



## REQUEST FOR INFORMATION & DEMONSTRATION

# RFI / RFD

No. 11/2020

On the subject of a system for  
Terrain dominance



|                     | Name                                | Position                         | Date     | Signature |
|---------------------|-------------------------------------|----------------------------------|----------|-----------|
| Written by          | Superintendent Gal Levy             | Electronics Officer R&D Division | 25/11/20 |           |
| Written by          | Superintendent Avi Chaushu          | Planning Department              | 25/11/20 |           |
| Approved by         | Chief Superintendent Amit Lifschitz | Acting Head of R&D Division      | 30/11/20 |           |
| Integration of work | Chief Superintendent Stefan Sefer   | Head of Planning Department      | 30/11/20 |           |





## 1. Introduction

The Israel National Police is responsible for maintaining public order, maintaining the security of person and property, and for the internal security of the country. The police carry out their role and fulfill their responsibilities by many different means, both in the air and on the ground.

The characteristics of crime and the evolving security challenges raise new operational needs, including the need for an operational system for "terrain dominance" that will allow continuous observation of a defined grid cell (urban / rural), enable analysis of the area, monitor and identify targets and unusual events according to user definition, pass on information, and help direct the ground and air forces.

## 2. General background

This document will define the operational and functional requirements for a system for terrain dominance from the air in terms of the user, including the platform, sensors and observation system, communication systems and ground station, C2 center and C2 systems, system operators and users, and the entities supporting them.

The request for information focuses on the products of the system, and does not define the technological concepts and the specific characteristics of the technological solution, such as: the type of means, how to link them, the detailed architecture of the systems, and the infrastructure and communication characteristics. All of these and more will be specified by the respondent to the request for information (RFI).

**Companies responding to this document may respond with information for all the systems, or for any of the subsystems listed in this document.**

## 3. Objective

The objective of this document is to detail the principles of the operational and functional requirement for implementation of an airborne system for terrain dominance for the Israel National Police (INP).

## 4. General





- A. Information providers are requested to include as much information as possible in their response, in accordance with the details of the RFI, and also to attach the data, documents and technical specifications, as far as possible in accordance with that stated in Appendix A.
- B. The RFI process should not be seen as a process for selection of a product supplier. It should also not be seen as an undertaking of any kind by the INP with regard to publishing a tender. It should be emphasized that any engagement (if any) will be made in accordance with the Mandatory Tenders Law and its regulations.
- C. The Israel Police intends to conduct demonstrations (RFD) for all responses that meet the requirements set out in Section 15. This will be in accordance with the decision and approval of the Tenders Committee, and in any event the INP reserves the right not to perform this measure, at its discretion.
- D. After reviewing the information, the INP may make any use of the information received from the participants as they see fit, including for the purpose of writing a specification document, or any other document.
- E. Should the INP decide to purchase any system, the purchase will be made in accordance with a dedicated specifications document that may differ from the requirements in this document. In any event, the engagement with the INP will be made subject to the Mandatory Tenders Law, and the fact of responding or the content of the response to this RFI will not give an advantage or disadvantage to any of the participants in this process.
- F. The INP may contact customers / users and/or any other entity for recommendations and opinions about the participant and the systems presented.
- G. The participants will bear all the expenses involved in responding to this RFI, including completing information, and holding meetings and discussions on the subject. Participants will not be entitled to any compensation or indemnification for expenses and/or damages caused to them in connection with the proceedings that are the subject of this document.
- H. The INP reserves the right to change the terms of the RFI, to hold clarification meetings with the participants, and/or to postpone the response and/or not to proceed to the demonstration stages, all at its discretion and subject to the decision of the Tenders Committee.





- I. In order to participate in this procedure, participants must be located in Israel and/or be represented by a representative in Israel who will be a liaison between them and the INP.
  - J. Due to various constraints, this procedure may be canceled, or reduced, or postponed. The INP will not bear any expense or payment in respect of postponing or canceling or reducing the process, or any other decision of the INP in connection with the process.
  - K. The INP may extend and/or postpone the dates specified in this document, at its sole discretion.
5. General characteristics of the system
- A system that provides aerial observation by means of an aerial platform carrying an optical payload enabling VISINT terrain dominance.
- A. The requirement is for proven and demonstrable technology that meets the requirements set out in this document.
  - B. The entire system will be built for mobility and rapid deployment between the various sites across the country.
6. Operational outlines of the system
- A. The system will operate within Israeli territory, and is expected to deal with a large and wide range of environmental characteristics, including an urban environment and dense urban environment with high-rise buildings, a marine environment, a mountainous environment, woods, an exposed environment, and other environmental characteristics existing in the State of Israel.
  - B. It must be able to work fully in all weather, including fog, rain, winds, etc., other than in exceptional and extreme weather conditions, under safety and regulatory restrictions. The response must state whether the system meets this requirement, and if not, the limitations must be specified.
  - C. A response is required in all lighting conditions during the day and night - a clear and high-quality picture. The respondent will indicate the degree of compliance with this requirement, and the limitations of the system.
7. General requirements
- A. Terrain dominance (electro-optical) - the ability to monitor and supervise movements in a defined area, including the ability to manage a large number of movements at the same time, and the ability to obtain a complete intelligence picture of the same grid cell. The capability includes a large grid cell





