

Figure S1 Satisfactory feature rate distribution in the studies reported ICC results regarding the feature reliability due to image segmentation for intra-/inter-observer agreement.

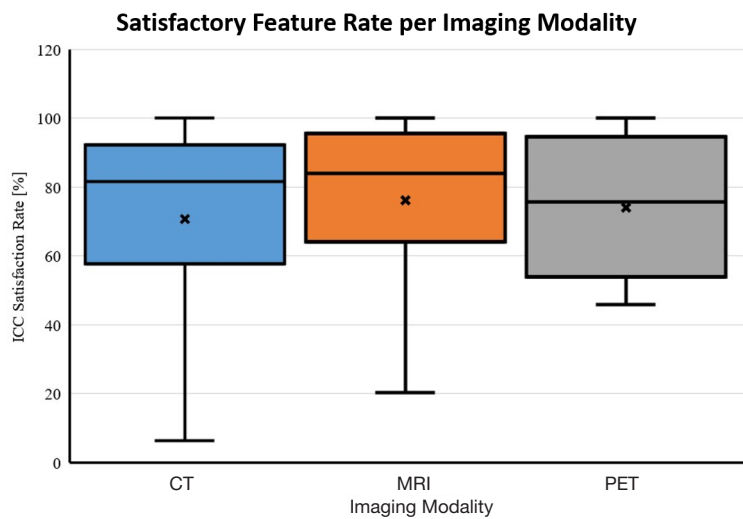


Figure S2 The difference of satisfactory feature rate in different imaging modality in the studies reported ICC results regarding the feature reliability due to image segmentation for intra-/inter-observer agreement.

Table S1 The available ICC forms described in the studies

PMID/doi	First author	Publication year	Disease or organ	Patient number	ICC purpose	ICC form described in the article	ICC model	ICC type	ICC definition
23807457	van Velden FHP et al.	2014	Colorectal cancer	29	Acquisition	2-way random single measure model	Yes	Yes	No
24047337	Leijenaar RTH et al.	2013	Lung cancer	34	Acquisition	ICC(1,1) for test -retest reliability and ICC(3,k) for inter-rater simulation	Yes	Yes	Yes
25025374	Parmar C et al.	2014	Lung cancer	20	Segmentation	Inter-observer segmentation (two-way mixed effect model, case 3A(McGraw), absolute agreement), intra-observer segmentation (one-way model, case 1(McGraw), form-specific formula given	Yes	Yes	Yes
26163091	Panth KM et al.	2015	Phantom	23	Segmentation	ICC(1,1), ICC(2,1)	Yes	Yes	Yes
26242464	Leijenaar RTH et al.	2015	Lung cancer	35	Quantification	Formula given, but cannot be specified to a certain form	No	No	No
26587549	Echegaray S et al.	2015	Liver cancer	29	Segmentation	A1 method (McGraw)	Yes	Yes	Yes
26795288	Rossum PSNR et al.	2016	HNC	217	Acquisition	An absolute agreement definition in a 2-way mixed-effects model	Yes	No	Yes
26920355	van Velden FHP et al.	2016	Lung cancer	11	Reconstruction	One-way random single-measure	Yes	Yes	No
27669756	Hu P et al.	2016	Colorectal cancer	40	Acquisition	Two-way mixed effect model, with formula given	Yes	Yes	Yes
27893446	Bogowicz M et al.	2016	HNC and lung cancer	22	Processing	Two-way mixed model, consistency	Yes	No	Yes
28612050	Echegaray S et al.	2016	Lung cancer	100	Segmentation	A1 method (McGraw)	Yes	Yes	Yes
29122358	Bogowicz M et al.	2017	HNC	178	Quantification	Two-way mixed single measures	Yes	Yes	Yes
29494598	Carvalho S et al.	2018	Lung cancer	215	Acquisition	ICC(1,k)	Yes	Yes	Yes
29513054	Pavic M et al.	2018	HNC and Lung Cancer	11	Segmentation	ICC(3,1), consistency	Yes	Yes	Yes
29520429	Lv W et al.	2018	NPC	106	Quantification	Formula given, but cannot be specified to a certain form	No	No	No
29633002	Shi Z et al.	2018	Vascular disease	96	Segmentation	Two-way random model with absolute measurements	Yes	Yes	Yes
29663411	Saha A et al.	2018	Breast cancer	50	Segmentation	ICC(3,1), consistency	Yes	Yes	Yes
29725965	Bologna M et al.	2018	HNC	36	Segmentation	Two-way mixed effect model	Yes	No	No
30002441	Hassan M et al.	2018	Lung cancer	18	Processing	Form-specific formula given	Yes	Yes	Yes
30135549	Bibault J et al.	2018	Colorectal cancer	95	Segmentation	Two-way mixed effect model, formula given	Yes	Yes	Yes
30158540	Ger RB et al.	2018	HNC and lung cancer	50	Processing	ICC (2, 1) (two-way random effects, absolute agreement, single rater/measurement) and ICC (3, 1) (two-way random effects, consistency, single rater/measurement)	Yes	Yes	Yes
30230556	Soufi M et al.	2018	Lung cancer	305	Acquisition	Two-ray random effect model, absolute agreement condition	Yes	No	Yes
30286184	Owens CA et al.	2018	Lung cancer	10	Segmentation	Two-way mixed-effects model	Yes	No	No
30463529	Zheng B et al.	2018	Liver cancer	319	Segmentation	A two-way random, single measure (absolute agreement)	Yes	Yes	Yes

