# **ENSITE X EP System** Experience From Technician Perspective Of View

*Jan Tesarik*

**Arrhythmology Dep., Cardiac Centre of Hospital Ceske Budejovice**

**Czech Republic**

NEMOCNICE ČESKÉ BUDĚJOVICE, a.s.

2 December 2022

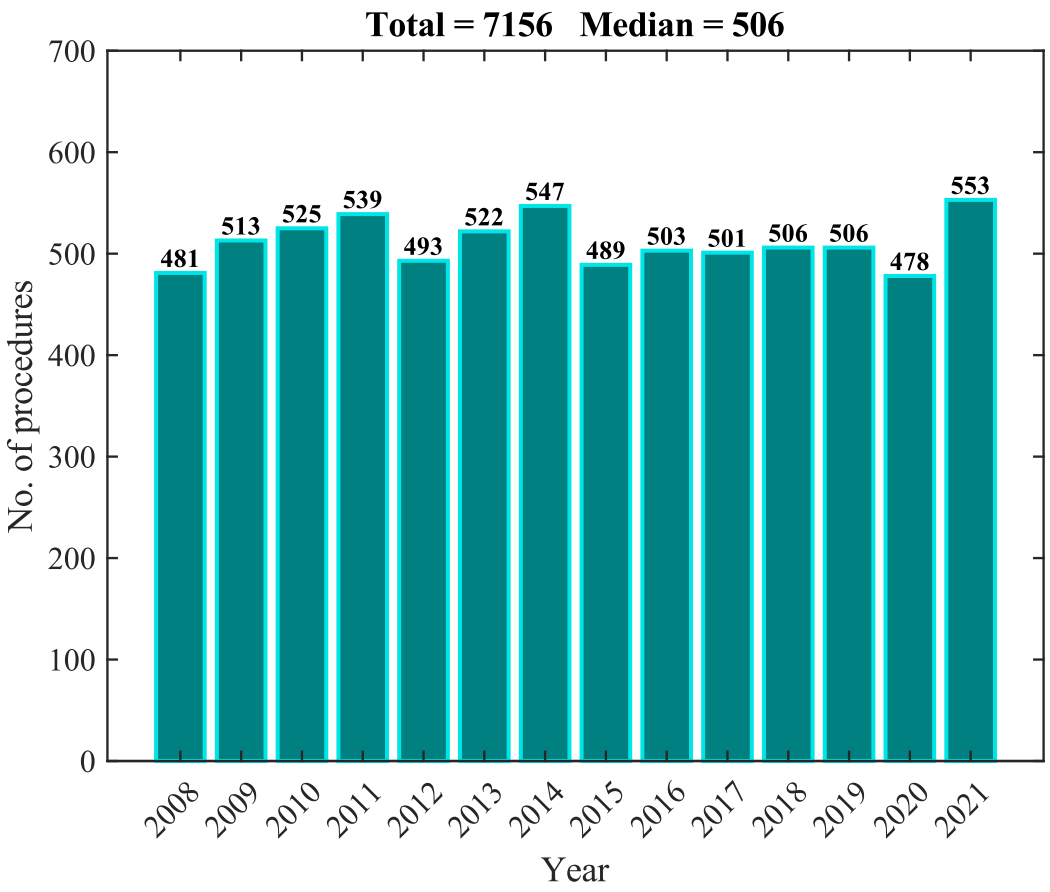
Bratislava, Slovakia

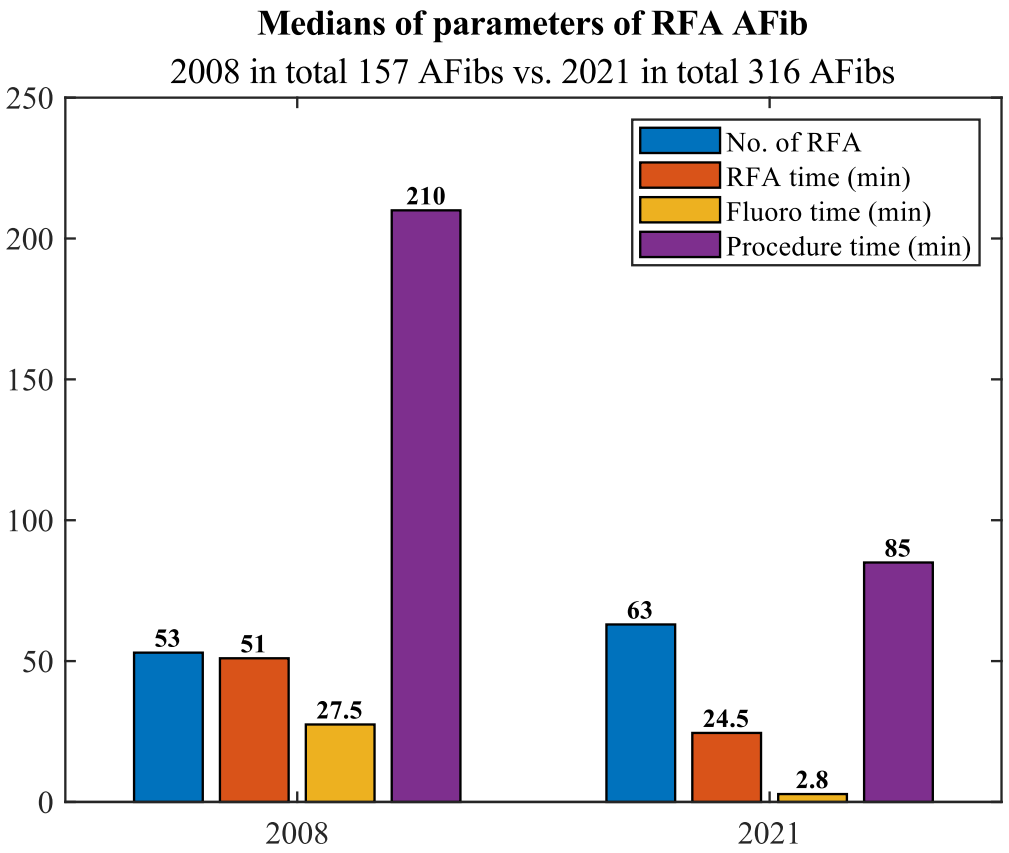
Abbott

# History of our EP Lab

| 2008 | 2010 | 8/2010 | 10/2010 | 3/2012 | 2017 | 2019 | 2022 | 2030 |
|---|---|---|---|---|---|---|---|---|
| First RFA's CARTO XP | CARTO 3 | Ensite Velocity Hansen | Pentaray | SmartTouch | Ensite Precision SW | Ensite Precision HW | **Ensite X** | **?** |

