

## **TENDERERS 'REQUESTS FOR CLARIFICATIONS TO THE SUPPLY TENDER DOSSIER AND RESPONSES OF THE CONTRACTING AUTHORITY (No.1)**

**Contract Title:** Supply of Equipment for Mersin ITS SAP

**Publication Ref.:** EC-ENEST/ANK/2026/EA-OP/0040

**QUESTION 1:** Regarding the technical requirements defined in “c4f\_annex\_ii\_techspec\_iii\_techoffer\_en\_V1.pdf”, would the Contracting Authority consider revising the following clause in order to ensure compliance with applicable regulations, broader competition, and vendor neutrality: Clause 2.1.16 – Clarification Request Current Requirement: “The sensor shall be at least 1 / 2.4” 2M pixel CMOS type.” Justification: According to the Regulation on Vehicle Manufacturing, Modification and Assembly, only a minimum 2 MP resolution requirement is defined for vehicle cameras, without any restriction regarding lens type. Therefore, specifying a particular sensor size may unnecessarily limit alternative compliant solutions and competition. Proposed Revision: “The sensor shall be at least 2 MP pixel CMOS type.”

**QUESTION 2:** Regarding the tender "Supply of Equipment for Mersin ITS SAP-LOT 2" (Publication Ref: EC-ENEST/ANK/2026/EA-OP/0040), we have thoroughly reviewed the tender dossier. In order to ensure wide competition, equal treatment of tenderers, and cost-efficiency in accordance with PRAG principles, we kindly request your clarification and revision on the following highly restrictive technical and administrative matters: 1. Restrictive Sensor Size (Item 2.1.16) Article 2.1.16 mandates a "1/2.4-inch" sensor. In the current industry standard for high-resolution passenger counting and mobile IP cameras, "1/2.8-inch" sensors are widely used and provide identical, if not superior, 1080p resolution and low-light performance. Mandating exactly 1/2.4" points to a very specific manufacturer. Question 1: Will the evaluation committee accept high-quality 1/2.8" sensors that fully meet the resolution and accuracy requirements of the project?

**ANSWER 1-2-:** Please refer to Changes to the Tender Dossier No.2.

**QUESTION 3:** Regarding the technical requirements defined in “c4f\_annex\_ii\_techspec\_iii\_techoffer\_en\_V1.pdf”, would the Contracting Authority consider revising the following clauses in order to ensure compliance with applicable regulations, broader competition, and vendor neutrality: Clause 2.1.17 – Clarification Request Current Requirement: “The sensor shall have at least M12- 2.2 mm lens, maximum M12 2.7 mm lens.(shall be between 2.2 mm to 2.7 mm ) The FOV shall be at least 120° and VFOV shall be at least 62,5°.” Justification: The relevant regulation defines only minimum camera performance requirements and does not impose specific hardware lens or FOV limitations. The requested fixed FOV and lens parameters may unnecessarily restrict alternative compliant technologies and competition. Proposed Revision: “The sensor shall have at least M12- 2.2 mm lens, maximum M12 2.7 mm lens. (shall be between 2.2 mm to 2.8 mm)”

**ANSWER 3:** Please refer to Changes to the Tender Dossier No.2.

**QUESTION 4:** Regarding the technical requirements defined in “c4f\_annex\_ii\_techspec\_iii\_techoffer\_en\_V1.pdf”, would the Contracting Authority consider revising the following clause in order to ensure compliance with applicable regulations, broader competition, and vendor neutrality: Clause 2.1.22 – Clarification Request Current Requirement: “The sensor shall comply with following standards as minimum: EN50155 - IEC60068-2-7EH – IP66 – EN50102 – ROHS – FCC – EMC – CE standards.” Justification: According to the updated vehicle regulation published on 18.02.2025, in-vehicle cameras are required to comply with minimum IP65, ISO 16750-3 and IK08 standards. Additional certification requirements beyond these minimum regulatory

requirements may increase costs and limit competition. Proposed Revision: “The sensor shall comply with following standards as minimum: ISO 16750-3 – IP65 – IK08 standards.”

