

# GEHC validation dataset for BIDS`TablePosition`

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GE HealthCare

# GEHC validation datasets

**Two exams collected with GE phantom landmarked via laser at 794 mm (Exam1486) and 711 mm (Exam1487)**

**while the location of phantom unchanged in world coordinates.**

Note that the table landmarked at 794 mm moved further inside bore.

**Each exam consists of 6 fMRI series:**

## **Feet-first**

- 1) Localizer
- 2) fMRI - the SI coverage I11.1 – S15.9
- 3) fMRI - the SI coverage I21.1 – S10.9
- 4) fMRI - the SI coverage I01.1 – S25.9

## **Head-first** (Phantom & landmark remains unchanged)

- 5) Localizer
- 6) fMRI - the SI coverage I11.1 – S15.9
- 7) fMRI - the SI coverage I21.1 – S10.9
- 8) fMRI - the SI coverage I01.1 – S25.9



Courtesy of Emory SPARC



# GEHC DICOM private tags

## (0043,10b2) MR Table Position Information:

Ex) (0043,10b2) LO [950\1257.1\ -30.4999\0\ -9999\ -9999]

- 1) isoVectorZ (Distance from ISO to ALIGN)
- 2) Landmark (Position value relative to the table/cradle home position)

### 3) **tablePosition + tableDelta**

- 4) dzPETMR
- 5) topOfHead
- 6) distanceFromTopOfHead

## (0019,107f) Table delta

Ex) (0019,107f) DS [0.000000]

**tableDelta** (a.k.a. Table Offset): the distance on the z-axis between the Scanner's Magnet Isocenter and the MR Scan Volume's z-axis center.

(0019,1019) DS [-1.1] # 4, 1 FirstScanLocation

(0019,101b) DS [25.9] # 4, 1 LastScanLocation

Unit-of-Measure: **mm**

**BIDS `TablePosition` [mm]**  
**= the 3<sup>rd</sup> value of (0043,10b2) – the value of (0019,107f)**



Details	Multi-Phase	Acceleration	Advanced
# of TE(s) per Scan:	1.0		Frequency: 64
Num Shots:	1		Phase: 64
TE:	30.0		NEX: 1.00
Flip Angle:	90		Bandwidth: 250.0
Intensity Correction:	NONE		Excitation Mode: Selecti...
Calibration In Prescan:	On		Shim: Auto
Intensity Filter:	None		RF Drive Mode: Preset
Save Original:	<input type="checkbox"/>		Phase Correct: On
3D Geometry Correction:	<input type="checkbox"/>		
		Research Monde	Table Delta: 0.00

# Table delta (a.k.a Table Offset)

Note from Andrew Byshenk at GEHC

The Table Offset identifies the distance on the z-axis between the Scanner's Magnet Isocenter and the MR Scan Volume's z-axis center.

For most MR Scans, the Table Offset is 0, but there are some normal situations when the Table Offset is non-0:

For MR Scans simultaneous with PET Tasks, it is necessary to perform the MR Scan at the same cradle position as its encapsulating PET Bed, and the cradle is positioned so the PET Bed Scan Volume's z-axis center is at the Scanner's Magnet Isocenter. If the Simultaneous MR Task is NOT center-linked with its encapsulating PET Bed, the cradle is likely not positioned so the MR Scan Volume's z-axis center is at the Scanner's Magnet Isocenter, and the Table Offset is set for the prescribed MR Scan Volume.

For some specialized Head Scanning, it is necessary to perform multiple MR Scans without moving the cradle, even though the multiple Scan Volumes may have different z-axis centers. The cradle is moved so the z-axis center of the first MR Scan Volume is at the Scanner's Magnet Isocenter, the multiple MR Scans are performed without moving the cradle, and the Table Offset is set for each MR Scan Volume.

