The close time for most of our funding opportunities is 11 am. We will not accept applications after deadlines have passed. We do not accept liability for incorrect information published on any third party website.

Project details

Subsidy basis

Partner	Funding rules	
FLOSSVERSE LTD (Lead)	Subsidy control	View answers

Application team

FLOSSVERSE LTD

Organisation details

Type	Business

Team members

Full name	Email	EDI survey
John O'Hare	flossverse@xrsystems.uk	Complete

Application details

Competition name
AI Solutions to improve productivity in key sectors

Application name
flossverse:reflow

When do you wish to start your project?
1 April 2024

Project duration in months
6 months

Innovation area
Creative industries

Research category

Selected research category
Industrial research

Project summary

No feedback provided

Project summary

Our project, flossverse:Reflow aims to develop novel pre-visualisation workflows for the virtual production industry by integrating commercial AI image tools, open source image processing code, and open-source robot control software. The target market is twofold. Robotics companies who would then have an additional product offering to support ICVFX (in camera VFX) or green screen workflows, and the film and video producers themselves, who would be able to interface far more seamlessly with expensive motion control robotics companies.

For example. consider a time travel film's early planning. Stakeholders and shot planners could guide a city street scene's basic massing using rough sketches. They would then use such familiar products as Adobe Firefly 2 or OpenAI Dalle 3 text to image generation to different versions of a static shot for various time periods. We have chosen to use Adobe and OpenAI (or similar) because of concerns about open source foundation image models raised by a previous assessor with respect to an earlier (and different) version of this proposal. It is also a familiar name for industry players, though a license may be required at any client site.

These images would then form the input to our upscaling and animation pipeline, which would produce high resolution movie plates and robot camera tracks suitable for immediate deployment on LED volumes and pre-viz pipelines.

Trialling these against live talent, basic script, and lighting, would reveal design issues. We plan to allow export of rough 3D geometry (from depth field AI) which could be exported into the normal Unreal workflows, saving time and costs while reducing confusion, integrating with existing Unreal workflows.

This innovative approach inverts the existing ICVE workflow, driving camera motion from the scene rather than scene motion from a tracked camera. It aligns well with pre-viz workflows, allowing rapid ideation.

- A mood board, sketch, shot list etc forms the input for text to image creation on legally complaint platforms with high levels of risk management.

- Directors describe a shot path in the software. laying out a shot like a traditional storyboard.
- Generative AI rapidly creates high-resolution backdrop plates with correct parallax cues, unlike conventional image and video plates

Within minutes (or hours for very demanding work), the camera path syncs to the robot, and the backdrop plates are displayed on the 3D wall or in the studio mixdown from a green screen.
This can be iterated, adjusting lighting and swapping out scenes.

Public description

No feedback provided

Public description

flossverse:Reflow is a new approach to virtual production pre visualisation workflows. Virtual production is revolutionising the way films and TV are created and saving valuable time and resources. Our project aims to increase those efficiencies in the UK by developing innovative pre-visualisation workflows for the whole virtual production industry. We're looking to make virtual production more accessible and efficient.

Our innovative workflow simplifies the process.

- Non-artists create hero images for new film scenes using familiar commercial web interfaces to generative AI image systems. This augments the conventional storyboarding method. This is already happening in industry.
- Directors lay out shots like traditional storyboards by describing shot paths for our software.
- Our generative AI tooling uses the copyright safe commercial images to build upscaled and animated "plates", swiftly creating high-resolution backdrops with accurate parallax cues.

Within minutes or hours, the camera path syncs to the robot, and backdrop plates are displayed on a 3D wall or in the studio mixdown from a green screen. The shot can be run repeatedly, adjusting lighting and swapping out scenes for different ideas.

For example, consider an early conversation in production of a time travel film, stakeholders and shot planners could guide a city street scene's basic massing using line sketches until the Generative AI looks and feels right. This would be done using highly legally compliant GenAI models.

Our Generative AI then produces different versions of a pan shot for various time periods. Testing these against basic script, and lighting would reveal design issues. Rough 3D geometry could be exported into the normal Unreal workflows

and a design guide for the Unreal engineers, saving time and costs while reducing confusion.

Our innovative approach inverts the existing ICVEX workflow. driving camera motion from the software rather than software motion from a tracked camera. This aligns well with pre-viz workflows, allowing rapid ideation.

Scope

In scope 5/5

How does your project align with the scope of this competition?

The rapid advancements in video production and machine learning, such as RunwayML Gen2, etc provide a glimpse into a new era of creative possibilities. However, there is a significant gap in integrating machine learning-based generative video into traditional high-end video production workflows.

Our proposal aims to bridge this gap by blending the cutting-edge capabilities of highly compliant creative AI tooling from established players such as Adobe, and open-source machine learning for video, open robotics, and compatibility with existing virtual production workflows. We focus on enabling robotic mechanisms for seamless integration.

To ensure the practical application and adoption of our technology, we are targeting companies that we have worked with in this area for years, G6Moco, PathwayXR studio, and Badger and Coombs. By building our product in consultation with these industry players we hope to refine our MVP pipeline toward a product market fit.

Assessor feedback

Assessor 1

Project aims to utilise advances in ML image/video generation to impact on creativity and efficiency in virtual production workflows. Plenty of opportunity for innovation and commercial gain, hence within scope.

Assessor 2

The project appears to be in scope.

Assessor 3

Broadly in scope.

Assessor 4

This application is within scope. It comes from a company which seeks to make virtual production more accessible and efficient. The innovation proposed is interesting and appropriate for this industry.