**ANSWER 4:** Please refer to Changes to the Tender Dossier No.2.

**QUESTION 5:** Clause 2.2.11 – Clarification Request Current Requirement: “The MNVR device shall have EN 50155, E-Mark, and ISO 16750-3 certifications.” Justification: According to the updated vehicle regulation published on 18.02.2025, MNVR devices are required to comply with E-Mark and ISO 16750-3 standards. Additional certification requirements beyond the regulation may increase costs and unnecessarily restrict competition. Proposed Revision: “The MNVR device shall have E-Mark, and ISO 16750-3 certifications.”

**ANSWER 5:** Please refer to Changes to the Tender Dossier No.2.

**QUESTION 6:** Could the Contracting Authority please share the brand/model information and supported communication protocols/interfaces of the central software platforms foreseen for integration? This information is required for proper integration planning, system architecture design, technical scope clarification, and accurate cost estimation.

**ANSWER 6:** The physical layer of the integration architecture is planned to be the RS485 interface. A standard, open, non-proprietary and non-copyrighted communication protocol will be utilized. Other technical details will be shared with the contractor during the implementation phase.

**QUESTION 7:** 2. Global Shutter Requirement (Item 2.1.23) Article 2.1.23 strictly requires a "Global Shutter". Modern high-end CMOS sensors used in public transport easily achieve over 90% counting accuracy without needing the expensive and highly restrictive Global Shutter hardware architecture. Question 2: Will standard, high-performance CMOS sensors (without Global Shutter) be accepted, provided they successfully pass the accuracy and vibration tests required by the Contracting Authority?

**QUESTION 8:** Is the global shutter feature requested for the sensor an absolute mandatory requirement? Would AI-based rolling shutter camera systems that provide the required passenger counting accuracy be accepted as equivalent?

**ANSWER 7-8:** The Specification 2.1.23 of Annex II+III Technical Specifications + Technical Offer remains unchanged as stated in the Tender Dossier.

**QUESTION 9:** 3. Rule of Origin (Derogation Request for IT Equipment) As per the tender rules, the equipment must originate from eligible countries. However, for Item 2.1 (Passenger Counting Sensor) and Item 2.2 (Mobile NVR), the overwhelming majority of internal components, chipsets, and raw manufacturing in the global supply chain are based in the Asian market (specifically China). Finding a fully EU/TR-originated manufacturer that meets these exact rigorous criteria is practically impossible and severely limits competition. Question 3: Will a derogation from the rule of origin be granted for Item 2.1 and Item 2.2 to allow equipment originating from the Asian market (e.g., China) in order to ensure technological feasibility and wide competition

**ANSWER 9:** The rules of origin for the evaluation of tenders remain unchanged, as defined in Article 4 (Legal Basis, Eligibility and Rules of Origin) of the Additional Information about the Contract Notice.

**QUESTION 10:** 4. Unnecessary Video Outputs for Vehicles (Item 2.2.2) Article 2.2.2 requires the MNVR to have HDMI, VGA, and CVBS outputs. In heavy-duty automotive and public transport environments, HDMI connections are highly prone to disconnection due to vibration (EN50155 standards). VGA and CVBS are the proven industrial standards for driver monitors. Question 4: Will the Contracting Authority accept MNVR units that provide highly stable VGA and CVBS outputs only, without the HDMI port requirement?

**ANSWER 10:** Please refer to Changes to the Tender Dossier No.2.

**QUESTION 11:** 5. Restrictive Storage Interface (Item 2.2.5) Article 2.2.5 mandates an "M.2 SSD" storage interface. In the mobile NVR industry, highly durable, anti-vibration 2.5-inch SATA HDDs or SSDs are the absolute standard. Forcing an M.2 SSD slot strictly limits the available industrial brands to a handful of specific IT manufacturers. Question 5: In order to broaden competition, will the Contracting Authority accept MNVRs equipped with industrial, vibration-proof 2.5-inch SATA HDD or SSD storage interfaces instead of M.2?

