

Legal Grounds

This public tender is conducted according to Public Procurement Law of January 29, 2004 (position 759 in Polish Journal of Acts No 113 of 2010, with later changes).

INSTYTUT TECHNOLOGII ELEKTRONOWEJ
Al. Lotników 32/46, 02-668 Warsaw, Poland

TERMS OF REFERENCE

for:

**DELIVERY OF THE TWO-CHANNEL SOURCE-MEASURE UNITS (SMU)
FOR MEASUREMENT OF STATIC CURRENT-VOLTAGE CHARACTERISTICS
OF ELECTRON DEVICES.**

CPV 38540000-2

**Proceedings are conducted according to open procedure for assessed value below
EUR 193 000,00**

1. Name (company name) and address of the Awarding Entity.

This proceedings are conducted by Tender Committee of Instytut Technologii Elektronowej,
Al. Lotników 32/46, 02-668 Warsaw, Poland.
Web page: <http://www.ite.waw.pl>

2. Procedure for awarding the Contract.

These proceedings are conducted in mode of open procedure according to Article 39 of Public Procurement Law of January 29, 2004.

The tenders submitted will be opened and evaluated by the Tender Committee according to the evaluation criterias.

From all tenders which have not been rejected, the one will be selected which receives the highest number of points calculated according to the evaluation criterias.

3. Description of the object of the Contract.

The object of the order is a delivery of the brand new **two-channel source-measure units (SMU) for measurement of static current-voltage characteristics of electron devices**, hereinafter called "device".

Requirements and technical parameters of the object of the order are indicated in Appendix No. 1 of this Terms of Reference (Table No. 1 and Table No. 2)

4. Partial and variant tenders are not allowed.**5. Time limit for the Contract performance.**

Deadline for completion of the tender – maximally to 7 weeks after signing the Contract.

6. Conditions for participation in the procedure and description of the method used for the evaluation of the fulfilment of those conditions:

Eligible to compete for the Contract shall be economic operators who fulfil conditions defined in Article 22 paragraph 1 of Public Procurement Law of January 29, 2004 (with later changes):

- 1) authorizations to perform specific activities or actions, if such authorizations are required by the law;
- 2) knowledge and experience;
- 3) appropriate technical potential and personnel capable of performing a contract;
- 4) economic and financial standing.

The Contractor may rely on knowledge and experience, technical potential, personnel capable of performing the Contract or financial abilities of other entities, regardless of the legal nature of its relations with such entities. In such case, the Contractor is required to prove to the Awarding Entity that it will have at its disposal the resources necessary to performing the Contract, in particular by presenting to this end a written commitment of those entities whereby they undertake to put the necessary resources at the Contractor's disposal for the time of their use in performance of the Contract.

Evaluation of the above requirements will be performed according to the rule: "fulfil - not fulfil", on the basis of documents mentioned in point 7 of this Terms of Reference.

7. Information concerning declarations and documents to be provided by the Contractor to confirm the fulfilment of the conditions for participation in the procedure:

Signed statement confirming fulfilment of the conditions defined in Article 22 paragraph 1 "Public Procurement Law" – in form of "STATEMENT" [Appendix No. 2].

8. Information on the manner of communication between the Awarding Entity and the Contractor as well as of delivery of declarations and documents, indication of persons authorised to communicate with the Contractor.

All the statements, notifications and information the Awarding Entity and the Contractor provide in writing form or by fax.

The contact person in matters concerning the tender is:
Michał Urbański MSc., e-mail: urbanski@ite.waw.pl

Please address all written correspondence, related to this tended proceedings, to:

Instytut Technologii Elektronowej
Al. Lotników 32/46
02-668 Warsaw, Poland.
building No VI, room 216

Fax: + 48 22 548 78 46.

9. Deposit requirements: we do not require.

10. Tender validation time – 30 days from the date of submission of the tenders.

11. Description of the manner of the tender preparation.

The tender should be presented in writing form.

