

BOS/48/FZ/14**4WD Chassis Dynamometer System for Exhaust Emissions
Analysis, Fuel Consumption and Vehicle Performance
Measurements**

CPV 38540000-2 – Machines and apparatus for testing and measuring

CPV 34328100-3 – Test benches

**SPECIFICATION OF ESSENTIAL CONDITIONS OF THE PROCUREMENT
(SECP)**

**OPEN TENDERING PROCEDURE REFERRING TO PUBLIC PROCUREMENT LAW -
ACT OF 29 JANUARY 2004 (DZIENNIK USTAW OF 2010, NO. 113, POS. 759 WITH
LATER AMENDMENTS),
REFERRED TO IN THIS DOCUMENT (SECP) AS 'THE ACT'**


**FOR AMOUNTS OVER THE VALUE DEFINED IN THE REGULATION ISSUED ON THE
BASIS OF ARTICLE 11.8 OF THE ACT**

Date: 2014-07-24

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§1. INTRODUCTION

1. The item of order is a four-wheel drive (hereafter ‘4WD’) chassis dynamometer (hereafter ‘dyno’) system designed for research, development and homologation activities in the range of testing and road load simulation of motor vehicles fuelled with gasoline, Diesel, LPG, CNG, synthetic fuels and biofuels, as well vehicles with hybrid and electric powertrain, in conjunction with exhaust emission analysis and fuel consumption measurement; vehicle/engine performance measurements (acceleration tests, engine power measurements); ECU mapping; mileage accumulation and catalyst ageing tests; vehicle preparation and preconditioning.
2. The system offered must be designed in accordance with – and meet the requirements of – the following documents:
 - 2.1. US EPA C100081T1 specification and the AAIM/EPA/CARB acceptance procedure entitled “Dynamometer Performance Evaluation and Quality Assurance Procedures”, revised March 17, 2000;
 - 2.2. Regulations UN ECE R83, GTR 15, UN ECE R84, UN ECE R101, UN ECE R103 and UN ECE R115 (NEDC and WLTC driving cycles);
 - 2.3. Directive 70/220/EEC with the latest amendments and Directive 80/1268/EEC with the latest amendments and Directive 2007/46EC with the latest amendments;
 - 2.4. Regulations EC (No. 715/2007, 692/2008 and 595/2009) with the latest amendments (NEDC and WLTC driving cycles);
 - 2.5. EPA 40 CFR 1066, US American Federal Tier 3 and Californian LEV III (FTP75, Highway, SC03 and US06 driving cycles);
 - 2.6. Japanese emission regulations: TRIAS 31-J042(3)-01 and TRIAS 99-006-01 (JC08 driving cycle).

Note (in relation to points 2.1-2.6): If any new regulation in this area – or a revision to an existing regulation – is approved after signing the contract, but before delivery of the item of order, the system must be adapted by the contractor to fulfil all requirements of this new regulation.

3. The system should also be capable of simulating various non-legislative driving cycles used for R&D purposes, chiefly the ARTEMIS CADC cycle (Report INRETS-LTE 0411), as well as other cycles used exclusively for vehicle preconditioning purposes, namely multiple repetitions of the EUDC (UN ECE R83, UN ECE R103).
4. The system must be designed, manufactured and installed for operation 16 hours a day, 6 days a week, and the system’s assumed life time should be at least 20 years.

5. The item of order covers basic and supplementary scopes. The basic scope includes supply of a 4WD chassis dynamometer system with control software, relevant accessories and associated services; in particular, at least the following elements:

- a 4WD chassis dynamometer;
- control cabinets with a control panel and remote control;
- automatic centring devices for both axles;
- an automatic rolling floor;
- a personnel guard system for each axle;
- sliding rails for vehicle mounting;
- a vehicle restraint system;
- full integration into BOSMAL's existing automation system;
- installation, commissioning and final acceptance;
- training;
- a warranty agreement covering a period of at least two years, in the range of routine maintenance of the system, all types of troubleshooting and repairs, spare parts, and all related costs;
- documentation and manuals;

While the supplementary scope includes 7 options:

- calibration equipment;
- pit decking;
- a spacing frame;
- a motorcycle testing extension;
- a vehicle restraint system based on a strap system;
- a vehicle position monitoring system;
- a device for measuring the rotational speed of engines.

The contractor has to present a price offer covering the following points:

- the basic scope of the order (price of a supply of a 4WD chassis dynamometer system with control software, relevant accessories and associated services, documentation);
- the supplementary scope (price for each option, separately)
- the annual price of an after warranty maintenance agreement.

The awarding entity foresees awarding the contract for the basic scope which represents its minimum configuration, for which the contract with the contractor will be concluded., Where the contract includes a supplementary scope (each of offered options) the awarding entity will decide on those points after a technical and financial analysis of the options offered.

§2. DESCRIPTION OF THE ITEM OF ORDER

A. GENERAL DESCRIPTION OF THE CHASSIS DYNAMOMETER SYSTEM

1. The 4WD chassis dynamometer system has to be designed for testing motor vehicles with front-, rear- and four-wheel drive drivetrains and have the capacity to facilitate driving in all of the following modes:
 - 1.1. road load simulation 2WD (1 axle) – for front- or rear- wheel drive vehicles in single axle operation;
 - 1.2. road load simulation 2WD (2 axles) – for front- or rear- wheel drive vehicles (with ABS, ESP, etc.) in single axle operation with the second axle speed-synchronized;
 - 1.3. road load simulation 4WD – for all wheel drive vehicles in twin axle operation;
 - 1.4. force controlled – for front-, rear- or all-wheel drive vehicles in single or twin axle operation. The speed synchronisation with the non driven axle is selectable in single axle operation.
 - 1.5. velocity controlled – for front-, rear- or all wheel drive vehicles in single or twin axle operation. The speed synchronisation with the non driven axle is selectable in single axle operation.

Note (in relation to points 1.1-1.5): in all drive modes – regardless of whether the vehicle has a 2WD or 4WD – the vehicle must lie horizontally (as if it were sited on floor and not on roll/s).
2. The chassis dynamometer system has to be adapted for use in a climatic chamber in the -35°C ... +50°C operating temperature range with relative humidity up to 90% (permanently); and from time to time in the -35°C ... +60°C range, with relative humidity up to 90%. Due to the possibility of condensation, all corrosion-susceptible steel parts must be hot-dip galvanised (paint-type coatings are not acceptable in this context, unless the metal is also hot-dip galvanised).
3. The chassis dynamometer system has to consist of two axles: one fixed axle (the front axle, to be situated next to BOSMAL's vehicle cooling fan) and one movable axle (the rear axle), each axle with two 48" (1219.2 mm) diameter rolls; each axle has to have a centrally mounted cradled AC motor (one motor per axle).
4. The chassis dynamometer system has to fulfil the following criteria:
 - 4.1. nominal power in 2WD mode: at least 150 kW in motoring mode and at least 153 kW in generator mode; in the speed range 100 km/h ... 180 km/h;
 - 4.2. overload power (10 s, every 180 s) in 2WD mode: at least 220 kW in motoring mode and at least 240 kW in generator mode; in the speed range: 90 km/h ... 125 km/h;

