Part 1: Appendix of the repairment results of VG1

 \underline{P} means the distance error values calculated based on all areas. \underline{P}^{\dagger} means the distance error values calculated based on denoised areas. \underline{T} means the distance error values calculated based on

Supplementary Mater	ial of Detailed Compar	rison of Error	Distributions A	cross AMs, Po	oint Clouds, and	d Surfaces bas	ed on VG1		
	Sample	Case 01 Left	Case 01 Right	Case 02 Left	Case 02 Right	Case 03 Left	Case 03 Right	Case 04 Left	Case 04 Right
	Defect (%)	27.11	21.42	21.1	32.4	24.87	28.4	31.02	32.83
	Mean \underline{P} (mm)	0.45 ± 0.31	0.38 ± 0.24	0.37 ± 0.32	0.75 ± 0.52	0.39 ± 0.28	0.46 ± 0.27	0.60 ± 0.53	0.61 ± 0.39
	Mean \underline{P}^{\dagger} (mm)	0.40 ± 0.32	0.37 ± 0.29	0.33 ± 0.27	0.71 ± 0.37	0.29 ± 0.20	0.45 ± 0.25	0.35 ± 0.22	0.37 ± 0.28
	Mean $\overline{\underline{T}}$ (mm)	0.64 ± 0.43	0.61 ± 0.56	0.88 ± 0.53	0.80 ± 0.78	0.71 ± 0.74	0.85 ± 0.71	0.81 ± 0.68	0.78 ± 0.62
	Mean \underline{S} (mm)	0.75 ± 0.61	0.55 ± 0.32	0.71 ± 0.52	0.78 ± 0.50	0.85 ± 0.55	0.72 ± 0.57	0.90 ± 0.69	0.68 ± 0.46
	Time Consumption (s)	67	48	44	54	52	73	58	48
	Sample Defect (%)	Case 05 Left 32.36	Case 05 Right 26.44	Case 06 Left 30.7	Case 06 Right 26.47	Case 07 Left 23.22	Case 07 Right 32.61	Case 08 Left 23.23	Case 08 Right 21.39
	Mean <u>P</u> (mm)	0.68 ± 0.54	0.59 ± 0.44	0.34 ± 0.24	0.47 ± 0.30	0.51 ± 0.37	0.57 ± 0.35	0.57 ± 0.35	0.55 ± 0.35
	Mean \underline{P}^{\dagger} (mm)	0.31 ± 0.22	0.41 ± 0.27	0.46 ± 0.31	0.54 ± 0.29	0.48 ± 0.31	0.54 ± 0.30	0.40 ± 0.26	0.53 ± 0.34
	Mean $\underline{\underline{T}}$ (mm)	0.65 ± 0.60	0.73 ± 0.54	0.70 ± 0.66	0.75 ± 0.55	0.76 ± 0.50	0.62 ± 0.45	0.75 ± 0.67	0.69 ± 0.59
Defect: $27.47 \pm 4.33\%$	Mean $\underline{\underline{S}}$ (mm)	0.80 ± 0.59	0.60 ± 0.33	0.83 ± 0.44	0.62 ± 0.47	0.54 ± 0.38	0.63 ± 0.52	0.86 ± 0.42	0.63 ± 0.42
L:R = 20:20 $M:F = None$	Time Consumption (s)	67	53	57	65	43	40	53	70
Age: None	Sample	Case 09 Left	Case 09 Right	Case 10 Left	Case 10 Right	Case 11 Left	Case 11 Right	Case 12 Left	Case 12 Right
	Defect (%)	21.15	22.15	32.69	27.22	30.25	32.72	29.69	34.6
\underline{P}^{\dagger} : 0.42 ± 0.31	Mean <u>P</u> (mm)	0.61 ± 0.56	0.67 ± 0.46	0.64 ± 0.39	0.67 ± 0.35	0.40 ± 0.31	0.51 ± 0.39	0.69 ± 0.48	0.76 ± 0.41
\underline{T} : 0.65 ± 0.48	Mean \underline{P}^{\dagger} (mm)	0.39 ± 0.27	0.42 ± 0.32	0.62 ± 0.44	0.68 ± 0.34	0.36 ± 0.29	0.34 ± 0.24	0.40 ± 0.23	0.59 ± 0.27
\mathbf{S} : 0.61 ± 0.43	Mean \underline{T} (mm)	0.75 ± 0.67	0.76 ± 0.63	0.85 ± 0.54	0.62 ± 0.55	0.77 ± 0.69	0.66 ± 0.52	0.57 ± 0.47	0.73 ± 0.32
$Time: 56.10 \pm 8.91$	Mean <u>S</u> (mm)	0.68 ± 0.46	0.67 ± 0.45	0.66 ± 0.35	0.53 ± 0.35	0.40 ± 0.29	0.80 ± 0.62	0.79 ± 0.67	0.85 ± 0.66
	Time Consumption (s)	65	56	60	60	59	47	60	46
	Sample	Case 13 Left	Case 13 Right	Case 14 Left	Case 14 Right	Case 15 Left	Case 15 Right	Case 16 Left	Case 16 Right
	Defect (%)	$22.43 \\ 0.42 \pm 0.27$	$20.77 \\ 0.39 \pm 0.28$	$21.7 \\ 0.45 \pm 0.25$	$28.17 \\ 0.69 \pm 0.32$	$29.22 \\ 0.78 \pm 0.40$	$21.89 \\ 0.48 \pm 0.32$	28.37 0.50 ± 0.32	29.74 0.55 ± 0.47
	Mean <u>P</u> (mm) Mean <u>P[†] (mm)</u>	0.42 ± 0.27 0.50 ± 0.30	0.39 ± 0.28 0.33 ± 0.29	0.43 ± 0.23 0.60 ± 0.33	0.69 ± 0.32 0.52 ± 0.30	0.78 ± 0.40 0.55 ± 0.39	0.48 ± 0.32 0.42 ± 0.32	0.30 ± 0.32 0.43 ± 0.24	0.55 ± 0.47 0.55 ± 0.37
	Mean \underline{T} (mm)	0.30 ± 0.30 0.71 ± 0.53	0.33 ± 0.29 0.82 ± 0.51	0.80 ± 0.53 0.88 ± 0.52	0.32 ± 0.30 0.82 ± 0.70	0.33 ± 0.39 0.79 ± 0.56	0.42 ± 0.32 0.71 ± 0.64	0.43 ± 0.24 0.73 ± 0.52	0.33 ± 0.57 0.87 ± 0.59
	Mean $\underline{\mathbf{S}}$ (mm)	0.71 ± 0.33 0.63 ± 0.42	0.82 ± 0.31 0.61 ± 0.42	0.88 ± 0.32 0.72 ± 0.41	0.82 ± 0.70 0.55 ± 0.45	0.79 ± 0.30 0.39 ± 0.30	0.71 ± 0.04 0.55 ± 0.45	0.73 ± 0.52 0.72 ± 0.52	0.87 ± 0.59 0.87 ± 0.61
	Time Consumption (s)	0.03 ± 0.42 51	0.61 ± 0.42	0.72 ± 0.41 52	62	0.39 ± 0.30 52	0.33 ± 0.43 50	0.72 ± 0.32	0.87 ± 0.01
	Sample	Case 17 Left	Case 17 Right	Case 18 Left	Case 18 Right	Case 19 Left	Case 19 Right	Case 20 Left	Case 20 Right
	Defect (%)	32.14	24.87	32.45	34.57	28.48	28.49	26.94	22.48
	Mean <u>P</u> (mm)	0.68 ± 0.52	0.59 ± 0.34	0.56 ± 0.35	0.49 ± 0.30	0.46 ± 0.36	0.63 ± 0.38	0.62 ± 0.38	0.46 ± 0.32
	Mean P^{\dagger} (mm)	0.53 ± 0.51	0.55 ± 0.40	0.48 ± 0.30	0.59 ± 0.39	0.51 ± 0.28	0.30 ± 0.20	0.57 ± 0.22	0.22 ± 0.13
	Mean $\overline{\underline{T}}$ (mm)	0.85 ± 0.61	0.62 ± 0.44	0.72 ± 0.57	0.66 ± 0.38	0.53 ± 0.44	0.50 ± 0.34	0.87 ± 0.49	0.67 ± 0.37
	Mean $\underline{\underline{S}}$ (mm)	0.55 ± 0.45	0.69 ± 0.43	0.50 ± 0.41	0.70 ± 0.53	0.79 ± 0.58	0.58 ± 0.35	0.71 ± 0.57	0.55 ± 0.42
	Time Consumption (s)	46	63	51	72	43	60	46	56

<u>P</u> means the surface error values calculated based on target defect areas. <u>S</u> means the surface error values calculated based on all areas. And you can find more information in Figure 3-B and its descriptions in manuscript.