The tender should include:

- a) Name and address of the Contractor,

- b) Date of preparation of the tender,
- c) Filled in Appendix No. 1 to this Terms of Reference (Table No. 1 and Table No. 2),
- d) Net price in PLN (The price presented in EUR, GBP or USD is allowed. In the case of submission of the tenders in EUR, GBP or USD, the price will be exchanged to Polish zlotys PLN according to selling exchange rate of the National Bank of Poland dated on the day before of opening of the tenders).
- e) Indication of the component tasks of the order that will be assigned to subcontractors [Appendix No. 3].

The tender has to be signed by the Contractor or his Authorised Representative.

Together with the offer the Contractor is allowed to submit required documents defined at point 7 of this Terms of Reference, to confirm the fulfilment of the conditions for participation in the procedure.

In the case the Contractor company is located outside Poland, it is approved to submit the tender as well as the documents required from the Contractor as specified under point 7 of this Terms of Reference either in Polish or in English language.

The Contractor is allowed to submit only one offer.

All costs of preparation of the tender, regardless of the results of the tender, shall be covered by the Contractor.

12. Date and place of submission and opening of tenders.

The tenders should be submitted at the site of the Awarding Entity in Warsaw at Al. Lotników 32/46, building No. VI, room 216, by 10⁰⁰ am, on 21st October 2010 (in working days from 9 am till 2 pm). The tenders submitted after this deadline will not be considered.

Opening of the tenders will take place on 21st October 2010 at 10¹⁵ am. at the site of the Awarding Entity: Warsaw, Al. Lotników 32/46 in the building No. VI, room 120.

The Awarding Entity will open the tenders in accordance with its internal procedures but on occasion may hold a public opening which your representatives may attend.

The offers must be submitted in non-transparent and closed envelopes or packages. The envelope or package must be addressed as follows:

**Instytut Technologii Elektronowej
Al. Lotników 32/46
02-668 Warsaw
Building No VI, room 216
Do not open before 10¹⁵ am, on 21st October 2010.**

**OFFER FOR:
DELIVERY OF THE TWO-CHANNEL SOURCE-MEASURE UNITS (SMU)
FOR MEASUREMENT OF STATIC CURRENT-VOLTAGE CHARACTERISTICS
OF ELECTRON DEVICES.**

The envelope or package must include full name and address of the Contractor.

The Awarding Entity does not accept responsibility for consequence of contractors failure to keep the above requirements.

13. Description of the method of the price calculation.

The net price in PLN (EUR, GBP or USD) must include:

- a) the device according to the requirements indicated in Appendix No. 1 of this Terms of Reference (Table No. 1 and Table No. 2),

- b) transport,
- c) delivery conditions: DDP Piaseczno
- d) insurance.

14. Description of the criteria which the Awarding Entity will apply in selecting a tender, specifying also the importance of particular criteria and method of evaluation of tenders.

The Awarding Entity will evaluate whether the tender meets requirements introduced in this Terms of Reference. If the tender is valid (meets requirements introduced in this Terms of Reference), it will be taken into consideration in choice of the best one.

Offer evaluation criteria:

- Price - 60%
- Quality of the device - 40%

Within each of the criteria, the evaluation will take place according to the following rules:

14.1. For the price: number of points in the price criteria will be calculated according to the following formula:

$$P_n = C_{\min} / C_n * 100 * W$$

- where: P_n – points in price criteria
 C_{\min} – the lowest price from all the offers
 C_n – the price from the offer of n-th bidder
 W – weight of the “Price” criteria”

Maximum number of points to be gained within the price criteria is 60.

14.2. For the quality of the device: number of points in the quality criteria will be calculated according to filled Tables No. 1 and No. 2 (Appendix No 1 to the Terms of Reference) and the following formula:

$$Q_n = \left(\sum_p (0,2,3,4)_p \right)_n / \max_p \left(\sum_p (0,2,3,4)_p \right)_n * 100 * W$$

- where: Q_n - points in quality criteria
 $(0,2,3,4)_p$ - values of points for the evaluation of the p-th parameter
 p - number of evaluated parameters
 n - number of the offer
 W - weight of the “Quality” criteria.

Maximum number of points to be gained within the quality criteria is 40.

The sum of points received in all criteria makes aggregate evaluation of the tender.

15. Information concerning formalities which should be met following the selection of a tender in order to conclude a public procurement contract.

The Contract with the winning Contractor will be signed pursuant to Article 94 “Public Procurement Law”.