**ANSWER 11:** Please refer to Changes to the Tender Dossier No.2.

**QUESTION12:** 6. Built-in GPS vs. External GPS Module for Signal Accuracy (Item 2.2.9) Article 2.2.9 states that the MNVR shall have a "built-in GPS module". In heavy-duty vehicles and public transport, MNVR units are typically installed inside metal cabinets or concealed compartments for security. A strictly "built-in" GPS module inside a metal enclosure often suffers from severe signal degradation and loss of location tracking. To ensure highly accurate and uninterrupted location tracking, industry-standard MNVRs utilize external, cabled GPS modules and antennas that can be optimally positioned near windows or on the vehicle roof. Question 6: To guarantee maximum signal reliability and accurate location tracking in real-world vehicle environments, will the Contracting Authority accept MNVR units equipped with industrial external, cabled GPS modules and antennas as fully compliant, instead of strictly built-in modules?

**ANSWER 12:** Please refer to Changes to the Tender Dossier No.2.

**QUESTION 13:** Could you please provide the number of vehicles on which the system will be implemented, including vehicle types, brand/model information, number of doors, and details of any existing camera infrastructure?

**QUESTION14:** How will the 1,250 passenger counting sensors be distributed among the vehicles? How many sensors are envisaged per vehicle? Will a sensor be installed above each door of the vehicle?

**QUESTION 15:** Will each of the 668 MNVR units be installed on a separate vehicle, or are any of these units intended to be used as spare units, stock items, or for central/office use?

**ANSWER 13-15:**

As a general principle, each of the 668 Mobile Network Video Recorders (MNVR) units is planned to be installed on a separate vehicle, with no units allocated for spares or central office use. Passenger counting sensors will be distributed to ensure maximum accuracy based on the specific vehicle configurations. Detailed information regarding the vehicle fleet (brands, models, door numbers, existing infrastructure) and the exact installation/distribution plans will be provided to the contractor during the project implementation phase. The tenderers should price their offers on the basis of the quantities and installation obligations in the tender dossier, and the final allocation should not alter the contract scope or create additional cost claims.

**QUESTION 16:** Is there any installation manual, mounting catalogue, or technical documentation regarding the above-door mounting area, ceiling height, cable routing, and power connection points in minibuses, shared taxis/"dolmuş" vehicles, and buses? On what basis will the installations be carried out?

**ANSWER 16:** There is no specific guide for installation. Detailed information regarding installation plans will be provided to the contractor during the project implementation phase. Please also refer to Article 3. Installation and Commissioning Requirements of ANNEX II + III: TECHNICAL SPECIFICATIONS + TECHNICAL OFFER for the responsibilities of the Contractor.

**QUESTION 17:** Do the vehicles currently have any existing IP cameras, analogue cameras, switches, recording devices, or in-vehicle network infrastructure?

**ANSWER 17:** Yes, but the Passenger Counting Sensors and MNVRs to be supplied shall operate completely independently.

**QUESTION 18:** Will the installation works be carried out during night shifts or depot/garage shifts in order not to disrupt the operation of the vehicles?

**ANSWER 18:** The installation works are expected to be carried out in a way that does not disrupt public service (during night, storage hours, etc.). The scheduling will be determined with the approval of the Mersin Metropolitan Municipality during the project implementation phase.

**QUESTION 19:** Will the central server, video management software, and storage infrastructure be provided by the Contracting Authority, or are these items expected to be included within the Contractor's offer?

**ANSWER 19:** Mersin Metropolitan Municipality has central server, central software platforms and storage infrastructure. These are not among the items to be supplied under this tender. Also, please refer to Article 3. Installation and Commissioning Requirements of ANNEX II + III: TECHNICAL SPECIFICATIONS + TECHNICAL OFFER for details of the responsibilities of the contractor for installations.

**QUESTION 20:** Is it sufficient for the passenger counting sensor to generate only boarding and alighting passenger count data, or is video footage also required to be transmitted to the central system?

**QUESTION 21:** Within the scope of anonymisation of passenger data, would it be sufficient for images to be processed within the sensor and not stored? Would it be sufficient for only numerical passenger data to be retained in the central system?