- photograph (from 250 m<sup>2</sup> to 100 km<sup>2</sup>) of sufficient resolution and sampling rate to allow tracking of a vehicle traveling in an urban area, both in real time and in post-event investigation. The respondent will indicate the sampling / refresh rate of the video feed.
- B. The system is required to provide continuous video feed 24/7, and the duration of operation will be in accordance with the requirements and the operational need. The respondent will indicate compliance with this requirement, or alternatively, if it does not meet the requirement, will specify the length of time possible in the proposed system, and under what conditions.
- C. Main system consist of the following subsystems ,a respondent that does not have all of the main system capabilities will indicate this in the response. response may be partial only for the following subsystems :
- 1) Built-in ability to store a recording of the video feed for a long period of several days.
  - 2) Investigation and tracking capability - the system's ability to investigate in real time or investigate post-event, and to track objects by means of at least 5 "investigation windows", while continuing video recording in each pre-defined grid cell.
  - 3) Command and control (C2) system - remote operation of the aerial system, and full interface and full display of all the required information and data as defined. The system will be mobile, for operation from anywhere in the country.
  - 4) Fusion of information - integration of observation systems and other sensors that are installed on the ground and will serve as a trigger for production of the VISINT information required from the system, in compliance with the requirements defined in this document.
  - 5) Communication system - a system for implementing communication with country-wide coverage. The system is intended for the bidirectional transfer of video feed and data between the airborne platform, the operator, and all consumers in the INP.
- D. The system must have a high level of availability and operational readiness, for routine and emergency deployment.
8. Aerial platform subsystem requirements
- A. The ability to remain in the air continuously 24/7. The duration of operation will be according to demand and operational need. The respondent will specify compliance with this requirement or alternatively, if the requirement is not met, will specify the length of time possible with the proposed system, and in what conditions.





- B. The respondent will specify time ranges in which the system can work depending on the different parameters.
  - C. A respondent offering an aerial platform will produce compliance with CAA (Israel civil aviation authority) standards and guidelines.
  - D. The system will transmit its location to the C2 system at all times.
  - E. Platform - UAV / drone / satellite or any other manned or unmanned aerial vehicle on which the sensor / system will be installed, that will be remotely controlled by the system operator, and / or will operate autonomously in the defined grid cell, and / or will operate according to a predefined flight plan.
  - F. The system will allow planning of flight paths according to the required areas of coverage (polygon).
  - G. The respondent will specify if the system supports covert operation? - not discernible to the eye (without magnification) or audible while operating in a particular area.
9. Optical payload subsystem requirements
- A. An aerial system for "terrain dominance" that will allow continuous viewing of grid cells of different sizes (from 250 m<sup>2</sup> to 100 km<sup>2</sup>).
  - B. An electro-optical system that is durable in outdoor conditions, such as: rain, dust, sun and EM radiation.
  - C. Observation head - one or more fixed or scanning cameras that create a unified and wide (panoramic) picture of the terrain.
  - D. Colored sensor to support daytime captures.
  - E. Thermal image sensor for the hours of darkness (or a sensor with high exposure).
  - F. Details of resolution and effective ranges (DRI – Detection, Recognition, and Identification).
  - G. The system is required to have a high resolution in order to allow the greatest possible ranges of recognition of vehicles (type / color), human figures, items of clothing, etc.
  - H. The system is customized and can be carried by a suitable aerial platform.
  - I. The respondent will indicate the ability, if any, to carry the optical system using a Cessna police aircraft.
10. Command and control (C2) recording and investigation subsystem requirements
- A. The system will communicate with one or more C2 terminals via dedicated communication.





