EXPLANATION OF TENDER DOCUMENTATION

within the meaning of Section 98 (3) of the Act No 134/2016, on public procurement, as amended (hereinafter the "**Act**")

Name of public contract:

DELIVERY OF MOBILE CAMERAS AND PROVISION OF RELATED SERVICES

Above-the-threshold public delivery contract,
open procedure (hereinafter the "**Public Contract**")

Reference number: VZ_2020_A48

ID	Question	Explanation
1	In question no. 1 in explanation no. 06, the inquirer explained to the contracting authority that the autofocus technology works differently than the contracting authority clearly assumes. If the camera is equipped with autofocus, as required by the contracting authority, it will not be practically possible to obtain a sharp photograph of a moving vehicle, because the camera will refocus on the moving vehicle for the entire period of engagement. From the described focusing principle, it is clear that the camera works with a static scene for the needs of focusing = visible image at one time, basically it can be imagined by stopping time, determining the object to focus, starting time and mechanically focusing (which takes approx. 0.5-1 s), after focusing, the camera detects that the originally focused object is already somewhere else and the whole process is repeated. Due to the fact that during the focusing process the whole image is fatally blurred for most of the time, the use of such a camera will be unusable in practice. If the contracting authority states that the reason for its request is 2: "practical and economic", then the inquirer considers it proven that the claim that the word "practical" cannot be used, because on the contrary it is completely inapplicable. As for the word "economic", the Interviewer considers it quite clear that this word should be used in the sense of "economically advantageous" or. "cheaper", which also cannot be used in this case,	Not accepted. The inquirer uses the institute of a request for an explanation of the tender documentation not to clarify the contracting authority's requirements, but to change them, probably because its existing technology does not meet the contracting authority's requirements. The contracting authority does not agree with the inquirer's conclusions and considers its answer to question no. 1 in the explanation no. 6 to be clear and refuses to change the tender conditions only because they do not meet inquirer's expectations. The contracting authority reiterates that it requires autofocus so that the camera operator does not have to focus by manually rotating the lens ring, as this is impractical for the operator (therefore the contracting authority justifies his request by practicality). In the reply, the contracting authority admitted that its requirement by focusing through a one-push button (if its control would be by software) meets the requirements, also with regard to the inquirer's argument concerning the time delay of the mechanical focusing of the lens. The inquirer completely omits the contracting authority's explanation regarding the requirement to minimize (especially repeated) camera operator training, which the contracting authority will have to carry out at its own

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	because an autofocus camera is significantly more expensive than a camera that lacks this functionality. It can therefore be stated that the contracting authority did not provide a relevant answer to question no. 1 from explanation no. 06. Furthermore, in point 1 of this answer, the contracting authority argues that the sharp photograph provided by the inquirer is taken at a very high speed and is therefore not relevant. It should be noted that a higher speed leads to lower quality and higher blur than an image taken under real conditions. Furthermore, in point 2 of this answer, the contracting authority argues that the sharp photograph provided by the inquirer is taken from too sharp an angle and is therefore not relevant. It should be noted that a sharper angle leads to a more distorted license plate and a lower number of pixels on which it is recorded than the image taken under real conditions, and yet is legible on the image sent by the Asker. In other words, the contracting authority's answer can be understood as the type of cameras offered is too good for his requirements and he demands worse and more expensive, while he does not allow such quality and cheaper cameras. Can the contracting authority provide a relevant justification for the need for an autofocus regime when its answer in explanation 06 has proved to be completely irrelevant?	expense, which is not paid separately by contracting authoritys. The inquirer incorrectly confuses this contracting authority's request with an economic indicator of the purchase price of the cameras, which is the acquisition cost, not the operating cost. The images sent by the inquirer to the request for an explanation of tender documentation no. 6 are not suitable for ANPR processing and do not provide even the slightest support for the inquirer's conclusions, especially with regard to the inquirer's argument that the license plates are legible in the pictures. The pictures of the license plate, except for the first vehicle, are not readeable in the pictures sent by the inquirer.
2	Electronic image stabilization is a SW functionality that does not affect the blur / sharpness of individual images, but affects the "stability" of video from a human perspective. From the point of view of the license plate recognition software that will process the images from the camera, there will be no difference at all in the quality of the image from the camera with or without electronic stabilization (if we are talking about a camera with a global shutter). Can the contracting authority explain why it refuses to accept a more suitable technical solution (ie a camera with a global shutter without stabilization), which at a lower price will provide it with a better image for further processing than the required cameras (rolling shutter with electronic image stabilization).	Not accepted. The inquirer uses the institute of a request for an explanation of the tender documentation not to clarify the contracting authority's requirements, but to change them, probably because its existing technology does not meet the contracting authority's requirements. The contracting authority does not specify in the tender documentation what type of deadline the camera should have and it is up to the supplier to offer such goods that meet the contracting authority's requirements. The contracting authority requires electronic image stabilization, among other things, also because the case of using the camera, listed in paragraph 2.3 of annex no. 1 to the tender documentation, assumes a fast driving of the mobile patrol vehicle and the camera will be exposed to vibrations and shocks. A certain measure would be mechanical

