

PYRAMID for avionics and mission systems: Phase 2 Webinar Clarifications

Below are questions that arose during the PYRAMID for avionics and mission systems: Phase 2 webinar held on 14 October 2025. Slides used in the webinar can be found by following [this link](#).

Further clarifications have been added on 29 October 2025 following the supplier one to one session on 23 October 2025.

Eligibility etc.

Q: Are companies that were successful in Phase 1 able to apply for Phase 2, and can a Phase 2 project be an extension of a successful Phase 1 project?

A: There are no exclusions on who can bid into Phase 2, and there can be 'extensions' as long as you can show some benefit of doing the additional work. Each proposal will be reviewed on its own merit regardless of Phase 1 success. If you were successful in Phase 1 we do ask that you explain clearly in your Phase 2 proposal how the additional work will further the adoption of PYRAMID within your organisation.

Q: Can the project be a refinement or update of something already made?

A: Yes, absolutely. Organisations have had great success in taking their systems and adopting PYRAMID and in doing this unlocking all sorts of new potential enabling new product lines allowing the introduction of changes more rapidly and at a modular level.

Q: Can you give more details on the differences between what you are looking for in Phase 2 compared to Phase 1?

A: They're very similar in that they're both focused on increasing PYRAMID adoption, growing the supplier base and getting feedback from industry on their experiences using PYRAMID.

But, whereas the focus of Phase 1 was entirely on PYRAMID adoption outside of the main GCAP suppliers into wider industry, Phase 2 is hoping to see PYRAMID applied as part of an end-to-end engineering process, embedded into a tool chain, and seeing that whole process from requirement to in-service, or component reuse across multiple products. We would like to see this result in PYRAMID adoption on current and future systems. We want the ability to make changes to avionics systems rapidly, and that requires looking at the whole process.

Q: Is Phase 2 targeted at existing collaborations on an existing system, or can an entirely new collaboration be proposed to be funded by PYRAMID Phase 2?

A: It could be an entirely new collaboration.

Q: When you mention collaborative working as a key requirement, are you expecting collaborating industry partners to submit joint proposals?

A: It would be great to see collaboration on bids submitted into the competition, however, it is not a key requirement. If you are submitting a collaborative bid then there would need to be one organisation who is the lead applicant with whom the contract is placed with. The submission portal allows for all collaboration partners to be listed. We have a [collaboration survey](#), so you can see if there is opportunity to link up.

Q: Can a company submit more than one proposal?

A: You can, but be careful to avoid inter-dependencies. You should also provide information

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to give assessors confidence that you would be able to deliver more than one project simultaneously should more than one proposal be successful.

Q: What were the common mistakes / misinterpretations made in bids for the phase 1? Things to do / avoid for Phase 2?

A: We strongly recommend you carefully read both the Competition Document and the PYRAMID Technical Standard and Guidance documents. It is worth fully understanding what PYRAMID compliance is. Confirm that you will be developing a PYRAMID compliant version of your system and not just reviewing how you might adopt the PRA in your system design. Indicate how many PYRAMID compliant components will be developed during the funded part of your project and how they will be integrated. The description of the avionics or mission system to which PRA compliance is to be adopted should give an indication of the size/scale/complexity of the system for which you will be applying PYRAMID.

Scope

Q: Could you give some examples of projects that were funded during the Phase 1 project?

A: Companies who were funded during Phase 1 included some Primes, System Integrators, Design authorities (including BAE Systems, Leonardo, Raytheon. But we also funded companies traditionally thought of as the lower-level tier suppliers; including SMEs that are developing small UAVs. Any organisation that is developing and integrating software into avionics mission systems is able to bid in and be successful. So, providing a key benefit for us in growing the supplier base that have adopted PYRAMID. If you would like to read more about the successful projects from Phase 1, please follow this [link](#).

Q: Is this competition purely for software projects only?

A: PRA is the functional breakdown of what has traditionally been called application-level software. However, the PRA could equally be adopted for Application Specific Integrated Circuits (ASICs) and Field Programmable Gate Arrays (FPGAs), that could possibly be in scope of the competition but would still have to be a layer of application-level software. If you're developing an operating system the functionality of the PRA wouldn't cover that.

Q: What if the software in question is bare metal (i.e. no operating system)? Can this be made PYRAMID compliant (i.e. containerised)?

A: There is nothing defined in any of the PYRAMID components that ties you to a specific API or working through middleware or an operating system. The way that the bridges are defined, you could be effectively controlling the hardware directly, so it would definitely be possible to make that type of system PYRAMID compliant.

Q: Is it goal to produce a working demo/prototype for one of the identified PRA Components or is it us demonstrating compliance through our development process?

A: Not for just one component, as it is likely that any system will have multiple components working together. Demonstrations should be in terms of showing a separation of functionality across a number of components. We also expect to see evidence of an onward pathway to a prototype demonstration and future exploitation of your system.

