Document Details: Q&A in response to the call for proposals
Challenge: Edge Video Analytics
Deadline for questions: Tuesday 13 May 2025
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Technical Questions

Q: What are the camera attributes to make sure the system has enough processing capacity to undertake AI processing and the impact on the battery life?
A: Consider all commercially available security cameras but also consider separate capabilities.

Q: Some platforms provide high accessibility, which are not suitable for development with operationally sensitive or classified data, is this a consideration?
A: All platforms will be considered

Q: What are the platform capabilities? Are they sufficient to run the necessary detection routines at speed?
A: Assume capabilities will be upscaled is required

Q: Has HMGCC established all the limitations of the platform and use cases to inform alternative use cases and scenario setups?
A: No

Q: Cascade processing requires sufficient storage and memory on Vision module, does your platform have this?
A: If the method is deemed viable, the platform can be prepared to suit

Q: Can you share anything about the current electrical interface you have between your sensor and the high-res camera?
A: Basic I/O signal

Q: Can you provide an order of magnitude of power usage / operational usage expectations?
A: 10-100 mA

Q: The requirements state that it is essential to receive a demonstrator as a final deliverable. Can I please confirm that this would include the handover of physical equipment as a final deliverable?
A: Yes, this would include the handover of physical equipment as a final deliverable

Q: Is the surveillance system intended to be static at a fixed location, or should it be designed for portability and frequent relocation? Understanding this will significantly impact our design considerations.
A: Understanding this will significantly impact our design considerations.
A: This will not be a body worn system. The system is fixed with relocation on a bi monthly basis (approx.)

Q: Will the surveillance system have access to GPS capabilities for location tracking and timestamping purposes? This information is crucial for certain AI algorithms and data analysis.
A: Yes. However, be conscious of emissions that could identify the system

Q: For the portable surveillance system configuration, what is the expected duration of battery life? Please provide specific requirements, such as one day, one week, one month, or any other specified timeframe, to guide our power management design
A: This can be managed, but consider max 1 month

Q: Surveillance applications inherently involve monitoring a specific area (field of view) and identifying particular subjects (person, vehicle, etc.). Could you please define the required field of view that our system should be capable of capturing? Additionally, please specify the primary subjects of interest for the surveillance.
A: Consider a 100° Horizontal FOV. Primary subjects: Vehicles and People

Q: Should we design the system with the assumption that it will need to operate reliably under harsh weather conditions, including factors like temperature extremes, precipitation, and dust? Knowing this will influence our choice of hardware and protective measures.
A: Yes, factoring these conditions (including low light) will enhance the bid

Q: Will the intended deployment method be mounted on a tripod, affixed to a wall, suspended from a roof, placed directly on a wall or the ground, or are there other deployment methods we should consider? If the system needs to accommodate multiple deployment scenarios, please let us know so we can address the various form factor requirements
A: A common method we use is a ø19mm clamp that holds a 19mm barrel or boss. That can be fixed in multiple scenarios

Q: When it comes to “secure by design” as mentioned in the project scope, do you mean protecting the hardware or protecting the software, or both, or either?
A: Software

Q: I would like to enquire whether the following in the challenge form refers to the start or end of the project ‘This is open to Technology Readiness Levels (TRL) from 4 – 9’
A: End

Q: Is there a guide to how fast the trigger should switch on the high-powered camera to not miss critical surveillance footage? For example, in typical operation, is a trigger that reacts within around a second permissible?
A: Less than a second should be the goal

Q: With the currently described setup of a high-powered camera and IR sensor how long can operations typically last? Related to this, what is the size of battery th
at is employed

(both physical and Watt-hours) and how many Watts is the high-powered camera? What improvement would you like to see in terms of deployment times?
A: Out of scope

Q: Do you have an indication on the percentage of false triggers from the IR sensor?
A: False triggers would predominantly be from wildlife

Q: What kind of communication should be used to alert that the camera is triggered, e.g. text, email? Additionally, how secure does this need to be? Can this be transmitted over a mobile network?
A: Already answered