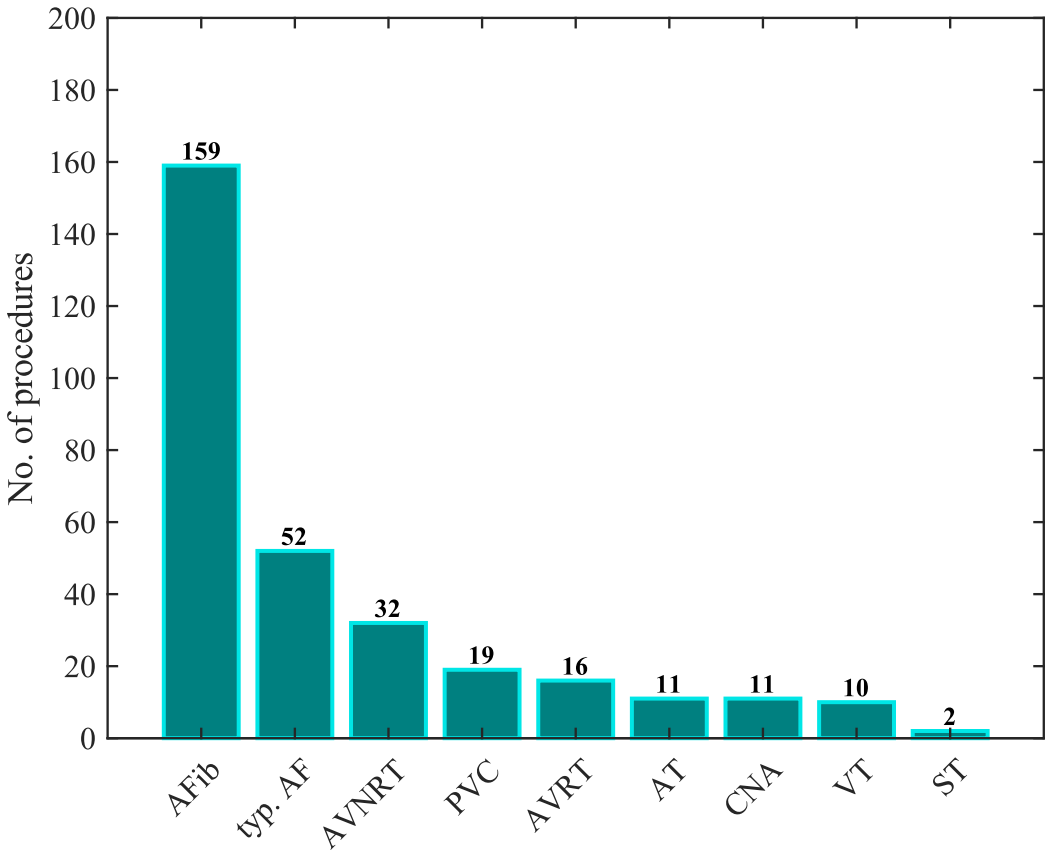
# History of our EP Lab



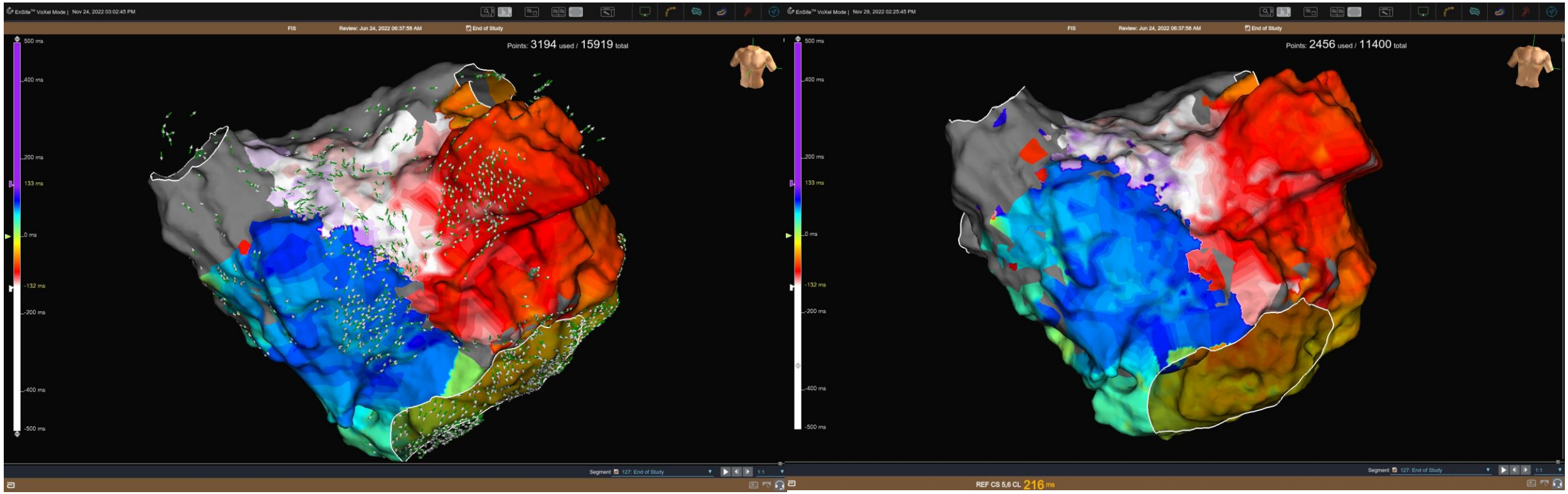
# ENSITE X EP SYSTEM - Procedures

- 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)



