Request for Proposal for the procurement of
PCT "Digital Surveillance Solution"

January 2025

I.   Introduction & Scope

1) PIRAEUS CONTAINER TERMINAL SINGLE MEMBER S.A. (hereinafter referred to as "**PCT**" or the "**Company**") is a company (Société Anonyme) incorporated under the laws of Greece, with registration number (General Commercial Registry Number) 044791207000 and registered offices in Piraeus, Akti Miaouli 85 and 2 Flessa Str. PCT, pursuant to the concession agreement dated 25/11/2008, as currently in force, for the concession of the port installations of Piers II and III of the container terminal of the Port of Piraeus between the "Piraeus Port Authority S.A.", "COSCO SHIPPING Ports Limited" (formerly named "COSCO Pacific Limited") and PCT, which has been ratified by Law 3755/2009, as amended and in force, has undertaken the management and operation of the port installations of Piers II and III of the container terminal of the Port of Piraeus.

2) One of the Company's primary objectives is to strengthen its surveillance capabilities, and in this regard, the Company is seeking proposals from qualified and experienced Suppliers for the implementation of the **Digital Surveillance Solution** (hereinafter referred to as the "**Project**" or **"Solution"**).

II.   Request for Proposal (RfP) & Glossary

1) The purpose of this Request for Proposal is to invite eligible participants (hereinafter referred to as the "**Participants**" and each one individually as the "**Participant**") to submit their proposal for the implementation of the Project (hereinafter referred to as the "**Proposal**"). The Project includes:
   a) The provision of the solution described below (hereinafter referred to as the "**Solution**"), which shall meet all technical specifications set forth in Appendix A of this RfP;
   b) The provision of comprehensive services to complete the entire process of the Project at the specified site (hereinafter referred to as the "**Services**"). The Services include, but are not limited to, the planning, equipment provision, staging, scheduling, deployment, parametrization, training, reporting, documentation, communication and coordination with other parties involved in the overall Project;
   c) The provision of relevant software licenses and hardware (where needed) to complete the entire Project at the specified site (hereinafter referred to as the "**Equipment**").

2) It is at the Company's sole and absolute discretion to award the Project to a single Participant or to award parts of the Project to different Participants.
3) The selected Participant(s) must be willing to work in a cooperative manner with PCT's staff and other parties working on behalf of PCT.
4) This RfP contains the Company's minimum requirements for a successful award.
5) No representations, warranties, or commitments, whether express or tacit, have been or can be considered to be given or shall be given in relation to the accuracy, adequacy or completeness of the present tender

(hereinafter referred to as the "Open **Tender Process**"), this document and the informational data provided by PCT to the Participants during the Tender Process.

6) This RfP does not constitute an offer to enter into an agreement and no contractual relationship is established hereby.

7) Submitting a Proposal entails full and unreserved acceptance of all terms and conditions of this Request for Proposal.

GLOSSARY

- "**Bonds**" means the bank letter of guarantee, the performance bond and the advance payment guarantee.
- "**Closing Date**" means the submission deadline, as stipulated in article 3.
- "**Contract**" means the contract to be signed between PCT and the Supplier
- "**Equipment and Services**" means the Project or Solution, with the specifications described in the Tender Documents including any services to be provided by the Supplier.
- "**Invitation to Tender**" means the present document, along with any Annexes attached hereto.
- "**Supplier**" means the Participants submitting their proposal for PCTs evaluation.
- "**Supporting Documentation**" means any documents that form part of the Project.
- "Open **Tender Process**" means the process launched by PCT and outlined in this Invitation to Tender, aiming at the selection of a Supplier and the award of the Contract to the latter.
- "**Tender Documents**" means the documents in relation to the Open Tender Process.

SECTION A. OPEN TENDER PROCESS

1) Under the conditions set out below, the Participants that are eligible to participate in the present Tender Process are:

A) Natural or legal persons active in the field of the Services, i.e. professionally active in the provision of Digital Surveillance Solutions registered in the relevant professional or trade register, if, according to the current legislation, their registration is required for the provision of the Services.

B) Joint ventures which meet the requirements set forth in point A.

IMPORTANT NOTE: If a natural or legal person, submits an individual Proposal, he/she/it shall not participate as a member of a joint venture. Similarly, a natural or legal person participating in the present proceedings as member of a joint venture may not participate as a member of another joint venture. In the case of submission of a Proposal by a joint venture, all its members are jointly and severally liable towards PCT.

2) Each Participant must meet the above conditions and the criteria described in the present RfP throughout the entire duration of the Tender Process.

3) This document provides a guideline to Participants for the structuring of their Proposal.

4) The Proposal should be prepared and submitted in accordance with the following instructions:

1. General

1) PCT may, at its sole discretion, provide additional or supplementary information to Participants. Additional information and clarifications as may be issued by PCT shall be deemed to form part of the tender documents. To request any additional information from PCT, Participants are required to send email to: Konstantinos.Ampelidis@pct.com.gr

2) The Participants shall bear all costs relating to their participation in the Tender Process. Under no circumstance will PCT be liable to reimburse Participants for any cost they will incur related to this Tender Process.

3) All information to be provided by PCT in the course of the Tender Process should be treated by Participants as private and confidential and should not be used for any purposes other than participation in this Tender Process.

4) The Participants may not invoke any oral answers, clarifications, or discussions with PCT or its employees, executives, or advisors, and any such invocation will be rejected and will not be taken into account.

2. Presentation

1) All documents submitted by the Participants must be either in English or Greek language. Financial Offers must be in a percentage of two decimal places.

2) If the Proposal includes any terms, conditions or specifications that vary or conflict with PCT's requirements as stated in the tender documents, then these terms, conditions or specifications will be considered null, and void and the Proposal may be rejected.

3. Submission of Proposals

1) The Proposal should be submitted by the Participant itself or by the Participant's authorized representative electronically by contacting Mr. Konstantinos Ampelidis (Konstantinos.Ampelidis@pct.com.gr) in order to express their interest and receive thorough guidelines. Participants should note that according to the PCT's procedures, Proposals are submitted either by accessing the PCT corporate FTP platform or by email (depending on the size of their offer, please note that email proposals have a maximum of 8mb email limit). Each individual sub-folder (Technical Proposal and Financial Offer) as well as the entire Proposal folder will be protected with different passwords which will be sent separately at each stage of the Tender Process at the time, the way and to a specific email which will be notified by the PCT to all Participants.

2) Proposals shall be submitted at PCT's FTP platform or by email (according to Mr. Ampelidis's instructions) until **16:00** local hour (Athens, Greece) on the **28th of January 2025** (Closing Date).

3) All documents should be sent in good time, using PCT's corporate FTP platform or by email (according to Mr. Ampelidis's instructions). Late submissions will not be considered by PCT.

4) The Proposal shall be completed in every respect and in full conformity with the terms of this RfP.

5) PCT reserves the right to extend the deadline for submission of the Proposals at its discretion.

6) The Proposals (which include Technical Proposal and Financial Offer) are submitted in encrypted zip file format.

7) All documents and materials shall be submitted in a soft copy.

8) The general folder of the Proposal should include two (2) sub-envelopes designated as follows:
   - Sub-folder-A - **Technical Proposal**, containing authorization documents and Technical Proposal (Unpriced) and should include all documents specified in Chapters A, B and C of Section B, in softcopy form.
   - Sub-folder B - **Financial Offer**, containing the financial offer (Contents Priced) and should include all documents specified in Chapters D and E of Section B, in softcopy form.

9) The two sub-folders should be clearly marked with the indication "TECHNICAL PROPOSAL" or "FINANCIAL OFFER", as appropriate (**note: lack of proper identification may invalidate the Proposal**).

10) Within each encrypted sub-envelope, Participants are required to include easily readable files (Microsoft "word .doc files" or Adobe ".pdf' format file).

11) The Proposals, including the Financial Offers of the Participants, shall be valid for a period of **six (6)** months from the submission deadline date. Participants are advised that they may be asked to extend the validity of their Proposal for additional months.

4. Participation requirements

Each Participant must, **upon penalty of disqualification**, fulfil the following criteria:

4.1. Personal Situation Criteria (ON/OFF)

Each Participant that participates in the Tender Process on its own or as a member of a joint venture is required, upon penalty of disqualification, to have the following professional qualifications:

1) The Participant must not be in a state of bankruptcy, liquidation, reorganization, winding-up, administration, receivership, suspension of business activities or any similar situation arising from a similar procedure under national law.

2) The managing partners in the case of a limited or general partnership or limited liability company, and the chairman and managing director in the case of a Société Anonyme or the natural persons exercising management functions in all other cases must not have been convicted on the basis of a final judgment for:
   a. Participation in criminal organizations
   b. Bribery
   c. Fraud
   d. Money laundering
   e. Embezzlement
   f. Extorsion
   g. Forgery
   h. Perjury
   i. Terrorist offences or offences linked to terrorist activities
   j. Child labor and other forms of trafficking in human beings

according to the Greek laws or crimes similar in their specific aspects to the above, provided for in foreign jurisdictions.

3) The Participant must have fulfilled its obligations relating to the payment of social security contributions in accordance with applicable Greek law (in the case of a Greek or foreigner Participant engaged in activity in Greece) or in accordance with the law of the country of the Participant's establishment and principal place of business, or otherwise the Participant must have come to a lawful arrangement in respect of any obligations relating to the payment of social security contributions, to the extent applicable.

4) The Participant must have fulfilled its tax obligations in accordance with applicable Greek law (in the case of a Greek or foreigner Participant engaged in activity in Greece) or in accordance with the law of the country of the Participant's establishment and principal place of business, or otherwise the Participant must have come to a lawful arrangement in respect of any obligations relating to the payment of taxes, to the extent applicable.

4.2. Previous Experience Criteria (ON/OFF)

1) The Participant, upon penalty of disqualification, must have at least a **3 (three)** year prior continuous experience, over the last **5 (five)** years regarding the provision of the Services.

2) If the Participant has rendered the Services as a member of a consortium or joint venture, its minimum participation in the consortium or joint venture should have been at least 50% in order to meet the criterion of the prior experience set out herein.

4.3. Financial and economic standing criteria (ON/OFF)

Each Participant that participates in the Tender Process is required, upon penalty of disqualification, to meet at a minimum the following financial criteria cumulatively:

1) Its annual turnover must have been as follows:
   For Year 2023: annual turnover at least € 10.000.000
   For Year 2022: annual turnover at least € 10.000.000

4.4. Technical skill criteria (ON/OFF)

Each Participant is required, upon penalty of disqualification of its Proposal, to meet the technical criteria described in Appendix A and meet all the mandatory requirements (Marked as M) in the Chapter C. The Technical Specifications table.

5. Assessment of Proposals

5.1. Presentation and interviews

1) Following submission of their Proposals, the Participants may be required to present their Technical Proposals to PCT's evaluation committee. Presentations will take place at PCT's premises, which are located at: Piraeus Container Terminal Single Member S.A. SEMPO Central Building Neo Ikonio Perama 18863 Greece, or via online presentation.

2) The time schedule for the presentations may be announced by PCT at a later stage. All Participants' costs associated with the presentation and any interviews will be solely at their own expense.

5.2. Process

1) PCT will form a panel to review and evaluate the Proposals, as well as any supplementary information it may obtain in the course of the evaluation process through clarifications, presentations and interviews with Participants.

2) The assessment criteria are listed below (not in order of significance):
   i. Compliance with the required specifications and technical requirements
   ii. Compliance with PCT's scope of work, timetable and delivery time
   iii. Qualifications/experience and references in similar implementation
   iv. Contract team qualifications/ experience
   v. Financial Offer

3) Technical Proposals that are considered unacceptable will not be further evaluated.

4) Technical Proposals shall be rejected if it appears from Sub-Folder A:
   i. That the Participant does not have the know-how or the experience and generally the technical capacity to perform the Services.
   ii. That Participant's proposed Solution is not in compliance with PCT's scope of work, timetable and cooperation terms and conditions.
   iii. That the Participant has provided, at any stage of the Tender Process, false information.
   iv. That any information provided by the Participant is found to be incorrect or the Participant fails to verify any information provided in the Proposal in response to PCT's request.

5) If the Technical Proposal is considered unacceptable it will not be further considered and sub-folder B shall remain locked. Only the Financial Offers of the acceptable Technical Proposals will be evaluated.

6) Financial Offers will be placed in order of preference for their overall cost effectiveness.

7) PCT reserves the right to enter into negotiations with the Participants during the evaluation process.

8) PCT may also request all or some of the Participants to submit a **Best and Final Offer** (BAFO) with a view to minimizing the offered prices.

9) A Proof of Concept of a scaled-down version of the offered Solution may be required by PCT prior to the selection of the successful Participant.

5.3. Selection criteria
1) The Participant submitting the Proposal which, at PCT's sole discretion and determination, represents the best value for money for PCT in terms of price, technical quality, reliability, maintainability and delivery, will be selected as the successful Participant and, at its sole discretion, PCT will award the Contract to the successful Participant.
2) The Technical Proposal carries a weight of 60% and the Financial Offer carries a weight of 40%.

5.4. Award Notification
The award of the Contract will be notified by the Company to the successful Participant in writing. Receipt of the notice of acceptance of the Proposal shall create an irrevocable obligation on the successful Participant to enter into a Contract with the Company without delay. When PCT's decision is final, Participants have no right to appeal against PCT's decision for awarding the Contract.

5.5. Signing of the Contract

1) The Contract will be signed as soon as the successful Participant submits to PCT the performance bank guarantee described in Chapter E of Section B and in any case not later than ten (10) working days from the day of receipt of the notification described in paragraph 5.4 above.

2) The agreement to be entered into between PCT and the successful Participant (the "**Agreement**" or the "**Contract**") shall be governed by, construed by and enforced in accordance with the laws of the Hellenic Republic. Any dispute or difference, which may arise concerning the interpretation or the execution of the Agreement and any claims arising there under, shall be subject to the exclusive jurisdiction of the courts of Athens, Greece.

Section B. TENDER PROPOSAL STRUCTRURE

The below structure shall be followed by all Participants.

▪ "**Technical Proposal**" includes the chapters:
A.   Details of Participant,
B.   Solemn Declaration
C.   Technical Proposal

which must be submitted in soft copy in an encrypted zip file marked "Technical Proposal".

▪ "**Financial Offer**" includes the chapters:
D.   Financial Offer
E.   Tender Terms & Conditions

which must be submitted in soft copy in an encrypted zip file marked "Financial Offer".

Chapter A.   Details of Participant

1) Participants shall supply, **upon penalty of disqualification**, the following information, together with the scanned originals or certified copies of documents.

A.   **Personal Situation documentation**
1.   Company name and legal form.
2.   Address of head office and telephone number.
3.   Company profile, date of establishment, and services offered, organizational structure, links with parent company and subsidiaries (if applicable).
4.   Incorporation documents for legal persons such as: (a) copy of the codified Articles of Association of the Participant, (b) the issue of the Government Gazette or certificate from the competent General Commercial Registry in which the latest decision officially establishing the Participant's Board of Directors and appointing its representatives was published.
5.   An official extract from the register of minutes of the Participant's Board of Directors or the competent body which approved participation in this Tender Process, appointing one or more persons to submit the Proposal, and to sign any document relevant to the Tender Process, and appointing a process agent.

6.   A solemn declaration from the representative/representatives and process agent appointed by decision of the Participant's competent body, in which they unconditionally and unreservedly accept their appointment.

7.   A certificate of registration, in original or certified copy issued by a competent authority proving that the Participant:

-      is professionally active in the provision of the Services,

-      is registered in the relevant professional register, if, according to the current legislation, their registration is required for the provision of the Services.

