PUBLIC INSTITUTION „NATIONAL SERVICE FOR THE RADIO FREQUENCIES MANAGEMENT"

TECHNICAL REQUIREMENTS

regarding to acquisition of one harmonics and flicker analyzer for EMC measurements according to IEC/EN 61000-3-2 şi IEC/EN 61000-3-3 standards

Elaborated:

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1. GENERAL NOTES	To be completed by the Bidder	
	Guaranteed Technical Specifications (GTS)	Deviation/ Remarks Specify if any
The Technical Requirements is an integral part of the Awarding Tender Documentation and contains whole set of requirements which is the basis for Technical Proposal preparation by each bidder. The imposed requirements will be considered as a minimum and mandatory. In this order, any submitted tender offer, which deviates from these Technical Requirements, will be taken into consideration only if the Technical Proposal implies the ensuring a qualitative level superior to the minimum requirements of these Technical Requirements. The offer containing technical characteristics of products inferior to those specified in the Technical Requirements will be considered inconsistent and will be rejected.		
2. PURPOSE OF ACQUISITION		
The object of this acquisition procedure is the: Supply, Installation and Commissioning of one test analyzer for harmonics and flickers measurements according to IEC/EN 61000-3-2 and IEC/EN 61000-3-3 standards **Purpose of acquisition:** To test the conformity of Electrical & Electronic products (single phase) to the harmonics and flicker requirements according to the European standards IEC/EN 61000-3-2 and IEC/EN 61000-3-3. The measurement instruments are being purchased for endowment of IP SNMFR testing laboratory for product conformity assessment purposes.		

Place of delivery: The measuring instruments and accessories will be delivered, installed and commissioning at the IP SNMFR headquarter, in Durleşti, str. N.Dimo 22/20, MD-2003		
3. GENERAL SCOP OF AQUISITION		
- To test the electromagnetic compatibility parameters of electronic and household electronics products in accordance with European standards in the field of electromagnetic compatibility and radio equipment - To perform testing of radio equipment regarding the efficient use of radio spectrum so that it does not cause harmful interference to prevent the proper use of the spectrum by license holders or end-users (the requirement of the Technical Regulation "Radio Equipment, Telecommunication terminal Equipment and the recognition of their conformity" approved by GD 1274 of 23.11.2007) - To facilitate the accreditation of the testing laboratory for the measurements necessary for product conformity assessment and product market surveillance over a wide range of tests in order to meet electromagnetic compatibility requirements regarding EMI perturbation emissions and immunity to disturbance EMS (Technical Regulation "Electromagnetic Compatibility of Equipment" approved by GD 807 of 29.10.2015) - To provide an accredited tests services necessary for CE and SM conformity marking for telecommunication, radio and home appliances products manufacturers.		

4. QUANTITY		
• 1 (one) test analyzer which would satisfy testing requirements of both standards IEC/EN 61000-3-2 and IEC/EN 61000-3-3 .		
5. DESCRIPTION		
5.1 Types of tests and measurements will be performed in the Laboratory		
The measuring instrument will assure performing of the following tests and measurements: a. To test the conformity of Electrical/Electronic/Telecommunication products according to European standard IEC/EN 61000-3-2 „**Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤16 A per phase)**" b. To test the conformity of Electrical/Electronic/Telecommunication products according to European standard IEC/EN 61000-3-3 „**Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤16 A per phase and not subject to conditional connection**" The mentioned tests are applied to electric and electronic products which use up to 16A current on single phase and intended to be connected to the low voltage (220-250V line to neutral, 50Hz) public power distribution network **NOTE**: The measuring Instruments and equipment offered by the bidder should assure and satisfy the necessity of the laboratory to perform full compliance tests according to the European standards in force (last editions).		

5.2 Laboratory chambers and rooms		
Laboratory has following main facility to perform the tests::		
a. The room for EMC measurements and tests : Room size: L= 4830mm; W= 2950mm; H=3285mm. **b. The room for EMC measurements and tests:** Room size: L= 6084mm; W= 3545mm; H= 3285mm.		