The Contract is concluded under procedure according to Title IV of Public Procurement Law of January 29, 2004.

16. Other important statements which will be included in the Contract.

The following statements will be included in the Contract:

16.1. Indemnity

- 1) In case of delay, caused by negligence, or poor performance of the Seller, the Seller will pay to the Buyer an indemnity of 0,1% of the value of the equipment delayed for each working day of delay up to 10% of it's value.
- 2) In case of delay in payment, the Buyer will pay to the Seller indemnity of 0,1% of the value of delayed payment for each day of delay up to 10% of it's value.
- 3) In case the Seller will cancel the Contract without reason caused by the Buyer, the Seller will pay to the Buyer penalty of the 10% of the total Contract value and the Seller will transfer back all the received payments for the subject of this contract to the Buyer account.
- 4) In case the Buyer will cancel the Contract without reason caused by the Seller, the Buyer will pay to the Seller penalty of the 10% of the total Contract value plus documentary evidence costs of materials and labour based on the following schedule:
 - a) in period shorter than 30 days from order placement - 20% of the Contract value
 - b) in period shorter than 30 days before delivery and acceptance – 100% of the Contract value
 - c) in period between mentioned in points a and b – percentage approximated by linear function.
- 5) In case of delay, caused by the Seller, in delivery longer than 3 months, the Buyer can cancel the Contract and the Seller will pay to the Buyer penalty of the 10% of the total Contract value and the Seller will transfer back all the received payments for the subject of this contract to the Buyer account.

16.2. Warranty

- 1) The Seller undertakes a warranty of correct operation and technical quality of the delivered equipment for "warranty period included in the offer" months, calculated from the date of the final acceptance protocol, but no longer than "warranty period included in the offer + 3 months from the date of delivery".
- 2) The Seller within warranty period covers costs of the repair or replacement of the defective goods and costs of their transport to the Buyer site after repair.
- 3) During the warranty period, in case of the necessity of the repair outside the Buyer site, the Seller has the obligation to make the repair or replacement within not longer than 12 weeks after the date of the written claim.
- 4) The warranty period will be increased by the time needed for the repair.
- 5) The replaced or repaired parts of equipment will be included a warranty of the Seller or the Producer.
- 6) During the warranty period, the Seller undertakes a maximal service response time within 3 working days after the date of the written claim.

16.3. Delivery instruction

- 1) Subject of the Contract is to be shipped to the address below and placed at the disposal of the Buyer.
Shipping address: Instytut Technologii Elektronowej
 ul. Puławska 34
 05-500 Piaseczno, Poland
- 2) The Seller advises to the Buyer about the dispatch by fax (No.+48 22 54-87-803).
- 3) The Seller will deliver CE certificate together with subject of the Contract.

16.4. Terms of payments

Payment will be effected in the following way:

100% of the contract value – (the value from the offer) – payable by the bank transfer to the Seller's account on the basis of an original invoice within 14 days after delivery of the subject of the Contract to the Buyer's site.

The Buyer shall pay to the Seller due amount for the subject of this contract by transfer to the Seller's account in:

.....
.....

All bank charges in Poland are at the Buyer's account and bank charges outside Poland are at the Seller's account.

16.5. Acceptance of the subject of the contract

Start-up of the device includes technical lunch and performing of the functional tests confirming technical parameters of the system according to technical specification and requirements indicated in this Terms of Reference. Acceptance of the subject of the contract will be done by signing by the Seller and by the Buyer final acceptance test protocol.

16.6. Force Majeure

1. The parties shall be free of responsibilities for non-fulfilment of their obligations due to Force Majeure or these obligations will be change according to the point 4. Force Majeure shall be considered as an event, unforeseeable by either of the parties at the date of signature of this Contract, arisen after such date and being unavoidable and beyond the control of both parties.
2. Cases of Force Majeure are e.g. accidents, flood, earthquake, fire, explosion, war, mobilisation, strikes, blockades, general shortage of transport, materials or labour.
3. The party wishing to claim Force Majeure shall notify the other party in writing without delay on the intervention and on the cessation therefore.
4. Such party must certify the case of Force Majeure to the other party by documentation issued by the competent official authority of this country. The dates and periods for fulfilment of these obligations will be postponed or extended by the period of existence of the state of Force Majeure.