Part 2: Appendix of overall results of clinical evaluation in VG2

	rial of Reconstructio	n error analysis based o	n the clinical cases from	Belgium, England, Ch	ina, And OA Dataset (V	/G2)
Caucasoid Clinical Cases				i zeigioiii, ziigioiiu, eii		32)
	Error Metric	Case 01	Case 02	Case 03	Case 04	Case 05
	Error Wetric	28.72%	20.83%	27.39%	22.47%	21.675%
	Mean <u>P</u> (mm)	0.17 ± 0.14	0.23 ± 0.22	0.31 ± 0.24	0.36 ± 0.27	0.30 ± 0.26
	0 25 50 75 100 %	0.00 0.00 0.12 0.24 0.99	0.00 0.12 0.17 0.36 1.00	0.00 0.12 0.24 0.47 0.95	0.00 0.12 0.29 0.59 0.93	0.00 0.11 0.24 0.47 1.03
Defect: 25.01 ± 2.75 %	Mean <u>G</u> 0 25 50 75 100 %	0.18 ± 0.13 0.00 0.10 0.15 0.26 0.46	0.25 ± 0.14 0.00 0.13 0.33 0.64 1.27	0.33 ± 0.25	0.30 ± 0.22	0.26 ± 0.18 $0.00 0.11 0.24 0.40 0.64$
L:R = 6:4	Mean \underline{S} (mm)	$0.00 0.10 0.13 0.26 0.46$ 0.53 ± 0.30	$0.00 0.15 0.35 0.04 1.27$ 0.56 ± 0.23	$0.00 0.13 0.31 0.51 0.82$ 0.74 ± 0.38	$0.00 0.11 0.27 0.46 0.75$ 0.67 ± 0.29	$0.00 0.11 0.24 0.40 0.64$ 0.56 ± 0.27
M:F = 5:5	0 25 50 75 100 %	0.00 0.32 0.45 0.68 1.27	0.00 0.38 0.52 0.67 1.00	0.00 0.45 0.69 0.99 1.66	0.00 0.46 0.62 0.85 1.35	0.00 0.38 0.52 0.67 1.21
Age: 61.00 ± 18.92	Time Consumption	51s	45s	55s	63s	42s
(15 to 95 years old)		Case 06	Case 07	Case 08	Case 09	Case 10
	Error Metric	25.04%	24.91%	29.18%	26.34%	23.56%
$\underline{\mathbf{S}}$: 0.63 ± 0.31	Mean <u>P</u> (mm)	0.40 ± 0.26	0.29 ± 0.25	0.27 ± 0.26	0.38 ± 0.30	0.54 ± 0.32
Time: 55.00 ± 10.67	0 25 50 75 100 %	0.00 0.12 0.35 0.59 1.01	0.00 0.12 0.24 0.47 0.91	0.00 0.11 0.23 0.35 0.99	0.00 0.12 0.29 0.59 0.92	0.00 0.22 0.59 0.82 1.22
	Mean <u>G</u>	0.30 ± 0.21	0.26 ± 0.19	0.29 ± 0.21	0.25 ± 0.18	0.30 ± 0.17
	0 25 50 75 100 %	0.00 0.11 0.26 0.45 0.74	0.00 0.10 0.23 0.40 0.67	0.00 0.10 0.25 0.45 0.74	$0.00 0.09 0.23 0.39 0.63$ 0.69 ± 0.34	0.00 0.10 0.25 0.37 0.60
	Mean <u>S</u> (mm) 0 25 50 75 100 %	0.66 ± 0.27 0.00 0.47 0.61 0.83 1.16	0.51 ± 0.20 0.00 0.39 0.51 0.62 1.23	0.55 ± 0.24 0.00 0.39 0.53 0.68 1.13	0.09 ± 0.34 0.00 0.47 0.61 0.83 1.46	0.65 ± 0.32 $0.00 0.43 0.59 0.82 1.59$
	Time Consumption	44s	0.00 0.39 0.31 0.02 1.23 57s	77s	49s	67s
Mongoloid Clinical Cases		gy Xi'an Jiao Tong Universit		773	175	073
		Case 01	Case 02	Case 03	Case 04	Case 05
	Error Metric	23.54%	26.74%	25.63%	27.92%	21.65%
	Mean <u>P</u> (mm)	0.48 ± 0.27	0.50 ± 0.25	0.32 ± 0.26	0.38 ± 0.21	0.30 ± 0.24
	0 25 50 75 100 %	0.00 0.28 0.47 0.71 0.98	0.00 0.35 0.47 0.71 1.03	0.00 0.12 0.25 0.47 0.97	0.00 0.24 0.35 0.47 1.05	0.00 0.11 0.24 0.47 0.97
Defect: 24.90 ± 3.20 %	Mean <u>G</u>	0.21 ± 0.15	0.29 ± 0.20	0.27 ± 0.18	0.26 ± 0.18	0.31 ± 0.19
L:R = $5:5$	0 25 50 75 100 %	0.00 0.10 0.19 0.33 0.54	0.00 0.12 0.26 0.45 0.75	0.00 0.10 0.24 0.40 0.66	0.00 0.11 0.24 0.40 0.63	0.00 0.12 0.26 0.43 0.69
M:F = 4:6	Mean <u>S</u> (mm)	0.60 ± 0.24	0.72 ± 0.38	0.54 ± 0.28	0.51 ± 0.17	0.61 ± 0.28
Age: 26.20 ± 7.40	0 25 50 75 100 % Time Consumption	0.00 0.43 0.57 0.73 1.06 54s	0.00 0.46 0.62 0.94 1.50 86s	0.00 0.39 0.53 0.61 1.00 48s	0.00 0.40 0.51 0.63 0.87 39s	0.00 0.44 0.57 0.73 1.25 62s
(14 to 43 years old)	Time Consumption	Case 06	Case 07	Case 08	Case 09	Case 10
\underline{P} : 0.40 ± 0.29	Error Metric	28.69%	23.47%	20.12%	21.35%	29.88%
\underline{G} : 0.27 ± 0.21	Mean <u>P</u> (mm)	0.22 ± 0.21	0.48 ± 0.29	0.42 ± 0.22	0.28 ± 0.26	0.31 ± 0.19
\underline{S} : 0.61 ± 0.42 <i>Time</i> : 50.60 ± 16.24	0 25 50 75 100 %	0.00 0.11 0.12 0.24 0.93	0.00 0.20 0.47 0.70 0.92	0.00 0.24 0.47 0.70 0.93	0.00 0.11 0.24 0.35 0.91	0.00 0.24 0.25 0.35 0.90
1tme. 50.00 ± 10.24	Mean <u>G</u>	0.32 ± 0.23	0.23 ± 0.11	0.27 ± 0.20	0.31 ± 0.23	0.30 ± 0.22
	0 25 50 75 100 %	0.00 0.12 0.29 0.50 0.81	0.00 0.04 0.22 0.32 0.36	0.00 0.10 0.25 0.43 0.71	0.00 0.10 0.27 0.49 0.80	0.00 0.11 0.28 0.48 0.77
	Mean \underline{S} (mm)	0.51 ± 0.19	0.58 ± 0.23	0.53 ± 0.19	0.58 ± 0.20	0.70 ± 0.32
	0 25 50 75 100 %	0.00 0.39 0.51 0.63 0.91	0.00 0.43 0.56 0.70 1.03	0.00 0.40 0.52 0.65 0.83	0.00 0.44 0.57 0.70 0.93	0.00 0.52 0.66 0.89 1.31
Negroid Clinical Cases (Time Consumption	37s lgium & Case 06-10 are fror	49s	62s	46s	33s
Negrota Clinical Cases (C		Case 01	Case 02	Case 03	Case 04	Case 05
	Error Metric	23.24%	27.55%	24.39%	26.87%	21.69%
	Mean <u>P</u> (mm)	0.44 ± 0.25	0.39 ± 0.27	0.48 ± 0.25	0.43 ± 0.24	0.40 ± 0.24
	0 25 50 75 100 %	0.00 0.24 0.41 0.59 0.93	0.00 0.12 0.29 0.59 0.93	0.00 0.35 0.47 0.71 0.92	0.00 0.24 0.35 0.59 0.92	0.00 0.24 0.35 0.58 0.99
Defect: 24.73 ± 2.49 %	Mean <u>G</u>	0.35 ± 0.23	0.31 ± 0.23	0.34 ± 0.24	0.34 ± 0.21	0.28 ± 0.20
L:R = $5:5$	0 25 50 75 100 %	0.00 0.13 0.31 0.53 0.83	0.00 0.12 0.29 0.49 0.79	0.00 0.13 0.32 0.54 0.84	0.00 0.12 0.31 0.53 0.84	0.00 0.10 0.25 0.43 0.69
M:F = 5:5	Mean <u>S</u> (mm) 0 25 50 75 100 %	0.77 ± 0.34 0.00 0.34 0.51 0.71 1.30	0.50 ± 0.18 0.00 0.38 0.49 0.62 0.78	0.70 ± 0.54 $0.00 0.47 0.65 1.08 1.57$	$0.63 \pm 0.27 \\ 0.00 0.45 0.61 0.78 1.24$	0.56 ± 0.30 $0.00 0.29 0.51 0.66 1.37$
Age: 40.18 ± 10.81	Time Consumption	62s	0.00 0.38 0.49 0.62 0.78	64s	42s	55s
(21 to 57 years old)		Case 06	Case 07	Case 08	Case 09	Case 10
\underline{P} : 0.43 ± 0.32	Error Metric	28.35%	21.58%	21.79%	24.63%	27.25%
<u>G</u> : 0.29 ± 0.18 <u>S</u> : 0.56 ± 0.38	Mean <u>P</u> (mm)	0.35 ± 0.25	0.43 ± 0.30	0.51 ± 0.28	0.40 ± 0.27	0.32 ± 0.23
$\underline{5}$. 0.30 ± 0.38 Time: 50.90 ± 9.26	0 25 50 75 100 %	0.00 0.11 0.29 0.47 0.92	0.00 0.17 0.35 0.70 0.92		0.0010.4510.6510.5010.00	
3 3 = 2.20	16 6		0.00 0.17 0.33 0.70 0.72	0.00 0.23 0.59 0.70 0.89	0.00 0.17 0.35 0.59 0.89	0.00 0.12 0.29 0.47 0.92
Ī	Mean <u>G</u>	0.33 ± 0.22	0.19 ± 0.13	0.18 ± 0.13	0.33 ± 0.25	0.24 ± 0.17
	0 25 50 75 100 %	0.00 0.14 0.30 0.52 0.80	$0.19 \pm 0.13 \\ 0.00 0.07 0.17 0.30 0.46$	$0.18 \pm 0.13 \\ 0.00 0.07 0.16 0.28 0.44$	$0.33 \pm 0.25 \\ 0.00 0.10 0.30 0.53 0.85$	$0.24 \pm 0.17 \\ 0.00 0.09 0.22 0.37 0.60$
