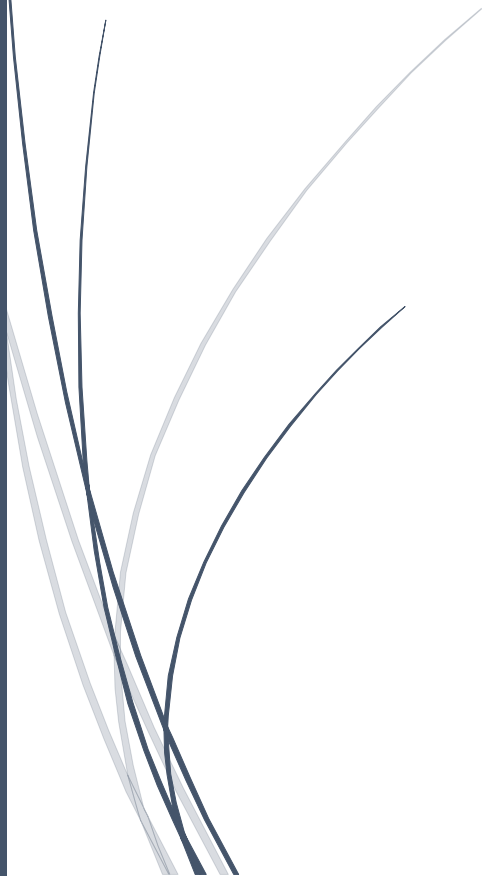
7/16/2023

Call for Proposal of CPE VDSL Router Design & Development



1. CONTEXT & BACKGROUND

This Call aims to solicit proposals from qualified enterprises (Electronics design and/or manufacturing entity operating in the Egyptian market) to design and develop a complete product of a high-speed internet router devices (**CPE**) ready for mass production.

1.1. INTRODUCTION

Egypt is making significant steps towards transforming its economy into a knowledge-based one focused on innovation and localization. Information Technology Industry Development Agency (**ITIDA**) has a pivotal role in the development of the ICT and Electronics industry. Moving forward, "Egypt Makes Electronics (**EME**)" is a Presidential Initiative executed by ITIDA supervised by Ministry of Information and Communication Technology (**MCIT**), entitled to capitalize on the growth of the nascent semiconductor and electronics industry in Egypt. EME aims to transform Egypt not only into World destination for Electronics Design but also a regional manufacturing hub.

Telecom Egypt (**TE**), as the largest integrated national telecom operator in Egypt has an important R&D role in driving innovation in the telecom sector in the Egyptian market. This is by encouraging local designers and manufacturing firms. In order for Telecom Egypt to operate its Internet services, terminals for high-speed Internet Customer Premise(s) Equipment (CPE) is needed to obtain faster internet services and data transfers with a better quality by obtaining a better connection that keeps pace with digital technology development.

1.2. THE OPPORTUNITY & GOALS

Information Technology Industry Development Agency (ITIDA) and Telecom Egypt (TE) are aiming to deepen local manufacturing through localization of the telecom products needs and devices requirements by soliciting local R&D and electronics manufacturers to develop and produce local telecom products.

In this context, Information Technology Industry Development Agency (ITIDA) and Telecom Egypt (TE) will sponsor up to three projects for the design and development of high-speed internet routers (CPE); funded by TE; implemented by three experienced enterprises operating in the Egyptian markets specialized in the Electronics design and/or manufacturing entity of telecom-electronic products to achieve the first Egyptian design and production for (CPE) routers.

Looking forward to achieving economic, social, monetary, and commercial goals, as follows:

- Enabling and developing a national arm of Egyptian companies to satisfy the local demands of telecom devices while introducing them to the global markets of electronics and telecom industry.
- Exploiting TE's capabilities and the volume of its purchases to provide the initial steppingstone for the design and manufacture of a local Egyptian product capable of exporting in the future.