5.3 The list of the types of equipment which will be tested in the laboratory		
The non-exhaustive and non-limiting list of the types of equipment on which electromagnetic compatibility tests will be performed in the laboratory is as follows: - Radiocommunication transmitters used in all governmental and non-governmental frequency bands (GSM, UMTS/CDMA 2000, TETRA, PMR/PAMR, WIMAX, LTE base station, radio transmitters, digital TV transmitters and receivers, etc.); - Radiocommunication receivers used in all governmental and non-governmental frequency bands; - All radio equipment used in all governmental and non-governmental frequency bands; - The multimedia and information technology terminal equipment; - The household appliance and electric tools - Sound and television broadcast receivers and associated equipment - Lighting equipment - Alarm and electronic security equipment An exception to this list is equipment which, owing to its overall dimensions (larger than 1.5m(L) x 1.1m(W) x 1.7m(H), can not be measured in the Laboratory chambers		

6. COMPONENCE		
The test analyser would be a complete test system for IEC/EN 61000-3-2 and IEC/EN 61000-3-3 and satisfy the testing requirements according to mentioned standards. The system would consist of following: • Voltage AC/DC power source, 1-single phase, stable, accurate, programmable and with integrated power analyzer functions • Coupling unit to connect the EUT (equipment under test) to the power source • Real-time Data acquisition unit • Data processing Unit for data analyses, results displaying and test results reporting • Testing software for data processing, control, displaying and reporting of the test results.		
7. THE MINIMAL PERFORMANCIES OF MEASUREMENT EQUIPMENT AND INSTRUMENTS		
The test analyzer for harmonics and flickers measurements according to IEC/EN 61000-3-2 and IEC/EN 61000-3-3 standards		
• The design and technical specifications of the test analyser should be fully compliant to the latest version of IEC/EN 61000-3-2 and IEC/EN 61000-3-3 standards and assure the testing requirements of these standards. • The test system would be designed for harmonics and flicker measurements for single phase lines and current <16A. • The test system would be supplied with stable, accurate and programmable power source compliant to the requirements of IEC/EN 61000-3-2 and IEC/EN 61000-3-3 standards **The power source technical requirements :** • Generated voltage: AC/DC • Frequency range (AC mode): 16-1000Hz • Power output (AC mode): 5000 kVA; • AC Voltage range: 0-300 Vrms; • DC voltage range: 0-300 V; • Harmonic distortion: <1% Ia 60 Hz, <2% Ia 400 Hz, <3% Ia 800 Hz		

- Output noise: (20 kHz to 1 MHz) <250 mVrms typical, <500 mVrms maximum
- Programming accuracy:

  Voltage (rms): ±0.2% of range
  Frequency: ±0.01% of programmed value
  Current limit: ±0.5% of programmed value
  Phase: <1,5° with balance load

- Programming resolution:

  Voltage (rms): 100 mV
  Frequency: 0.01 Hz 16–81.91 Hz,
  0.1 Hz 82.0–819.1 Hz,
  1 Hz 820–1000 Hz
  Current limit: 0.1 Amps
  Phase: 0.1°

- Output impedance : programmable
  Resistive Range: 17-1000 mOhm, Resolution: 4 mOhm, Accuracy: 2% FS;
  Inductive Range: 230-1000 µH, Resolution: 4 µH, Accuracy 2% FS

- Source impedance for flicker measurements: according to IEC/EN 61000-3-3 (0.24 Ω + j0.15 Ω in the line and 0.16 Ω + j0.1 Ω in the neutral).
- Power output DC mode: 3500 kVA
- Output noise: (20 kHz to 1 MHz) < 500 mV rms,
- Arbitrary waveforms generations
- Over load and over temperature protection
- Perform following measurements:
  - Frequency 16-500Hz accuracy ± 0.01%
  - Voltage rms 0-300V accuracy ± 0.5V
  - Current rms 0-40A accuracy ± 0.5 A
  - Crest factor 0-6.00 accuracy ± 0.05
  - Real power 0-5kW accuracy ± 20W
  - Apparent power 0-5kVA accuracy ± 20VA
  - Power factor 0-1.00 accuracy ± 0.02
  - Harmonics measurements:
    - Frequency fundamental 16-500Hz resolution 0.01Hz accuracy ± 0.01Hz
    - Frequency harmonics 32-48kHz resolution 0.01Hz accuracy ± 0.01Hz
    - Phase 0-360° resolution 0.5° accuracy ± 2°
    - Voltage resolution 10mV accuracy ± 250mV
    - Current resolution 10mA accuracy ± 50mA