8.   Appendix C required documentation.

IMPORTANT NOTE: In the case of a J/V the documents referred to in point (A) must be submitted for the Participant and for each of its members. Moreover, the agreement setting up the joint venture must be submitted, declaring at least the following:

i.   the acceptance of joint submission of the Proposal.

ii.   the stakes of each member in the J/V.

iii.   the joint representative and process agent of the J/V and

iv.   that the members shall be jointly and severally liable to PCT for implementing the Project.

B. Previous experience documentation

Each Participant must complete the below table and provide evidence of the relevant experience. The relevant list should be dully singed for its validation by the official representative of the Company

EVIDENCE OF EXPERIENCE IN SIMILAR PROJECTS

Project	Employer	Budget	Duration	Other

C. Financial and economic documentation

1. Published financial statements for the financial years 2023, 2022 and 2021.

CHAPTER B. SOLEMN DECLARATION

Participants are required to submit to the Company a solemn declaration (Article 8 of Greek Law 1599/1986) or relevant declaration file via the www.Gov.gr portal of the Participant's legal representative according to their statutes and/or of authorized representative, stating the following:

For foreign participant suppliers who do not have access to the portal "www.gov.gr", the original signature of the signer is required on the solemn declaration document attached and a scanned electronic file should be included in the supplier's proposal. PCT may ask the suppliers at a later stage to submit the original hardcopy signed document validated before a notary or other public authority.

In my personal responsibility and knowing the sanctions set in the provisions of paragraph 6 of Article 22 of Law 1599/1986, I declare that:

1

- Our Company is not subject to any of the exclusion criteria of paragraph 4 of Section A as cited in the Tender document.
- Our Company is fully aware of the content of this Request of Proposal and accepts unconditionally and unreservedly all its terms and conditions.
- Our Company acknowledges that its participation is at its sole risk and expense.
- Our Company guarantees the accuracy of its Financial Offer and acknowledges that no adjustment of its fee shall be made for any reason whatsoever.
- The submitted Proposal shall be binding on our Company for a period of six (6) months from the closing date, within which, PCT shall have the right to invite our Company in writing to conclude the Contract, and we shall be obligated to appear.
- There exist no corporate restrictions, conflicts of interest, restrictions arising under competition law or any other legal restrictions preventing our Company from submitting a Proposal and implementing the Project.
- Neither our Company itself, its controlling shareholder(s) nor any of its subsidiaries, or (to its knowledge) any of its directors or senior officers is, or is subject to dominant influence of or controlled by an individual/entity that is, the subject of any economic or financial sanctions or trade embargoes (collectively, "Sanctions") administered, enforced or imposed by the United Nations Security Council, the European Union or the United States from time to time.

Solemn Declaration to be submitted.doc

CHAPTER C. TECHNICAL PROPOSAL

A Participant's Technical Proposal shall demonstrate its experience, financial capacity and firm understanding of PCT's requirements and the work involved in executing the Services on time.

Technical Proposal shall comply with PCT's scope of work, timetable and cooperation terms and conditions, as described in Appendix A. All Services and Equipment offered must be available on site at PCT's premises upon request from PCT. For all the above, the Participants are required to submit in writing the technical specifications of each study/service.

▪ **Technical Specifications table**

Unless otherwise mentioned in the below specifications, all below specifications shall be answered in detail.

M = **M**andatory

N = **N**ice to Have

H = **H**ighly Recommended

Line#	Description	Requirement / Categorization (M, N, H)	Compliance Yes / No	Detailed Response Reference
1.	**Digital Surveillance Application – Architecture**			
2.	The platform is highly open and is compatible with digital cameras, encoders, and hard disk video recorders provided by mainstream vendors at home and abroad.	M		
3.	The intelligent security protection system uses the client/server (C/S) or browser server architecture.	M		
4.	Supports concurrent access of video data from 500 HD cameras and concurrent AI video analysis of at least 800 channels of video.	M		
5.	The capability of connecting to third-party service systems or platforms must be provided, and interfaces must be reserved.	M		
6.	**Intelligent Security Protection Application - Video Preview**			
7.	Live video preview is supported. Live video can be displayed in split windows. Users can select 1 x 1 to 6 x 6 common windows. Users can customize the window layout. A maximum of 9 x 9 windows are supported.	M		
8.	Allows to enable or disable image enhancement, display or hide video information, rotate 90 degrees, display or hide the timestamp, and adjust the image scale.	M		
9.	Supports smooth display. Users can quickly enable or disable smooth single-picture display on live video images. This prevents	M		

Line#	Description	Requirement / Categorization (M, N, H)	Compliance Yes / No	Detailed Response Reference
	frame freezing caused by network fluctuation and ensures smooth video playback.			
10.	Allows users to right-click a live video image in a single window to switch between the primary and secondary streams.	M		
11.	Supports privacy protection for live video images in a single window. After a private area is set, the private area cannot be viewed during live video preview.	M		
12.	PTZ control, enabling/disabling PTZ control, omni-directional PTZ control, rotation speed control, digital zoom-in/out control, preset position configuration, preset position tour, and PTZ locking/unlocking Supports aperture adjustment, lens focus adjustment, light enabling/disabling, wiper enabling/disabling, and PTZ driving using the mouse on the image.	M		
13.	Bookmarks can be added on the live video preview page to mark exceptions and special situations.	M		
14.	**Intelligent Security Protection Application - Video Playback**			
15.	Allows users to view recordings. Allows users to select video channels and time to play back recordings. Supports recording playback in standard windows and customized windows. Supports simultaneous recording playback in a maximum of 16 windows.	M		
16.	Allows users to right-click a live video image in a single window and choose Recording Playback from the shortcut menu to quickly switch to the recording playback page.	M		
17.	Supports synchronous or asynchronous playback of multiple channels of video recordings.	M		
18.	Users can select a customized time point to play back recordings. The recording date is displayed on the time selection page. Users can pause, drag, play, fast play (2, 4, 8, or 16 times), and slow play. (1 / 2, 1 / 4, 1 / 8 multiples), Rewind by 1 frame. Supports full-screen playback.	M		
19.	Users can download recordings. Users can select a video channel, start time, and end time to download recordings. The download path and file name can be customized. Batch download of recordings is supported.	M		
20.	Users can select video channels and time to search for video slices. Videos can be automatically segmented in 20 equal segments within a specified time range. Two or multiple	M		

Line#	Description	Requirement / Categorization (M, N, H)	Compliance Yes / No	Detailed Response Reference
	segments can be selected based on equal segments to quickly locate the recording point at the time when the scene is concerned. Supports single-slice recording playback and slice point recording screenshots.			
21.	Recording privacy protection is supported. After the area is set to a private area, the private area cannot be viewed during recording playback.	M		
22.	**Intelligent Security Protection Application - Alarm Event Management**			
23.	Event alarms can be received and displayed in real time. Users can customize whether to display the latest alarms. Supports quick redirection to query all events.	M		
24.	An alarm is displayed on the electronic map. Should able to double-click the alarm to view detailed information and review the handling. Quickly locate alarm points on a single alarm map.	M		
25.	Users can filter concerned alarms by device, alarm severity, handling status, and alarm type.	M		
26.	Alarms can be handled. Users can select Not to handle, Handle, or Falsely report alarms. Users can enter handling suggestions in quick input or user-defined mode.	M		
27.	Supports heat chart statistics. Supports query by device and time. Statistics can be collected by time segment and displayed in line charts and bar charts. Displays the proportion in a pie chart or other and supports data export.	M		
28.	**Intelligent Security Protection Application - O&M Management**			
29.	Supports device networking visualization.	M		
30.	Monitors the system status, including the CPU usage, memory usage, disk usage, and traffic.	M		
31.	Collects statistics on online and offline video devices, and collects statistics on the offline rate and offline devices based on system vendors. Supports statistics on the device offline rate and top 5 devices. The statistical period can be the current day, week, month, or year.	M		
32.	User operation logs can be viewed. Users can search for operation records by user or time. Logs include the operation user, operation IP address, access module, and content. Operation logs can be exported.	M		
33.	**Intelligent Security Protection Application - Digital Map**			

Line#	Description	Requirement / Categorization (M, N, H)	Compliance Yes / No	Detailed Response Reference
34.	Supplier should provide an electronic GIS platform supporting hierarchical layering display of electronic map lists, adding, deleting, and updating electronic maps, configuring electronic map names, and importing static maps and displaying via interface 3rd party data. The map file format can be CAD, SHAPE, or other compatible and JPEG/BMPJPEG/PNG/PBM/PGM/PPM/XBM/XPM PCT will provide the CAD / Shape files of PCT layout for the GIS platform	M		
35.	Allow users to zoom in or out on a map.	M		
36.	Allows users to add video device locations on electronic maps. Adjusts the position and angle of the device. After a map is added to the device, the icon of the added map is displayed in the resource tree. After devices are deployed, users can perform operations based on device locations, including double-clicking and previewing videos, right-clicking previews, playing back videos, pushing videos to the video wall, and viewing details.	M		
37.	Ability to interface with 3rd party for displaying data and icons on the electronic map. Web api service to post data to map example: { Mapid, lat, long, name, remarks, icon, link }	M		
38.	**Intelligent Security Protection Application - System Management**			
39.	Support device addition, device parameter configuration, directory site configuration, and user configuration.	M		
40.	Interconnects with algorithm capabilities through APIs and SDKs to meet flexible algorithm selection requirements in different service scenarios.	M		
41.	Support for adding, deleting, modifying, and querying event rules, support for customizing event specification names, support for event linkage scope restrictions with the option of unlimited or restricted device sources, and time restrictions with the option of unlimited or restricted time periods; Support linkage client response, TV wall, email sending, front-end calling, pan tilt control, and reverse control.	M		
42.	Support interconnection with PCTs email system. Additionally, when an alarm event is generated and confirmed by user, the supplier will provide via interface (HTTP or SMS Gateway provided by PCT) all the related available data in order for PCT to generate notifications for its users.	M		

Line#	Description	Requirement / Categorization (M, N, H)	Compliance Yes / No	Detailed Response Reference
	For example: timestamp, Severity level, AI function triggered i.e. security, fire, over speed, etc.), Value (i.e. speed value, etc.), description, and other data useful to the user.			
43.	The system can be viewed on mobile devices either via html or native application or otherwise.	M		
44. Data Center Virtualization Platform (Huawei DCS, Broadcom Vmware, Microsoft Hyper-V are recommended)				
45.	Supports hybrid deployment of x86 and Arm servers. One platform can be used to manage x86 and Arm servers in a unified manner.	M		
46.	Supports online adjustment of VM specifications, including CPU and memory resources. The adjustment takes effect without the need of restart.	M		
47.	After a VM is deleted, it is moved to the recycle bin. VMs in the recycle bin can be restored.	M		
48.	The virtualization software support creating consistency snapshots for VMs. When a fault occurs, services can be quickly restored to the state at point in time when the snapshot was created.	M		
49.	The virtualization platform supports local disks, IP SAN, FC SAN, and NAS.	M		
50.	The virtualization software must support migrating only VM storage. Users can specify the configuration mode of destination disks and migration rate control during migration setting.	M		
51.	Provides graphical indicator monitoring on hosts and VMs. Users can customize the monitoring period. The monitoring indicators include the CPU usage, memory usage, disk usage, disk I/Os, and network traffic rates. Users can also export monitoring data.	M		
52.	Supports alarms for various indicators, including but not limited to the CPU usage, memory usage, disk usage, storage I/O latency, partition usage, and virtualization domain resource usage. Users can customize alarm thresholds.	M		
53.	**Video and Storage - Outdoor HD PTZ Camera (HOLOWITS, Bosch, Siemens are recommended)**			
54.	To ensure compatibility and performance, the camera, the VMS, the video storage device and the AI functions must be provided by the same vendor or otherwise provide the compatibility list certified by vendor mentioning also the supported functionalities and specifications.	M		

Line#	Description	Requirement / Categorization (M, N, H)	Compliance Yes / No	Detailed Response Reference
55.	Minimum illumination, color ≤ 0.001 lux, 0.001 lux	M		
56.	Built-in sensor resolution ≥ 2560 × 1440, at least 1/1.8-inch progressive scan CMOS image sensor.	M		
57.	Sensor target surface ≥ 1/1.8 "," support electric zoom, 32 not less than, 6-192mm	M		
58.	Built-in strobe light, infrared radiation distance ≥ 200 m, ≥ 30 m	M		
59.	Support SWIRL lens	M		
60.	Support, Onvif, Protocol	M		
61.	with one RJ45 two alarm input, one memory card slot one memory card slot 256 GB	M		
62.	Operating temperature: -30°C to 60°C (illuminator off) -30°C to 40°C (30°C)	M		
63.	Window waterproof curve design, window heating film precise defogging	M		
64.	Scene adaptation is supported. The backlight, moving speed, foggy (rainy) day, and normal scenarios can be automatically identified, and the corresponding image parameters can be quickly and adaptively adjusted.	M		
65.	Display the secure boot status and the verification results of the boot, kernel, and application software during the boot process.	M		
66.	Support system intrusion detection, with network card promiscuous mode check, system sensitive file check, illegal super account detection, botnet detection, Rootkit, detection, program trust list, mining malicious process detection and other setting options	M		
67.	The equipment covers 0 ~ 1.5 km of the coast. The shell is made of anti-corrosion materials to protect the equipment from corrosion.	M		
68.	The proposed equipment should support the below: • At least three independent video streams. • The horizontal rotation angle of the PTZ is between 0° and 360°, the vertical rotation angle is between - 20° and + 90°. • Wide dynamic range (WDR) of at least 120dB; Digital WDR is not accepted. • Support backlight compensation (BLC) and cloudy day adaptive. • Optical zoom: not less than 32 times optical zoom.	M		

Line#	Description	Requirement / Categorization (M, N, H)	Compliance Yes / No	Detailed Response Reference
	• Supports PoE power supply in compliance with IEEE 802.3at and 24 V AC power supply. • Support electronic image stabilization, reduce image jitter. • The camera is equipped with an IP66-certified protective case. Supports 6 kV surge protection.			
69.	**Video and Storage - Outdoor HD Bullet Camera (HOLOWITS, Bosch, Siemens are recommended)**			
70.	To ensure compatibility and performance, the camera, the VMS, the video storage device and the AI functions must be provided by the same vendor or otherwise provide the compatibility list certified by vendor mentioning also the supported functionalities and specifications.	M		
71.	Minimum illumination: color: ≤ 0.001 lux; B/W: ≤ 0.0001 lux	M		
72.	Sensor resolution ≥ 2560 × 1440, sensor target surface ≥ 1/1.8," support for motorized zoom lens, focal length range not less than 2.8-12mm	M		
73.	Wide dynamic range (WDR) of at least 120 dB; Digital WDR is not accepted.	M		
74.	Supports backlight compensation (BLC) and cloudy-day adaptation.	M		
75.	Supports the ONVIF protocol to ensure compatibility.	M		
76.	Scene adaptation is supported. The system can automatically identify scenarios such as backlight, moving speed, foggy (rainy) days, and normal conditions, and quickly and adaptively adjust the corresponding image parameters.	M		
77.	The secure boot status is displayed. During the boot process, the status of the boot, kernel, and application software is displayed level by level.	M		
78.	Supports system intrusion detection, including network adapter promiscuous mode detection, system sensitive file detection, illegal super account detection, botnet detection, rootkit detection, program trust list, and mining malicious process detection.	M		
79.	The camera has an anti-corrosion class of D and covers 0-1.5 km of the coast. The housing is made of anti-corrosive material to protect the equipment from corrosion.	M		
80.	Electronic image stabilization, reducing image jitter.	M		

