ENSITE X EP System Experience From Technician Perspective Of View

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CBI FTE MEETING

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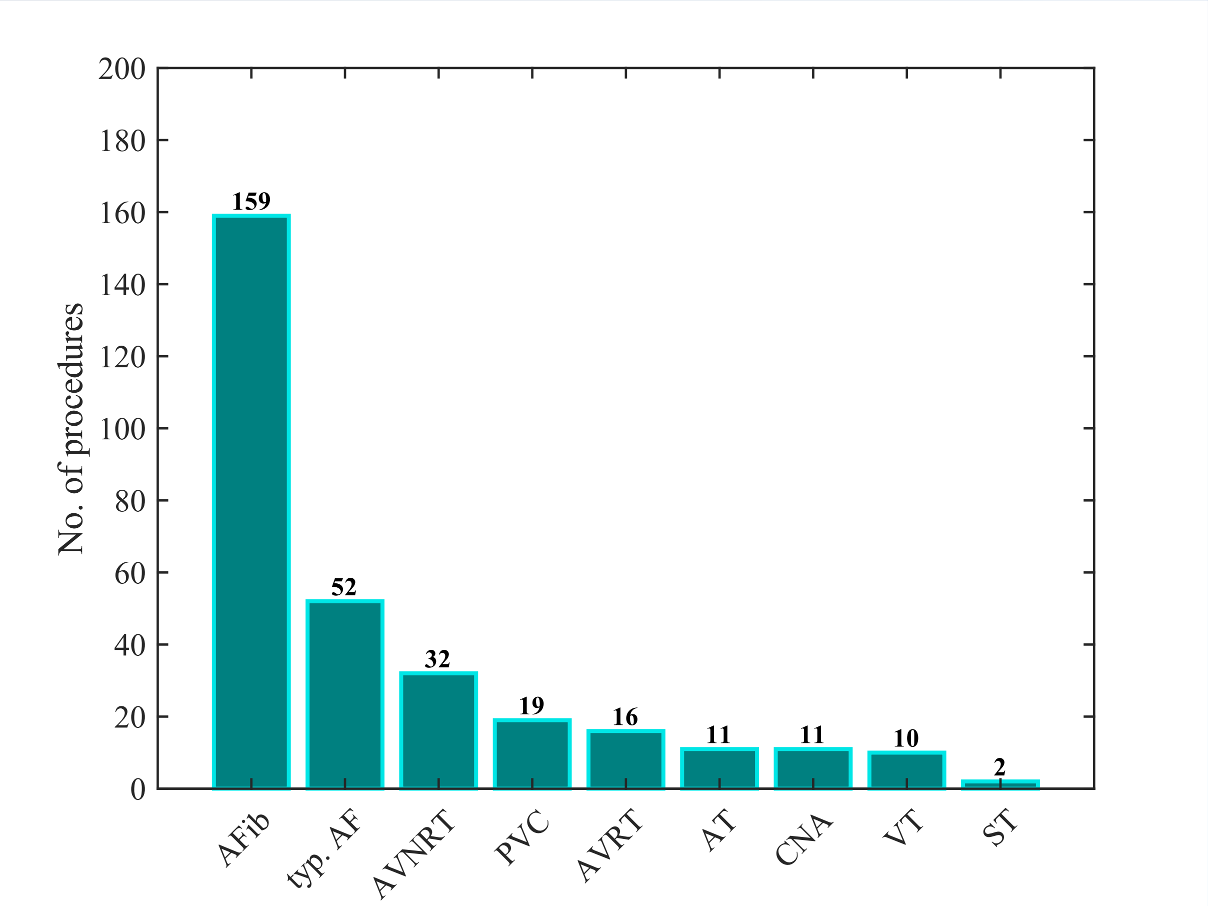
NEMOCNICE

ČESKÉ BUDĚJOVICE, a.s.

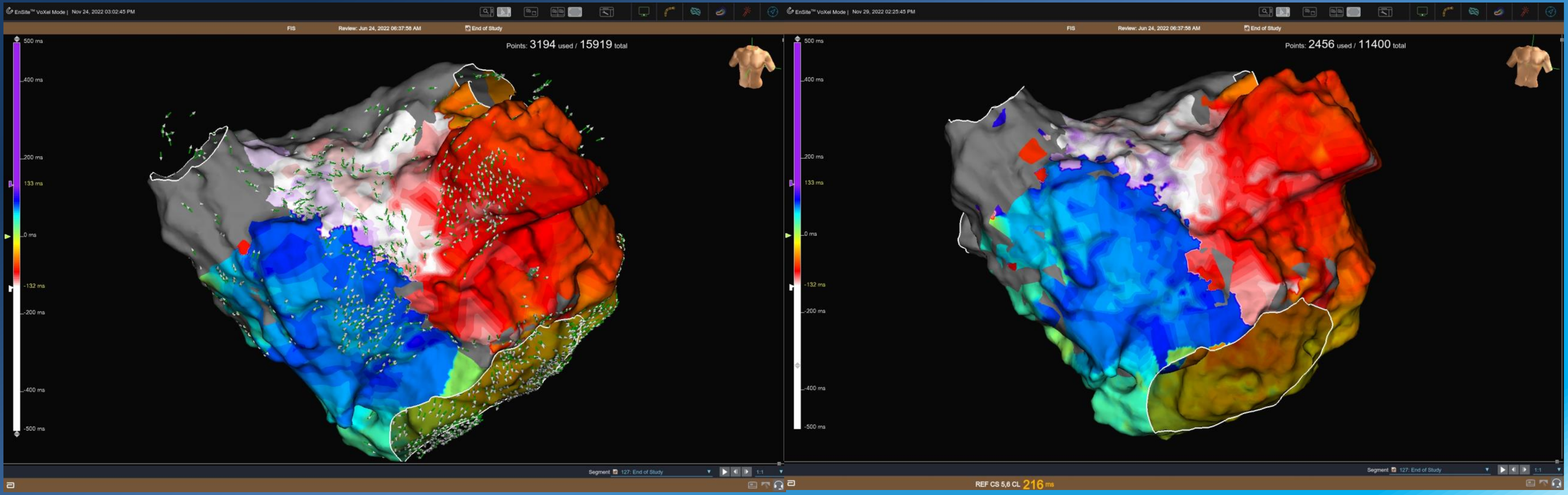
ENSITE X EP SYSTEM - Procedures

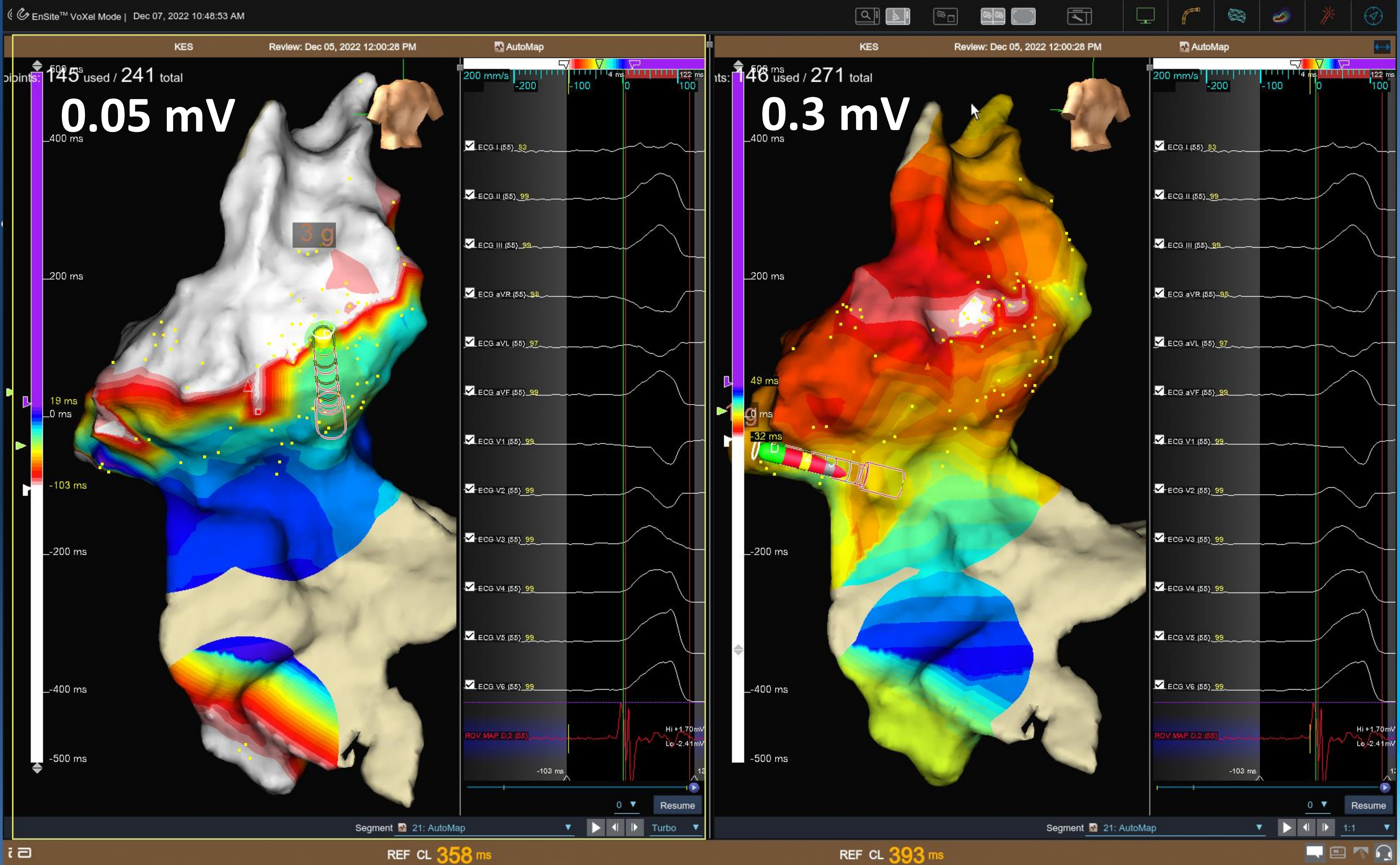
- First procedure 10 January 2022 – **PVC**
- Until nowadays in total **331** procedures
  - **223** procedures in **Voxel** mode (AFib, CNA, AT, PVC, VT)
  - **108** procedures in **NavX** mode (AVNRT, AVRT, typ. AF)