- Seeking the possibility of achieving self-sufficiency in the local market of routers for the high-speed Internet router devices (CPE), reducing import rates and the volume of foreign currency spending furthermore increasing the foreign currency reserves in the event of exporting.
- Transferring knowledge and knowhow in the telecom industry, building new job opportunities for specialists and technicians working in this field by encouraging emerging design and manufacturing companies specialized in this field.
- Saving foreign currency expenditure.
- Satisfy Telecom Egypt's requirements by providing a locally manufactured product (CPE) specifically designed to suit the company's technical and commercial needs.
- Developing a supply chains for high-speed internet routers (CPE).
- Seeking to reduce the unit price of these (CPE) devices.
- Working in favor of development and scientific research while introducing new competencies and ideas serving the national industry.
- Increasing the export opportunities of ICT, electronics services and products.
- Stimulating the investment by the domestic companies in the ICT and electronics industry.

2. PURPOSE

ITIDA in accordance to the agreement with TE is issuing this Call for Proposal (CFP) to solicit proposals from qualified ICT/Electronics enterprises, operating in the Egyptian markets (as design house or manufacturer or consortium). This solicitation targets the design and development of a complete product of high-speed internet routers (CPE) ready for mass production, while owning its Intellectual Property (IP) thus fulfilling Telecom Egypt (TE)'s local and regional demands through local manufacturing.

The developed project shall include end-to-end product satisfying all defined specifications and requirements shown in **Annex-1** including software functions, features, hardware specifications, mechanical requirements, communication standards. The successful projects will be qualified to contract for mass volume production.

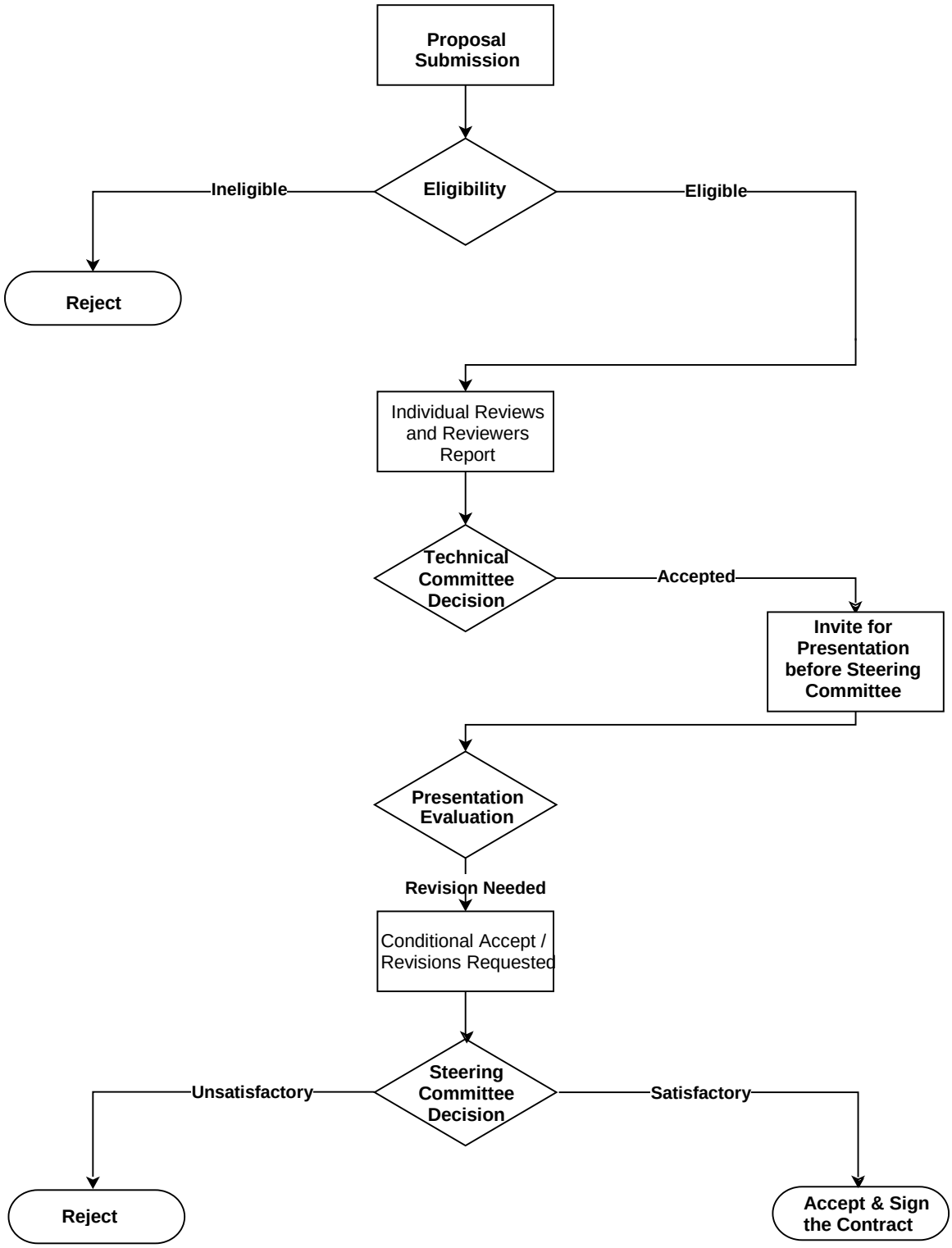
3. PROJECT IMPLEMENTATION AND SCOPE OF WORK