B. A number of the platform operations listed below will be performed from the C2 terminal:

- 1) Live or reconstructed video playback, or a combination of the two to open investigation windows.
- 2) Video playback and zooming in the investigation windows without losing the overall picture of the area.
- 3) Automatic tracking of objects in the investigation windows.
- 4) Direct and rapid access to pre-defined indexes of time or place as defined by the operator.
- 5) Ability to add layers of information according to operational need, including an information layer of street names.
- 6) Retrieving high-resolution video segments from the storage unit to the operating position.
- 7) Anchoring coordinates of areas of interest, for distribution to the forces in the field.
- 8) Sorting and analyzing information according to areas, dates, events, scenarios, and over time.
- 9) Presenting accurate time stamp (GPS based) on the video with up to 3 seconds deviation.
- 10) Ability to mark and hide specific grid cells on the video (Based on need).
- 11) Ability to interface and integrate with additional systems used by the INP.
- 12) The system will record video in high resolution to enable recognition of objects in the investigating windows, such as: vehicle or human targets.
- 13) Storage of video information for a period of several days, with the ability to extend in the future.
- 14) Deletion of video information on reaching the storage limits of the system will in principle be FIFO (first in first out) (protected material will be deleted only with the user authorization).
- 15) The system will enable the export of video information to extract investigative materials from the system in a common format (such as AVI, MP4).

#### 11. Communication and information security subsystem requirements

- A. The communication system will enable the investigation windows to be transmitted to the ground.  
The system must operate in a variety of channels and have the ability to interface with existing communication systems in the INP and other bodies.
- B. The ability to transfer images and data bi-directionally in real time.
- C. The ability to store the raw material locally and transfer it to the police servers after landing on the ground for analysis and investigation.
- D. Cyber protection - the bidder must specify the characteristics of the system's resistance to cyber hacking.





- E. The systems protecting against leakage of information to any unauthorized entity must be detailed.
  - F. Protection of the system and platform against disruption of navigation systems, GPS, communications, and other system items.
  - G. Authorizations and system access mechanism according to user profile.
  - H. Full monitoring capability and alert for security system exceptions.
12. Operation and user experience
- A. Interface in Hebrew (preferably) or in English.
  - B. Flexibility for changes and expansion according to operational needs.
13. Environmental conditions and physical characteristics
- A. The operating temperature for the observation system will be in accordance with the environmental conditions in the installation area (for example, according to flight altitude conditions).
  - B. Dimensions and weight – system's physical parts will be such as to allow it to be moved between the different sites.
14. Service and maintenance
- A. The bidder must specify the options for engagement and the range of "service packages", insofar as they exist, for example:
    - 1) Purchase of system components, including installation, training, and maintenance, and full operation by INP.
    - 2) Purchase of system components, maintenance and platform operation services by the vendor.
    - 3) Purchase of full services, including command and control center, information processing, and distribution.
    - 4) The Israel National Police can be offered additional service packages and options for use, according to the supplier's capabilities.
  - B. The bidder must list the maintenance services required for the system.
15. Demonstration





- A. The INP reserves the right to conduct a demonstration in accordance with its professional and budgetary considerations, taking into account the requirements of this document, and subject to the responses.
- B. The RFD process is optional and the INP is not bound to implement it.
- C. Insofar as a demonstration is performed, it will be performed with regard to respondents whose systems comply with the conditions detailed below, and in accordance with the decision of the Tenders Committee and its approval.
- 1) Aerial platform - staying in the air for at least two consecutive hours.
  - 2) Optical payload
    - a) Visual coverage and video recording of a grid cell of at least 250 m<sup>2</sup>
    - b) Minimum resolution that allows tracking of a target of a vehicle in motion
    - c) A clear differentiation between a person and a vehicle target in the dark
  - 3) Command and control system for recording and investigation
    - a) Continuous saving of raw visual information (RAW DATA)
    - b) The ability to play the raw data continuously in an investigation window while continuing to record the grid cell in its entirety
  - 4) Communication - transmission of the visual signal of at least one investigation window to the ground in real time.
- D. The Israel National Police will be entitled to examine all or some of the responses, and it is possible that responses will be examined only in some of the categories, according to the decision of the professional team examining the responses:
- 1) Size of the coverage area
    - a) Up to 1 km<sup>2</sup>
    - b) Up to 5 km<sup>2</sup>
    - c) 5 to 30 km<sup>2</sup>
    - d) 30 to 100 km<sup>2</sup>
  - 2) Type of aerial platform (plane, UAV, drone, etc.)
  - 3) Separate examination of one or more of the subsystems
- E. If the Israel National Police decides to carry out a demonstration, the demonstration will be held in an area to be defined according to professional considerations, and at a time to be coordinated





between the INP and the respondent, but it is clarified that the INP is not obliged to conduct all stages of the demonstration.