ENSITE X EP SYSTEM - Experience

- **HD grid & Omnipolar mapping**
  - Clear **LAT map**, elimination of bipolar blindness

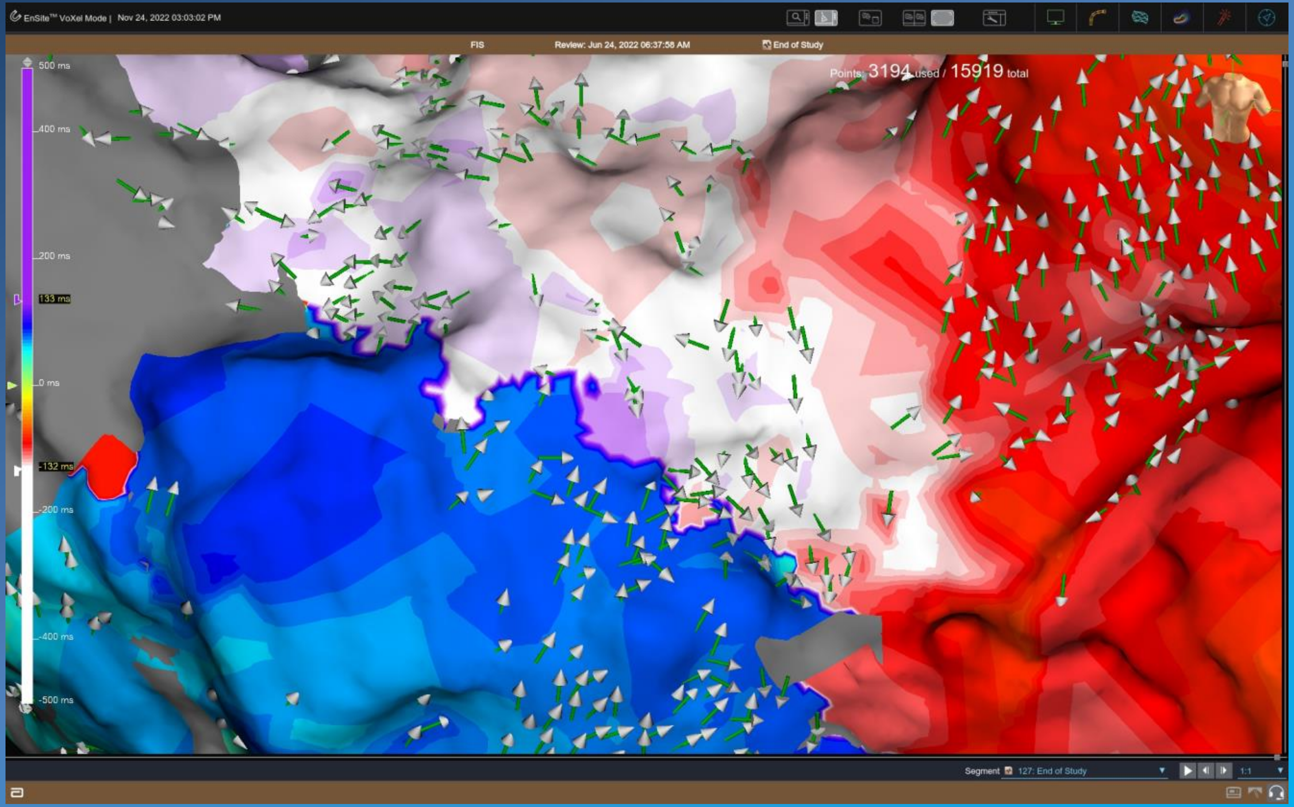


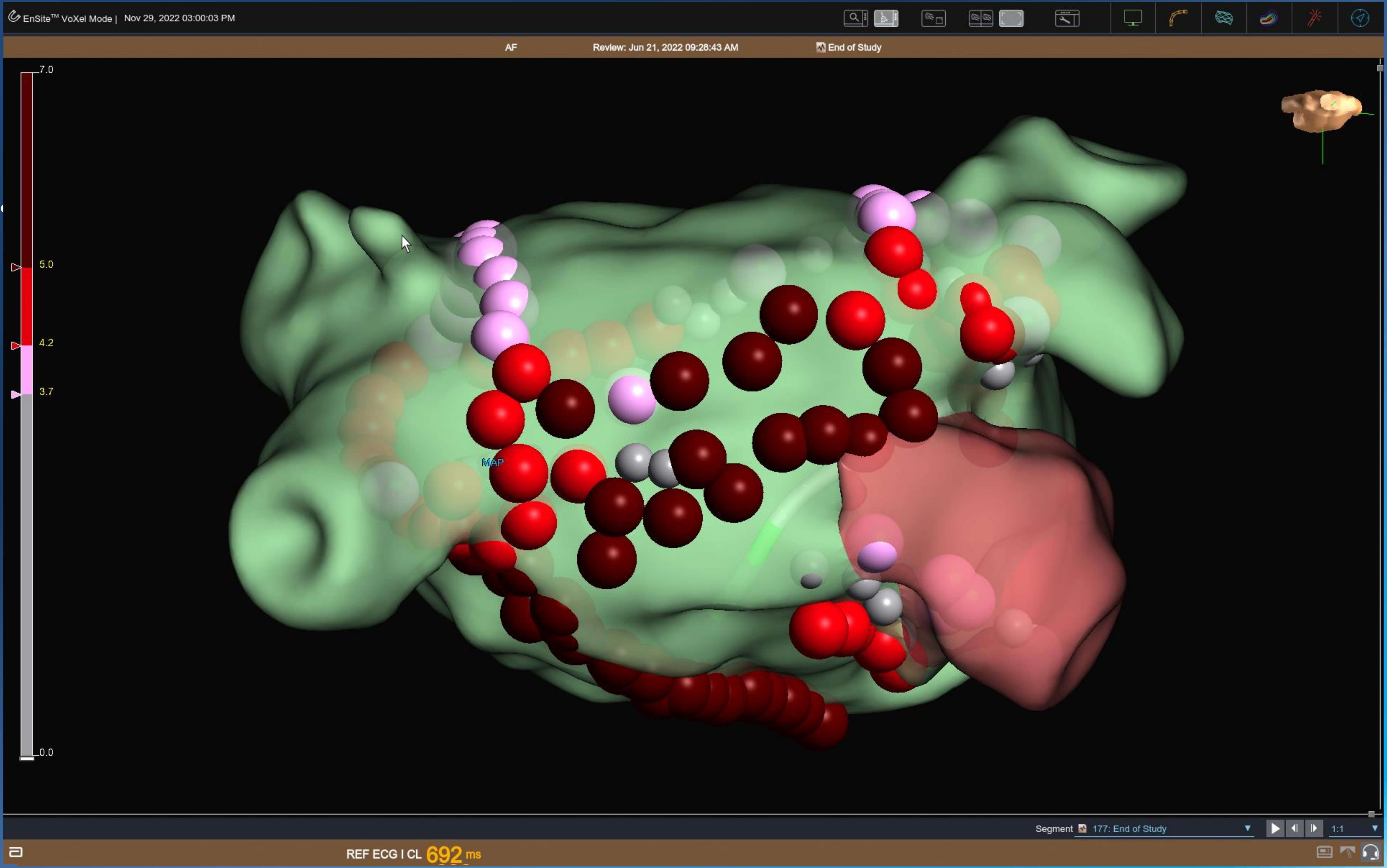


EnSite™ VoXel Mode | Dec 07, 2022 10:48:53 AM
KES
Review: Dec 05, 2022 12:00:28 PM
AutoMap
145 used / 241 total
0.05 mV
400 ms
200 ms
19 ms
0 ms
-103 ms
-200 ms
-400 ms
-500 ms
200 mm/s
ECG I (55)
ECG II (55)
ECG III (55)
ECG aVR (55)
ECG aVL (55)
ECG aVF (55)
ECG V1 (55)
ECG V2 (55)
ECG V3 (55)
ECG V4 (55)
ECG V5 (55)
ECG V6 (55)
ROV MAP D,2 (55)
Hi +1.70mV
Lo -2.41mV
Resume
Segment 21: AutoMap
Turbo
REF CL 358 ms
KES
Review: Dec 05, 2022 12:00:28 PM
AutoMap