**ANSWER 20-21:** It is sufficient to transmit passenger counting data (e.g. boarding, alighting, occupancy, density, etc.) to the central system and to store video footage on the vehicle's MNVR device, with the capability for the recorded video footage to be retrieved whenever required. No personally identifiable passenger data may be collected or stored for the passenger counting function, and that video storage/retrieval must comply with the tender dossier, applicable data protection requirements and data localisation requirements.

**QUESTION 22:** It is stated that the sensor is required to detect passenger density inside the vehicle while the vehicle is in motion and transmit data to the data center for each stop. Could you please clarify the definition of "passenger density"? Should this be reported as real-time in-vehicle occupancy, the difference between boarding and alighting passengers, the number of persons, or percentage occupancy?

**ANSWER 22:** Vehicle Passenger density shall be derived from boarding and alighting data and may be expressed either as the number of passengers on board or as an occupancy percentage.

**QUESTION 23:** The MNVR is required to have an SD card feature. Is the SD card expected to be included within the scope of the offer? If so, what are the minimum capacity and industrial-grade requirements?

**ANSWER 23:** Please refer to Specification 2.2.25 of Annex II+III Technical Specifications + Technical Offer

**QUESTION 24:** The MNVR is required to support 3G or 4G networks. Would models supporting 5G also be accepted? Is active 3G support still required?

**ANSWER 24:** Please refer to Changes to the Tender Dossier No.2. Additional 5G support is acceptable, provided that 4G/LTE compatibility is maintained.

**QUESTION 25:** Could the Contracting Authority please clarify what is meant by the requirement that the MNVR shall “allow firmware modification”? Would integration through the manufacturer’s SDK/API be sufficient, or is access to the firmware source code or authorisation for custom firmware development expected?

**ANSWER 25:** Specification 2.2.13 requires the MNVR to ensure that firmware updates, modifications, enhancements, or customizations can be implemented where required, through manufacturer-authorised SDK/API support or an equivalent authorised firmware update/configuration/customisation interface.

**QUESTION 26:** Through which method will the MNVR integration with the 112 Emergency Call Centre be carried out? Could the Contracting Authority please clarify the API, protocol, data format, test environment, and allocation of responsibilities on the 112 side?

**ANSWER 26:** Please refer to “Regulation on the Manufacture, Modification and Assembly of Vehicles published in the Official Gazette No. 29869, dated 26.10.2016”, “ Changes to the Tender Dossier No.2. (Relevant specification addition to LOT 2 – Traffic Management System Equipment, 1. General requirements, Article 1.5 (Page 8 of 15))”, and “Article 3. Installation and Commissioning Requirements of ANNEX II + III: TECHNICAL SPECIFICATIONS + TECHNICAL OFFER” for the responsibilities of the Contractor.

**QUESTION 27:** In case of mobile connection loss, what should be the required data buffering duration on the vehicle?

**ANSWER 27:** The specifications do not specify a particular day/hour limit for local buffering time in case of cellular network outages. However, according to specification 2.2.17 of Annex II+III Technical Specifications + Technical Offer, records must be stored "without interruption and securely".

**QUESTION 28:** Following vehicle installations, will any official approval process be required, such as TSE approval, vehicle inspection, modification project approval, or any similar procedure? If required, will the responsibility for applications and approvals rest with the Contracting Authority or the Contractor?

**ANSWER 28:** Please refer to “Regulation on the Manufacture, Modification and Assembly of Vehicles published in the Official Gazette No. 29869, dated 26.10.2016”, “ Changes to the Tender Dossier No.2. (Relevant specification addition to LOT 2 – Traffic Management System Equipment, 1. General requirements, Article 1.5 (Page 8 of 15))”, and “Article 3. Installation and Commissioning Requirements of ANNEX II + III: TECHNICAL SPECIFICATIONS + TECHNICAL OFFER” for the responsibilities of the Contractor.

**QUESTION 29:** Will the spare parts list be for information purposes only, or will it be considered as a binding price list under the contract? If it is to be binding, will the prices remain fixed for a period of five years?

**ANSWER 29:** The list of spare parts and consumables, including unit prices, is for information purposes only.