

**PART 1**  
**Terms of Quotation**

**1. Invitation to Quotation**

The Quotation is invited for the execution of the whole (or any part) of the Products more particularly set out in the Particular Specification (Part 3) and the Schedule (Part 4) subject to and in accordance with these Terms of Quotation, the General Conditions set out in Part 2 hereof and the Special Conditions of Contract set out in Part 5.

**2. Quotation**

- (a) The Quotation relates to the execution of all (or any part) of the Products during the contract period as specified in the Particular Specification and the Schedule set out in Part 3 and Part 4 respectively.
- (b) The Particular Specification and the Schedule issued with the Quotation must not be altered by the Bidder. Any modification of the Particular Specification and the Schedule considered necessary by the Bidder shall be the subject of a separate letter accompanying the Quotation. Figures shall not be altered or erased; any alteration shall be effected by striking through the incorrect figures and inserting the correct figures in ink above the original figures. All such amendments shall be initialed by the Bidder in ink.
- (c) The Quotation is to be submitted in **duplicate** and is to be completed in ink or typescript. Otherwise, the Quotation may not be considered.
- (d) The Quotation may not be considered if incomplete information is given or if any particulars and data asked for in the Schedule are not furnished in full.
- (e) The Quotation shall be submitted by hand or courier to the following address:

Procurement Department  
(Attn.: Ms. Harrit Chan)  
Logistics and Supply Chain MultiTech R&D Centre Level 11, Cyberport 2  
100 Cyberport Road Hong Kong

### 3. Quotation Closing Date and Time

(a) Quotation Closing Date and Time

The Quotation will be closed at 5pm (Hong Kong time) on **29 July 2024**.

The Quotation must be submitted before the Quotation Closing Date and Time (Hong Kong time). Late quotation will not be considered.

(b) Quotation Closing Date and Time Extension in case of Rainstorm/Typhoon

In case a black rainstorm warning or typhoon signal No. 8 or above is in force for any duration between 9:00 am (Hong Kong time) and 12:00 noon (Hong Kong time), the Quotation Closing Time will be extended to 12:00 noon (Hong Kong time) on the next weekday (i.e. except Saturday and Sunday) other than public holiday.

### 4. Charges

(a) The charges to be quoted by the Bidder shall be in Hong Kong dollars. Prices quoted in foreign currency will not be considered. Such charges shall be net and where applicable, they shall include trade and cash discounts and all expenses incidental to the due and proper performance of the Contract by the Bidder.

(b) If, at the request of the Bidder, assistance of any Centre staff is provided after normal working hours (i.e. Mondays to Fridays, inclusive, 9:00 am to 5:45 pm; Saturdays, Sundays and public holidays excluded), the Bidder will be responsible for the overtime remuneration, subsistence allowances and travelling expenses of such Centre staff directly engaged in such assistance.

(c) Price quoted

It will be assumed, unless the Bidder clearly stipulates otherwise, that his offer will remain valid for the duration of the Contract. Therefore no request for price variation will be considered. If, however, the Bidder wishes to submit a conditional offer which contains a price variation clause, he may do so, with clear understanding that such an offer may prejudice the award of the Contract. In any such case the basis of the price variation formula shall be clearly stipulated and accepted by the Centre in writing.

(d) Accuracy of Quotation Prices

The Bidder shall make certain the prices quoted are accurate before submitting the Quotation. Under no circumstances will the Centre accept any request for price adjustment on grounds that a mistake has been made in the quotation prices.

### 5. Basis of Acceptance

The Quotation will be accepted on an “overall” basis. Incomplete quotation will not be considered. The Centre reserves the right to accept none, any or part of the offer.

## **6. Acceptance**

The successful Bidder will receive as an indication of acceptance a fax or a letter of acceptance. This fax or letter of acceptance shall constitute a binding contract. Bidders who do not receive any notification within the validity period of their offers shall assume that their quotations have not been accepted.

## **7. Alternative Proposals and Negotiation**

Alternative proposals which improve the value of the offer may be submitted. The Centre reserves the right to negotiate with any Bidder about the terms of the offer.

## **8. Consideration of Offers**

The Centre is not bound to consider an offer in the event of a claim being received by the Centre alleging or the Centre having grounds to believe that the deliverables to be supplied by the Bidder under the Quotation are infringing copyrights or have otherwise infringed the intellectual property rights in the goods or product of a third party.

## **9. Saving**

The Centre is not bound to accept the lowest or any offer and reserves the right to accept none, all or any part of any offer at any time within the period mentioned in clause 3 hereof.

## **10. Documents of Unsuccessful Bidders**

Documents of unsuccessful Bidders may be destroyed not less than three months after the date the Contract has been awarded.

## **11. Latest Audited/Unaudited Accounts**

The Bidder shall upon request by the Centre and its representatives, whilst his Quotation remains open, submit the latest audited accounts or unaudited accounts as appropriate for checking within 14 days from the date of such request. Late submission will not be considered.

## **12. Complaints about Quotation Invitation Process or Contract Awards**

The quotation invitation process is subject to internal monitoring to ensure that contracts are awarded properly and fairly. Any Bidder who feels that his offer has not been fairly evaluated may write to the Centre's Company Secretarial Manager who will personally examine the complaint and refer it to the approving authority for consideration if it relates to procedures followed. The Bidder shall lodge the complaint before disposal of documents of unsuccessful Bidders which shall be within 3 months after the award of the Contract.

## **13. Personal Data Provided**

(a) The Bidder's personal data provided in the Quotation will be used for quotation

evaluation and contract award purposes. If insufficient and inaccurate information is provided, the Quotation may not be considered.

- (b) The Bidder shall acknowledge and consent that the Bidder's personal data provided in the Quotation may be disclosed to government departments and non-government organizations.
- (c) The Bidder shall have the right of access and correction with respect to personal data as provided for in Sections 18 and 22 Principle 6 of Schedule 1 of the Personal Data (Privacy) Ordinance. The right of access includes the right to obtain a copy of the Bidder's personal data provided in the Quotation.
- (d) Enquiries concerning the personal data collected by means of the Quotation, including the making of access and corrections, shall be addressed to the Procurement Officer issuing the Quotation.

#### **14. Contractors' Performance Monitoring**

The Bidder is advised that shall he be awarded the Contract his subsequent performance will be monitored and may be taken into account when his future quotations are evaluated. The Quotation will be rejected if by the Quotation Closing Date, the Bidder is under suspension from submitting quotations for the Centre.

#### **15. Cancellation of Quotation**

Without prejudice to the Centre's right to cancel the Quotation, where there are changes of requirement after Quotation Closing Date for operational or whatever reasons, the Centre is not bound to accept any conforming quotation and reserves the right to cancel the Quotation.

#### **16. Offers to be Bound**

- (a) All parts of the Quotation Documents submitted and offered by the Bidder will be bound on the Bidder. A Bidder is deemed to have satisfied itself as to the correctness of its quotation. In the event that a Bidder discovers an error in its quotation after the quotation has been deposited, the Bidder may correct the same in a separate letter. No request for adjustment or variation whatsoever will be allowed or entertained after the Quotation Closing Date.
- (b) Should it be found on examination by the Centre after the Quotation Closing Date that a Quotation has made errors in the figures stated in its quotation that may have a significant effect on the quotation, the Bidder may be informed of the errors and asked to confirm in writing whether it is prepared to abide by the corrected figures.
- (c) The Centre may require a Bidder to clarify any aspect of its quotation by way of provision of additional information or documentary proof. A quotation may not be considered if the Bidder fails to comply with the Centre's request for clarification.
- (d) Correspondence exchanged between the Centre and the Bidder about the quotation may upon the parties' agreement form part of the Contract after the Contract has been awarded.

- (e) Variation to any part of the Contract will not be allowed after the Contract has been awarded unless prior approval has been obtained from the Centre Representative.

## **17. Prevention of Bribery Ordinance**

Offering an advantage to any Centre employee is an inducement to or reward for giving assistance in procuring any tender with the Centre will render the quotation null and void.

## **18. Warranty Against Collusion**

- (a) By submitting a quotation, a Bidder is regarded to have represented and warranted to the Centre that in relation to the Invitation to Quotation:
  - (i) save with the prior written consent of the Centre, it has not communicated and will not communicate to any person other than the Centre the amount of any price submitted in its quotation;
  - (ii) it has not fixed and will not fix the amount of any price submitted in its quotation by arrangement with any person;
  - (iii) it has not made and will not make any arrangement with any person as to whether it or that other person will or will not submit a quotation; and
  - (iv) it has not otherwise colluded and will not otherwise collude with any person in any manner whatsoever in the tendering process.
- (b) In the event that a Bidder is in breach of any of the representations and/or warranties in sub-clause (a) above, the Centre shall be entitled to, without compensation to any person or liability on the part of the Centre:
  - (i) reject the Bidder's quotation;
  - (ii) if the Centre has accepted the quotation, withdraw its acceptance of the Bidder's quotation; and
  - (iii) if the Centre has entered into the contract with the Bidder, terminate the contract.
- (c) By submitting a quotation, a Bidder is regarded to have undertaken to indemnify and keep indemnified the Centre against all losses, damages, costs or expenses arising out of or in relation to any breach of any of the representations and/or warranties in sub-clause (a).
- (d) A breach by a Bidder of any of the representations and/or warranties in sub-clause (a), may prejudice its future standing as a Centre contractor or service provider.
- (e) Sub-clause (a) shall have no application to Bidder's communications in strict

confidence with its own insurers or brokers to obtain an insurance quotation for computation of the prices quoted in its quotation, or with its professional advisers, consultants or sub-contractors to solicit their assistance in preparation of its quotation.

- (f) The rights of the Centre under sub-clauses (b) to (d) are in addition to and without prejudice to any other rights or remedies available to it against the Bidder.
- (g) Nothing in this clause shall limit the Centre's absolute right to determine or to request any other information/supporting documents/items in connection with or arising out of this Invitation to Quotation.