The project activities and process of implementation are depicted below:

3.1. FIRST PHASE: Call for Proposal (**CFP**) & CONTRACTING WITH APPLICANTS.

This phase will encompass announcing the competitive call through the Information Technology Development Industry Authority (ITIDA), Q&A session to answer any questions about the Call, and selecting up to three qualified companies capable of successfully completing the task according to the criteria agreed upon between TE and ITIDA.

The selection process is depicted in the following chart:



3.2. SECOND PHASE: THE DESIGN AND IMPLEMENTATION PHASE.

- Submitting the details of the design requirements and specifications of the required high-speed internet device (CPE).
- Hardware, Software and Mechanical system development according to proposed milestones.
- Periodical review meeting between technical committee and projects leaders to follow up on the outputs of the three projects to ensure their consistency with the specifications and the proposed plan.
- Within development phase; mechanical properties, hardware specifications, Functions and User Interface shall be approved by the review committee within different milestones.
- Creating, submitting and presenting the technical and financial progress reports by each company at the end of each milestone.
- Completion of the design and development phase of the product by the companies.
- Preparation of the final prototype of the routers of the high-speed Internet (CPE).
- Product test: final prototype is expected to be tested at one of reputable testing agencies (ex. Keysight, Orange Lab, …etc.), and release a test report, to ensure that the product satisfies the international standards and meet the working conditions in Egypt.
- The prototype should meet the qualifications to obtain CE certification & NTRA type approval.
- Technical Deliverables shall be reviewed, tested and validated by technical committee.
- The design phase is expected to include at least 3 milestones:
    - Setup the development platform, agreement with technology partners, acquiring all development kits/tools with necessary knowhow transfer, systems architecture, final electrical and mechanical specifications
    - Building MVP (preliminary prototype) with basic features.
    - Delivery of Final working prototypes satisfying all requirements.

3.3. THIRD PHASE: TESTING AND VALIDATION BY TE

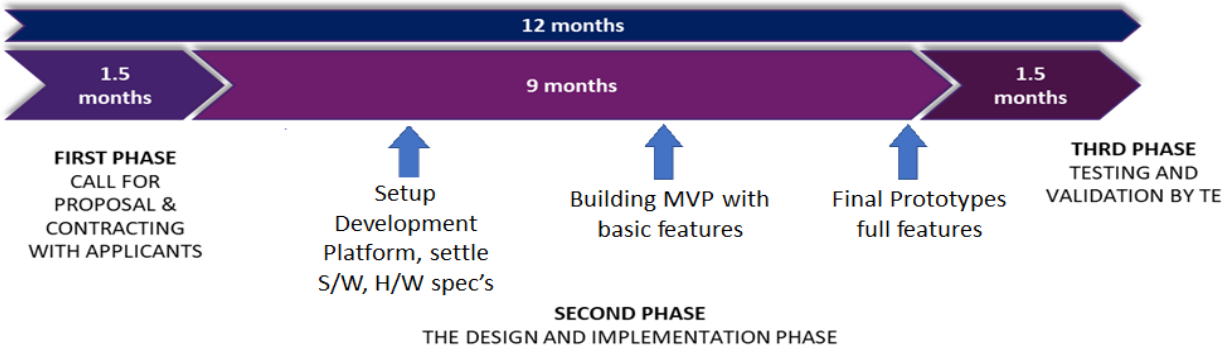
- Testing and validation of the delivered industrial samples by TE according to the international standards and required specifications mentioned below **in the Annex (1)** by TE and ITIDA.
- Announcing the winning company or companies with the best model design in terms of performance and cost standards and its compliance with international standards.