146 used / 271 total
0.3 mV
400 ms
200 ms
49 ms
0 ms
-32 ms
-200 ms
-400 ms
-500 ms
Segment 21: AutoMap
1:1
Resume
REF CL 393 ms

ENSITE X EP SYSTEM - Experience

- **HD grid & Omnipolar mapping**
  - To get clear map the setting of **sensitivity threshold** is crucial!
  - Setting based on few first collected LAT points
  - Algorithm **First deflection and Last deflection (VT‘s)**
  - **Activation Vectors –** identification of block line (OT certainty > 0,4)

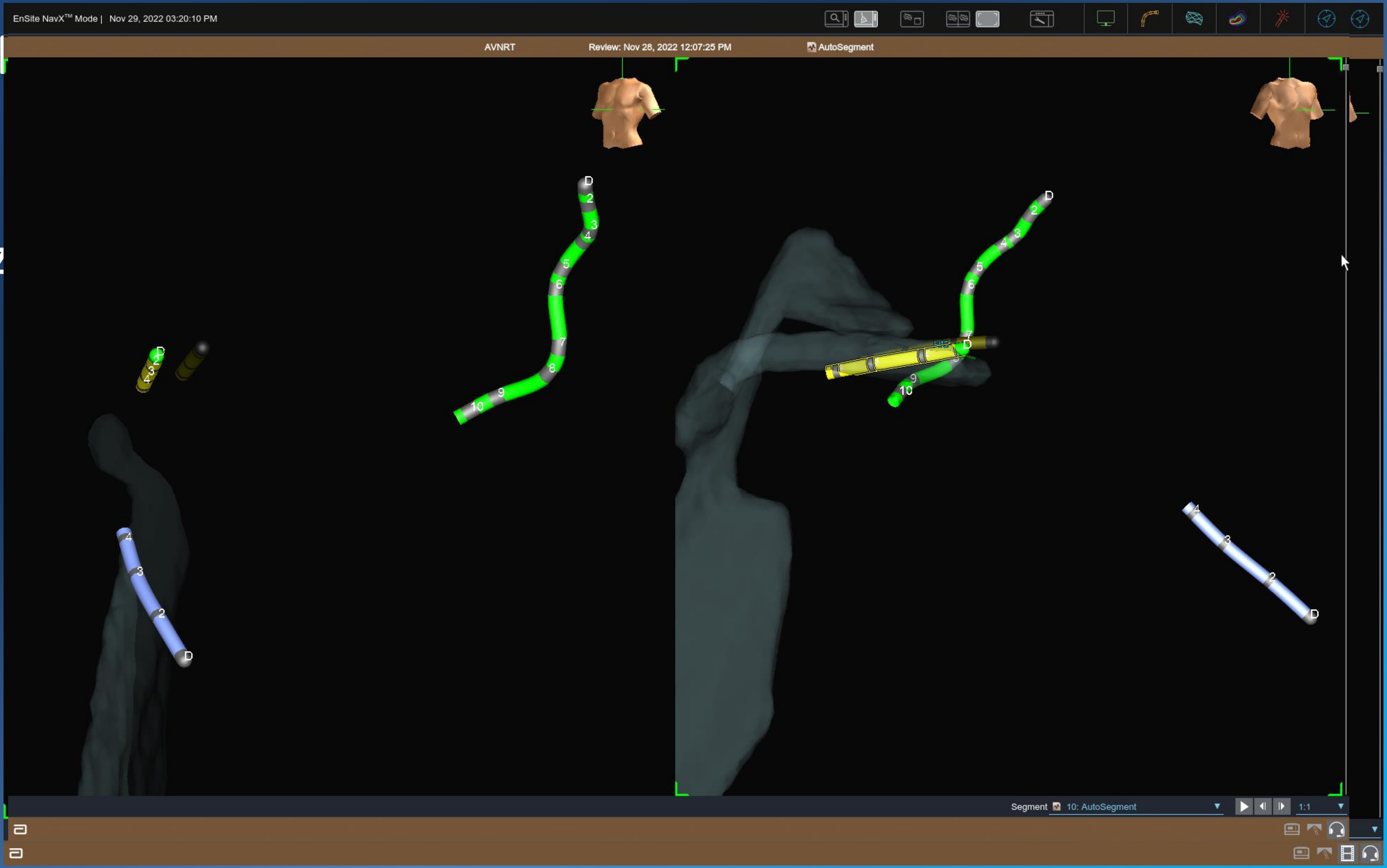




EnSite™ VoXel Mode | Nov 29, 2022 03:00:03 PM
AF
Review: Jun 21, 2022 09:28:43 AM
End of Study
7.0
5.0
4.2
3.7
0.0
MAP
Segment
177: End of Study
1:1
REF ECG I CL 692 ms

