			
2.3.2.1.4	CERTIFICATIONS	Indication of the standards that make up the device.			
		Supporting documentation.			
2.3.2.1.5	INFORMATION FORM FOR EACH DEVICE	Part number for each device.			
		Serial number for each device.			
		Pallet number in which every device has been sent.			

		Master box number in which each device has been sent.			
		MAC address of all the network cards of each device.			
		Part number of the principal components (at a minimum: mother board, screen and battery).			
		Identifier obtainable with software of each device.			
2.3.2.1.6	PACKING CONDITIONS	Measurement of individual box.			
		Weight of individual box.			
		Measurement of master box.			
		Weight of master box.			
		Individual boxes per master box.			
		Master boxes per pallet.			
		Pallet height.			
2.3.2.1.7	UPDATE SYSTEM	Specify if the device will have a remote OTA (Over the Air) and/or a removable device (for example and SD card) update system.			
		In the case of an OTA system, specify its specific functionality.			
		If the respondent will offer the infrastructure.			
		If the infrastructure can be located in Uruguay			
		If the Ceibal Center will have exclusive control over sending the updates			
		If the Ceibal Center can develop or solicit changes to the equipment's software once they are being used in the field			
DESIRABLE DOCUMENTATION					

			COMPLIANCE		
2.3.2.2.1	PROCESS FOR RECORDING ID OBTAINABLE WITH SOFTWARE	Document that specifies tools and process for recording an Id obtainable with software and maintaining the association between the Id and serial number on the casing in case of repair			

9.   APPENDIX IV: REQUIREMENTS FOR INSTALLING THE IBIRAPITÁ LAUNCHER

IbirapitáOS is a launcher that offers a complete operating environment to the user. In the final device, IbirapitáOS and Android will coexist, with IbirapitáOS being the default operating system. See requirement 2.1.16 DISK IMAGING.

The following details the information that should be delivered and capacities for correct installation and configuration of IbirapitáOS:

REQUIREMENTS			COMPLIANCE		OBSERVATIONS
			Yes	No	
9.1	MODIFYING THE BASE IMAGE	Modifying the operating system base image.			
9.2	SYSTEM PRIVILEGE	Offer a platform key for the system			
9.3	PERSONALIZATION	Process specification and tools to personalize the software.			
		Specification of changes that can be made to the imaging software.			
		Capacity to personalize pre-loaded applications.			
		Capacity to include static content (books, audio, video, etc.).			
		Capacity to personalize the user interface.			
		Capacity to personalize the default system configuration.			
		Capacity to add system files, for example, SSL certificates.			
9.4	DEVELOPMENT	Time to respond to requests.			

		Iteration time for every cycle of developing imaging software.			
9.5	CERTIFICATION	Certification of developed imaging system software.			
		Specification of the cost of certifying software imaging.			
		The respondent assumes the cost of certification for the first software imaging.			

9.1   Modify base image: modify the base image of the operating system with that of the device.

9.2   System privileges: provide the "platform key" so that Ceibal can create new versions of the operating environment so they can have system privileges.

9.3   Personalization: specify the process and tools to personalize the tablet software, and indicate, in addition, what type of changes can be made to the imaging software.

By way of example, there is interest in modifying the following aspects:

- Default applications that are pre-loaded, including user and system applications.
- Adding static content (books, audio, video, etc., in a form that comes pre-loaded on the device.
- Personalize the user interface (for example at the bottom of the screen, the image that appears when the device starts, etc.)
- Personalize the default system configuration (for example the language of the device)
- Being able to add files to the system, for example SSL certificates to access the Ceibal system.

9.4   Cycle to develop an image. In case of being awarded, respondent will plan an overall process of generating imaging software based on Ceibal requirements, so they can provide relevant documentation with the delivery timeframe in mind.

The respondent can specify as a part of his bid the time to respond to requests from Ceibal, whether about development process questions or general questions. It is hoped that this development process is executed in various cycles, and it will be helpful for the respondent to indicate the iteration time for each image. In each cycle it can be required that Ceibal deal directly with the manufacturer.

- In order to design development cycles, the following tasks can be included:
- Modification of basic configurations like default language, time zone, among others.
- Installation of Ceibal applications as system applications.
- Disk partitioning.
- Uploading digital certificates in specific directories.

9.5   Certified imaging software: it is required to have certification for the developed imaging software, as with apps and the operating system's own store (for this particular point delivery timeframe can be evaluated case by case).

Specify the cost of image certification. The respondent will assume the cost of the first software imaging developed for the device.

10. APPENDIX V: SPECIFICATION OF CELLULAR NETWORK

10.1 GSM (EDGE/GPRS)

Bands of operation: EGSM (900 MHz) – DCS (1800 MHz)
Carrier bandwidth: 200 KHz
Suggested UE category: Multislot class 12 or better (GPRS/EDGE).

10.2 UMTS (HSPA +/ HSPA)

Bands of operation: Bands 1 (2100 MHz) and 5 (850 MHz).
Carrier bandwidth: 5 MHz.
Suggested UE category: (Release 8 and later): Category 24 or better.

10.3 LTE

Bands of operation: Band 4 (AWS).
Carrier bandwidth: 1.4/3/5/10/15/20 MHz.
Suggested UE category (Release 8 and later): Categories 3 or 4.

11. BID VERIFICATION LIST

1	Complete all the items in Appendices I, II, III y IV and include in the bid the information requested in the Appendices.
2	Specify the delivery deadline for factory installed software imaging, in order to comply with the specified timeframe.
3	Specify if factory installation of software imaging will proportionately affect the proposed schedule.
4	Bid quotation according to the brackets established in the specifications.
5	Specify guarantee conditions in case the conditions established by Ceibal are not met.
6	Specify delivery timeline of the final product.
7	Bid delivery according to segmentation in the folders defined in section 3. BID for the corresponding devices.