Consequences:

Successful projects shall be eligible and have priority for contracting of local manufacturing delivery of CPE devices ex. VDSL Routers.

4. **TIMELINE**

Twelve-month duration is envisioned from the **CFP** to the prototype testing and validation, whereas nine-month duration is envisioned from contract signature to accomplish the design, implementation and delivery of the final prototype with full features. The timeline is shown in the following graph.



5. **ELIGABILITY**

The eligible proposals should meet the following conditions:

- The company must be operating in Egyptian market as a design house or a manufacturer or consortium from design house and manufacturer.
- The company must have a dedicated R&D team in Egypt in related electronics or telecom products and capable of achieving local product design and manufacturing.
- Previous experience in similar projects in design, development and Manufacturing.
- There is an agreement (LOI or MOU) with one of the chipset suppliers

6. **REQUIRMENTS**

The applicants should fulfil the below requirements within their proposal.

#	Requirement	Description
1	Company Profile	Company background and domain of expertise. Company size, no. of staffs, presence in Egyptian market, no. of offices and locations and profiles of technology or manufacturing partners
2	Regional/ International Experience	International or regional experiences working in other markets
3	Company financial situation – financial statement	Income statement for last 2 years
4	Previous experience in similar projects	Submit a company portfolio including previous experiences in similar design project.
5	Previous mass production experience of similar products	Submit a company previous experiences dealing with electronic devices mass manufacturing.

6	Customer references	Reference contacts from company's customers (name, address, main contact numbers).
7	R&D team	The company must have a dedicated R&D team.
8	Agreement with chipset	Submit LOI or MoU with chipset provider (ex. Qualcomm, MTK, Realtek, Maxilinear,…etc.)
9	Time plan for design phase with detailed breakdown and milestones	Submit nine-months project plan for the design phase, including needed resources, task breakdown and milestones
10	Technical/commercial/legal Requirements	Adhere to TE technical, commercial, and legal requirements attached in all Requirements available in the Annex (1)
11	Budget estimation & design cost breakdown	Submit a cost breakdown for all design stages grouped for each and every milestone
12	Estimated production price based on volume tiers	Submit unit price for mass production based on volume tiers (10K, 50K, 100K, 200K, 500K, 1M) units.
13	Local Manufacturing Plan	Provide a local manufacturing plan in case of contracting for local mass-production, including pre-agreement with one of local manufacturer (LOI or MOU).

7. DELIVERABLES:

Completion of each work package marks fulfilling a milestone, numbered from Milestone 1, 2, 3..etc., and associated with a comprehensive report with deliverable detailed findings, outcomes, and recommendations. Each milestone and deliverable associated with the demonstrated report will be reviewed and validated by technical committee.

Within six months of implementation, the company should deliver initial prototype with basic features to be reviewed while ensuring the product consistency with the required specifications by technical committee and TE team.

At the end of the project after the review and validation of both the technical committee and the steering committee, the expected deliverables should include:

- Final technical and financial reports.
- The final prototype of CPE locally manufactured (20 pcs)
- All Design files, including source codes of Software design, hardware, CAD files, mechanical drawings, certificates,..etc.)
- Mechanical housing and all needed accessories.
- Testing Reports from one of professional testing labs
- Manufacturing plan in case of contracting volume production
- Final product cost.
- Copy of agreements with partners and technology providers.

8. Payment Plan

The fund shall be deposited to the company in installments basis, according to the financial proposal, the approved deliverables of each milestone and achieved tasks validated by the steering committee. The payment plan is explained in the following table:

#	Milestones	Max. Duration	Max. payment (%)
1-	Down payment		20%
2-	Milestone-1: (Setup platform, S/W, H/W requirements…)	3 months	15%
3-	Milestone-2: Unleash MVP with basic features	3 months	25%
4-	Milestone-3: Deliver final prototypes full features	3 months	30%
5-	Milestone-4: Testing & Validation by TE	1.5 months	10%

9. INSTRUCTIONS

9.1. The Proposal shall comprise the following two documents:

- Technical Offer demonstrating that the company meets all call requirements. The document structure should follow associated proposal form.
- Financial Offer with detailed cost information based on associated budget form.
- Company profile
- All required documents explained in associated proposal form.