## **19. Enquiries**

Any enquiries from the Bidder concerning this quotation invitation document up to the date of lodging their Quotation with the Centre shall be in writing and shall be submitted to:

Procurement Officer  
(Attn.: Ms. Harrit Chan)  
Logistics and Supply Chain MultiTech R&D Centre  
Level 11, Cyberport 2  
100 Cyberport Road  
Hong Kong

Telephone: (852) 3796 9264

Facsimile: (852) 3106 0202

E-mail Address:

[harrit.chan@lscm.hk](mailto:harrit.chan@lscm.hk)

**PART 2**  
**General Conditions of Contract**

**1. Products and Variations**

- (a) The Products to be supplied under the Contract shall be as laid down in the Particular Specification, the Schedule and Special Conditions of Contract and shall be provided, as and when required, to the satisfaction of the Centre or its nominated staff. All orders placed under the Contract shall be issued in writing and the Centre will not be responsible for products supplied and/or services performed on oral instructions issued by any person whomsoever.
- (b) The Contractor shall not extend the Products beyond the requirements specified in the Particular Specification and the Schedule except as directed in writing by the Centre; but the Centre may, subject to the proviso hereinafter contained, at any time during the contract period by notice in writing direct the Contractor to alter, amend, omit, add to, or otherwise vary any of the Products and/or the contract period, and the Contractor shall carry out such variations, and be bound by the same conditions, so far as are applicable, as though the said variations were stated in the Schedule.

Provided that no such variation shall, except with the consent in writing of the Contractor, involve a net addition to or deduction from the contract price of more than ten per cent or the contract period of more than six months, unless otherwise mutually agreed by the Contractor and Centre.

- (c) Where a variation has been made to the Contract the amount to be added to or deducted from the contract price in accordance with that variation shall be determined in accordance with the rates specified in the Schedule so far as the same may be applicable and where rates are not contained in the said Schedule, or are not applicable, such amount shall be such sum as is reasonable in the circumstances.

Due account shall be taken of any partial execution of the Products which are rendered useless by any such variation.

**2. Assignment**

The Contractor shall not, without the written consent of the Centre, assign or otherwise transfer the Contract, or any part share or interest therein, and the performance of the Contract by the Contractor shall be deemed to be personal to him.

**3. Quality of Products**

- (a) The Products shall be as specified in the Particular Specification and the Schedule and shall fulfil all the conditions and terms of any drawings and specifications (if any) supplied to the Contractor.
- (b) Any drawings and specifications reasonably required for the Contractor's guidance in the execution of the Contract shall be provided by Centre free of charge but shall be returned on completion of the Contract.

#### **4. Inspection and Acceptance**

All Products provided in pursuance of the Contract shall be subject to inspection and shall not be deemed to have been accepted unless either:

- (a) The Centre shall so certify; or
- (b) The Products are not rejected as being unsatisfactory within 21 days of the date upon which they were executed.

#### **5. Rejections**

- (a) Without prejudice to any statutory rights, the Centre or the nominated staff may reject any Services (or part thereof) which do not strictly conform to the conditions of sub-clause (a) of clause 3 hereof.
- (b) Within 24 hours of being notified in writing of the rejection of any Services the Contractor shall be required to take the necessary action to rectify such rejected Services.

#### **6. Centre Property**

When the Centre property is issued to the Contractor under the Contract, the Contractor shall be responsible for the due return of all such property. Should any such property be lost or damaged from any cause whatsoever while in the possession or control of the Contractor or his servants, workmen or agents, the Contractor shall pay for the same at total original cost plus 20%. A count of the articles or material in the possession of the Contractor may be made at any time by the Centre and the Contractor shall render such assistance as is necessary for this purpose.

#### **7. Centre Premises/Contractor's Premises**

- (a) The Contractor, shall ensure that all persons engaged by him in carrying out the Contract keep to such parts of Centre premises as are necessary for the due discharge of the Contractor's obligations under the Contract.
- (b) Where the Services are carried out on the Contractor's premises such premises shall be open to inspection by the Centre or the nominated staff at all reasonable times.
- (c) The safety of any vehicles used by the Contractor and brought alongside or onto Centre premises, as the case may be, shall be the responsibility of the Contractor, who shall indemnify the Centre in respect of any loss or damage to such Centre premises.



## **8. Payment for Services**

The Contractor shall render an invoice to the Centre nominated staff:-

- (a) an itemized account on or before the 10<sup>th</sup> or the 25<sup>th</sup> day of each month of the charges which he considers due to him for Products delivered under the Contract; or
- (b) on completion of any separate portion of the Products (in respect of which a charge is laid down in the Schedule) an account for such portion.

All such accounts shall be signed by the Centre's nominated staff. Unless otherwise agreed by the Centre such accounts shall be paid within 30 days of the date upon: -

- (i) where the said accounts are signed by the Centre or the nominated staff, or
- (ii) where the Products have been accepted pursuant to clause 4 of the General Conditions herein

whichever date is the earlier.

## **9. Illegal Workers**

- (a) The Contractor undertakes not to employ illegal workers in the execution of any Centre contracts. Should the Contractor be found to have employed illegal workers in breach of this undertaking, the Centre Representative may, on behalf of the Centre, by notice in writing, terminate the Contract and the Contractor is not entitled to claim any compensation.
- (b) The Contractor shall be liable for all expenses necessarily incurred by the Centre as a result of the termination of the Contract.

## **10. Default**

If the Contractor shall fail to deliver all or any of the Products provided for in the Contract within the Contract period or such extended period as may be agreed in accordance with clause 1(b) of the General Conditions hereof, the Centre may at its absolute discretion terminate the whole or any part of the Contract by notice in writing to the Contractor, but without prejudice to any claims by the Centre for breach of Contract including but not limited to its right of Centre to assign the balance of the undelivered Products to another contractor or contractors whereupon the Contractor shall be liable for any sums so incurred in excess (hereinafter called 'any excess') of the Contract price.

## **11. Recovery of Sums Due**

Whenever under the Contract any sum of money shall be recoverable from or payable by the Contractor, the same may be deducted from any sum then due or which at any time thereafter may become due to the Contractor under the Contract or any other Centre contracts.

## **12. Liability for Damages or Compensation**

- (a) Centre and its employees or agents shall not be under any liability whatsoever for or in respect of:
  - (i) any loss of or damage to any of the Contractor's property or that of its employees or agents however caused (whether by any Negligence of the Centre or any of its employees or agents or otherwise).
  - (ii) any injury to or death of any of the Contractor's employees or agents save and except any such injury or death caused by the Negligence of the Centre or any of its employees or agents.
- (b) The Contractor shall indemnify the Centre and its employees or agents against any claim or demand made against or liability incurred (including all costs, charges or expenses whatsoever) by the Centre or any of its employees or agents in respect of:
  - (i) any loss, damage, injury or death referred to in sub-clause(a) of this clause (save and except injury or death caused by the Negligence of Centre or any of its employees or agents).
  - (ii) any loss or damage sustained by or any injury to or death of any third party in consequence of any Negligence of the Contractor or any of its employees or agents.
- (c) The Contractor shall indemnify the Centre against any loss of or damage to any property of the Centre or of any of its employees or agents or any injury to any employee or agent of the Centre arising out of the Negligence of the Contractor or any of its employees, sub-contractors or agents.
- (d) For the purposes of this clause 'Negligence' shall have the same meaning as that assigned to it in Section 2(1) of the Control of Exemption Clauses Ordinance.

## **13. Policy of Insurance and Compensation**

- (a) The Contractor shall effect a policy of insurance against all claims, demands or liability under the Contract with an insurance company approved by Centre (which approval shall not be unreasonably withheld) and shall continue such insurance during the continuance of the Contract and shall when required, deposit with the Centre Representative for safe keeping during the contract period such policy of insurance together with the receipt of payment of the current premium.
- (b) If the Contractor shall fail to effect and keep in force the insurance referred to or

any other insurance which he may be required to effect under the terms of the Contract then and in any such cases Centre may effect and keep in force any such insurance and pay such premium or premiums as may be necessary for that purpose and from time to time deduct the amount so paid by Centre as aforesaid from any moneys due or which may become due to the Contractor or recover the same as a debt due from the Contractor.

- (c) In the event of any of the Contractor's employees or agents suffering any injury or death in the course of or arising out of the Contract and whether there be a claim for compensation or not, the Contractor shall within 7 clear working days give notice in writing of such injury or death to the Centre Representative.

#### **14. Bankruptcy**

The Centre may at any time by notice in writing summarily terminate the Contract without entitling the Contractor to compensation in any of the following events:

- (a) if the Contractor shall at any time be adjudged bankrupt, or shall have a receiving order or orders for administration of his estate made against him, or shall take any proceedings for liquidation or composition under any Bankruptcy Ordinance for the time being in force, or make any conveyance or assignment of his effects or composition or arrangement for the benefit of his creditors or purports so to do; or
- (b) if the Contractor, being a company shall pass a resolution or the court shall make an order for the liquidation of its assets, or a receiver or manager shall be appointed on behalf of the debenture holders, or circumstances shall have arisen which entitled the court or debenture holders to appoint a receiver or manager.

Provided always that such determination shall not prejudice or affect any right or action or remedy which shall have accrued or shall accrue thereafter to the Centre.

#### **15. Corrupt Gifts**

- (a) If the Contractor or any employee or agent of the Contractor shall be found to have committed an offence under the Prevention of Bribery Ordinance (Chapter 201) or any subsidiary legislation made thereunder or under any law of a similar nature in relation to the Contract or any other Centre contracts, the Centre Representative may, on behalf of the Centre, summarily terminate the Contract, without entitling the Contractor to any compensation therefor.
- (b) The Contractor shall be liable for all expenses necessarily incurred by the Centre as the result of the termination of the Contract.

#### **16. Consent to Disclosure**

The Centre shall have the right to disclose whenever it considers appropriate or upon request by any third party (written or otherwise) information on the awarded Contract, without any further reference to the successful Contractor, the name and address of the successful Contractor, description of Products and the amount of the Contract.

## **17. Publicity**

The Contractor shall submit to the Centre all advertising or other publicity material relating to the Contract or the products supplied or other work done in connection with the Contract wherein the Centre's name is mentioned or language used from which a connection with the Centre can reasonably be inferred or implied. The Contractor shall not publish or use any advertising or other publicity material without the prior written consent of the Centre.

## **18. Governing Law**

The Contract shall be governed by and construed in accordance with the laws of Hong Kong and the parties hereby agree to submit to the jurisdiction of the courts of Hong Kong in relation to any matters arising out of the Contract.

## **19. Admission of Contractor Personnel to Centre Premises**

- (a) Upon request from time to time by the Centre, the Contractor shall provide to the Centre a list of the names, posts, staff identity card numbers, addresses and telephone numbers of all Contractor's employees, agents, sub-contractors and those employees and agents of the aforementioned sub-contractors (collectively "Relevant Personnel") who may at any time require admission on behalf of the Contractor to any premises occupied by the Centre for the purposes of the Contract if so required by the Centre Representative, and in that event such list shall specify the capacities in which those persons are employed by or connected with the Contractor and shall contain such other particulars as the Centre Representative may reasonably require.
- (b) The Contractor shall ensure that while any of the Relevant Personnel is on the Centre's premises they will conform to the Centre's normal codes of staff and security practice.
- (c) The Centre Representative reserves the right to refuse to admit to the Centre premises any person, whose admission would be, in the reasonable opinion of the Centre Representative, undesirable.
- (d) In the event that the Contractor fails to comply with this Clause 19 and it is determined that such failure is prejudicial to the interests of the Centre, the Centre Representative may thereupon terminate the Contract forthwith pursuant to Clause 4 of the Special Conditions of Contract.