Q: Is there interest in projects associated with air platforms typically operated in other services, such as low-cost high-attribution, normally Army use case today?

A: There is an interest in expanding PYRAMID adoption to systems outside of traditional RAF platforms. Work is currently being undertaken with companies working on UAVs potentially for the Army; but also some of the Naval helicopter systems. We are interested in

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lessons from across air.

Q: Does the PYRAMID architecture manage the complexities introduced by AI autopilots that

can change UAV fight paths depending on threats detected *en route*?

A: Whilst it doesn't do that, there are some components that are very much aligned with AI and autonomy and directly support it e.g. Authorisation, as an assumption was made that there would be a lot of autonomy and AI embedded into those systems.

Q: Most avionic functions are traditionally built by a small number of established large Primes. Will SMEs have any access to information/advice from the Primes?

A: We strongly encourage collaboration and to help enable this we have a [collaboration survey](#) which you can complete. The information of other organisations that have also signed up will then be available for you to review and make your own connections. DASA does not offer a brokering service.

Q: Will there be funding available to validate projects within a demo environment. (Multi-domain industry partners showcasing the PYRAMID compliant system)?

A: I think it would be welcomed, but we would also expect to see what your plans are to take that demonstration environment further to deployment.

Q: Is there interest in integrating the PRA with uncrewed systems for better compatibility and interoperability with crewed systems, or is the focus on the latter?

A: We have no preference towards bids focusing on systems for uncrewed or crewed platforms, either will be of interest to us. Similarly, platform size is also not a factor in whether you are able to submit a bid. We are equally interested in all things where the PRA can be applied.

Q: Do proposals need to sit within a single PRA Component, or can multiple components be addressed as containerisation/contamination is respected overall?

A: It's very likely that any PYRAMID deployment would require multiple component types working within that system. Unless you are working on one component which might provide huge benefits to an element of avionics mission systems, we would more expect to see multiple components working within a deployment.

General

Q: There seems to be a lot of detail required to prepare a project. Is there an expected page number for a project? How much detail are you asking for to apply?

A: We do ask for sufficient technical detail for assessors to make an informed decision. But there is a word count limit of 3,000 for each of the 3 main sections of Desirability, Feasibility & Viability. There are sections to further explain your exploitation plans and provide additional information so the total limit is about 10,000 words. We advise that around 4,000-6,000 words is optimal. Assessors have 90 minutes in total to complete their assessment of a proposal. All answers must be submitted in the submission service fields; PDFs cannot be attached. Do not use images as a way to overcome the word count limit.

Q: Will the PYRAMID calls continue, or is this a one-off?

A: There are no current plans for any more PYRAMID calls after Phase 2.

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Q: What is the target completion TRL for project under the proposal at the conclusion of the funded period?

A: There isn't a specific TRL requirement for this competition. We are, however, interested in what level your systems are now, and where they might get to. In your proposal, use your expert opinion to decide what TRL you think your system is at and detail your reasoning.

Q: How many projects are you looking to fund. Do you have guidance on minimum / maximum project value?

A: We have up to £3 million (excluding VAT) and expect to fund 5-10 projects. We expect to see a wide range of programmes at varying stages, so it is not possible to set a limit for each bid. Your total costs should be appropriate to cover the work expected to adopt PYRAMID i.e. activity, resources required. We are not paying for the full development of your product. Consumables & hardware are not eligible costs; but the time you need and the work you will undertake to adopt PYRAMID are.

Q: Is GCAP now using the PRA? Until PRA is agreed internationally this programme will continue to be technically hampered...

A: Yes, all GCAP members have agreed that PYRAMID is the architecture of choice and will be adopting it.

Supporting Documents

Q: How does this complement the use of DefStan 00-055 for Safety Critical applications?

A: PYRAMID was designed to ensure that it was fundamentally compatible with airworthiness and software standards and ensure that it doesn't preclude the application of any of these standards to the software and systems developed. The modular approach to system design and development also enables other techniques such as modular certification based on Goal Structuring Notation that are of real interest in rapid re-certification when a change has been made.

Q: Is there a plan to issue a PRA Requirements Definition Document pack?

A: All PRA information is defined in the [Technical Standard](#). It is also described in [DEFSTAN 00-134](#) which is available online through [Knowledge in Defence](#), which may require registering for an account to access. Everything which was in the exploiters pack has been incorporated into the Technical Standard.

Supplier one to one clarifications

Q: Will our proposals be assessed on how we plan to integrate PYRAMID into an existing product? Or on our processes and the changes/upgrade made to the product? How deep into process and practices will you go?