E

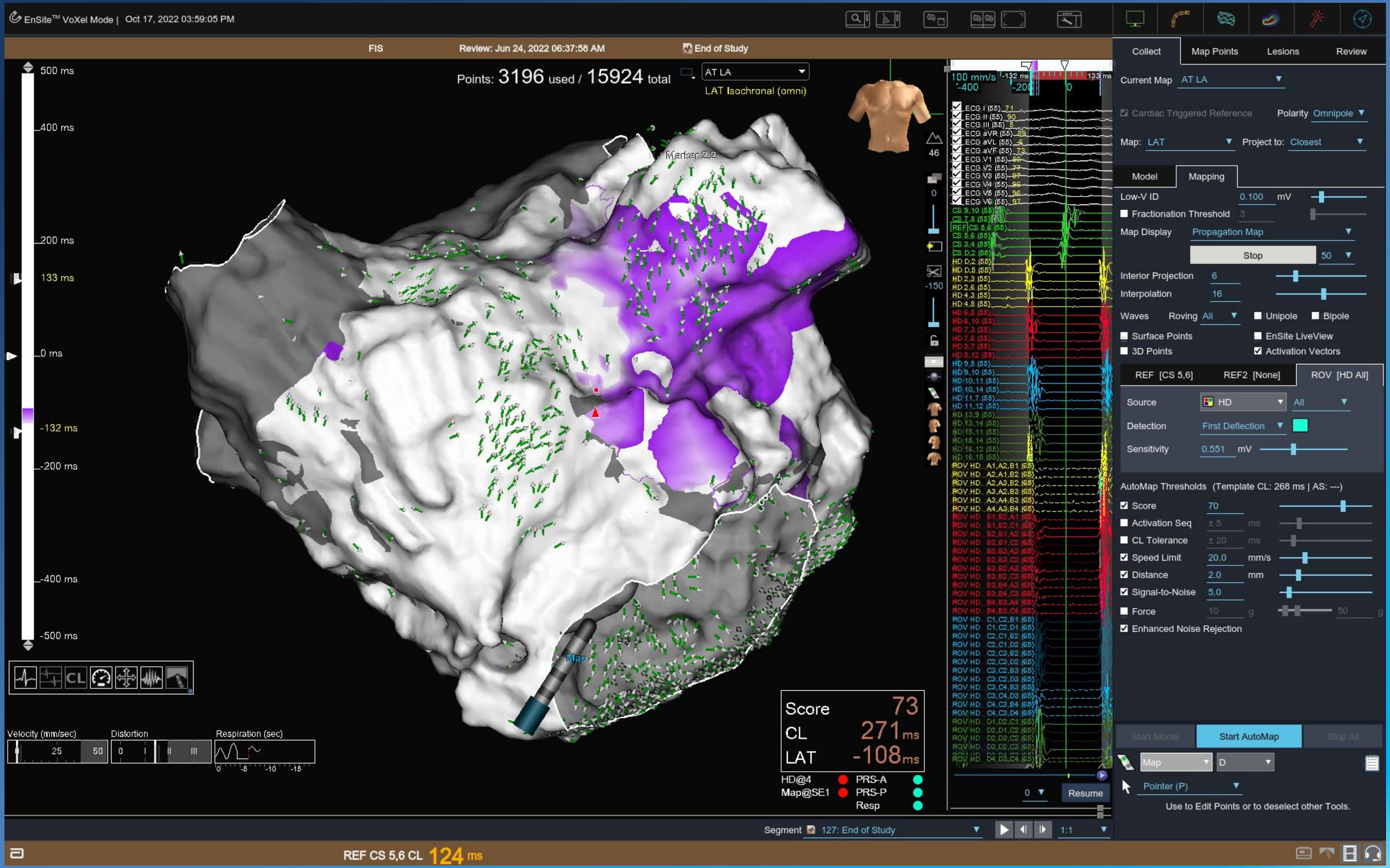
- Z



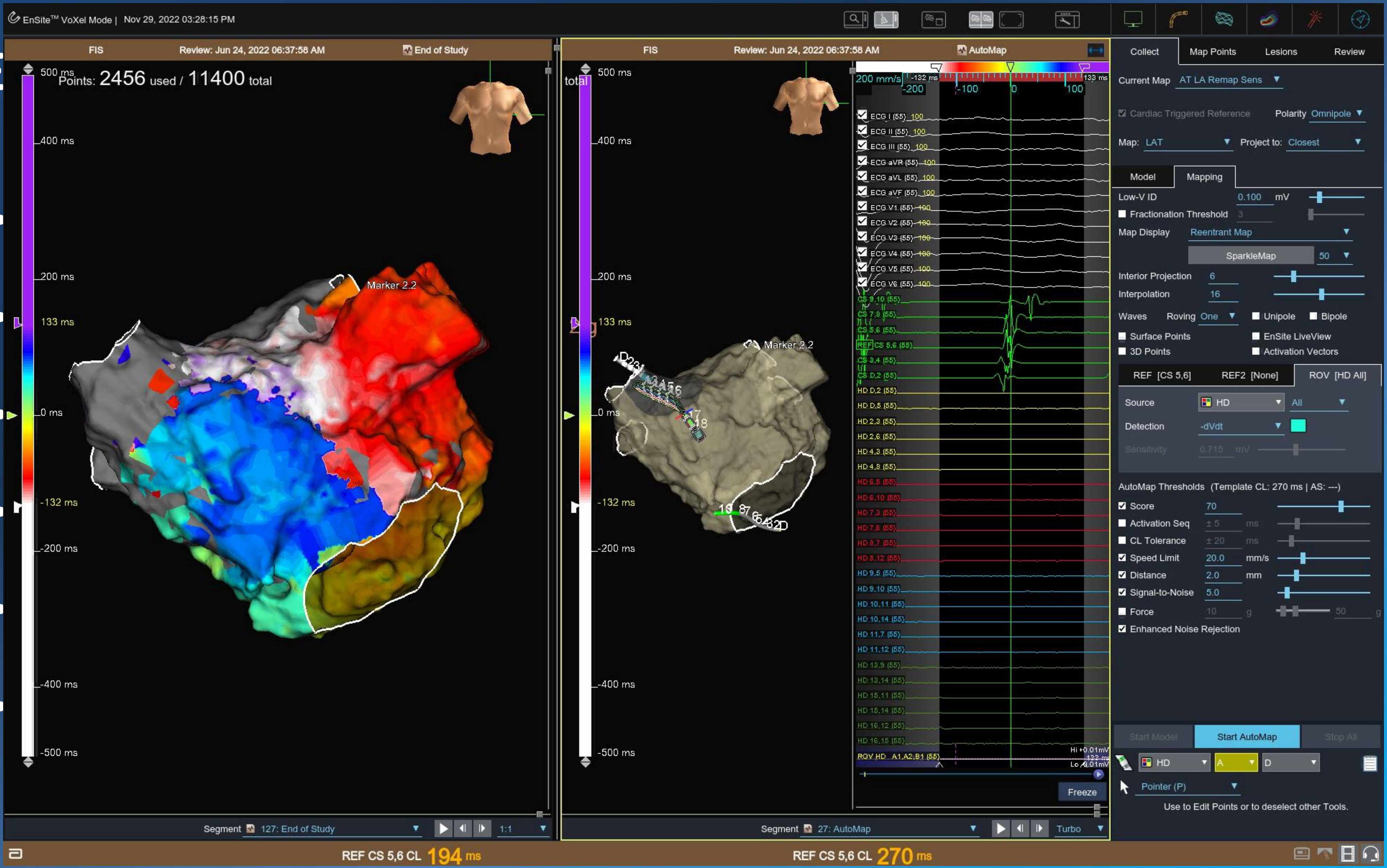
EnSite NavX™ Mode | Nov 29, 2022 03:20:10 PM
AVNRT
Review: Nov 28, 2022 12:07:25 PM
AutoSegment
Segment
10: AutoSegment
1:1