Line#	Description	Requirement / Categorization (M, N, H)	Compliance Yes / No	Detailed Response Reference
81.	The proposed equipment should support the below: • At least three independent video streams. • Minimum illumination: Color: 0.001 lux (F1.2, AGC ON, 1/30s shutter speed); B/W: 0.0001lux (F1.2, AGC ON, 1/30s shutter speed). • Support backlight compensation (BLC) and cloudy day adaptive. • Wide dynamic range (WDR) of at least 120dB; Digital WDR is not accepted. • Support backlight compensation (BLC) and cloudy day adaptive. • Optical zoom: not less than 32 times optical zoom. • Supports PoE power supply in compliance with IEEE 802.3at and 24 V AC power supply. • The maximum power consumption does not exceed 11.4 W, and the typical power consumption is less than 3.6 W. • Supports video quality diagnosis, such as static noise, color cast, video freezing, gain imbalance, image shaking, and stripe noise detection. • The camera is equipped with an IP66-certified protective case. Supports 6 kV surge protection. • Must have at least 50 meters of IR range.	M		
82.	**Video and Storage – Video Management Platform**			
83.	To ensure compatibility and performance, the camera, the VMS, the video storage device and the AI functions must be provided by the same vendor or otherwise provide the compatibility list certified by vendor mentioning also the supported functionalities and specifications.	M		
84.	Video device access module: supports access of various types of PUs through national standards, ONVIF, and proprietary protocols of mainstream vendors.	M		
85.	The product must integrate storage and computing functions and support service functions such as access, storage, analysis, search, and alarm.	M		
86.	The server must have at least 8 GB DDR4 RAM and support at least sixteen (16) TB 2.5-inch or 3.5-inch SATA hard disks or SAS hard disks.	M		

Line#	Description	Requirement / Categorization (M, N, H)	Compliance Yes / No	Detailed Response Reference
87.	Supports the SafeVideo or equivalent, ensuring that data is still readable and writable in remaining normal disks upon a RAID5 fa	M		
88.	2 x GE electrical ports, support for the load balancing and multi-address modes.	M		
89.	Must withstand operating temperature: -5°C to +55°C.	M		
90.	Key data on the system disk can be backed up to the data disk and multiple copies can be generated. Key data includes the data related to the normal running of the system, such as the database, configuration file, and video index file. Restores data from data disks to system disks.	M		
91.	Hot spare dynamic disks must be supported. When a data disk is faulty, the hot spare disk functions as the data disk, and the faulty disk functions as the new backup disk after fault recovery.	M		
92.	Supports recording lock, preventing important recordings from being overwritten within a specified period.	M		
93.	Supports video buffering, ensuring video data integrity.	M		
94.	Each NVR supports 128-channel video access, storage, and forwarding, and the maximum access bandwidth is 512 Mbit/s.	M		
95.	Each NVR supports 32-channel video playback and download. The maximum playback bandwidth is 160 Mbit/s.	M		
96.	Must have at least CE certification.	M		
97.	**Network（Huawei, Cisco, Arista are recommended） - Data center out-of-band management switch** **The Supplier should offer the cost of each item in separate line in the Financial Proposal since depending on the proposed setup the quantity items of this equipment may change**			
98.	24 x 10/100/1000Base-T ports, 4 x GE SFP+ ports, 2 stack ports	M		
99.	Built-in AC	M		
100.	The equipment should support the standard SNMP protocol and syslog protocol. Can be managed by the standard SNMP NMS.	M		
101.	**Network（Huawei, Cisco, Arista are recommended） - Camera access switch** **The Supplier should offer the cost of each item in separate line in the Financial Proposal since depending on the proposed setup the quantity items of this equipment may change**			

Line#	Description	Requirement / Categorization (M, N, H)	Compliance Yes / No	Detailed Response Reference
102.	At least 8 ports 10/100/1000Base-T ports, 4 ports GE SFP ports.	M		
103.	PoE+ capability.	M		
104.	The forwarding performance is not lower than 72 Mpps.	M		
105.	With 32K MAC entries (MAX).	M		
106.	Support Voice VLAN.	M		
107.	Ethernet loop protection: ERPS, MSTP.	M		
108.	Multicast PIM DM, PIM SM, PIM SSM.	M		
109.	IP routing Static route, RIP, RIPng, OSPF, OSPFv3, VRRP, VRRP6, Routing Policy, Policy-Based Routing.	M		
110.	QoS/ACL 2K rules per IPv4 ACL.	M		
111.	Stacking capabilities	M		
112.	-40°C to +65°C at an altitude of 0–1800 m, mapping industrial optical modules	M		
113.	Storage temperature -40°C to +70°C	M		
114.	The equipment supports the standard SNMP protocol and syslog protocol. Can be managed by the standard SNMP NMS.	M		
115.	**AI algorithm and management - AI Manager**			
116.	The system must ensure that the software is used only by authorized users or users and legal entities that PCT will authorize. The supplier should submit in the proposal the terms of its software licenses.	M		
117.	The Solution must allow users to track the number of cameras and type of AI models purchased in that license, the number of licenses in use, and the number of licenses available.	M		
118.	The Solution must allow users to adjust certain algorithm parameters, such as confidence levels, distance thresholds, and the required number of occurrences within a given period of time to raise an alert. Hence, the AI system can be customized to better fit the needs of a particular task or situation.	M		
119.	The Solution must allow users to delineate the area (ROI: the region of interest) to be monitored, so that the AI algorithm can focus on the relevant aspects of the image and ignore the irrelevant ones, thereby improving their accuracy and efficiency. Here, ROI refers to a specific area within the camera image that is of particular interest and importance to the AI algorithms.	M		

Line#	Description	Requirement / Categorization (M, N, H)	Compliance Yes / No	Detailed Response Reference
120.	The Solution must allow users to easily customize the AI algorithm working schedule, such as on daily, weekly, or monthly base and modify the schedule at any time to adapt to changing needs and circumstances.	M		
121.	The Solution must allow users to easily set specific active scheduled times for each of the AI algorithms, ensuring that they are working efficiently and effectively.	M		
122.	The system must allow users to have control over the duration of time that the system should wait before triggering an alarm with their specific needs and preferences, ensuring that they are alerted promptly when necessary.	M		
123.	**AI algorithm and management - General requirements**			
124.	Adopt cloud-edge architecture: train and optimize algorithms on the cloud and perform inference on edge devices.	M		
125.	The intelligent video surveillance system must be able to analyze surveillance images 24/7.	M		
126.	After the warning is generated for the violation behavior in the monitoring area, the alarm information is categorized and automatically stored in the server database, including time, location, snapshot, link to incident video or images, etc. and create an incident case file for investigation.	M		
127.	The algorithm must be able to process RGB images from the camera stream without requiring any additional sensors.	M		
128.	The Solution must be able to adjust the parameters of the algorithm.	M		
129.	The algorithm must be able to detect objects in both day and night lighting conditions and must be suitable for use in both indoor and outdoor environments.	M		
130.	**AI algorithm and management - Vehicle Retrograde Detection**			
131.	The algorithm must allow users to input the true direction info and be capable of detecting the direction of travel for each detected vehicle for two/more traffic lanes. Upon incident detection relevant flows and actions should apply.	M		
132.	The minimum object size in the scene must be 80 x 60 pixels in a 1920 x 1080-pixel image.	M		
133.	The algorithm must have a produced alarm accuracy of at least 90%	M		

Line#	Description	Requirement / Categorization (M, N, H)	Compliance Yes / No	Detailed Response Reference
	(Produced alarm means the final output from the system for which the false and real incidents are confirmed from user.)			
134.	**AI algorithm and management - Speed monitoring for Vehicles**			
135.	The algorithm must be capable of detecting and tracking the vehicle, estimating the speed of the vehicle using distance covered in a certain period of time. Upon incident detection relevant flows and actions should apply.	M		
136.	The minimum object size in the scene must be 60 x 40 pixels in a 1920 x 1080-pixel image.	M		
137.	The algorithm must have a produced alarm accuracy of at least 90% (Produced alarm means the final output from the system for which the false and real incidents are confirmed from user.)	M		
138.	**AI algorithm and management - External Truck Detection**			
139.	When the external vehicle is in a non-operation area or prohibited area, an alarm should be generated and reported. The detection system must be able to compare the description of a truck with its characteristics to determine whether it is a PCT internal truck or an external truck. Upon incident detection relevant flows and actions should apply.	M		
140.	The detection system must have a minimum resolution of 1920 x 1080 pixels and be able to detect objects as small as 60 x 40 pixels.	M		
141.	The system must have a produced alarm accuracy of at least 90%. (Produced alarm means the final output from the system for which the false and real incidents are confirmed from user.)	M		
142.	**AI algorithm and management - RTGC & QC Runway Stop**			
143.	The system must provide user to be able to delineate the area to be monitored and specify time threshold. Upon incident detection relevant flows and actions should apply.	M		
144.	The system must have a detection capability of identifying objects with a minimum size of 60 x 40 pixels in a 1920 x 1080-pixel image.	M		
145.	The system must have a produced alarm accuracy of at least 90%. (Produced alarm means the final output from the system for which the false and real incidents are confirmed from user.)	M		

Line#	Description	Requirement / Categorization (M, N, H)	Compliance Yes / No	Detailed Response Reference
146.	**AI algorithm and management - RTGC Service Vehicle Limit Number Detection**			
147.	The system must have a user interface that allows the user to delineate the area to be monitored and input a waiting time threshold. Upon incident detection relevant flows and actions should apply.	M		
148.	The minimum object size in the scene must be 60 x 40 pixels in a 1920 x 1080-pixel image.	M		
149.	The bidder must provide an alarm accuracy of at least 90%. (Produced alarm means the final output from the system for which the false and real incidents are confirmed from user.)	M		
150.	**AI algorithm and management - Intrusion Detection**			
151.	The system must be able to detect people despite obstructions in the video stream. Upon incident detection relevant flows and actions should apply.	M		
152.	The Intrusion Detection system must have a detection capability of 1920 x 1080 pixels, with a minimum object size of 60 x 40 pixels.	M		
153.	The produced alarm accuracy must be at least 93%. (Produced alarm means the final output from the system for which the false and real incidents are confirmed from user.)	M		
154.	**AI algorithm and management - Detection of PPE**			
155.	The algorithm must be capable of analyzing images and video footage to detect violations of safety regulations and standards. Upon incident detection relevant flows and actions should apply.	M		
156.	The minimum object size that the system can detect must be 80 x 60 pixels in a resolution of 1920 x 1080 pixels.	M		
157.	The produced alarm accuracy must be at least 90%. (Produced alarm means the final output from the system for which the false and real incidents are confirmed from user.)	M		
158.	**AI algorithm and management - Virtual Fencing**			
159.	The algorithm must ensure being able to detect people in the video stream and raise an alert if there is any violation. Upon incident detection relevant flows and actions should apply.	M		
160.	The virtual fencing algorithm must have a detection capability of 1920 x 1080 pixels, with a minimum object size of 60 x 40 pixels.	M		
161.	The produced alarm accuracy must be at least 93%.	M		

Line#	Description	Requirement / Categorization (M, N, H)	Compliance Yes / No	Detailed Response Reference
	(Produced alarm means the final output from the system for which the false and real incidents are confirmed from user.)			
162.	**AI algorithm and management - Person Detection**			
163.	The system must be able to quickly detect the presence of people. Upon incident detection relevant flows and actions should apply.	M		
164.	The minimum object size for person recognition in 1920 x 1080 pixels must be 80 x 60 pixels.	M		
165.	The produced alarm accuracy must be at least 93%. (Produced alarm means the final output from the system for which the false and real incidents are confirmed from user.)	M		
166.	**AI algorithm and management - Smoke and Fire Detection**			
167.	The system must be able to quickly detect the presence of smoke or fire and send immediate alerts to notify authorities. Upon incident detection relevant flows and actions should apply.	M		
168.	The minimum object size for smoke or fire detection in 1920 x 1080 pixels must be 60 x 40 pixels.	M		
169.	The produced alarm accuracy must be at least 90% (Produced alarm means the final output from the system for which the false and real incidents are confirmed from user.)	M		
170.	**AI algorithm and management - Privacy Protection**			
171.	The system must detect faces in the input video and blurs the faces if it is opted. Upon incident detection relevant flows and actions should apply.	M		
172.	The minimum object size for face detection in 1920 x 1080 pixels is 60 x 40 pixels.	M		
173.	The accuracy of locating and blurring faces accuracy must be at least 95%. (Produced alarm means the final output from the system for which the false and real incidents are confirmed from user.)	M		
174.	**AI Inference Server – Specifications - (Huawei, DELL, HPE are recommended)** **[Indicatively the following compute cluster is the minimum acceptable by PCT, and the suppliers should propose their own sizing to fit their solution & smooth operation & should provide the calculation method for sizing all the hardware equipment proposed (i.e. servers, storage, networking devices, etc.]**			

Line#	Description	Requirement / Categorization (M, N, H)	Compliance Yes / No	Detailed Response Reference
175.	Second generation Intel Xeon at least 376 Core (at least 2.6GHz)	M		
176.	GPU configuration capacity: 24 * V100 GPU (3*8*32GB)	M		
177.	Memory configuration capacity: at least 3400GB	M		
178.	Support the following memory technologies (ECC, Memory Mirroring, SDDC, Failed DIMM Isolation, Memory Thermal Throttling, etc.), and official website information is required to prove it	M		
179.	At least 5TB System Disk.	M		
180.	With Dedicated Storage System	M		
181.	Storage can support both SAN and NAS capabilities, and the storage can support SAN and NAS Active-Active across sites capabilities without gateway.	M		
182.	At least 58 TiB effective capacity, Cache for two Controller to be larger or equal to 512GB (excluding any performance acceleration module, FlashCache, PAM, SSD Cache, or SCM).	M		
183.	Supports all flash NVMe SSD expansion to be larger or equal to 36 disks without enclosure.	M		
184.	At least 2 controllers, the system can be expended to 32 controllers, Performance should be up to 300k IOPS take into account the io size 8K and 70% read ratio.	M		
185.	Support to tolerate simultaneous failure of three disks, and the disks can be expanded to 3200 SSDs.	M		
186.	Each compute node should have at least 8 * 25GE SFP28 network cards	M		
187.	GPU acceleration module: supports up to 8 full-height, full-length, double-width GPU acceleration cards	M		
188.	Main Compute node Configured with 4 hot-swappable titanium power modules, supporting N+N/N+M redundancy	M		
189.	Main Compute node Supports 6 hot-swappable counter-rotating fans	M		
190.	**Delivery - Professional qualification**			
191.	Project manager: The project manager of the supplier must have the PMP and Prince 2 certificates or other project management certificates at the same level.	M		
192.	Delivery engineers: The engineers of the supplier must have the certificate for CCIE, HCIE, or network engineers at the same level.	M		
193.	Delivery experience: The supplier must have experience in delivering smart visualized security operation projects.	M		

Line#	Description	Requirement / Categorization (M, N, H)	Compliance Yes / No	Detailed Response Reference
194.	**GENERAL REQUIREMENTS**			
195.	Total Solution free warranty period (including services) after the Final Acceptance Certificate (FAC) issued from PCT	≥ 1 Year		
196.	The warranty period for all hardware shall be at least thirty-six (36) months. Supplier is required to provide detail warranty support for each Equipment separately.	≥ 3 years		
197.	Estimated end of support for all proposed Equipment and Software	≥ 5 years		
198.	Phone support 24x7 and provide the contact support details: • Email • Phone (without charge for PCT) and Online (24x7) in Europe • Other support ticket platform	M		
199.	Online and Chat and Email support options.	M		
200.	Within the free warranty period the required support is: • Initial response within 30 minutes for Priority 1 & Priority 2 Service Requests (SR) by qualified technical support engineer on a 24x7 basis after reporting the SR from customer. • Initial response within 2 hours for Priority 3 SR by qualified technical support engineer on a 10x5 basis after acknowledging the SR from customer. • Initial response within next business day for Priority 4 SR by qualified technical support engineer on a 10x5 basis after acknowledging the SR from customer. • Supplier restore Priority 1 SR within 24 hours after problem diagnosis. • Supplier shall ship spare parts within one (1) business day from the date of RMA registration by PCT, while delivery time to PCT premises should not exceed one (1) day from shipment. The supplier should provide onsite service NBD after the spare parts delivered at PCT premises. Service Request (SR) classification. • Priority 1 (P1 – Critical): End Customer cannot perform critical business functions, and immediate corrective action is required. • Priority 2 (P2 – Major): End Customer can perform critical business functions, but performance of critical business functions is degraded or severely limited.	M		