- F. Respondents that are invited to demonstrate the system / systems will be given a period of up to 14 days to prepare for demonstration of the system from the moment the request is received from the professional body in the INP. It may be considered to extend the preparation period up-on request for 7 more days.
- G. A preference for demonstrating the system on an airborne platform of the INP will be examined.
- H. The demonstration will be performed according to the coverage capability of the various solutions.
- I. The bidder will demonstrate to representatives of the Israel National Police how the system is operated, and will operate it, perform a demonstration, and provide an answer to all questions from the demonstration participants.
- J. The demonstration will include the scenarios detailed in Appendix B to this document.
- K. It is clarified that all materials that are transcribed and recorded during presentation of the capabilities will be handed over to the Israel National Police in full and without any change or editing, and may not be saved or held in any medium whatsoever.

## 16. Timetable

- A. Publication of this document - "Request for Information" (RFI).
- B. Receiving responses to the RFI by 28.2.2021 at 16:00.
- C. Analysis of the responses to the RFI, and taking a decision by the INP Tenders Committee with regard to the models that will be invited to demonstrate for the RFD. In accordance with section 15.C.
- D. Notifying the relevant RFI participants regarding their transition to the RFD phase, in accordance with the decision of the Tenders Committee.
- E. Readiness for demonstration within 14 days of notification of transition to the RFD phase.
- F. Performance of the RFD, up to one month.
- G. Summarizing the findings.

## 17. Administration – obtaining the RFI documents

- A. The RFI documents are published on the website of the Government Procurement Administration at [www.mr.gov.il](http://www.mr.gov.il).





- B. The RFI documents can also be obtained from the offices of the Purchasing and Sales Department, located on the 1st floor of the National Police HQ in Ramle, at 41 Ba'alei Hamelacha St., Ramle Industrial Area.
- C. The INP contact person who is responsible for the RFP, to whom all inquiries and questions should be directed, is Superintendent Sivan Monshi, via email: [SivanMo@police.gov.il](mailto:SivanMo@police.gov.il).

18. Procedure for forwarding inquiries to the police

- A. Questions and inquiries should be sent in writing and in Hebrew only to the email address: [SivanMo@police.gov.il](mailto:SivanMo@police.gov.il), up to 7 days before the deadline for submitting the responses.
- B. In each inquiry, the section number in the document to which it refers must be indicated in the format below:

| Number | Chapter in document | Section | Content of inquiry |
|--------|---------------------|---------|--------------------|
|        |                     |         |                    |

19. Delivering responses to the RFI

- A. The response to the request - Appendix A must be sent in no later than the last date, to the email address: [SivanMo@police.gov.il](mailto:SivanMo@police.gov.il).
- B. How to respond
  - 1) The language of the response: the response will be submitted in Hebrew. At the same time appendices, such as: user manual, technical material, sample documents, etc., may be attached in English only, without the need to translate them.
  - 2) The response will be made on Appendix A.
  - 3) The answers should be completed on a computer, and not by hand.
  - 4) Most of the information requested is set out in tables in which yes / no must be indicated with regard to a particular capability, and brief information, such as weight or a number of details, is to be provided in the remarks column.
  - 5) The remarks column in the tables can be used by the respondent to add information related to the section.





- 6) Referral to an appendix does not substitute for a clear and detailed answer in Hebrew to the request for information in that section.
- 7) Referral to an appendix as indicated above will include reference to a page number, or other appropriate indication that will allow direct and rapid access to the information.

#### C. The process of handling the RFI

##### 1) First stage - examination of the response

The Israel National Police will examine the information received from the respondents, and may hold meetings and contact all or some of them with a request for clarification, as well as any additional information.

A dedicated team will be set up by the Israel National Police to examine the responses, which will consist of the following officeholders:

- a) Technology & IT department
- b) Planning department
- d) Logistics and Procurement department
- e) Operational clients at the national headquarters and in the various districts

##### 2) Second stage – implementing the RFD

The Israel National Police may ask participants whose systems meet the threshold requirements to perform a demonstration, for the purpose of examining them.

The scenarios to be examined in the demonstrations will be ultimately defined prior to implementation, in accordance with the various constraints.