9.2. General Rules

- The Company must clearly present its profile and references.
- All products IPs' rights or patents outcome from this project shall be owned by Telecom Egypt (funding agency).
- The payment shall be paid to selected companies in installments based on milestones deliverables and project performance according to the contract.

9.3. Proposal Presentation

- Applicants whose proposals receive an "Accept" decision and are deemed as shortlisted proposals.
- The shortlisted proposals are invited to give a presentation before the Technical Evaluation Committee (**TEC**) members and steering committee. This presentation results in another unified score based on how the applicants addressed the comments/concerns of both committees, then the final decision is made.
- Based on the presentation score, successful proposals will proceed to the contracting stage.

9.4. Proposal Submission

- A template is provided on ITIDA's website for the typical sections of the proposal. This template represents the minimum requirements that are expected to be exploited in the proposal.

- The proposal should be prepared to address all the scoring items provided in the EVALUATION CRITERIA relevant to Call in the next section.
- The submission package should include:
    - Project Proposal: in PDF format, the filename should be a short/abbreviated name of the Design Company followed by "_Proposal_CPE_Design". For e.g., My Company_Proposal_CPE_Design.pdf.
    - Project Team Resumes: in PDF format, one file combining all resumes. The filename should be a short/abbreviated name of the Design Company followed by "_Resumes_CPE_Design". For e.g., My Company_Resumes_CPE_Design.pdf.
    - Company Profile: in PDF format, the filename should be a short/abbreviated name of the Design Company followed by "_Profile_CPE_Design". For e.g., My Company_Profile_CPE_Design.pdf.

- To submit the proposal, please email to: **hmfouad@itida.gov.eg**

10. PROPOSAL EVALUATION CRITERIA

i- A Technical Evaluation Committee (**TEC**) will evaluate the Technical Offer. TEC will employ the following criteria for evaluation:

Criterion	Weight
Company Profile	20
Previous experience in similar projects or in deep technology of electronic products development	20
Work plan for design phase and delivery approach with details breakdown/milestones	30
Implementation Development Team	20
Future Manufacturing Plan and product cost	10
Total	100

Proposal should get a Passing grade in every criterion while scoring at least 80 marks to be accepted; otherwise it will be considered unaccepted.

ii- Financial evaluation.

iii- Choosing the best 3 acceptable proposals.

11. IMPORTANT DATES

Call for Action: 19 July 2023
Q&A Session: 31 July 2023
Submit Time: 24 Aug. 2023
Short list Presentation Date: 31 Aug. 2023
Results Date: 7 Sep. 2023
Contract Signing Date: 12 Sep. 2023

ANNEX (1)

This section will enclose all the needed specifications that must be fulfilled while adhering to TE's technical, Mechanical & commercial requirements, NTRA & Electronic Requirements.

i. TE Technical Design Requirements:

General		
Feature	Description	Required
Power Switch	A power switch to turn the unit on and off	
Reset button	A push button to reset the device configuration to its default values	
Power LED	An LED to indicate that the box is receiving power	
4 LAN LEDs	4 LEDs where each LED turns on when a device is connected to corresponding Ethernet port	
ADSL Line LED	An LED to indicate that the ADSL line is connected	
Internet connection LED	An LED to indicate that the PPP link is established	
WLAN LED	An LED to indicate that the Wireless is active	
WLAN Switch	A switch to activate and deactivate the wireless LAN	Optional
WLAN security LED	An LED to indicate that wireless security is active	Optional
Dual Band	2.4 GHz 5GHz 802.11 b/g/n/ac	Mandatory
Chipset	please state type	
G.INP	Support G.INP	Mandatory
CPE housing and packaging	packaging and housing of CPE should be customized upon we Requirements	
cable delivered with CPE	twisted cable not flat cable	
Splitter	high quality splitter is needed	
operating temperature	up to 55 degree	
USB	Device must support minimum USB 2.0	File transfer and 4G

		backup is mandatory

Configuration Options		
Feature	Description	Required
GUI	Ability to Configure the device through a GUI	
Wizard setup	The default page to be displayed after login should be a wizard asking about ISP credentials and the other PVC settings to be hidden next to be the wireless settings (SSID and security options)	
TR-069	TR-069 HDM compliant/certified and integrated with SAM, SSM, WCM and HDM	Mandatory
Interoperability with WE HDM	Interoperability integration with WE Motive customized solution including SAM, SSM, WCM and HDM.	
HDM integration XML files	it mandatory to provide XML file that cover all standard and vendor specific parameters in GUI to be availed in XML file of firmware	Mandatory all GUI features Bidder must provide all parameter mapping with values
UPNP	Support for universal plug and play	
File Upload		
Username Locking of PPPoE	Ability to lock the username to username@tedata.net.eg where (username is a numeric value and password is also a numeric value	