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		stabilization, but the contracting authority refused to do so when processing the tender conditions due to the design complexity. Electronic image stabilization is therefore the only solution known to the contracting authority to meet the contracting authority's requirements for the quality of the recording during the fast driving of the mobile patrol vehicle.
3	In Question no. 4 in Explanation no. 06, the inquirer showed the contracting authority that there is a dependence between the resolution of the sensor, the angle of the lens, the distance of the vehicle and the size of the license plate on the image. If the Interviewer used an image with a 45 ° lens and showed that it is an image with a quality (number of license plate pixels) bordering possible recognition, then extending the lens to 70 ° while maintaining the sensor resolution will degrade it to almost half the number of pixels and The license plate will certainly become illegible. All this is when using the 3MP camera, which is also one of the better ones. If a 2MP camera is offered, which the contracting authority admits, the situation will be even worse. The contracting authority should define a minimum camera resolution for its protection, so that it does not happen to it that it receives cameras that will not provide sufficiently high-quality images in the required cases of use. Given that the contracting authority stated that he is not a camera specialist, this can also be replaced by a combination of real parameters: how many pixels the license plate should have in the image at what distance at what angle of view of the lens, from which the minimum resolution can be calculated. Does the contracting authority define any of the described parameters?	Not accepted. The contracting authority does not agree with the inquirer's conclusions, partly because the contracting authority is not able to verify any of the inquirer's statements from the attached image. In response to question no. 5, the explanation of tender documentation no. 2, the contracting authority explained what the minimum resolution of the sensor is required for the subsequent processing of records. The contracting authority intentionally does not require a high-resolution sensor, mainly in order not to obtain a sensor with too small pixels with a lower saturation capacity, which leads to a worse signal-to-noise ratio and a lower dynamic range. Due to the above, the contracting authority prefers to adjust the scanned image optically. To the image attached by the inquirer to question no. 4 in the explanation of tender documentation no. 6, the contracting authority adds that in accordance with the use case specified in paragraph 2.1 of annex no. 1, the contracting authority would take pictures of the lane adjacent to the site so that the vehicles were closer to the camera and therefore occupied a larger image area. The image taken by the inquirer captures the lane at a distance and therefore does not fully correspond to the use case intended by the sponsor. Also for this reason, it is not possible to agree with the inquirer's conclusions. Again, we encounter a situation where the inquirer infers something, but not only does not present any credible justification for his claim, but uses his unverified conclusions to influence or even question the legitimate requirements of the contracting authority for the parameters of the demanded goods. If the contracting authority wanted to negotiate its requirements with suppliers, it would choose a different method of public procurement than

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		open tender. The contracting authority does not define the minimum resolution or number of pixels to capture the license plate, because it knows that for the software used to recognize the license plate, such information is not the only determinant and does not want to argue with suppliers as to whether or not it is right and bear the burden of proof, when there is no reason for that. At the same time, the contracting authority adds that it has defined the required functional and technical parameters in chapter 3 of annex no. 1 to the tender documentation, as well as the requirements for the use of cameras in chapter 2 of annex no. 1 to the tender documentation. The offered cameras must meet all the requirements of the contracting authority.
4	The contracting authority argues for the need for an optical zoom and a quality image, does not recognize the digital zoom and does not define the required quality. In this way, it purposefully and unjustifiably discriminates against technically more advantageous solutions, which at the same time provide better outputs. Here is a specific example: A) FullHD camera, 70° lens, vehicle license plate distance 10m when viewed from the front. If we consider that the license plate is 50 cm, then its size will be about 71 pixels in the image. B) FullHD camera, 35° lens, vehicle license plate distance 22m when viewed from the front. If we consider that the license plate is 50 cm, then its size will be about 71 pixels in the image. C) 8k camera, 70 ° lens, vehicle license plate distance 22m when viewed from the front. If we consider that the license plate is 50 cm, then its size will be about 124 pixels in the image. Cases A) and B) show the extreme possibilities of the technology required by the contracting authority, ie. in the specific case A) the Submitter will receive an image with a license plate 71 pixels wide, although it has the zoom of the camera at the maximum, ie the closest and narrowest image (the least information in the shot). However, if the Interviewer could use an 8k camera without an optical zoom (7680x3840) with a 35 ° lens, then under the same conditions it would provide the same image with the same license plate resolution of 124 pixels, although the angle of view would not be narrowed and the most information would be	Not accepted. The contracting authority does not dispute the inquirer's technical calculations and conclusions, but strongly rejects the inquirer's unreasonable remark about (cit.) "*discrimination of a more technically advantageous solution*" mainly because the absence of optical zoom and its replacement by digital zoom (ie image crop) since any crop reduces the number of pixels that carry the image information and thus reduces the recognizability of the recording, inversely proportional to the degree of zoom (the greater the zoom, the poorer the quality of the recording). The contracting authority conceived the use cases in article 2 of annex no. 1 together with future camera users and defined them in accordance with them so that the composition of the recordings is preferably realized by physically approaching the mobile patrol vehicle to the scanned object and fine-tuning it by adjusting the zoom. The contracting authority has already commented on the use of a high-resolution camera, which would allow digital zoom to compensate for the absence of optical zoom, for example in answer to questions 3 and 5. The inquirer argues on the basis of the images he attached to his inquiry no. 5 in the explanation no. 6 and the contracting authority reiterates that these images do not by far correspond to the contracting authority's intention to use cameras and are irrelevant for