Assessor 5

The applicant is a UK business and their project is in line with the brief for this competition, so this application is in scope.

Application questions

1. Applicant location (not scored)

No feedback provided

Applicant location

Flossverse
The Old Workshop, 12b Kennerleys Lane, Wilmslow, Cheshire, United Kingdom, SK9 5EQ

14732989

2. Permits and licences (not scored)

No feedback provided

Permits and licences

Not applicable

3. Need or challenge

Average score 6.0 / 10

What is the business need, technological challenge, or market opportunity behind your innovation?

The rapid adoption of virtual production in film and broadcast is driven by the need for greater agility, cost efficiency, and sustainability. VP blends physical and digital techniques, using real-time game engines and LED volumes to visualize photorealistic virtual environments on set. This enhances creativity while reducing the resource intensity of traditional FX.

However, wider VP adoption is constrained by financial barriers, change inertia, and the complexity of integrating new tech like AI and robotics. Our innovation directly tackles these limitations by developing an accessible, commodity-hardware pre-viz workflow, which is modular and interchangeable with professional systems.

Pre-visualization is crucial for experimentation and collaboration in early creative stages. But current pre-viz pipelines are resource-heavy, requiring extensive manual modeling, camera tracking, and programming. Our workflow uses AI image generation and off-the-shelf robotics to rapidly create virtual backgrounds and camera paths, providing quick iterative feedback.
Adamslab/OpenSlider: A 3-axis 3D printed camera slider project that utilizes Marlin

and is made with common components. (github.com) (https://github.com/Adamslab/OpenSlider)

This dramatically accelerates the process compared to manual techniques, fostering collaboration between creatives, clients, and technologists. Generative AI content creation expands access, requiring less specialized labour. Exporting scene geometry also kickstarts asset creation in game engines.

Our approach represents a disruptive inversion of typical VP workflows that drive camera motion from a tracked physical camera. Generating parallax-correct virtual environments first allows camera motion to emerge iteratively from creative exploration.

This aligns with agile pre-viz while making the process more tangible. We will integrate open-source robotics libraries like ROS with industry pre-viz tools, displaying outputs using affordable LED walls and/or the far more accessible greenscreen.
LED Virtual Production Studio | Pathway (pathwayxr.studio) (https://www.pathwayxr.studio/)

Demonstrating full pipelines with commodity hardware showcases efficiency gains and mitigates client risk aversion to emerging tech. It provides a path to incrementally infuse AI and ML into mainstream VP with proper oversight.

We have identified competitors like Cuebric who offer modular VP solutions, but not tailored pre-viz workflows. Their closed systems also limit client visibility into AI decision-making processes.
Seyhan Lee (https://seyhanlee.com/)

Our use of familiar commercial tooling like Adobe firefly and ChatGPT vision alongside transparent open source models ensures responsible and interpretable AI integration.

Adobe Firefly -- Generative AI for everyone (https://www.adobe.com/sensei/generative-ai/firefly.html)

We have active discussions with Pathway XR virtual production studio, the school of Art and Media at the University of Salford, The Media City Innovation hub, as well as industry leading motion control robotics company G6Moco, and plan to continue collaborating with these partners while developing our relationship with Badger and Combes production, to validate these techniques.
https://bcombes.com/
G6Moco Home Page (https://www.g6moco.com/)
Innovation Hub - Media City UK (https://www.mediacityuk.co.uk/innovation/)

This comprehensive approach distinguishes us in the VP services marketplace, aligning with UK initiatives to boost productivity through innovation. It expands our

capabilities while delivering an additional IP-licensable offering, cementing our leadership in the sector.

We feel that we have a strong grasp of the emerging legislative landscape and have attended BridgeAI events, and sought independent legal advice. Our use of familiar commercial tools addresses concerns from assessors in an earlier and far more ambitious version of this proposal.

As mentioned the key competitor in the modular VP solutions space is the USA based Cuebric (https://cuebric.com/ (https://cuebric.com/)). Their closed proprietary systems limit client visibility into AI decision-making. Their focus is also on full production-ready systems rather than accessible pre-viz, which we see as an under developed market in the UK.

Other vendors like Mo-Sys provide tracking and camera robotics (https://www.mo-sys.com/ (https://www.mo-sys.com/)), and indeed we have worked extensively with such systems, but they lack integrated AI-enabled workflows.

Our innovation fills this gap by leveraging open-source robotics and transparent AI to rapidly iterate pre-viz using affordable hardware and/or rented cloud compute. We are to a degree hardware agnostic, and far more so than any potential competitor we have seen. This provides crucial agility in creative development.

We have already collaborated with Pathway Studio and learn valuable lessons over 8 months of access to their LED ICVFX volume.

Our approach provides this missing link. It aligns with wider initiatives like the UK government's recent Creative Industries Sector Deal (https://www.gov.uk/government/publications/creative-industries-sector-deal (https://www.gov.uk/government/publications/creative-industries-sector-deal)). This emphasizes innovation, immersive content, and intelligent use of automation to boost the sector's productivity and global competitiveness.

Our accessible pre-viz workflow contributes on all these fronts - fueling innovation, enhancing immersive VP capabilities, and automating laborious manual processes through responsible AI integration.

Assessor feedback

Assessor 1

Very difficult to appreciate which problem within VP techniques is being tackled and what proposed solution is intending to do. Current problems with pre-via workflows need to be explained in more detail and then contrasted with proposed approach. After reading several times, not able to ascertain exactly what is being proposed, other than it combines images from Generative AI with open source robotics. Not clear why a concrete example is not given to help explain concept. Certainly not clear why approach is disruptive inversion

of typical VP workflows. Links cannot be used in proposals and so they don't help.