WAN		
Feature	Description	Required
Multiple PVCs	Supporting up to 8 PVCs	
PVC sensing	Supporting PVC Auto Sense and customized PVCs with manual adjustment	Optional
IGMP	Support for IGMP (proxy and snooping)	Mandatory

Protocols		
Feature	Description	Required
PPPoE	Support for PPPoE	
IPoE	Support for IP over Ethernet	
Bridging	Support for RFC 1483 Bridging	
Wan to Ethernet Termination	Terminate the WAN to one of the Ethernet Ports	
Different type of protocols on different PVC	Support up to 8 different protocols on 8 different PVC	
Multi-PPPoE on different PVC	support up to 8 PPPoE on 8 different PVC	

Encapsulation		
Feature	Description	Required
LLC		
VC MUX		
Editable VPI and VCI		
Editable username and password of PPPoE		
Editable MTU	Editable MTU per PVC & auto adjust	Hardware must support MTU 2000
Automatic DNS assignment	Ability to set the DNS configuration based on parameters defined by the operator	
User Defined DNS	Ability to manually set the DNS configuration	

ADSL Modes		
Feature	Description	Required
G.DMT (G992.1)		
G.Lite (G992.2)		

ANSI T1.413 Issue 2		
ADSL2 (G.992.3)		
ADSL2+ (G.992.5)		
ADSL2 Annex L		
ADSL2+ Annex M		
Manual Adjustment		
Automatic Adjustment		
SRA		

VDSL Modes		
Feature	Description	Required
ITU G.993.1	VDSL	
ITU G.993.2	VDSL2	
ITU-T G.993.5	G.Vector % super vectoring	
vectoring	vectoring support not vectoring friendly	Mandatory
8a Profile		
8b Profile		
8c Profile		
8d Profile		
12a Profile		
12b Profile		
17a Profile		
30a Profile		Optional
35a Profile		Optional
35b Profile		Mandatory
Manual Adjustment		
Automatic Adjustment		
G.inp		Mandatory

LAN		
Feature	Description	Required
Four LAN ports	GE Ports needed	
IPv4	Support for IP version 4	
Subnet Mask Validation	Ability to verify the validity of the subnet mask and preventing the user from entering a invalid one	
DHCP Server	The ability of the device to function as a DHCP server	
DHCP Reservation	Ability to reserve a segment of the DHCP address space	

	to specific devices based on the MAC address	
DHCP relay per PVC		
Disable DHCP Server per SSID	in case of DHCP Relay failure public Wi-Fi customer don`t get an IP from the internal DHCP	
Multiple IPs on the LAN interface	Ability to assign multiple public and/or private IPs from different subnets to the LAN interface to enable the device to act as a gateway for multiple subnets.	
VLAN	Port mapping or interface grouping	
Port to PVC Mapping	Mapping PVC to physical ports individually or wireless SSID	

Wireless LAN		
Feature	Description	Required
Enabling and Disabling Wireless LAN		
Editable SSID	Ability to change the WLAN SSID	
Disabling SSID broadcasting	Ability to disable SSID Broadcasting	
Security Options (Open Shared)		
WPA PSK	TKIP	
WPA RADIUS Server		
WPA2-PSK	AES	
Mixed WPA and WPA2		
ASCII password		
Hexadecimal password		
802.11b		
802.11g		
802.11n		
802.11ac		
802.11b and g		
802.11b,g and n		
Auto Channel Select		
Manual channel Adjustment		
Different 802.11 b/g/n mode per SSID		