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	available. If we start cropping this image = do digital zoom, the license plate will still remain as large as 124 pixels and its quality will not change. The inquirer showed by an illustrative example that a higher resolution camera without optical zoom will completely replace a lower resolution camera with optical zoom. Such a camera is cheaper, less prone to malfunctions, it will not be necessary to control the zoom change by the operator and will provide significantly better output for further processing. Can the contracting authority explain why it refuses to accept this more appropriate technical solution in all respects?	the purposes of explaining the tender documents. evident from the inquirer's arguments lead to completely misguided conclusions. The use cases defined by the contracting authority in annex no. 1 of the tender documentation are based on the requirements of contracting authority's clients (future users) for minimal manipulation of the camera while driving the vehicle. The contracting authority's clients prefer the optical setting at the beginning of the measurement and the subsequent possible adjustment of the image composition by moving (zooming in / out) the vehicle to the scanned object.
5	In the answer no. 5 in the explanation no. 01, the contracting authority stated that it requires a camera with a sensor of at least 1⁄2 “in order to ensure the “minimum required image quality”. The inquirer requests that the contracting authority specifically define this "minimum required image quality" and delete the requirement for the size of the scanning sensor for the following reasons: 1) Sensor size does not guarantee image quality 2) Modern sensors with a size close to 1/3 "provide higher image quality than most 1⁄2" sensors 3) Cameras with sensors with a size close to 1/3“ will be at a lower price than the expected value of the public contract. From the above information, it is clear that the contracting authority can receive the same quality or better solution at a much lower price, if it specifies more specifically the required parameters of the camera. If the contracting authority retains a general inaccurate definition, then 1) He does not behave like a proper manager, because he intentionally and consciously buys more expensive and worse performance, thus violating the laws of the Czech Republic. 2) Most manufacturers who use state-of-the-art sensors close to 1/3 "and do not make sense to use inferior 1⁄2" sensors are unjustifiably discriminated against. As stated in §182 par. 1) let. a), The contracting authority sets requirements for the properties of the object through parameters expressing the requirements for performance or function, a description of the purpose or needs to be met. The requirement for a sensor of at least 1⁄2 “size does	Not accepted. The minimum required image quality required by the contracting authority is completely conditioned by the use of a sensor with a minimum size of 1/2". Of course, it also depends on how many pixels the sensor consists of, because the quality of image information depends, inter alia, on pixels' size. Therefore the contracting authority prefers optical zoom and and does not accept the inquirer's suggested higher resolution. For the completeness of the information, the contracting authority states that he requires a larger sensor also because he will not (cannot) use a IR lighting in poor lighting conditions, so he also does not require it. The larger each individual pixel, the more light falls on it and the better the information it provides for further processing. It follows that if we have two sensors of the same size and one of them has a lower resolution, the individual pixels may be larger and we can therefore reasonably assume that such a sensor will provide better information. The resulting image quality also depends on the processor used and how it can process the information from the sensor. Small pixels have lower saturation capacity, which leads to a worse signal-to-noise ratio and lower dynamic range. Therefore, this explanation of the contracting authority's requirement should be considered final and unchangeable in the context of the required image quality.