Assessor 2

This is a well identified need and technological challenge, and the proposer has identified the possibility for significant improvement over the current state of the art.

Assessor 3

Overall the applicant details issues with the current virtual production process. While some detail is provided, the size of the problem and the implications could have been quantified and detialed further. Also, unfortunaltey a large number of key information seems to be contained in hyperlinks and assessors are not allowed to follow hyperlinks.

Assessor 4

There is good motivation for the project. The applicant has clearly explained the difference that this development would bring to virtual production. Competition has been identified and the applicant is knowledgeable on the wider market. This project aligns with the recent government's creative industries initiative.

Assessor 5

The applicant is addressing an opportunity in a high growth area, however the applicant has not provided enough commercial justification for the specific addition of robotic camera movements in the pre-visualisation process. The case for integrating AI/ML to enhance options for decision making is clear however the benefit of the robotic camera to reduce time has not been sufficiently justified. This issue may illustrate the merit of applicant carrying out this feasibility study.

4. Approach and innovation

Average score 6.2 / 10

What approach will you take and where will the focus of the innovation be?

Our approach centers on developing an end-to-end pre-visualisation workflow integrating custom robotics, commercial and open-source machine learning. The presented workflow is familiar to industry practitioners. Using newly available image to image tools from OpenAi and Adobe hand sketched storyboards can be iterated into AI-generated images, augmenting existing storyboarding pipelines. The documentation on how to accomplish this would be an output of the project. We would then use this ethically and legally licensed / endorse base imagery to create high resolution motion plates for pre-visualisation using our own codebase and open source libraries. This innovation focuses existing technologies on new areas of film production to accelerate the pre-viz process.

We will build a custom integration between open-source robotics software, and industry-standard pre-viz tools such as Unity and Unreal Engine, as well as own own software. Our pipeline will ingest concept images to produce both animated scenes, and crucially co-responding camera motion control scripts. We may also be able to convert images into rought scene geometry. Exporting this rough geometry back into Unreal potentially provides a design guide for virtual production teams, expediting asset creation.

This procedural generation of camera motion and virtual backgrounds represents a disruptive approach, inverting typical virtual production workflows that drive scene motion from a tracked camera. Our method aligns well with iterative pre-viz, fostering collaboration between creatives and providing quick feedback.

We will ensure responsible and transparent AI use by leveraging trusted providers like Adobe and OpenAI for image generation.

We have discussed the project with contacts in the industry and they have agreed to collaborate through limited access to equipment for scale testing, though this is not a dependency. We have extensive experience deploying virtual production, Generative AI/ML systems, and robotics, and possess the capabilities to validate this workflow with clients. This innovation expands our service offerings for film and broadcast, providing an additional competitive edge.

The primary outputs will be the integrated software pipeline, detailed documentation, and demonstrable minimal workflows. We will showcase the efficiency gains to prospects, using a physical studio setup with commodity hardware (or perhaps our industry partners) to illustrate the complete process. The pipeline itself will be licensable IP, delivering new revenue.

This comprehensive approach provides the productivity gains and infrastructure sought by the creative industries, cementing our leadership in virtual production services.

miniDeck.pdf (opens in a new window) (/application/10103573/form/question/37542/forminput/103165/file/621396/download).

Assessor feedback

Assessor 1

Insufficient information about approach. Vague high level statements make it hard to determine what is being proposed and why different from existing approaches. 'inverting typical VP workflows' used again without explanation and appears to contradict statement 'presented workflow is familiar to industry practitioner'. No explanation how it differs/relates to existing approaches, so level of innovation not clear. Lack of concrete detail makes it hard to assess viability of approach. Two slides in appendix shed more light but also raise more questions. Not clear why transparent description being avoided, unless plans not as advanced as claimed.

Assessor 2

This score reflects a strong and innovative approach with a clear focus on enhancing pre-visualization workflows in film production. The proposal demonstrates a good understanding of integrating various technologies and aligns well with industry needs. Areas for improvement include providing more details on ethical considerations, specific industry collaborations, and a clearer depiction of commercial viability and efficiency gains.

Assessor 3

It appears the core of the proposed innovation is to use off the shelf Gen AI products to create backdrop images. What this then has to do with Robots remains largely unclear and should have been described in more detail. A large issue of commercial use of images created by providers like Adobe remains--especially in larg movie productions.

Assessor 4

The approach addresses the challenge that the applicant has set out earlier. The innovation is ambitious and significant for the visual production industry. Evidence has been given as to how the innovation is different from competitors.

Assessor 5

The applicant has clearly described their approach, however they have not provided sufficient discussion to link their approach with addressing the challenge of greater efficiency in the pre-visualisation process. The efficiencies

created by using AI-generated images to augment existing storyboarding pipelines is clear but lacks commercial justification. However the benefit of inverting typical virtual production workflows is not sufficiently clear.

5. Team and resources

Average score 7.2 / 10

Who is in the project team and what are their roles?

The project team is composed of highly specialised individuals with extensive experience in robotics, machine learning, and virtual production.

Dr. John O'Hare (Flossverse) - Lead: Dr. O'Hare is well-versed in virtual production and has developed open-source collaboration tools for B2B solutions using AV/ML models. He can also cover project management roles being Prince2Agile certified. He holds a PhD in immersive telepresence.

Dr. Sean Chase (Robotics) - Robotics: Dr. Chase specializes in robotics and AI, focusing on developing the MVP, robotic systems, and AI-generated camera tracking data. He also brings expertise in visualization for robotics systems and integrative glue to systems such as Unreal and Unity.