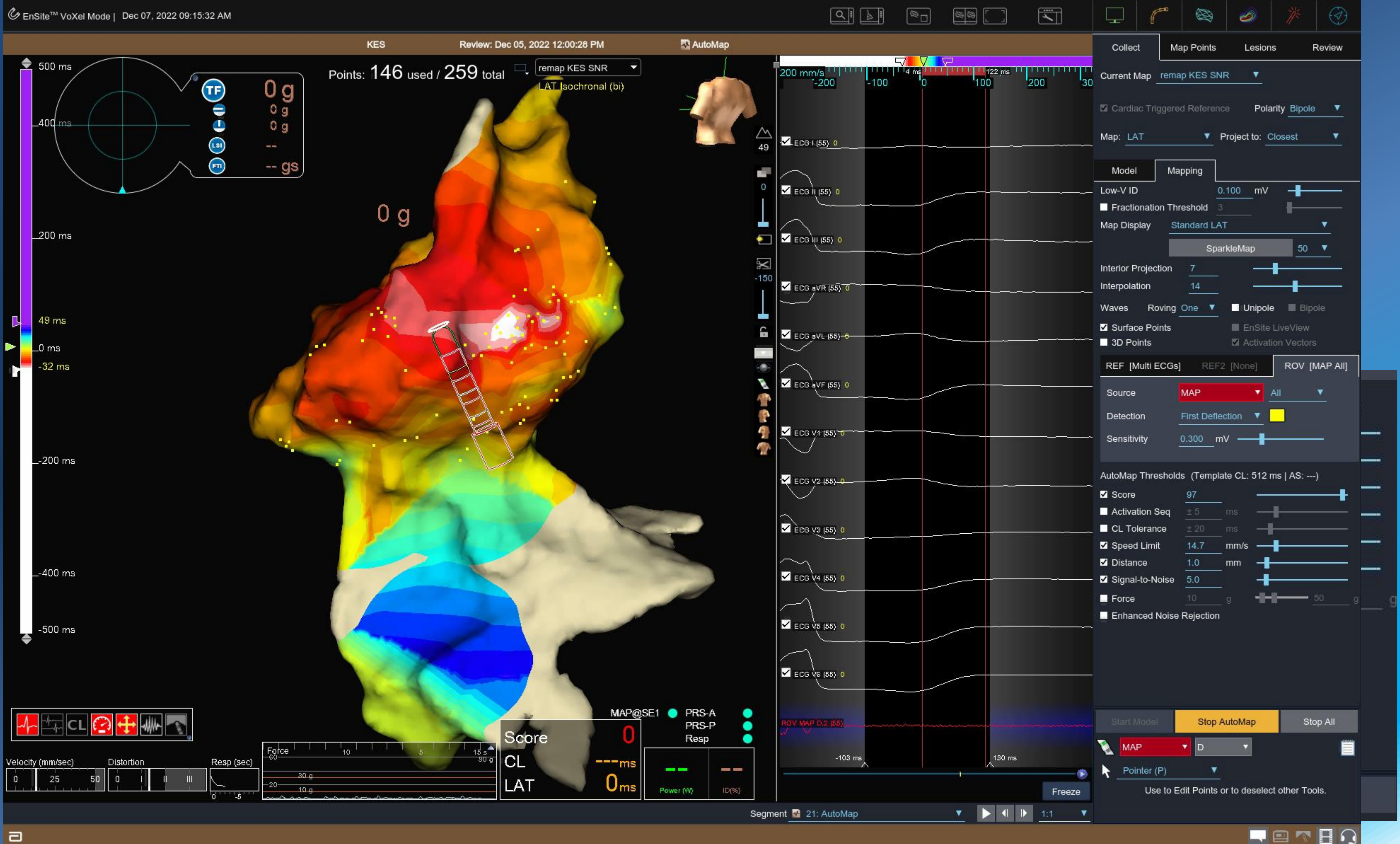
ENSITE X EP SYSTEM – We appreciate

- Propagation map



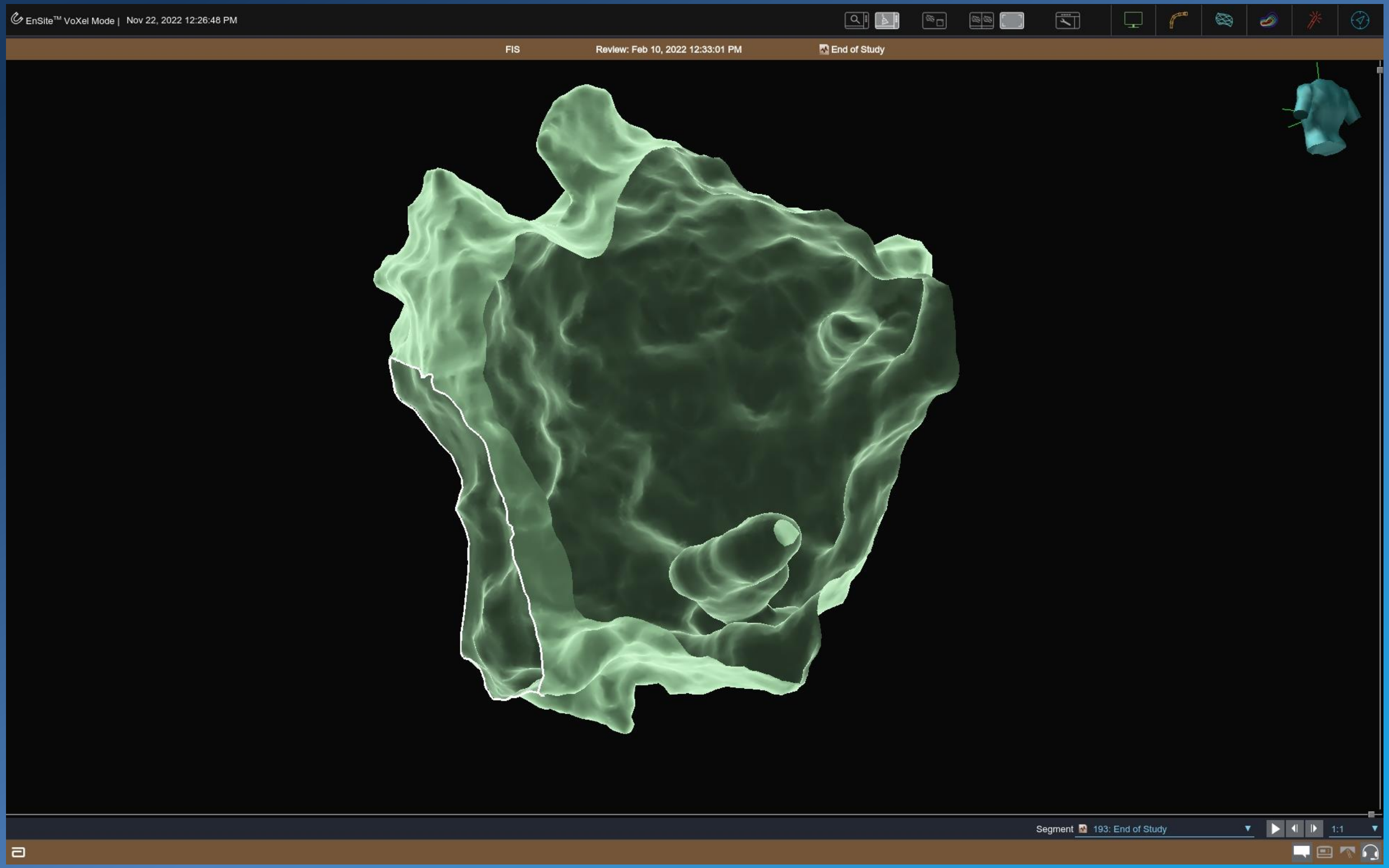
E


EnSite™ VoXel Mode | Nov 29, 2022 03:28:15 PM
FIS
Review: Jun 24, 2022 06:37:58 AM
End of Study
Points: 2456 used / 11400 total
500 ms
400 ms
200 ms
133 ms
0 ms
-132 ms
-200 ms
-400 ms
-500 ms
Marker 2.2
Segment 127: End of Study
1:1
REF CS 5,6 CL 194 ms
FIS
Review: Jun 24, 2022 06:37:58 AM
AutoMap
200 mm/s
Segment 27: AutoMap
Turbo
Freeze
REF CS 5,6 CL 270 ms
Collect
Map Points
Lesions
Review
Current Map AT LA Remap Sens
Cardiac Triggered Reference
Polarity Omnipole
Map: LAT
Project to: Closest
Model
Mapping
Low-V ID 0.100 mV
Fractionation Threshold 3
Map Display Reentrant Map
SparkleMap 50
Interior Projection 6
Interpolation 16
Waves Roving One
Unipole
Bipole
Surface Points
EnSite LiveView
3D Points
Activation Vectors
REF [CS 5,6]
REF2 [None]
ROV [HD All]
Source HD All
Detection -dVdt
Sensitivity 0.715 mV
AutoMap Thresholds (Template CL: 270 ms | AS: ---)
Score 70
Activation Seq ± 5 ms
CL Tolerance ± 20 ms
Speed Limit 20.0 mm/s
Distance 2.0 mm
Signal-to-Noise 5.0
Force 10 g 50 g
Enhanced Noise Rejection
Start Model
Start AutoMap
Stop All
Pointer (P)
Use to Edit Points or to deselect other Tools.


EnSite™ VoXel Mode | Dec 07, 2022 09:15:32 AM
KES
Review: Dec 05, 2022 12:00:28 PM
AutoMap
500 ms
400 ms
200 ms
49 ms
0 ms
-32 ms
-200 ms
-400 ms
-500 ms
TF
0 g
0 g
0 g
LSI
FTI
-- gs
Points: 146 used / 259 total
remap KES SNR
LAT Isochronal (bi)
0 g
49
0
-150
200 mm/s
-200
-100
0
100
200
4 ms
122 ms
ECG I (55)
ECG II (55)
ECG III (55)
ECG aVR (55)
ECG aVL (55)
ECG aVF (55)
ECG V1 (55)
ECG V2 (55)
ECG V3 (55)
ECG V4 (55)
ECG V5 (55)
ECG V6 (55)
ROV MAP D,2 (55)
-103 ms
130 ms
Freeze
Collect
Map Points
Lesions
Review
Current Map
remap KES SNR
Cardiac Triggered Reference
Polarity
Bipole
Map:
LAT
Project to:
Closest
Model
Mapping
Low-V ID
0.100
mV
Fractionation Threshold
3
Map Display
Standard LAT
SparkleMap
50
Interior Projection
7
Interpolation
14
Waves
Roving
One
Unipole
Bipole
Surface Points
EnSite LiveView
3D Points
Activation Vectors
REF [Multi ECGs]
REF2 [None]
ROV [MAP All]
Source
MAP
All
Detection
First Deflection
Sensitivity
0.300
mV
AutoMap Thresholds (Template CL: 512 ms | AS: ---)
Score
97
Activation Seq
± 5
ms
CL Tolerance
± 20
ms
Speed Limit
14.7
mm/s
Distance
1.0
mm
Signal-to-Noise
5.0
Force
10
g
50
g
Enhanced Noise Rejection
Start Model
Stop AutoMap
Stop All
MAP
D
Pointer (P)
Use to Edit Points or to deselect other Tools.
MAP@SE1
PRS-A
PRS-P
Resp
Score
0
CL
---ms
LAT
0ms
Power (W)
ID(%)
Velocity (mm/sec)
0
25
50
Distortion
0
I
II
III
Resp (sec)
Force
10
5
15 s
80 g
30 g
10 g
Segment
21: AutoMap
1:1