A: We are encouraging the adoption of PYRAMID, growing the supplier base and getting the lessons learnt from industry. We care about the output, and don't want you to change your processes, use different tool chains, software languages, or modelling tools – it is all about the separation of functionality into PYRAMID compliant components and deployments. The fundamental thing to bring out in the proposal is what activity you will be undertaking to make your product PYRAMID compliant, and how this meets the intent defined in the DASA Competition Document.

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Q: In the PYRAMID Technical Standard, you discuss hardware, but our products tend to be firmware based. Would this still meet the requirements of the competition?

A: We are talking about the application layer, not the Operating System or infrastructure, but the application space which would typically include the mission system software, and some vehicle management software functionality as described in the PYRAMID Technical Standard. There are no restrictions on how this functionality is implemented as long as it complies with the PYRAMID Reference Architecture, so implementation via Software, Firmware or Application Specific Integrated Circuits (ASICs), can still meet PYRAMID compliance rules by separating the functionality.

Q: You've included Item Development Assurance Levels (IDALs) in the Technical Standard for the component definitions. Is it a requirement that proposals show how these IDALs will be met, as design assurance will take place in much slower time compared with product development.

A: IDAL compliance is not part of the mandatory requirements, but the standard offers guidance that these components may need to meet these IDALs for some applications; and therefore if you see potential in reusing the components or their artefacts in other systems it may be valuable to develop them to this level. We're not going to be checking if you are developing components to these assurance levels, this will be entirely your decision.

Q: If we have multiple strands which could be incorporated into one bid, is it better to submit one proposal, or to separate them into separate proposals?

A: Don't overstretch yourself in a single proposal. Once you've been supported to start adopting components the expectation would be that you sustain yourself from then on. It's also worth noting that if you put in a number of proposals that you should be able to fulfil all of them if they are successful. For additional guidance, please submit an innovation outline.

Q: Would there be a concern over the underlying TRL level? Our product's potential exploitation pathway would be much further down the line from PYRAMID adoption.

A: The most important thing is showing multiple PYRAMID components running as a deployment; the fact it hasn't been demonstrated outside of a lab onto an aircraft would not be a problem, but we would like to see your plans for how your system will be exploited into a real capability.

Q: Would a PYRAMID compliant system which has scalable teaming/swarming implications, be in scope of the competition?

A: It absolutely would, that is how we see future capability being delivered with PYRAMID compliant software on individual UAVs which can then work together in a swarm, with components being reused across the elements of the swarm. How you communicate between these elements of the swarm would be not be mandated as PYRAMID is agnostic to datalinks and communication systems between the aircraft.

Q: Are we able to include in our proposal a demonstration of the development of process through simulation to validation, so we might reduce development cycle times in the future?

A: We are supportive of understanding the end-to-end process and how PYRAMID can support rapid adaptability within that process. Changing the software is only part of the 'requirement to in-service' process, and we believe the modular approach provided by PYRAMID enables further benefits in terms of, for example, modular safety cases. It is all about rapid adaptability of capability and the end-to-end process is key to this.

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Q: Is collaboration with USA organisations permissible, for FACE and PYRAMID alignment?

A: We have worked closely with the USA Government and industry teams to understand the architectures and standards they are using, and we developed PYRAMID to be compatible and complementary to the FACE Technical Standard and components developed that are FACE conformant. Collaboration isn't mandatory but very much welcomed.

Q: When looking at mapping our systems to PYRAMID we've found a spread across different components. Is there concern about distribution of software over multiple components and the potential impact on performance?

A: If you take the functionality from one part of a system it might require multiple components to meet those responsibilities. We do support the concept of keeping the components separate for as long as possible in the development lifecycle, but, if necessary, you are able to combine components at 'build time' into a single executable. But it would still have to be developed as separate components to be PYRAMID compliant. We don't want to impose a performance penalty, but experience has shown that previous concerns regarding performance have not turned out to be the case in the deployment, but we are interested in your lessons regarding performance for your system.

Q: If we are working in collaboration and acting as lead on the proposal, would we be responsible checking the sub-contractor's compliance to PRA? And is this eligible to be listed as a cost.

A: It is the responsibility of the lead organisation in this engagement to ensure that PRA compliance has been achieved. If part of the work being undertaken is reviewing the compliance of work undertaken by sub-contractors, then that would be considered as an eligible cost, but the overall bid will still be assessed against value for money.

Q: Would it be more appropriate to demonstrate a plug and play rules-based solution, or a multiple tier autonomy where there are autonomous agents operating at tasking level?

A: The PYRAMID components and concepts have been developed for different level of autonomy and authorisation; and we would see it as very likely that there would be multiple instantiations of the PRA components working at different levels of autonomy. Whether you then design the system using extensions to implement specific algorithms (which only output information through their parent component) is entirely up to you. The are approaches facilitated by PYRAMID Technical Standard to implement different levels of autonomy, and it is likely that you would want to separate the functionality using extensions. But we want to understand your logic in designing the system the way that you have and how this will enable the benefits of PYRAMID.