- 4.3. nominal power in 4WD mode: at least 300 kW in motoring mode and at least 300 kW in generator mode; in the speed range: 100 km/h ... 180 km/h;
- 4.4. overload power (10 s, every 180 s) in 4WD mode: at least 440 kW in motoring mode and at least 480 kW in generator mode; in the speed range: 90 km/h ... 125 km/h;
- 4.5. base inertia per axle: maximum 1200 kg;
- 4.6. maximum permissible axle load: minimum 2500 kg;
- 4.7. permitted total vehicle weight: minimum 4500 kg;
- 4.8. maximum test speed: minimum 250 km/h;
- 4.9. total inertia simulation (vehicle weight) range for accelerations of 3.76 m/s² over the US06 driving cycle, with increments of 1 kg:
 - 4.9.1. 2WD mode: from maximum 454 kg to minimum 3500 kg;
 - 4.9.2. 4WD mode: from maximum 700 kg to minimum 3500 kg;
- 4.10. wheel base range: from a maximum of 1800 mm to a minimum 4400 mm with a tolerance of wheel base adjustment of $\leq \pm 2$ mm; the centreline differential of the rolls shall not exceed 2 mm across the entire range of wheelbase settings.
- 4.11. roll surface: suitable to work under different climatic conditions. The roll coating should be protected against the environmental conditions and should be of suitable roughness to keep slippage of the tires on the rolls as low as possible during operation, while avoiding excessive noise & abnormal tyre wear;
- 4.12. speed synchronisation of all roll speeds should be within ± 0.05 km/h, for dyno operation with a vehicle, under all driving conditions – including the US06 cycle. Furthermore, the difference in the distance covered by the front and rear rolls shall be less than 0.001 m for every 1 m travelled and less than 0.2% of the driven distance over the entire WLTC;
- 4.13. the tractive force / torque has to be measured by a heated load cell with the following parameters (values for the total measuring chain):
 - accuracy $\leq 0.08\%$,
 - hysteresis $\leq 0.08\%$,
 - repeatability $\leq 0.03\%$,
 - nonlinearity $\leq 0.08\%$;
- 4.14. speed has to be measured by an incremental sensor of resolution minimum 10000 pulses per revolution with accuracy ± 0.02 km/h;
- 4.15. time has to be measured with accuracy $\pm 0.001\%$;
- 4.16. the system response time (as defined in US EPA C100081T1 specification) must be less than 50 ms;
- 4.17. the accuracy of road load simulation has to be $\pm 1\%$ of the set value or ± 9.8 N, whichever is greater;
5. The influence of parasitic losses of the bearings on the losses of the chassis dynamometer should be close to 0 (zero). The bearings' service-free life should be at least 50 000 hours. The average usage load is to be 60 km/h with an axle load of 1000 kg (per axle). The contractor must show

that the frame is free from twists and any kind of warping tendency. The technical solution has to be described and justified in the technical description.

6. The chassis dynamometer system and its graphical user interface (in English) has to allow operation of the chassis dynamometer in the full range of its capabilities. The graphical evaluation software package has to facilitate the acquisition, recording, storage (in a database), handling and visualisation of measured and derived quantities during a given test. It has to facilitate execution of at least the following tests and functions:

- dynamometer warm-up;
- base inertia verification;
- loss compensation;
- drift check;
- response time evaluation;
- calibration of the force chain - dead weight calibration mode;
- 4WD synchronisation evaluation;
- Japanese JASO E 011 evaluation ('Requirements and Evaluation Methods of Chassis Dynamometers for Four-Wheel-Drive Vehicles')
- road load simulation;
- constant speed - speed controlled mode;
- constant force - tractive force controlled mode;
- coast down model adaptation and verification ('multi coast down'); the coast down execution procedure, values and limits have to be customizable;
- measurement of the power at the wheel;
- engine power measurements – both static and dynamic, with driver guidance, calculated according to DIN 70020, UN ECE R85, 80/1269/EEC, ISO 1585, SAE J1349 and JIS D1001;
- vehicle frictional loss determination;
- acceleration measurements;
- time measurement;
- distance measurement;
- speedometer / odometer checks;
- management of the system's vehicle parameter database.

The software must allow program function sequencing and must feature a calendar function to start preselected tests at a given time/date.

7. The software has to be installed on a PC (19" rack format) integrated into the under-desk industrial cabinet equipped with a 2nd hard disk for permanent backup (mirrored) with an optical drive (DVD read and write). The PC has to be equipped with an Ethernet network card and MS Windows operation software (version 7, or later). The original installation discs for all software installed should be also delivered.

8. The system has to be equipped with at least one 19" LCD screen and a UPS system for the PC. The UPS must be a 19" version integrated into the under-desk industrial cabinet.
9. The system has to be integrated to the existing VETS 7000NT automation system and have outputs of both analogue (+/- 10 V) and digital (TTL) type for the speed signal for the driver's aid and an analogue signal for the relative wind blower (fan). The signals have to be available in the control cabinet on terminal blocks. Additionally, it has to be possible to integrate an autopilot in the future (i.e. an interface between the autopilot and the dyno control).
10. The vehicle wheel base adjustment system has to be motorised. It must move the movable roll smoothly and evenly, maintaining the parallel arrangement with the non-movable roll.
11. The dyno's upper surface (i.e. the housing surrounding the rolls) has to be sufficiently flat and even to facilitate vehicle delivery using a vehicle transporting device, for example of the Stringo™ type.
12. The system cabinets have to be designed in accordance with European EC norms, with protection class IP 23.
13. The 4-quadrant frequency converters for the dynamometers have to be IGBT flux vector controlled.
14. Cables and connectors between the control cabinet and all electro-mechanical components have to be made in such a way so as to protect the measuring/control signals against all possible sources of electromagnetic interference.

B. GENERAL DESCRIPTION OF ADDITIONAL EQUIPMENT

1. A driver information system (an additional monitor or a tablet is acceptable) to give information and directions to the driver regarding test steps during performance tests.
2. A personnel protection system for all rotating parts (vehicle wheels, rolls) in the form of guard rails beside both rolls.
3. A vehicle restraint system, which must ensure that the vehicle is well restrained on the chassis dynamometer, within a tolerance of ± 12.5 mm both perpendicular and parallel to the vehicle's longitudinal axis, during operation over driving cycles (including the US06 and WLTC) and full load power measurements (accelerations of the order of $3 \dots 5 \text{ m/s}^2$). The system must be based on a vehicle hook fixing approach (making use of the vehicle's front and rear towing lugs) and equipped with fixing rods (steel bars); the supported height range of the front and rear towing lugs above the floor is to be 23 ... 55 cm. The system's anchors have to be fixed to the floor on sliding rails (in the perpendicular and parallel directions, over the whole length and width of the chassis dyno) and these components have to be installed during the chassis dyno construction phase. The system has to consist of the following elements: sliding anchors (4 pcs.), transverse rods (2 pcs.), tractive rod (1 pc.) and diagonal rods (2 pcs.). Additionally, for 2WD mode operation wheel clamps for one axle are required.


4. A set of centring devices (4 pieces, i.e. a pair for each axle) to position the test vehicles' tires centrally on the chassis dynamometer's rolls. The centring device should be able to centre the vehicle axle on the middle of the roll as well as lifting up the axle, up to a weight of minimum 2500 kg.
5. A mechanical brake, to be useable at all speeds, integrated into the emergency stop concept.
6. A remote control to allow the driver to control the dynamometer from the driver's seat, for both left- and right-hand drive vehicles of all types and sizes testable on the dyno. As a minimum, it has to have buttons to select control modes, centre the vehicle, adjust the vehicle wheel base, set values (this may be achieved by '+/-' type buttons) and an emergency stop push button.
7. A control panel (19" format), together with control buttons, status lamps and an emergency off push button has to be integrated into the under-desk industrial cabinet in the operation room.
8. A tele-diagnostic tool for servicing, problem solving and error diagnosis remotely over the internet.
9. A power filter to act against harmonic effects on the power supply and an EMC filter to meet the needs of industrial networks according to EMC product standard IEC/EN 61800-3 PDS of category C2 has to be installed. In addition, an advanced filter system should be integrated to reduce the size of the transformer.
10. The test stand covering has to be supported by a substructure to insure that contact with the pit walls and edges is not necessary. The cover has to fulfil the following requirements:
 - Surface : hot-dip galvanised and painted RAL 9006
 - Maximum permissible axle load in the track area : minimum 2500 kg
 - Maximum permissible load in the remaining area : minimum 1000 kg/m²
11. The moving floor which covers the gap between the fixed and moveable axles has to be motorized and fulfil the requirements given in point 10 above.
12. The system has to have pit ventilation fans – at least one air intake fan and one air extractive fan, to ensure proper pit ventilation, especially in view of the fact that the system will be used in a climatic chamber under a wide range of temperature and humidity. The fans have to be integrated to BOSMAL existing gas warning system and turn on in case of gas warning alarm when the dyno is off. Acceptable solution is supply an additional fan/s installed in pit decking (manufactured according to the Directive 94/9/EC - ATEX) for integration to the gas warning system.
13. The execution of normal service activities must be possible without entering the pit through the service hatches.