	0 25 50 75 100 % Mean <u>S</u> (mm)	$0.00 0.14 0.30 0.52 0.80\\0.66 \pm 0.32$	$\begin{aligned} 0.19 &\pm 0.13 \\ 0.00 & 0.07 0.17 & 0.30 0.46 \\ 0.57 &\pm 0.23 \end{aligned}$	$0.18 \pm 0.13 0.00 0.07 0.16 0.28 0.44 0.60 \pm 0.28$	$0.33 \pm 0.25 \\ 0.00 0.10 0.30 0.53 0.85 \\ 0.74 \pm 0.44$	$0.24 \pm 0.17 \\ 0.00 0.09 0.22 0.37 0.60 \\ 0.44 \pm 0.15$
	0 25 50 75 100 % Mean <u>S</u> (mm) 0 25 50 75 100 %	$\begin{aligned} 0.00 0.14 0.30 0.52 0.80\\ 0.66 \pm 0.32\\ 0.00 0.42 0.61 0.87 1.24 \end{aligned}$	$\begin{aligned} 0.19 &\pm 0.13 \\ 0.00 & 0.07 0.17 & 0.30 0.46 \\ 0.57 &\pm 0.23 \\ 0.00 & 0.41 0.55 & 0.71 0.93 \end{aligned}$	$0.18 \pm 0.13 \\ 0.00 0.07 0.16 0.28 0.44 \\ 0.60 \pm 0.28 \\ 0.00 0.41 0.55 0.73 1.16$	$0.33 \pm 0.25 \\ 0.00 0.10 0.30 0.53 0.85 \\ 0.74 \pm 0.44 \\ 0.00 0.42 0.60 1.02 1.44$	0.24 ± 0.17 $0.00 0.09 0.22 0.37 0.60$ 0.44 ± 0.15 $0.00 0.34 0.44 0.54 0.66$
OA Data from Zenodo C	0 25 50 75 100 % Mean <u>\$\mathbf{S}\$</u> (mm) 0 25 50 75 100 % Time Consumption	$0.00 0.14 0.30 0.52 0.80\\0.66 \pm 0.32\\0.00 0.42 0.61 0.87 1.24\\50s$	$\begin{aligned} 0.19 &\pm 0.13 \\ 0.00 & 0.07 0.17 & 0.30 0.46 \\ 0.57 &\pm 0.23 \end{aligned}$	$0.18 \pm 0.13 0.00 0.07 0.16 0.28 0.44 0.60 \pm 0.28$	$0.33 \pm 0.25 \\ 0.00 0.10 0.30 0.53 0.85 \\ 0.74 \pm 0.44$	$0.24 \pm 0.17 \\ 0.00 0.09 0.22 0.37 0.60 \\ 0.44 \pm 0.15$
OA Data from Zenodo, C	0 25 50 75 100 % Mean <u>S</u> (mm) 0 25 50 75 100 % Time Consumption Q500, MUG500, and Ka	$0.00 0.14 0.30 0.52 0.80 \\ 0.66 \pm 0.32 \\ 0.00 0.42 0.61 0.87 1.24 \\ 50s$ aggle	0.19 ± 0.13 $0.00 0.07 0.17 0.30 0.46$ 0.57 ± 0.23 $0.00 0.41 0.55 0.71 0.93$ $45s$	0.18 ± 0.13 $0.00 0.07 0.16 0.28 0.44$ 0.60 ± 0.28 $0.00 0.41 0.55 0.73 1.16$ $53s$	$0.33 \pm 0.25 \\ 0.00 0.10 0.30 0.53 0.85 \\ 0.74 \pm 0.44 \\ 0.00 0.42 0.60 1.02 1.44 \\ 62s$	0.24 ± 0.17 $0.00 0.09 0.22 0.37 0.60$ 0.44 ± 0.15 $0.00 0.34 0.44 0.54 0.66$ $39s$
OA Data from Zenodo, Control Defect: 26.63 ± 3.63 %	0 25 50 75 100 % Mean <u>\$\mathbf{S}\$</u> (mm) 0 25 50 75 100 % Time Consumption	$0.00 0.14 0.30 0.52 0.80\\0.66 \pm 0.32\\0.00 0.42 0.61 0.87 1.24\\50s$	$\begin{aligned} 0.19 &\pm 0.13 \\ 0.00 & 0.07 0.17 & 0.30 0.46 \\ 0.57 &\pm 0.23 \\ 0.00 & 0.41 0.55 & 0.71 0.93 \end{aligned}$	$0.18 \pm 0.13 \\ 0.00 0.07 0.16 0.28 0.44 \\ 0.60 \pm 0.28 \\ 0.00 0.41 0.55 0.73 1.16$	$0.33 \pm 0.25 \\ 0.00 0.10 0.30 0.53 0.85 \\ 0.74 \pm 0.44 \\ 0.00 0.42 0.60 1.02 1.44$	0.24 ± 0.17 $0.00 0.09 0.22 0.37 0.60$ 0.44 ± 0.15 $0.00 0.34 0.44 0.54 0.66$
Defect: 26.63 ± 3.63 % L:R = 5:5	0 25 50 75 100 % Mean <u>S</u> (mm) 0 25 50 75 100 % Time Consumption Q500, MUG500, and Ka	0.00 0.14 0.30 0.52 0.80 0.66 ± 0.32 0.00 0.42 0.61 0.87 1.24 50s aggle $Case\ 01[26]$	0.19 ± 0.13 0.00 0.07 0.17 0.30 0.46 0.57 ± 0.23 0.00 0.41 0.55 0.71 0.93 45s $Case\ 02[26]$	0.18 ± 0.13 0.00 0.07 0.16 0.28 0.44 0.60 ± 0.28 0.00 0.41 0.55 0.73 1.16 53s $Case\ 03[27]$	0.33 ± 0.25 0.00 0.10 0.30 0.53 0.85 0.74 ± 0.44 0.00 0.42 0.60 1.02 1.44 62s $Case\ 04[27]$	0.24 ± 0.17 0.00 0.09 0.22 0.37 0.60 0.44 ± 0.15 0.00 0.34 0.44 0.54 0.66 39s $Case\ 05[28]$
Defect: 26.63 ± 3.63 % L:R = 5:5 M:F = None	0 25 50 75 100 % Mean <u>S</u> (mm) 0 25 50 75 100 % Time Consumption Q500, MUG500, and Ka Error Metric Mean <u>P</u> (mm) 0 25 50 75 100 %	$0.00 0.14 0.30 0.52 0.80 \\ 0.66 \pm 0.32 \\ 0.00 0.42 0.61 0.87 1.24 \\ 50s$ aggle $Case \ 01[26] \\ 26.25\% \\ 0.43 \pm 0.26 \\ 0.00 0.23 0.46 0.59 0.97$	0.19 ± 0.13 $0.00 0.07 0.17 0.30 0.46$ 0.57 ± 0.23 $0.00 0.41 0.55 0.71 0.93$ $45s$ $Case \ 02[26]$ 21.88% 0.39 ± 0.25 $0.00 0.23 0.35 0.58 0.97$	0.18 ± 0.13 $0.00 0.07 0.16 0.28 0.44$ 0.60 ± 0.28 $0.00 0.41 0.55 0.73 1.16$ $53s$ $Case \ 03[27]$ 31.06% 0.33 ± 0.18 $0.00 0.24 0.35 0.39 0.91$	0.33 ± 0.25 $0.00 0.10 0.30 0.53 0.85$ 0.74 ± 0.44 $0.00 0.42 0.60 1.02 1.44$ $62s$ $Case \ 04[27]$ 27.48% 0.58 ± 0.26 $0.00 0.35 0.59 0.82 0.93$	0.24 ± 0.17 $0.00 0.09 0.22 0.37 0.60$ 0.44 ± 0.15 $0.00 0.34 0.44 0.54 0.66$ $39s$ $Case\ 05[28]$ 31.69% $0.37 \pm 0.27\ duoq$ $0.00 0.12 0.35 0.55 0.97$
Defect: 26.63 ± 3.63 % L:R = 5:5 M:F = None Age: None	0 25 50 75 100 % Mean <u>S</u> (mm) 0 25 50 75 100 % Time Consumption Q500, MUG500, and Ka Error Metric Mean <u>P</u> (mm) 0 25 50 75 100 % Mean <u>G</u>	$0.00 0.14 0.30 0.52 0.80$ 0.66 ± 0.32 $0.00 0.42 0.61 0.87 1.24$ $50s$ aggle $Case \ 01[26]$ 26.25% 0.43 ± 0.26 $0.00 0.23 0.46 0.59 0.97$ 0.23 ± 0.17	0.19 ± 0.13 $0.00 0.07 0.17 0.30 0.46$ 0.57 ± 0.23 $0.00 0.41 0.55 0.71 0.93$ $45s$ $Case \ 02[26]$ 21.88% 0.39 ± 0.25 $0.00 0.23 0.35 0.58 0.97$ 0.36 ± 0.26	0.18 ± 0.13 $0.00 0.07 0.16 0.28 0.44$ 0.60 ± 0.28 $0.00 0.41 0.55 0.73 1.16$ $53s$ $Case \ 03[27]$ 31.06% 0.33 ± 0.18 $0.00 0.24 0.35 0.39 0.91$ 0.30 ± 0.20	0.33 ± 0.25 $0.00 0.10 0.30 0.53 0.85$ 0.74 ± 0.44 $0.00 0.42 0.60 1.02 1.44$ $62s$ $Case \ 04[27]$ 27.48% 0.58 ± 0.26 $0.00 0.35 0.59 0.82 0.93$ 0.29 ± 0.22	0.24 ± 0.17 $0.00 0.09 0.22 0.37 0.60$ 0.44 ± 0.15 $0.00 0.34 0.44 0.54 0.66$ $39s$ $Case \ 05[28]$ 31.69% $0.37 \pm 0.27 \ duoq$ $0.00 0.12 0.35 0.55 0.97$ 0.23 ± 0.16
Defect: 26.63 ± 3.63 % L:R = 5:5 M:F = None Age: None <u>P</u> : 0.41 ± 0.28	0 25 50 75 100 % Mean <u>S</u> (mm) 0 25 50 75 100 % Time Consumption Q500, MUG500, and Ka Error Metric Mean <u>P</u> (mm) 0 25 50 75 100 % Mean <u>G</u> 0 25 50 75 100 %	$0.00 0.14 0.30 0.52 0.80$ 0.66 ± 0.32 $0.00 0.42 0.61 0.87 1.24$ $50s$ aggle $Case \ 01[26]$ 26.25% 0.43 ± 0.26 $0.00 0.23 0.46 0.59 0.97$ 0.23 ± 0.17 $0.00 0.08 0.21 0.37 0.60$	0.19 ± 0.13 $0.00 0.07 0.17 0.30 0.46$ 0.57 ± 0.23 $0.00 0.41 0.55 0.71 0.93$ $45s$ $Case \ 02[26]$ 21.88% 0.39 ± 0.25 $0.00 0.23 0.35 0.58 0.97$ 0.36 ± 0.26 $0.00 0.13 0.32 0.56 0.89$	0.18 ± 0.13 $0.00 0.07 0.16 0.28 0.44$ 0.60 ± 0.28 $0.00 0.41 0.55 0.73 1.16$ $53s$ $Case \ 03[27]$ 31.06% 0.33 ± 0.18 $0.00 0.24 0.35 0.39 0.91$ 0.30 ± 0.20 $0.00 0.12 0.28 0.46 0.71$	0.33 ± 0.25 $0.00 0.10 0.30 0.53 0.85$ 0.74 ± 0.44 $0.00 0.42 0.60 1.02 1.44$ $62s$ $Case \ 04[27]$ 27.48% 0.58 ± 0.26 $0.00 0.35 0.59 0.82 0.93$ 0.29 ± 0.22 $0.00 0.11 0.27 0.47 0.76$	0.24 ± 0.17 $0.00 0.09 0.22 0.37 0.60$ 0.44 ± 0.15 $0.00 0.34 0.44 0.54 0.66$ $39s$ $Case\ 05[28]$ 31.69% $0.37 \pm 0.27\ duoq$ $0.00 0.12 0.35 0.55 0.97$ 0.23 ± 0.16 $0.00 0.09 0.21 0.35 0.58$
