



Challenge: Smart glasses for mapping

Summary of the challenge

Can you help defence and security use smart glasses to aid reconnaissance missions?

This is the latest 12-week, funded challenge launched by HMGCC Co-Creation – now open for applications.

The aim of this project is to develop an edge device that can process video and audio and has the ability to stitch together and create high fidelity 3D maps from off-the-shelf smart glasses.

Participants should deliver a demonstrable proof of concept to a minimum Technology Readiness Level 4.

HMGCC Co-Creation will provide funding for time, materials, overheads and other indirect expenses for successful applicants.

Technology themes

Applied research, artificial intelligence, computer vision, data science and engineering, information technology, machine learning, modelling and simulation, software development, wearable technologies.

Key information

Total budget (ex VAT), up to	£60,000
Project duration	12 weeks
Competition opens	Monday 12 October 2026
Competition closes	Thursday 12 November 2026

Context of the challenge

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Smart glasses are now commercially available, offering features including integrated cameras, AI voice assistance and heads-up displays.

For security and defence operators, smart glasses could provide a first-person reconnaissance view of a terrain but, for this capability to be used, government would need a robust, secure, and automated software chain able to convert raw sensor streams into 3D geospatial intelligence.

The gap

Human reconnaissance is a specialised task undertaken when drones and satellites can't be used, for example when scouting concealed targets, operating in adverse weather conditions or where agility is required.

In high stress situations, it is crucial a system is available that is easy to use. This system should be able to take images of the situation being studied, so the data can be interpreted by an analyst.

This challenge really asks whether commercial smart glasses could help provide a lower cost solution to some of the existing specialised systems.

But questions remain:

- Who can access the raw data and under which legal frameworks?
- Can the camera deliver sufficient resolution and stability for accurate mapping?
- Can the sensor suite be leveraged to generate reliable 3D models without additional hardware, while processing in real time?

Example use case

Michael is on a reconnaissance mission in a city. His objective is to gather a detailed visual and acoustic map for operational planning, which could help future colleagues travelling in the city have a better understanding of the area.

Michael wears a commercial pair of smart glasses that continuously record a high-resolution video feed. They tag each frame with head-orientation data using built-in inertial measurements, and capture sound. All data remains encrypted on the device and is processed in real-time.

The data is only downloaded after the mission, eliminating any transmission risk.

When back at base, analyst Julie inspects the raw and the real-time processed data. She can see that the 3D model has already been created, the algorithm on an edge device was able to compensate for rapid head movements, stitching overlapping frames into seamless panoramas.

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This data can now be easily accessed by local staff so they can avoid dangerous areas and see up to date maps of the local environment.

Project scope

The focus of this challenge is on processing sensor information from smart glasses. The deliverable should be a proof of concept to at least Technology Readiness Level (TRL) 4.

Essential requirements:

- Assess the data generated from smart glasses and provide a report on where the data may go and who may have access.
- Use camera sensor information from smart glasses to provide high-quality images of an urban environment in daytime.
- Demonstrate a proof of concept using camera information to re-create a 3D map.

Desirable requirements:

- Use camera sensor information from smart glasses to provide high-quality images of an urban environment in low light conditions.
- Demonstrate a proof of concept using audio sensor information to add to reconnaissance information.
- Explore all essential requirements across multiple smart glasses from different manufacturers.
- A stretch goal is to combine audio and visual data to overcome common mapping hurdles, such as reflections (which confuse cameras) and solid walls (which block sight).
- Reports on this work should detail future roadmaps of smart glasses manufacturers, including projecting the types of new sensors and other features that could be incorporated in the next three years.

Constraints:

- We are open to a wide range of smart glasses on the market.
- All smart glasses sensor information gathered must be legally compliant, for example with GDPR.
- The terms and conditions of the use of procured smart glasses must not be breached.

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Not required:

- We do not want a redesign of smart glasses.
- We do not want to develop new smart glasses.
- We do not want to change the physical structure of smart glasses.