C. OPTIONAL ADDITIONAL EQUIPMENT AND SERVICE

1. A set of calibration equipment to verify the tractive force measurement chain, across its whole measuring range (at least up to 10 000 N). This shall consist of an arm of known accurate reach from the centre of the rolls, together with a set of weights. The device has to be designed to calibrate in both the force direction and also through the zero-point without changing the arm from one force direction to the other. Weights should be approved by an accredited laboratory with calibration certificates attesting to the same.
2. Pit decking for covering the free space between the dynamometer construction and the pit edges. It has to be supported by a substructure to insure that contact with the pit walls and edges is not necessary. Additionally, it has to contain a service flap, with stairs or a ladder, which facilitates safe access to the pit. It has to fulfil all requirements given in part B point 10.
3. Spacing frame between the dynamometer construction and the existing base mounting points (“elephant feet”) in the pit.
4. A motorcycle testing extension.
5. A vehicle restraint system based on a strap system.
6. A vehicle position monitoring system.
7. A device for measuring the rotational speed of engines (both spark- and compression-ignition; indirect and direct injection; engine shut-off (as controlled by a stop/start-type system) or cylinder/s deactivation must not cause the device to stop measuring. The device has to be integrated to the existing VETS 7000NT automation system and the 4WD dyno system (for power measurement purpose).

D. INSTALLATION AND ACCEPTANCE

1. The organisational meeting (the kick-off meeting) will be organised at BOSMAL Institute within one week of signing the contract. The purpose of this meeting shall be to determine the action timetable.
2. Within two weeks of signing the contract the contractor is obliged to submit a design and plan of deployment for the elements of the system to BOSMAL, in order to receive approval for the same. The design on the chassis dynamometer system element layout will be based on BOSMAL’s laboratory drawings. The contractor will specify all the installation requirement needed for proper functioning of the system’s equipment.
3. The dynamometer system will be installed in the existing laboratory in climatic chamber and on already prepared installation points (“elephant feet”) in the pit. The pit dimensions are the following: length × width × depth: 8.900 × 5.280 × 2.000 mm – see attachment no. 5 and 6. Before starting designing work the contractor has to carry out a technical survey of the site.
4. The contractor has to provide a technical documentation of the dynamometer and power requirement after signing a contract.

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5. Pre-acceptance of the system will be carried out at the contractor's site together with BOSMAL representatives.
6. Parameters of the supply media available at BOSMAL are as follows:
 - 6.1. Power supply: 400 V $\pm 5\%$, 230 V $\pm 5\%$;
 - 6.2. Compressed air: 6 bar ± 0.5 bar.
7. A preliminary analysis of the dynamometer project foresees power supply and control signal cables of maximum length 15 m. The contractor has to perform exact measurements in relation to this point during the technical survey mentioned in point 3.
8. Acceptance tests will be performed according to AAİM/EPA/CARB "Dynamometer Performance Evaluation and Quality Assurance Procedures". All necessary equipment for these tests will be provided by the contractor. An uncertainty analysis in the range of measurement of a distance value, a speed value, an acceleration value and a torque and force value should be included in the acceptance protocol.
9. The scope of delivery of the system should include system documentation, in English or Polish (2 paper copies and an electronic version on CD/DVD), consisting of at least:
 - 9.1. technical drawings of the system (configuration scheme);
 - 9.2. schematics of pneumatic and hydraulic components;
 - 9.3. schematics of all electric components and connections with a description of usage codes;
 - 9.4. operation, repair and maintenance manuals including a description of measurement execution and calibration procedures, in the part necessary from the point of view of Directive 2006/42/EC must be provided together with translation into Polish ;
 - 9.5. manuals of functions of system components and software;
 - 9.6. a spare parts list;
 - 9.7. a list of spare parts which BOSMAL should have in stock to minimise downtime in the event of system breakdown;
 - 9.8. reports from equipment checks after start-up at the contractor's site;
 - 9.9. a declaration of conformity with the demands of ECE and EPA legislation and US EPA C100081T1 specification;
 - 9.10. declarations of conformity according to at least the following safety standards:
 - 9.10.1. Low Voltage Directive 2006/95/EC, harmonized standards:
 - IEC/EN 60204-1 Safety of machinery
 - IEC/EN 61010-1 Safety requirements for electrical equipment for measurement, control and laboratory use
 - 9.10.2. EMC Directive 2004/108/EC, harmonized standards:
 - IEC/EN 61000-6-2 Generic standards - Immunity for industrial environments
 - IEC/EN 61000-6-3 Generic standards - Emission standard for residential, commercial and light-industrial environments

- IEC/EN 61000-6-4 Generic standards - Emission standard for industrial environments
- IEC/EN 61326-1 Electrical equipment for measurement, control and laboratory use
- IEC/EN 61800-3 category C2 - Adjustable speed electrical power drive systems,
- IEC/EN 61000-2-4 Environment - Compatibility levels in industrial plants for low-frequency conducted disturbances

9.10.3. Machinery Directive 2006/42/EC, harmonized standards:

- EN ISO 12100-1/2 Safety of machinery
- EN ISO 14121-1 Risk assessment
- EN ISO 13849-1/2 Safety-related parts of control systems
- EN ISO 13850 Emergency stop

9.10.4. EN 50160 Voltage characteristics of electricity supplied by public electricity networks.

10. Scope of responsibility. See Table 1.

Table 1. Scope of responsibility ('X' = party to take full responsibility for item)


	Task	BOSMAL	Contractor
1	Design of the system layout	X (acceptance)	X
2	Delivery		X (DDP)
3	Unloading	X	X (supervision)
4	Storage	X	
5	Supply media (power supply, compressed air)	X	X (requirements)
6	Unpacking	X (support)	X
7	Locating the system components		X
8	Fixing		X
9	Laying of cables between cabinet and mechanical parts		X
10	Connection of cables between cabinet and mechanical parts		X
11	Assembling and integrating all system components		X
12	Commissioning		X
13	Acceptance tests	X	X
14	Final acceptance	X	X
15	Training	X	X
16	Test vehicle with driver	X	

§3. CONDITIONS FOR PARTICIPATION IN THE PROCEDURE

1. The tender procedure is open to the contractors which:
 - 1.1. Meet the conditions for participation in the procedure as set out in Article 22.1 of the Act, i.e.:
 - 1.1.1. hold a qualification to perform certain activities or services, if such a qualification is required by law;
 - 1.1.2. have sufficient relevant knowledge and experience;
 - 1.1.3. have sufficient technical resources and personnel capable of performing the contract;
 - 1.1.4. satisfy the requirements relating to their economic and financial standing.
 - 1.2. Are not excluded from participation in contract award procedures for the reasons described in Article 24.1 and Article 24.2 of the Act.
 - 1.3. Have supplied at least three systems with final acceptance performed according to the US EPA C100081T1 specification, in the past three years (before the closing date for submitting tenders), which were performed for:
 - 1.3.1. car or LCV manufacturers;
 - 1.3.2. direct (tier 1) suppliers of car manufacturers;
 - 1.3.3. homologation and certification bodies in the field of combustion engines or vehicles.

§4. DESCRIPTION OF TENDER PREPARATION

1. The tender must be written in Polish (while the technical description can be written in English) and prepared using means that prevent the text of the tender from being deleted without leaving a trace of its deletion (Article 9.2 of the Act).
2. The awarding entity recommends that:
 - 2.1. The first pages of the tender document be the completed “***Tender Form*** (Appendix 1).
 - 2.2. The pages of the tender document be numbered successively, starting from number 1 on the first page of the “***Tender Form*** (Appendix 1) (the pages of any documents enclosed within the tender document must also be numbered).
 - 2.3. All the sheets of paper be fastened or stapled in a way that prevents any sheet from becoming loose.
 - 2.4. Each page of the tender document be initialled by a person authorised to sign the document.
 - 2.5. Each correction, if any, of the tender document be initialled by a person authorised to sign the document.

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3. The tender document must be accompanied by the following statements and documents:

3.1. Statements and documents confirming that the contractor meets the conditions for participation in the tender procedure:

- 3.1.1. a document confirming that the contractor holds a qualification to perform certain activities or services, if such a qualification is required by law, particularly a concession, permit or licence;
- 3.1.2. a statement that the contractor has sufficient relevant knowledge and experience to perform the contract.
- 3.1.3. a statement that the contractor has sufficient technical resources and personnel capable of performing the contract;
- 3.1.4. if the contractor uses other persons having sufficient relevant knowledge, experience, technical resources and personnel capable of performing the contract, as well as financial resources, the contractor shall submit relevant statements by such persons containing such persons' commitments to make their resources available to the contractor;
- 3.1.5. a statement that the contractor's economic and financial standing allows the contractor to perform the contract.