Defect: 26.63 ± 3.63 % L:R = 5:5 M:F = None Age: None <u>P</u> : 0.41 ± 0.28 <u>G</u> : 0.30 ± 0.23	0 25 50 75 100 % Mean <u>S</u> (mm) 0 25 50 75 100 % Time Consumption Q500, MUG500, and Ka Error Metric Mean <u>P</u> (mm) 0 25 50 75 100 % Mean <u>G</u> 0 25 50 75 100 % Mean <u>S</u> (mm)	$0.00 0.14 0.30 0.52 0.80$ 0.66 ± 0.32 $0.00 0.42 0.61 0.87 1.24$ $50s$ aggle $Case \ 01[26]$ 26.25% 0.43 ± 0.26 $0.00 0.23 0.46 0.59 0.97$ 0.23 ± 0.17 $0.00 0.08 0.21 0.37 0.60$ 0.60 ± 0.28	0.19 ± 0.13 $0.00 0.07 0.17 0.30 0.46$ 0.57 ± 0.23 $0.00 0.41 0.55 0.71 0.93$ $45s$ $Case 02[26]$ 21.88% 0.39 ± 0.25 $0.00 0.23 0.35 0.58 0.97$ 0.36 ± 0.26 $0.00 0.13 0.32 0.56 0.89$ 0.70 ± 0.32	0.18 ± 0.13 $0.00 0.07 0.16 0.28 0.44$ 0.60 ± 0.28 $0.00 0.41 0.55 0.73 1.16$ $53s$ $Case \ 03[27]$ 31.06% 0.33 ± 0.18 $0.00 0.24 0.35 0.39 0.91$ 0.30 ± 0.20 $0.00 0.12 0.28 0.46 0.71$ 0.64 ± 0.28	0.33 ± 0.25 $0.00 0.10 0.30 0.53 0.85$ 0.74 ± 0.44 $0.00 0.42 0.60 1.02 1.44$ $62s$ $Case \ 04[27]$ 27.48% 0.58 ± 0.26 $0.00 0.35 0.59 0.82 0.93$ 0.29 ± 0.22 $0.00 0.11 0.27 0.47 0.76$ 0.79 ± 0.38	0.24 ± 0.17 $0.00 0.09 0.22 0.37 0.60$ 0.44 ± 0.15 $0.00 0.34 0.44 0.54 0.66$ $39s$ $Case\ 05[28]$ 31.69% $0.37 \pm 0.27\ duoq$ $0.00 0.12 0.35 0.55 0.97$ 0.23 ± 0.16 $0.00 0.09 0.21 0.35 0.58$ 0.46 ± 0.17
Defect: 26.63 ± 3.63 % L:R = 5:5 M:F = None Age: None <u>P</u> : 0.41 ± 0.28 <u>G</u> : 0.30 ± 0.23 <u>S</u> : 0.58 ± 0.28	0 25 50 75 100 % Mean <u>S</u> (mm) 0 25 50 75 100 % Time Consumption Q500, MUG500, and Ka Error Metric Mean <u>P</u> (mm) 0 25 50 75 100 % Mean <u>G</u> 0 25 50 75 100 % Mean <u>S</u> (mm) 0 25 50 75 100 %	$0.00 0.14 0.30 0.52 0.80 \\ 0.66 \pm 0.32 \\ 0.00 0.42 0.61 0.87 1.24 \\ 50s$ aggle $Case \ 01[26] \\ 26.25\% \\ 0.43 \pm 0.26 \\ 0.00 0.23 0.46 0.59 0.97 \\ 0.23 \pm 0.17 \\ 0.00 0.08 0.21 0.37 0.60 \\ 0.60 \pm 0.28 \\ 0.00 0.41 0.54 0.74 1.15$	0.19 ± 0.13 $0.00 0.07 0.17 0.30 0.46$ 0.57 ± 0.23 $0.00 0.41 0.55 0.71 0.93$ $45s$ $Case 02[26]$ 21.88% 0.39 ± 0.25 $0.00 0.23 0.35 0.58 0.97$ 0.36 ± 0.26 $0.00 0.13 0.32 0.56 0.89$ 0.70 ± 0.32 $0.00 0.46 0.63 0.92 1.22$	0.18 ± 0.13 $0.00 0.07 0.16 0.28 0.44$ 0.60 ± 0.28 $0.00 0.41 0.55 0.73 1.16$ $53s$ $Case \ 03[27]$ 31.06% 0.33 ± 0.18 $0.00 0.24 0.35 0.39 0.91$ 0.30 ± 0.20 $0.00 0.12 0.28 0.46 0.71$ 0.64 ± 0.28 $0.00 0.43 0.60 0.80 1.14$	0.33 ± 0.25 $0.00 0.10 0.30 0.53 0.85$ 0.74 ± 0.44 $0.00 0.42 0.60 1.02 1.44$ $62s$ $Case\ 04[27]$ 27.48% 0.58 ± 0.26 $0.00 0.35 0.59 0.82 0.93$ 0.29 ± 0.22 $0.00 0.11 0.27 0.47 0.76$ 0.79 ± 0.38 $0.00 0.50 0.72 1.01 1.36$	0.24 ± 0.17 $0.00 0.09 0.22 0.37 0.60$ 0.44 ± 0.15 $0.00 0.34 0.44 0.54 0.66$ $39s$ $Case\ 05[28]$ 31.69% $0.37 \pm 0.27\ duoq$ $0.00 0.12 0.35 0.55 0.97$ 0.23 ± 0.16 $0.00 0.09 0.21 0.35 0.58$ 0.46 ± 0.17 $0.00 0.34 0.46 0.57 0.71$
Defect: 26.63 ± 3.63 % L:R = 5:5 M:F = None Age: None <u>P</u> : 0.41 ± 0.28 <u>G</u> : 0.30 ± 0.23	0 25 50 75 100 % Mean <u>S</u> (mm) 0 25 50 75 100 % Time Consumption Q500, MUG500, and Ka Error Metric Mean <u>P</u> (mm) 0 25 50 75 100 % Mean <u>G</u> 0 25 50 75 100 % Mean <u>S</u> (mm) 0 25 50 75 100 % Time Consumption	$0.00 0.14 0.30 0.52 0.80 \\ 0.66 \pm 0.32 \\ 0.00 0.42 0.61 0.87 1.24 \\ 50s$ aggle $\frac{Case \ 01[26]}{26.25\%} \\ 0.43 \pm 0.26 \\ 0.00 0.23 0.46 0.59 0.97 \\ 0.23 \pm 0.17 \\ 0.00 0.08 0.21 0.37 0.60 \\ 0.60 \pm 0.28 \\ 0.00 0.41 0.54 0.74 1.15 \\ 69s$	0.19 ± 0.13 $0.00 0.07 0.17 0.30 0.46$ 0.57 ± 0.23 $0.00 0.41 0.55 0.71 0.93$ $45s$ $Case \ 02[26]$ 21.88% 0.39 ± 0.25 $0.00 0.23 0.35 0.58 0.97$ 0.36 ± 0.26 $0.00 0.13 0.32 0.56 0.89$ 0.70 ± 0.32 $0.00 0.46 0.63 0.92 1.22$ $51s$	0.18 ± 0.13 $0.00 0.07 0.16 0.28 0.44$ 0.60 ± 0.28 $0.00 0.41 0.55 0.73 1.16$ $53s$ $Case \ 03[27]$ 31.06% 0.33 ± 0.18 $0.00 0.24 0.35 0.39 0.91$ 0.30 ± 0.20 $0.00 0.12 0.28 0.46 0.71$ 0.64 ± 0.28 $0.00 0.43 0.60 0.80 1.14$ $49s$	0.33 ± 0.25 $0.00 0.10 0.30 0.53 0.85$ 0.74 ± 0.44 $0.00 0.42 0.60 1.02 1.44$ $62s$ $Case \ 04[27]$ 27.48% 0.58 ± 0.26 $0.00 0.35 0.59 0.82 0.93$ 0.29 ± 0.22 $0.00 0.11 0.27 0.47 0.76$ 0.79 ± 0.38 $0.00 0.50 0.72 1.01 1.36$ $63s$	0.24 ± 0.17 $0.00 0.09 0.22 0.37 0.60$ 0.44 ± 0.15 $0.00 0.34 0.44 0.54 0.66$ $39s$ $Case\ 05[28]$ 31.69% $0.37 \pm 0.27\ duoq$ $0.00 0.12 0.35 0.55 0.97$ 0.23 ± 0.16 $0.00 0.09 0.21 0.35 0.58$ 0.46 ± 0.17 $0.00 0.34 0.46 0.57 0.71$ $35s$
Defect: 26.63 ± 3.63 % L:R = 5:5 M:F = None Age: None P: 0.41 ± 0.28 G: 0.30 ± 0.23 S: 0.58 ± 0.28	0 25 50 75 100 % Mean <u>S</u> (mm) 0 25 50 75 100 % Time Consumption Q500, MUG500, and Ka Error Metric Mean <u>P</u> (mm) 0 25 50 75 100 % Mean <u>G</u> 0 25 50 75 100 % Mean <u>S</u> (mm) 0 25 50 75 100 %	$0.00 0.14 0.30 0.52 0.80 \\ 0.66 \pm 0.32 \\ 0.00 0.42 0.61 0.87 1.24 \\ 50s$ aggle $Case \ 01[26] \\ 26.25\% \\ 0.43 \pm 0.26 \\ 0.00 0.23 0.46 0.59 0.97 \\ 0.23 \pm 0.17 \\ 0.00 0.08 0.21 0.37 0.60 \\ 0.60 \pm 0.28 \\ 0.00 0.41 0.54 0.74 1.15 \\ 69s$ $Case \ 06[28]$	0.19 ± 0.13 $0.00 0.07 0.17 0.30 0.46$ 0.57 ± 0.23 $0.00 0.41 0.55 0.71 0.93$ $45s$ $Case 02[26]$ 21.88% 0.39 ± 0.25 $0.00 0.23 0.35 0.58 0.97$ 0.36 ± 0.26 $0.00 0.13 0.32 0.56 0.89$ 0.70 ± 0.32 $0.00 0.46 0.63 0.92 1.22$ $51s$ $Case 07[29]$	0.18 ± 0.13 $0.00 0.07 0.16 0.28 0.44$ 0.60 ± 0.28 $0.00 0.41 0.55 0.73 1.16$ $53s$ $Case \ 03[27]$ 31.06% 0.33 ± 0.18 $0.00 0.24 0.35 0.39 0.91$ 0.30 ± 0.20 $0.00 0.12 0.28 0.46 0.71$ 0.64 ± 0.28 $0.00 0.43 0.60 0.80 1.14$ $49s$ $Case \ 08[29]$	0.33 ± 0.25 $0.00 0.10 0.30 0.53 0.85$ 0.74 ± 0.44 $0.00 0.42 0.60 1.02 1.44$ $62s$ $Case \ 04[27]$ 27.48% 0.58 ± 0.26 $0.00 0.35 0.59 0.82 0.93$ 0.29 ± 0.22 $0.00 0.11 0.27 0.47 0.76$ 0.79 ± 0.38 $0.00 0.50 0.72 1.01 1.36$ $63s$ $Case \ 09[30]$	0.24 ± 0.17 $0.00 0.09 0.22 0.37 0.60$ 0.44 ± 0.15 $0.00 0.34 0.44 0.54 0.66$ $39s$ $Case\ 05[28]$ 31.69% $0.37 \pm 0.27\ duoq$ $0.00 0.12 0.35 0.55 0.97$ 0.23 ± 0.16 $0.00 0.09 0.21 0.35 0.58$ 0.46 ± 0.17 $0.00 0.34 0.46 0.57 0.71$ $35s$ $Case\ 10[30]$
