Supplemental Material for “Distributed VFX Architecture for SPH Simulation”

Here, we detail the results of the quantitative part of the user study. The first part consists of the specific questions related to our implementation, the second part shows the System Usability Scale (SUS) questions.

As stated in the paper it can be seen that all participants agreed that the overall workflow is better if the fluid simulation is integrated in the 3D content creation software in contrast to standalone fluid simulation applications.

Only one user agreed to the statement “Outsourcing simulation calculation to a render slave speeds up my workflow”. The reason for this became clear in a discussion with the participants. While all participants had the latest GPUs in their workstations, none of the studios had GPU blades in their server farms yet. The user who agreed to the statement referred to a possible future situation where GPU servers would be available, while the other users referred to their current situation where the fastest GPUs were only available in the workstations.

The usability was also rated very good in the SUS questionnaire. This is attributable to the fact that the solver blended into the interface they were experts in.

Additional Questionnaires

started: 3
finished:3 (100%)

1. Outsourcing simulation calculation to a render slave speeds up my workflow

					AnsweredQuestion	**3**
					SkippedQuestion	**0**
totally agree				totally disagree	RatingAverage	RatingCount
66,7% (2)	0,0% (0)	33,3% (1)	0,0% (0)	0,0% (0)	1,67	3

2. The overall workflow is better if the fluid simulation is integrated in the 3d content creation software in contrast to standalone fluid simulation applications.

					AnsweredQuestion	**3**
					SkippedQuestion	**0**
totally agree				totally disagree	RatingAverage	RatingCount
66,7% (2)	33,3% (1)	0,0% (0)	0,0% (0)	0,0% (0)	1,33	3

3. In 3dsmax the overall workflow is better if the fluid simulation is integrated in Particle Flow in contrast to fluid object plugins.

					AnsweredQuestion	**3**
					SkippedQuestion	**0**
totally agree				totally disagree	RatingAverage	RatingCount
33,3% (1)	**33,3% (1)**	**33,3% (1)**	0,0% (0)	0,0% (0)	2,00	3

4. Integrating fluid solver in Particle Flow allows me to achieve a greater variety of effects than a standalone solver.

					AnsweredQuestion	**3**
					SkippedQuestion	**0**
totally agree				totally disagree	RatingAverage	RatingCount
66,7% (2)	0,0% (0)	0,0% (0)	33,3% (1)	0,0% (0)	2,00	3

5. Direct raytracing of fluid blobs results in better visual quality

					AnsweredQuestion	**3**
					SkippedQuestion	**0**
totally agree				totally disagree	RatingAverage	RatingCount
66,7% (2)	33,3% (1)	0,0% (0)	0,0% (0)	0,0% (0)	1,33	3

T6. Direct raytracing of fluid blobs is less flexible

					AnsweredQuestion	**3**
					SkippedQuestion	**0**
totally agree				totally disagree	RatingAverage	RatingCount
0,0% (0)	0,0% (0)	33,3% (1)	0,0% (0)	**66,7% (2)**	4,33	3

7. Direct raytracing is slow

					AnsweredQuestion	**3**
					SkippedQuestion	**0**
totally agree				totally disagree	RatingAverage	RatingCount
0,0% (0)	0,0% (0)	0,0% (0)	33,3% (1)	**66,7% (2)**	4,67	3

8. I am considering to use direct raytracing in one of my next projects

AnsweredQuestion	**3**
SkippedQuestion	**0**

System Usability Scale

startet: 3
finished 3 (100%)

1. I think that I would like to use this system frequently

						AnsweredQuestion	**3**
						SkippedQuestion	**0**
Strongly disagree					Strongly agree	RatingAverage	RatingCount
0,0% (0)	0,0% (0)	0,0% (0)	33,3% (1)		**66,7% (2)**	4,67	3

2. I found the system unnecessarily complex

						AnsweredQuestion	**3**
						SkippedQuestion	**0**
Strongly disagree					Strongly agree	RatingAverage	RatingCount
100,0% (3)	0,0% (0)	0,0% (0)	0,0% (0)		0,0% (0)	1,00	3

3. I thought the system was easy to use

						AnsweredQuestion	**3**
						SkippedQuestion	**0**
Strongly disagree					Strongly agree	RatingAverage	RatingCount
0,0% (0)	0,0% (0)	0,0% (0)	0,0% (0)		**100,0% (3)**	5,00	3

4. I think that I would need the support of a technical person to be able to use this system

						AnsweredQuestion	**3**
						SkippedQuestion	**0**
Strongly disagree					Strongly agree	RatingAverage	RatingCount
100,0% (3)	0,0% (0)	0,0% (0)	0,0% (0)		0,0% (0)	1,00	3

5. I found the various functions in this system were well integrated

						AnsweredQuestion	**3**
						SkippedQuestion	**0**
Strongly disagree					Strongly agree	RatingAverage	RatingCount
0,0% (0)	0,0% (0)	0,0% (0)	33,3% (1)		**66,7% (2)**	4,67	3

6. I thought there was too much inconsistency in this system

						AnsweredQuestion	**3**
						SkippedQuestion	**0**
Strongly disagree					Strongly agree	RatingAverage	RatingCount
66,7% (2)	33,3% (1)	0,0% (0)	0,0% (0)		0,0% (0)	1,33	3

7. I would imagine that most people would learn to use this system very quickly

						AnsweredQuestion	**3**
						SkippedQuestion	**0**
Strongly disagree					Strongly agree	RatingAverage	RatingCount
0,0% (0)	0,0% (0)	0,0% (0)	0,0% (0)		**100,0% (3)**	5,00	3

8. I found the system very cumbersome to use

						AnsweredQuestion	**3**
						SkippedQuestion	**0**
Strongly disagree					Strongly agree	RatingAverage	RatingCount
100,0% (3)	0,0% (0)	0,0% (0)	0,0% (0)		0,0% (0)	1,00	3

9. I felt very confident using the system

						AnsweredQuestion	**3**
						SkippedQuestion	**0**
Strongly disagree					Strongly agree	RatingAverage	RatingCount
0,0% (0)	0,0% (0)	0,0% (0)	33,3% (1)		**66,7% (2)**	4,67	3

10. I needed to learn a lot of things before I could get going with this system

						AnsweredQuestion	**3**
						SkippedQuestion	**0**

10. I needed to learn a lot of things before I could get going with this system						
Strongly disagree				Strongly agree	Rating Average	Rating Count
66,7% (2)	33,3% (1)	0,0% (0)	0,0% (0)	0,0% (0)	1,33	3