Line#	Description	Requirement / Categorization (M, N, H)	Compliance Yes / No	Detailed Response Reference
	• Priority 3 (P3 – Minor): End Customer business functionality is largely unaffected but End Customer requires support to resolve minor issues. • Priority 4 (P4 – Other): No impact to End Customer business functionality. Normal service requests for the sales, installation, operation and maintenance of products, documentation non-conformance, non-urgent RMA requests, and cosmetic defects.			
201.	Presence of local technical support team in Greece by the vendor and shall have at least one spare parts center at Greece.	M		
202.	Provide support structure in Greece for the vendor and/or the supplier partner if applicable	M		
203.	Any transportation and labor for damages within the warranty shall be covered by the vendor without cost.	M		
204.	The technical assistance provided should be provided by a qualified engineer certified by the vendor	M		
205.	All repairs under warranty must be restored under the responsibility of the vendor and without any additional charge on site at the location of installation	M		
206.	All equipment, materials and software must be covered without additional cost during the warranty period. Any new patches, updates, new releases, firmware upgrades that refer to the offered system must be installed under the responsibility of the supplier on-site and without any additional charge.	M		
207.	The storage solution should monitor hardware alarms from customer's devices in 24*7 mode. Once a device alarm is generated, the supplier's solution should automatically report this alarm to their technical support center and PCT. The storage solution should also provide automatic fault reporting, capacity performance prediction, disk risk prediction to prevent potential risks.	M		
208.	The complete support process should be described in detail with the relevant Standard Operation Process (SOP).	M		
209.	The supplier should provide full access to PCT's relevant users in order to fully utilize the use, management and system admin management of the entire solution without restrictions. The basic Database admin training should also be provided without cost in case the database is different to Oracle or MS SQL.	M		

Line#	Description	Requirement / Categorization (M, N, H)	Compliance Yes / No	Detailed Response Reference
210.	The supplier should include in its offer and shall provide official onsite training for all the Digital Surveillance Solution including the AI platform functions for PCT end users and also the system administrative parts for all the supplied equipment and software with experienced Instructor Led Training.	M		
211.	The supplier should list in detail the training plan and courses mentioning also the attendance audience per case.	M		
212.	Warranty period of the entire solution: **Hardware** warranty will start from the issuance of the Delivery Acceptance from PCT. PCT should approve in advance any delivery from the supplier. **Software warranty and licenses** will start only upon the complete delivery to PCT of the solution and the issuance of the Final Acceptance Certificate (FAC) from PCT. The solution may be considered ready for FAC evaluation from PCT only when all hardware, software licenses and services (installation, training, testing, pilot operation) have been completely delivered and the produced alarm accuracy of each AI function is above 90% (which will be monitored from relevant metrics & KPIs) for a continuous and uninterrupted period of 30 days with smooth operation. (Produced alarm means the final output from the system for which the false and real incidents are confirmed from user.)	M		
213.	The Supplier should prepare and submit for evaluation and approval from PCT, the acceptance tests list and report, which shall include the following: • The type of the Equipment tested, date and location; • List of the participants from both PCT and the Seller; • Any defects detected and the proposed remedy measures; • All test records which are to be kept as attachments to the Acceptance Certificate. All Acceptance tests results should be approved and signed by PCT. The Supplier shall also submit the following documentation prior to requesting PCT to sign the Acceptance Report: • Equipment list • Operation manuals, Maintenance manuals	M		

Line#	Description	Requirement / Categorization (M, N, H)	Compliance Yes / No	Detailed Response Reference
214.	The supplier needs to provide a feedback mechanism for separately each AI function for false alarm events, and collect statistics on the ratio of false alarm events to all alarm events, and the ratio of correct alarm events to all alarm events, and monthly change value, so that the PCT can monitor the historical algorithm accuracy and improvement. During the warranty period the supplier should provide monthly report to PCT explaining the reason for the false alarms and suggest how to improve. PCT may request the supplier to add up to 20 metrics and 20 KPIs (or use existing metrics and KPIs if such provide the required information, thus the supplier should provide a list including all the pre-defined metrics and KPIs that system can support) without additional cost. The metrics and KPIs will use data only generated or handled from the Solution provided.	M		
215.	PCT should be able to manage and change the parameters via relevant GUI of each AI function in order to adapt to current situations of the terminal. Supplier should list the parameters available to PCT for each AI function	M		
216.	Besides the specific AI functions required from PCT, the Digital Surveillance Solution provided should also provide a set of video analytics functions via the Video Management System (VMS) that should be included and provided compulsory from the Supplier. The VMS that the Supplier will offer shall replace the current existing VMS that PCT is using (SenStar). Currently the VMS functions that are in place for operation reasons and security protecting the terminal are the following: virtual fence or tripwire cross detection, intrusion detection, TCP Listener (accept metadata), Video Signal Loss, Camera Tampering, Motion Detection, Indoor People Tracking, Outdoor Tracking (People and Vehicle), Left Item Detection, Auto Tracking PTZ, Crowd Detection, , PTZ preset flows. The supplier should list all the video analytics functions available and provided from the proposed VMS. The supplier is obliged within the project to deploy and parametrize the offered VMS in order to cover with the current exiting cameras and support all the areas (PCT and PCDC buildings and warehouse internally and externally and	M		

Line#	Description	Requirement / Categorization (M, N, H)	Complian ce Yes / No	Detailed Response Reference
	Engineering service area) that are currently supported from the existing VMS (SenStar). The supplier should provide extensive and detailed information of the proposed VMS.			
217.	From the Digital Surveillance Solution including also the VMS, the Supplier should upon an incident/alarm automate and perform all the below mentioned predefined steps and process flows end-to-end, (indicatively and to be finalized during implementation): 1. To focus on the incident with all available cameras or other sensors and depict the incident on map and video/message pop-up to the relevant department/users depending on the incident case. Each separate incident/alarm that will be confirmed by PCT user will constitute a unique "Incident Case" for which all relevant data should be included in each such "Incident Case". PCT should be able to backup, within one month from incident initiation, and restore at any given time an "Incident Case" in order to have full access to all the specific "Incident Case" data. 2. Depending on the Severity that will be marked from the user, send appropriate notification message (email or other notification) to the relevant users while also send via interface to PCT the data available so that PCT can notify appropriate users via SMS/Viber, 3. Open automatically incident case and autofill with all the case data including links to video, images, etc. so that each case can be followed up from the user and be updated with status evolution until closure of case incident. 4. Update metrics and KPIs with each case results and findings. During the project implementation, PCT will describe up to 20 predefined process flows that should be implemented from the supplier (or if existing flows can support PCTs requirement then the existing flows can be used thus the supplier should provide a list including all the pre-defined process flows that system can support) without additional cost as part of the project implementation.	M		

Line#	Description	Requirement / Categorization (M, N, H)	Compliance Yes / No	Detailed Response Reference
	Indicatively actions that can be included in the aforementioned process are the below: • Alarm linkage actions include client response, video wall, email sending, PU shouting, and PTZ control. • Intelligent alarm analysis, generation, and reporting • Receive alarms, display alarms on the electronic map, and allows users to double-click an alarm to view alarm details. Users or the System can take snapshots, record local videos, enable audio (if available), enable intercom (if available), and display video on the video wall. • For the linkage configuration of the first point, the system can automatically send emails and trigger audio prompts. • Manually review alarm events, can select No need to handle, Handle, or False alarm, can enter handling comments. • Querying historical alarm data • Etc.			
218.	The Supplier should provide the ability for each incident case to be backup to the storage system PCT provided, and be able to restore when required and view all the incident data.	M		
219.	The proposed solution should provide, without additional cost, APIs for interfacing with external applications. Including login management, device grouping, device management, live video recording, common recording API, PTZ control, preset position, alarm and event callback, event list query, intelligent metadata push, and intelligent alarm data push while also may allow to change AI parameters will not affect the integrity of the function.	M		
220.	The proposed solution should provide the ability to change via GUI the AI function parameters and also draw new areas and boundaries by PCT user	M		
221.	The system should have the function of alarm linkage configuration, including: client response, TV wall, email sending, front-end shouting, PTZ control, etc.	M		
222.	The Supplier should submit a detailed delivery time table for the entire project detailing all the phases and deliverables per phase until the complete delivery to PCT as well as the estimated involvement of PCT at each phase.	M		
223.	The supplier is obliged to deliver to PCT the entire project full functional and operational demonstrating all the functionalities	M		

Line#	Description	Requirement / Categorization (M, N, H)	Compliance Yes / No	Detailed Response Reference
	and obtaining by PCT the approval for each, thus the supplier should submit in his proposal all the functional deliveries proposed for PCT's evaluation.			
224.	The Supplier should submit layout drawings & specification table at least for the following: • General Layout • Network diagram • Network requirement • Virtualisation • VMS • Switch • Camera • Server and storage	M		
225.	The Supplier should submit full Technical design report	M		
226.	The Supplier should submit list of Non-Compliances to the Technical Specifications	M		
227.	The Supplier should provide the full documentation and manuals to PCT in relation to the platform and its operation, such as: • Manual for all software applications and functions • General Layout • Network diagram • Network requirement • Virtualisation • VMS • Switch • Camera • Server and Storage All documentation should be delivered in digital format.	M		
228.	PCT departments, teams, user groups, and individual users can be defined based on their roles. User groups can be added, deleted, modified, and queried. The user group name, user group type, and user group access resource tree can be customized. Allows users to add, delete, modify, and query user identities, and assign identity-based access permissions, including video, event, and configuration permissions. Users can concurrently and in parallel view videos with the maximum bandwidth available.	M		

Line#	Description	Requirement / Categorization (M, N, H)	Compliance Yes / No	Detailed Response Reference
229.	All data exchange processes through the interface will fully comply with the requirements of the General Data Protection Regulation (GDPR) and other relevant legislation.	M		
230.	The Supplier must describe in detail if can integrate with Active Directory AD) or otherwise how users are created, maintained and all related security topics (password complexity, retention, etc.) for complying with GDPR and ISO 27001 security standards.	M		
231.	Private encrypted transmission protocols are used for data transmission between application clients and servers to ensure security.	M		
232.	The application should implement Role Based Access Control (RBAC) for custom configuration of device resources, functional access rights, etc. to ensure that users can only access data and functions relevant to their roles.	M		
233.	PCT should be able to creation custom RBAC roles by its own	M		
234.	Provide custom configuration of user device resources and function access permissions. After configuration, users can only access the device resources and function access permissions assigned to them, and those not assigned to them will not be visible.	M		
235.	The application should implement comprehensive logging of all user activities, including login attempts, data access and administrative actions.	M		
236.	All data exchanged through interfaces will be protected with encryption and will comply with all security standards stipulated by applicable legal provisions.	M		
237.	The proposed storage solution should have enough capacity for managing and storing all the existing cameras and all the new cameras video streams for a period of at least 14 days.	M		
238.	The suppliers should provide the algorithm calculations method for sizing all the hardware equipment proposed (i.e. servers, storage, networking devices, etc.)	M		
239.	The Supplier must mention in the Technical proposal all the software applications and related licenses proposed, and state in its Financial proposal the cost of each software and additional cost for expanding the license and users.	M		
240.	The Solution Supplier must ensure that organization data is not hosted offshore or transmitted unencrypted.	M		

Line#	Description	Requirement / Categorization (M, N, H)	Compliance Yes / No	Detailed Response Reference
241.	The Solution Supplier must ensure that all GDPR compliance requirements are covered.	M		
242.	The Supplier should inform PCT how many Rack U is required for hosting all the relevant equipment in the datacenter and shall include in separate cost line the relevant offer with Racks in its financial offer together with all details of U per equipment, Rack manufacturer, model, etc.	M		
243.	The Supplier is obliged to provide the total end-to-end solution including the relocation of existing cameras if needed, the power and network cabling and mounting infrastructure until the cameras in the yard and PCTs equipment after consulting PCT Facility department for the approved installation process, materials and method. Also the necessary tools, trucks, elevators, ladders, etc. for installing the equipment in the yard will be provided from the supplier.	M		
244.	The supplier should deploy a GIS digital map platform of entire terminal yard, and buildings, substations, etc. to depict graphically the real time situation of the terminal and incidents	M		
245.	The supplier should submit in its proposal a detailed map layout depicting the suggestion for installing all cameras (either relocating the existing or installing new) with details of the type of camera per location, height, direction, area that the camera will cover, need new mounting pole or mount on existing light pole, etc.	M		
246.	The AI functions will be applied to the Terminal as per the layout In Appendix E, while PCT will have the ability to change the areas that the AI functions will be applied by informing promptly the Suppler	M		
247.	For all the AI algorithms, PCT would like to be able to train by itself all the models with Machine Learning (ML) and monitor and retrain. In case such training platform has separate cost, the Supplier is required to provide the cost in separate line in the Financial offer	N		
248.	PCT should have read access to the Digital Surveillance data in order to be able to extract for internal use and custom reports.	M		
249.	Supplier should have ISO Certification: ISO9001, ISO20000, ISO27001	M		
250.	Supplier should have Security implementation certificate or equivalents	H		

Line#	Description	Requirement / Categorization (M, N, H)	Compliance Yes / No	Detailed Response Reference
251.	Supplier must be vender authorized partner and provide bidding authorization letter and local support service authorization letter from the manufacture vendor.	M		
252.	Vendor must have local service center in Greece	M		
253.	Vendor must have at least one AI research and development center in Europe	M		
254.	Supplier should provide how many integration projects are delivered with value of more than 1 million euro each project in the past three years	M		
255.	Supplier should provide how many ICT integration projects are delivered in the last 3 consequent years (2021, 2022, 2023) in Europe	M		
256.	Supplier must have implementation, project management and support experience in Europe	M		
257.	Vendor should have legal entity in Greece for at least 5 years	H		
258.	Supplier should have port/terminal project experience	M		
259.	The Supplier shall ensure that the Solution is and remains at all times fully compliant with the requirements of the applicable legislation, and in particular those set forth in Regulation (EU) 2024/1689 (the "**Artificial Intelligence Act**" or **"AI Act"**) and the Regulation (EU) 2016/679 (the "**General Data Protection Regulation**" or **"GDPR"**) and the legislation in relation to cybersecurity. In this context, the Supplier shall: (a) provide a fully compliant Solution with all compliance assessments and approvals required by applicable law; (b) inform Customer of any authorization that may be required to operate the Solution; (c) inform Customer of any specification that may pose a high risk to the rights and freedoms of individuals before proceeding with its implementation; and (d) state what its role(s) are according to the Artificial Intelligence Act and provide written evidence of compliance with any obligation arising from its role(s) under the AI Act. It is agreed that if the Solution or any part thereof is found not to comply with applicable law (including, but not limited to, the Artificial Intelligence Act and the General Data Regulation), the Supplier shall indemnify and hold harmless the Customer from any fine or penalty imposed on the Customer due to such non-compliance, unless the Supplier has pointed out such non-compliance and the Customer has persisted in implementing it. The relevant amounts shall be collected by PCT either by forfeiture of the Performance Bond or by	M		

Line#	Description	Requirement / Categorization (M, N, H)	Compliance Yes / No	Detailed Response Reference
	offsetting them against any financial obligations of PCT to the Supplier, or by any other legal means.			