To confirm above mentioned statement the contractor submit following documents:

- financial report or its part, and if it is a subject of examination by auditor under accountancy provisions, along with the opinion on financial report or its part respectively, and in case when the contractor is not required to prepare a financial report, other documents certifying their turnover as well as their liabilities and receivables – for a period not longer than 3 last financial years, and if the duration of economic activity is shorter – for that period;
 - information from a bank or cooperative savings and credit union wherein the contractor holds an account, confirming the amount of financial resources held or the economic operator's creditworthiness (minimum value of PLN - 2 000 000) issued not earlier than 3 months before the expiry of the time limit for submission of tenders or requests to participate in the procedure;
 - paid insurance policy, and in case of lack thereof other document confirming that the contractor is insured for third party liability within the scope of economic operator's activity with reference to subject matter of contract (the minimum amount of PLN 2 000 000)
- 3.1.6. the format for the statements for points: 3.1.1, 3.1.2, 3.1.3, 3.1.5 in §4 are included in appendix 3 of the SECP;
 - 3.1.7. a statement that the contractor is not excluded from participation in contract award procedures for the reasons described in Article 24.1 and the Act (the form of this statement is included in appendix 4 of SECP);
 - 3.1.8. a list of supplies (with final acceptance performed according to the US EPA C100081T1 specification) performed within the three years preceding the closing date for submitting tenders or, if the contractor has been in operation for less than three years, then within the period of its operation, providing the value of the supplies,

the subject matter, the date of completion and the name of the entities to whom the systems were supplied, accompanied by evidence of appropriate performance of the supplies. Additionally, the contractor submits an exemplary acceptance protocol according to the US EPA C100081T1 specification of one 4WD dyno system installed;

In lieu of the aforementioned certificates/evidence, the contractor may submit documents confirming the appropriate performance and correct completion of the supplies as specified in Articles 1.1.2 and 1.1.3 of the Prime Minister's Regulation of 30 December 2009 on the types of documents that may be required by awarding entities from contractors and on the form of such documents (published in Dziennik Ustaw No.226, item 1817);

- 3.1.9. an extract from the relevant register or a central business registration and information service, if the law requires registration of the contractor, in order to prove that the contractor is not excluded from contract award procedures under Article 24.1.2 of the Act, such an extract to be issued on a date not earlier than six months before the closing date for submitting tenders;
- 3.1.10. a certificate issued by the head of the relevant tax authority confirming that the contractor is not in arrears with taxes or that the contractor has been granted a lawful exemption from, deferral of or the right to make outstanding payments in instalments or that the relevant authority's decision with respect to the contractor has been suspended entirely, in each case issued on a date not earlier than three months before the closing date for submitting tenders;
- 3.1.11. a valid certificate issued by the relevant branch of Zakład Ubezpieczeń Społecznych (Polish National Social Insurance Institution) or Kasa Rolniczego Ubezpieczenia Społecznego (Farmers' Social Insurance Fund) confirming that the contractor is not in arrears with health and social insurance contributions or that the contractor has been granted a lawful exemption from, deferral of or the right to make outstanding payments in instalments or that the relevant authority's decision with respect to the contractor has been suspended entirely, in each case issued on a date not earlier than three months before the closing date for submitting tenders;
- 3.1.12. a certificate issued by the National Criminal Record Register to the extent specified in Article 24.1.4-8 of the Act, issued on a date not earlier than six months before the closing date for submitting tenders;
- 3.1.13. a certificate issued by the National Criminal Record Register to the extent specified in Article 24.1.9-11 of the Act, issued on a date not earlier than six months before the closing date for submitting tenders;
- 3.1.14. pursuant to Article 26.2d of the Act, a list of companies in the same group of companies as referred to in Article 24.2.5 of the Act, or a statement that the contractor is not part of any group of companies.

4. The tender document also must be accompanied by a detailed technical description of the products offered. It is acceptable to present this description in English.
5. The documents listed in Article §4, 3.1.8 - 3.1.13 must be issued in accordance with the requirements laid down in the Prime Minister's Regulation of 19 February 2013 on the types of documents that may be required by awarding entities from contractors and on the form of such documents (published in *Dziennik Ustaw* of 2013, item 231).
The above documents must be submitted as originals or certified photocopies dated and signed by a person authorised to represent the contractor.
6. If the contractor's registered business office or place of residence is based outside the Republic of Poland, then instead of the documents specified in §3 1 of the above Prime Minister's Regulation:
 - 6.1. Points 2-4 and point 6: the contractor must submit a document or documents issued in the country of the contractor's registered business office or place of residence, confirming that:
 - 6.1.1. no liquidation procedure has been initiated against the contractor and that the contractor has not been declared bankrupt;
 - 6.1.2. the contractor is not in arrears with taxes, health and social contributions or that the contractor has been granted a lawful exemption from, deferral of or the right to make outstanding payments in instalments or that the relevant authority's decision with respect to the contractor has been suspended entirely;
 - 6.1.3. no decision has been issued to forbid the contractor to tender for public contracts.
 - 6.2. Points 5 and 7, the contractor must submit a certificate issued by the relevant judicial or administrative authority with jurisdiction over the place of residence of the person to whom the documents relate, to the extent specified in Article 24.1.4-8 and Article 24.1.10-11 of the Act.
7. The documents specified in §4, 6.1.1, 6.1.3 and 6.2, should be issued on a date not earlier than six months before the closing date for submitting tenders.
8. The document specified in §4, 6.1.2, the second indent, should be issued on a date not earlier than three months before the closing date for submitting tenders.
9. If any of the aforementioned documents are not issued in the country of residence of a person or in the country of the contractor's registered business office or place of residence, the document must be substituted with a document containing a statement, naming the persons authorised to represent the contractor, made before the relevant judicial, administrative, professional self-government or economic self-government authority in the country of residence of the person, or in the country of the contractor's registered business office or place of residence, or made before a public notary.

10. In the event of any doubt as to the content of any document submitted by the contractor whose registered business office or place of residence is based outside the Republic of Poland, the awarding entity may request the relevant authorities in the country of a person's place of residence or the contractor's registered business office or place of residence to provide the necessary information regarding the document concerned.
11. The contractor may only submit one tender, offering only one, final price.
12. The awarding entity will accept tenders expressed in and settlements with the contractor in Polish zloty (PLN) or in Euros (EUR).
13. The awarding entity will not accept variant or partial tenders, while the possibility of offering supplementary options according to §2 part C or others at the discretion of the contractor is acceptable. Offering of options no. 1 ... 3 according to §2 part C is obligatory
14. If the contractor is represented by an agent, the tender document must be accompanied by the agent's power of attorney, specifying the scope of powers and signed by persons authorised to represent the contractor.
15. If the tender document is accompanied by materials other than required by the awarding entity, e.g. advertising or information materials, it is desirable that such materials be permanently and unambiguously separated from the tender document.
16. Any information provided in the course of the tender procedure and classified as the contractor's secrets as defined in the Act on Combating Unfair Competition (Polish: *Ustawa o zwalczaniu nieuczciwej konkurencji*) (published in *Dziennik Ustaw* of 1993, No.47, item 211, as later amended) with respect to which the contractor has stated that the information may not be made available to other bidders must be marked with the following text: ***Nie udostępniać innym uczestnikom postępowania. Informacje stanowią tajemnicę przedsiębiorstwa, w rozumieniu Art. 11, ust.4 ustawy o zwalczaniu nieuczciwej konkurencji*** (English: ***This information may not be made available to other bidders. This information is classified as a business secret as defined in Article 11.4 of the Act on Combating Unfair Competition***) and enclosed separately from the tender document.
17. It is the awarding entity's suggestion that the contractor's tender be submitted in a sealed package (without signs of tampering), and with the following text on the package: ***Oferta w trybie przetargu nieograniczonego na dostawę stanowiska hamownii podwoziowej 4WD*** (English: ***A tender, submitted in an open-tender procedure, for the supply of a 4WD chassis dynamometer system***).
18. The awarding entity will reject each tender under Article 89.1 of the Act if the content of the tender fails to comply with the Specification of Essential Conditions of the Procurement (SECP), subject to Article 87.2.3 of the Act.
19. A group of contractors tendering for the contract in question (a Consortium) should meet the conditions for participation in the tender procedure and submit documents confirming that they meet the conditions in accordance with the provisions of Articles 3 and §4 of the Specification of Essential Conditions of the Procurement (SECP).

