HEDNO S.A. SPECIFICATION	COMMUNICATION UNIT (MODEM) FOR ELECTRONIC MEDIUM VOLTAGE METERS	ND/402/ 22.11.2018
Issued by the Metering Branch	**Network Department**	

TECHNICAL SPECIFICATION
COMMUNICATION UNIT FOR ELECTRONIC MV METERS

This technical specification is about the communication unit (MODEM) that will be used for the communication link of the medium voltage electronic meters with a Telemetering System for the transfer of metering data. The communication unit shall:

1. Be of **2G/3G and/or 2G/4G LTE** type.
2. Be GPRS multislot Class 8 or higher.
3. Support communication based on the TCP/IPv4 protocol.
4. Have "Transparent" operation capability.
5. Support static IP address for 2G/3G and/or 2G/4G LTE communication.
6. Operate with all mobile communication networks of the country.
7. Perform automatic switching to GSM communication with capability for automatic restoration to 2G/3G and/or 2G/4G LTE communication, when the signal is lost in case of 2G/3G and/or 2G/4G LTE communication.
8. Auto restart in order to find GSM and/or 2G/3G and/or 2G/4G LTE communication signal in case of voltage loss and subsequent voltage restoration.
9. Be capable to automatically reboot at regular intervals, configurable from 1 to 24 hours.
10. Communicate at speed from 9600 to at least 19.200 bps, with the capability of remote and local selection of the desired speed.
11. Be able to remotely change the communication mode from GSM to GPRS/3G and vice versa.
12. Provide capability for reading and parameterization (speed, codes, communication status, signal strength, etc.) via remote commands.
13. Be modular.
14. Be plug-in on the front side of the meter or adaptable inside the terminals cover of the meter.
15. Access to the modem (e.g. for testing, replacement, SIM card replacement, etc) shall be secured with sealing, but without requiring the opening of the main meter cover or violation of the metrological meter sealing.
16. Be directly powered by the meter without any external power supply.
17. Be accompanied by an appropriate antenna of suitable gain and dimensions, in order to be installed in the metering device.
18. Should feature a female SMA connector for a minimal attenuation connection with the antenna.
19. Provide operating indications (i.e. using LED) that include signal strength and are visible when the meter and the modem are fully installed. Alternatively provide operating indications and signal strength on meter's display or those should be remotely available through software.

20. Provide device for placement of the SIM card.
21. Operate in accordance with meters communication protocols EN/IEC 62052-11/47/53/61/62 and DLMS/COSEM.
22. Operate smoothly (uninterrupted) and without problems at the following environmental conditions:
    - Operating temperature range -20ºC to +55ºC
    - Annual mean humidity up to 75%.
23. Have the CE mark and conform to the Radio Equipment Directive 2014/53/EU (RED).
24. Provide protection (in conjunction with the meter power supply) against overvoltages.
25. Shall be provided with the modem configuration software accompanied by the appropriate software licenses.
26. Be delivered parameterized, according to HEDNO guidelines.
27. Have degree of protection IP51 or higher, in conjunction with its installation on the meter, according to standard IEC 60529.
28. Have a protection system against destruction of the SIM card when the card is removed from the modem without prior disconnection of the modem power supply.
29. Not require recharge or/and new parameterization for its immediate operation, in case of storing it for at least 24 month period.

PACKAGE

30. The modems shall be carefully packaged in individual protective cardboard boxes and stacked in a larger 5-6-piece protective cardboard box.
31. The cardboard boxes shall be placed on EU palettes to facilitate transport.
32. These boxes shall be externally and indelibly marked with the Contract number, the material Code and the Manufacturer's Data.

SAMPLE

It is required to submit sample of the communication unit and antenna, with the parameterization software for testing of the seamless communication and meter data transfer between meters – communication units and the Meter Software as well as the Telemetering System through HEDNO VPN and the mobile carrier.