Dr. Chase and Dr. O'Hare have a long-standing professional relationship, having collaborated on robotics and display systems research at Salford University for around a decade.

External Collaborations (not funded)

- G6Moco (Visual Engineering & Robotics): Interested in experimenting with our project on their small VP wall and large-scale robotics systems. They are a non funded partner but very interested in the product, and their global reach as a potential recipient of this product adds significantly to our confidence.
- Pathway XR Innovation Lab (Trafford): Have an innovation lab and partnership with HP and are open to some collaborative discussion as a non funded partner, with potential for testing against their screen, though this is not a hard dependancy.
- Badger & Combes is an award winning production studio with strong partnerships with the University of Salford campus at mediacityUK, and are happy to lend their advice and wisdom.
- MediaCity Immersive Technologies Innovation Hub, aim to grow a sense of place, purpose and value in MediaCity, focused on innovation in immersive tech. It is part of the Innovation Accelerators programme led by Innovate UK UKRI investing £100m in 26 transformative R&D projects to accelerate the growth of three high-potential innovation clusters including Greater Manchester.

We have begun discussions about potential synergies as they begin their journey.

Resources

We have access to essential hardware resources, including GPUs, robotics, cameras, and displays. Dr Hill would come on board to flossverse for this project.

By involving key players from the video production industry in our external collaborations, we aim to mitigate the risk and enhance the credibility of our application.

team.pdf (opens in a new window) (/application/10103573/form/question/37543/forminput/103171/file/616135/download).

Assessor feedback

Assessor 1

Team appear to have relevant skills and experience. However not clear who works for flossverse or whether latter exists. Needs more wrt current state, previous projects and how proposed project fits in business strategy. Also confusion around team membership - two listed at start, vague reference to another later on, but only two CVs in appendix. Needs explaining. List of possible collaborators is useful but appear to be vague possibilities rather than concrete commitment. Access to required hardware, which should have been defined earlier, also needs more detail and explanation. Reference to Dr Hill coming on board is confusing.

Assessor 2

This is a strong team, with significant expertise and meaningful industry collaborations, but with room for improvement in detailing specific contributions, resource utilization, and team dynamics.

Assessor 3

The two main individuals appear to have the relevant qualifications to conduct the project and past experience in grant-funded work. The attached appendix exceeds the limit. The applicants propose a large number of external collaborators which don't seem to be funded through the project. Yet their role should have been descirbed further especially with respect to IP ownership.

Assessor 4

The team has the technical skills for this project and should work well together as they have a long-standing collaborative relationship. They might benefit, however, from the inclusion of some commercial expertise in this area.

Assessor 5

The applicant has an excellent in-house team with the necessary skills and experience to successfully deliver the proposed project outputs. However the commercial skills required to fully exploit the project outputs have not been discussed in enough detail.

6. Market awareness

Average score 5.8 / 10

What does the market or markets you are targeting look like?

The virtual production market is in a rapid growth phase, with the UK positioning itself as a global leader. Facilities across regions, such as Wakefield's Production Park
Production Park --- Where global tours are staged and film and TV comes to life. (https://www.productionpark.co.uk/)
Pathway (previously referenced)
SODA School of Digital Arts - School of Digital Arts (SODA) -- Manchester Metropolitan University (mmu.ac.uk) (https://www.schoolofdigitalarts.mmu.ac.uk/)
London's numerous studios, stand to gain from our solution's cost-efficiency and adaptability.

Listings - The Studio Map (https://thestudiomap.com/listings/?search_location=London,%20UK&lat=51.50721&lng=-0.127586&proximity=29&category=tv-studio&tags=virtual-production&sort=a-z)

Target Markets:

Our focus is on both domestic and international VFX and robotics companies who can license our software and workflows. We have strong regional connections with organizations like G6Moco and PathwayXR, which will serve as initial touchpoints for market penetration.

Market Size and Growth:

Fortune Business Analytics projects the VP market to double from £2.5B to £6B within the next five years. Our solution targets the underexplored pre-visualization

sector, offering considerable cost savings that could attract substantial investor interest.

Barriers to Entry:

We acknowledge the need for an in-depth analysis of market barriers, including competition, regulatory hurdles, and customer acquisition costs. For these reasons we are knowingly working to a dual target of commodity film making and student access with ex colleagues at Salford University.

Secondary Markets:

While our primary focus is on VFX and robotics companies, secondary markets could include educational institutions and independent content creators who could benefit from more affordable virtual production solutions. We aim to build a product which can support pre-viz and the educational aspects of it's benefits for the far more ubiquitous green screen film makers market.

Financial Impact:

Our solution could save thousands of pounds per project for small facilities and tens of thousands for larger studios. Given that systems are often charged at high daily rates, even a few hours saved can result in significant cost reductions. These prices vary per installation and project, but we are confident in this assertion having witnesses the wasted time first hand.

Assessor feedback

Assessor 1

True that VP is rapidly growing and UK has strong presence, so projects in area are timely. Target market seems reasonable but needs more detail and evidence of appetite for system being proposed. Claim re under explored pre-viz sector and proposed system offering cost savings needs far more explanation and justification to be convincing. Comment re commodity film making and student access needs context - very confusing. Claim that proposed system is affordable needs explanation and justification. Good that VP market size indicated but without indication what slice might be spent on pre-viz, eg, difficult to see significance.

Assessor 2

The proposers present a reasonably comprehensive understanding of the virtual production space, with clear identification of primary and secondary markets. The proposal demonstrates awareness of market growth and financial impacts but could be strengthened with more detailed market

analysis, barrier mitigation strategies, and a wider survey of those now involved in the VP community.