20. The documents and statements confirming that the conditions for participation in the tender procedure with regard to Article 24.1 of the Act are met must be submitted by each member of the Consortium. In the case of documents and statements confirming that the conditions for participation in the tender procedure with regard to Article 22.1 of the Act are met, it is sufficient for such documents and statements to be submitted by one member of the Consortium or it is sufficient if the documents submitted by the contractors jointly show that they meet the conditions.
21. Copies of documents relating to, respectively, the contractor (the members of the Consortium) or other entities whose resources the contractor relies on under the rules contained in Article 26.2b of the Act must be certified by, respectively, the contractor or such other entities.
22. In the case of a Consortium, the tender document must be accompanied by a document appointing an agent for the Consortium, pursuant to Article 23 of the Act, submitted as an original or a copy certified in accordance with the provisions of the Civil Code.

§5. EVALUATION OF OFFERS

1. In accordance with article 24.2.4 and article 24.4 of the Act contractors who did not show compliance with the conditions for participation are excluded from participation in the procurement procedure. The tender of an contractor which has been excluded shall be considered rejected.
2. The basic scope of the offered equipment should fulfil all the minimum requirements, as listed in: §2 of SECP, parts A, B and D.
3. The awarding entity can demand explanations from the contractors which are concerned with the content of submitted tender accordingly to article 87.1 of the Act. awarding entity can make amendments to obvious mistakes included in the offer immediately notifying the contractors, according to article 87.2 of the Act.
4. The awarding entity has determined the following evaluation criteria, which are given in table 2:

Table 2 Tender evaluation criteria


<i>No.</i>	<i>Criterion</i>	<i>Description</i>	<i>W_i [%]</i>
1.	Price	Total gross price of full set of equipment, to include all costs incurred by the contractor, together with chosen options	74
2.	Price	Price of maintenance agreement for five years after the warranty period according to §8 point 2. For evaluation the following will be taken: 5 × the cost of the necessary maintenance during one year of operation, together with all required consumable parts.	10
3.	Additional warranty period	Additional 12 months of warranty period over 2 years. The maximum value is 6 % for an additional 24 months of warranty period.	0, 3 or 6
4.	Technical parameter I	System response time	2
5.	Technical parameter II	Speed synchronisation accuracy of all roll speeds over the US06 cycle	2
6.	Technical parameter III	Speed sensor resolution (no. of pulses per revolution)	2
7.	Technical parameter IV	Maximal permissible axle load	2
8.	Technical parameter V	Maximum inertia simulation @ acceleration of 3.76 m/s ²	2
Sum			100

5. Each tender shall be evaluated with a system of points determined on the basis of the following formula (5.1):

$$L = 100 \cdot \left(\frac{C_{1min}}{C_1} \cdot W_1 + \frac{C_{2min}}{C_2} \cdot W_2 + \frac{C_{4min}}{C_4} \cdot W_4 + \frac{C_{5min}}{C_5} \cdot W_5 + \frac{C_{6max}}{C_6} \cdot W_6 + \frac{C_{7max}}{C_7} \cdot W_7 + \frac{C_{8max}}{C_8} \cdot W_8 \right) + C_3 \quad (5.1)$$

where:

- L – final evaluation, expressed in points,
- C_{1min} – the lowest price quoted in all tenders which have not been rejected,
- C₁ – the price of the tender currently under evaluation,
- C_{2min} – the lowest price quoted in all tenders which have not been rejected,
- C₂ – the price of the tender currently under evaluation (including the calculated cost of annual maintenance for the system under evaluation),
- C₃ – the parameter related to the extended warranty: 3 – when the warranty covers an additional 12 months; 6 – when the warranty covers an additional 24 months; 0 – in all other cases,
- C_{4min} – the lowest value of technical parameter I in all tenders which have not been rejected,

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- C_4 – the value of the technical parameter I from the tender under evaluation,
- $C_{5_{min}}$ – the lowest value of technical parameter II in all tenders which have not been rejected,
- C_5 – the value of the technical parameter II from the tender under evaluation,
- $C_{6_{max}}$ – the highest value of technical parameter III in all tenders which have not been rejected,
- C_6 – the value of the technical parameter III from the tender under evaluation,
- $C_{7_{max}}$ – the highest value of technical parameter IV in all tenders which have not been rejected,
- C_7 – the value of the technical parameter IV from the tender under evaluation,
- $C_{8_{max}}$ – the highest value of technical parameter V in all tenders which have not been rejected,
- C_8 – the value of the technical parameter V from the tender under evaluation,
- W_i – the applicable value of the weighting factor [%] – see table 2.
- i – the tender number (No.).

6. Technical parameters indicated in table 2 above must be clearly stated in the technical description of the system and must be confirmed in the ***Tender form***.
7. If an tender is made, the choice of which might incur a taxation liability for the awarding entity (in accordance with provisions for the taxation of goods and services in relation to the intra-community acquisition of goods), the awarding entity will add the tax on goods and services that would include an obligation to pay the aforementioned to the to the price of the tender, in accordance with all applicable regulations.
8. All prices given in EUR will be converted (for the evaluation purpose only) to PLN in accordance with the mean NBP rate established on the day of the tenders are opened.
9. The contractors will be informed of the final result of by the awarding entity, in writing, by fax or e-mail.

§6. FORMAL REQUIREMENTS

1. The contractor can ask for further explanations concerning the order terms on working days during the hours: 7:00 – 14:00. The people responsible are as follows:
 - 1.1. Mr. Zbigniew Liszewski (in the commercial field). Purchasing Department, zbigniew.liszewski@bosmal.com.pl.
 - 1.2. Piotr Bielaczyc, PhD (in the technical field). Engine Research Department, piotr.bielaczyc@bosmal.com.pl.

2. All statements, notices, notifications or information will be provided by the awarding entity and contractors as part of the tender procedure in question by fax to 48 33 82 28 846 or by e-mail to zakupy@bosmal.com.pl, pursuant to Article 27 of the Act. The party receiving any such statement, notice, notification or information must confirm its receipt immediately when requested to do so by the sending party.
3. The statements, applications/requests, notices/notifications and information referred to above will be deemed made or given at the time of their receipt by the receiving party in such a way that the receiving party could have become aware of their content till 13 o'clock at working days.
4. Each interested party has the right to familiarize itself with the documentation of the tender procedure in question, upon a request made to the awarding entity. In reply to the request, the awarding entity will be required to specify the place, date and conditions of making the documentation available, in accordance with the rules set out in the Act and the regulation issued under the Act and the Prime Minister's Regulation of 26 October 2010 on the procedure for the award of public contracts (published in Dziennik Ustaw No.233, item 1458), issued under Article 96.5 of the Act
5. Each contractor must provide security for signing the contract, in the form a bid bond provided before the closing date for submitting tenders and for the tender binding period, in the amount of PLN 60 000 (sixty thousand Polish zloty) or EUR 15 000 (fifteen thousand Euro).
6. The bid bond may be provided in any of the forms specified in Article 45.6 of the Act.
7. If the bid bond is a cash deposit, the amount must be paid into the awarding entity's bank account held with Bank Pekao SA O/Bielsko-Biala:
 - 7.1. for PLN: Account No.: 32 1240 4142 1111 0000 4823 8630;
 - 7.2. for EUR: Account No.: 39 1240 4142 1978 0000 4823 0559 – SWIFT: PKOPPLPW, with the following text in the bank transfer description field: **wadium - przetarg nieograniczony na dostawę stanowiska hamownii podwoziowej 4WD** (English: **bid bond - tender submitted in an open-tender procedure, for the supply of a 4WD chassis dynamometer system**).
8. If the bid bond is a cash deposit, the cash deposit will be deemed to have been paid on the date when the payment is credited to the awarding entity's bank account.
9. If the bid bond is provided in any other form acceptable by the awarding entity, it must be enclosed, in the original, to the tender document.
10. The contractor's guarantee must be irrevocable, unconditional, drawn up in accordance with the applicable laws and regulations and should contain at least the following:
 - 10.1. The name of the contractor, the beneficiary of the guarantee (the awarding entity), the guarantor (the bank or insurance institution providing the guarantee), including their registered offices.
 - 10.2. The claim to be guaranteed.
 - 10.3. The guarantee amount.
 - 10.4. The validity period of the guarantee.
 - 10.5. The guarantor's undertaking to pay the guarantee amount in the event of the occurrence of the circumstances described in Article 46.4a and Article 46.5 of the Act.