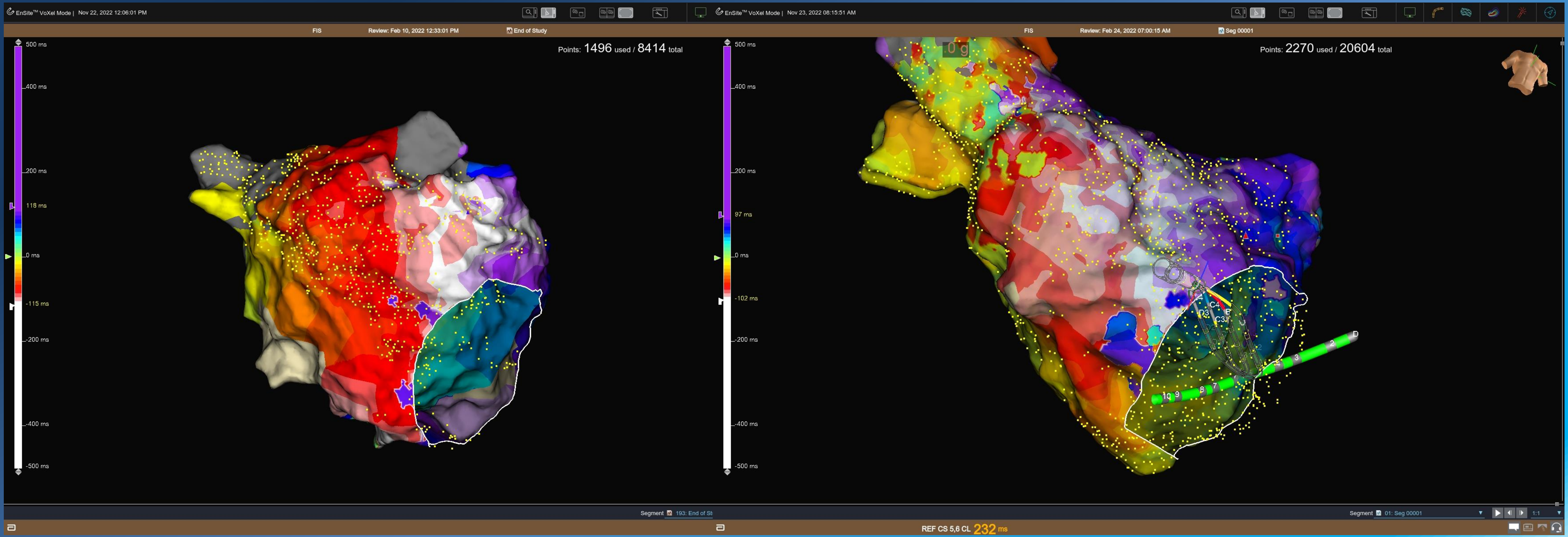
ENSITE X EP SYSTEM – We miss/suggest

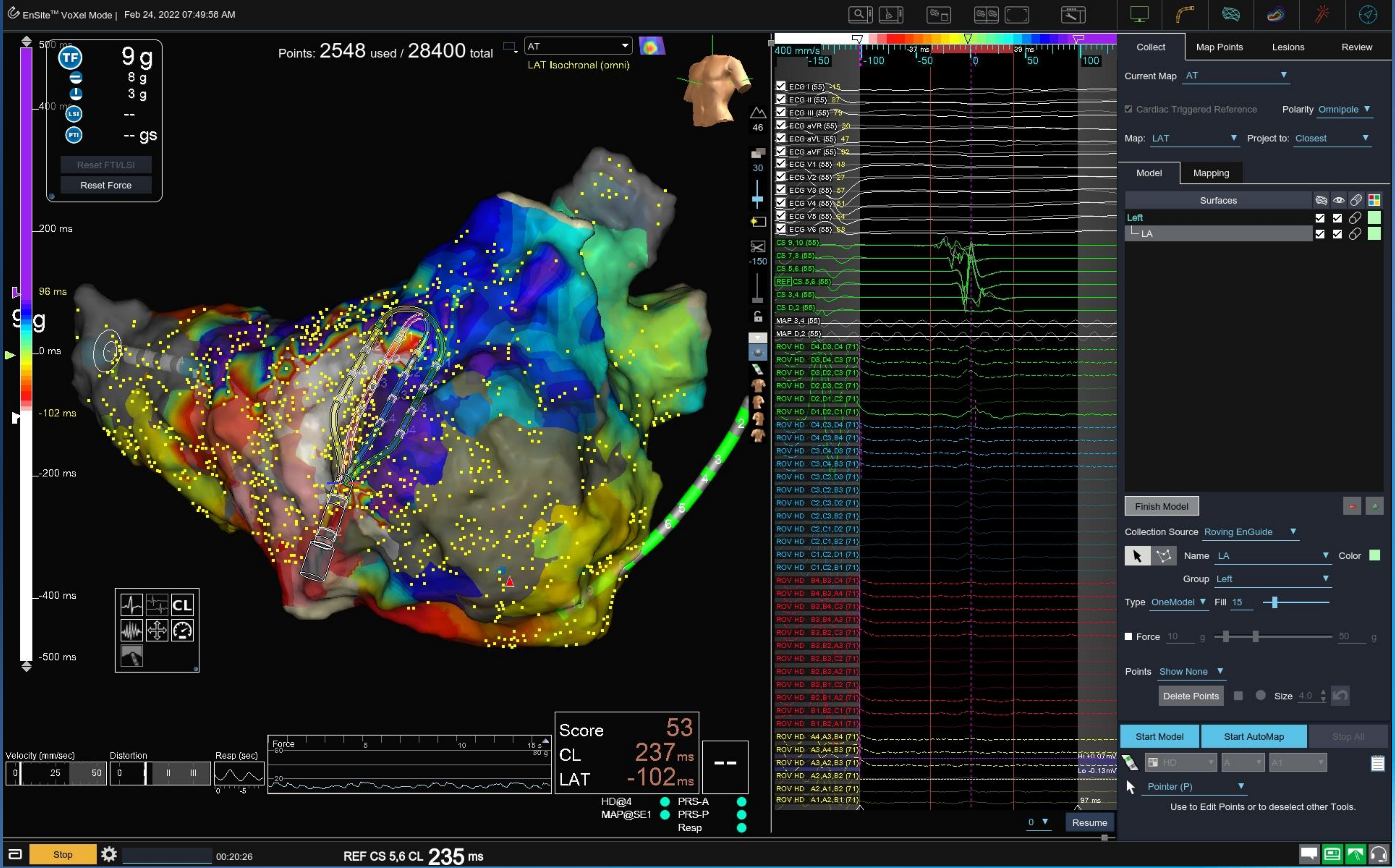
- Algorithm for elimiantion of inner geometry structures



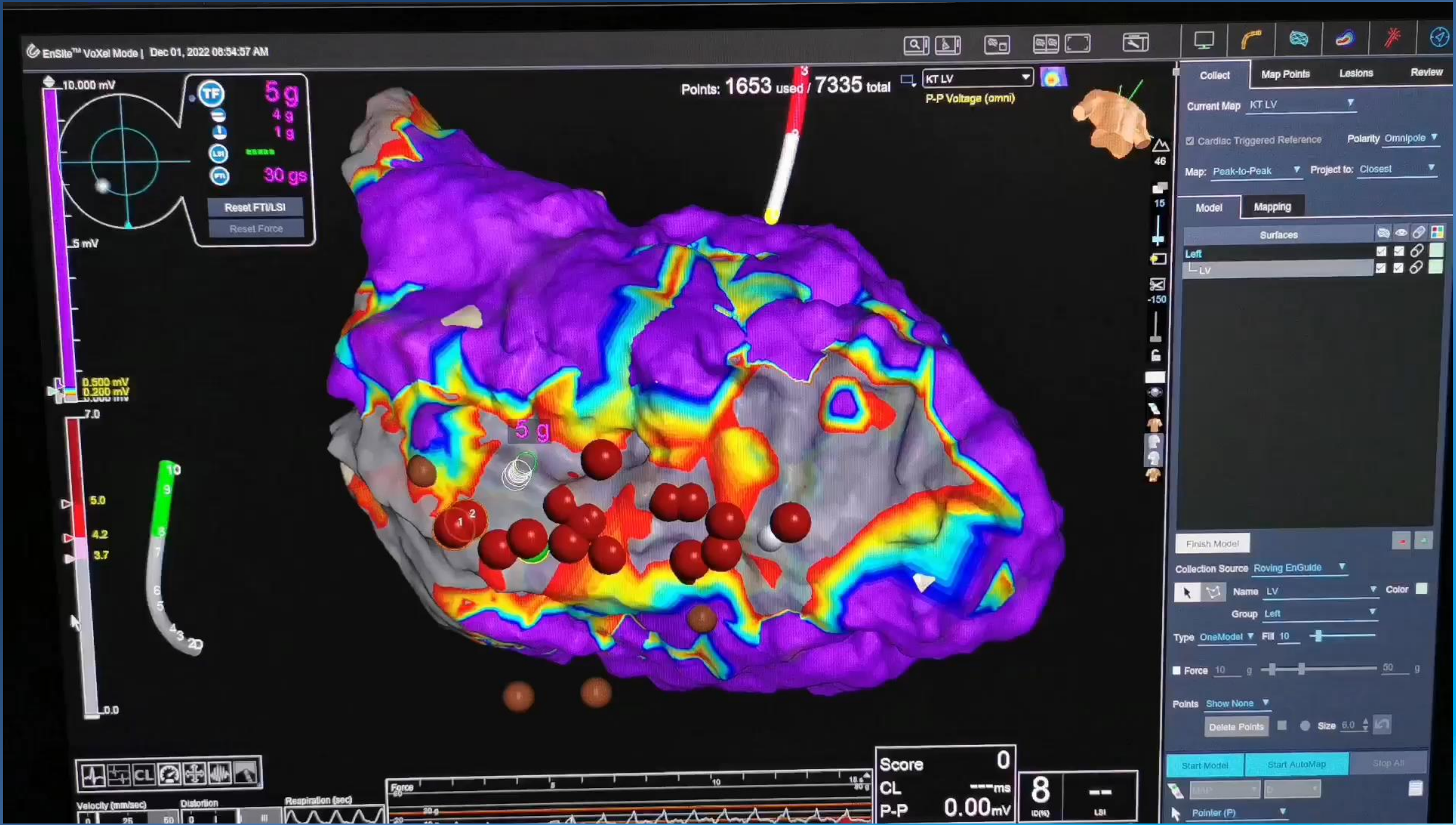
ENSITE X EP SYSTEM – We miss/suggest

- Algorithm for elimination of so-called **lonely islands** of LAT points (**v. 2**)