Defect: 26.63 ± 3.63 % L:R = 5:5 M:F = None Age: None <u>P</u> : 0.41 ± 0.28 <u>G</u> : 0.30 ± 0.23 <u>S</u> : 0.58 ± 0.28	0 25 50 75 100 % Mean <u>S</u> (mm) 0 25 50 75 100 % Time Consumption Q500, MUG500, and Ka Error Metric Mean <u>P</u> (mm) 0 25 50 75 100 % Mean <u>G</u> 0 25 50 75 100 % Mean <u>S</u> (mm) 0 25 50 75 100 % Time Consumption Error Metric	$0.00 0.14 0.30 0.52 0.80 \\ 0.66 \pm 0.32 \\ 0.00 0.42 0.61 0.87 1.24 \\ 50s$ aggle $\frac{Case \ 01[26]}{26.25\%} \\ 0.43 \pm 0.26 \\ 0.00 0.23 0.46 0.59 0.97 \\ 0.23 \pm 0.17 \\ 0.00 0.08 0.21 0.37 0.60 \\ 0.60 \pm 0.28 \\ 0.00 0.41 0.54 0.74 1.15 \\ 69s$	0.19 ± 0.13 $0.00 0.07 0.17 0.30 0.46$ 0.57 ± 0.23 $0.00 0.41 0.55 0.71 0.93$ $45s$ $Case \ 02[26]$ 21.88% 0.39 ± 0.25 $0.00 0.23 0.35 0.58 0.97$ 0.36 ± 0.26 $0.00 0.13 0.32 0.56 0.89$ 0.70 ± 0.32 $0.00 0.46 0.63 0.92 1.22$ $51s$	0.18 ± 0.13 $0.00 0.07 0.16 0.28 0.44$ 0.60 ± 0.28 $0.00 0.41 0.55 0.73 1.16$ $53s$ $Case 03[27]$ 31.06% 0.33 ± 0.18 $0.00 0.24 0.35 0.39 0.91$ 0.30 ± 0.20 $0.00 0.12 0.28 0.46 0.71$ 0.64 ± 0.28 $0.00 0.43 0.60 0.80 1.14$ $49s$ $Case 08[29]$ 26.22%	0.33 ± 0.25 $0.00 0.10 0.30 0.53 0.85$ 0.74 ± 0.44 $0.00 0.42 0.60 1.02 1.44$ $62s$ $Case \ 04[27]$ 27.48% 0.58 ± 0.26 $0.00 0.35 0.59 0.82 0.93$ 0.29 ± 0.22 $0.00 0.11 0.27 0.47 0.76$ 0.79 ± 0.38 $0.00 0.50 0.72 1.01 1.36$ $63s$	0.24 ± 0.17 $0.00 0.09 0.22 0.37 0.60$ 0.44 ± 0.15 $0.00 0.34 0.44 0.54 0.66$ $39s$ $Case\ 05[28]$ 31.69% $0.37 \pm 0.27\ duoq$ $0.00 0.12 0.35 0.55 0.97$ 0.23 ± 0.16 $0.00 0.09 0.21 0.35 0.58$ 0.46 ± 0.17 $0.00 0.34 0.46 0.57 0.71$ $35s$
Defect: 26.63 ± 3.63 % L:R = 5:5 M:F = None Age: None <u>P</u> : 0.41 ± 0.28 <u>G</u> : 0.30 ± 0.23 <u>S</u> : 0.58 ± 0.28	0 25 50 75 100 % Mean <u>S</u> (mm) 0 25 50 75 100 % Time Consumption Q500, MUG500, and Ka Error Metric Mean <u>P</u> (mm) 0 25 50 75 100 % Mean <u>G</u> 0 25 50 75 100 % Mean <u>S</u> (mm) 0 25 50 75 100 % Time Consumption	$\begin{array}{c} 0.00 0.14 0.30 0.52 0.80\\ 0.66\pm0.32\\ 0.00 0.42 0.61 0.87 1.24\\ 50s\\ \hline \text{aggle}\\ \hline Case\ 01[26]\\ 26.25\%\\ \hline 0.43\pm0.26\\ 0.00 0.23 0.46 0.59 0.97\\ 0.23\pm0.17\\ 0.00 0.08 0.21 0.37 0.60\\ 0.60\pm0.28\\ 0.00 0.41 0.54 0.74 1.15\\ 69s\\ \hline Case\ 06[28]\\ 20.88\% \end{array}$	0.19 ± 0.13 $0.00 0.07 0.17 0.30 0.46$ 0.57 ± 0.23 $0.00 0.41 0.55 0.71 0.93$ $45s$ $Case 02[26]$ 21.88% 0.39 ± 0.25 $0.00 0.23 0.35 0.58 0.97$ 0.36 ± 0.26 $0.00 0.13 0.32 0.56 0.89$ 0.70 ± 0.32 $0.00 0.46 0.63 0.92 1.22$ $51s$ $Case 07[29]$ 28.65%	0.18 ± 0.13 $0.00 0.07 0.16 0.28 0.44$ 0.60 ± 0.28 $0.00 0.41 0.55 0.73 1.16$ $53s$ $Case \ 03[27]$ 31.06% 0.33 ± 0.18 $0.00 0.24 0.35 0.39 0.91$ 0.30 ± 0.20 $0.00 0.12 0.28 0.46 0.71$ 0.64 ± 0.28 $0.00 0.43 0.60 0.80 1.14$ $49s$ $Case \ 08[29]$	0.33 ± 0.25 $0.00 0.10 0.30 0.53 0.85$ 0.74 ± 0.44 $0.00 0.42 0.60 1.02 1.44$ $62s$ $Case\ 04[27]$ 27.48% 0.58 ± 0.26 $0.00 0.35 0.59 0.82 0.93$ 0.29 ± 0.22 $0.00 0.11 0.27 0.47 0.76$ 0.79 ± 0.38 $0.00 0.50 0.72 1.01 1.36$ $63s$ $Case\ 09[30]$ 29.64%	0.24 ± 0.17 $0.00 0.09 0.22 0.37 0.60$ 0.44 ± 0.15 $0.00 0.34 0.44 0.54 0.66$ $39s$ $Case\ 05[28]$ 31.69% $0.37 \pm 0.27\ duoq$ $0.00 0.12 0.35 0.55 0.97$ 0.23 ± 0.16 $0.00 0.09 0.21 0.35 0.58$ 0.46 ± 0.17 $0.00 0.34 0.46 0.57 0.71$ $35s$ $Case\ 10[30]$ 22.51%
Defect: 26.63 ± 3.63 % L:R = 5:5 M:F = None Age: None <u>P</u> : 0.41 ± 0.28 <u>G</u> : 0.30 ± 0.23 <u>S</u> : 0.58 ± 0.28	0 25 50 75 100 % Mean <u>S</u> (mm) 0 25 50 75 100 % Time Consumption Q500, MUG500, and Ka Error Metric Mean <u>P</u> (mm) 0 25 50 75 100 % Mean <u>G</u> 0 25 50 75 100 % Mean <u>S</u> (mm) 0 25 50 75 100 % Time Consumption Error Metric Mean <u>P</u> (mm)	$0.00 0.14 0.30 0.52 0.80 \\ 0.66 \pm 0.32 \\ 0.00 0.42 0.61 0.87 1.24 \\ 50s$ aggle $Case \ 01[26] \\ 26.25\% \\ 0.43 \pm 0.26 \\ 0.00 0.23 0.46 0.59 0.97 \\ 0.23 \pm 0.17 \\ 0.00 0.08 0.21 0.37 0.60 \\ 0.60 \pm 0.28 \\ 0.00 0.41 0.54 0.74 1.15 \\ 69s$ $Case \ 06[28] \\ 20.88\% \\ 0.34 \pm 0.22$	0.19 ± 0.13 $0.00 0.07 0.17 0.30 0.46$ 0.57 ± 0.23 $0.00 0.41 0.55 0.71 0.93$ $45s$ $Case 02[26]$ 21.88% 0.39 ± 0.25 $0.00 0.23 0.35 0.58 0.97$ 0.36 ± 0.26 $0.00 0.13 0.32 0.56 0.89$ 0.70 ± 0.32 $0.00 0.46 0.63 0.92 1.22$ $51s$ $Case 07[29]$ 28.65% 0.46 ± 0.28	0.18 ± 0.13 $0.00 0.07 0.16 0.28 0.44$ 0.60 ± 0.28 $0.00 0.41 0.55 0.73 1.16$ $53s$ $Case \ 03[27]$ 31.06% 0.33 ± 0.18 $0.00 0.24 0.35 0.39 0.91$ 0.30 ± 0.20 $0.00 0.12 0.28 0.46 0.71$ 0.64 ± 0.28 $0.00 0.43 0.60 0.80 1.14$ $49s$ $Case \ 08[29]$ 26.22% 0.54 ± 0.26	0.33 ± 0.25 $0.00 0.10 0.30 0.53 0.85$ 0.74 ± 0.44 $0.00 0.42 0.60 1.02 1.44$ $62s$ $Case 04[27]$ 27.48% 0.58 ± 0.26 $0.00 0.35 0.59 0.82 0.93$ 0.29 ± 0.22 $0.00 0.11 0.27 0.47 0.76$ 0.79 ± 0.38 $0.00 0.50 0.72 1.01 1.36$ $63s$ $Case 09[30]$ 29.64% 0.37 ± 0.27	0.24 ± 0.17 $0.00 0.09 0.22 0.37 0.60$ 0.44 ± 0.15 $0.00 0.34 0.44 0.54 0.66$ $39s$ $Case\ 05[28]$ 31.69% $0.37 \pm 0.27\ duoq$ $0.00 0.12 0.35 0.55 0.97$ 0.23 ± 0.16 $0.00 0.09 0.21 0.35 0.58$ 0.46 ± 0.17 $0.00 0.34 0.46 0.57 0.71$ $35s$ $Case\ 10[30]$ 22.51% 0.30 ± 0.25