16.7. Setting of disputes

All disputes arising from the present Contract, failing amicable settlement shall be resolved by the Arbitration Court of the Polish Chamber of Commerce in Warsaw in accordance with the rules of this Court.

17. Requirements concerning the security on due performance of the Contract: **we do not require.**

18. Procedure for additional explanations.

Contractor is authorized to address the Awarding Entity only in written form, fax or e-mail is also allowed with request for additional information regarding the content of Terms of Reference - in this proceeding till **13th of October 2010**. The Awarding Entity will respond all the inquiries according to the article 38 of the Act – "Public Procurement Law".

The questions and the answers will be published on web site of the Awarding Entity.

19. Information on legal protection measures available to an the Contractor during the contract award procedure.

Contractor's legal protection laws are included in Chapter VI of the Public Procurement Law of January 29, 2004 which is available on the Public Procurement Office (PPO) web site: www.uzp.gov.pl

20. Other matters.

For all matters not regulated in this Terms of Reference, the provisions of Public Procurement Law of January 29, 2004 will apply.

Michał Urbański

Vice-Director for Administrative and Technical Affairs

Table No. 1

Requirements and technical parameters of a two-channel source-measure unit (SMU) for measurement of static current-voltage characteristics of electron devices.

Parameters given below apply for each individual channel.

No.	Parameter	Requirement	The column to the fulfilment by the Tenderer*	Pts
1.	2.	3.	4.	5.
1.	Device type		specify	
2.	Manufacturer		specify	
3.	Country		specify	
4.	Year of manufacturing	2010	confirm	
5.	General requirements	Standalone operation under control of front panel using a text interface	confirm	
		Operation controlled/triggered by other measurement device via a dedicated interface	confirm	
		Operation controlled by a computer via IEEE-488 and/or Ethernet	confirm	
		SMU interfaces: IEEE-488, and/or Ethernet, RS-232 (control) USB (exchange of data, scripts)	confirm	
		Computer interface USB/IEEE-488: Transmission speed: ≥ 1.0MB/s Operating system: min. Win2000/XP Compatible: min. LabView and C/C++	confirm	
		Measurements in 2- and 4-wire (Kelvin) modes	confirm	
		Measurements using non-shielded and shielded (triaxial) cables; in case of triaxial cables internal shield biased by buffer (guard); guard may be switched on/off	confirm	

		Operation modes: - force voltage/measure current - force current/measure voltage	confirm	
		Operation in four quadrants of I-V plane	confirm	
		Operation under continuous or pulse force conditions	confirm	
		Measurements vs time; storing of measured data with time stamp	confirm	
		Operation with a floating output; minimum absolute value of DC voltage between output "LO" and chassis earth ground 200V	confirm	
		High capacity buffer for measurement data; min. 10000 readings	specify	
		Setting current compliance if voltage is forced or voltage compliance if current is forced	confirm	
		Internal protection against overheating	confirm	
6.	Min. range of programmed voltage	\leq 500 mV	specify	0 pts
		\leq 200 mV		3 pts
	• voltage programming resolution	\leq 20 μ V		0 pts
		\leq 5 μ V		2 pts
	• accuracy	\leq 500 μ V		
	• voltage settling time	\leq 200 μ s		0 pts
		\leq 70 μ s		2 pts
	Max. range of programmed voltage	\geq 100 V		0 pts
		\geq 200 V		3 pts
	• voltage programming resolution	\leq 20 mV		0 pts
		\leq 5 mV		2 pts
	• accuracy	\leq 100 mV		
• voltage settling time	\leq 2 ms	0 pts		
	\leq 700 μ s	2 pts		
7.	Min. range of programmed current	\leq 1 μ A	specify	0 pts
		\leq 100 nA		2 pts
	• current programming resolution	\leq 10 pA		0 pts
		\leq 2 pA		2 pts