## **20. Order of Precedence**

In the event that there is any conflict, contradiction or ambiguity between any documents which form part of the Contract, the following order of precedence shall be applied in order to resolve any such conflict, contradiction or ambiguity:

- (a) Special Conditions of Contract;
- (b) Particular Specification;
- (c) General Conditions of Contract; and
- (d) Schedule.

### **PART 3**

## **Particular Specification**

### **1. Scope Of Work**

Objective:

Solution of a system includes installation of Hill Fire Detectors (HFD) at eleven (11) Fire Lookouts in the country parks, A.I. machine learning development, a User Control System (UCS) at Fire Control Centre and mobile devices as well as the supporting communication (between HFD and UCS) and data storage system.

The Services of the Tender shall include the following major tasks:

- (a) Project Inception Report
  - (i) Submission of an inception report detailing the overall work plan;
  - (ii) Conduct site investigation;
  - (iii) Submit detailed system design;
  - (iv) Submit design solution for installation of HFD and alternate power source (where applicable) at respective Fire Lookouts; and
  - (v) Procurement of equipment (hardware and software) for setup of the System.
- (b) Installation of the eleven (11) HFD, A.I. Development and distribution of servers middleware
  - (i) Site preparation and logistic arrangement for installation of HFD and System components at the Fire Lookouts;
  - (ii) Installation and testing of HFD at the Fire Lookouts of country parks;
  - (iii) Installation of a distribution server middleware i.e. Video Storage System (VSS) at each Fire Lookout.
- (c) Set up of UCS, A.I. Development and conduct User Acceptance Test (UAT)
  - (i) Set up of UCS and interface development at Fire Control Centre and mobile device including but not limited to mobile tablets;
  - (ii) Incorporation of A.I. machine learning and development of model for detecting and monitoring of hill fires accurately, including the feature of false alarm reduction;
  - (iii) Testing and fine-tuning of the UCS and A.I. technology;
  - (iv) Conducting UAT upon fulfilling the performance requirements; and
  - (v) Submission of report of UAT.
- (d) Publication of user guide and training for administrators
- (e) Review, final report and executive summary
- (f) Services in 12-month Defects Liability Period
- (g) Other related tasks
- (h) All installation works shall be complied with relevant legislation, guidelines and guidance notes, including but not limited to,
  - (i) Employment Ordinance, Chapter 57,
  - (ii) Factories and Industrial Undertakings Ordinance, Chapter 59
  - (iii) Employees' Compensation Ordinance, Chapter 282
  - (iv) Occupational Safety and Health Ordinance, Chapter 509
  - (v) Minimum Wage Ordinance, Chapter 608
  - (vi) Prevention of Heat Stroke at Work published by the Labour Department
  - (vii) The Construction Site (Safety) Regulation
  - (viii) The Code of Practice for Metal Scaffolding Safety

- (ix) The Code of Practice for Bamboo Scaffolding Safety
- (x) Guidance Notes on Safe Use of Power-operated Elevating Work Platforms
- (xi) Overview of Work-at-Height Safety

- (i) The Services shall cover all associated works including but not limited to electrical works, structural works, building services works and builder's works necessary for completing the installation and performing the maintenance services properly.
- (j) The tasks shall include the design, supply, delivery, installation, testing and commissioning of the required new system. All equipment and fixtures of the system(s), if any, include without limitation power controllers and cables dedicated for or belonging to the system, in particular the Miniature Circuit Breaker(s) (MCB(s)), power cables from the MCB(s) to the equipment, local & remote controllers and enclosure cabinets, shall be provided with new equipment and associated controlling devices / cables / installation to the specification unless the items are brand-new provided for the new systems or otherwise stated specifically. The Contractor shall design, supply and install the System together with all necessary hardware and software (with perpetual licenses or license until the expiry of the system lifetime) with all related accessories for provision of the System. The Contractor shall install the equipment / devices at the locations agreed by LSCM. Compatibility between the equipment and devices installed under this Tender and those existing shall be ensured by the Contractor through its own investigation and testing and shall be fully demonstrated to LSCM.

## 2. Requirements of this Work Assignments

The successful bidding firm ("the Service Provider") shall provide the Services so as to accomplish the objectives stated in clause 1 above. The Service Provider's work assignment proposal ("the Proposal") shall fully comply with all the essential requirements specified in this work assignment brief.

1. Requirement of Inception report and overall work plan:
  - (a) At inception stage, the Contractor shall outline, formulate and present the overall work plan and programme for reviewing the overall achievement and proposed ways forward. The Contractor shall submit an inception report, including but not limited to the following sections, within one (1) month after commencement of the Period;
    - (i) an understanding and appreciation of the study objectives;
    - (ii) description of the proposed methodology; tasks analysis and interfaces;
    - (iii) a work programme, highlighting the schedule of the main tasks, including but not limited to, the plan for site investigation and system design, equipment procurement, delivery, on-site installation, equipment testing, user interface platform, A.I. development and testing, writing the user guide, providing training for users as well as dates of reports submission and meetings of LSCM and the various presentation/ consultation meetings, and interfaces;
    - (iv) re-confirmation of the organization and staffing of the project team with defined responsibilities; and
    - (v) variation, if any, to the requirements of the Services agreed by LSCM.
  - (b) The inception report will be considered as complete only when the report is approved by LSCM. The Contractor shall update the report when there are changes to its contents.
2. Site investigation and survey report

The Contractor shall carry out site surveys and investigation and submit a survey report within one months after commencement of the Period to collect all relevant data, particulars and dimensions to prepare their design.

  - (a) The Contractor shall carry out detailed inspection and measurement for proposed locations twelve (12) sites, eleven (11) Fire Lookouts and the Fire Control Centre for the design and installation of the System. Maps of the locations of Fire Lookouts and the Fire Control

Centre are provided in Annex I (Site Information and Location Maps of the Hill Fire Detectors and User Control System).

- (b) The Contractor shall produce a survey report with color photos illustrating the installation environment and associated provisions with detailed notes on conditions and measurements, as well as all features, particulars, performance and dimension of any associated equipment and any existing equipment to be replaced.

### 3. System design

The Contractor shall submit a detailed system design report for approval within three (3) months after commencement of the Period and prior to fabrication and commencement of the respective work.

- (a) The report shall cover the following information:
  - (i) detailed description of the system design with system drawings and circuit diagrams showing the arrangement of the operating controls, configuration, equipment layout and spare slots, ports, etc. of the entire system;
  - (ii) list of proposed equipment and material to become part of the Services (including without limitation the racks, cabinets and panels, device) together with equipment identification, required quantity, technical data, diagrams, drawings, dimensions and descriptions relating to the items with the material information (e.g. dimension, thickness, strength, properties);
  - (iii) details of security, safety and lightning protection of the system components;
  - (iv) shop drawings illustrating proposed installation and their installation position, height and surrounding environment;
  - (v) associated test reports;
  - (vi) material sample; and
  - (vii) any assumptions and limitations in the design shall be clearly stated.
- (b) The System shall comprise front-end Hill Fire Detectors, distribution servers middleware i.e. Video Storage System (VSS) and a backend UCS. The proposed system design shall be a proven technology which had been adopted in other government projects or different terrains with a track record of successful detection. The Contractor shall provide past project reference or certificates by independent third-party bodies for reference.
- (c) The Contractor shall be deemed to have obtained all the necessary information concerning the site conditions which may affect or have implications on the Tender and to be fully aware of the Services involved in this Tender. The Contractor shall identify any potential transportation and installation problems which might degrade the system performance and advise LSCM of any necessary course of action, otherwise the Contractor is deemed to accept that the installation environment is suitable for the corresponding system to perform its function. A Privacy Impact Assessment (PIA) shall be conducted and reported in the report.
- (d) The Contractor shall prepare its own comprehensive design notes (memoranda) with summary on the design criteria and checking procedure to ensure the design meets the requirements of the Tender as well as the relevant regulations and design codes.
- (e) With reference to any conceptual drawings, actual situations shall be verified on site by the Contractor. The Contractor shall also be required to take all particulars and dimensions of the site and the existing installation conditions during the progress of the Services. The Contractor shall submit in details on any modifications found necessary to LSCM for approval. No claim for extra costs shall be made in this respect. Approval given by LSCM for the modifications shall not relieve the Contractor of his obligations and liabilities under this Contractor.
- (f) The exact system design and installation locations will be subject to approval by LSCM. Contractor shall take the responsibility to determine the detailed requirements of the building services provisions and associated works necessary for the intended functional and operational needs of the System.
- (g) It is the Contractor's responsibility under this Tender to check the exact installation on site in order to ensure any latest amendments not indicated in the Contractor Documents are

included in the Services. The Contractor shall liaise and coordinate directly with other equipment suppliers for smooth completion of Services at no extra cost.

- (h) The Contractor shall conduct sufficient site investigation and document review of all existing structural, architectural and other services provisions for the preparation of shop drawings for approval and ensure that all his/her services are properly planned and coordinated without any conflicts with other trades and existing building operation.
- (i) In the event that the designs or any aspects of the proposed products are rejected by LSCM, the Contractor shall, within fourteen (14) days of receiving the notice of rejection, review and revise its design submission and forward its revised submission to LSCM for further consideration.
- (j) All relevant design and calculations shall be carried out, checked and certified by and authorized person, Registered Structural Engineer or chartered civil engineer, especially some of the lookouts built more than 40 years ago.

#### 4. Design solutions

- (a) The System shall be designed in accordance with the specific system requirements, equipment specifications and design criteria as specified, Annex II (Technical Particulars of the Hill Fire Detector) and Annex III (Technical Requirements of the Video Storage System and the User Control System), unless otherwise approved by LSCM.
- (b) The Contractor shall be responsible for the complete and detailed design solution and proper configuration, including but not limited to the associated works, to meet the design and operational needs of the System. The design shall be cost-effective and in compliance with all relevant legal requirements, the contractual requirements and the user's requirements of LSCM, with adequate consideration, allowance and provisions for possible variation as appropriate. Any assumptions and limitations in the design shall be clearly stated.
- (c) The System shall be designed and manufactured to facilitate inspection, cleaning, maintenance and repair. Particular attention shall be made to the maintenance requirements of equipment in locations with restricted and difficult access.
- (d) Adequate attention and consideration shall be given on the following aspects on developing the design:
  - (i) aesthetical design and overall appearance including landscaping;
  - (ii) all functional and planning requirements specified in the tender;
  - (iii) effectiveness, ease of construction and associated risks of structural design/layout;
  - (iv) efficiency and flexibility for future replacement, alteration and expansion;
  - (v) provision of satisfactory operation and maintenance facilities in terms of safety, efficiency, user-friendliness and durability;
  - (vi) reduction of construction time and minimal obstruction to operation;
  - (vii) incorporation of green measures and environmental friendliness;
  - (viii) reduction on usage of non-renewable resources and harmful materials;
  - (ix) energy efficiency and life cycle cost;
  - (x) adoption of innovative and intelligent design;
  - (xi) risks and impacts of equipment/process failure;
  - (xii) productivity enhancement; and
  - (xiii) submission of source code of the solution.