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	not meet any part of the above-cited definition or any other part of §182. A parameter expressing performance or function requirements may be, for example, sensor resolution, sensor sensitivity, sensor speed, and the like, but it is certainly not its size. Can the contracting authority correct the technical specification so that it is not in conflict with the law? Ie. delete the requirement for the physical size of the sensor and replace it with the requirements for the function (ie for the qualitative properties of the sensor)?	
6	In the event that the contracting authority does not comply with the requirement from Inquiry no. 5 and insists on 1/2 "sensors, the inquirer asks for an explanation why it must not use a camera with a sensor close to 1/3" light and a lower level of digital noise than his other camera with a 1/2 "sensor, which he is ready to offer.	Not accepted. The contracting authority does not challenge the inquirer's argument that there may be a top 1/3" sensor on the market providing a higher subjectively assessed image quality than a poor quality 1/2" sensor. However, the contracting authority states that the 1/2" sensor requires mainly because at the same minimum resolution that the contracting authority requires for the subsequent processing of image data, the pixel size (area) of the 1/2" sensor is more than twice bigger than on 1/3" sensor and it can therefore reasonably be assumed to have (of course with the same make quality) a proportionally higher saturation capacity for capturing images in low light than a 1/3" sensor due to the physical nature.
7	The contracting authority requires one camera for the vehicle, which the operator will shoot to the right and obliquely to the left in front of him, at the same time it can be easily removed from the vehicle. At the same time, it requires the definition of 2 specific focal lengths and their SW refocusing. The inquirer does not dispute the meaningfulness of this concept, although it is more expensive, less reliable and significantly more difficult to operate manually and the necessary expertise of the operator. The inquirer proposes to allow an alternative technical solution that meets the functional requirements of the contracting authority - ie. will provide a sufficiently high-quality image for license plate recognition in all 3 required modes (even at one moment without manual intervention of the crew or without SW request to change the configuration) and at the same time it will be as easy to dismantle as the existing solution required by the contracting authority. The solution proposed by the inquirer is:	Not accepted. The contracting authority does not consider the use of two cameras at the same time and considers this solution to be impractical, technically complicated and unacceptable to the end user. By his proposal, the inquirer de facto circumvents the logical and legitimate technical requirements of the contracting authority. The contracting authority finds the impracticality, technical complexity and user unacceptability of the alternative solution proposed by the inquirer in particular in the fact that: • causes a greater obscuration of the view of the crew (and especially the driver), • the design of the bracket will be much more complicated than the standard bracket of one camera and will therefore have a much higher susceptibility to damage during installation and disassembly, • two cameras have a much higher space requirement during transport than one,

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	1) cheaper to buy 2) cheaper to operate (fewer repairs) 3) less demanding on the operator (it does not have to move with the cameras and it is difficult to solve the right angle needed for the SW selected focal length) 4) more reliable Will the contracting authority allow other (apart from the high-resolution camera, see question no. 4) alternative technical solutions to meet the functional requirements? That is, the contracting authority will accept the delivery of 2 identical cameras with different lenses, which will be placed on a rotating holder in both axes (within one body) and this holder will be mounted in accordance with the contracting authority's requirements for damage to the vehicle. The contracting authority will be able to easily disassemble and will be able to shoot the cameras as it sees fit (only in practice it will not be necessary).	• two cameras (depending on the design) weigh much more than one. The contracting authority adds that the cameras will be transported and stored together with other components of the mobile patrol equipment (computer or tablet, power batteries, holders, cables, etc.) in one hand luggage ("suitcase"), whose space options are limited and manipulated (loading, carrying, unloading) it will be used by the crews of road patrol vehicles - it is therefore necessary to take into account the regulations on the maximum permissible weight of the load intended for manual handling. The contracting authority does not allow the cameras and other components of the mobile patrol equipment to be transported and stored in more than one package, as they will contractually and legally form a single unit. The contracting authority does not allow a change in the tender documentation in this respect only because the inquirer clearly does not have the required technology and for this reason tries to misuse the institute of explanation of the tender documentation to modify the tender in its favor.
8	If the contracting authority does not comply with the requirement in question 7, can it justify why it requires the above-mentioned, very user-friendly, technical solution? The inquirer has reasonable doubts that the Police of the Czech Republic is requesting the required solution, because within the equipment of its vehicles it buys a system with a completely different and simpler concept, corresponding to our proposals in question no.7. It seems completely illogical for the inquirer for the Police to operate two such diametrically different solutions for the same purpose, while the technology requested by the contracting authority will be even more in the numerical minority. It can be reasonably assumed that the Police of the Czech Republic will secure a much more friendly solution and the police officers will then have no interest in using the purchase solution within this public contract. The inquirer understands that this is a change in architecture, but taking this change into the prepared solution is a relatively small intervention, operatively solvable in the project implementation and would have a significant positive effect on price, but mainly on ergonomics for police officers and customs officers.	Explained. Although the contracting authority is not obliged to explain its reasons for setting the tender conditions, it will do so for the sake of the transparency of this public contract. The contracting authority does not know for what purpose the Police of the Czech Republic acquires the above-mentioned solution by the inquirer. However, the technical specification stated in this tender documentation was consulted and agreed with the responsible employees of the Police of the Czech Republic. The contracting authority requires a solution that will be convenient, practical and easy for the operator to handle, set up and train. The use of two cheap cameras instead of one high-quality one (which the contracting authority requires) is not such a solution in the opinion of the contracting authority with regard to ergonomics.

In Prague on 29 May 2020

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