# Laser landmarked at 794 mm (ex1486) and 711 mm (ex1487)

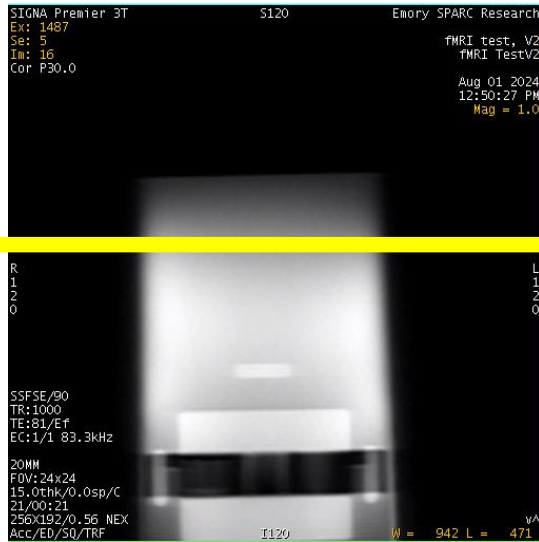


Table moved further toward bore

**794mm**  
**Ex1486**



**711mm**  
**Ex1487**



# Laser landmarked at 794 mm (ex1486)

- Feet-first**
- 01\_3\_Plane\_Localizer\_FF
  - 02\_Ax\_fmRI\_FF\_I11.1\_S15.9
  - 03\_Ax\_fmRI\_FF\_I21.1\_S05.9
  - 04\_Ax\_fmRI\_FF\_I01.1\_S25.9
- Head-first**
- 05\_3\_Plane\_Localizer\_HF
  - 06\_Ax\_fmRI\_HF\_I11.1\_S15.9
  - 07\_Ax\_fmRI\_HF\_I21.1\_S05.9
  - 08\_Ax\_fmRI\_HF\_I01.1\_S25.9

Phantom & landmark  
remained unchanged  
(in world coordinate)