#### 5. Interface to Other Systems and Equipment

- (a) The Contractor shall take into account of the interface and interconnection between the System and other systems or equipment in the course of the design to fulfil the system requirements. The System shall be compatible with the equipment and software of the interfaced system(s)/equipment to form a complete system to perform the intended functions in order to facilitate effective and efficient events operation in the installation venue(s).
- (b) Modification and/or replacement of other existing systems / equipment to achieve compatibility is generally not allowed unless otherwise approved by LSCM.

#### 6. Equipment Procurement, Installation and Testing



- (a) The Contractor shall submit the equipment procurement report within three (3) months after commencement of the Period as well as installation and testing of first batch of HFD (the 4 HFD, including Tin Fu Tsai, Pat Heung, Wu Kau Tang) and equipment within six (6) months after commencement of the Period (refer to section 5 of Milestones and Schedule).
- (b) Upon completion of the site installation of the first batch of HFD, the Contractor shall submit a plan for testing in accordance with the functional requirements specified in for the required performances are able to be achieved. The Contractor shall conduct the tests within two (2) weeks after agreement of the plan by LSCM.
- (c) The Contractor shall submit a test report within two (2) weeks after passing all the tests required.
- (d) The Contractor shall submit Equipment Technical Brochures and Test Certificates material register indicating the equipment and material to be used in this Tender are in the requested format, furnished with all technical equipment brochure and test certificates for the LSCM perusal. The Contractor shall provide two bound sets of such documents and a recommended priced spare part list within three (3) weeks after approval of the equipment. One set shall be original brochure from the manufacturer.
- (e) The procurement and installation of equipment for implementation of the System shall include at least eleven (11) sets of fire detectors, and each set shall have capabilities of pan-tilt-zoom, thermal/infra-red detection for night vision and wide-angle view (which can be separate cameras on the same pole), supporting poles, network video recorders, A.I. detection engine, cables for connecting to data network and power supply system for effective functioning of the system. For installations with structural implications, i.e., the poles, the Contractor shall submit an original Structural Calculations Report. Specifications of hardware of Fire Detectors are shown in Part A of Annex II (Technical Particulars of the Hill Fire Detector).
- (f) The HFD shall be with a video analytic system consisting of two sets of cameras and each set shall consist of one pan-tilt-zoom type camera with thermal / infra-red vision and a wide-angle camera. A separate pan-tilt-zoom (PTZ) CCTV camera shall be installed on the roof-top of the site for the surveillance of the System to ensure its physical safety from unauthorized access.
- (g) The Contractor shall arrange equipment installation, Communication connection (e.g. 4G / 5G network) and power supply on the locations. Details of site preparation for installation is specified as Part B of Annex II (Technical Particulars of the Hill Fire Detector).
- (h) On-site equipment shall include:
  - (i) Pan-Tilt-Zoom (PTZ) Camera with wiper with thermal detection and visual verification;
  - (ii) IR illuminator;
  - (iii) Panoramic Camera with 360° panoramic view;
  - (iv) Network Switch;
  - (v) Network Video Recorder (NVR) Server; and
  - (vi) A.I. Edge Computer.
- (i) The HFD should be installed at a height at or above the roof top of the respective fire lookout to achieve good viewing coverage for surveillance of the country parks area, and shall be installed with appropriate, rigid and safe structures, brackets and frames as necessary for mounting and fixing all fixed equipment and at a location as agreed by LSCM. The Contractor should assess the structural condition of fire lookouts and propose the most appropriate installation method of the HFDs and other system components. The Contractor shall ensure that the installed equipment are complying with the requirements of government structural. The availability of power supply and data network at each location should be considered before installation of the equipment.
- (j) The Contractor shall exercise due care in his work to avoid any damage done to the existing building structure/equipment/facilities (e.g. false ceiling, floor, seats and furniture) and any potential danger to the individuals at site. The Contractor shall be liable for all damages to other facilities, materials, equipment and furniture on the sites due to his negligence to protect them.

- (k) All equipment installed outdoors shall be ruggedized and capable of withstanding the environments (temperature, humidity, salinity, vibration, etc.) that it is expected to operate in or to be subject to in its operational life.
- (l) The Contractor shall take into consideration the need for the outdoor installations to withstand typhoon and heavy rainstorms in Hong Kong during the selection and installation of outdoor equipment. The high temperature and high humidity environment of the installation venue(s) and the hazard due to typhoon / heavy rainstorm shall be taken into consideration for the enclosure design of the equipment which are installed outdoor. The enclosure for modules/components to be installed in outdoor environment shall be fully sealed for protection against water.
- (m) The Contractor shall design and provide appropriate lightning protection systems, including copper tape lightning conductors and earth pits, for the System.
- (n) All outdoor equipment including underground cables shall be weather-proof and well protected against lightning.
- (o) All equipment and enclosures supplied shall be rust-resistant and corrosion resistant suitable for the environmental conditions under which the equipment will be required to operate.
- (p) All outdoor equipment shall be designed to work continuously at ambient temperature of 40°C under outdoor and unsheltered environment unless otherwise specified.
- (q) Equipment for the set up of UCS and the Video Storage System (VSS) shall be proposed in the procurement report, according with the mandatory features specified as Annex III (Technical Requirements of the Video Storage System and the User Control System), for approval from LSCM.
- (r) The UCS and video wall display in Fire Centre must be completely installed, connecting at least 4 sites for demonstration in 9 months.
- (s) An auxiliary screen on top of the video wall display should be installed for an extra view of the UCS.

#### Functional Requirements of Hill Fire Detectors

- (a) The HFD shall be capable of operating day and night, in high temperature and in low visibility conditions, such as rain, smoke, fog, smog and haze etc. The HFD shall be able to detect wood or vegetation-based fires with size of 2m x 1m at the distance up to 5 km away from the HFD. The detection capability shall be unaffected at night or in low-visibility conditions.
- (b) The HFD shall be able to adjust appropriate heat threshold at which an alarm shall be sent to the UCS. The threshold shall be based on the distance of the heat source from the HFD. The Contractor shall liaise and coordinate with LSCM for the temperature threshold of the System for detection of hill fire. Trials might be provided by LSCM for the System fine-tuning. The Contractor shall submit a proposal for the system configuration methodology for approval from LSCM.
- (c) The HFD, together with the pan-tilt pedestal shall provide an automatic, 360-degree and 24x7 hill fire monitoring service. The 360-degree coverage areas of the System shall be scanned within fifteen (15) minutes. Any fire within the coverage zones of the HFD should be detected within fifteen (15) minutes.
- (d) The HFD shall support the replay of both thermal image and visible light image in the UCS. The System operator shall be able to select, at the UCS, for the display of video image derived from the thermal or visual camera.
- (e) The HFD shall allow manual control with the view of the visual camera. A live video stream from the visual camera shall be provided at the UCS.
- (f) The HFD shall have self-testing facility at the power up of the HFD or self-testing shall be activated by the operator vice the UCS.
- (g) The images and video signals from the HFD and the PTZ CCTV camera shall be stored at a local Video Storage System(s) installed at each Fire Lookout and stored remotely at a server set up at the Fire Control Center. The Contractor shall provide sufficient storage capacity for the storage of all required data for at least thirty-one (31) days.

- (h) The image / video file for storage shall have the date, time, fire size (if necessary) and location embedded with the storage data file. The files shall be transmitted from the HFD at the Fire Lookouts to the Video Storage System(s) locally and remotely at the Fire Control Centre through a 5G/4G LTE network.
- (i) The data transmission rate shall be at least 5MB/s for transmission of image and video signals for each operator workstation. The Contractor shall design the data network for transmission of the image / video signals from the HFD and the PTZ CCTV camera to the local VSS as well as to the UCS set up at the Fire Control Center for the LSCM's approval.
- (j) In case the network between the VSS and the UCS experiences a slowdown, the System shall prioritise fire alert message with UTM Grid Reference coordinates to be delivered to the operator workstation. Visual images shall be processed with reduced priority. In case of network breakdown, information of the fire alerts shall be stored locally at the VSS to be retrieved later.
- (k) The System shall be able to mask any area in the camera view for any treated heat source or for privacy issue for false-alarm reduction. The masking must be freely scalable and applicable in any shape. This masking shall be modified by the operator in real time.
- (l) The System shall store the fire alert logs for at least one (1) year and the fire alert reports shall be retrieved and generated by the operator at the operator workstation.
- (m) The HFD and the cameras shall be installed and operated in outdoor environment. Waterproof and dust-proof enclosure for these equipment or other accessories shall be provided with at least IP65.
- (n) Washer/wiper facility or suitable water jet wash system shall be provided to the HFD and visual camera to remove any water or dust deposits on the enclosure of the thermal and visual cameras and the operator can activate the wash / wipe switch on the control workstation to clear the lens or screen.
- (o) Should any work involve modification of existing equipment, the Contractor shall be required to demonstrate that the operating performance of the equipment has not been degraded after being modified.

#### Functional Requirements of the Video Storage System

- (a) The Video Storage System (VSS), set up at each Fire Lookout, shall provide adequate channels and video capacity in storing all camera images / videos provided by the Contractor in the System.
- (b) It shall include without limitation of the following functions:
  - (i) Live viewing;
  - (ii) Recording;
  - (iii) Playback;
  - (iv) Backup;
  - (v) Remote access;
  - (vi) Search, including but not limited to time search, channel search, etc;
  - (vii) Pause, fast forward/reverse and playback/ recording speed control; and
  - (viii) Select and display the on-screen alarm list.
- (a) The VSS shall be provided with sufficient hard disk capacity for storing at least thirty-one (31) days of continuous recording for twenty-four (24) hours for all channels with at least 720p and 6fps per channel.
- (b) The video compression standard of the storage shall be MPEG4 or H.264 or better.
- (c) The VSS shall provide graphical user interface for the user to configure the settings and program the recording of video images.
- (d) The VSS shall be synchronized to the master clock of the System for consistent time and date information.
- (e) The VSS shall alert the operator when the hard disk is approaching a certain time threshold for being overwritten.
- (f) The VSS shall be equipped with different types of backups via USB and equivalent interface for external hard disk backup or via LAN for network backup server.