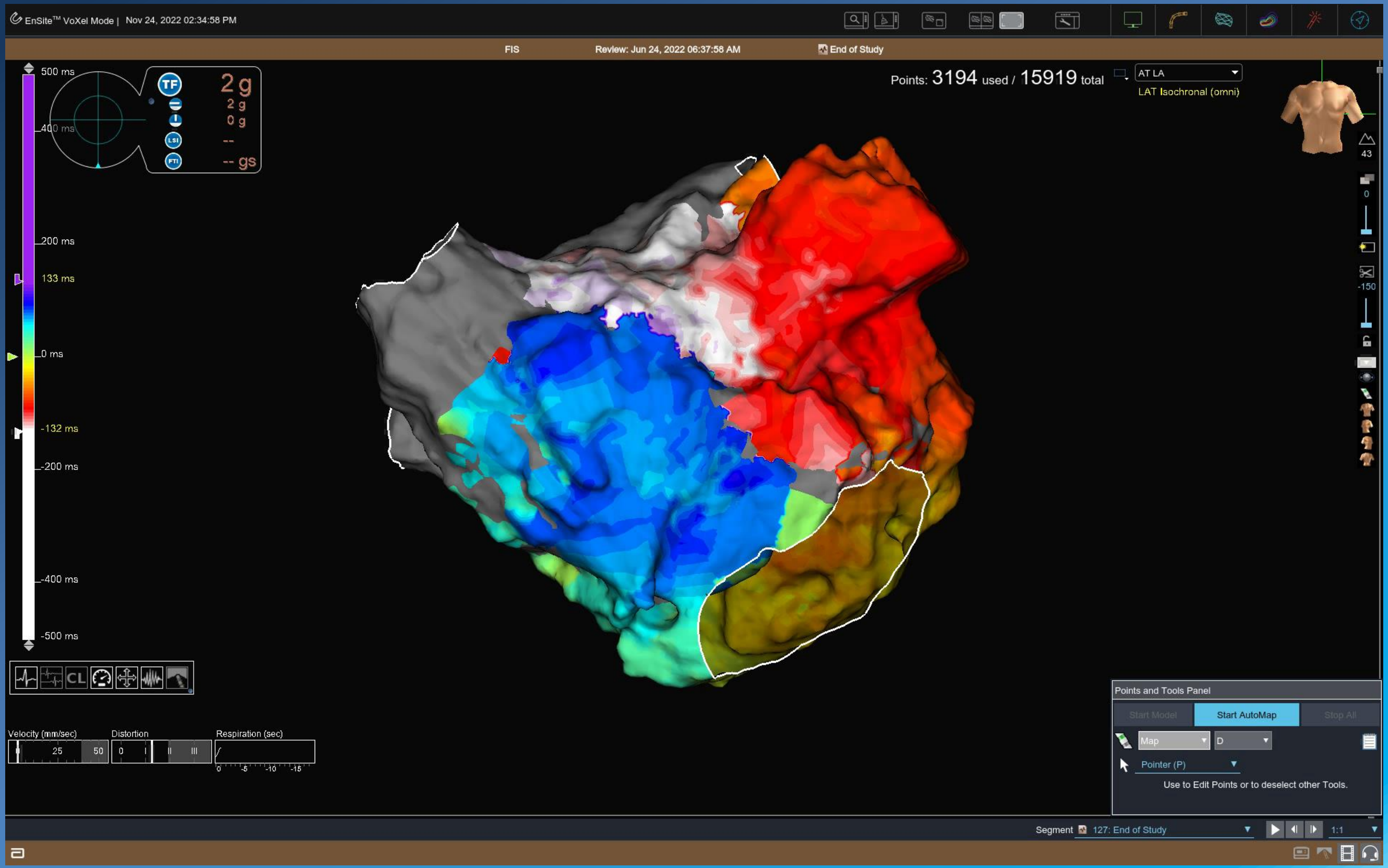


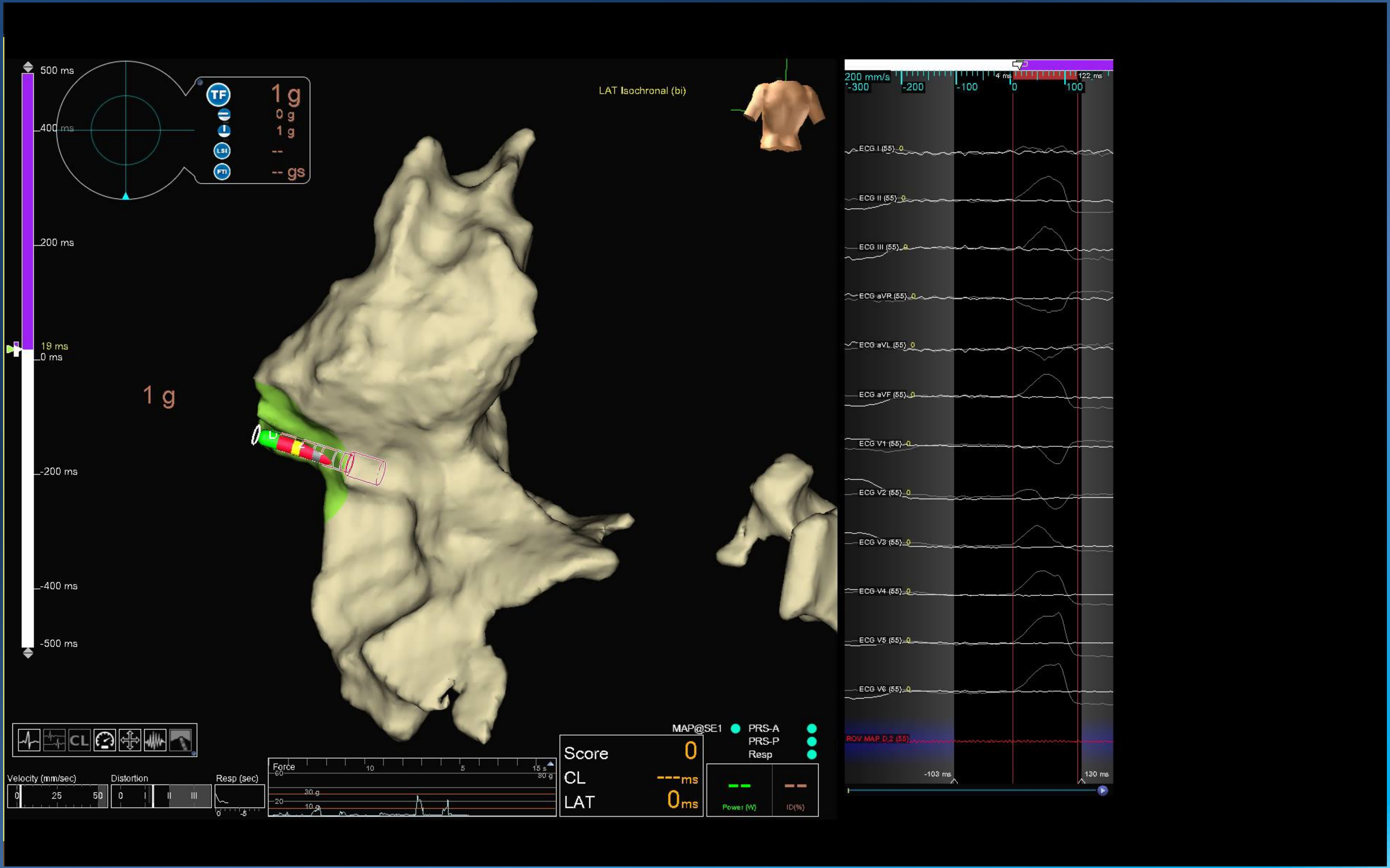
EnSite™ VoXel Mode | Feb 24, 2022 07:49:58 AM
Points: 2548 used / 28400 total
AT
LAT Isochronal (omni)
9 g
8 g
3 g
-- gs
Reset FTI/LSI
Reset Force
500 ms
400 ms
200 ms
96 ms
0 ms
-102 ms
-200 ms
-400 ms
-500 ms
400 mm/s
-150 -100 -50 0 50 100
-37 ms
39 ms
ECG I (55)
ECG II (55)
ECG III (55)
ECG aVR (55)
ECG aVL (55)
ECG aVF (55)
ECG V1 (55)
ECG V2 (55)
ECG V3 (55)
ECG V4 (55)
ECG V5 (55)
ECG V6 (55)
CS 9,10 (55)
CS 7,8 (55)
CS 5,6 (55)
REF CS 5,6 (55)
CS 3,4 (55)
CS D,2 (55)
MAP 3,4 (55)
MAP D,2 (55)
Collect
Map Points
Lesions
Review
Current Map AT
Cardiac Triggered Reference
Polarity Omnipole
Map: LAT
Project to: Closest
Model
Mapping
Surfaces
Left
LA
Finish Model
Collection Source Roving EnGuide
Name LA
Color
Group Left
Type OneModel
Fill 15
Force 10 g 50 g
Points Show None
Delete Points
Size 4.0
Start Model
Start AutoMap
Stop All
Pointer (P)
Use to Edit Points or to deselect other Tools.
Velocity (mm/sec)
Distortion
Resp (sec)
Force
Score 53
CL 237 ms
LAT -102 ms
HD@4
MAP@SE1
PRS-A
PRS-P
Resp
Resume
Stop
00:20:26
REF CS 5,6 CL 235 ms