- D. It is the responsibility of the participant demonstrating the system to set up the subsystems that were detailed in his response.
- E. The participant will perform the demonstration to the timetable and in coordination with the professional entities in the INP.
- F. The demonstration will be carried out on the basis of scenarios prepared by the INP as detailed in Appendix B, and by means of the system proposed by the respondent.





מחלקת פיתוח אמצעים טכנולוגיים

"עתה חכמה ומדע תן לי" (דברי הימים ב', א' י')



המחלקה הייעודית



- G. No payment will be made for demonstrating the systems in this process.
- H. It will not be required to demonstrate an interface to the INP systems.
- I. Due to technical, operational and other constraints, the Israel National Police reserves the right not to carry out the RFD phase, in part or in full.





**Appendix A – Table of Responses**

**1. Details and properties of the system**

| <u>No.</u> | <u>Subject</u>   | <u>Section</u> | <u>Information required</u>  | <u>Complies</u><br><u>– yes / no</u> | <u>Details</u> |
|------------|--|----------------|--|--------------------------------------|----------------|
| 1.         | Bidder's details   | -              | Participant's name   |                                      |                |
| 2.         |  | -              | Contact person   |                                      |                |
| 3.         |  | -              | Telephone  |                                      |                |
| 4.         |  | -              | Fax  |                                      |                |
| 5.         |  | -              | Email  |                                      |                |
| 6.         |  | -              | Address  |                                      |                |
| 7.         | General information about the bidder                       | -              | Participant's classification (manufacturer / supplier etc.)  |                                      |                |
| 8.         |  | -              | Years of operation   |                                      |                |
| 9.         |  | -              | Fields of operation  |                                      |                |
| 10.        |  | -              | Number of similar systems supplied by the manufacturer in the past 3 years                                       |                                      |                |
| 11.        |  | -              | Details of the experience of the bidder and the manufacturer in the field of "electro-optical terrain dominance" |                                      |                |
| 12.        | Information about the manufacturer                         | -              | Name of manufacturer's company   |                                      |                |
| 13.        |  | -              | Country in which the manufacturing company's management is located   |                                      |                |
| 14.        |  | -              | Country of manufacture of the main system components   |                                      |                |
| 15.        |  | -              | Main field of occupation of the manufacturer   |                                      |                |
| 16.        |  | -              | Years of operation of the manufacturer in main field of occupation   |                                      |                |
| 17.        |  | -              | Years of operation in the production and supply of "electro-optical terrain dominance" systems                   |                                      |                |
| 18.        |  | -              | Number of "electro-optical terrain dominance" systems supplied by the manufacturer in the past 5 years           |                                      |                |
| 19.        | General information and experience of the proposed systems | -              | Details of customers using the systems, including type and number of systems and length of use                   |                                      |                |





| No. | Subject  | Section | Information required   | Complies<br>– yes / no | Details |
|-----|--|---------|--|------------------------|---------|
| 20. | General information and experience of the proposed systems | -       | Details of contact people of customers, including names, telephone numbers, email address  |                        |         |
| 21. | Outlines of the system's operation                         | 5       | Suitability for work in a variety of frameworks such as:<br>Urban environment (dense), marine environment, hilly environment, wooded environment, and others that are characteristic of the terrain in the State of Israel                             |                        |         |
| 22. |  | 5       | Working fully in all weather, including fog, rain, winds, etc. other than exceptional and extreme weather conditions, under safety and regulatory restrictions. If the system does not meet this requirement, please indicate what its limitations are |                        |         |
| 23. |  | 5       | Ability to work in all lighting conditions, day and night, and obtain a clear and high-quality image. The respondent will indicate the degree of compliance with this requirement and the limitations of the system                                    |                        |         |
| 24. |  | 5       | Is the system capable of handling the large number of simultaneous movements that are characteristic of an urban environment?  |                        |         |
| 25. | General requirements                                       | 6       | Technical description of the characteristics of the optical payload. The bidder will detail the technical characteristics of the payload, such as: resolution, sampling rate. FOV aperture, staring / scanning, etc.                                   |                        |         |
| 26. |  | 6       | The system is required to provide continuous video for at least 2 hours (any additional time beyond this is an advantage)  |                        |         |
| 27. |  | 6       | Description of the platform on which the payload is carried (UAV, plane,   |                        |         |