- (g) The archive and playback operations of the VSS shall not interrupt the normal recording operation of the VSS. It shall allow playback operation during recording.
- (h) The VSS shall allow for the selection of a variety of recording mode configurations. This information shall include but not limited to the following: end of disk (stop recording when hard disk is full or overwrite oldest images first [FIFO]) and recording mode (simplex [record or playback] or duplex [record and playback simultaneously]).
- (i) Physically separated hard disks shall be used for system and program storage and image storage. The image storage hard disks shall be of on-line redundant configuration type, i.e. RAID 1 or RAID 5.
- (j) The VSS shall allow the user to define independent image record rate and picture quality setting during an alarm.
- (k) The VSS shall provide a menu for configuring site information. This information shall include a site description name (up to 20 characters) and a language selection menu. This menu shall also display the amount of disk used with the start/end recording times.
- (l) The VSS shall be able to configure the system's time and date display. This information shall include time, date, holiday setup, date format, time format, time zone and daylight savings time. It shall also allow date format of dd/mm/yyyy to be displayed.

#### Development for the Hill Fire Detection System

- (a) The Contractor shall propose a software solution approach for false alarm reduction verifying the true state of all the alarms generated by the Hill Fire Detection System. The Contractor shall provide a description of the software solution approach, with reference case(s), for false alarm reduction utilizing, for example, machine learning and A.I. model.
- (b) The proposed Hill Fire Detection System covers the monitoring of a significant area of country parks. Installation of additional heat sensors, smoke detectors, visual cameras, or thermal sensors for local warning in a country park, although commonly considered an approach for false alarm reduction, significantly increases the initial cost and the subsequent maintenance cost of the System. Therefore, the use of additional detectors and sensors in a country park is considered undesirable.
- (c) The software proposed shall include collecting images and videos of hill fire occurrences, labelling the image data, building an image database and A.I. model for image analysis of spatial and temporal patterns of hill fires occurring in the country parks. The A.I. model should be continuously trained for positive detection of hill fires with automatic generation of alert reports to the operators but shall be trained to minimise false positive rate and to avoid false alarms.
- (d) The Contractor shall collect and label hill fire images for A.I. model input and machine learning after installation of first batch of Hill Fire Detectors and report the progress within five (5) months after commencement of the Period. The Contractor shall continue fine-tuning the A.I. model of all Hill Fire Detectors to enhance detection accuracy for image analysis of spatial and temporal patterns of hill fire incidents and report the testing results within nine 9 months, 12 months and 15 months after commencement of the Period;
- (e) Some fire lookouts are in restricted areas, Transport Department approval must be applied.
- (f) Real-time image of the cameras shall be fed into the computing devices for realtime analysis. The Contractor shall assist to fine-tune the parameter of optimizer to improve the accuracy during training of A.I. model.
- (g) Virtual machine images shall provide at least 2 TB free storage (not include operating system) for data upload.
- (h) All data collected in this project, including video-analytics of hill fire incidents and personnel particulars, should be protected and not be used for any commercial purposes.
- (i) The Contractor shall submit the setup and configuration manuals, including procedure for setup and configuration, testing guide and any other relevant documentation.
- (j) The Contractor should have experience on installation cameras in country parks.
- (k) The Contractor shall provide the document for adjusting the computing power and storage capacity.
- (l) Contractor should have relevant patents to prove the solution or algorithms are applicable

to the technology or industry standard.

- (m) The hill fire detection algorithm should include but not be limited to:
  - (i) Region threshold filter
  - (ii) Static feature filter
  - (iii) Moving object filter
  - (iv) Oscillation-based filter

#### Specifications and functional requirements of User Control System(UCS)

- (a) The UCS shall be set up within six (6) months after commencement of the Period and it will be located primarily at the Fire Control Centre and at the same time accessible by duty officers in the field via mobile devices.
- (b) The UCS shall provide a local server system and a PC operator workstation at the Fire Control Centre to monitor any suspicious heat sources and the respective location. An operator control workstation shall be installed at the Fire Control Centre for indication of alarms, location maps and provide user interface for operations to view the real-time video signal from the HFD at the Fire Lookout.
- (c) The System shall prompt at workstation computer and notify the user on detection of the any suspected source of hill fire. When a fire is detected, the UCS shall be able to generate an automatic visual alert signal and audio warning at the operator workstation at the Fire Control Centre as well as the mobile devices. All alerts and indication map should be included in one software interface. The alert shall include, but not limited to the following information:
  - (i) Date and time;
  - (ii) Location of the detected fire on a map with accuracy of  $\pm 50\text{m}$  using GPS or UTM Grid reference coordinate system, or relevant;
  - (iii) Distance of the fire from the Hill Fire Detector; and
  - (iv) Thermal and visual color image of the fire.
- (d) The alert should support WeChat Notification and Email Notification.
- (e) The alert setting should have Personalized permission settings.
- (f) The UCS shall allow the user to activate / deactivate independently each of the above items.
- (g) Five (5) sets mobile devices, including but not limited to mobile tablets, shall be provided for use by operators to monitor the information generated by HFD / UCS remotely.
- (h) System should support Panoramic Viewing on thermal images and Intruders detection via existing cameras.
- (i) UCS could be installed on Mobile Devices with notification features, e.g. Android and iOS.

#### User Interface, Testing and Commissioning

- (a) The user interface shall be developed within six (6) months after commencement of the Period. It shall include the hardware and software for a stationery interface of UCS at Fire Control Centre and a mobile interface for mobile devices visualizing video stream of the cameras as well as a map-based platform to show the real-time situation of hill fire occurrence.
- (b) The Contractor shall provide a user interface with following functions:
  - (i) provide dashboard interfaces with interactive filter; and
  - (ii) support to create interactive graphs and charts in the form of dashboards and worksheets.
- (c) Testing and Commissioning
  - (i) The Contractor shall be responsible for undertaking and recording the test.

#### Defects and Period (DLP) and Maintenance Service

- (a) the Contractor shall provide the Warranty Services during the DLP commencing on the date immediately after the Acceptance Date. The Contractor shall provide comprehensive maintenance service during DLP including labour, parts and material upon completion of the tasks. All costs of the Warranty Service shall be included in the tender price.
- (b) During the DLP, the Contractor shall carry out the maintenance works.
- (c) During the DLP, the Contractor shall arrange competent staff to attend to the defects in the

System and equipment supplied and/or installed under this Tender. The Contractor shall take full responsibility for fixing any defects within the shortest possible duration. All defects shall be fully rectified before the expiry of the DLP.

- (d) During the DLP, each piece of equipment shall be guaranteed by the Contractor against any defects resulting from faulty design, installation, materials or workmanship.
- (e) The scope of maintenance services shall reference the General Specification for Electrical Installation in Government Buildings of the Hong Kong Special Administrative Region, 2017, issued by Architectural Services Department, the Government of the HKSAR. The specification could be downloaded from [www.archsd.gov.hk/media/publications-publicity/general-specification-for-electrical-installation/eegs2017.pdf](http://www.archsd.gov.hk/media/publications-publicity/general-specification-for-electrical-installation/eegs2017.pdf).
- (f) The Contractor shall be responsible for all routine and preventive maintenance services, and rectification of any defects arising from equipment wear and tear, failure of module/component, poor workmanship, damage due to improper installation method, etc. The services shall cover the following:
  - (i) to carry out all repairs for hardware and patches/updates for software necessary to maintain the System(s) in good working order and in conformity with the specification;
  - (ii) to provide all transport, travel, permit/licenses, access, workmanship, labour, insurance, materials, consumables and equipment including cleaning materials, tools and all testing instruments required for the maintenance services; and
  - (iii) to provide technical advice on phone / email regarding the usage of the System(s).

#### Routine and Preventive Maintenance during DLP

- (a) Contractor shall submit a routine and preventive maintenance manual, within 21 months after commencement of the tender, proposing details and schedule of routine and preventive maintenance work to be carried out to assess the healthiness of the System(s) and to back up the system and database files, etc. as appropriate in order to keep the System(s) in good operating condition and in accordance with the business requirements and specifications set out for the System(s) during DLP.
- (b) The Contractor shall develop a maintenance recommendation plan with price estimation for subsequent years after completion of the tender. The recommendation plan shall contain the number, level of skills, qualifications, relevant experience of technicians required to carry out the services, and including but without limitation to the following items:
  - (i) Two (2) numbers of preventive maintenance for the System are predicted each year and the preventive maintenance shall be conducted in normal office hours. Preventive maintenance service shall be provided within three (3) working days upon receiving service order.
  - (ii) Upon receiving a fault report by telephone call, competent and specially trained engineers/technicians shall be dispatched to attend the fault call and arrive on sites on or before the next working day. A hotline service shall be provided and available during office hours for receiving the fault report.
  - (iii) The estimated cost for both corrective and preventive maintenance, including the labour and material charges.
- (c) The routine and preventive maintenance services shall follow the proposed maintenance manual and the manufacturer's maintenance recommendation for individual hardware.
- (d) The maintenance services shall include but not limited to the following where applicable:
  - (i) inspection of the System(s) and the environment working conditions;
  - (ii) cleaning, lubrication, replacement of worn, defective or suspect parts and circuit updating and modifications;
  - (iii) adjustments, modifications and improvements and any or all reliability improvement to the System(s);
  - (iv) maintenance of electric fans and filters if provided for the provision of the System(s);
  - (v) check all signals and power cables against damages, poor insulation or loose connections;
  - (vi) visual inspection of cable patches for any signs of defects or damage;
  - (vii) re-tighten up any loose connections and replace damaged cables or poor insulation

found;

- (viii) check and replace airtight and/or watertight sealant;
  - (ix) measure cable loss and power for optical fibre cables;
  - (x) measure and record the input direct current (DC) voltages of equipment, and calibrate the operating DC voltages in accordance with the manufacturer’s recommendations;
  - (xi) check for any overheating of the equipment;
  - (xii) battery discharge and capacity test of all power supply system units;
  - (xiii) collection and evaluation of error tables / fault printouts, which should also contain the results of the System’s self-tests, such that preventive actions can be taken at an early stage to avoid major breakdown;
  - (xiv) back-up of the system and database files;
  - (xv) updating of software signature of anti-virus software and system security software; and
  - (xvi) updating of documentation relating to the System(s).
- (e) The Contractor shall provide software/firmware update and configuration service at least twice a year during preventive maintenance.
  - (f) Routine and preventive maintenance shall normally be conducted during office hours. In order to reduce disruption to its daily operation, LSCM reserves the right to require the Contractor to carry out preventive maintenance outside normal office hours.
  - (g) The Contractor shall give at least two (2) weeks’ prior notice to LSCM for any of the preventive maintenance tasks which may affect the normal operation of the System(s) and shall obtain the prior consent of LSCM before proceeding.
  - (h) The Contractor shall take note of the message from LSCM concerning the performance of the System(s) as a whole of the installation and effect any repairs, replacements or adjustments which may be required to bring the System up to its original performance standards.
  - (i) Any irregularities identified during the preventive maintenance activities shall be reported to LSCM immediately. The Contractor shall, based on the findings from the preventive maintenance tasks, bring any potential issues or degradation in the performance of the System to the attention of LSCM. This is to ensure that preventive measures or appropriate actions are taken at an early stage in order to prevent major faults or performance deterioration from happening.
  - (j) The Contractor shall maintain a preventive maintenance record of all elements of the System(s), listing the date of preventive maintenance, the person performing the maintenance work and the next scheduled preventive maintenance due date.