Coupling unit:

- The coupling unit would realise the connection of the EUT (equipment under test) to the power source
- Number of phases: 1
- Measurement channels: 4
- EUT connector: CEE77 and terminal block
- Coupling Unit would have integrated IEC 61000-3-3 16 Amp impedance
- Maximum voltage: 240VAC
- Maximum current: 16Arms
- Supply power:
  Voltage 230Vac +/- 10%
  Current 0.5A
  Frequency: 50/60Hz

- Real time data acquisition unit would have:
  - resolution: 16biti
  - Speed: 250 kSamples/s
- Test analyzer would be offered with SOFTware for data processing, control, displaying and reporting of the test results. Minimal performance is following:
- Automated test sequences.
- User selectable test limits
- AC voltage distortion continuously monitored
- Voltage and current waveform shown together in real time
- Complete test documentation including Word™ and Excel™ compatible data files
- EUT description and testing conditions identification can be added to the test report
- The measuring instrument should be compliant to the applicable European technical regulations, safety requirements of the EN/IEC 61010 standard and shall comply with relevant EMC&EMI standards.
- The test analyzer should be supplied with the Calibration Certificate issued by the ILAC/EA/APLAC/IAAC (ISO 17025) accredited calibration laboratory.
- Calibration certificate shall not be older than 3 months from date of delivery to IP SNMFR.

Accessories		
The offer shall include all standard accessories, interconnecting cables, power supply cables, connectors etc. The offer shall include USB-GPIB interface converter and GPIB cables, in case the measuring instrument is remote controlled by IEEE-488 interface only. Both hard and soft copies of Safety manual, Installation manual and Operating manual shall be supplied. The manuals should be in at least one of following languages Romanian/English/Russian.		
8. STAFF TRANING		
The bidder shall be responsible for the installation, commissioning and test-run of equipment. When the installation is complete, the bidder shall demonstrate that the supplied equipment meets the declared specifications and provide one-day (8 hours) instruction to laboratory personnel on the following areas: - Operation of the equipment; - Verification of the characteristics; - System maintenance & trouble shooting over view; - Testing procedures aspects; - Safety considerations during the operation and maintenance of the equipment - Preventive and corrective maintenance of the equipment.		

9. WARRANTY		
The warranty period shall be at least 24 months for all measuring equipment and shall start from the date of signature without objection of the equipment acceptance report. If different parts of the equipment are accepted by IP SNMFR over different periods of time, the warranty period for the entire equipment / measurement system will begin from the date of signature of the last acceptance report.		
10. POST WARRANTY		
The bidder has the obligation to ensure, after the expiry of the warranty period, under the terms of a subsequent contract, service and spare parts for a minimum period of 7 years for all offered equipment.		
11. Eligibility criteria for bidders		
The bidder shall provide documents establishing experience and capability as follows: • The bidder shall have minimum of 5 year's experience in supplying similar or higher system. • The end users list whose facility has been accredited to ISO/IEC 17025 standard and purchased or use such instruments. • The bidder shall provide the copy of recommendation letters or feedback from 3 accredited European test laboratory which use such measuring instruments. Note: The manufacturer's references for the required type of equipment are acceptable, in case the bidder is not the manufacturer of the equipment.		
Note: Compliance to meeting all of the above technical specification requirements should be furnished in detail against each technical requirement in GTS column with supporting technical illustrations, schematics, diagrams, drawings, catalogues of proposed sub-equipment & instruments offered.		