All replies related to the Technical Specifications must be detailed and referenced to the relevant proposed product documentation.

a. All proposed Solutions must have any possible required suitable license or certificate to guarantee the usage of the hardware Equipment and software products in the European Union.

b. The Technical Proposal shall upon penalty of rejection of the Proposal, include at least the following information:

    a)   A description of the methodology which shall be used for the execution of Services and Equipment provision

    b)   A description of the tools which shall be used for the provision of the Services and Equipment.

    c)   A description of the personnel which shall be used for the provision of the Services and Equipment.

c. The Technical Proposal shall upon penalty of rejection of the Proposal, all proposed Solutions must meet all the mandatory requirements (Marked as M) in the Technical Specifications table.

CHAPTER D. FINANCIAL OFFER

Participants are requested to submit a Financial Offer for providing the total Solution, Services and Equipment that are the subject-matter of this RfP according to the following tables:

Financial Table F.1-1

HARDWARE – SOFTWARE – LICENSES					
Item #	Description / Category	A1: Unit Cost (€) without VAT	Quantity	A2: Total Solution Cost (€) without VAT	Free Warranty Provided (in years)
1					
2					
3					
…					
GRAND TOTAL SOLUTION COST (without VAT) **:**					

Financial Table F.1-2

SERVICES					
Item #	Description / Category	A1: Unit Cost (€) without VAT	Quantity	A2: Total Solution Cost (€) without VAT	Free Provision of Services (in Man-Days)

1	Physical Installation Services				
2	Configuration Services				
3	Training Services				
4	Maintenance & Support Services, SLA				
…	Please mention any other services…				
GRAND TOTAL SOLUTION COST (without VAT):					

The Participants shall provide the following:

a. The Suppliers are required to provide the detailed cost per each item offered (hardware, software, license, service) in order for PCT to be able to modify quantities as per the need of the project resulting to a valid and functional solution.

b. Price per man-day per specialist level (excl. travel and accommodation expenses) for any additional services may be required in the future.

c. Detailed analysis for the following after the expiration of the free warranty period:
    i. Annual maintenance cost for the overall Solution (analyzed per type of device, software license and service type and per each Equipment)
    ii. Annual SLA cost as provided during the warranty period for all hardware equipment, software and services as described by the technical specifications.
    iii. The Cost per item (one quantity) of all the Critical Spare Equipment and Parts and Software and Services for eliminating downtime (not more than 24 hours) and enabling quick operation recovery shall be mentioned in detail together with the cost per each item in the Financial Offer.

d. All proposed Solutions must include all costs that would be incurred in order to create a functional and managed enterprise environment.

e. All prices shall be quoted on a "Fixed Price" base for all Solution categories, thus Financial Offers with cost variations utilized by the user/client may not be considered valid.

f. The Participants shall provide in advance and in details a list of all costs that may occur and burden the Company in any current or future time related to any aspect of the proposed Solution, thus detailed special prices for additional hardware, software components and services shall be provided.

g. The proposed Solution shall consist of new Equipment (not used or refurbished).

Financial Terms and conditions

- All prices shall be in Euro, excluding VAT.
- Prices shall include the entire delivery to PCT premises and deployment as per project specifications.
- Suggested Payment Terms:

  ➢ 10% Advanced Payment (subject to the submission of an equivalent letter of Advance Payment guarantee and a Good Performance guarantee, both issued by a financial institution accepted by PCT). These guarantees will be returned after 2 months following the Final Acceptance Certificate.
  ➢ X% upon total Equipment and software license delivery to PCT
  ➢ Y% upon delivery of phase (i.e. A, B, C, etc.) to PCT

  ➢ 30% upon final acceptance for the entire delivery of the Solution and issuance of the Final Acceptance Certificate (FAC) by PCT.

- FAC will be issued upon delivery of the entire Project and after a continuous 30 days of production operation without issues.
- The Financial Offer should be quoted on a "Fixed Price" base for all Solution categories
- Any delivery/shipping and insurance cost shall be included in the Participant's cost.
- All prices quoted should be inclusive of any applicable withholding tax.
- PCT may on its own discretion choose to purchase only parts of the total offered Solution and the supplier is obliged to accept without change of financial cost.

CHAPTER E. OTHER TERMS AND CONDITIONS

1) Prior to the signing of the Contract, the selected Participant is required to submit to PCT a performance bond in favor of PCT for an amount equal to 10% of total project cost to be issued by a financial institution lawfully operating and approved by PCT. The performance bond will be valid for the entire duration of the Contract and payable on first demand. PCT will return the performance bond two (2) months after the lapse of the term (duration) of the Contract, provided that the provider has fulfilled all its obligations under the Contract and that no reason for the forfeiture of the performance bond by PCT will have arisen until the expiry of the term of the Contract. For the avoidance of doubt, it is clarified that no Contract will be signed unless the performance bond is delivered to PCT.

2) PCT reserves the right, at its sole discretion, to repeat, postpone, cancel, suspend, or amend the Tender Process, at any time, without prior notice and without any liability towards the Participants and/or third parties. No person shall acquire against PCT and all its employees, officers, advisors, and agents in general,

any right or claim for compensation, or indemnification, or other, for any reason or cause whatsoever relating to this RfP and/or participation in the Tender Process.

3) It is at PCT's sole discretion to consider all Proposals void and invalid and cancel the whole Tender Process. No compensation will be paid to the Participants under this circumstance.

4) Each Participant understands and acknowledges that the Company will rely on the information contained in its Proposal in making its decision regarding the award of the Contract and that such information is expressly warranted by the Participant to be true and correct. In addition, each Participant shall provide, prior to the award of the Contract, such supporting documentation and information as may be reasonably requested by the Company.

5) Any approvals and permissions (by the Greek or any other authorities) that are necessary to fulfill the provision of Services and the Contract shall be described in the Proposal along with the activities required (including duration and costs) to achieve them. Notwithstanding, unless required by relevant rule and regulation that this is the obligation of PCT to fulfill them (the Participants are obliged to mention explicitly such rule and/or regulation) the Participant shall be responsible at their own cost to fulfill those approvals and permissions. Any necessary approvals and permissions must be obtained in good time in order not to jeopardize the agreed time schedule. PCT shall be kept informed about the progress of any approvals required.

6) Participation itself in the Tender Process is made at the responsibility and expense of the Participants. Participants understand and acknowledge that exclusion from the Tender Process or failure in the Tender Process or the cancellation or adjournment of the Tender Process by the Company shall not create any right for any Participant or any third party to claim any compensation or indemnity, for any reason whatsoever, including but not limited to any alleged damages or alleged loss of profits or loss of opportunity or for any costs related to the participation in the Tender Process, by the Company and/or its employees, officers or advisors, and agents in general.

7) This RfP will be governed by and construed in accordance with Greek Law and any dispute that may arise hereunder shall be subject to the exclusive jurisdiction of the courts of Athens, Greece.

8) The Contract and all written communication between the parties will be in the English and/or Greek language.

9) All applicable regulations and standards (Greek, European Union) should be complied with.

10) PCT reserves the right to change the requirements, specification, and Services to be provided by the selected Participant.

11) The Participants are not entitled to transfer, sell, and lease, award to a third party in any way even by means of subcontracting or transfer the Contract or part of it or any rights or obligations deriving from the Tender Process or the Contract, without prior written consent of PCT.

12) PCT legitimately considers that each Participant submitting a Proposal in relation to this Tender Process complies with all relevant provisions on the data protection legislation in Greece and European Union and any other applicable data protection legislation in any relevant jurisdiction, including but not limited to the EU's General Data Protection Regulation (GDPR) 2016/679 and Greek Law 4624/2019. Indicatively, each Participant, by submitting a Proposal in relation to this Tender Process, represents and guarantees that: (a) The Participant has obtained from any data subject involved his/her explicit consent and authorization to transmit his/her personal data to PCT in order for PCT to process and maintain a record thereof for the purposes of this Tender Process, (b) The Personal Data the Participant transmits is accurate, up-to-date, correct and relevant to this Tender Process, (c) If needed, the Participant shall assist PCT in the lawful processing of Personal Data and promptly notify PCT of any data subject's request (d) The Participant has

informed the data subjects of their rights under the GDPR and the relevant legislation, as well as of its intention to further transfer them to PCT.

CHAPTER F.   PARTICIPATION LETTER OF GUARANTEE

For the valid participation in this Tender Process each Participant is required to submit to PCT an unconditional participation letter of guarantee (hereinafter referred to as the "**Participation Letter of Guarantee**") payable upon PCT's first demand of an amount of **60.000** Euro (€_____).

The Participation Letter of Guarantee shall be submitted in hard copy at the registered offices of PCT, Piraeus Container Terminal Single Member S.A. N. SEMPO, N. IKONIO, PERAMA18863, ATHENS, GREECE, no later than seven (7) working days after the Closing Date. The Participation Letter of Guarantee shall be submitted in a sealed envelope which bears the following indications:

TO: PIRAEUS CONTAINER TERMINAL SINGLE MEMBER S.A.
SUBJECT: REQUEST FOR PROPOSAL FOR THE PROCUREMENT OF DIGITAL SURVEILLANCE SOLUTION
BY: [PARTICIPANT'S CORPORATE NAME]
ATTENTION: MR. AMPELIDIS OR MRS TATARAKI

With regard to the Participation Letter of Guarantee, the following shall apply:
(i)   The Participation Letter of Guarantee shall be issued by a first- class financial institution lawfully operating in Greece or other country acceptable by PCT.
(ii)   The Participation Letter of Guarantee must be drafted in all material aspects in accordance with the template of Appendix D.
(iii)   The initial validity period of the Participation Letter of Guarantee shall be six (6) months, whereas in case of an extension of the validity of the Proposal, the Participants are required to ensure an equal extension of the validity period of the Participation Letter of Guarantee, before the lapse of its validity period.
(iv)   The Participation Letter of Guarantee is returned as follows, as the case may be:
(a)   To the selected Participant, within twenty (20) days from the signing of the Contract.
(b)   To the other Participants, within twenty (20) days from the declaration of the selected Participant.
(c)   To each Participant within ten (10) days of the cancellation of the Tender Process by PCT for any reason.
(v)   The Participation Letter of Guarantee shall be forfeited in the following cases:
(a)   withdrawal of a Participant's Proposal,
(b)   change in the identity of the Participant,
(c)   non-extension of the validity period of the Participation Letter of Guarantee, in breach of paragraph (iii) above,
(d)   increase by the Participant of the prices set out in the Financial Offer, for any reason whatsoever,
(f)   refusal or failure of the selected Participant to attend the signing of the Contract within the time limit set out by PCT or lapse of the relevant deadline, as this may be extended by PCT.
(g)   provision of false evidence or information by the Participant.
(h)   in any other case provided for specifically in the RfP.

The forfeiture of the Participation Letter of Guarantee does not harm or restrict in any way the right of PCT to raise any further claims against the Participants in the above-mentioned cases.

IMPORTANT NOTE 1: Failure to submit the Participation Letter of Guarantee will result in the Participants disqualification.

IMPORTANT NOTE 2: If the Participant is a joint venture, either the Participation Letter of Guarantee must be issued for all members of the J/V jointly and severally, indicating the full names and addresses of each member, or multiple Participation Letter of Guarantees may be submitted, which must meet the aforementioned requirements, provided that the aggregate amount of all the Participation Letter of Guarantees equals to Euro _____ (€_____) and the obligations of all J/V members of such Participant are secured on a joint and several basis. For the avoidance of doubt, it is clarified that in case of submission of multiple Participation Letter of Guarantees, the forfeiture of the Participation Letter of Guarantee submitted by one member will entail the forfeiture of the Participation Letter of Guarantees submitted by all other members.

Appendix A – Technical Specifications

As per Chapter C above in this tender document and as per below specifications.

1 General Requirements

The project aims to build a smart and safety **Digital Surveillance Solution** management system, implementing comprehensive AI monitoring and analysis of personnel, vehicles, Items and yard, identify unsafe behaviors and conditions of terminal operators, mobile vehicles and port machinery equipment, as well as factors such as fire that affect safe operation, reduce safety accidents caused by visual fatigue of security personnel, shift changes, and the inability of fully monitoring a large number of cameras, achieve the goal of safe production. This project should include Digital Surveillance Solution Smart Port Safety and Security Platform, terminal full-scene AI algorithm, video surveillance devices, hardware infrastructure devices, and command center.

The project should fully utilizes the existing infrastructure resources of PCT. The development principles should include but are not limited to ease of use, combining advancement and practicality, openness and extensibility, safety and reliability, standardization.

2 Design Requirements

The project must have at least the following capabilities: Intelligent video surveillance system (video management, video access, video storage, and cameras management), Intelligent video analysis system (Scenario-based AI intelligent analysis algorithms and their management platform, alarm management), and the GUI application of the security system. The system must have end-to-end security management and control capabilities. The platform must be designed according to the following architecture:
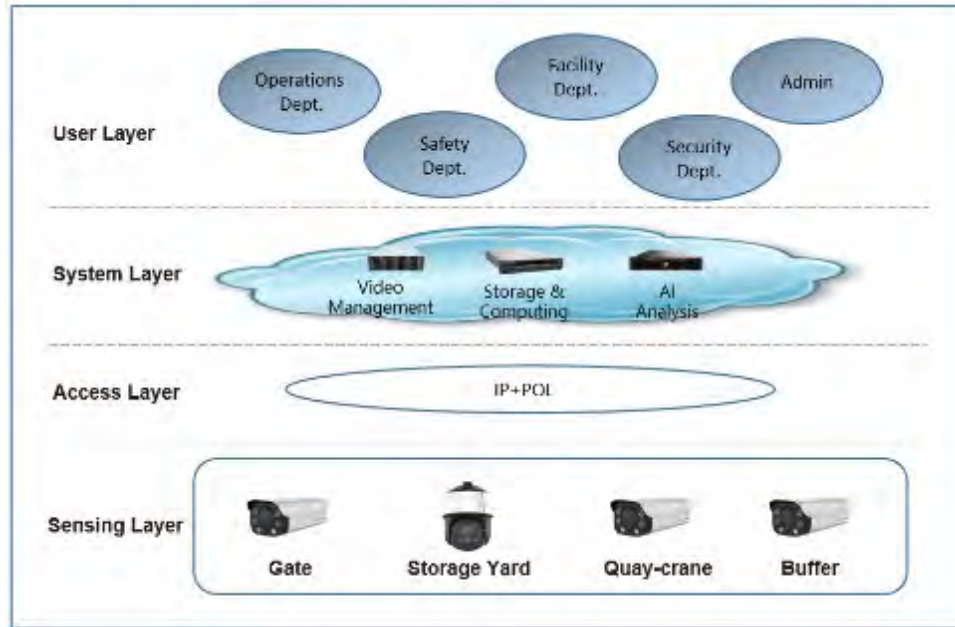
The Digital Surveillance Solution platform should consists of the sensing layer, access layer, system layer, and user layer.

- Sensing layer: The sensing layer consists of sensing devices such as cameras installed on the light poles, QCs and walls. And they are used to collect videos from the entire terminal.

- Access layer: The access layer can transmit video data to the video management system in real time through the terminal IP network.

- System layer: As the core of the Digital Surveillance Solution platform, the system layer provides functions such as video access, video storage, AI computing resources, and AI analysis services.

- User layer: The user layer consists of various departments that use the platform at the terminal. Related departments use the video data efficiently and collaboratively based on the principle of centralized video management and on-demand video access permission application.

3 Infrastructure Requirements

Indicatively the following compute cluster is suggested, but the suppliers can propose their own sizing to fit their solution smooth operation and should provide the calculation method for sizing all the hardware equipment proposed (i.e. servers, storage, networking devices, etc.).

Indicative suggested **Compute cluster:** The total number of resources should not less than that required in the Technical Specifications table. In addition, to meet the requirements of different services on data center

resources, unified virtualization resource management is required for servers, computing resources, and storage resources in the data center.

Network: PoE access switch must configured at each new camera location connect to the core network through aggregation switch in the terminal. New device must compatible with existing Cisco devices. Reutilize existing network devices when possible.

