VFX production roles – Virtual production competencies

This document lists the additional competencies (or skills and knowledge) required to incorporate virtual production technologies into one part of the workflow within a VFX organisation or department. The competencies for the various VFX functions and departments are divided into four main areas of work, based on the existing structure of the National Occupational Standards:

1. VFX production
2. VFX quality monitoring
3. VFX creation
4. VFX research and development

This document lists the skills and knowledge required to include virtual production in the **VFX production** area of work.

These tasks are divided into two main functions: **Securing VFX work** and **Producing VFX work,** with further overall recommendations around **collaborative working.** The grids below list the new or modified competencies needed in order to adopt virtual production within a project. These complement the wider competencies required within each of these functions to undertake more traditional VFX projects, which are detailed in the full National Occupational Standards.

SECURING VFX WORK

Main tasks	**Skills related to virtual production** *You must be able to:*	**Knowledge related to virtual production** *You need to know and understand:*
Determine the brief for visual effects including the use of virtual production	1. identify any vision, wishes or preconceptions that directors, producers, supervisors, or creative teams may have for the use of VP 2. identify key factors which signal the need for the use of VP 3. consider and establish how shooting live action content will be affected by VP 4. suggest the use of VP and emerging technology where you think they enhance the brief 5. ensure that the brief is technically feasible and identify its implications of using VP on the resources and technology available 6. consider how VP will affect cost, budget, schedules - for example availability of VP equipment and trained practitioners and how this may change schedule and budgeting 7. ensure that the brief can be achieved within budget, schedule, location, and other parameters	1. the creative vision using VP for VFX work 2. where to obtain information about how the budget and schedule can be affected by the use of VP 3. how to judge the skills, expertise, and capabilities of the VFX team considering using VP 4. how VP can be used in VFX to enhance productions and in some instances to save money 5. the benefits and disadvantages of the different tools including VP, that can be used for VFX and when it is appropriate to use them 6. how to present your arguments in support of your point of view in favour of or against the use of VP 7. how to identify the cost implications and the practicalities of realising VP for VFX including crew, materials, equipment, locations, budgets, and availability of these 8. how to ensure technical feasibility

	8. identify and communicate the implications of changing requirements on budget, schedule and creative outputs and act to resolve them	9. awareness of emerging new technology within or beyond VP
Advise production from VFX perspective	1. define what clients expect or need from content/assets against all options available, what is feasible and within budget considering the use of VP 2. analyse production plans, workflow, budget and schedule using information from reliable sources considering VP	1. how to find out client expectations of using VP 2. methods for evaluating the cost and technical feasibility of projects covering VP as an option 3. sources of information about production plans, available emerging technologies, workflow, budget, and schedule and how to access these 4. the creative potential of VP to help the client achieve their creative vision
Advise clients on a project considering the use of virtual production as an option	1. identify what clients need to know about cost, time, and technical requirements in order to progress projects 2. identify possibilities in terms of technical feasibility, workflows, costs, and timings which are consistent with what clients wants to achieve 3. explain possibilities, implications, and constraints of using or not using VP to clients in positive ways	1. the technical capabilities of the facility and the crew with the right skills available for VP 2. sources of expertise (especially crew with the right skills) to cover VP in possible projects, and how to access them 3. how VP processes compare to other options and what impact this has on the workflow, budget and schedule 4. where to go for expert advice on using VP for your projects (UK experts, manufacturers, practitioners)
Cost a VFX project and negotiate with a client	1. clarify your understanding of clients' needs 2. confirm the business objectives, scope, timescales, and overall budget 3. identify possibilities that are technically feasible and meet artistic objectives and budget including VP 4. consult with Virtual Art Department lead and On Set Virtual Production supervisor where appropriate to inform time and resource requirements 5. identify and allow for contingency planning for the use of VP taking into consideration the availability of equipment and skilled staff, cost and how these can impact on schedule changes for the production 6. negotiate and provide structured arguments to support the proposed budgets and creative objectives	1. project constraints including cost, required deliverables, timing and available resources when planning on using VP 2. how to identify and balance your criteria for accepting projects such as profit, increased reputation, sufficient time to do a good job, working for particular people, workflow planning – for example choice of workflow may be affected by the availability of equipment and skilled staff for VP 3. problems and risks associated with different kinds of project and how to plan for contingencies 4. technical capabilities and the creative contribution that the people available can make to projects and how these may affect the bid and the choice to use VP 5. how to negotiate, agree and record changes to budgets and workflows 6. the benefits of weighing up the cost of using VP against other options to meet the brief and when it is appropriate to advise clients to use more cost-effective alternative services

Present bids and tenders	1. present information that is well thought through, factually correct, from a reliable source and emphasises the full range of benefits incorporating VP associated with your proposal 2. consider the impact of the budget of the target audience and delivery platform (including VP) identified for the proposal 3. use visual aids and new emerging visualisation technologies which are suitable for the presentation method to enhance your audience's understanding and experience of the points you are making	1. how to identify the target audience and delivery platform for the proposal 2. the benefits and disadvantages of different visual aids and ways of presenting ideas and information 3. the rapidly developing and evolving processes and technology within VP so as to be able to present authoritatively to clients

Further considerations

- **Costing a VFX project** - availability of staff and equipment is a key factor and issue at present, which a producer must consider when offering up or negotiating VP services. As the world of VP is changing so quickly at the moment, we cannot be sure how long staffing and equipment issues will remain the case – depending on how long it takes to train people up with the right skills and have the tools and equipment available on a bigger scale.
- **Present bids and tenders** – with VP in the mix, the actual bidding and tendering process could extend and/or could get complicated. If a client asks for bids for an end-to-end process – from art department to final film – then there's a lot more to account for, particularly in studios where you are using the same resources when it comes to artists/production across pre-vis and production stages.