Dates

Competition opens	Monday 12 October 2026
Clarifying questions deadline	Thursday 29 October 2026
Clarifying questions published	Thursday 5 November 2026
Competition closes	Thursday 12 November 2026
Applicants notified	Thursday 19 November 2026
Pitch Day	Wednesday 25 November 2026
Pitch Day outcome	Monday 30 November 2026
Commercial onboarding begins*	Tuesday 1 December 2026
Target project kick-off	January 2027

*Please note, the successful solution provider will be expected to have availability for a one-hour onboarding call via MS Teams on the date specified to begin the onboarding/contractual process.

Eligibility

This challenge is open to sole innovators, industry, academic and research organisations of all types and sizes. There is no requirement for security clearances.

Solution providers or direct collaboration from [countries listed by the UK government under trade sanctions and/or arms embargoes](#), are not eligible for HMGCC Co-Creation challenges.

How we evaluate

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All proposals, regardless of the application route, will be assessed by the HMGCC Co-Creation team. Proposals will be scored 1-5 on the following criteria:

Feasibility	<ul style="list-style-type: none"> • What is the technical credibility of the minimum viable product proposed? <ul style="list-style-type: none"> ○ Is it technically possible? ○ Are there key technical risks overlooked? • Likelihood of the minimum viable product reaching or exceeding the minimum required Technology Readiness Level (TRL)? <ul style="list-style-type: none"> ○ Does the proposal aim to reach the minimum TRL? ○ Assessors' confidence in the proposal from technical perspective? ○ Will the proposal exceed the minimum TRL? • Credibility of the team regarding technical and project management skills? <ul style="list-style-type: none"> ○ Does the team have all the relevant expertise? ○ How experienced are they? ○ Have they delivered something similar before?
Desirability	<ul style="list-style-type: none"> • How closely does the proposal directly address the challenge? <ul style="list-style-type: none"> ○ Does the proposal achieve all essential requirements? ○ How many desirable requirements are achieved? ○ Is this something the users want? • How well is the benefit for government and dual-use described? <ul style="list-style-type: none"> ○ Is the benefit to the user's well described? ○ Have the applicants identified dual-use markets? • Ambition of the proposed solution? <ul style="list-style-type: none"> ○ Does the solution provide an incremental step in capability or significant leap? ○ Is the proposed solution unique to the applicants?
Viability	<ul style="list-style-type: none"> • How well is the exploitation route described? <ul style="list-style-type: none"> ○ Is the proposal just aiming to deliver the minimum for the project? Or have they got a project plan post phase 1? ○ Are they thinking about commercial exploitation routes? ○ Are there rough costings for future work? • How well does the proposal demonstrate value for money and are the costs broken down and justified? <ul style="list-style-type: none"> ○ How much time and resource is spent on a project for the cost?

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	<ul style="list-style-type: none"> ○ Is there a perceived high ambition for the cost? ○ Is there a robust costing plan? • How well is the project delivery described leading to the minimum viable product? <ul style="list-style-type: none"> ○ Is there a Gantt chart or similar? ○ Are there proposed outcomes after each sprint? ○ Are the applicants experienced in Agile methodology?
Budget	<ul style="list-style-type: none"> • Are the project finances within the competition scope?

Invitation to present

Successful applicants will be invited to a pitch day, giving them a chance to meet the HMGCC Co-Creation team and pitch the proposal during a 20-minute presentation, followed by questions.

After the pitch day, a final funding decision will be made. For unsuccessful applicants, feedback will be given in a timely manner.

Clarifying questions

Clarifying questions or general requests for assistance can be submitted directly to Co-Creation@dstl.gov.uk and cocreation@hmgcc.gov.uk before the deadline with the challenge title as the subject. These clarifying questions may be technical, procedural, or commercial in subject, or anything else where assistance is required. Please note that answered questions will be published to facilitate a fair and open competition.

How to apply

Please submit your application on the [HMGCC Co-Creation website](#). Any queries please email Co-Creation@dstl.gov.uk and cocreation@hmgcc.gov.uk.

All information you provide to us as part of your application will be handled in confidence.

Applications **must** be no more than six pages or six slides in length. HMGCC Co-Creation reserves the right to stop reading after six pages if this limit is breached. The page/slide limit excludes title pages, references, personnel CVs and organisational profiles.