support Band steering		Mandatory
Different channels for different SSID		
Wireless isolation per SSID		
MAC Address Filter per SSID not per WIFI		
802.11e/WMM		
maximum number of clients per SSID		
13 different channels on 2.4 GHz band	Channel 1 (2.412 GHz) to 13 (2.472 GHz)	
WPS		
MAC Address Filter		
Band steering performance	DBM value, time to shift, ….	
WIFI MAX speed 2.4G		
WIFI MAX speed 5G		
SUPPORT TR-398		
5G supported channels		
MIMO 2*2 for 2.4Ghz & 5G Hz		Mandatory
WIFI 6 support 802.11ax 1500		optional
WIFI easy mesh	Mesh support for wireless connectivity with devices	mandatory
Easy mesh release	R2,R3 , R4	
Easy mesh compatibility	Compatibility with AP	
Mobile app for WIFI support service		

NAT options		
NAT and NAPT		
Feature	Description	Required
Full Featured NAT	interoperability of real and private IP together at the same time	
IP Address Mapping	One to one, Many to many with overload, Many to many no overload, Many to one) (interoperability of real and private IP together at the same time	
Port Mapping		
Port Forwarding		
Virtual Server		
User Defined Ports		
DMZ Host		
DDNS		
support both IPv4 and IPv6 (Dual Stack) for Client traffic		Mandatory

support Dual Stack Lite		Mandatory
support DNS64XLate	Shall be supported within 2 years	Optional
support Native IPv6 (with no IPv4) for Client traffic		

Firewall		
Feature	Description	Required
Allow/Deny by IP address		
Allow/Deny by IP address per SSID		
Allow/Deny by MAC address		
Allow/Deny by MAC address per SSID		
Allow/Deny by URL		
Allow/Deny by URL per SSID		
Allow/Deny by content		Optional
Allow/Deny by content per SSID		

Security Requirements		
Feature	Description	Required
For firmware make sure of the integrity of the received BIN file to avoid anonymous backdoors.		
For firmware make sure there is no hardcoded default accounts OR default passwords		
For firmware make sure there is no hardcoded telnet passwords		
For firmware make sure there is no clear text private Key certificates		
Block traffic to ports Telnet and HTTP (23,80) from the internet		
For new firmware eliminate unsecure telnet service on the CPE		
Make sure that the version of network services is not vulnerable		
CPE should support WPA2		
Enable logging by default on CPEs		
Ensure the connection (from HDM to CPE) is over SSL		
Disable unsecure service (HTTP) and replace by secure version (HTTPS)		
Change week password on the web console (default account) ,unique password per subscriber		
Unique WIFI password for each CPE		

Ensure CPE provider SLA includes to notify TE ISP with any vulnerability and new firmware releases (specially the security related releases)		
Check PDF attached for security		

Troubleshooting		
Feature	Description	Required
Traceroute		
Ping		

Maintenance		
Feature	Description	Required
Reset to factory defaults through the GUI		
Reset to factory defaults through switch		
Firmware upgrade		

Logging		
Feature	Description	Required
Logging	System log explaining security, WAN and LAN protocols, errors, warnings and started or stopped process as well.	

Customization		
Feature	Description	Required
Routed activated PPP PVC	Routed activated PPP PVC, protocol PPPoE, VPI 0, VCI 35, Encapsulation LLC snap, being able to edit username and password, default username to be numeric value 00000 locked and suffixed by @tedata.net.eg, password default value 00000000 mtu to be 1492.	
Login credentials	username: admin pw: last 8 characters of SN upper case	
Wi-Fi credentials	SSID: WE_LAST 6 of MAC upper case	

	pw: last 8 characters of SN lower case	
Adding WE logo	The logo to be apparent on the GUI	
Opening Page	The default opening page with the CPE is factory default should have only the filed for ISP username and password which edits the routed PVC then directs to wireless settings to be also adjusted and finally after saving the settings to redirects to CPE login Page which directs to system info page.	
Dying Gasp (from CPE to MSAN)		Mandatory
TR-069 Activated		
URL	http://acs.tedata.net.eg	
Username		
Password		
Path	/tr069	
Port	7547	
Authentication	No Authentication	
Intervals	60	
Periodic Inform	Activated	
vendor ID message check	should include unique vendor ID, serial number of device, FW version	
HDM integration XML files	it mandatory to provide XML file that cover all standard and vendor specific parameters in GUI to be availed in XML file of firmware	Mandatory all GUI features
stability test on ASSIA	performance stability test per time	