Corrective maintenance during DLP

- (a) The Contractor shall arrange competent and specially trained technicians / engineers to attend to the inspection, fault diagnosis and repair requirements upon receiving a fault report.
- (b) The corrective maintenance services shall cover all fault diagnosis and correction of fault (for both hardware and software) in all the equipment and ancillaries as found in the System(s) and they shall be performed in such manner which:
  - (i) conforms to the business requirements and specifications of the System(s); and
  - (ii) does not have adverse effect on the operation of the site.
- (c) The Contractor shall provide LSCM with a manned telephone number in Hong Kong for fault reporting, available from 08:00 hours to 23:30 hours, seven (7) days a week.
- (d) The Contractor shall respond by arriving on site within the response time limitation given below or any time limit agreed between the officer-in-charge of the country park or LSCM for that particular incident / fault report:

<u>Fault cases</u>	<u>Response time (hours)</u>
Urgent Faults	< 24
Non-urgent Faults	< 72

- (e) The Contractor shall investigate the fault on site until a solution is found and applied,

resolving the issue and restoring the services to the satisfaction of LSCM after arrival on site within the time limitation specified below unless special logistic arrangement is required (e.g. scaffolding, software patch), or until a work-around solution is agreed with LSCM and successfully implemented if the issue cannot be resolved immediately:

<u>Fault cases</u>	<u>Fault rectification time limitation (hours)</u>
Urgent Faults	< 48
Non-urgent Faults	< 120

(including the response time, i.e. counting from the time of the fault call is made)

- (f) Urgent fault refers to any of the following that has, will or is expected to cause/lead to:
  - (i) Safety concern, human injury or fatality;
  - (ii) Data corruption, loss of data, incorrect data manipulation and their presentation or display;
  - (iii) Serious system or equipment fault that causes significant inconvenience to the operator of the system or the public;
  - (iv) System suspension;
  - (v) Prolonged or non-trivial inconvenience to the public, operator of the System(s) or various stakeholders.
- (g) The Contractor shall submit escalation procedures on fault rectification for the LSCM's consideration and agreement.
- (h) Replacement of any plug in unit / module / component to the System(s) shall be obtained from the plug in unit / module / component specified in the manufacturer's spare parts list and approved by LSCM in advance.
- (i) The replacement of any plug in unit / module / component / device to the System(s) shall not affect the function and license of the software of the System(s).
- (j) In the event that alternative plug in units or electronic parts or modules are used or any equipment is modified for fixing the reported faults leading to incompatibility of programming tools that have already been procured by or supplied to LSCM to conduct parameter changes of such equipment or of other part(s) of the System(s), the Contractor shall provide the appropriate programming tools at no additional cost to LSCM.
- (k) The Contractor shall acknowledge that LSCM will take all reasonable steps to implement the data backup and protection measures. In the event that there is corruption to data and files resulting from the deficiency or malfunction of any of the System(s), or negligence on the part of the Contractor, its sub-Contractors, agents or its employees, without prejudice to other rights and claims of LSCM, the Contractor shall give all assistance as LSCM may require for the recreation of the data and files established before the corruption and reprocess the necessary jobs.
- (l) As part of the corrective maintenance services for the System(s) or any part(s) thereof, the Contractor shall provide the following services in respect of the software installed therein:
  - (i) The correction of any errors in the software necessary for the equipment to continue to perform in accordance with the overall specifications and for the Contractor to provide the services as specified in the Service Specifications;
  - (ii) The provision (including installation) of corrections updates or enhancements to the software so as to maintain the same to the prevailing state of development of the software, which the Contractor may supply subsequently to other customers from time to time;
  - (iii) The provision of continuous updates (i.e. provision and installation of update version of the software) of the software, whenever necessary, in order to maintain the efficient operation of the System(s), without altering the features or functions specified in the specifications;
  - (iv) The provision of updates to the documentation to reflect and describe the nature of the changes and upgrades of the facilities, functionality and operating conditions of the software; and



- (v) The provision and installation of software updates / modifications to meet any equipment changes.
- (m) Subject to technical feasibility and general availability, the Contractor shall supply, test and install at no additional charge to LSCM all new releases, modified, enhanced, corrected, improved, replacement or updated versions/patches of the software / firmware. At the discretion of LSCM, LSCM may defer the installation of any updated software / firmware so provided. If the Contractor provides a written notice to LSCM that an updated software / firmware shall be installed to cure or avoid infringement of a third party's Intellectual Property Rights, the Contractor shall install such updated software / firmware as soon as practicable at no additional charge to LSCM.
- (n) If any error or degradation of the performance level occurs in the System(s) or any part(s) thereof after the installation of any updated software / firmware, the Contractor shall uninstall the updated software / firmware, reinstall the previous version, and carry out all necessary tests and restore the System(s) and all parts thereof to their original performance level within twenty-four (24) hours and in any event they should perform no worse than the specified availability levels.

#### Review, Final Report and Executive Summary

- (a) The final task shall include a review of the overall achievement and the proposed ways forward which may include further enhancement in respect of using smart surveillance technology.
- (b) The Contractor shall review and compile a final report (in English) and an executive summary (in both English and Traditional Chinese) on the whole project within twenty-five (25) months after commencement of the Period.
- (c) The final report shall report on the UAT of the System, results of system training / A.I. development, documentation of the HFD and training materials for administrators as well as summarize the overall achievements, experience gained and way forward.
- (d) The Contractor shall prepare a PowerPoint to present the review and summary and a paper to explain the System in English and Chinese.

The Service Provider has to abide by all the requirements stated in this work assignment brief (including all the terms and conditions included therein) and the commitments as described in the Proposal of the Service Provider.

### **Annex I**

#### **Site Information and Location Maps of the Hill Fire Detectors and User Control System**

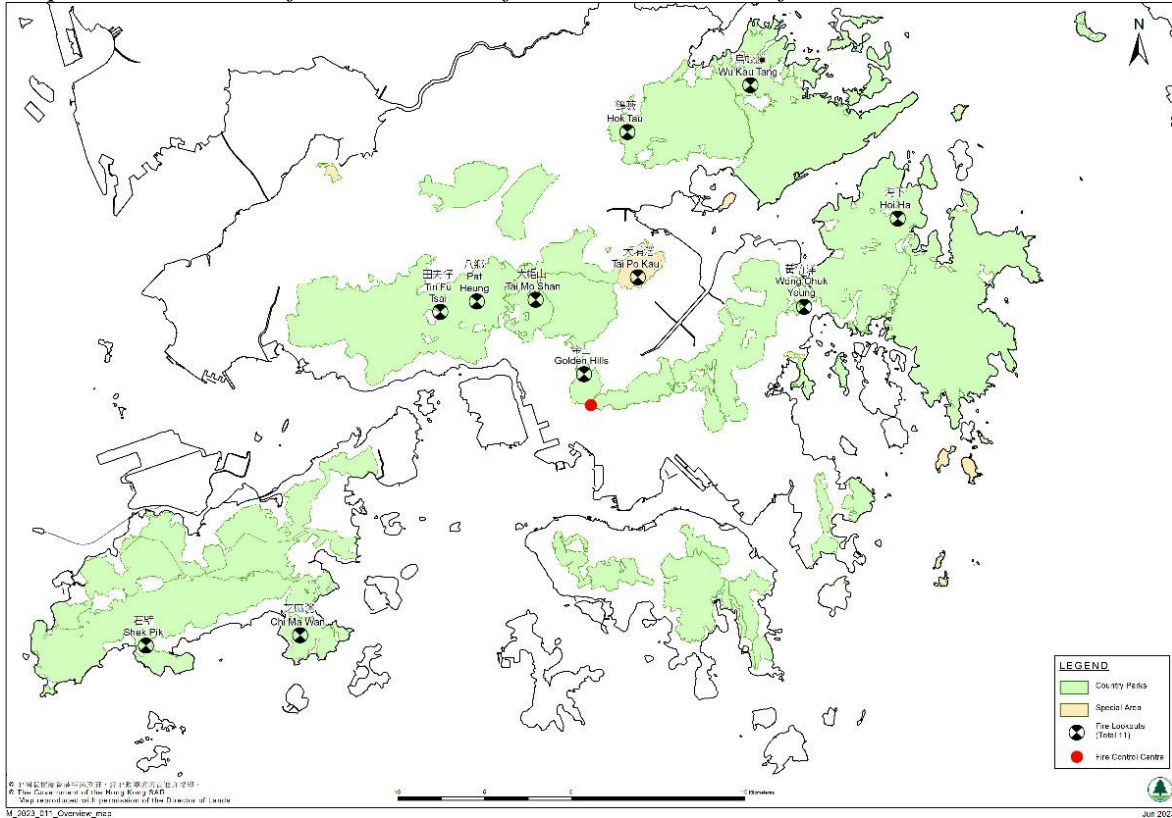
##### Notes for Installation of Hill Fire Detectors (HFD) at Fire Lookouts of Country Parks

1. Most of the Hill Fire Lookouts were established between 1960s to 1980s. They are situated at vantage points in the hills with limited vehicle road access. Only three of the eleven Fire Lookouts are accessible by vehicles while the others are accessible via hiking trail linked to a vehicle drop off point. Information on the accessibility of the Fire Lookouts are listed in Table I-1 below, please provide accessibility solutions.
2. The Contractor shall assess the structural condition of the fire lookouts and derive an appropriate design solution for the installation of HFD. The HFDs shall be installed at a height at or above the roof top of the respective fire lookout and at a location as agreed by LSCM, to achieve the best monitoring coverage and meet the required performance of fire detection. The Contractor shall ensure that the installation complies with the requirements of structural safety as specified - Service Requirements. Given that the fire lookouts at Chi Ma Wan, Tai Mo Shan, Golden Hill and Tai Po Kau are older buildings, it is preferred to install a stand-alone structure besides the fire lookout for installation of the HFD

3. Power supply is not available at the Chi Ma Wan and Tai Po Kau Fire Lookouts. The Contractor shall also design and install a solution of power supply for continuous operation of the HFD and the System. All the lookouts require a power backup to prevent power shortage of the HFD.