Assessor 3

Sencondary markets mentioned yet not quantified. Barriers to entry acknowledged yet not detailed or mitigated. There is no mention of potential business model or licencing fees. The market analysis remains at a very superficial level without detailing TAM/SAM/SOM. Assessors are not allowed to access external hyperlinks.

Assessor 4

There is a good awareness of the market size and how the industry operates. More quantification would have been welcome. Barriers to market have been discussed. Potential secondary markets have been identified.

Assessor 5

The applicant has identified some headline information to assist in quantifying the potential market opportunity, however they have not provided sufficient information to fully support their specific market opportunity.

7. Outcomes and route to market

Average score 5.8 / 10

How are you going to grow your business and increase long term productivity as a result of the project?

We already possess strong relationships across local academia, virtual production, and robotics. This innovation cements our leadership by expanding service offerings in the rapidly growing virtual production market.

Our accelerated pre-viz workflows target motion control robotics companies, virtual production facilities and courses of all sizes, and micro production creative businesses. The value is faster experimentation and collaboration in early design stages, increasing quality and reducing costs.

We will showcase efficiency gains using affordable hardware, mitigating client scepticism of emerging tech. Our existing industry network provides a launchpad for commercializing this workflow.

As the workflow matures, we will transition to a SaaS model - licensing our software IP and support for a recurring fee. This boosts scalability while tapping into an adjacent high-value market.

In the short term, procedural generation of pre-viz backgrounds and camera paths provides rapid creative feedback. Long term productivity increases come from reusable workflow IP and the resulting acceleration across production timelines.

We will continue to contribute to open communities where possible, strengthening the ecosystem. But core IP will be protected through trade secrets and restrictive licensing. Our head start provides a first-mover advantage in this white space.

We are developing detailed financial projections and market penetration forecasts. But early testing suggests a minimum 30% efficiency gain in pre-viz stages, translating to significant cost and time reductions.

Our dissemination strategy focuses first on production partners and academic collaborators. We will showcase tangible prototypes to expand visibility and conduct pilot studies validating ROI.

This fuels viral adoption across our networks in VFX and broadcast.

Target Customers & Value Proposition: We're focusing on domestic and international VFX and robotics companies. Our solution offers the potential for significant cost savings---ranging from thousands to tens of thousands per project.

Route to Market: Initially, we will leverage existing regional partnerships, including G6Moco and PathwayXR, and Badger and Coombs to validate our product. As we scale, we aim to partner with global tech giants like Roe in Wakefield, Nvidia, and Sony.

Profiting from Innovation: Our unique value proposition comes from integrating advanced AI video capabilities into existing workflows. As the technology matures, we plan to emerge as SaaS experts in this niche, complementing existing Unreal Engine and Adobe workflows.

Short- & Long-Term Goals: In the short term, we aim for 4K video quality and simple robotic movements. Long-term, we plan to evolve into a SaaS model, serving a broader market.

Assessor feedback

Assessor 1

Strong relationships should have been described earlier and evidence provided that flossverse has leadership credentials in VP. Repeated claim that system will speed up experimentation and collaboration has not been explained or evidenced. Section consists of series of claims without

explanation and justification, making it very hard to assess. Lack of concrete detail, especially in relation to what will emerge from this project and how it will be leveraged to gain market traction. Value proposition for customer not addressed others vague claims about efficiency and cost saving, which are not convincing without explanation and justification. Nothing on likely growth.

Assessor 2

The proposal is well expressed in terms of the current dynamics of the market and articulates a reasonably good plan for tranistioning to a a SaaS model.

Assessor 3

The applicant mentions a SAAS fee yet fails to detail the size of the fee or who is the beachhead segment. Given this lack of focus, the go to market strategy appears rather high level. No discussion of revenues or profits and a timeline to achieve those. Exploitation and dissemination remains superficial.

Assessor 4

Target customers have been identified and the value proposition is sound. Routes to market are clear and plausible. There is a good plan for growth and productivity. Exploitation is outlined.

Assessor 5

The applicant has identified their target customers and they have presented a value proposition. The value proposition lacks sufficient supporting evidence. They have provided a high level description of their proposed route to market along with their plans for their direction for growth, these lack adequate practical quantified detail.

8. Wider impacts

Average score 6.6 / 10

What impact might this project have outside the project team?

This innovation promises economic gains for the UK's creative sector by enhancing productivity and global competitiveness. Faster pre-viz workflows

directly reduce costs and timelines for production partners, boosting project volumes and quality.

We estimate a minimum 20% acceleration in early creative stages, translating to over £5 million in savings annually across our potential client base (assuming all studios but excluding public customers). New revenue streams from licensable IP also strengthen the domestic VP ecosystem.

Broader impacts stem from increased experimentation and access. GenAI, cloud, and commodity hardware lower barriers for new creatives and studios. Our academic collaborations will also help disseminate techniques into educational contexts.

We aim to partner with up to 2 leading institutions and build on our relationship with the new Emergent Multi-Media Technologies Facilities Centre in Bolton to implement pilot courses, potentially reaching 500+ students over 2 years. This spreads critical digital skills and strengthens diversity pipelines into the industry.

Sustainability benefits arise from virtual techniques reducing physical shoots. We estimate 30% faster pre-viz may lower on-location days by over 2000 annually, cutting carbon emissions by 15% for participating studios.

By demonstrating efficient integration of emerging technologies like AI and robotics, we will also establish best practices for ethical and responsible adoption. This promotes trust and accelerates mainstream acceptance of these more advanced and high skill workflows (more common in the USA and mainland Europe).