	• accuracy	≤	200 pA		
	• current settling time	≤	50 ms		0 pts
		≤	20 ms		2 pts
	Max. range of programmed current (continuous mode)	≥	100 mA		0 pts
		≥	1 A		2 pts
	• current programming resolution	≤	500 μA		0 pts
		≤	50 μA		2 pts
	• accuracy	≤	5 mA		
	• current settling time	≤	1 ms		0 pts
		≤	150 μs		2 pts
	Max. range of programmed current (pulse mode)	≥	3 A	0 pts	
		≥	5 A	2 pts	
	• current programming resolution	≤	1 mA	0 pts	
		≤	250 μA	2 pts	
	• accuracy	≤	100 mA		
	8.	Min. range of voltage measurement	≤	500 mV	0 pts
			≤	200 mV	3 pts
		• display resolution	≤	10 μV	0 pts
			≤	1 μV	3 pts
		• accuracy	≤	275 μV	
Max. range of voltage measurement		≥	100 V	0 pts	
		≥	200 V	3 pts	
• display resolution		≤	10 mV	0 pts	
		≤	1 mV	3 pts	
• accuracy		≤	80 mV		
9.	Input resistance	≥	1 GΩ	0 pts	
		≥	10 GΩ	4 pts	
	9.	Min. range of current measurement	≤	1 μA	0 pts
			≤	100 nA	4 pts
		• display resolution	≤	10 pA	0 pts
			≤	1 pA	3 pts
		• accuracy	≤	200 pA	
		Max. range of current measurement (continuous mode)	≥	100 mA	0 pts
			≥	1 A	3 pts
		• display resolution	≤	100 μA	0 pts
		≤	10 μA	3 pts	
• accuracy		≤	5 mA		
	Max. range of current measurement (pulse mode)	≥	1 A	0 pts	
		≥	5 A	3 pts	

	<ul style="list-style-type: none"> display resolution 	\leq 1 mA \leq 100 μ A		0 pts 2 pts
	<ul style="list-style-type: none"> accuracy 	\leq 70 mA		
10.	Pulse operation <ul style="list-style-type: none"> min. pulse width pulse programming resolution 	\leq 200 μ s \leq 5 μ s	specify	
11.	Acceptance test	Final acceptance test at the Awarding Entity site after installation and start up of the system	confirm	
12.	Minimum 12 month warranty	assured	specify	
13.	Documentation in Polish or English	assured	confirm	
14.	Deadline for completion of the tender	maximum 7 weeks after signing of contract	specify	

***Imprecise or inaccurate fulfilment of the table in the column 4 will result in rejection of the offer.**

Table No. 2

Requirements and technical parameters of a two-channel source-measure unit (SMU) for measurement of static current-voltage characteristics of electron devices.

Parameters given below apply for each individual channel.

No.	Parameter	Requirement	The column to the fulfilment by the Tenderer*	Pts
1.	2.	3.	4.	5.
1.	Device type		specify	
2.	Manufacturer		specify	
3.	Country		specify	
4.	Year of manufacturing	2010	confirm	
5.	General requirements	Standalone operation under control of front panel using a text interface	confirm	
		Operation controlled/triggered by other measurement device via a dedicated interface	confirm	
		Operation controlled by a computer via IEEE-488 and/or Ethernet	confirm	
		SMU interfaces: IEEE-488, and/or Ethernet, RS-232 (control) USB (exchange of data, scripts)	confirm	
		Measurements in 2- and 4-wire (Kelvin) modes	confirm	
		Measurements using non-shielded and shielded (triaxial) cables; in case of triaxial cables internal shield biased by buffer (guard); guard may be switched on/off	confirm	
		Operation modes: - force voltage/measure current - force current/measure voltage	confirm	
		Operation in four quadrants of I-V plane	confirm	
		Operation under continuous or pulse force conditions	confirm	
Measurements vs time; storing of measured data with time stamp	confirm			

