Transfer-Function-Independent Acceleration Structure for Volume Rendering in Virtual Reality – Supplementary Material

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1. Supplementary Performance Results

In addition to the average frame times that were recorded during the performance comparison benchmarks and are listed in the manuscript, we report the frame delta times for the slowest 1 percentile frames measured during the same performance benchmark runs in Table 1.
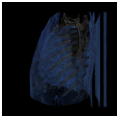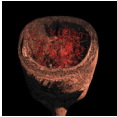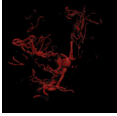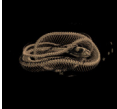
Dataset	Description		None	Distance Map	Boolean Octree	Min-Max Octree	Bitfield Octree
	Lungs $512 \times 512 \times 690$	Marching Only [ms]	13.33	7.28	9.01	17.02	9.61
		+ Early Exit [ms]	9.86	3.38	5.44	11.52	5.77
		+ Shading [ms]	14.81	9.31	9.99	14.70	10.39
		+ Lighting [ms]	16.86	9.86	10.88	16.44	11.41
	Head MRI $512 \times 640 \times 184$	Marching Only [ms]	12.75	8.75	11.27	16.83	12.83
		+ Early Exit [ms]	7.43	2.40	3.25	6.57	3.79
		+ Shading [ms]	10.66	6.09	6.00	8.44	6.93
		+ Lighting [ms]	11.73	6.75	6.81	9.42	7.70
	Aneurysm $256 \times 256 \times 256$	Marching Only [ms]	7.44	1.14	3.08	3.06	3.04
		+ Early Exit [ms]	7.41	1.02	2.78	2.76	2.82
		+ Shading [ms]	7.84	1.47	2.95	2.91	2.95
		+ Lighting [ms]	8.57	1.62	3.13	3.18	3.14
	Manix $512 \times 446 \times 459$	Marching Only [ms]	10.33	3.16	5.12	5.26	5.23
		+ Early Exit [ms]	7.59	1.12	2.43	2.39	2.37
		+ Shading [ms]	9.04	2.80	3.14	3.28	3.26
		+ Lighting [ms]	10.73	3.06	3.55	3.56	3.58
	Beetle $832 \times 832 \times 494$	Marching Only [ms]	21.46	2.69	3.54	3.60	3.46
		+ Early Exit [ms]	20.02	0.92	1.58	1.59	1.60
		+ Shading [ms]	21.33	1.71	2.29	2.23	2.31
		+ Lighting [ms]	25.44	2.02	2.47	2.59	2.53
	Kingsnake $1024 \times 1024 \times 795$	Marching Only [ms]	27.89	2.92	3.98	4.09	4.16
		+ Early Exit [ms]	25.01	1.62	3.04	3.09	3.16
		+ Shading [ms]	27.13	3.31	3.92	3.95	4.03
		+ Lighting [ms]	34.09	3.60	4.36	4.52	4.58

Table 1: *The slowest 1 percentile frame delta times measured during the performance comparison benchmark runs.*