The following figure shows the video surveillance network architecture.

The below is a high level architecture presentation of the existing network layout and according to the proposed solution and implementation setup, there may be a need to amend the quantities needed for a full functional solution, thus the Suppliers are required to provide in their financial offers the item cost of the equipment.
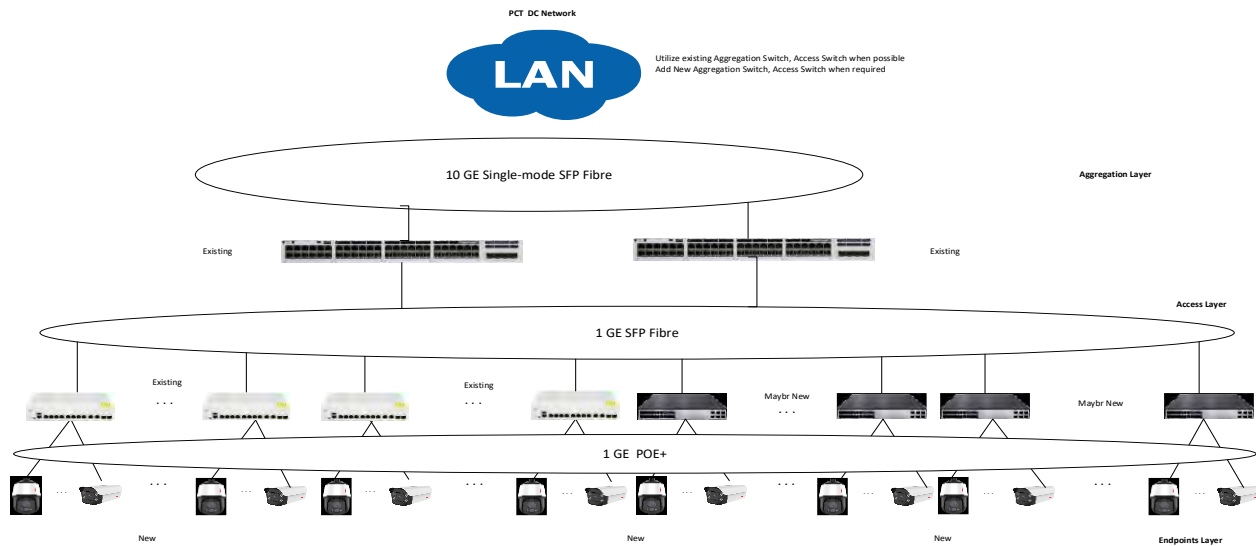
Server cluster and VMS cluster must connect to the core network through dedicate aggregation switch in Data Center.

Management switch must be configured to separate production data flow and management data flow.
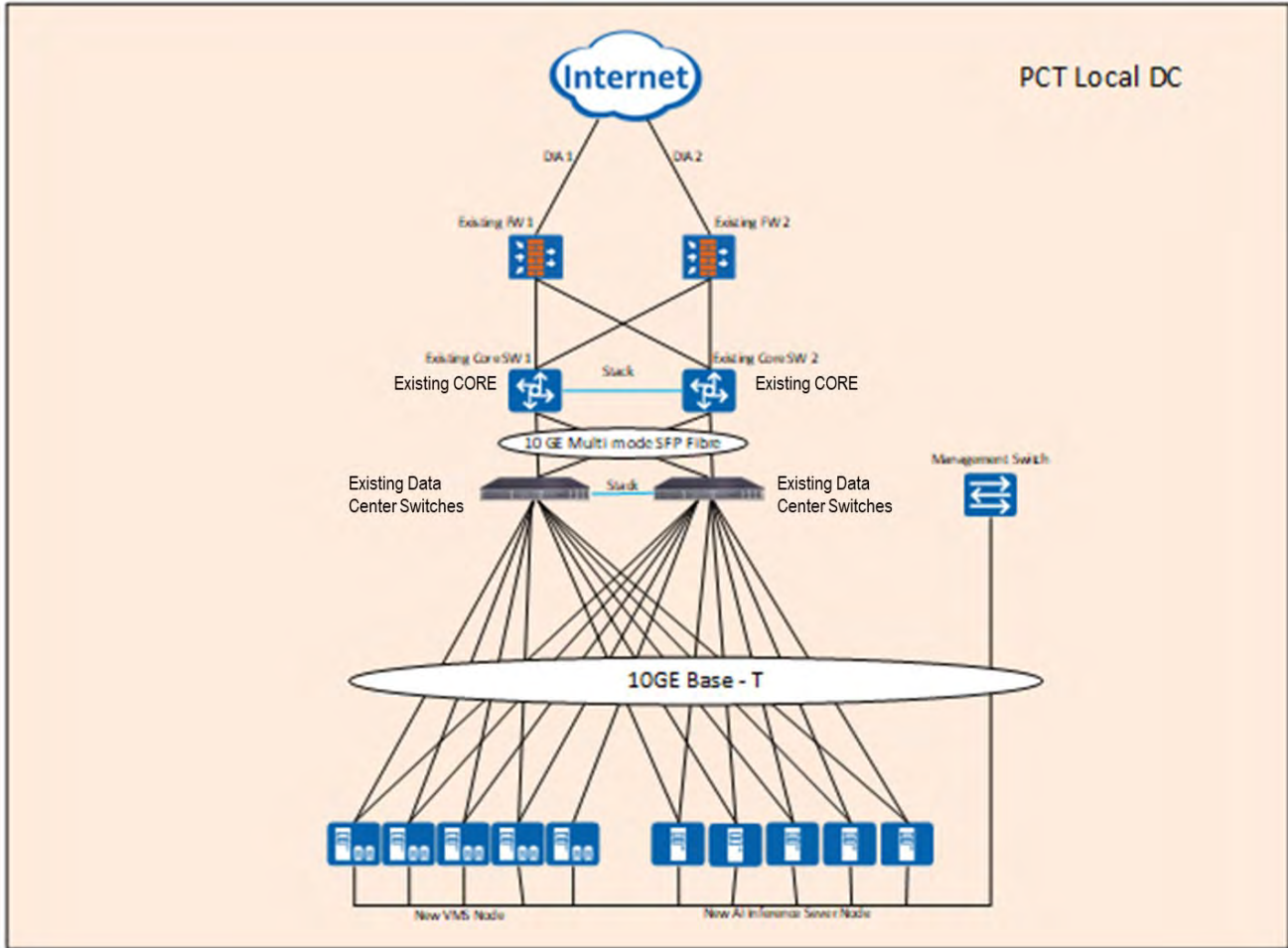
4   Intelligent Video Surveillance System Requirements

The intelligent video surveillance system should adopt a digital solution to implement all-round and all-time security protection in important areas, digital transmission of image signals, and video storage. Data interaction with the Digital Surveillance Solution Port Security Guard System through optical fiber and Ethernet enables all video information to be shared through network information for internal users to monitor images and view video materials in real time, forming a unified and coordinated dynamic network video surveillance system.

1) The video surveillance system uses the H.265 encoding format for storage. The storage duration must be at least 14 days. The storage appliance must be able to manage cameras on the live network for unified management and video storage.

2) Video storage devices must provide at least 600 channels or 2400 Mbit/s forwarding and access bandwidth capabilities, and be compatible with Axis cameras on the live network.

3) In addition to monitoring the outdoor production operation of the terminal, the video surveillance system shall be able to access the cameras in the buildings.

4) The video surveillance system should use multiple types of cameras to reuse existing facilities, including cameras, lamp poles, and switches. Add industrial-grade PoE access switch at the point where no switch is deployed to connect cameras and aggregation switches in the terminal equipment room to connect video surveillance networks.

5) The new cameras have the starlight sensitivity and infrared function.

    a) A 4-megapixel ultra-HD box camera is added to cover the entire port area, meeting the surveillance coverage requirements in the following areas:

Full Coverage Box Camera	On the QCs, install one box camera on each of the QC in PIER 2 and PIER 3. The installation height is about 11m.
	PIER II area, installed on a 15m high pole lamp
	PIER III area, installed on a 15m high pole lamp

    b) A 4-megapixel high-conversion spherical camera is added to monitor outdoor operations, meeting the surveillance coverage requirements in the following areas:

Full Coverage Dome Camera	PIER II area, installed on a 15m high pole lamp
	PIER III area, installed on a 15m high pole lamp
	Train running area, installed on a 15m high pole lamp

For details, Terminal layout and existing camera mapping refer to ANNEX E.

5   Intelligent Video Analysis System Requirements

The system can connect to video storage devices to obtain real-time video streams. Based on advanced AI algorithms and computing resources, the system can intelligently analyses real-time video to monitor personnel, vehicles, items and yard in the operation area and report alarms in real time. Improve the intelligent, proactive, and safety level of the terminal.

1) Supports AI-based intelligent video processing. To meet all monitoring and alarm requirements described in this specification, videos from 500 HD cameras can be concurrently accessed and AI-based intelligent processing can be performed on 800 channels of video streams. AI-based intelligent alarm data of 800 channels of video should be able to be stored for one month and then PCT should be able to backup and recreate "Incident Case" as described in the specifications table.

2) The system can configure parameters for AI algorithms, set working hours, and make work plans based on actual requirements.

3) The system should be able to run all day long and perform 7 x 24 uninterrupted analysis over the video surveillance system.

4) The system must be able to detect events under daytime and night time lighting conditions, and can be used in indoor and outdoor environments.

5) The system shall be able to blur faces in stored snapshots or videos of events to ensure privacy.

5.1   Intelligent Video Analysis Algorithm Requirements

In this project, key production elements such as the yard area, trucks, and operators must have the following intelligent analysis capabilities and cover the areas presented in the:

1) **Vehicle Retrogade Detection:** The system can detect and distinguish external vehicles driving in the wrong direction on the road. If any vehicle drives in the wrong direction, an alarm is generated and reported. **The required coverage area is marked in red, while wherever possible PCT may decide to include more areas with this function with the project cameras that will be installed if available license and system resources meet minimum requirements.**
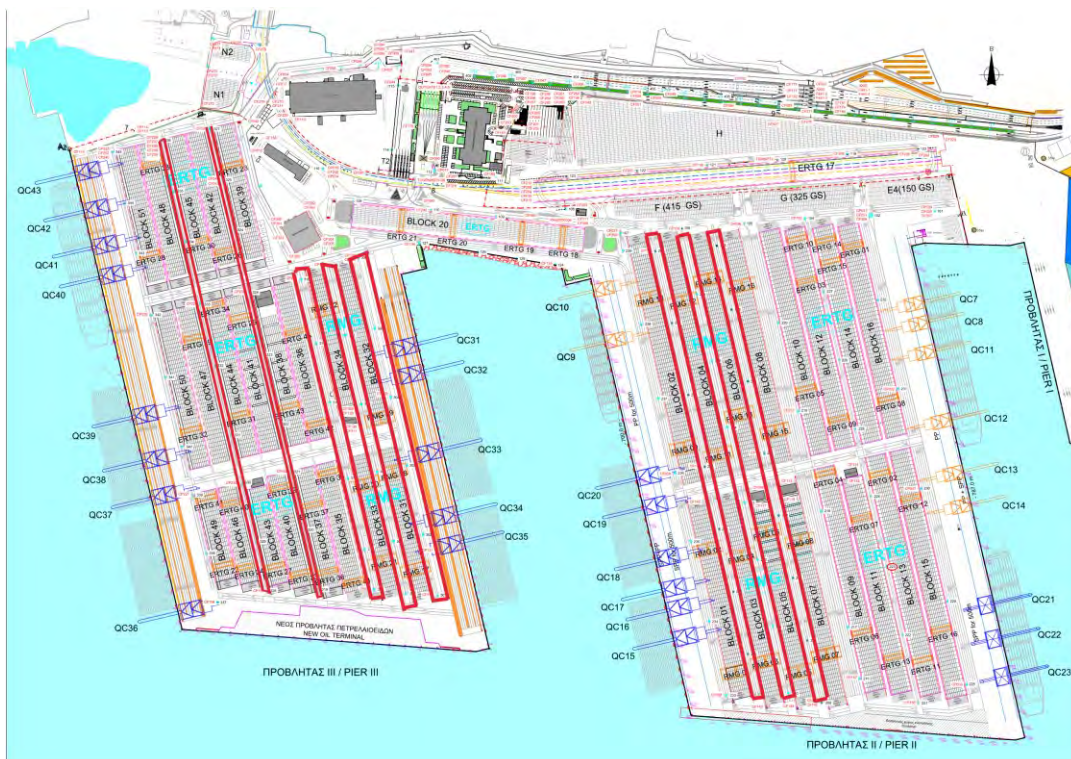
2) **Vehicle Speed Monitoring:** Detects the speed of vehicles on the road where the external truck (even internal trucks) is running. If the speed of the external truck exceeds the limit, an alarm is generated and reported. **The required coverage area is marked in red, while wherever possible PCT may decide to include more areas with this function with the project cameras that will be installed if available license and system resources meet minimum requirements.**
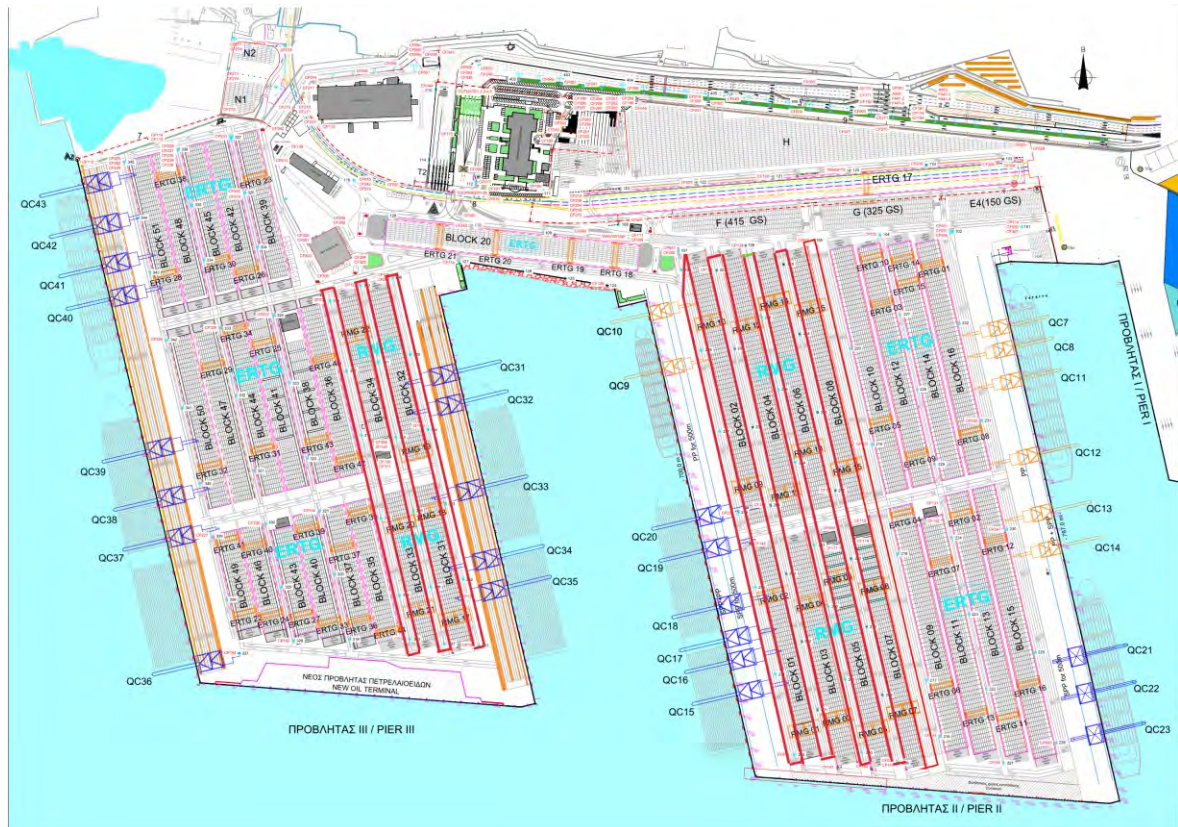
3) **External Trucks Detection:** PCT trucks are different with external trucks. They have special features, such as the vehicle shape, color, and PCT identifier. In the terminal, external trucks have planned working areas. So when the external vehicle is in a non-operation area or prohibited area, an alarm should be generated and reported. **The required coverage area is marked in red, while wherever possible PCT may decide to include more areas with this function with the project cameras that will be installed if available license and system resources meet minimum requirements.**
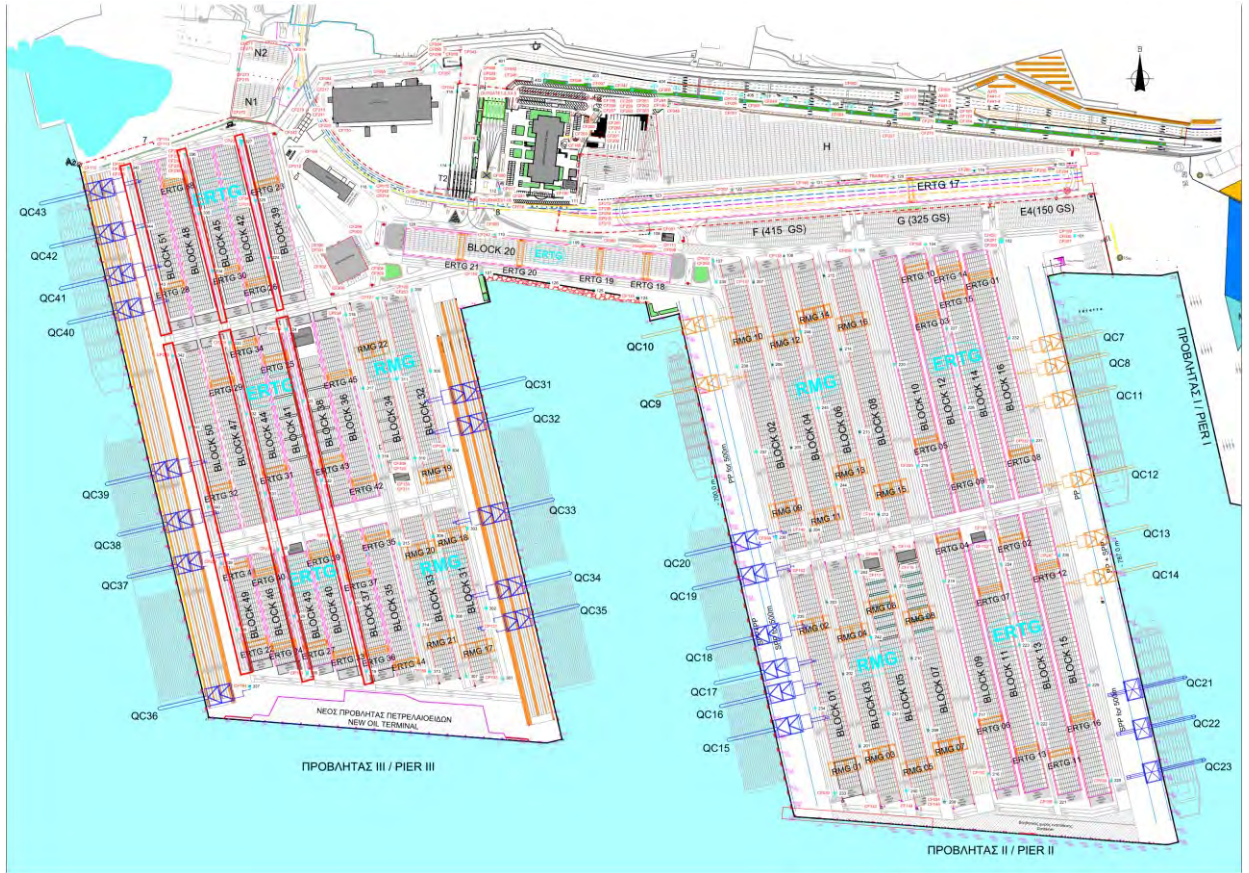
4) **RTGC & QC Runway Stop Detection:** If a vehicle is parked on the track of port machinery such as RTGC or QC (or other area determined from PCT user) for more than a predetermined time set by PCT user (i.e. 30 seconds), an alarm is generated and reported. **The required coverage area is marked in red, while wherever possible PCT may decide to include more areas with this function with the project cameras that will be installed if available license and system resources meet minimum requirements.**