11. Any disputes regarding the guarantee will be resolved in accordance with the laws of the Republic of Poland before a court of law with jurisdiction over the awarding entity's registered office.
12. The above provisions will apply to sureties accordingly.
13. The awarding entity will refund or, in justified cases, retain the bid bond in accordance with the provisions of Article 46 of the Act.
14. In the case of a Consortium, the bid bond may be provided by one member of the Consortium.
15. The awarding entity may require the contractor to provide the bid bond already refunded to the contractor, pursuant to Article 46.3 of the Act.
16. Pursuant to Article 36.4 of the Act, the awarding entity requires the contractor to specify, in its tender document, those parts of the contract which the contractor intends to subcontract ***Tender form*** (Appendix no. 1).
17. All the contractors tendering for the contract as a group will be jointly and severally liable for the performance of the contract, pursuant to Article 141 of the Act.
18. The selected contractor will be required to sign the contract in accordance with the ***Material Provisions of the Contract*** (Appendix 2 to the Specification of Essential Conditions of the Procurement) (SECP) and in accordance with the Articles 139 and 140 of the Act.
19. The awarding entity will require the contractor to provide a performance bond equal to 5 (five) % of the contract's net value in the forms described in the Article 148.1 of the Act. The selected contractor shall provide the performance bond in the full amount, irrespective of the form of the bond, not later than on the day of signing the contract, but before signing the contract.
20. If the selected contractor fails to provide the required performance bond, the awarding entity may select the best of the other submitted tenders, pursuant to Article 94.3 of the Act, unless the conditions described in Article 93.1 of the Act are fulfilled
21. The awarding entity must be supplied with the agreement which regulates the cooperation of the contractors just before signing the contract in the case if the aforementioned contractors tender a joint bid.
22. If the selected contractor carries on a business as a limited liability company, then if the value of the contract exceeds twice the amount of the contractor's share capital, the contractor will, not later than on the day of signing the contract, submit its shareholders' resolution in which the company's shareholders agree that the company may enter into a transaction whose value exceeds twice the amount of the company's share capital, pursuant to the provisions of Article 230 of the Polish Companies Code (Kodeks spółek handlowych), unless the company's deed of formation specifies otherwise (in which case, an extract of the contractor's company formation deed must be submitted to confirm that the company is authorised to assume such obligations.). If the selected tender is a joint tender submitted by a group of contractors, the awarding entity will require the contractor to submit an agreement governing the terms and conditions of the individual contractors' co-operation, such an agreement to be submitted before the contract is entered into.

§7. TERMS


1. Tenders must be submitted to the Purchasing and Warehousing Department of Instytut Badań i Rozwoju Motoryzacji BOSMAL Sp. z o.o., at the address of ul.Sarni Stok 93 (93 Sarni Stok street), Room 330 or 361, 43-300 Bielsko-Biała, Poland by **12 o'clock noon on 15 September 2014.**
2. All tenders submitted after the above deadline will, irrespective of the reasons for their late submission, be returned after the expiry of the time limit for objections, of which prior notification will be given to the relevant contractor in accordance with Article 84.2 of the Act.
3. All tenders validly received will be opened in Room 401 in the building of Instytut Badań i Rozwoju Motoryzacji BOSMAL Sp. z o.o., **at 12:30 (half past twelve in the afternoon) on 15 September 2014.**
4. The contractors will be bound by their tenders for a period of 60 days from the closing date for submitting tenders (Article 85.1.1 of the Act).
5. The system offered must be delivered and started up within **seven (7) months of the date of entering the contract, as a non-negotiable requirement.**

§8. ADDITIONAL CONDITIONS

1. The offer has to contain also maintenance agreement for five years after the warranty period, which should ensure a trouble-free system operation within this period. The agreement should contain the cost of the necessary maintenance during one year operation together with all required consumable parts.
2. The contractor of the item of the order shall be obliged to provide the following:
 - 2.1. Training of the system operation and basic maintenance activities. The training shall be conducted at contractor or at BOSMAL site.
 - 2.2. Warranty for a minimum of 24 months following the acceptance protocol date. The warranty includes periodical free of charge maintenance services, which should ensure a trouble-free system operation within this period and are necessary from the contractor point of view to keep the warranty, together with all required consumable parts and servicing. The warranty encloses all troubleshooting and repair activities. The extension of the warranty period is evaluation criterion 3 - table 2 in §5.
 - 2.3. Possibility of reporting of faults at least by e-mail seven days a week, 24 hours a day.
 - 2.4. Service response, counting from the moment of reporting the failure by the awarding entity to establishing a contact with contractor in order to make an agreement of removal the failures is to be within 24 hours (working days). Service action is to be no later than 5 working days, counting from the moment of reporting the failure, during the warranty period. An experienced engineer is required onsite at BOSMAL, with spare parts. The maximum repair period is not more than 10 working days from the moment of reporting

of the failure. If the failure cannot be resolved within the prescribed period, the failed component must be replaced with a new one free of defects.

- 2.5. Availability of spare parts and post-warranty service for at least 10 years from the signing the acceptance protocol.
- 2.6. Service within 10 working days after expiry of the warranty period (experienced engineer with spare parts onsite at BOSMAL).
- 2.7. Maintenance of the complete system just before expiry of the warranty period.
3. The awarding entity foresees the possibility of awarding supplementary contracts on the basis of art. 67.1.7 of the Act, the object of which will be the options that the awarding entity does not provide in the basic contract.
4. The contractor is required to ensure that the machine is accompanied by a complete set of operation manuals and control software in Polish or English, an installation manual in Polish, a CE declaration of conformity for the machine, and warranty documents.
5. Contractors and other entities that have or had an interest in being awarded the contract have the right to exercise the legal remedies provided for in Articles 179-198g of the Act, in cases where the value of the contract is equal to or exceeds the amounts specified in the provisions of law issued under Article 11.8 of the Act.
6. In the event of the occurrence of unexpected circumstances, the awarding entity will accept an equivalent solution that meets all the requirements laid down in the Specification of Essential Conditions of the Procurement (SECP) and the submitted tender (evaluation criteria) and provided that the substitute product is proved to meet such requirements.
7. The supply of a substitute product will not result in an increase in the price or an extension of the time limit for the performance of the contract or any extension of any related periods (the warranty period, the service team's response time etc.).
8. Pursuant to Article 144.1 of the Act, the awarding entity will accept amendments to the contract if the time limit for performance of the contract is extended, in accordance with the description in the ***Material Provisions of the Contract*** – appendix 2.
9. The tender procedure may be invalidated in the cases specified in Article 93 of the Act.

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§9. APPENDICES

1. *Tender form*– appendix no. 1.
2. *Material provisions of the contract* – appendix no. 2.
3. *The contractor's statement on meeting the conditions for participation in the tender procedure* – appendix no. 3.
4. *The contractor's statement on no grounds for exclusion* – appendix no. 4.
5. *Drawing of BOSMAL's emissions testing laboratory and climatic chamber (including the dyno pit)* – appendix no. 5.
6. *Drawing of the location of installation points in the dyno pit* – appendix no. 6.

End of the SECP

....., date2014

.....
Contractor's stamp.....
Phone/Fax Numbers.....
REGON (Statistical Registration Number).....
Tax Registration Number.....
E-mail**TENDER**

We hereby submit our tender for the supply of an equipment of a 4WD chassis dynamometer including control software, relevant accessories and associated services, which we agree to perform in accordance with the requirements laid down in the Specification of Essential Conditions of the Procurement (SECP).

1. We agree to perform the contract for the following price:

a. including the basic scope of the order:

net amount: PLN/EUR.....

in words: net, plus

VAT at the rate of%, i.e. PLN/EUR

gross amount: PLN/EUR.....

in words: gross amount.....

b. including the supplementary scope of the order:

- calibration equipment: net amount: PLN/EUR.....

in words:net, plus

VAT at the rate of%, i.e. PLN/EUR gross amount:

PLN/EUR..... in words: gross

amount

- pit decking: net amount: PLN/EUR.....

in words:net, plus

VAT at the rate of%, i.e. PLN/EUR gross amount:

PLN/EUR..... in words: gross

amount.....