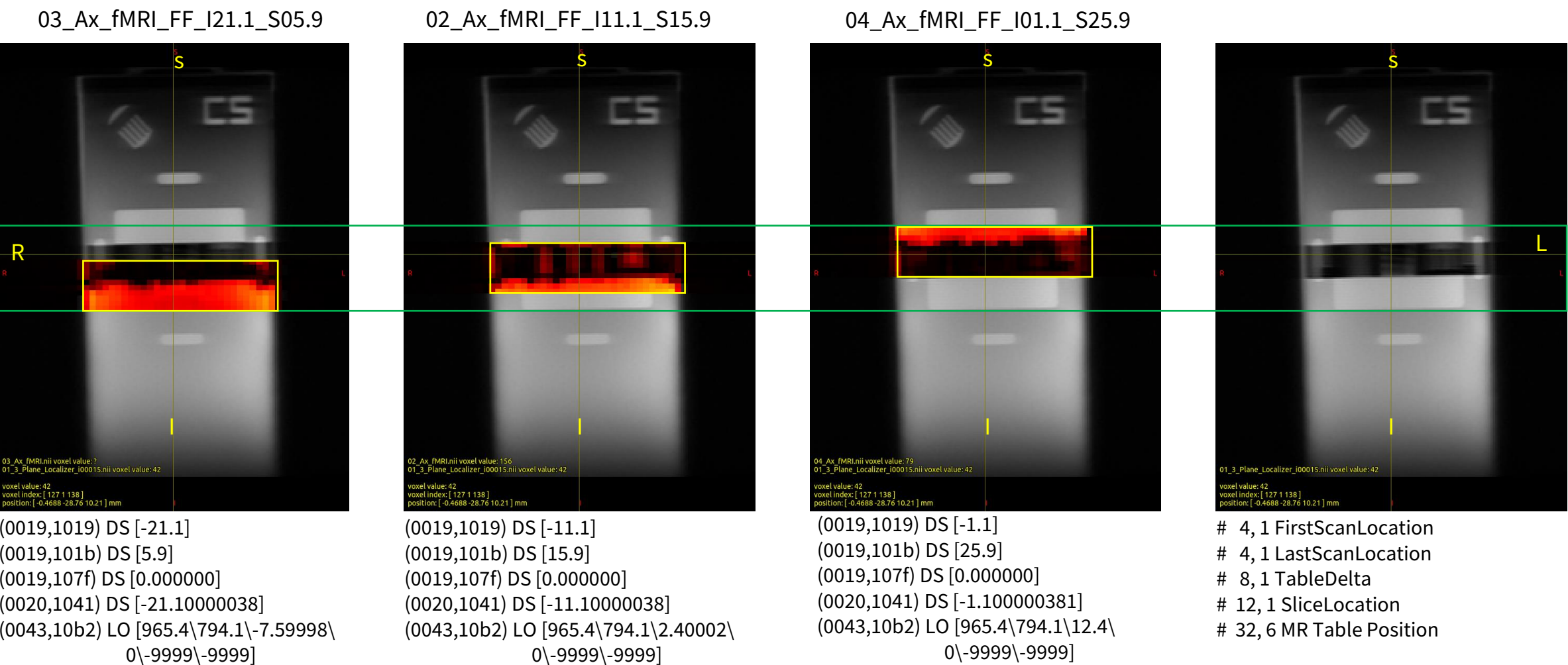
**Feet-first**



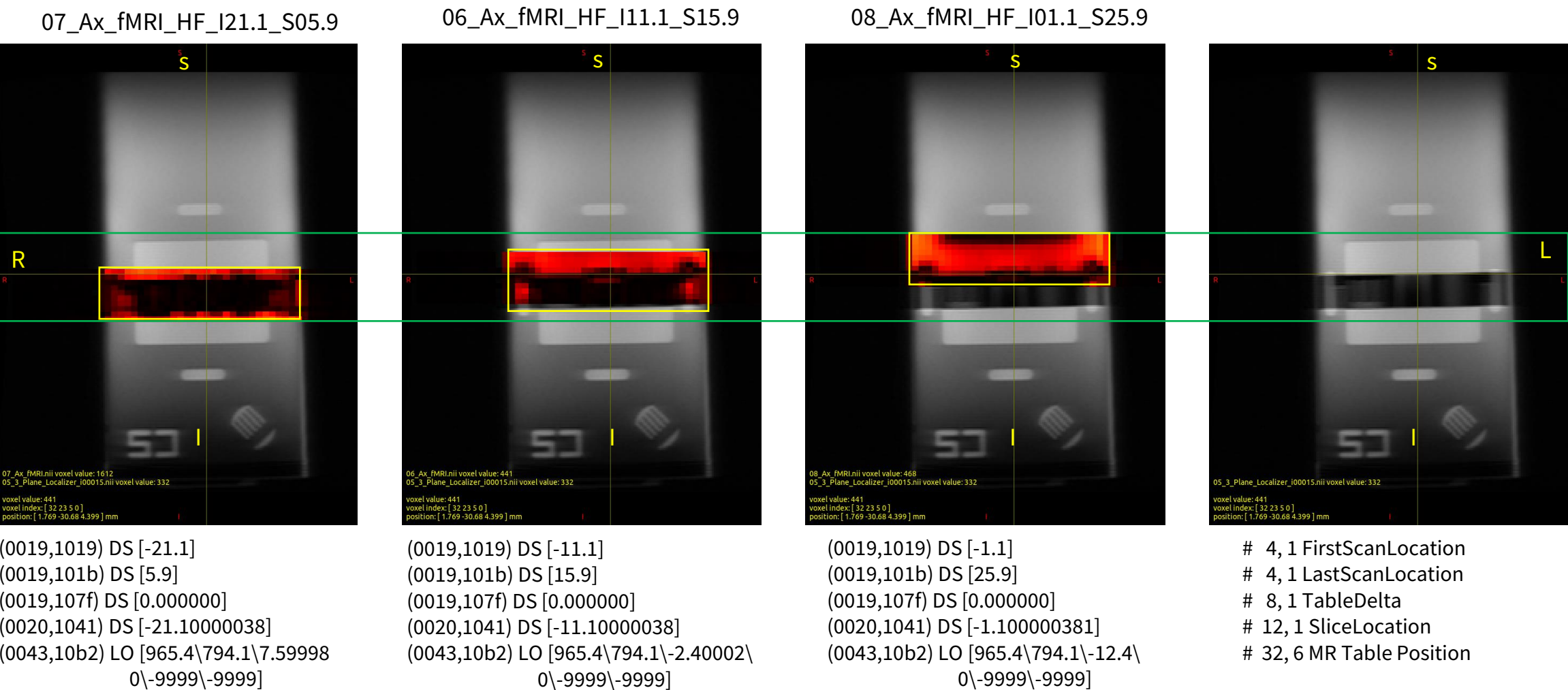
**Head-first**



# Exam1486, Laser landmarked at 794mm, Feet-first



# Exam1486, Laser landmarked at 794mm, Head-first





# Laser landmarked at 711 mm (ex1487)

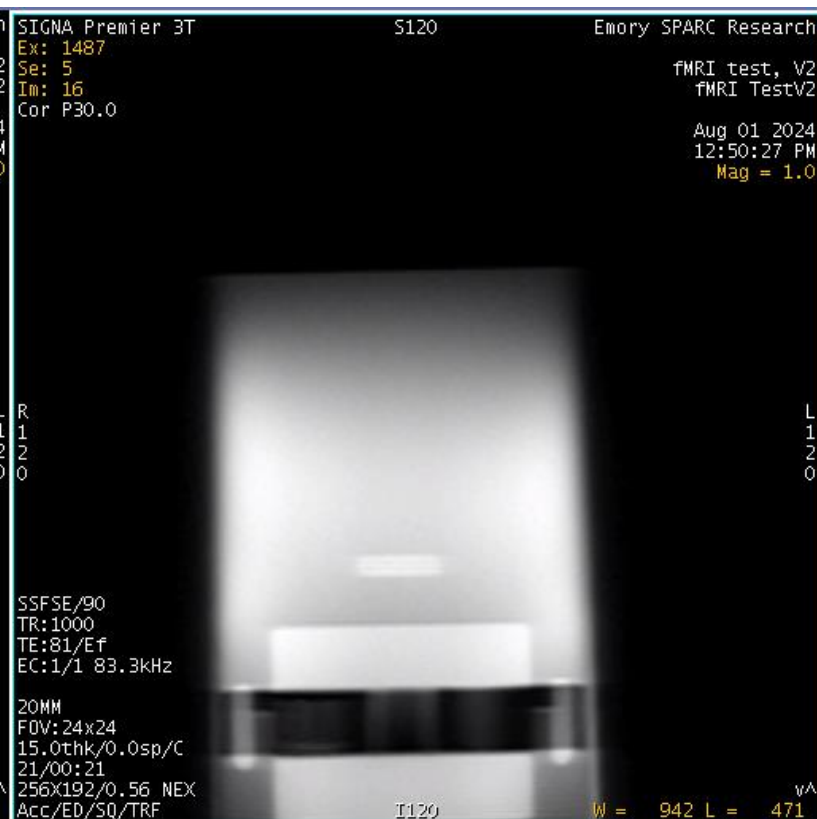
- Feet-first**
  - 01\_3\_Plane\_Localizer\_FF
  - 02\_Ax\_fMRI\_FF\_I11.1\_S15.9
  - 03\_Ax\_fMRI\_FF\_I21.1\_S05.9
  - 04\_Ax\_fMRI\_FF\_I01.1\_S25.9
- Head-first**
  - 05\_3\_Plane\_Localizer\_HF
  - 06\_Ax\_fMRI\_HF\_I11.1\_S15.9
  - 07\_Ax\_fMRI\_HF\_I21.1\_S05.9
  - 08\_Ax\_fMRI\_HF\_I01.1\_S25.9