Our commitment to assisting with developing open standards lowers barriers for smaller studios. Meanwhile, IP protection sustains our competitive edge in VP services. This balanced approach grows the sector holistically.

- **Customers**: Reduced production costs can make services and products 15-25% more competitive.
- **Supply Chain and Industry**: Entry of new players could grow the market by an estimated 10-15%.
- **UK Economy**: Our project could attract up to £50M in investments and create around 50 jobs within three years.

Environmental Impacts: **Positive**: Could reduce carbon footprint by 15%. **Negative**: Anticipated 5% increase in energy use, which will be offset by energy-efficient technologies.

Regional Impacts: Could boost regional economy by £20M and create 20 jobs in local hubs.

Jobs and Education: Aim to partner with up to 2 educational institutions to update curricula, impacting 500+ students over two years

Diversity and Social Inclusion: Aims to enable 100+ creators from underrepresented backgrounds through Emergent Multi-Media Technologies Facilities Centre

Health, Safety: Could reduce on-location shoot risks by up to 30% thanks to significantly reduced time on set.

Assessor feedback

Assessor 1

Claims regarding acceleration and savings need to be explained and justified. Similar comments apply to other points made - all are valid in general terms but are predicated on claims about proposed approach which have not been explained or justified. For example, needs explanation as to why successful development of the system may result in a regional boost of 20M and 20 jobs - very specific numbers but no justification. Hence difficult to properly assess potential benefits of proposed project.

Assessor 2

This section presents a comprehensive understanding of the wider impacts of the project, including significant economic, educational, sustainability, and ethical implications. The proposal demonstrates a clear vision for enhancing the creative sector's productivity, promoting sustainability, and fostering diversity and inclusion. The anticipated impacts on reducing production costs, growing the market, attracting investments, creating jobs, and reducing environmental and safety risks are substantial and well-articulated. The partnership with educational institutions and the potential impact on 500+ students strengthen the diversity pipeline into the industry, which is a key wider impact.

Assessor 3

Some positive impacts are discussed and quantified (i.e. reduction in accidents), evicence or sources would have been nice to see. Negative impacts are briefly mentiond with respect to the environment without considering other factors such as job losses of set designers.

Assessor 4

A number of realistic, potential outcomes have been identified. These include economic, environmental, regulatory, educational and health & safety areas. Regional impacts have been considered. A negative impact with appropriate mitigation has been mentioned.

Assessor 5

The applicant has explored a number of areas of potential positive impact however they have not provided sufficient supporting evidence for the claims that have been articulated. They have discussed potential negative impact and appropriate mitigation.

9. Project management

Average score 5.8 / 10

How will you manage your project effectively?

The project will utilize an Agile/Kanban methodology with the following elements:

- Kanban board to visualize workflow, limit work-in-progress, and track progress. Daily standups and retrospectives will enable continuous improvement.
- Clear definition of deliverables, quality gates, and success metrics for each work package. Quantifiable indicators will facilitate monitoring.
- Regular reviews, both internally and with stakeholders, to gather feedback, realign objectives if needed, and showcase incremental progress.
- Active risk monitoring, with mitigation steps tracked and plans adjusted transparently as required.
- Comprehensive documentation of processes to ease onboarding and knowledge transfer.
- Quick iterative testing to evaluate productivity gains, translating insights into refinements.

Work packages include:

- Robotics integration
- AI video generation
- Market analysis and adoption
- Legal and compliance

Development of a small scale robotic camera system for integration and testing (Dr Hill) integrate a custom robot track with a commodity camera and screen. This piece of work should be undertaken first. Liaise with the nominated externals

(Pathway GBMoco etc to support any necessary "at scale' testing of the ideas would be optional or as required.

AI generated image workflows would begin with accessible and clear documentation of commodity tools familar to practitioners, nuanced for the pipeline. Explore and document the current state of the art in open source upscaling, video to video and image to video pipelines (such as animatediff) , and explore their licensesBuild a technology demonstrator around the time travel film narrative Build custom automated workflows from the best available software which could (with guidance) be used in a live studio shoot scenario with a supportive technology innovator such as GBMoco SODA or Pathway.

Market analysis and research: Conduct market analysis to identify potential early adopters and develop product market fit and targeted marketing strategies. Assess the market size, and potential customer segments. Estimate and plan for predicted growth rates. Though possibly informing the product development this is an output in it's own right and is targeted to scaling of the business after the project conclusion.

Monitoring will comprise of weekly updates milestone reviews. Adjustments will be made in real-time based on progress and risks.

This Agile/Kanban approach, combined with transparent reviews, will provide the accountability and flexibility needed to deliver the project successfully within budget and timeline constraints.

reflow.pdf (opens in a new window) (/application/10103573/form/question/37547/forminput/103195/file/620477/download).

Assessor feedback

Assessor 1

Good that project plan divided into distinct work packages with timescales. Lack of clarity wrt technical approach in earlier sections makes it hard to assess validity of plan. Some further information here that provides hints about approach, but remains high level and vague, lack of coherent plan. Nothing on milestones (despite claims they will be reviewed), deliverables or cost per WP. No indication of responsibilities or leadership roles. Not convincing.

Assessor 2

This section provides a well-structured and effective project management strategy, with comprehensive planning, risk management, and stakeholder

engagement.The attached appendix with its Gant chart could be clearer however.

Assessor 3

A high-level project plan is submitted albeit further detail would have been required such as a list of deliverables with associated due dates, individuals responsible for each WP and WP-based costing. WP-dependency unclear. Blue markings not explained.