- a spacing frame: net amount: PLN/EUR....., in words:net, plus VAT at the rate of%,i.e. PLN/EUR gross amount: PLN/EUR..... in words: gross amount.....
 - a motorcycle testing extension: net amount: PLN/EUR....., in words:net, plus VAT at the rate of%,i.e. PLN/EUR gross amount: PLN/EUR..... in words: gross amount.....
 - a vehicle restraint system based on a strap system: net amount: PLN/EUR, in words:net, plus VAT at the rate of%,i.e. PLN/EUR gross amount: PLN/EUR..... in words: gross amount.....
 - a vehicle position monitoring system: net amount: PLN/EUR....., in words:net, plus VAT at the rate of%,i.e. PLN/EUR gross amount: PLN/EUR..... in words: gross amount.....
 - a device for measuring the rotational speed of engines: net amount: PLN/EUR.....,in words: net, plus VAT at the rate of%,i.e. PLN/EUR gross amount: PLN/EUR..... in words: gross amount.....
- c. service agreement covers necessary maintenance during one year operation together with all required consumable parts: net amount: PLN/EUR, in words:net, plus VAT at the rate of%,i.e. PLN/EUR gross amount: PLN/EUR in words: gross amount

2. We agree to perform the contract within months.
The required time limit for performing the contract is 7 (seven) months from the day of signing the contract.
3. The equipment fulfils the European Safety Regulations and be granted CE certificates.
4. We agree to warrant correct functioning of the equipment formonths.
The minimum warranty period for the entire equipment is 24 (twenty four) months from the date of signing the acceptance protocol.
5. Technical parameter I: the system response time is ms; maximum value is 50 ms.
6. Technical parameter II: speed synchronisation accuracy of all roll speeds over the US06 cycle is km/h; maximum value is 0.05 km/h.
7. Technical parameter III: speed sensor resolution is (pulses per revolution); minimum value is 10000 pulses per revolution.
8. Technical parameter IV: maximal permissible axle load is [kg]; minimum value is 2500 kg.
9. Technical parameter V: maximal inertia simulation @ acceleration of 3.76 m/s^2 is kg; minimum value is 3500 kg.
10. We hereby state that we accept the tender's binding period specified in the Specification of Essential Conditions of Procurement (SECP).
11. We accept the ***Material Provisions of the Contract*** and the terms of payment specified therein and agree that if our tender is selected, we will sign the contract at a place and time to be determined by BOSMAL .
12. We hereby state that if our tender is selected as the best tender, we agree to provide, before signing the contract, a performance bond in the form of and in the amount ofPLN/EUR*, which is equal to 5% of the net contract value.
13. We further state that we will perform the contract entirely through our own efforts / We intend to subcontract the execution of the following portions of the contract*:

1/.....
(subcontractor's name and address; scope of subcontract activities)

2/.....
(subcontractor's name and address; scope of subcontract activities)

14. Statement on business secrets (if applicable):

We further state that the information contained in Appendix no. to our tender is classified as a business secret (business secrets) and as such should not be made available to other contractors participating in the tender procedure.

15. The official E-mail for documents' exchange is:

Documents can be sent to fax number:

The entire tender document consists of consecutively numbered pages.

.....
Signature of the contractor's authorised representative

**Cross out whichever is not applicable*

Material Provisions of the Contract

1. The subject matter of the contract is the basic scope of order for a four-wheel drive chassis dynamometer system designed for research, development and homologation activates in the range of testing and road load simulation of motor vehicles and supplementary scope (offered options) on which the awarding entity will decide after the technical and financial analysis of the offered options.

A detailed description of the item matter of the contract is contained in §2 of SECP. The description and the contractor's tender document shall form an integral part of the contract.

2. The contract shall be deemed to have been entered into at the time of signing it.
3. The contractor is obliged to carry out the contract by not later than 7 (seven) months from the date of signing a contract.
4. The documents required in technical documentation must be delivered not later than 7 (seven) months from the date of signing a contract.

The time limits specified in points 3 and 4 above shall be extended in the event of the occurrence of delay caused by:

- 4.1. A stoppage or delay caused by the awarding entity's fault;
 - 4.2. an event of force majeure directly affecting the performance of the contract on time;
 - 4.3. the occurrence of circumstances which the Parties to the contract could not have predicted, despite the exercise of due care.
5. In the event of delay, the Parties shall agree upon a new deadline for performance in writing, provided that the maximum extension of the time limit for performance may not exceed the duration of the interruption or stoppage concerned.
 6. As consideration for the appropriate performance of the contract, the awarding entity shall pay the selected contractor the price specified in the contractor's tender. The gross price specified in the tender as consideration for the performance of the contract should include any and all costs incurred by the contractor and shall not be increased.
 7. The contractor is obliged to deliver, install and start up the item of the order at the location specified by the awarding entity. The contractor is required to provide, together with the contract items, a set of instructions and control software in Polish or English, installation instructions and other items (§2, Section D, point 9.4) in Polish, together with declarations of conformity and warranty documents.
 8. The settlement of the contract will be based on:
 - 8.1. Pre-invoice in the amount of 30% of the net price contained in the tender. Invoice within 30 days after signing the contract.
 - 8.2. Invoice in the amount of 40% of the net price contained in the tender. Invoice within 30 days after delivery of the item of order.

- 8.3. The final invoice in the amount of 30% of the net price contained in the tender. Invoice within 30 days after the date of signing acceptance protocol and after the delivery of the required documents.
9. Detailed information about the amount of the invoices shall be determined in the contract.
10. Invoices shall be paid within 30 days from the date of receiving them by the awarding entity.
11. In case of detection of the defects at the time of acceptance, the awarding entity shall have the following authorities:
- 11.1. If the defect can be repaired at the awarding entity's side, the signing of the receiving protocol can be postponed till the time of fixing the issues but no longer than 30 days after first date of planned acceptance.
- 11.2. If the defect cannot be repaired at the awarding entity's side or it requires longer time to be repaired, the awarding entity may refuse to sign the acceptance. Within 14 days Parties are to decide about the terms of repairing or the necessity of replacement of the item of order (for new and free from defects). New date of acceptance must be determined. All agreements must take written form.
12. The awarding entity and the contractor shall, in the contract, appoint their respective representatives to be authorised to deal with technical arrangements and to sign the final acceptance report.
13. Performance bond will be refunded in accordance with Article 151 of the Act.
14. The contractor shall participate in all such consultations as may be necessary to ensure appropriate performance of the contract.
15. The contractor shall conduct free of charge basic training including system operation, performing analysis and basic maintenance activities. The training shall be conducted at contractor or at BOSMAL site.
16. The contractor shall provide a warranty of the proper functioning of the unit for the period specified in the offer (starting from signing the acceptance). The warranty includes periodical free of charge maintenance services, which should ensure a trouble-free system operation within this period and are necessary from the contractor point of view to keep the warranty, together with all required consumable parts and servicing. The warranty encloses all troubleshooting and repair activities.
17. The contractor shall ensure service response time, counted from the moment of fault notification by the awarding entity to the time when the contractor contact with the awarding entity, to agree details of the fault fixing no longer than 24 hours (working days). Repair has to start no later than 5 working days from the notification defects during the warranty period. It is required an experienced engineer with spare parts onsite at BOSMAL. Maximum repair period 10 working days from notification of the fault.
18. The contractor shall ensure the availability of spare parts to buy and post-warranty servicing for at least 10 years from the date of final acceptance protocol.
19. The awarding entity may withdraw from the contract under the general rules contained in Article 145 of the Act.