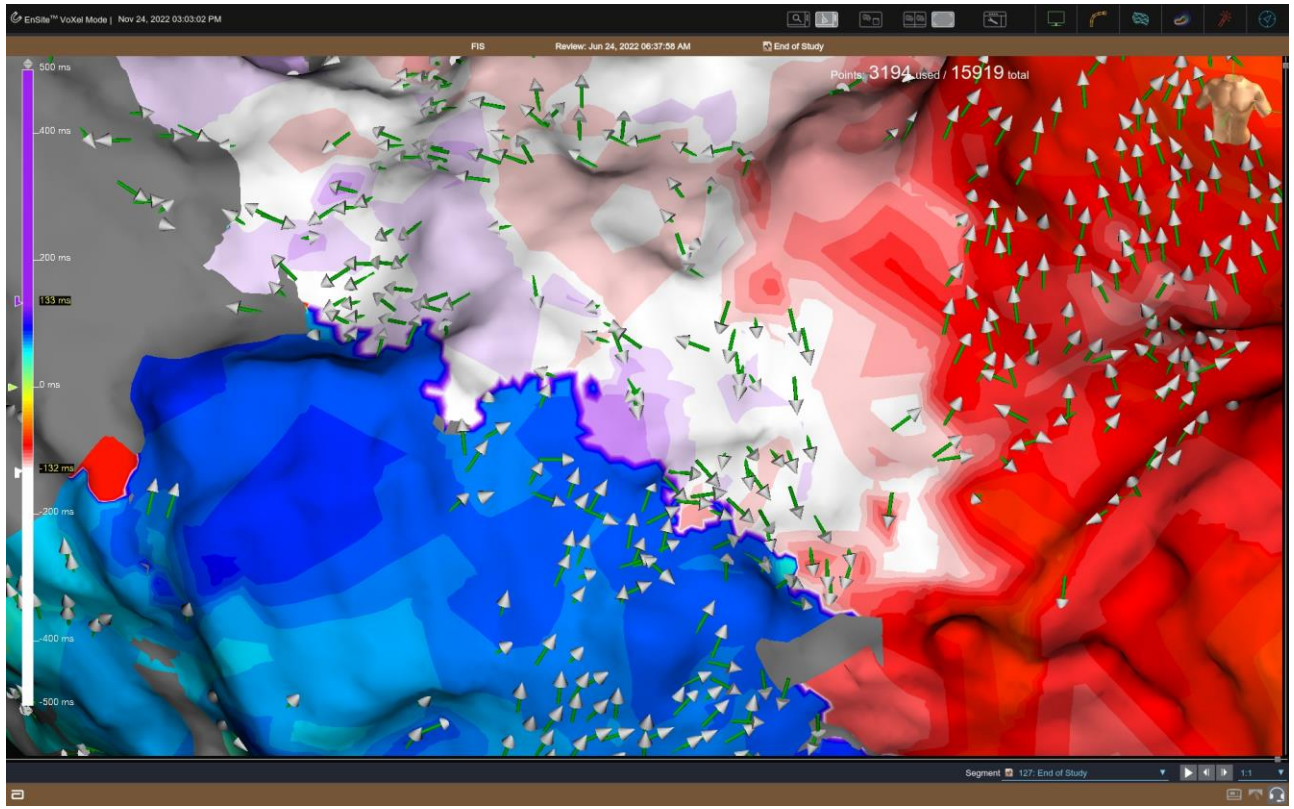
# ENSITE X EP SYSTEM - Experience

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