Q: Should the trigger be alerted when a human enters the shot, or should the trigger be able to filter out specifics; for example, when a known individual enters the shot, or someone matching a description?
A: Yes to all

Q: Will HMGCC provide testing environments and/ or scenarios to facilitate testing as per the higher TRLs?
A: Yes

Q: Should the trigger be demonstrated on a high-power camera or can this be demonstrated via a proxy indicator. If a high-powered camera is required, will HMGCC provide access to a high-power camera, or should we supply our own?
A: Concept demonstrator hardware should be supplied by the developer

Q: The example mentions recognising a "subject of interest." How precisely is an SOI defined? Does it involve specific individuals, types of objects (e.g., vehicles of a certain make/model), or particular behaviours? What is the required accuracy for SOI recognition on the low-power edge device to trigger the main camera?
A: Looking for a 70-80% accuracy

Q: When the edge device triggers the main camera, what specific data is expected to be transmitted back to the central location alongside the high-quality footage? Is it just a notification, or should it include metadata from the edge AI analysis (e.g., type of SOI detected, timestamp, confidence score)?
A: Additional Meta data would be beneficial to the bid

Q: The project scope mentions the ability to "plug and play into existing surveillance systems." What are the typical interfaces and protocols used by these existing systems? Are there specific hardware or software standards that need to be adhered to for seamless integration?
A: Already answered

Q: Is there an expectation for the edge AI model to learn and adapt over time, for example, to recognise new SOIs or adjust to changing environmental conditions? If so, how will this learning process be managed and updated on potentially remote edge devices?
A: These features would be beneficial to the bid

Q: How will the end-users interact with the edge device? Is there a need for a local interface for configuration, monitoring, or basic analysis, or is all interaction expected to be remote?
A: Remote would be the ideal solution but local is minimal requirement

Q: What is the expected technical proficiency of the personnel deploying and operating these systems in the field? This will influence the required ease of use and the level of technical support needed.
A: Skilled installation engineers

Q: While battery power is a key concern, are there specific types of batteries commonly used? Are there expectations for energy harvesting or other power management techniques to extend operational life beyond just the AI-driven triggering?
A: Out of scope

Q: Given the context of national security, what are the primary security threats the edge device, and the overall system need to be protected against in the deployment environment (e.g., physical tampering, cyber-attacks, signal jamming)? Is the device likely to left permanently at the target location (i.e. not recovered.)
A: HMGCC can manage the security aspects. It will be left permanently at the location.

Q: Can the authority release an ICD for the surveillance camera? Or an example make/model?
A: A wide range of industry standard CCTV cameras should be considered

Q: Will we get to test on a representative surveillance camera? If yes, are we able to modify it?
A: No

Q: The example use case states that a message is sent to a remote operator/user. Is this just an alert, or are pictures or video also sent?
A: Additional features would be beneficial to the bid

Q: Does the authority have a bearer technology in mind for sending the alerts/data from the device to the user?
A: Not defined

Q: How long must the device operate in situ without the operator having to return to it?

A: Already answered

Q: Is there a maximum size or mass envelope for the device?
A: No maximum size defined

Q: If the edge device is conducting face/person identification does the authority have any expectations for accuracy/bias/fairness? Are there any legal minimums to comply with?
A: Accuracy answered

Q: Does the proposed work focus solely on the integration of cameras and other sensors with AI-enabled methods to support surveillance systems, or does it also need to consider other components such as communication systems?
In the example, it is mentioned that the user will receive a notification via a message. Should we also consider the design of this functionality?
A: Solely cameras

Q: Since a clearer modelling of operational conditions would help support more tailored applications to meet specific requirements, could they please list additional potential operational environments where this system could be used, beyond those provided in the examples?
A: A wide range of environment capabilities would be beneficial to the bid

Q: Will the user be operating in a contested environment signals wise?
A: No

Q: Will the user require the capability to change the embedded intelligence (ie. the SOI) based on operational needs post deployment?
A: Yes

Q: Will the user require no-code/visual editors for selecting/inputting the SOI?
A: User features like this would be beneficial to the bid