20. In addition, the awarding entity may withdraw from the contract within 30 days without any claims made by the contractor, if:
 - 20.1. the contractor fails to commence the performance of its obligations under the contract by the agreed date or discontinues their performance;
 - 20.2. the contractor performs the contract inadequately or inappropriately, against the provisions of the contract, and fails to take action to remedy its performance despite having been requested to do so by the awarding entity, in writing;
 - 20.3. a bankruptcy or liquidation procedure has been initiated in relation to the contractor.
21. The contractor shall pay liquidated damages of 10% of the contractor's remuneration specified in the contract, if the contractor withdraws from the contract for reasons for which the contractor is liable.
22. The awarding entity shall pay liquidated damages of 5% of the contractor's remuneration specified in the contract, if the awarding entity withdraws from the contract for reasons for which the awarding entity is liable.
23. If the contractor fails to perform the contract by the deadline for its performance, the contractor shall pay liquidated damages equal to 0.2% of the value of the contract for each week of delay. The amount of the liquidated damages may not exceed 5% of the price specified in the contract.
24. The contractor may withdraw from the contract within 30 days if the awarding entity fails to perform its obligations to pay the invoices issued by the contractor and payment period has been exceeded by at least 4 (four) weeks.
25. The statement of withdrawal from the contract shall only be valid if it is made in writing.
26. The liquidated damages provided for in the contract shall not exclude either Party's right to pursue claims for compensation under the general rules of the Civil Code.
27. In the event of delay in payment, the contractor may charge interest at the rate of 0.2% of the late payment for each week of such delay.
28. The Parties agree that they may negotiate their mutual liabilities arising from the liquidated damages provided for.
29. Neither Party shall be liable for its failure to perform or inappropriate performance of the Contract or for any damage if such failure, inappropriate performance or damage is caused by the occurrence of an event of *force majeure*. Detailed provisions regarding *force majeure* events and their consequences shall be included in the contract.
30. The contractor shall comply with the provisions regarding business secrets and the confidentiality obligations detailed in the contract.
31. Any changes to the contract shall only be valid in they are made in writing in the form of a written amendment signed by authorised representatives of both Parties, item to Article 144 of the Act.
32. Any disputes arising from the performance of the contract shall be resolved by a common court of law with jurisdiction over the awarding entity's registered office.
33. All matters not provided for in the contract shall be governed by the applicable provisions of the Civil Code and the Public Procurement Act, including the implementing provisions issued therein, and the provisions of the Act on Copyright and Related Rights.

....., date2014

.....
Contractor's stamp

**CONTRACTOR'S STATEMENT ON
MEETING THE CONDITIONS FOR PARTICIPATION IN THE TENDER PROCEDURE**

Article 22.1.1 of the Public Procurement Act

In connection with our tender in the procedure for the award of a public contract for the supply of an equipment of a 4WD chassis dynamometer including control software, relevant accessories and associated services to BOSMAL Automotive Research and Development Institute Ltd, Tender Procedure No. BOS/48/FZ/14,

we hereby state, on behalf of
(The contractor's full name)

that we meet the following conditions for participation in the tender procedure as at the date of submitting our tender, i.e.

- 1) we hold the qualification to perform certain activities or services, if such a qualification is required by law,
- 2) we have the necessary relevant knowledge and experience,
- 3) we have sufficient technical resources and personnel capable of performing the contract,
- 4) our economic and financial standing allows us to perform the contract.

.....
(name and signature of the contractor's
authorised representative)

....., date2014

.....
Contractor's stamp

CONTRACTOR'S STATEMENT ON

NO GROUNDS FOR EXCLUSION

Article 24.1 of the Public Procurement Act

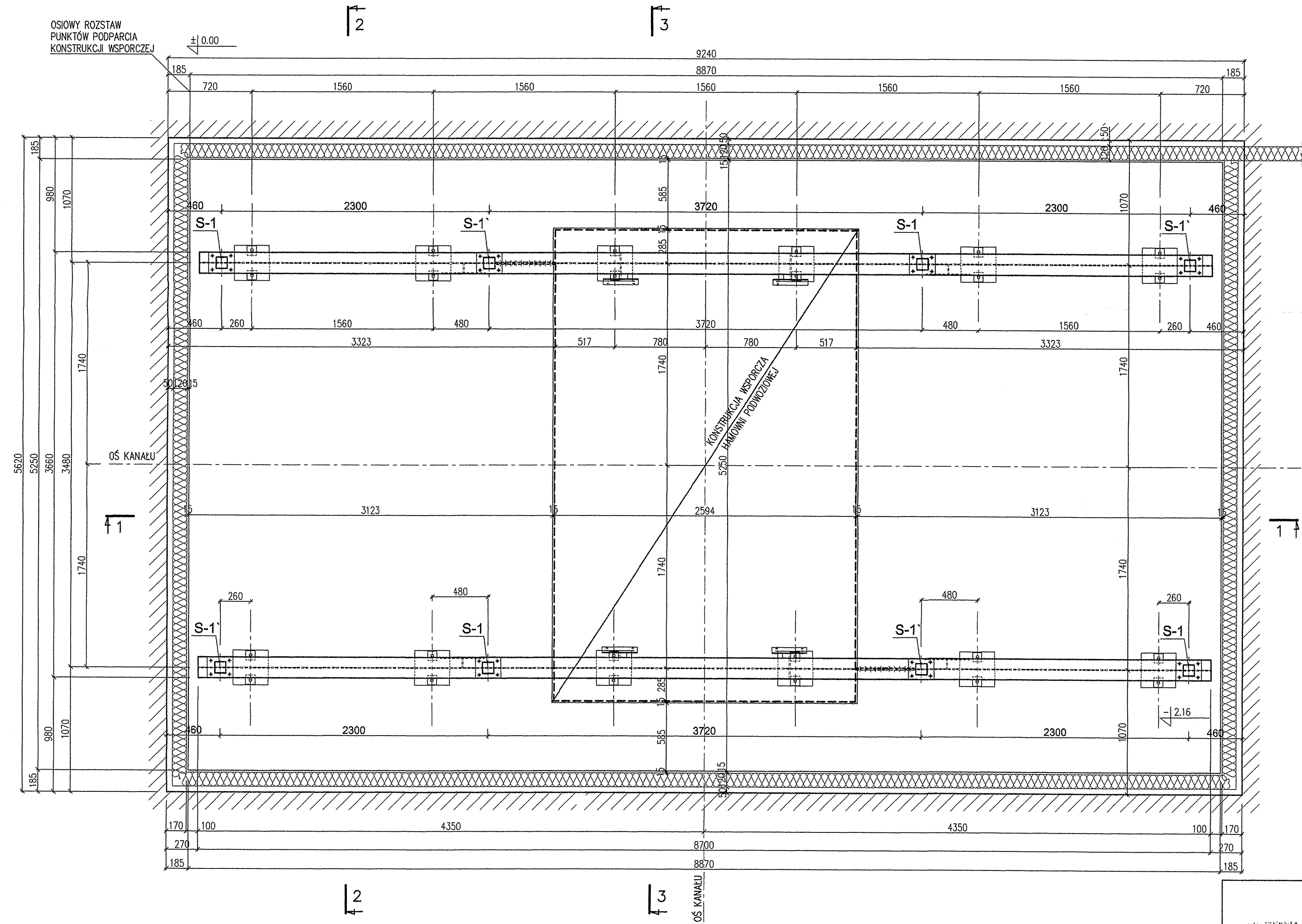
In connection with our tender in the procedure for the award of a public contract for the supply of an equipment of a 4WD chassis dynamometer including control software, relevant accessories and associated services to BOSMAL Automotive Research and Development Institute Ltd, Tender Procedure No. BOS/48/FZ/14,

we hereby state, on behalf of
(The contractor's full name)

that are we are not excluded from the procedure for the award of the contract under Article 24.1 of the Public Procurement Act.

.....
(name and signature of the contractor's
authorized representative)

ROZMIESZCZENIE SŁUPKÓW NOŚNYCH
W KONSTRUKCJI PODŁOGI HAMOWNI 1:25



PRACOWNIA PROJEKTOWA » INŻYNIERSTWO B-B » mgr inż. Tadeusz BIERNACKI ul. Sławkowska 217 - tel. 1253-62		PROJEKTANT: mgr inż. Tadeusz Biernacki mgr inż. Józef Pasierbek oprac. nr ewid. B-B-3075	
OPRACOWAŁ: mgr inż. Wojciech Czyż		1985	
BRANŻA: KONSTRUKCYJNA	SKALA: 1:25	DATA: 11.2005r.	NR RYS.
OBIEKT-ADRES: OŚRODEK BADAWCZO - ROZWOJOWY SM "BOSMAL"			
INWESTOR: OŚRODEK BADAWCZO - ROZWOJOWY SM "BOSMAL" 43-300 BIELSKO - BIAŁA UL. SARNI STOK 93			
NAZWA RYS. RZUT HAMOWNI -ROZMIESZCZENIE SŁUPKÓW NOŚNYCH W KONSTRUKCJI PODŁOGI HAMOWNI			