Assessor 4

The project flow plan is acceptable but more detail on the management side would have been welcome. For example, work packages, timelines and team member ownership. The plan is reasonable and tasks appropriate to the project.

Assessor 5

The applicant has provided a practical work plan, however they have not costed the individual work packages or shown the linkages/dependencies or described the specific milestones. They have described their approach to project management, this along with their previous experience suggests that they are likely to successfully deliver the project outputs.

10. Risks

Average score 6.2 / 10

What are the main risks for this project?

Technical Risks and Mitigation: The project is technically ambitious, aiming to integrate closed and open-source machine learning tools with robot control software within existing virtual production workflows. The main technical risks involve integration challenges, the limitations of generative AI, and compatibility issues. To mitigate these, we will allocate dedicated time for integration testing and clearly define the project's scope to manage expectations on automation. We'll also position our tool as a pre-visualization aid. For compatibility, we'll initially target standard 4K video formats and simple robot dolly shots, with more complex movements as stretch goals.

Commercial Risks and Mitigation: Commercially, the project's novelty could hinder market adoption. Competition from established players and the challenges in monetization also loom large. To counter these, we will conduct market analysis to pinpoint early adopters and target multiple verticals. Monitoring the competitive landscape will allow us to continuously refine our unique selling propositions. We will explore various revenue models, ensuring our value proposition aligns with client expectations.

Managerial Risks and Mitigation: Managerially, the project hinges on the effective collaboration, adherence to scope, and budget management. We plan to establish clear communication channels, define roles, and set responsibilities to ensure collaboration efficiency. We will adopt Kanban, to keep the project on track. In case of gaps in expertise, we have sufficient contacts to backfill an MVP.

Environmental Risks and Mitigation: Although not as pronounced, environmental risks must be acknowledged, particularly in terms of the project's carbon footprint due to hardware utilization and potential e-waste. We aim to utilize energy-efficient technologies and engage in proper e-waste disposal protocols to mitigate these impacts.

Critical Project Inputs: For the project's success, certain inputs are critical: access to cutting-edge hardware resources, specialized expertise---particularly in machine learning and robotics. We've secured commitments for the necessary hardware and have identified key personnel for recruitment.

Regulatory and Ethical Management: Finally, the project outputs may encounter regulatory scrutiny, certification requirements, and ethical considerations, especially regarding data protection and the deployment of AI. To manage this, we will engage with legal experts early on to navigate data protection laws and conduct risk analysis. Ethical use of data and AI will be at the forefront, ensuring we adhere to the highest standards of responsible innovation.

risks.pdf (opens in a new window) (/application/10103573/form/question/37548/forminput/103201/file/620486/download).

Assessor feedback

Assessor 1

Reasonable overview of risk, indicating awareness of complexity of technical development (albeit not apparent from proposal) and difficulties in gaining commercial traction in this sector (inertia, etc). Risk register lacks detail and concrete links to project plan and mitigations come across as will try harder statements rather than alternative strategies should risks materialise. For example, utilising open source elements as mitigation against AI image generation not working as anticipated isn't convincing.

Assessor 2

Risks management and mitigation is reasonably thorough, with most of the more obvious pitfalls being well identifies.Providing more specifics on technical solutions, adapting to market changes, managing scope and budget, quantifying environmental impact, and detailing regulatory strategies could further strengthen the risk management plan.

Assessor 3

Overall a good coverage of the main risks. While the applicant submits a register of risks and their potential mitiagtion it would have been nice to see a scoring of those risks using probability and impact scales pre and post mitigation. Individual responsibilites should be assigned to each risk. Appendix is not consistent with risks discussed in the text (i.e. environmental).

Assessor 4

Key risks covering technical, commercial, managerial, managerial, environmental, regulatory and critical areas have been given. Mitigation is appropriate. The plan would benefit from named owners of risks.

Assessor 5

The applicant has identified the key risks, they have not fully explored appropriate mitigation for the critical impact of the commercial risks. They have considered and provided appropriate mitigating actions for the majority of the other risks identified including ethical and regulatory issues.

11. Added value

Average score 6.0 / 10

How will this public funding help you to accelerate or enhance your approach to developing your project towards commercialisation?

Public funding will accelerate this project's development and commercialization through:

- Access to specialised technical talent - The grant will allow us to dedicate top roboticists and AI experts full-time. Their expertise is essential for rapid prototyping.

- Reduced time to market - Public funding will compress our development timeline from 18 months to 6 months for the MVP. This substantial acceleration is crucial for capturing first-mover advantage.
- Increased credibility - BridgeAI backing validates our solution's potential with commercial partners, investors, and clients. This can help secure follow-on private capital.
- Risk reduction - The grant lowers our financial risk, allowing greater focus on technical R&D rather than short-term revenue. This is vital for breakthrough innovation.

Without public funding, progress would be incremental based on client work. We predict a functioning prototype would take over 2 years, ceding leadership to global rivals. The grant shrinks this to 6 months, propelling UK competitiveness.

Existing internal funds will be used to match the IUK contribution. But these are modest compared to the transformative impact of a sizeable grant. This additional leverage enables a quantum leap in our capabilities.

For collaborators like G6Moco, Badger and Coombs, and Pathway, the grant will also accelerate integration of new techniques into their workflows. Our project enhances the UK virtual production ecosystem.

Assessor feedback

Assessor 1

Claim that funding will allow dedication of top roboticist and AI experts is confusing and doesn't align with content of Q5\. Other benefits of funding are valid. Current state of company and availability of internal funds needs explaining, including why internal funding not able to fund whole project. Nothing on whether alternative sources of funding investigated. Above plus lack of clarity over need and approach does not make a convincing case.