Defect: 26.63 ± 3.63 % L:R = 5:5 M:F = None Age: None P: 0.41 ± 0.28 G: 0.30 ± 0.23 S: 0.58 ± 0.28	0 25 50 75 100 % Mean <u>S</u> (mm) 0 25 50 75 100 % Time Consumption Q500, MUG500, and Ka Error Metric Mean <u>P</u> (mm) 0 25 50 75 100 % Mean <u>G</u> 0 25 50 75 100 % Mean <u>S</u> (mm) 0 25 50 75 100 % Time Consumption Error Metric Mean <u>P</u> (mm) 0 25 50 75 100 % Mean <u>G</u> 0 25 50 75 100 % Mean <u>G</u> 0 25 50 75 100 %	$\begin{array}{c} 0.00 0.14 0.30 0.52 0.80\\ 0.66 \pm 0.32\\ 0.00 0.42 0.61 0.87 1.24\\ 50s\\ \hline \text{aggle}\\ \hline $	0.19 ± 0.13 $0.00 0.07 0.17 0.30 0.46$ 0.57 ± 0.23 $0.00 0.41 0.55 0.71 0.93$ $45s$ $Case 02[26]$ 21.88% 0.39 ± 0.25 $0.00 0.23 0.35 0.58 0.97$ 0.36 ± 0.26 $0.00 0.13 0.32 0.56 0.89$ 0.70 ± 0.32 $0.00 0.46 0.63 0.92 1.22$ $51s$ $Case 07[29]$ 28.65% 0.46 ± 0.28 $0.00 0.24 0.47 0.71 0.93$ 0.37 ± 0.27 $0.00 0.13 0.34 0.58 0.91$	0.18 ± 0.13 $0.00 0.07 0.16 0.28 0.44$ 0.60 ± 0.28 $0.00 0.41 0.55 0.73 1.16$ $53s$ $Case \ 03[27]$ 31.06% 0.33 ± 0.18 $0.00 0.24 0.35 0.39 0.91$ 0.30 ± 0.20 $0.00 0.12 0.28 0.46 0.71$ 0.64 ± 0.28 $0.00 0.43 0.60 0.80 1.14$ $49s$ $Case \ 08[29]$ 26.22% 0.54 ± 0.26 $0.00 0.35 0.59 0.71 0.97$	0.33 ± 0.25 $0.00 0.10 0.30 0.53 0.85$ 0.74 ± 0.44 $0.00 0.42 0.60 1.02 1.44$ $62s$ $Case 04[27]$ 27.48% 0.58 ± 0.26 $0.00 0.35 0.59 0.82 0.93$ 0.29 ± 0.22 $0.00 0.11 0.27 0.47 0.76$ 0.79 ± 0.38 $0.00 0.50 0.72 1.01 1.36$ $63s$ $Case 09[30]$ 29.64% 0.37 ± 0.27 $0.00 0.12 0.35 0.59 0.97$	$\begin{array}{c} 0.24 \pm 0.17 \\ 0.00 0.09 0.22 0.37 0.60 \\ 0.44 \pm 0.15 \\ 0.00 0.34 0.44 0.54 0.66 \\ 39s \\ \hline \\ Case\ 05[28] \\ 31.69\% \\ \hline 0.37 \pm 0.27\ \text{duoq} \\ 0.00 0.12 0.35 0.55 0.97 \\ 0.23 \pm 0.16 \\ 0.00 0.09 0.21 0.35 0.58 \\ 0.46 \pm 0.17 \\ 0.00 0.34 0.46 0.57 0.71 \\ 35s \\ \hline Case\ 10[30] \\ 22.51\% \\ \hline 0.30 \pm 0.25 \\ 0.00 0.12 0.24 0.47 0.98 \\ 0.31 \pm 0.23 \\ 0.00 0.11 0.28 0.49 0.79 \\ \hline \end{array}$
Defect: 26.63 ± 3.63 % L:R = 5:5 M:F = None Age: None <u>P</u> : 0.41 ± 0.28 <u>G</u> : 0.30 ± 0.23 <u>S</u> : 0.58 ± 0.28	0 25 50 75 100 % Mean <u>S</u> (mm) 0 25 50 75 100 % Time Consumption Q500, MUG500, and Ka Error Metric Mean <u>P</u> (mm) 0 25 50 75 100 % Mean <u>G</u> 0 25 50 75 100 % Mean <u>S</u> (mm) 0 25 50 75 100 % Time Consumption Error Metric Mean <u>P</u> (mm) 0 25 50 75 100 % Mean <u>G</u>	$\begin{array}{c} 0.00 0.14 0.30 0.52 0.80\\ 0.66 \pm 0.32\\ 0.00 0.42 0.61 0.87 1.24\\ 50s\\ \hline \text{aggle}\\ \hline Case\ 01[26]\\ 26.25\%\\ \hline 0.43 \pm 0.26\\ 0.00 0.23 0.46 0.59 0.97\\ 0.23 \pm 0.17\\ 0.00 0.08 0.21 0.37 0.60\\ 0.60 \pm 0.28\\ 0.00 0.41 0.54 0.74 1.15\\ \hline 69s\\ \hline Case\ 06[28]\\ 20.88\%\\ \hline 0.34 \pm 0.22\\ 0.00 0.12 0.35 0.47 0.92\\ 0.33 \pm 0.24\\ 0.00 0.12 0.31 0.52 0.83\\ 0.50 \pm 0.18\\ \hline \end{array}$	0.19 ± 0.13 $0.00 0.07 0.17 0.30 0.46$ 0.57 ± 0.23 $0.00 0.41 0.55 0.71 0.93$ $45s$ $Case 02[26]$ 21.88% 0.39 ± 0.25 $0.00 0.23 0.35 0.58 0.97$ 0.36 ± 0.26 $0.00 0.13 0.32 0.56 0.89$ 0.70 ± 0.32 $0.00 0.46 0.63 0.92 1.22$ $51s$ $Case 07[29]$ 28.65% 0.46 ± 0.28 $0.00 0.24 0.47 0.71 0.93$ 0.37 ± 0.27 $0.00 0.13 0.34 0.58 0.91$ 0.48 ± 0.19	0.18 ± 0.13 $0.00 0.07 0.16 0.28 0.44$ 0.60 ± 0.28 $0.00 0.41 0.55 0.73 1.16$ $53s$ $Case \ 03[27]$ 31.06% 0.33 ± 0.18 $0.00 0.24 0.35 0.39 0.91$ 0.30 ± 0.20 $0.00 0.12 0.28 0.46 0.71$ 0.64 ± 0.28 $0.00 0.43 0.60 0.80 1.14$ $49s$ $Case \ 08[29]$ 26.22% 0.54 ± 0.26 $0.00 0.35 0.59 0.71 0.97$ 0.15 ± 0.11 $0.00 0.05 0.14 0.24 0.38$ 0.49 ± 0.16	0.33 ± 0.25 $0.00 0.10 0.30 0.53 0.85$ 0.74 ± 0.44 $0.00 0.42 0.60 1.02 1.44$ $62s$ $Case 04[27]$ 27.48% 0.58 ± 0.26 $0.00 0.35 0.59 0.82 0.93$ 0.29 ± 0.22 $0.00 0.11 0.27 0.47 0.76$ 0.79 ± 0.38 $0.00 0.50 0.72 1.01 1.36$ $63s$ $Case 09[30]$ 29.64% 0.37 ± 0.27 $0.00 0.12 0.35 0.59 0.97$ 0.32 ± 0.23 $0.00 0.12 0.28 0.49 0.81$ 0.60 ± 0.28	0.24 ± 0.17 $0.00 0.09 0.22 0.37 0.60$ 0.44 ± 0.15 $0.00 0.34 0.44 0.54 0.66$ $39s$ $Case\ 05[28]$ 31.69% $0.37 \pm 0.27\ duoq$ $0.00 0.12 0.35 0.55 0.97$ 0.23 ± 0.16 $0.00 0.09 0.21 0.35 0.58$ 0.46 ± 0.17 $0.00 0.34 0.46 0.57 0.71$ $35s$ $Case\ 10[30]$ 22.51% 0.30 ± 0.25 $0.00 0.12 0.24 0.47 0.98$ 0.31 ± 0.23 $0.00 0.11 0.28 0.49 0.79$ 0.54 ± 0.25
Defect: $26.63 \pm 3.63 \%$ L:R = 5:5 M:F = None Age: None \underline{P} : 0.41 ± 0.28 \underline{G} : 0.30 ± 0.23 \underline{S} : 0.58 ± 0.28	0 25 50 75 100 % Mean <u>S</u> (mm) 0 25 50 75 100 % Time Consumption Q500, MUG500, and Ka Error Metric Mean <u>P</u> (mm) 0 25 50 75 100 % Mean <u>G</u> 0 25 50 75 100 % Mean <u>S</u> (mm) 0 25 50 75 100 % Time Consumption Error Metric Mean <u>P</u> (mm) 0 25 50 75 100 % Mean <u>G</u> 0 25 50 75 100 % Mean <u>G</u> 0 25 50 75 100 %	$\begin{array}{c} 0.00 0.14 0.30 0.52 0.80\\ 0.66 \pm 0.32\\ 0.00 0.42 0.61 0.87 1.24\\ 50s\\ \hline \text{aggle}\\ \hline $	0.19 ± 0.13 $0.00 0.07 0.17 0.30 0.46$ 0.57 ± 0.23 $0.00 0.41 0.55 0.71 0.93$ $45s$ $Case 02[26]$ 21.88% 0.39 ± 0.25 $0.00 0.23 0.35 0.58 0.97$ 0.36 ± 0.26 $0.00 0.13 0.32 0.56 0.89$ 0.70 ± 0.32 $0.00 0.46 0.63 0.92 1.22$ $51s$ $Case 07[29]$ 28.65% 0.46 ± 0.28 $0.00 0.24 0.47 0.71 0.93$ 0.37 ± 0.27 $0.00 0.13 0.34 0.58 0.91$	0.18 ± 0.13 $0.00 0.07 0.16 0.28 0.44$ 0.60 ± 0.28 $0.00 0.41 0.55 0.73 1.16$ $53s$ $Case \ 03[27]$ 31.06% 0.33 ± 0.18 $0.00 0.24 0.35 0.39 0.91$ 0.30 ± 0.20 $0.00 0.12 0.28 0.46 0.71$ 0.64 ± 0.28 $0.00 0.43 0.60 0.80 1.14$ $49s$ $Case \ 08[29]$ 26.22% 0.54 ± 0.26 $0.00 0.35 0.59 0.71 0.97$ 0.15 ± 0.11 $0.00 0.05 0.14 0.24 0.38$	0.33 ± 0.25 $0.00 0.10 0.30 0.53 0.85$ 0.74 ± 0.44 $0.00 0.42 0.60 1.02 1.44$ $62s$ $Case 04[27]$ 27.48% 0.58 ± 0.26 $0.00 0.35 0.59 0.82 0.93$ 0.29 ± 0.22 $0.00 0.11 0.27 0.47 0.76$ 0.79 ± 0.38 $0.00 0.50 0.72 1.01 1.36$ $63s$ $Case 09[30]$ 29.64% 0.37 ± 0.27 $0.00 0.12 0.35 0.59 0.97$ 0.32 ± 0.23 $0.00 0.12 0.28 0.49 0.81$	$\begin{array}{c} 0.24 \pm 0.17 \\ 0.00 0.09 0.22 0.37 0.60 \\ 0.44 \pm 0.15 \\ 0.00 0.34 0.44 0.54 0.66 \\ 39s \\ \hline \\ Case\ 05[28] \\ 31.69\% \\ \hline 0.37 \pm 0.27\ \text{duoq} \\ 0.00 0.12 0.35 0.55 0.97 \\ 0.23 \pm 0.16 \\ 0.00 0.09 0.21 0.35 0.58 \\ 0.46 \pm 0.17 \\ 0.00 0.34 0.46 0.57 0.71 \\ 35s \\ \hline \\ Case\ 10[30] \\ 22.51\% \\ \hline 0.30 \pm 0.25 \\ 0.00 0.12 0.24 0.47 0.98 \\ 0.31 \pm 0.23 \\ 0.00 0.11 0.28 0.49 0.79 \\ \hline \end{array}$