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There is no prescribed application format, however, please ensure your application includes the following:

Applicant details	Contact name, organisation details and registration number.
Scope	Describe how the project aligns to the challenge scope.
Innovation	Describe the innovation and technology intended to be delivered in the project, along with new IP that will be generated or existing IP that can be used.
Deliverables	Describe the project outcomes and their impacts.
Timescale	Detail how a minimum viable product will be achieved within the project duration.
Budget	Provide project finances against deliverables within the project duration.
Team	Key personnel CVs and expertise, organisational profile if applicable.

Co-Creation terms and conditions

Proposals must be compliant with [HMGCC Co-Creation terms and conditions](#). By submitting your proposal you are confirming your organisation's unqualified acceptance of Co-Creation terms and conditions.

Commercial contracts and funding of successful applications will be engaged via our commercial collaborator, Cranfield University.

HMGCC Co-Creation supporting information

[HMGCC](#) works with the national security community, UK government, academia, private sector partners and international allies to bring engineering ingenuity to the national security mission, creating tools and technologies that drive us ahead and help to protect the nation.

[HMGCC Co-Creation](#) is a partnership between [HMGCC](#) and [Dstl](#) (Defence Science and Technology Laboratory), created to deliver a new, bold and innovative way of working with the wider UK science and technology community. We bring together the best in class across industry, academia, and government, to work collaboratively on national security engineering challenges and accelerate innovation.

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HMGCC Co-Creation aims to work collaboratively with the successful solution providers by utilising in-house delivery managers working [Agile](#) by default. This process will involve access to HMGCC Co-Creation's technical expertise and facilities to bring a product to market more effectively than traditional customer-supplier relationships.

FAQs

1. Who owns the intellectual property?

As per the HMGCC Co-Creation terms and conditions, project IP shall belong exclusively to the solution provider, granting the Authority a non-exclusive, royalty free licence.

2. Who are the end customers?

National security users include a wide range of different UK government departments which varies from challenge to challenge. This is a modest market and so we would encourage solution providers to consider dual use and commercial exploitation.

3. What funding is eligible?

This is not grant funding, so HMGCC Co-Creation funds all time, materials, overheads and indirect costs.

4. How many projects are funded for each challenge?

On average we fund two solution providers per challenge, but it does come down to the merit and strength of the received proposals.

5. Do you expect to get a full product by the end of the funding?

It changes from challenge to challenge, but it's unlikely. We typically see this initial funding as a feasibility or prototyping activity.

6. Is there the possibility for follow-on funding beyond project timescale?

Yes it is possible, if the solution delivered by the end of the project is judged by the HMGCC Co-Creation team as feasible, viable and desirable, then phase 2 funding may be made available.

7. Can we collaborate with other organisations to form a consortium?

Yes, in fact this is encouraged, however please see the maximum budget of the individual challenge.

8. I can't attend the online briefing event, can I still access this?

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If a briefing event is held, any questions (and answers) will be captured and published after the event. The call itself is not recorded and use of AI notetakers is not permitted.

9. Do we need security clearances to work with HMGCC Co-Creation?

Our preference is work to be conducted at [OFFICIAL](#), we may however, request the project team undertake [BPSS](#) checks or equivalent.

10. We think we have already solved this challenge, can we still apply?

That would be welcomed. If your product fits our needs, then we would like to hear about it.

11. Can you explain the Technology Readiness Level (TRL)?

Please see the [UKRI definition](#) for further detail.

12. Can I source components from the list of restricted countries, e.g. electronic components?

Yes, that is acceptable under phase 1 - feasibility, as long as it doesn't break [UK government trade restrictions and/or arms embargoes](#).

Further considerations

Solution providers should also consider their business development and supply chains are in-line with the [National Security and Investment Act](#) and the National Protective Security Authority's ([NPSA](#)) and National Cyber Security Centre's ([NCSC](#)) [Trusted Research](#) and [Secure Innovation](#) guidance. NPSA and NCSC's [Secure Innovation Action Plan](#) provides businesses with bespoke guidance on how to protect their business from security threats, and NPSA and NCSC's [Core Security Measures for Early-Stage Technology Businesses](#) provides a list of suggested protective security measures aimed at helping early-stage technology businesses protect their intellectual property, information, and data.

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