Assessor 2

The proposer makes an articulate case for public funding here, offering a clear explanation of how the grant could significantly accelerate the project's development and commercialization.

Assessor 3

The response could have been strenghthened by providing further details on additionality. Alternative routes of funding not epxlored in detail. Ovreall weak arguments for public funding.

Assessor 4

This is a sound argument for public funding and the difference it would make to the progress of the project. More, however, could have been said about the exploration of other funding sources.

Assessor 5

The arguments for public funding are not sufficiently strong. The applicant has not discussed alternative sources of finance in sufficient detail. It is likely that this project will increase the R&D activities of the applicant and their potential non-funded partners.

12. Costs and value for money

Average score 6.6 / 10

How much will the project cost and how does it represent value for money for the team and the taxpayer?

The total project costs are £64,131, comprising £48,276 in labour, £9,655 in overheads, £5,000 in materials, and £1,200 in capital usage.

We are requesting a grant of £44,892, which is 70% of the total costs. This increased grant will provide substantial funding to develop and demonstrate this innovative workflow, significantly de-risking adoption for commercial partners.

Flossverse will match the requested £44,892 grant with £19,239 of internal funds. This covers partial labour and overheads for our staff.

The materials and remaining labour costs will be externally financed through existing company reserves. This structure still ensures both public and private investment into realizing the project goals.

Delivering a functioning prototype workflow for £64,131 represents excellent value. It is far lower than typical VP production costs, which can run into the millions. The efficiency gains for studios from faster pre-visualization will recoup the investment manifold through cost and time savings.

Rapid concept iteration also reduces wastage compared to physical-first approaches. This represents responsible use of taxpayer funds for high impact.

The 70% grant allows us to increase the ambition and pace of development significantly. Flossverse possesses the specialized skills to maximize outcomes on this budget. The balance between IUK funding and internal contribution enables cutting-edge R&D and strengthens UK leadership in virtual production.

We believe the taxpayer funds are well justified by the economic benefits, and are undertaking to contribute as defined.

Assessor feedback

Assessor 1

Budget for this length and type of project appear reasonable, although lack of clarity wrt technical components makes it hard to assess viability. Needs more detailed breakdown of costs per work package and what funds will be spent on. Again, lack of clarity in earlier sections makes claims re value for money difficult to assess.

Assessor 2

This seems like a relatively modest ask for what could prove to be a highly effective project. There is therefore a good indication of value for public investment on offer here.

Assessor 3

The provided costing details don't provide enough confidence to score this as good value for money. The applicant fails to provide detailed role descriptions. Furthermore there is no detail (i.e. make/model/manufacturer) for the required equipment. A GenAI system is most likely not Capex but material and a lump sum of 20k without explanation of which system is difficult to assess.

Assessor 4

Project costs are appropriate and offer value for money. The applicant has mentioned how their contribution will be financed. This project is ambitious and innovative and aligns with government initiatives.

Assessor 5

The applicant has provided project costs that are appropriate and should be sufficient to successfully deliver the proposed project outputs. In terms of value for money for the team this project deliver the potential to grow the applicant's business and reputation, however for the taxpayer the applicant has not provided adequate commercial justification.

Application score: 62.2%

The finances of all project partners are included in this summary.

	Total costs (£)	Funding level (%)	Funding sought (£)	Contribution to project (£)	Other public sector funding (£)
FLOSSVERSE LTD Organisation	**64,131**	70.00	44,892	19,239	0

Funding breakdown

	Total	Labour (£)	Overheads (£)	Materials (£)	Capital usage (£)	Subcontracting (£)	Travel and subsistence (£)	Other costs (£)
FLOSSVERSE LTD Organisation View finances (/application/10103573/form/FINANCE)	**£64,131**	48,276	9,655	5,000	1,200	0	0	0

Supporting information

Project impact

Understanding the benefits of the projects Innovate UK supports

Partner	Status
FLOSSVERSE LTD (Lead)	Complete

Terms and conditions

Award terms and conditions

Partner	Funding rules	Terms and conditions
FLOSSVERSE LTD (Lead)	Subsidy control	Innovate UK - Subsidy control (/application/10103573/form/terms-and-conditions/organisation/94821/question/37068)

Assessor feedback

Assessor 1
There may well be some interesting technical ideas behind this project that could be disruptive to VP workflows, but this is not sufficiently conveyed in the proposal. Very difficult to sort out what problems are being addressed and what proposed approach will do and how it differs from what already exists, despite multiple readings. Coupled with vague and ill-defined project plan makes it hard to recommend.

Assessor 2
This appears to be a good fit with the competition, and the proposal seems to be an appropriate candidate for Innovate UK funding. The applicants have presented a well-considered, innovative, and feasible project with significant potential benefits to the virtual production industry and beyond. The combination of technical innovation, skilled team, strong partnerships, sound financial planning, and potential for wide-ranging impacts makes it a strong case for the grant.

Assessor 3
Overall the application should have contained more information especially in the project, risk, market and go to market section. The cost section is not satisfactory. Overall not recommended for funding.

Assessor 4
This project is recommended for funding. It is innovative and ambitious and makes good use of AI. It will make virtual production more accessible and efficient. The team are highly skilled in this area. More detail would have been welcome on the project and risk plans.

Assessor 5
The applicant is addressing a high growth area. They have the necessary skills and experience to deliver the technical innovations proposed. They have not attracted a higher score as sufficient commercial justification has not been provided. Some elements of the project will deliver a clear value proposition

for the virtual production industry others require further justification. Overall this project will enable the applicant to test their proposition and therefor should be supported.