 \underline{P} means 3D point cloud distance errors. \underline{G} means 3D gradient changes based on point clouds. \underline{S} reconstructed surface errors.

Part 3: Supplementary Material of detailed reconstruction results of the Caucasoid people in VG2

Defect And Repaired Model	Defect and repaired AMs	PCEM*	VGGC*	Surface Error
		-0.85 -0.46 -0.40 -0.20	1.00 - 5.00 - 5.00 - 5.00 - 5.00	230 240 241 241 242 243 244 245 245 245 245 245 245 245
		-540 -640 -520 -520	1.00 4.60 5.64 4.30 5.00	23
		-0.00 -0.00 -0.40 -0.25	1.00 6.80 -6.60 -6.00 -6.00	23
		- 0.00 - 0.00 - 0.10 - 0.13 - 0.00	1.00 - 6.60 - 6.60 - 6.00 - 6.00	23
		- 0.00 - 0.00 - 0.10 - 0.15 - 0.00	1.00 -0.00 -0.00 -0.40 -0.20	23 24 25 24 25 26 26 26 26 26 26 26 26 26 26
		- 540 - 640 - 640 - 620	- 550	23 201 201 201 201 201 201 201 201
		-0.00 -0.00 -0.00 -0.00	1.00 - 6.00 - 6.00 - 6.00 - 6.00	23 23 24 24 24 25 26 26 27 27 28 28 28 28 28 28 28 28 28 28 28 28 28
		-0.00 -0.00 -0.00 -0.10 -0.20	1.00 d atd d atd d atd d atd d atd	23 23 24 24 25 26 27 28 28 28 28 28 28 28 28 28 28
		-0.40 -0.40 -0.40 -0.70 -0.70	1.00 1.00 1.60 5.60 5.00	23
		- 6.10 - 6.10 - 6.40 - 6.20	1.00 -0.00 -0.00 -0.00 -0.00	23

^{*:} this means: it is not original result form and processed into the form of 2D photo based on projection operations of original calculated error values.