| No. | Subject              | Section | Information required  | Complies<br>- yes / no | Details |
|-----|----------------------|---------|---|------------------------|---------|
|     |                      |         | drone, drone squadron, and so on).  |                        |         |
| 28. | General requirements | 6       | continuous storage and recording subsystem - the respondent will specify whether it has recording capability and detail the duration of recording the video signal at maximum resolution.   |                        |         |
| 29. |                      | 6       | investigation and tracking subsystem. The respondent will specify whether there is a system with the ability to investigate and track in real time and "post-event investigation", whereby several investigation windows can be opened simultaneously (at least 5 windows) while maintaining the full image recording sequence. |                        |         |
| 30. |                      | 6       | a C2 subsystem enabling command and control of the platform and all the information in the system through a user interface  |                        |         |
| 31. |                      | 6       | The bidder will specify the degree of maturity of the technology of the system / subsystems.  |                        |         |
| 32. |                      | 6       | Fusion of information - the ability to integrate observation systems and other sensors installed on the ground that will serve as a trigger for the production / enrichment of VIZINT information. The respondent will specify which sensors and ground systems can be interfaced with the system and how they operate.         |                        |         |
| 33. |                      | 6       | A communication subsystem for the transmission of data (video and control) between the ground units and the aerial units  |                        |         |
| 34. |                      | 6       | Availability and operational status:<br>1. Time taken to deploy system in routine from the moment of receiving the instruction.<br>2. Time taken to deploy system in emergency - from the moment of   |                        |         |





| No. | Subject                             | Section | Information required  | Complies<br>– yes / no | Details |
|-----|-------------------------------------|---------|---|------------------------|---------|
|     |                                     |         | receiving the instruction according to availability.<br>3. Time until video transmission – up to 60 minutes from the moment of starting the operation to start of transmission over the working area.   |                        |         |
| 35. | General requirements                | 6       | What means of operation and routine maintenance are required for the system (for example: frequency of servicing, wear and tear)?   |                        |         |
| 36. |                                     | 6       | Continuous coverage capability over a defined area in time ranges of over two hours. Advantage – capability for a longer time, including by the ability to "hot swap" between the platforms. The respondent will specify time ranges for system work depending on the various parameters. |                        |         |
| 37. | Requirements of the aerial platform | 6       | The system will comply with the standards and instructions of the CAA.  |                        |         |
| 38. |                                     | 7       | The system will enable flight paths to be built according to the areas of coverage also by means of autonomous flying   |                        |         |
| 39. |                                     | 7       | The system will broadcast its location to the C2 system at all times  |                        |         |
| 40. |                                     | 7       | Can the system have the ability to operate covertly – not visible to the eye nor heard during operation. The bidder must specify at what altitudes covert flight will take place, and what resolution is obtained at each altitude.   |                        |         |
| 41. | Observation system requirements     | 9       | An aerial system for "terrain dominance" that will allow continuous and simultaneous observation of grid cells of different sizes (from 250 m <sup>2</sup> to 100 km <sup>2</sup> ).  |                        |         |
| 42. | Observation system requirements     | 9       | An electro-optical system that is resistant to outside conditions, such as: rain, dust, sunshine, and EM radiation.   |                        |         |





| No.                    | Subject                | Section  | Information required   | Complies<br>– yes / no   | Details          |                         |                          |          |  |  |  |          |  |  |  |          |  |  |  |  |  |
|------------------------|------------------------|--|--|--------------------------|------------------|-------------------------|--------------------------|----------|--|--|--|----------|--|--|--|----------|--|--|--|--|--|
| 43.                    | C2 system requirements | 9  | Observation head - one or more staring or scanning cameras that create a unified and wide image of the terrain (panorama).   |                          |                  |                         |                          |          |  |  |  |          |  |  |  |          |  |  |  |  |  |
| 44.                    |                        | 9  | The respondent will specify what sensors the system has:<br>Colored daylight sensor<br>Thermal image sensor for nighttime<br>High exposure sensor for a clear image in the dark  |                          |                  |                         |                          |          |  |  |  |          |  |  |  |          |  |  |  |  |  |
| 45.                    |                        | 9  | Observation performance comparison table: (example)<br>The respondent will specify the performance of the system's ranges of observation<br><table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Device hovering height</th> <th>Area of coverage</th> <th>Distinguishing a person</th> <th>Distinguishing a vehicle</th> </tr> </thead> <tbody> <tr> <td>Height 1</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Height 2</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Height 3</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> | Device hovering height   | Area of coverage | Distinguishing a person | Distinguishing a vehicle | Height 1 |  |  |  | Height 2 |  |  |  | Height 3 |  |  |  |  |  |
| Device hovering height |                        | Area of coverage   | Distinguishing a person  | Distinguishing a vehicle |                  |                         |                          |          |  |  |  |          |  |  |  |          |  |  |  |  |  |
| Height 1               |                        |  |  |                          |                  |                         |                          |          |  |  |  |          |  |  |  |          |  |  |  |  |  |
| Height 2               |                        |  |  |                          |                  |                         |                          |          |  |  |  |          |  |  |  |          |  |  |  |  |  |
| Height 3               |                        |  |  |                          |                  |                         |                          |          |  |  |  |          |  |  |  |          |  |  |  |  |  |
| 46.                    | 10                     | The system will communicate with one or more ground C2 stations via dedicated communication                        |  |                          |                  |                         |                          |          |  |  |  |          |  |  |  |          |  |  |  |  |  |
| 47.                    | 10                     | Video playback, live, reconstructed, or a combination of the two together to open investigation windows.           |  |                          |                  |                         |                          |          |  |  |  |          |  |  |  |          |  |  |  |  |  |
| 48.                    | 10                     | Video playback and zoom investigation of the investigation windows without losing the picture of the general area. |  |                          |                  |                         |                          |          |  |  |  |          |  |  |  |          |  |  |  |  |  |
| 49.                    | 10                     | Automatic tracking of objects in the investigation windows.  |  |                          |                  |                         |                          |          |  |  |  |          |  |  |  |          |  |  |  |  |  |
| 50.                    |                        | 10   | Direct and rapid access to points in time or place defined by the operator.  |                          |                  |                         |                          |          |  |  |  |          |  |  |  |          |  |  |  |  |  |
| 51.                    |                        | 10   | The ability to add layers of information according to operational need,  |                          |                  |                         |                          |          |  |  |  |          |  |  |  |          |  |  |  |  |  |