Table S1 (continued)

Table S1 (continued)

PMID/doi	First author	Publication year	Disease or organ	Patient number	ICC purpose	ICC form described in the article	ICC model	ICC type	ICC definition
30506687	Pfaehler E et al.	2019	Phantom	1	Reconstruction, segmentation	Two-way single measure model for consistency	Yes	Yes	Yes
30679599	Alex Z et al.	2019	HNC and Lung Cancer	50	Acquisition	ICC(1,1)	Yes	Yes	Yes
30714158	Vuong D et al.	2019	Lung cancer	19	Acquisition	ICC(1,1) for 4DPETMR, ICC(3,1) for PETCT-PETMR	Yes	Yes	Yes
30738530	Mori M et al.	2019	Pancreatic cancer	31	Segmentation	One-way random single-measure model	Yes	Yes	No
30765732	Lecler A et al.	2019	Breast cancer	207	Segmentation	ICC(2,1), absolute agreement	Yes	Yes	Yes
30840747	Foy JJ et al.	2018	Healthy	39	Quantification	ICC(a,1)	Yes	Yes	Yes
30845221	Duron L et al.	2019	Breast cancer	104	Segmentation	2-way random intraclass correlation coefficient (ICC) (absolute agreement, average type)	Yes	Yes	Yes
30928060	Branchini M et al.	2019	Pediatric	21	Processing	One way random single measure model	Yes	Yes	No
30961895	Peeken JC et al.	2019	Soft tissue sarcoma	221	Segmentation	ICC(3,1)	Yes	Yes	Yes
31015155	Fiset S et al.	2019	Cervical cancer	62	Acquisition	ICC(1,1) for test -retest reliability and diagnostic-simulation, ICC(2,1) for inter-observer	Yes	Yes	Yes
31032192	Qiu Q et al.	2019	Liver cancer	106	Segmentation	Form-specific formula given	Yes	Yes	Yes
31063427	Kocak B et al.	2019	Kidney cancer	30	Segmentation	Two-way model, single-rating, and absolute agreement	Yes	Yes	Yes
31131906	Tixier F et al.	2019	GBM	90	Segmentation	Two-way random effects model	Yes	No	No
31273242	Whybra P et al.	2019	HNC	441	Processing	2-way mixed-effects model, single rater, absolute agreement	Yes	Yes	Yes
31375452	Huang L et al.	2019	Lung cancer	31	Acquisition	2-way fixed effect, absolute agreement, and single measurement model	Yes	Yes	Yes
31375883	Ugga L et al.	2019	HNC	89	Segmentation	Absolute agreement ICC value	No	No	Yes
31392481	Yamashita R et al.	2020	Pancreatic cancer	55	Acquisition	Mixed effects linear model	Yes	No	No
31420497	Pfaehler E et al.	2020	Phantom	3	Acquisition, quantification	2-way single-measure model for consistency of features	Yes	Yes	Yes
31423714	Ta D et al.	2020	Healthy	6	Acquisition	Two-way mixed-effects model	Yes	No	No
31477335	Traverso A et al.	2020	Cervical cancer	81	Processing	ICC(2,1)	Yes	Yes	Yes
31539450	Bologna M et al.	2019	Phantom	1	Acquisition, processing	Measure agreement in mixed-effect models, equivalent to the (A,1) model described in McGraw et al	Yes	Yes	Yes
31703155	Merisaari H et al.	2020	Prostate cancer	112	Acquisition	ICC(3,1)	Yes	Yes	Yes
31743889	Cong M et al.	2020	Lung cancer	50	Segmentation	Absolute agreement method	No	No	Yes
31761666	Wang Y et al.	2019	Gastric cancer	30	Segmentation	Two-way mixed effects, absolute agreement, single rater ICC test	Yes	Yes	Yes