Phantom & landmark  
remained unchanged  
(in world coordinate)

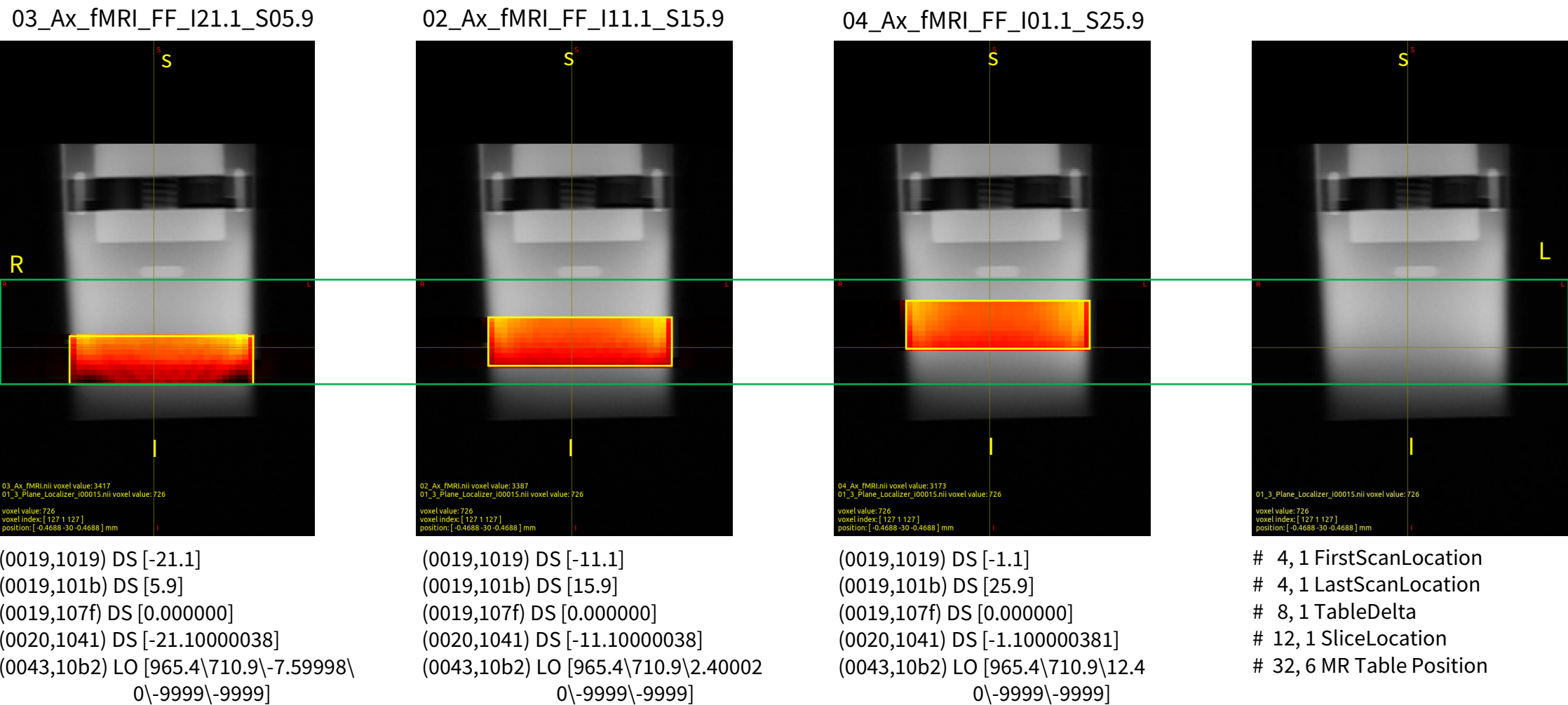
**Feet-first**



**Head-first**



# Exam1487, Laser landmarked at 711mm, Feet-first



# Exam1487, Laser landmarked at 711mm, Head-first