| No. | Subject  | Section | Information required  | Complies<br>– yes / no | Details |
|-----|--|---------|---|------------------------|---------|
|     | C2 system requirements                                     |         | including an information layer of street names.   |                        |         |
| 52. |  | 10      | Retrieving high-resolution video segments, from the storage unit to the operating station.  |                        |         |
| 53. |  | 10      | Anchoring reference points of areas of interest for circulation to the forces in the field.   |                        |         |
| 54. |  | 10      | Options for sorting and analyzing information according to areas, dates, events, scenarios, and over time.  |                        |         |
| 55. |  | 10      | Presenting accurate time stamp (GPS based) on the video with up to 3 seconds deviation  |                        |         |
| 56. |  | 10      | Ability to mark and hide specific grid cells on the video (Based on need)   |                        |         |
| 57. |  | 10      | Ability to interface and integrate with other systems used by the INP.  |                        |         |
| 58. |  | 10      | Storage of video material for a period of a number of days, with the possibility of increasing in the future.   |                        |         |
| 59. |  | 10      | Deletion of photographic material on reaching the system's storage limit will be on the basis of FIFO.  |                        |         |
| 60. |  | 10      | The system will allow the downloading of video information (EXPORT) to remove investigative materials from the system in a user-friendly manner in a common format. |                        |         |
| 61. |  | 10      | Is there an analytical ability to detect unusual activity in post-event investigation?  |                        |         |
| 62. | Communication system and information security requirements | 11      | Bidirectional ability to transfer pictures and data in real time  |                        |         |
| 63. |  | 11      | Ability to store the raw material locally and transfer it to INP servers after landing on the ground for analysis and investigation.                                |                        |         |
| 64. |  | 11      | How capable is the system of withstanding attempted cyber-hacking?  |                        |         |





| No. | Subject   | Section | Information required   | Complies<br>– yes / no | Details |
|-----|---|---------|--|------------------------|---------|
| 65. |   | 11      | What are the system's capabilities in the field of information security?   |                        |         |
| 66. |   | 11      | Does the system have a mechanism for authorization and access to the system according to user profile?   |                        |         |
| 67. |   | 11      | How resistant is the system to disruption to the navigation system, communication, and other parts of the system?  |                        |         |
| 68. |   | 11      | The ability to warn of unusual events in the security system.  |                        |         |
| 69. |   | 11      | The system will be easy to learn and operate by the user.  |                        |         |
| 70. | Operation and user experience                         | 12      | The user interface language in the C2 system.  |                        |         |
| 71. |   | 12      | Flexible to changes and expansion of the user interface according to operational needs.  |                        |         |
| 72. | Environmental conditions and physical characteristics | 13      | Dimensions and weight - the dimensions of the system will enable it to be moved between different sites  |                        |         |
| 73. |   | 13      | Communication system - ability to transmit the investigation windows to the ground. The system is required to operate in a variety of channels and be able to interface with existing communication systems in the INP and other entities. |                        |         |
| 74. | Service and maintenance                               | 14      | Optional engagement for a "service package"  |                        |         |