EnSite™ VoXel Mode | Dec 01, 2022 08:54:57 AM
10.000 mV
5 g
4 g
1 g
30 gs
Reset FTI/LSI
Reset Force
5 mV
0.500 mV
0.200 mV
Points: 1653 used / 7335 total
KT LV
P-P Voltage (omni)
Collect
Map Points
Lesions
Review
Current Map KT LV
Cardiac Triggered Reference
Polarity Omnipole
Map: Peak-to-Peak
Project to: Closest
Model
Mapping
Surfaces
Left
LV
Finish Model
Collection Source Roving EnGuide
Name LV
Color
Group Left
Type OneModel
Fill 10
Force 10 g 50 g
Points Show None
Delete Points
Size 6.0
Start Model
Start AutoMap
Stop All
Pointer (P)
7.0
5.0
4.2
3.7
0.0
5 g
Score 0
CL ---ms
P-P 0.00mV
8
LSI
Force
Velocity (mm/sec)
Distortion
Respiration (sec)

ENSITE X EP SYSTEM – Tips & Traps

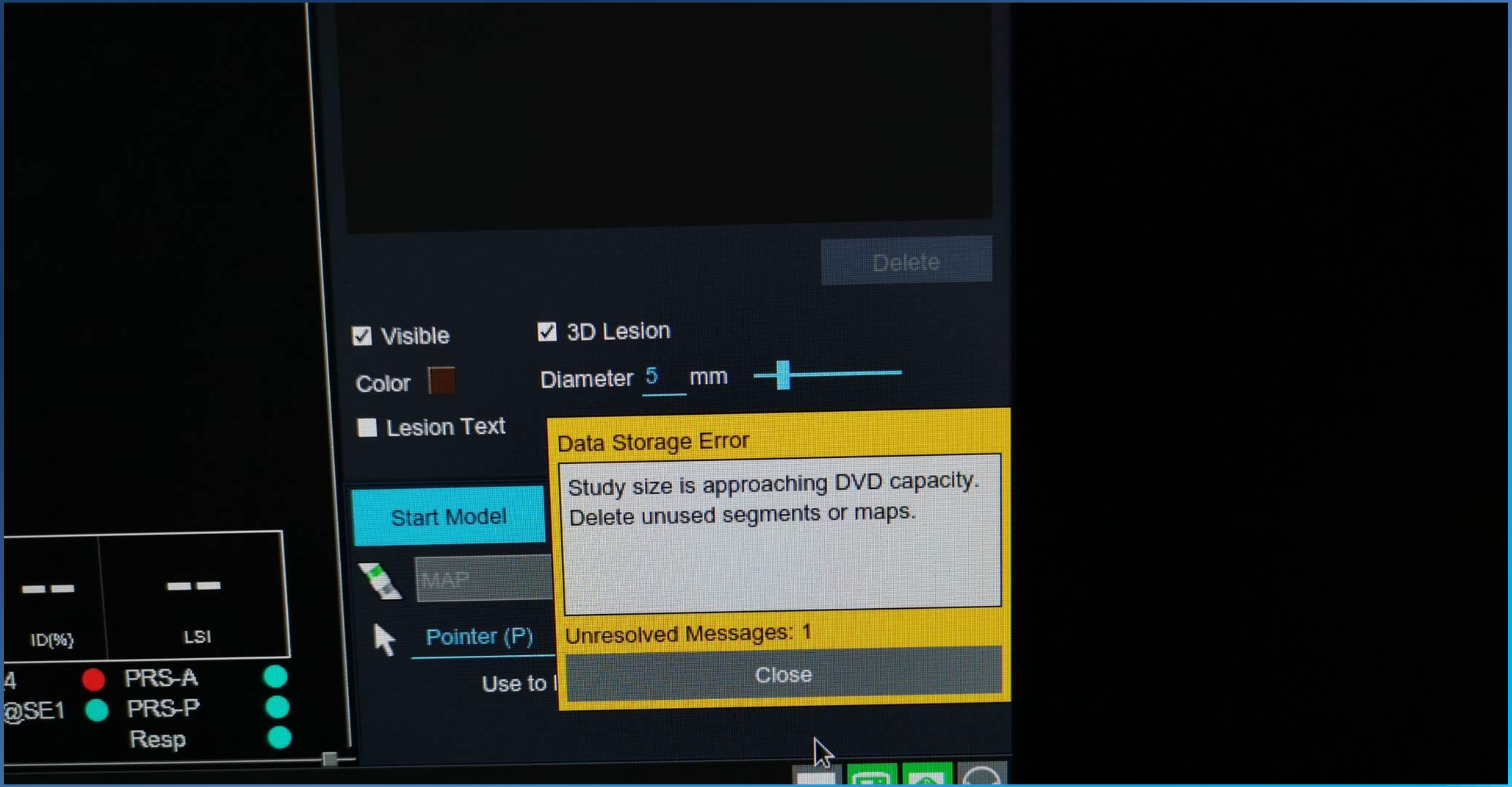
- **Cropping** the geometry





500 ms
400 ms
200 ms
19 ms
0 ms
-200 ms
-400 ms
-500 ms
TF
1 g
0 g
1 g
-- gs
LAT Isochronal (bi)
1 g
200 mm/s
ECG I (55)
ECG II (55)
ECG III (55)
ECG aVR (55)
ECG aVL (55)
ECG aVF (55)
ECG V1 (55)
ECG V2 (55)
ECG V3 (55)
ECG V4 (55)
ECG V5 (55)
ECG V6 (55)
ROV MAP D,2 (55)
-103 ms
130 ms
MAP@SE1
PRS-A
PRS-P
Resp
Score 0
CL ---ms
LAT 0ms
Power (W)
ID(%)
Velocity (mm/sec)
Distortion
Resp (sec)
Force

ENSITE X EP SYSTEM – What annoys us ☺



ENSITE X EP SYSTEM - Conclusion

- **We used to be……**
  - Exclusively CARTO EP Lab (14 years)
  - The transition to **Ensite X** (7 months) is definitely achievable………….

	Eniste X		**CARTO 3**	
	PVI	PVI+	PVI	PVI+
No. RFA	55	82	60	90
RFA time (min)	21.9	27.8	21.9	36.1
Fluoro time (min)	2.7	3.8	2.2	2.7
Fluoro dose ($mGycm^2$)	1615	2410	2390*	2961*
Procedure time (min)	90	105	75	105

ENSITE X EP SYSTEM - Conclusion

- **…………BUT**
  - Need to have skilled **technicians/engineers** ☺
  - **Ensite X** offers a lot of great features which can be used, just find them ☺
  - **Technican and Ensite X** can provide new views on arrhytmias for MD‘s
  - **Ensite X** is challenging/exciting self-centered, **Does not** let you focus on any other stuff except itself ☺

THANKS FOR ATTENTION

and

DON'T ASK ANY QUESTIONS