Table S1 (continued)

Table S1 (continued)

PMID/doi	First author	Publication year	Disease or organ	Patient number	ICC purpose	ICC form described in the article	ICC model	ICC type	ICC definition
31824843	Wu J et al.	2019	Colorectal cancer	102	Segmentation	Single rater; definition: absolute agreement; model: inter-user ICC: two-way random effects; intra-user ICC: two-way mixed effects	Yes	Yes	Yes
31824847	Chen W et al.	2019	Gastric cancer	30	Segmentation	Intraclass (single-rating, consistency, 2-way mixed effects model), interclass (multiple-rating, consistency, 2-way random-effects model)	Yes	Yes	Yes
31903240	Xu X et al.	2019	Lung cancer	132	Segmentation	Two-way fixed effect, absolute agreement, and single measurement	Yes	Yes	Yes
31918370	Kakino R et al.	2020	Lung cancer	256	Segmentation	Two-way random effects model under an absolute agreement condition	Yes	No	Yes
31941949	Yang F et al.	2020	Phantom	1	Segmentation	2-way random effect model to estimate the absolute agreement of multiple raters per measurement	Yes	Yes	Yes
31971614	Scalco E et al.	2020	Prostate cancer	14	Acquisition	Two-way mixed effect model, single rater type, both consistency and absolute agreement were used	Yes	Yes	Yes
32123281	Park BW et al.	2020	Bladder cancer	83	Processing	ICC(c,1)	Yes	Yes	Yes
32174316	Caballo M et al.	2020	Breast cancer	93	Segmentation	ICC(3,1)	Yes	Yes	Yes
32229081	Palle S et al.	2020	Endometrial cancer	30	Segmentation	Two-way random effects, single rater, agreement	Yes	Yes	Yes
32236847	Nardone V et al.	2020	Phantom	1	Acquisition	Mean rating, absolute agreement, and two-way mixed effects model	Yes	Yes	Yes
32240418	Cattell R et al.	2019	Phantom	5	Quantification	2-way mixed-effects model, single rater, absolute agreement	Yes	Yes	Yes
32277703	Rai R et al.	2020	Phantom	11	Acquisition	Two-way random effect with absolute agreement model	Yes	No	Yes
32395833	Vuong D et al.	2020	Lung cancer	124	Acquisition	ICC(3,1)	Yes	Yes	Yes
32399621	Haider SP et al.	2020	HNC	50	Segmentation	Two-way mixed effects, absolute agreement, single rater	Yes	Yes	Yes
32557189	Yang P et al.	2020	NPC	21	Processing	ICC(3,10)	Yes	Yes	Yes
32593138	Ramon R et al.	2020	GBM	100	Segmentation	Two-way random effects, absolute agreement, single rater/measurement	Yes	Yes	Yes
32705290	Cuocolo R et al.	2020	HNC	89	Segmentation	Two-way, absolute agreement and single rater ICC	Yes	Yes	Yes
32723501	Dreher C et al.	2020	Phantom	17	Segmentation	Two-way mixed model for absolute agreement and single measures	Yes	Yes	Yes
32728098	Haarburger C et al.	2020	Kidney cancer, liver cancer, lung cancer	1216	Segmentation	ICC(1,1)	Yes	Yes	Yes
32737518	Cysouw MCF et al.	2021	Prostate cancer	76	Segmentation	Two-way mixed effect model, absolute agreement	Yes	No	Yes