## Appendix B - Test scenarios at the RFD stage

**In the scenarios listed in the table attached to this appendix, the following parameters will be examined:**

1. Maximum size of coverage area
2. The resolution obtained on the surface
3. Ability to identify targets (person, vehicle, vehicle color, vehicle type, etc.)
4. Locate events as defined in the table below
5. Duration and manner of stay in the air (continuous, hot swap, etc.)
6. Storage and recording - the continuity and manner of recording will be examined (is it necessary to replace storage devices, is the information indexed)
7. Investigation system - examination of the variety of investigation capabilities
  - a. Playing real-time or reconstructed video ("post-event") or a combination of both for opening investigation windows.
  - b. Zoom investigation of the investigation windows without losing the overall picture of the area.
  - c. Automatic tracking of objects in investigation windows.
  - d. Direct and quick access to points of time or place (indexes) defined by the operator.
  - e. Ability to add layers of information according to operational need, including an information layer of street names.
  - f. Retrieving high-resolution video segments, from the storage unit to the operating station.
  - g. Anchoring landmarks of areas of interest for distribution to forces in the field.
  - h. Options for sorting and analyzing information according to areas, dates, events, scenarios, and over time.
  - i. Ability to interface and integrate with other systems used by the INP.
  - j. The system will allow video recording of a high enough quality to identify objects such as a vehicle or human targets during the video investigation.
  - k. Storage of video information for a period of several days with the ability to increase in the future.





- I. Deletion of photographic video information upon reaching the system's storage limits will be in principle FIFO. (Protected photographic material will be deleted only with the client's approval).
  - m. The system will allow downloading of video information (EXPORT) to remove investigative materials from the system in a user-friendly way and in a common format.
8. Ease of operation, user experience

**Details of the scenarios to be tested in the demonstration:**

| <u>No.</u>      | <u>Property</u>  | <u>Description</u>   | <u>Result obtained</u> | <u>Details</u> |
|-----------------|--|--|------------------------|----------------|
| 1.              | Set-up time  | Measuring the time from the start of the activity until receipt of continuous video for the purpose of investigation |                        |                |
| <b>Daylight</b> |  |  |                        |                |
| 2.              | Identification of a person / vehicle according to coordinates                            | Locating a person / vehicle to be placed within the defined grid cell according to the coordinates provided.         |                        |                |
| 3.              | Real-time tracking of a vehicle / human target to the end of the system's coverage limit | Tracking a vehicle and a number of people in motion in real time.  |                        |                |
| 4.              | Can the device be noticed and heard while tracking                                       | Flying the device to altitude during tracking and seeing whether it is heard or seen.                                |                        |                |
| 5.              | "Post-event" investigation <b>Automatic</b>  | "Post-event" investigation analysis in order to identify whether a vehicle / person is                               |                        |                |





| <u>No.</u>       | <u>Property</u>   | <u>Description</u>   | <u>Result obtained</u> | <u>Details</u> |
|------------------|---|--|------------------------|----------------|
|                  | tracking of a vehicle / person target to the end of the system's coverage limit (opening 5 investigation windows) | seen and identified in the system coverage when 5 investigation windows are opened.  |                        |                |
| 6.               | Saving and exporting products for external viewing  | Saving relevant segments of video from the system on a disk on key and displaying them on a standard viewer.   |                        |                |
| <b>Nighttime</b> |   |  |                        |                |
| 7.               | Locating a human / vehicle target according to coordinates  | Locating a person / vehicle to be placed within the defined grid cell according to the coordinates provided.   |                        |                |
| 8.               | Real-time tracking of a vehicle / human target to the end of the system's coverage limit                          | Tracking a vehicle and a number of people in motion in real time.  |                        |                |
| 9.               | Can the device be noticed and heard while tracking  | Flying the device to altitude during tracking and seeing whether it is heard or seen.  |                        |                |
| 10.              | "Post-event" investigation Automatic tracking of a vehicle / person target to the end of                          | "Post-event" investigation analysis in order to identify whether a vehicle / person is seen and identified in the system coverage when 5 investigation windows are opened. |                        |                |





| <u>No.</u> | <u>Property</u>   | <u>Description</u> | <u>Result obtained</u> | <u>Details</u> |
|------------|---|--------------------|------------------------|----------------|
|            | the system's coverage limit (opening 5 investigation windows) |                    |                        |                |