**Part A: Location maps of the eleven (11) Fire Lookouts and the Fire Control Centre**

*Map I-0: Locations of Fire Lookouts for the installation of Hill Fire Detectors*



**Part B: Site information of the eleven Fire Lookouts and Fire Control Centre**

**Table I-1 Site information of fire lookouts and Fire Control Centre**

*Table I-1 Site information of fire lookouts and Fire Control Centre*

S/N	Fire Lookout	Age of Building (years*)	Storey / Height (meters*)	Power supply	Altitude of Building (meters*)	Accessibility from closest access road (Distance* / Elevation gain*)	Estimate time for access to lookout from vehicle drop off point on foot (minutes*)
1	Hoi Ha	~ 10	Single / 3m	Y	255m	via Hiking trail (0.5 km / +100m)	20 mins
2	Tin Fu Tsai	> 20	Single / 3m	Y	460m	Direct access by road	N/A
3	Pat Heung	> 30	Single / 3m	Y	550m	via Hiking trail (0.3 km / +20m)	10 mins
4	Hok Tau	~ 40	Two / 6m	Y	290m	via Hiking trail (1.5 km / +190m)	60 mins
5	Wu Kau Tang	~ 40	Two / 6m	Y	300m	via Hiking trail (1.5 km / +200m)	45 mins

6	Wong Chuk Yeung	~ 40	Two / 6m	Y	285m	Direct access by road	N/A
7	Shek Pik	~ 40	Two / 6m	Y	205m	via Hiking trail (0.5 km / +130m)	30 mins
8	Chi Ma Wan	> 60	Single / 3m	No	305m	via Hiking trail (2 km / +260m)	60 mins
9	Tai Mo Shan	> 60	Single / 3m	Y	780m	via Hiking trail (0.5 km / +10m)	15 mins
10	Golden Hill	> 60	Single / 3m	Y	370m	via Hiking trail (0.5 km / +105m)	20 mins
11	Tai Po Kau	> 60	Single / 3m	No	410m	Direct Access by Road	N/A
12	Fire Control Centre	N/A	N/A	Y	N/A	Direct Access by Road	N/A

Note: \*All figures in the above Table I-1 is approximation and for reference only

## **Annex II**

### **Technical Particulars of the Hill Fire Detector**

**The specifications listed in Part A are mandatory features.** The proposed Hill Fire Detectors to be installed shall meet at least the basic specifications and requirements listed below.

#### **Part A – Specifications of Hill Fire Detectors**

##### (i) Performance Specifications

	Thermal Detection Module
Camera	640 x 480 Pixels Resolution (50mm lens) or better
Horizontal Field of View during automatic scan (degree)	12.4°
Thermal Detection Range (km)	6 km to 8 km
Average Processing Time per view (sec)	4 secs or faster

##### (ii) Specifications

Pan Tilt Platform	Horizontal movement: Vertical movement: Axis speed: Axis accuracy:	0 to 360 degrees -40 to 40 degrees 8 degrees/sec ±0.1 degrees
Thermal Imaging Optics	Field of view: Sensor resolution:	12.4 degrees (H) x 9.3 degrees (V) 640 x 480
Visible Light Optics	Visible IP camera: Sensor resolution:	23x optical zoom 3840 x 2160

Electrical Specifications	Power: Input voltage:	80 W nominal 95 W peak 100 to 240 VAC
Environmental Specifications	Temperature range: Humidity: Waterproof grade:	-15° to 50°C <95% RH IP66
Communication Interface	Wi-Fi 6 or better, Gigabit Ethernet	

(iii) Specifications of Infra-red Sensor

Sensor Type	Uncooled Micro Bolometer
Resolution	640 x 480
Field of View (FOV)	12.4 degrees (H) x 9.3 degrees (V) 50mm motorized focus germanium lens
Thermal Sensitivity	<50 mk @ F/1.0, 30Hz, 300K
Aperture	F1.0
Image Frame Rate	50Hz (PAL) / 60Hz (NTSC)
Probe Temperature Range	-20°C ~ 120°C / -20°C ~ 650°C
Output Video Format	NTSC / PAL
Accuracy	±2°C or 2%
Communication	1 Gbps Ethernet
Operation Voltage	DC 12V
Detection Distance	2 meter square wildfire @ 5 km distance (50mm lens) 6 meter square wildfire @ 8 km distance (50mm lens) with AI Engine assistance

(iv) Specifications of Electro-optical Sensor

Sensor Type	1/1.8" or larger CMOS progressive scan CMOS
Max Sensor Resolution	Native Pixels 3840 x 2160 or better
Shutter	1 sec ~ 1/10,000 sec
Day and Night Mode	ICR filter (Auto/schedule/Alarm/Trigger) or Night time enhanced Full Color mode
Wide Dynamic Range	Digital Wide Dynamic Range 120db or better
Video Compression Standard	H.265/H.264/MJPEG/MPEG4
H.264 codec Profile	Baseline Profile/Main Profile/High Profile
Compression Output Rate	32Kbps ~ 16Mbps or better
Optical Zoom	23x (Focal length = 5.9 ~ 135.7 mm)
Low Light Capability	Color 0.005 Lux @ F1.5
Storage Function	Support SD/SDHC/SDXC, NAS
Communication Interface	1xRJ45, 1xRS485, 1xRS232
Operating Voltage	DC 12V

**Part B – Installation Prerequisites of Hill Fire Detectors**

<p>Supporting Pole or Platform</p>	<p>Each Hill Fire Detector shall be mounted on, a supporting pole, platform or structure at the fire lookouts, which is elevated above the tree line at the installation site. The supporting pole / platform shall be capable of supporting the Hill Fire Detector and other accessories/equipment for up to a total of 300 kg.</p> <p><u>Remarks:</u> The Contractor shall develop a suitable mounting solution for each location, subject to agreement by LSCM.</p>
<p>Power</p>	<p><u>Voltage:</u> DC 24V (an AC to DC power adaptor will be included for 110-220 VAC power source)</p> <p><u>Wattage:</u> 80W nominal 95W peak</p> <p><u>UPS:</u> 1000 VA is recommended when power is not stable</p> <p><u>Remarks:</u> For installation locations without power supply, the Contractor shall develop a suitable solution for power supply to the Hill Fire Detectors, subject to agreement by LSCM</p>
<p>Data Connectivity</p>	<p>Standard IP connection with minimum 5 MB/sec stable bandwidth per fire detector.</p> <p>Network latency &lt; 80 ms, one fixed IP address.</p> <p>Wired Lan, Wi-Fi Point to Point (Preferred), or 5G/4G LTE (VPN)</p>

**Annex III**  
**Technical Requirements of the Video Storage System and the User Control System**

The technical requirements of the Video Storage System (VSS) and the User Control System (UCS) listed below are mandatory features. The proposed VSS and UCS shall meet at least the basic specifications and requirements listed below.

(i) Supported Server Specifications

	<p>VSS installed at each Fire Lookout with Insight Globe UI Configuration</p>	<p>Minimum Local Server Configuration for the UCS installed at the Fire Control Center</p>
--	-------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------

Infrastructure	Custom Made Barebone Server Hardware	Custom Made Barebone Server Hardware
Connection	Gigabit Ethernet + 1000Mbps Fiber connection to ISP, or better	Internet Connection 100Mbps and above at Datacenter
No. of FD Support	1 ~ 200	1 ~ 100
CPU	16-core 3.0Ghz Base Clock 128MB Level 3 Cache PCIe 4.0 x 128 Lane	AMD Ryzen Threadripper PRO 3955WX
RAM	64 GB ECC DDR4 minimum	512GB DDR4 minimum
OS Drive	2 TB x 2 Mirror RAID SSD	512GB x 2 Mirror RAID SSD
Storage Drive	2 TB Harddrive per FD per month storage or NAS A 12 unit setup will require a 7.68TB Enterprise Grade SSD for storing 1 month of archive image data	30 x 16TB HDD Cables for connecting to Fast NAS Storage Unit 100GB Network Card
OS	Ubuntu	Ubuntu
Database	Cassandra	Cassandra
Data Redundancy	RAID 1 / RAID 6 / ZFS RAID-Z2 / ZFS RAID-Z3 or equivalent configuration	RAID 1 / RAID 6 / ZFS RAID-Z2 / ZFS RAID-Z3 or equivalent configuration

## (ii) PC Client Specifications installed at Fire Control Centre

CPU Processor	Intel i5 Core 13 Generation or higher
System Memory	32 GB DDR4 RAM or higher
GPU	Nvidia or AMD GPU with 2GB VRAM or above (support 3 monitors)
OS	Windows 11 or newer OS
Supported Web Brower	Google Chrome, Microsoft Edge
Network	1 Gbps Ethernet port
Storage	2TB SSD or above

LED Monitor	<ol style="list-style-type: none"> <li>1. Screen Size: 32" or larger</li> <li>2. Panel Type: VA or IPS</li> <li>3. Resolution: 3840 x 2160, or higher</li> <li>4. Brightness (Typical): 400 cd/m<sup>2</sup>, or higher</li> <li>5. Contrast Ratio: 3,000:1 or better</li> <li>6. Viewing angle (Horizontal/Vertical): 178° / 178°</li> <li>7. Response Time: 4ms(GTG), or faster</li> <li>8. sRGB Coverage: 99% (Typical)</li> <li>9. Connectivity: HDMI, DP, USB-C</li> </ol>
LED Video Wall Displays	<ol style="list-style-type: none"> <li>1. Screen Size: 3000mm(W) x 1400mm(H) or larger</li> <li>2. Pixel Pitch: 0.62mm</li> <li>3. LED Type: MicroLED</li> <li>4. LED Drive Method: Common Cathode</li> <li>5. Overall Resolution: 4800 x 2160, or higher</li> <li>6. Brightness (Max): 1000 cd/sq, or higher</li> <li>7. Contrast Ratio: 10,000:1 or better</li> <li>8. Viewing angle (Horizontal/Vertical): 160° / 160° or better</li> <li>9. Color Gamut: &gt;93% DCI-P3</li> <li>10. LED Lifetime (Half Brightness): &gt;100,000 hours</li> </ol>

(iii) Specifications of mobile device (A total of 5 sets shall be provided by the Contractor):

CPU Processor	Apple M1 or higher
System Memory	256 GB or above
Display	<ol style="list-style-type: none"> <li>1. At least 10.9" 2360 x 1640 resolution display</li> <li>2. SDR brightness: 500 nits max</li> </ol>
Connectivity	Wi-Fi 6 + 5G Cellular
SIM Card	Nano-SIM

Power and Battery	Up to 9 hours of operation using cellular data network
Charging	Charging via USB Type C
Security	Touch ID or equivalent
Operating System	iPadOS 17 or higher

### 3. Requirements for the Bidding Firm and Assignment Team

#### *Requirements for the Bidding Firm*

- (a) The bidding firm shall have experience in completion of at least 5 (5) A.I. development experience, at least one (1) of which for the Hong Kong Government Department, with similar nature and scope of those required in this service. The project references shall be completed within the past ten (10) years as at the proposal closing date.