PRODUCING VFX WORK

Main tasks	**Skills related to virtual production** *You must be able to:*	**Knowledge related to virtual production** *You need to know and understand:*
Develop budgets for VFX work	1. determine the most appropriate requirements in terms of materials, technology, outsourcing, delivery and personnel and their likely costs that will meet the overall needs of the project, including how the use of VP will impact on all of these 2. if relevant, determine the size of the budget available for VP and clarify whether any allocations have already been made 3. identify and record plans and allowance for contingencies to address the impact of using VP and how this can affect budget 4. interpret the implications of project specifications and creative parameters and the way this can be impacted in the budget by considering the use of VP	1. who to consult to get accurate the most accurate information about likely costs relating to the use of VP, including specific equipment and skilled staff 2. ways to make sure others understand the scale and type of resources required for using VP 3. the current standard prices for resources 4. the types of contingencies relating to VP that may arise, and how to take them into account when estimating costs

Plan and schedule resources	1. allocate sufficient time to each stage in the production process to enable objectives to be met and for effective use of resources 2. collaborate with other departments the VFX departments creating the content: this could be software departments in relation to the tech or could be production side departments such as camera to determine the main elements and timescales required to meet creative briefs 3. devise shooting schedules to take account of factors which are likely to affect production activities when using VP 4. suggest realistic solutions when difficulties arise 5. create or approve risk assessment documents appropriate for VP	1. how allocation of time will be impacted by considering the complexities of using VP 2. how to identify information about creative brief and directors' vision including the budget, and the proposed delivery date for the production 3. how to choose the most appropriate location for the shoot and base for productions 4. the required sequence and likely duration of activities in the different stages of the production process when using VP 5. the importance of considering the impact of using VP on cast and crew 6. why the shooting schedule needs to account for availability of VP equipment and skilled staff, and any impact this has on budget 7. guidelines relating to selecting cast and crew 8. the likely impact of overseas filming or shooting on schedules, such as travel times, time differences, climate and shooting hours 9. the importance of always obtaining permissions and clearances and how to go about obtaining these 10. the types of contingencies that can occur, and how to allow for these in the schedule 11. factors that should be included in a production schedule 12. the sorts of difficulties that might arise in implementing the schedules, and how these may be resolved 13. how to carry out a risk assessment for a production when using VP
Monitor workflow	1. communicate digital workflow requirements to all those involved using organisational communication channels, ensuring they are clear as to their role and the technical requirements 2. make sure VP workflows produce file types consistent with the operations required and the various post-production outputs needed 3. check that workflows allow clients to check progress and make decisions as specified in agreements with clients	1. common hardware and software technical workflows for VP 2. formats used at all stages of workflow (including VP) and the dependency of one stage on another 3. impact on workflow of introducing VP to project, such as availability of equipment or skilled staff 4. standards of delivery and expressions of best practice 5. how to document and communicate agreed VP workflow and updates in accessible and clear formats 6. effective ways of communicating with a mixed and changing team
Monitor work against schedule	1. agree with relevant people that planned schedules are realistic and achievable using information gained from technical recces	1. what factors could cause delays to productions, and the need for contingency planning 2. what schedule solutions and problems can be presented by use of VP

	2. identify possible problems and solutions presented by the use of VP, and plan for clear contingencies	
Monitor profitability	1. maintain your schedule against what was planned and agreed 2. consult with relevant colleagues about the impact of any problems in your work on cost and time requirements including consideration for the availability of equipment and skilled staff for the use of VP 3. carry out a realistic assessment of the cost and time implications of any potential changes in schedule or possible improvements to product 4. agree decisions that increase or decrease cost or time taken or affect the product with relevant colleagues	1. performance and time demands of different stages of the workflow for a project 2. abilities and ways of working of the different contributors to a project 3. technical requirements and limitations of the project and the facilities 4. reasons for changes to schedule or product including problems in a task, extras requested by clients or colleagues, possible improvements to product identified by yourself or colleagues

Further considerations:

- **Planning production of VFX work** – this relates closely to competencies for *costing and negotiating VFX work* and *advising clients* (see above) – have to maintain a level of being realistic: VP is not a magic solution and decision-making should always keep the best interest of the client at the forefront, even if they come in asking for VP. If this route doesn't best serve their desired outcomes, this needs to be communicated.
- **Securing suitable vendors and contractors** – this process will not change as a result of VP. We considered creating a list of vendors for VP equipment and tech support but as this could change on a daily / weekly basis, decided this was not worthwhile.

COLLABORATIVE WORKING

As virtual production brings the use of VFX forward into the pre-production and on-set production phases of workflow, more collaborative working between VFX practitioners and colleagues in other departments is now essential. VFX practitioners can make fewer decisions in isolation without involving other departments more closely.

- Engagement and interaction with the art department is particularly critical – VFX on its own cannot move forward without working closely with art and set production.
- The importance of pre-production is key, with more time, effort and investment needed at the beginning of the process as planning could be what makes or breaks the work and the outputs more than the technical aspect. Planning should be top priority for all involved from the start, before any technical discussions
- Planning schedules, resources and budgets for VFX elements need to be looked at as part of the whole production rather than as an individual contributions, especially when problem-solving and identifying contingencies.