Table S1 (continued)

Table S1 (continued)

PMID/doi	First author	Publication year	Disease or organ	Patient number	ICC purpose	ICC form described in the article	ICC model	ICC type	ICC definition
32758279	Suter Y et al.	2020	GBM	63	Reconstruction	ICC(2,1), absolute agreement	Yes	Yes	Yes
32767049	Song X et al.	2021	Ovarian cancer	104	Segmentation	Single-rater, absolute- agreement, 2-way mixed-effects model	Yes	Yes	Yes
32800693	Gutmann DAP et al.	2020	Liver cancer	310	Processing	ICC(1,1) for test reliability and ICC(3,k) for inter-rater agreement	Yes	Yes	Yes
32822054	Kim D et al.	2020	Lung cancer	35	Segmentation	Inter-rater agreement (absolute agreement, 2-way random effect model, k = 2), intra-rater agreement (absolute agreement, 2-way mixed effect model, k = 2)	Yes	Yes	Yes
32827069	Park YW et al.	2021	Lung cancer	51	Segmentation	One-way random effects model	Yes	No	No
32843663	Granzier RWY et al.	2020	Breast cancer	138	Segmentation	Two-way random single measure ICC(2,1)	Yes	Yes	Yes
32939634	Kulkarni A et al.	2020	Pancreatic cancer	128	Segmentation	Two-way model with single rating and absolute agreement	Yes	Yes	Yes
32968131	Crobe A et al.	2020	Soft tissue sarcoma	70	Segmentation	2-way random model, agreement between raters and 6 raters	Yes	Yes	Yes
32970859	Bianchini L et al.	2021	Phantom	1	Acquisition	Two-way random effects for absolute agreement and single rater/measurement	Yes	Yes	Yes
33118182	Pati S et al.	2020	GBM	31	Segmentation	ICC(3,1)	Yes	Yes	Yes
33128598	Park JE et al.	2020	GBM	422	Segmentation	Two-way mixed-effects model	Yes	No	No
33137621	Tsarochi M et al.	2020	Breast cancer	73	Segmentation	Two-way mixed effect model, single measurement for absolute agreement	Yes	Yes	Yes
33228815	Wang X et al.	2020	Gastric cancer	539	Segmentation	Multiple-rating, consistency, 2-way random-effects model	Yes	Yes	No
10.1109/ACCESS.2019.2923755	Li Z et al.	2019	Brain	15	Acquisition, processing	ICC(1,1) for intra-observer repeatability, ICC(3,1) for inter-observer repeatability	Yes	Yes	Yes
10.1117/12.2512406	Hendrik MJ et al.	2019	Liver cancer	13	Segmentation	ICC(2,1)	Yes	Yes	Yes
10.21037/trc.2017.09.47	Qingtao Q et al.	2017	Liver cancer	15	Segmentation	ICC(A,1) (inter-observer segmentation), ICC(C,1) (intra-observer segmentation), formulas given	Yes	Yes	Yes
10.4274/imj.galenos.2019.09582	Burak K et al.	2019	GBM	70	Segmentation	Two-way model, single-rating, and absolute agreement	Yes	Yes	Yes