- (b) The bidding firm must have relevant patents to prove the solution or algorithms are applicable to the technology or industry standard. And the relevant patents are citing by at least 3 other companies.
- (c) The bidding firm shall have at least one RSE approval design for installing a camera on roof top.

#### *Requirements for the Assignment Team*

- (d) The Service Provider shall assign a team ("**Assignment Team**") for this work assignment in accordance with its Proposal. The structure of the Assignment Team shall comprise **one team leader and at least one team member**. The team leader and the team member shall be **different individuals**. The Assignment Team shall be employees of the bidding firm.
- (e) The team leader shall have experience in completion of at least three (3) projects, at least one (1) of which for the Hong Kong Government Department, with similar nature and scope of those required in this service. The project references shall be completed within the past ten (10) years as at the proposal closing date.
- (f) At least one of the team members shall have experience in the completion of at least one (1) project, with similar nature and scope to those required in this service, in the past ten (10) years as at the proposal closing date to support the team leader.
- (g) The team leader and the team member shall be able to converse fluently in Cantonese and English and shall be able to read and write traditional Chinese and English.
- (h) The team leader shall act as a single contact point to the LSCM regarding all related activities of this work assignment. The Service Provider shall assign a deputy team leader when the team leader is on leave or not in HKSAR. The period of assignment of the deputy team leader shall not exceed 10% of the duration of this work assignment. The Service Provider shall ensure that other team member(s) is/are easily contacted, and available for regular and ad hoc discussions for the purposes of executing this work assignment.
- (i) The Assignment Team shall have a bachelor's or master's degree in computer science, artificial intelligence, machine learning, or a related field Strong programming skill.

#### *Replacement of Staff*

- (j) LSCM reserves the right to request change of staff members assigned by the Service Provider to the Assignment Team. Any change of staff members requested by the Service Provider shall require LSCM's prior written approval.

## **4. Duration of this Work Assignment**

- (a) This work assignment shall cover the period of the design and implementation of the Hill Fire Detection System. It is expected that this work assignment will commence around August 2024, and the expected duration is about 25 months from the design approval date of this work assignment, subject to the progress of the Hill Fire Detection System Project. The Service Provider shall achieve the Milestones stated in the Proposal to the satisfaction of LSCM according to the target Schedule as specified in Clause 5 below. The exact duration of this work assignment and the schedule for submission of deliverables may be revised subject to the progress of the Hill Fire Detection System Project.



## 5. Milestones and Schedule

- (a) The Assignment Team shall produce the deliverables (which shall be written in English) not later than the target completion dates as specified in the table below. The Government reserves the right to make final adjustments to the list of milestones.

<b>Milestones and Key Deliverables</b>	<b>Tentative Schedule (from commencement date of this work assignment)*</b>
<b>Milestone 1: System Design and Procurement Schedule:</b> <b>(a) Inception report and overall work plan</b>	Month 1
<b>(b) Site investigation and survey report</b>	Month 1 - 2
<b>(c) System design report and equipment procurement report</b>	Month 1 - 3
<b>(d) User Control System development, user interface development, testing and commissioning</b>	Month 1 - 6
<b>Milestone 2: System design report and equipment procurement report</b> <b>(a) Installation, calibration and testing report for the four of the HFDs</b> <b>(b) Testing of A.I. model and machine learning</b>	Month 1 - 6
<b>(c) Installation, calibration and testing report for the two of the HFDs</b> <b>(d) Fine-tuning of A.I. model and result report</b>	Month 1 - 9
<b>(e) Installation, calibration and testing report for the two of the HFDs</b> <b>(f) Fine-tuning of A.I. model and result report</b>	Month 1 - 12
<b>(g) Installation, calibration and testing report for the other remaining HFDs</b> <b>(h) Fine-tuning of A.I. model and result report</b>	Month 1 - 15
<b>Milestone 3: Report on User Acceptance Test (UAT) and Final Report</b> <b>(a) User guide and training programme for administrators and provision of maintenance manual</b>	Month 1 - 21
<b>(b) Project completion upon acceptance of System UAT result and submission of final report and executive summary</b>	Month 1 - 25
<b>Milestone 4: Defects Liability Period (DLP)</b> <b>(a) 12-month DLP upon the issuance of the Acceptance Note</b>	For a period of 12 months immediately after the Acceptance Date

\*The target completion date may be revised subject to site condition of the Hill Fire Detection System Project.

## **6. Payment Schedule**

- (a) Please refer to Part 4 of this document.

## **7. Penalties of Delays**

- (a) Any potential delay of the schedule must be notified to LSCM at least two weeks in advance to allow LSCM sufficient time to adjust plans accordingly. In addition, those changes in schedule have to be mutually agreed with LSCM with written justifications;
- (b) For each month of delay beyond the agreed project completion date (excluding force majeure), the service provider will incur a penalty, which is 2% of the total project cost, the ceiling of penalty amount not more 6% of total project cost;
- (c) Delays caused by force majeure events (e.g., natural disasters, strikes, government or regulatory actions) are exempt from penalties, the duration of exemption to be decided solely at the discretion of LSCM;
- (d) LSCM can terminate the contract due to excessive delays of more than 2 months from the original project completion date (excluding force majeure). LSCM shall not be liable for any payments, fees, or costs related to any incomplete portion(s) of the project. The service provider shall be deemed to be fully compensated upon termination of the project and shall not be entitled to any additional compensation for any incomplete portion(s) of the project; “The Service Provider shall be liable for all expenses necessarily incurred by the Centre as the result of the termination of the Contract;
- (e) If Contractor cannot continue or complete the project, LSCM is allowed or right to use the developed source code from the Contractor.

## **8. Confidentiality**

The Service Provider and Main Contractor shall sign an NDA that any information shall not disclose any data to third parties without the authorized agreement from LSCM;

**PART 4**

**Payment Schedule**

Payment Milestone	Percentage of Total Payment
Tender awarded	10%
Inception Report	20%
System Design	20%
Completion of 1 lookout	10%
Completion of first 6 lookout and Control Centre	20%
Completion of 11 lookout	15%
Completion of DLP	5%

**PART 5**  
**Special Conditions of Contract**

**1. Confidentiality**

All information supplied by the Centre in this quotation invitation and under the subsequent Contract shall be treated as confidential. The Bidder and the Contractor shall not pass any information to any person except to their own employees who have a need to know the information for the purpose of this Contract. They shall ensure that their employees are fully aware of and comply with the provision of this clause. The foregoing obligations shall survive any termination of the Contract.

**2. Payment for the Products**

Payment in respect of the Products provided shall be arranged by the Centre. The invoice shall be sent to Procurement, Level 11, Cyberport 2, 100 Cyberport Road, Hong Kong.

**3. Contracts (Rights of Third Parties) Ordinance (Cap. 623)**

The parties hereby declare that nothing in this Contract confers or purports to confer on any third party any benefit or any right to enforce any term of this Contract pursuant to the Contracts (Rights of Third Parties) Ordinance (Chapter 623 of the Laws of Hong Kong).

**4. Termination of Contract**

During the Contract Period, the Centre has the right to terminate the whole or any part of the service with a one-month advance notice if the Contractor fails to fulfil the service requirements as mentioned in Part 3 of the quotation document.

**5. Ownership of Intellectual Property Rights**

5.1 The ownership of all deliverables and the relevant data, including all electronic records, obtained under this Contract belongs to LSCM. Publication of the data or interpreted results arising from this Service shall require the approval of LSCM.

5.2 The intellectual property rights of all deliverables shall be owned by LSCM. The Contractor shall comply with all the prevailing legislations related to intellectual property rights in Hong Kong. LSCM will not accept any deliverable which infringes intellectual property rights or has infringed the intellectual property rights in the goods or product of a third party.

**Appendix 1**

**QUOTATION**

Please provide the quotation specified in PART 3

Item	Description	Quantity	Amount (HK\$) (To be specified by the Tenderer / vendor)
1	Total solution of this tender specified in PART 3	1 job	
<b>Total sum:</b>			<b>HK\$</b> _____

**Statement of Compliance**

Please mark as '☑' in the appropriate box:

- I/We confirm that I/we and my/our offered product/services as quoted above is **in compliance** with all the mandatory features set out in the Particular Specifications.
- I/We confirm that I/we and my/our offered product/services does **not comply** with the mandatory features set out in the Particular in the following aspects:

Clause No.                      Technical Specifications                      Details of Deviation

- We are sorry that we are unable to quote.  
Reason (if any): \_\_\_\_\_

The Quotation shall, unless otherwise indicated by the Bidder, remain open for not less than 90 days after the Quotation Closing Date. If the Bidder is unable to comply with this requirement, he must clearly state the period for which the Quotation is valid for acceptance below. If before the expiry of the agreed validity period the Bidder's offer is withdrawn, due notice will be taken of his action and this may well prejudice his future standing as a supplier or service provider.

“Our offer will remain valid for a period of \_\_\_\_\_ days from the Quotation Closing Date.”

Authorised Signature: \_\_\_\_\_ Tel. No.: \_\_\_\_\_

Name & Title in Block Letter: \_\_\_\_\_ Fax No.: \_\_\_\_\_

Name of Bidder and Company Chop: \_\_\_\_\_ Date : \_\_\_\_\_

**Appendix 2**

DOCUMENT CHECKLIST

- Work assignment Proposal
  - Alternative power source for no power supply fire lookouts
  - Installation methodology of the camera on the roof top
- Project references, patents, qualification, RSE approved design as specified in PART 3 Clause 3
- CV of the team leader and one of the team members