Defect Model is the original input data of our AI and will be processed by the workflow provided by Figure 1-2 in manuscript.

Repaired Model is the final result of our AI. And it would be compared by following scales orderly.

Defected AMs are the direct inputs of our trained AI BAR-Net framework.

Repaired AMs are the direct outputs of our trained AI BAR-Net framework. And repaired AMs would conducted step 3 in Figure 1 to get its final repaired model. PCEM* represents 3D Point Cloud Error Maps but in a form of 2D photo to provide 3D distance error distribution of pairwise point clouds (repaired and ground truth). Firstly, based on repaired and ground truth p-AMs, pairwise point clouds would be generated orderly and compared by calculating errors point by point. Then, with a color bar, the distances between each point pair would be projected on a 2D photo which is same shape of its P-AM.

VGGC* is similar to PCEM*. However, it calculated gradient change of each point based on K-Nearest Neighbors (KNN) and covariance matrices. And the difference of gradient change at each point would be projected into 2D photos.

Surface Error Displaying (SE) mean the histogram and normal distribution fitting diagram of distance values calculated based on pairwise reconstructed surfaces. And last column displays its defect area using a color bar shown below of the histogram.

Part 4: Supplementary Material of detailed reconstruction results of the Mongoloid in VG2

Defect And Repaired Model	Defect and repaired AMs	PCEM*	VGGC*	Surface Error	
		-5.50 -5.60 -5.60 -5.70	1.00 5.00 6.40 6.23	23	
		- 5.60 - 6.60 - 5.27 - 5.00	1.00 5.60 5.50 6.00	100 100 100 100 100 100 100 100 100 100	
		- 0.00 - 0.40 - 0.27 - 0.00	1.00 0.00 -0.00 -0.00	33	
		- 0.00 - 0.40 - 0.20 - 0.20	0.00 0.00 0.00 0.00	33 33 34 44 43 44 45 45 45 46 45 46 45 46 45 46 46 46 46 46 46 46 46 46 46 46 46 46	
		-0.60 -0.60 -0.20	1.00 0.00 0.00 0.00	133 134 135 136 137 137 137 137 137 137 137 137 137 137	
		- 5.60 - 5.60 - 5.20 - 5.00	1.00 0.60 0.60 0.00	33 33 33 33 33 33 33 33 33 33 33 33 33	
		- 5.60 - 6.60 - 6.20 - 5.20	1.00 5.60 5.60 5.00	33 33 34 35 35 35 35 35 35 35 35 35 35 35 35 35	
		-0.00 -0.00 -0.00	1.00 6.60 5.60 2.20	133 134 135 136 137 137 138 138 138 138 138 138 138 138 138 138	
		-140 -140 -140 -140	1.00 -0.00 -0.00 -0.00 -0.00	33 34 34 34 34 34 34 34 34 34 34 34 34 3	
		-8.60 -8.60 -5.60 -5.20	1.00 0.00 0.00 0.00 0.00	133 134 135 136 137 136 137 137 137 137 137 137 137 137 137 137	

^{*:} this means: it is not original result form and processed into the form of 2D photo based on projection operations of original calculated error values. Defect Model is the original input data of our AI and will be processed by the workflow provided by Figure 1-2 in manuscript.

Repaired Model is the final result of our AI. And it would be compared by following scales orderly.

Defected AMs are the direct inputs of our trained AI BAR-Net framework.

Repaired AMs are the direct outputs of our trained AI BAR-Net framework. And repaired AMs would conducted step 3 in Figure 1 to get its final repaired model. PCEM* represents 3D Point Cloud Error Maps but in a form of 2D photo to provide 3D distance error distribution of pairwise point clouds (repaired and ground truth). Firstly, based on repaired and ground truth p-AMs, pairwise point clouds would be generated orderly and compared by calculating errors point by point. Then, with a color bar, the distances between each point pair would be projected on a 2D photo which is same shape of its P-AM.

VGGC* is similar to PCEM*. However, it calculated gradient change of each point based on K-Nearest Neighbors (KNN) and covariance matrices. And the difference of gradient change at each point would be projected into 2D photos.

Surface Error Displaying (SE) mean the histogram and normal distribution fitting diagram of distance values calculated based on pairwise reconstructed surfaces. And last column displays its defect area using a color bar shown below of the histogram.

Part 5: Supplementary Material of detailed reconstruction results of the Negroid in VG2

Defect And Repaired Model	Defect and repaired AMs	PCEM*	VGGC*	Surface Error
		4.46 4.46 4.40 4.00	0.00 - 0.00 - 0.00 - 0.00	127 128 129 129 129 129 129 129 129 129 129 129
		-0.00 -0.00 -0.00 -0.00	1.00 0.00 10.00 4.00 4.00	13.5 13.5 13.5 13.5 13.5 13.5 13.5 13.5
		4.60 -0.60 -0.40 -0.72	1.00 6.86 16.46 4.29	137 138 148 148 148 148 148 148 148 14
		-8.00 -8.00 -8.00 -8.20 -8.00	1.00 - 6.00 - 6.00 - 6.00	33
		4-10 4-10 4-10 4-10	1.00 0.00 10.00 0.00	133 133 134 135 136 137 138 138 138 138 138 138 138 138
		446 440 440 440	1.00 6.80 16.40 6.30 6.00	120 120 2 121 2 120 2 12
			1.00 -0.00 -0.00 -0.00 -0.00	13
		446 446 420 420	1.00 - 6.60 - 6.60 - 6.23 - 6.00	133 131 131 131 131 131 131 131
		440 440 440 420	1.00 - 6.60 - 6.60 - 6.00	137 138
			1.00 1.00 1.00 1.00 1.00 1.00	131 132 133 134 135 134 134 135 134 134 134 134 134 134 134 134 134 134

^{*:} this means: it is not original result form and processed into the form of 2D photo based on projection operations of original calculated error values.

Defect Model is the original input data of our AI and will be processed by the workflow provided by Figure 1-2 in manuscript.

Repaired Model is the final result of our AI. And it would be compared by following scales orderly.

Defected AMs are the direct inputs of our trained AI BAR-Net framework.

Repaired AMs are the direct outputs of our trained AI BAR-Net framework. And repaired AMs would conducted step 3 in Figure 1 to get its final repaired model. PCEM* represents 3D Point Cloud Error Maps but in a form of 2D photo to provide 3D distance error distribution of pairwise point clouds (repaired and ground truth). Firstly, based on repaired and ground truth p-AMs, pairwise point clouds would be generated orderly and compared by calculating errors point by point. Then, with a color bar, the distances between each point pair would be projected on a 2D photo which is same shape of its P-AM.

VGGC* is similar to PCEM*. However, it calculated gradient change of each point based on K-Nearest Neighbors (KNN) and covariance matrices. And the difference of gradient change at each point would be projected into 2D photos.

Surface Error Displaying (SE) mean the histogram and normal distribution fitting diagram of distance values calculated based on pairwise reconstructed surfaces. And last column displays its defect area using a color bar shown below of the histogram.

Part 6: Supplementary Material of detailed reconstruction results of the OA in VG2

Defect And Repaired Model	Defect and repaired AMs	PCEM*	VGGC*	Surface Error
		-0.05 -0.05 -0.05 -0.20 -0.20	1.00 -5.60 -5.60 -9.20 -9.00	23.3 20.3 21.3 22.3 23.3 24.3 25.3 26.3
		-840 -840 -840 -823 -826	1.00 -0.00 -0.60 -0.60 -0.00	23
		440 440 440 440 440 440	1.00 1.60 6.60 6.00	23 di di di di di di
		140 148 140 140	1.00 -0.00 -0.00 -0.00 -0.00	2129 2129 2129 2129 2139 2139 2139 2139
		4.00 4.00 4.10 4.00	1.00 -0.00 -0.00 -0.00	
		4.00 4.00 4.10 4.00	1.00 -0.00 -0.00 -0.00	33 34 35 36 36 36 36 36 36 36 36 36
		4.00 4.00 4.10 4.00	1.00 -0.00 -0.00 -0.00 -0.00	23 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
		4.50 4.50 4.50 4.50	1.00 -0.00 -0.00 -0.00	23
		440 440 440 440	1.00 0.00 0.00 0.00	28
		4.0 4.0 4.0 4.0	1.00 -0.00 -0.00	13
0				