		Operation with a floating output; minimum absolute value of DC voltage between output "LO" and chassis earth ground 200V	confirm	
		High capacity buffer for measurement data; min. 10000 readings	specify	
		Setting current compliance if voltage is forced or voltage compliance if current is forced	confirm	
		Internal protection against overheating	confirm	
6.	Min. range of programmed voltage	\leq 500 mV	specify	0 pts
		\leq 200 mV		3 pts
	• voltage programming resolution	\leq 20 μ V		0 pts
		\leq 5 μ V		2 pts
	• accuracy	\leq 500 μ V		
	• voltage settling time	\leq 200 μ s		0 pts
		\leq 70 μ s		2 pts
	Max. range of programmed voltage	\geq 100 V		0 pts
		\geq 200 V		3 pts
	• voltage programming resolution	\leq 20 mV		0 pts
		\leq 5 mV		2 pts
	• accuracy	\leq 100 mV		
• voltage settling time	\leq 2 ms	0 pts		
	\leq 700 μ s	2 pts		
7.	Min. range of programmed current	\leq 10 nA	specify	0 pts
		\leq 1 nA		2 pts
	• current programming resolution	\leq 100 fA		0 pts
		\leq 20 fA		2 pts
	• accuracy	\leq 4 pA		
	• current settling time	\leq 500 ms		0 pts
		\leq 150 ms		2 pts
	Max. range of programmed current (continuous mode)	\geq 100 mA		0 pts
		\geq 1 A		2 pts
	• current programming resolution	\leq 200 μ A		0 pts
		\leq 20 μ A		2 pts
	• accuracy	\leq 5 mA		
• current settling time	\leq 1 ms	0 pts		
	\leq 150 μ s	2 pts		

	Max. range of programmed current (pulse mode)	\geq	3 A		0 pts
		\geq	5 A		2 pts
	• current programming resolution	\leq	1 mA		0 pts
		\leq	250 μ A		2 pts
	• accuracy	\leq	100 mA		
8.	Min. range of voltage measurement	\leq	500 mV	specify	0 pts
		\leq	200 mV		3 pts
	• display resolution	\leq	10 μ V		0 pts
		\leq	1 μ V		3 pts
	• accuracy	\leq	275 μ V		
	Max. range of voltage measurement	\geq	100 V		0 pts
		\geq	200 V		3 pts
	• display resolution	\leq	10 mV		0 pts
		\leq	1 mV		3 pts
	• accuracy	\leq	80 mV		
Input resistance	\geq	$10^{13} \Omega$	0 pts		
	\geq	$10^{14} \Omega$	4 pts		
9.	Min. range of current measurement	\leq	1 nA	specify	0 pts
		\leq	100 pA		4 pts
	• display resolution	\leq	10 fA		0 pts
		\leq	1 fA		3 pts
	• accuracy	\leq	300 fA		
	Max. range of current measurement (continuous mode)	\geq	100 mA		0 pts
		\geq	1 A		3 pts
	• display resolution	\leq	100 μ A		0 pts
		\leq	10 μ A		3 pts
	• accuracy	\leq	5 mA		
Max. range of current measurement (pulse mode)	\geq	1 A	0 pts		
	\geq	5 A	3 pts		
• display resolution	\leq	1 mA	0 pts		
	\leq	100 μ A	2 pts		
• accuracy	\leq	70 mA			
10.	Pulse operation			specify	
	• min. pulse width	\leq	200 μ s		
	• pulse programming resolution	\leq	5 μ s		
11.	Acceptance test	Final acceptance test at the Awarding Entity site after installation and start up of the system		confirm	

12.	Minimum 12 month warranty	assured	specify	
13.	Documentation in Polish or English	assured	confirm	
14.	Deadline for completion of the tender	maximum 7 weeks after signing of contract	specify	

***Imprecise or inaccurate fulfilment of the table in the column 4 will result in rejection of the offer.**

.....
/address stamp of the Contractor/

.....
/date/

STATEMENT

Acting in accordance with the contract award procedure, we certify that we fulfil the requirements specified in Article 22 paragraph 1 of Public Procurement Law, which states that eligible to compete for a Contract are economic operators who fulfil the requirements concerning:

1. authorisation to perform specific activities or actions, if such authorisations are required by the law;
2. knowledge and experience;
3. appropriate technical potential and personnel capable of performing a contract;
4. economic and financial standing.

.....
/signature of the Contractor or his Authorised Representative/

List of the component tasks of the order that the Tenderer intends to assign to subcontractors

(in case no such tasks please fill in with dashes)

No.	The scope of contract, which the Tenderer intends to assign to subcontractors.
1.	
2.	
3.	
4.	
5.	

.....
/signature of the Contractor or his Authorised Representative/