   Since Pier-2 East is planned to be reconstructed in the future, PCT will decide in due time and before the project initiation by the awarded supplier, if the Pier-2 East area will include the installation of the AI functions and relevant equipment and amend accordingly the installation plan, while the relevant equipment and resources may be deployed in other PCT areas as per PCTs sole decision.
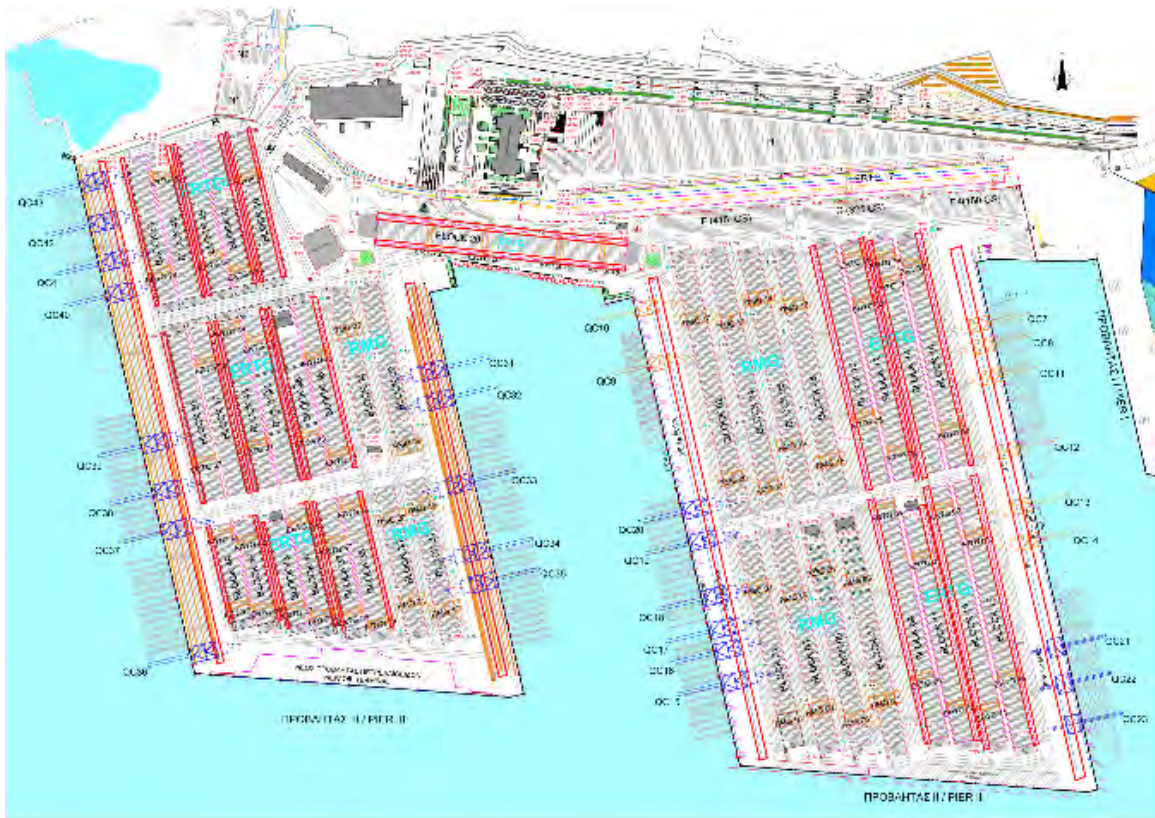
5) **RTGC Operation Vehicle Quantity Inspection:** When the number of vehicles waiting in the same RTGC or QC area (or other area determined from PCT user) exceeds a specified threshold (configurable), an alarm is generated and reported. **The required coverage area is marked in red, while wherever possible PCT may decide to include more areas with this function with the project cameras that will be installed if available license and system resources meet minimum requirements.**
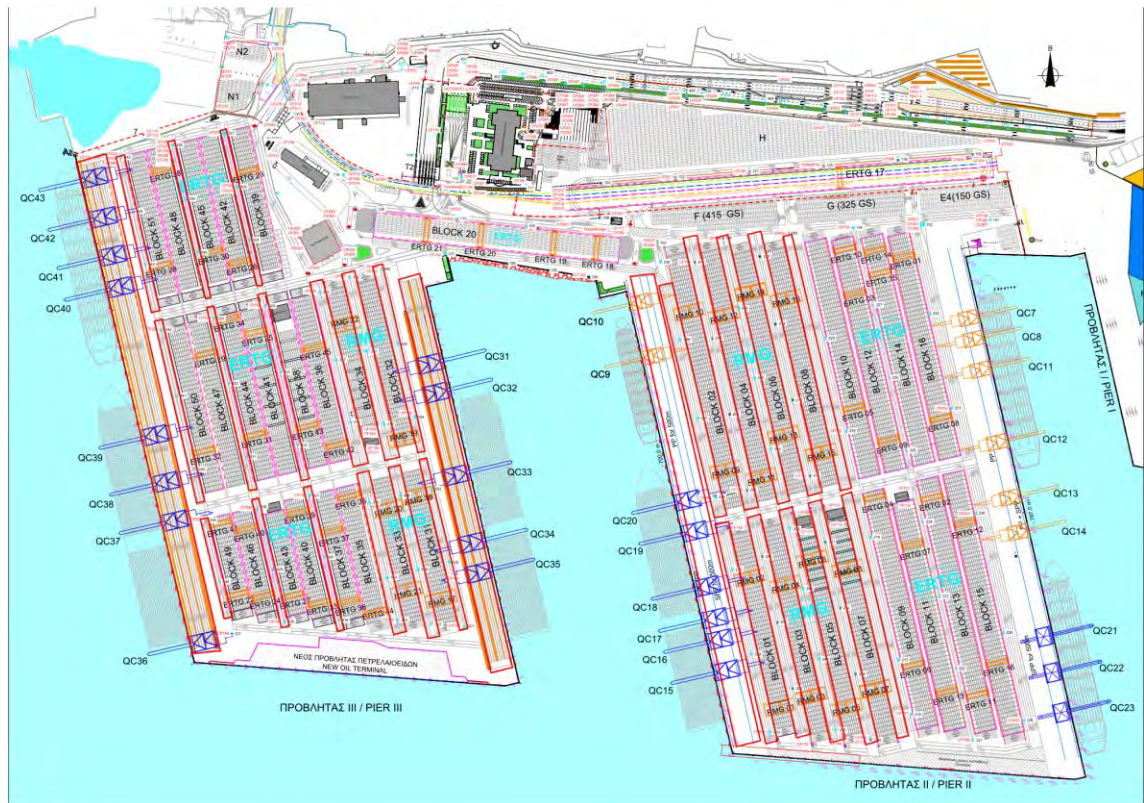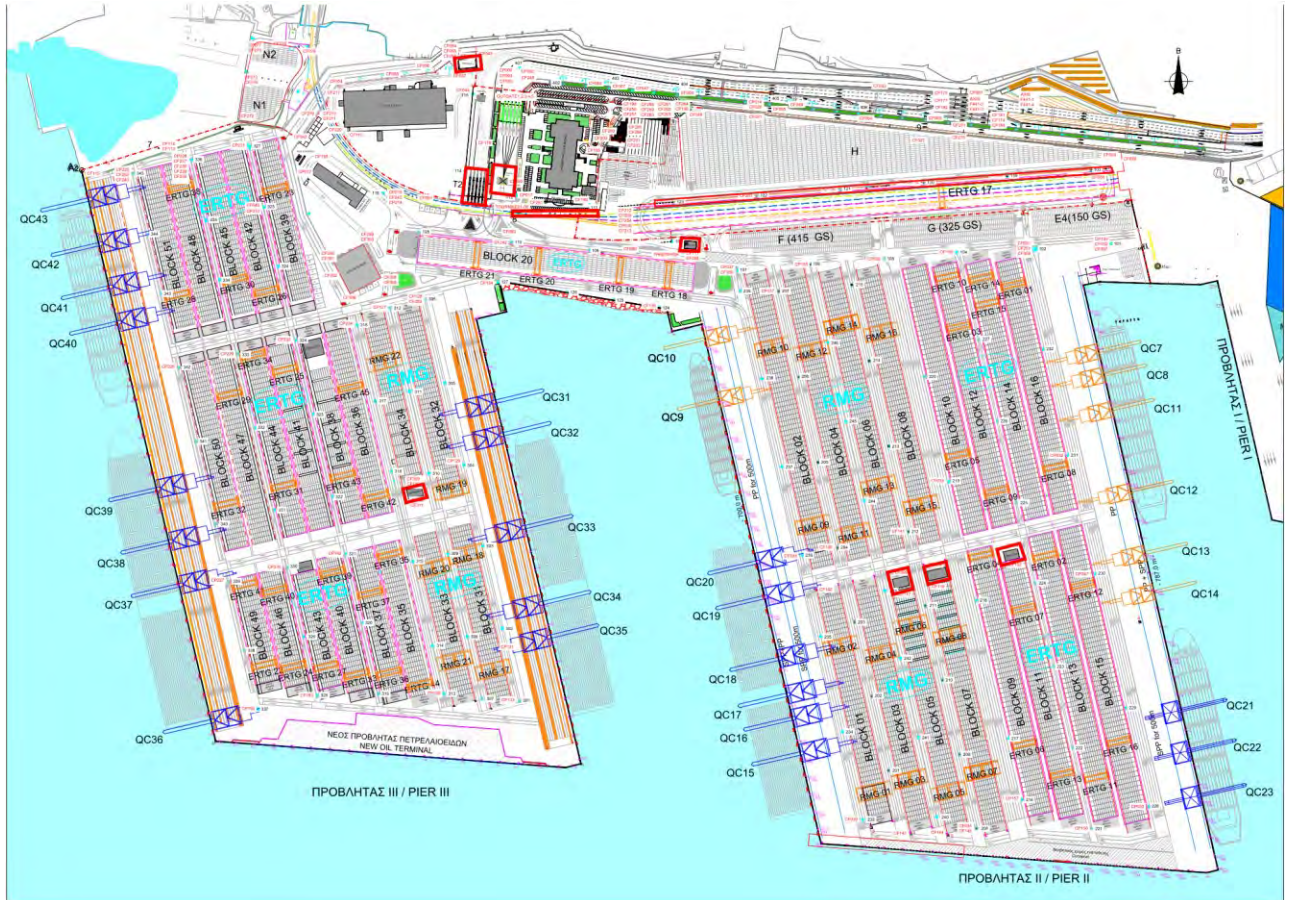
6) **Person Intrusion Detection:** If a person is detected to enter the restricted areas such as indicatively the automatic operation area of the wharf, railway, and substation, an alarm will be generated and reported. PCT user will be able to draw by itself the restricted areas. **The required coverage area is marked in red, while wherever possible PCT may decide to include more areas with this function with the project cameras that will be installed if available license and system resources meet minimum requirements.**

7) **Personal Protective Equipment Detection:** In the operation area of the wharf yard (or other area determined from PCT user), if a person is detected that is not wearing protective clothing such as reflective clothing and safety helmets as required, an alarm needs to be generated and reported. **The required coverage area is marked in green, while wherever possible PCT may decide to include more areas with this function with the project cameras that will be installed if available license and system resources meet minimum requirements.**

Since Pier-2 East is planned to be reconstructed in the future, PCT will decide in due time and before the project initiation by the awarded supplier, if the Pier-2 East area will include the installation of the AI functions and relevant equipment and amend accordingly the installation plan, while the relevant equipment and resources may be deployed in other PCT areas as per PCTs sole decision.