ACS Configuration/ troubleshooting		
Feature	Description	Required
MTU		Mandatory
DNS		Mandatory

WLAN SSID configuration		Mandatory
PPP Sync		Mandatory
IPTV configuration		Mandatory
IP Address Mapping (Option Pack)		Mandatory
Ping		Mandatory
Traceroute		Mandatory

ii. TE Access devices security Requirements:

The flowing points is the most considered security requirements but not limited to:

Firmware analysis	
#	Point
1	For firmware file (.BIN or .IMG) must comply with integrity chick (provide MD5 checksum)
2	For firmware make sure there is no hardcoded default accounts, default passwords OR Keys
3	For firmware make sure there is no hardcoded telnet, SSH passwords
4	For firmware remove telnet package and SSH package
5	For firmware make sure there is no clear text private Key certificates.

Network	
#	Point
6	Block traffic to ports Telnet and HTTP (23,80) from the internet, accepted to enable port 80 but must redirect to port 443
7	Close any other unnecessary open ports, unused services i.e. (open ports with listening processes) MUST be disabled by default on all interfaces.
8	Devices that support FTP serves via USB flash storage consider the flowing • Restrict activation of this service only after plugin the USB • Enforce subscriber to setup strong password for this service. • Protect against brute-force attacks {account lockout after 5 failed login attempts} • replace the FTP service with SFTP or FTPS • File transfer protocol have to be restricted to be used only over LAN. • Disable Autorun from being executed via USB
9	For Device GUI Interface vendor must remove the options of telnet and SSH service.
10	Vendor must provide most stable updated secure version of network services running on the device.

11	CPE should support WPA2 by default.
12	WPS should be disabled by default on the device
13	Ensure the connection (from HDM to CPE) is over SSL
14	Unique WIFI password for each CPE (recommended last 8 character from serial number)
15	Filtering and blocking of MAC addresses MUST be supported on Wi-Fi interfaces and SHOULD be supported on LAN interfaces.
Web	
#	Point
16	web console password of the (default account) must be unique, strong, complex password per subscriber • (recommended last 8 character of serial "if it's not sequential and randomly generated and unpredictable" • You have to enforce subscriber to change his password for the first login to strong, complex one)
17	Restrict login attempts to avoid brute force attack. "Web UI login page MUST be blocked after 3 to 5 wrong attempts, by 30 to 60 seconds".
18	Enable logging by default on CPEs
19	Ensure CPE provider SLA includes to notify TE ISP with any vulnerability and new firmware releases (specially the security related releases)
20	Disable unsecure service (HTTP) and replace by secure version (HTTPS) on all pages and tabs over LAN
21	Vendor must fix Web page vulnerabilities of the device.
22	CPE must have security measures implemented or configured against all common denial of service i.e. (ping to death – flooding – smurf attack)
23	CPE must have a firewall and if disabled a massage must prompt

iii. **TE Mechanical Design Requirements**

For the mechanical part kindly find it below the Maximum dimensions:

Mechanical Design	
Specs	**Maximum Dimension**
Dimensions (W x H x D)	220*170*90 mm

iv. NTRA Design Requirements:

The Prototype must comply with the requirements set by the NTRA for Type-Approval from NTRA official website: https://www.tra.gov.eg/en/regulations/type-approval/
This step is mandatory by the telecommunications equipment facility when importing, manufacturing or assembling devices, which include communications and electronics devices, ensuring that the device is conforming to the international radio, electromagnetic and health specifications approved in Egypt, which are:

- Equipment to the global Radio Frequency (RF).
- Electromagnetic Compatibility (EMC).
- Safety and Health standards approved in Egypt.

v. Electronics Design Requirements

The Prototype must comply with the below requirements:

- IPC-2221 standards of PCB design.
- IPC-A-610 standards for electronics assembly.
- Prototype should pass aging test at least 96 hours.
- PCBA (Assembled PCB) should satisfy EMC/EMI design constrains
    - Emissions EN 55022
    - Immunity EN 55024
    - Overvoltage with IEC standards.
- For the power supply:
  The common-mode attenuation in a state with no ground connection is high—20 dB or greater in the frequency range from 10 kHz to 20 MHz—and that normal-mode attenuation is also high: 40 dB in the frequency range from 30 kHz to 30 MHz.