Q: Can indicative solutions make use of Cloud technologies alongside the edge analytic components in the overarching solution?
A: Edge is the main driver

Q: Is there an existing tool set you would prefer to use to communicate with the high powered device or is it anticipated that the proposal should include this? If the later, what devices should we support?
A: Already answered

Q: Are the agents using the high powered devices for Video and or Pictures? Would we need to consider this in our proposal?
A: Video

Q: Is the proposed detection mechanism intended to be focused on a specific region of the camera? Such as the Middle 70% if the camera image area.
A: This is a sensible assumption

Q: Would the detection mechanism be able to "train" itself on existing image data of the subject of interest or action?
A: Similar features would be beneficial to the bid

Q: What limitations does the proposed detection mechanism have for communication with a Cloud endpoint? Can we use a MOD accredited cloud endpoint to communicate with the edge device as needed?
A: Edge is the preferred driver

Q: At present is there a requirement to get MOD accreditation for the devices we develop or would that be a factor for later?
A: That may come later

Q: For the low powered (camera) detection mechanism, what distance would it have to work up to? Is it long / short distance?
A: Short distance (up to 20m)

Q: What are the distances from trigger sensor to SOI?
A: Short distance (up to 20m)

Q: What are the distances from trigger sensor to master system with long distance high spec camera Camara?
A: Short distance (up to 20m)

Q: What is the maximum total size/weight of the trigger sensor(s) system?
A: undefined

Q: What is the maximum total size/weight of the master system?
A: undefined

Q: What is the minimum detection performance of the trigger sensor? (Image quality and human detection success rate)
A: Already answered

Q: What is the minimum power duration of the trigger sensor? (Days, weeks, months etc)

A: Already answered

Q: What's the expected distance between SOI and the sensors?
A: Already answered

Q: Can wireless protocols be used for trigger events?
A: Yes

Q: Target environment for SOI? Indoor/outdoor, urban/rural
A: Already answered

Project/General Questions

Q: What pass/fail criteria are assigned to the project?
A: Proposals are scored against the selection criteria detailed in the challenge form.

Q: Is there only a single winner or will multiple applicants be selected?
A: There is generally one solution provider we will engage with.

Q: Are these value-based or cost-based contracts? For example, do we propose a contract cost figure based on the value we will deliver, which includes a rough breakdown in term of time, material, overheads, and indirect costs? Or is this breakdown not of particular interest?
A: The budget is set in the challenge form however in your proposal we would expect to see a project plan which would include much of what has been mentioned here

Q: Does HMGCC want these costs specifically evidenced, proven, and audited similar to a grant (timesheets, payslips, bank statements etc), or is this treated like a commercial procurement contract where the contract will be judged on the basis of its delivery and timesheets and payslips remain confidential?
A: No it is treated as a procurement therefore the its delivery and the MVP that are paramount. No other defrayal evidence is required

Q: What are the typical payment terms? Are there stage gates, or is everything paid in arrears at the end of the project?
A: Usually at the end of a sprint (sprint lengths within the 12 weeks are defined in your proposal)

Q: Are we able to provide a costed option within a bid?
A: You can provide as much information within the limits set in the challenge form brief. The budget is set in the introduction section of the challenge form

Q: Can you please confirm the budget limit for a consortia? I've seen the line "Budget per single organisation, up to £60,000" – can you confirm that means a consortia of e.g. 2 companies would have a budget up to £120k?

A: There is generally one solution provider we will engage with up to £60k. This does not prevent consortia applying i however for this challenge must stay within the £60k budget

Q: Can the application be in the form of a report (as opposed to slides), as long as it does not exceed the 6-page limit?
A: As long as the proposal covers all areas that will be scored it can take whichever format you wish. If it does not contain information that we have specifically asked for then the proposal will not score well

Q: Can the application include graphs or diagrams?
A: Yes

Q: In the evaluation of innovation, new knowledge and IP are mentioned. What are the metrics used to evaluate these concepts? For example, in addition to the prototypes, are we also expected to deliver academic publications or patents?
A: No, this is a score of 1-5 on how Innovative the proposed solution is based on our technical expertise.