

Online Resource 1

A dual-input DICOM benchmark for perfusion algorithm validation: temporal-separation bias in single-input deconvolution

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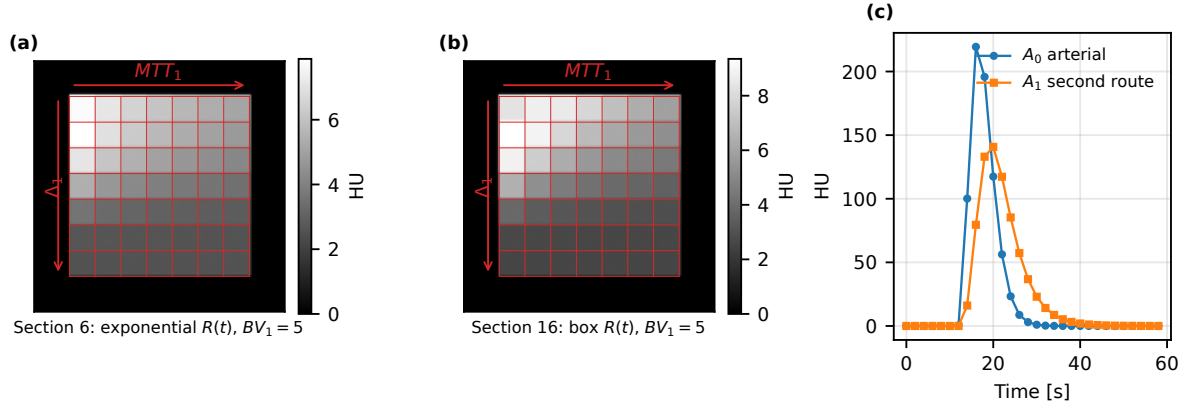
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Supplementary Table S1

Principal attributes used to encode the released series. Values are taken from the first object; identifiers, positions and times vary between objects as required. A package-level check separately verified key mandatory attributes, UID consistency, geometry and temporal coverage across all 480 objects. A representative generated object was checked against the machine-readable CT Image IOD tables of PS3.3: 276 Type 1, 2 and 3 requirements were evaluated with no Type 1 or Type 2 violation and no value-representation or value-multiplicity mismatch. The 51 conditional (Type 1C, 2C) attributes are conditioned in prose in the standard and are listed rather than judged by that check.

Attribute	Tag	Value
<i>Identification</i>		
SOP Class UID	(0008,0016)	1.2.840.10008.5.1.4.1.1.2 (CT Image Storage)
Modality	(0008,0060)	CT
Image Type	(0008,0008)	DERIVED\PRIMARY\AXIAL
Series Description	(0008,103E)	DualInputPerfusionPhantom
Manufacturer	(0008,0070)	SYNTHETIC
<i>Synthetic and quality-control status</i>		
Synthetic Data	(0008,001C)	YES
Quality Control Subject	(0010,0200)	YES
Quality Control Image	(0028,0300)	YES
Image Comments	(0020,4000)	SYNTHETIC PHANTOM - NOT FOR DIAGNOSTIC USE
<i>Spatial geometry</i>		
Rows, Columns	(0028,0010–11)	512, 512
Pixel Spacing	(0028,0030)	0.43\0.43 mm
Slice Thickness	(0018,0050)	8.0 mm
Image Position (Patient)	(0020,0032)	z from 0 to 120 mm in 8 mm steps
Image Orientation (Patient)	(0020,0037)	1\0\0\0\1\0
Patient Position	(0018,5100)	HFS
Position Reference Indicator	(0020,1040)	empty (Type 2)
<i>Temporal ordering</i>		
Content Time	(0008,0033)	30 values at 2.0 s spacing
Acquisition Time	(0008,0032)	as Content Time
Acquisition Number	(0020,0012)	frame index, 1 to 30
Instance Number	(0020,0013)	1 to 480
Series Number	(0020,0011)	1
<i>Pixel encoding</i>		
Samples per Pixel	(0028,0002)	1
Photometric Interpretation	(0028,0004)	MONOCHROME2
Bits Allocated / Stored / High Bit	(0028,0100–02)	16 / 16 / 15
Pixel Representation	(0028,0103)	1 (signed)
Rescale Slope	(0028,1053)	0.01
Rescale Intercept	(0028,1052)	0.0
Rescale Type	(0028,1054)	HU
<i>Acquisition</i>		
KVP	(0018,0060)	empty (Type 2; no acquisition physics is modelled)
<i>Transfer syntax</i>		
Transfer Syntax UID	(0002,0010)	1.2.840.10008.1.2.1 (Explicit VR Little Endian)

Supplementary Fig. S1



Supplementary Fig. S1. The released series read back from DICOM. (a) Section 6 (exponential $R(t)$, $BV_1 = 5$ mL/100 g) and (b) section 16 (box $R(t)$, same volume) at frame 12, with the 7×7 tile grid overlaid; the additional onset delay Δ_1 increases down the rows and the second-route transit time MTT_1 across the columns. (c) The two input functions recovered from section 1.