8) **Virtual Fencing:** If a person is detected in the perimeter area of the wharf (or other area determined from PCT user), an alarm is generated and reported. **The required coverage area is marked in blue, while wherever possible PCT may decide to include more areas with this function with the project cameras that will be installed if available license and system resources meet minimum requirements. The Virtual Fencing will be applied also at all PCT perimeter borders to enforce security.**

9) **Person Detection:** In dangerous areas such as the yard operation area of the wharf (or other area determined from PCT user), if a person is detected, an alarm needs to be generated and reported. **The required coverage area is marked in green, while wherever possible PCT may decide to include more areas with this function with the project cameras that will be installed if available license and system resources meet minimum requirements.**

10) **Smoke and Fire Detection:** In flammable and explosive areas including gas stations and substations at the wharf (or other area determined from PCT user), if smoke or fire is detected, an alarm is generated and reported. **The required coverage area is marked in red, while wherever possible PCT may decide to include more areas with this function with the project cameras that will be installed if available license and system resources meet minimum requirements.**
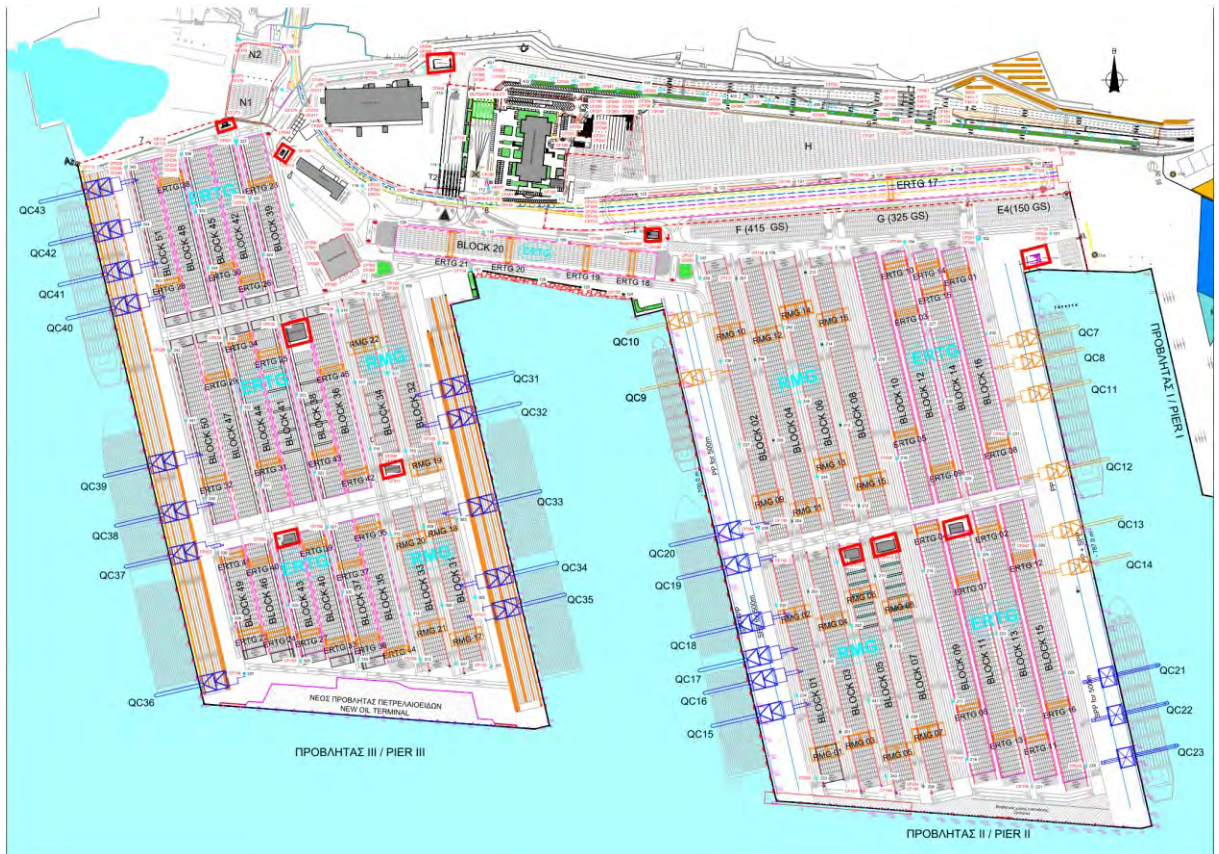
11) **Privacy Protection:** To protect the privacy of terminal operators, faces in the generated alarm data need to be blurred.

6   Digital Surveillance Solution Safety and Security Platform Requirements

The platform should be able to collect, manage, and query real-time alarm data, analyse it and aggregate the analysis results. It needs to display the location of cameras and alarm information on the vector map, showing the overall security situation of the terminal.

1) Provides basic video management capabilities to implement functions such as video preview, video query, and electronic map.

2) Provides intelligent management capabilities to implement functions such as alarm linkage and event processing and query. Implements alarm statistics, real-time event statistics, device statistics, and algorithm statistics.

3) Provides O&M management and situation visualization capabilities.

4) Video device access management is supported. Video data can be obtained by connecting to cameras through standard or non-standard protocols. Supports video standards such as GB/T 28181 and ONVIF.

Supports interconnection with proprietary protocols of video devices, including but not limited to SDK, RTSP, RESTful API, and CGI.

5) Supports the interconnection of audible and visual alarm devices.

6) All Apps can be displayed on any mobile device.

7) The Digital Surveillance Solution platform must able to manage the entire life cycle of video collection, video upload, AI intelligent analysis, alarm generation, alarm presentation and alarm handling as indicatively shown below:

6.1 Video Preview Requirements

1) Allows users to preview live video and switch between the primary and secondary streams by right-clicking a live video image in a single window.

2) Displaying live video in split windows, including 1 x 1 to 6 x 6 regular windows, and customizing the layout of the windows. A maximum of 9 x 9 windows are supported.

3) Allows users to zoom in on the live video image in a single window and zoom out the image by using the mouse.

4) Supports single-window live video image privacy protection. After the area is set to a private area, the private area cannot be viewed during live video preview.

5) Supports PTZ control, enabling/disabling PTZ control, omni-directional PTZ control, rotation speed control, digital zoom-in/out control, preset position configuration, preset position tour, and PTZ lock/unlock.

Supports aperture adjustment, lens focus adjustment, light enabling/disabling, wiper enabling/disabling, and PTZ driving using the mouse on the image.

6) Bookmarks can be added on the live TV preview page to mark exceptions and special situations.

6.2   Video Playback Requirements

1) Video viewing is supported. Allows users to select video channels and time for video playback. Supports video playback in standard windows and customized windows. A maximum of 16 windows can be played simultaneously. Allows users to zoom in on the live video image in a single window and zoom out the image by using the mouse.

2) Allows users to right-click a live video image in a single window and choose Recording Playback from the shortcut menu to quickly switch to the recording playback page. Supports single-window live video image privacy protection. After the area is set to a private area, the private area cannot be viewed during live video preview.

3) Allows users to download recordings. Users can select a video channel, start time, end time, and download path and file name. Supports batch download of recordings.

4) Users can select a customized time point to play back recordings. The time selection page displays the date when the recording is available. Users can pause, drag, play, fast play (2, 4, 8, or 16 times), and slow play. (1/2, 1-4, 1/ 8 multiples), upside down, etc.

6.3   Alarm Event Management Requirements

1) Receives and displays event alarms in real time. Users can customize whether to display the latest alarms. Allows users to quickly jump to the event query page and view all events.

2) An alarm is displayed on the electronic map. You can double-click the alarm to view the detailed information and review the handling. Quickly locate alarm points on a single alarm map.

3) Display concerned alarms by device, alarm severity, handling status, and alarm type.

4) Allows users to handle alarms. Users can select No Handle, Handle, or false alarms. Users can enter handling suggestions in quick input or customized mode.

6.4   Alarm Event Statistics Requirements

1) Supports heat chart statistics.

2) Query by device, time, and other conditions.

3) Supports the statistics by time segment, and displays the statistics result in a line chart and a bar chart. Displays the proportion in a pie chart and supports data export.

6.5 O&M Management Requirements

1) Supports device networking visualization.

2) Monitors the system status, including the CPU usage, memory usage, disk usage, and traffic.

3) Collects statistics on online and offline video devices, including the offline rate and offline devices of each vendor. Supports statistics on the device offline rate and top 5 devices. The statistics period can be the current day, week, month, or year.

4) Allows users to view operation logs. Querying user operation records by user and time; Logs include the operation user, operation IP address, access module, and content. Operation logs can be exported.

6.6 Digital Map Requirements

1) The Supplier should provide GIS platform to depict all action on a map as mentioned in specification table

2) Displaying the electronic map list by level, adding, deleting, and updating the electronic map, configuring the electronic map name, and importing the static map. The map file format can be JPEG/BMPJPEG/PNG/PBM/PGM/PPM/XBM/XPM.

3) Allows users to zoom in or out on a map.

4) Allows users to add video device locations on the electronic map. Adjusts the position and angle of the device. After a map is added to the device, the icon of the added map is displayed in the resource tree. After device deployment is complete, you can perform operations based on the device location, including double-clicking and previewing the video, right-clicking and previewing the video in real time, playing back the video, pushing the video to the video wall, and viewing details.

6.7 System Management Requirements

1) Supports device addition, device parameter configuration, directory site configuration, and user configuration.

2) Allows users to add, delete, modify, and query event rules. Allows users to customize event specification names. Allows users to set the event linkage scope to unlimited or restricted device sources. Allows users to set the time limit to unlimited or restricted time periods.

3) Supports linkage client response, video wall, email sending, PU shouting, PTZ control, and anti-control.

7 Command Center Requirements

The solution should be able to stream to video wall or LED screens to any existing monitoring room, should able to display real-time monitoring images and comprehensive situation of the entire terminal. Cooperate with the terminal emergency management department to establish a management process of routine analysis, control, and onsite handling.

8 Equipment and Service Specifications

Refer to the Technical Specifications table

9 Auxiliary Engineering List

Reference for the number of systems and sites involved in the solution.

Note: The following table lists the items that may be involved in this project. However, this does not mean that the list is the most accurate. Based on the requirements in this document, the contractor needs to visit the PCT site, add or delete work items based on the actual situation, and provide a complete and accurate work item list required by the project to meet all requirements in this document.

Item	Sub-Item	Quantity	unit	Reference: Specification Description	Remarks
AI Application Platform	Digital Surveillance Solution Smart Port Safety and Security Platform	1	set		
Data Center Virtualization Platform	Supplier should propose (i.e. DCS, VMware, etc.)	1	set		
Video and Storage	Outdoor HD PTZ Camera	63	set		
	Outdoor HD Bullet Camera	83	set		
	VMS	5	set		
Network Device	Video access switch (industrial grade)	45	set		
	Data Center management switch	1	set		
AI algorithm & management	AI Manager	1	set		
	Vehicle Retrograde Detection	1	set		
	Speed monitoring for Vehicles	1	set		
	Detection of PCT truck or external	1	set		
	RTGC & QC Runway Stop	1	set		

Item	Sub-Item	Quantity	unit	Reference: Specification Description	Remarks
	RTGC Service Vehicle Limit Number Detection	1	set		
	Intrusion Detection	1	set		
	Detection of PPE	1	set		
	Virtual Fencing	1	set		
	Person recognition	1	set		
	Smoke and Fire Detection	1	set		
	Privacy Protection	1	set		
AI Inference Server Total 768 GB GPU resources	Requirements refer to Technical Specification Table		set		

Appendix B - Lists of Non-Compliances

- List of Non Compliance to the **Terms and Conditions**

No	Clause Number	Tender Requirement	Description of Non-Compliance	Reasons for Non-Compliance	Alternative Proposals

Note 1:   The Participant shall state specifically, in the respective tables above, if there are any non-compliance to the Instructions to Participants, Terms and Conditions, Schedules of Particulars of this Tender. The reasons for the non-compliance and any alternative proposal shall also be stated.

Note 2:   If there is no non-compliance, the Participant shall state "no non-compliance" in the respective tables.

- List of Non Compliance to the **Technical Requirements**

No	Clause Number	Tender Requirement	Description of Non-Compliance	Reasons for Non-Compliance	Alternative Proposals

Note 1:   The Participant shall state specifically, in the respective tables above, if there are any non-compliance to the Technical Specifications and Requirements of this Tender. The reasons for the non-compliance and any alternative proposal shall also be stated.

Note 2:   If there is no non-compliance, the Participant shall state "no non-compliance" in the respective tables.

Appendix C - GDPR Statement & Prequalification documents

Privacy Notice for
Suppliers CVs.EN.do

Pre-qualification documents

Qualification_Docu
ments_For_New_Sur

ANNEX D

PARTICIPATION LETTER OF GUARANTEE TEMPLATE

(place - date)

From: (Eligible Bank)

  (the "**Bank**")

To: **PIRAEUS CONTAINER TERMINAL SINGLE MEMBER S.A. with registered offices located at 85, Akti Miaouli & 2, Flessa Str, 185 38 Piraeus, Greece**

  (the "**Beneficiary**")

LETTER OF GUARANTEE NO. _____ FOR _____ (_____ €)

Dear Sirs,

1.   We are pleased to inform you by virtue of the present letter, we unconditionally and irrevocably guarantee, waiving all rights of division and discussion and the right to invoke any objections, in particular, any objection stipulated under Articles 851–856, 862−864 and 866−869 of the Greek Civil Code, in favour of [_____ *(registered name), with registered seat at the Municipality of ____, street____ no ___* (the "**Participant**"), up to the amount of EUR 60.000,00 €, to which amount our guarantee is limited to, with regards to the participation of the aforementioned Participant in the tender process launched by the Beneficiary with the Invitation to Tender for the **Procurement of Digital Surveillance Solution** dated _____ for the award of the aforesaid procurement (hereinafter referred to as the "**Invitation to Tender**") which will be held on ____ or any other date in case of any postponement thereof (hereinafter referred to as " **Submission Deadline**"), pursuant to the Invitation to Tender.

2.   This letter of guarantee is provided solely in connection with the obligations of the Participant and members of the Participant, which arise from participating in the aforementioned tender process in accordance with the Invitation to Tender.

3.   This guarantee is valid for a period of six (6) months from the Submission Deadline. The validity period of this letter of guarantee may be extended by a newer letter of ours to you,

following the submission of a relevant request by the Participant prior to its expiry. This letter of guarantee ceases to be in force even before its expiration date, if we receive your prior written declaration that we may consider ourselves free of any obligation arising therefrom or with its return to us for cancellation or after the payment by the Bank to the Beneficiary of the total sum of our guarantee.

4.   The above amount is reserved at your disposal, and we shall pay this to you in its entirety or partly, without any excuse nor any objection or dispute, within five (5) business days upon receipt of your first simple written notice to that effect.

5.   This letter of guarantee is governed by the laws of Greece and any dispute arising out of or in connection with this letter falls under the exclusive jurisdiction of the courts of Athens[1].

Done at [insert place], on [insert date]

[Signature]

_____

On behalf of

[Bank]

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[1] IMPORTANT NOTE: PCT is willing to apply the Uniform Rules for Demand Guarantees ("URDG" 758) to the extent that they are consistent with the terms and conditions of the present letter of guarantee, upon your request and evaluation thereof by PCT.

ANNEX E

Terminal layout attached below indicating possible locations that the cameras and AI functions may be applied as per Appendix A, item #6.

PCT Terminal Yard Layout (with camera

Camera Mapping.pdf