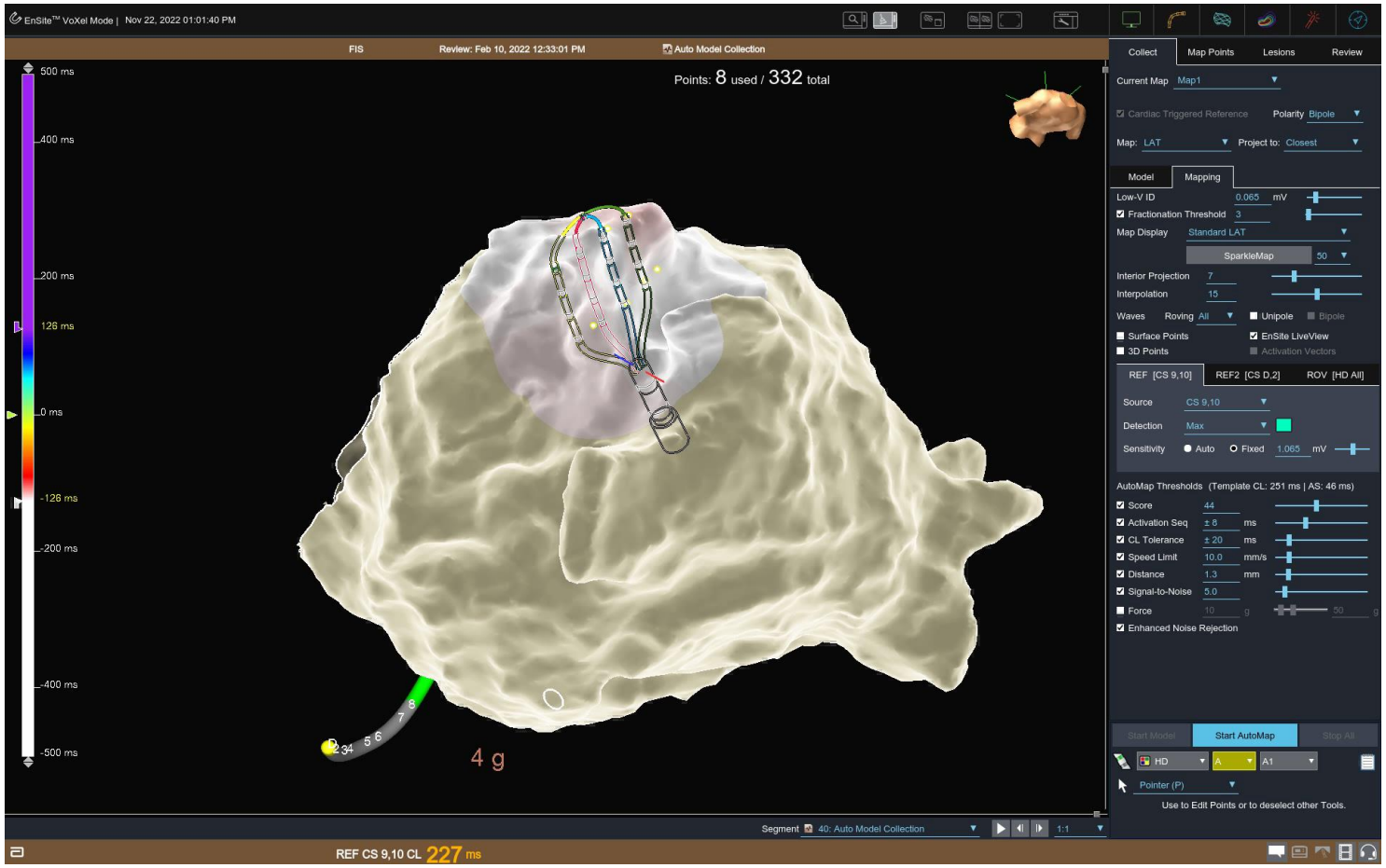
# ENSITE X EP SYSTEM - Experience

- **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)



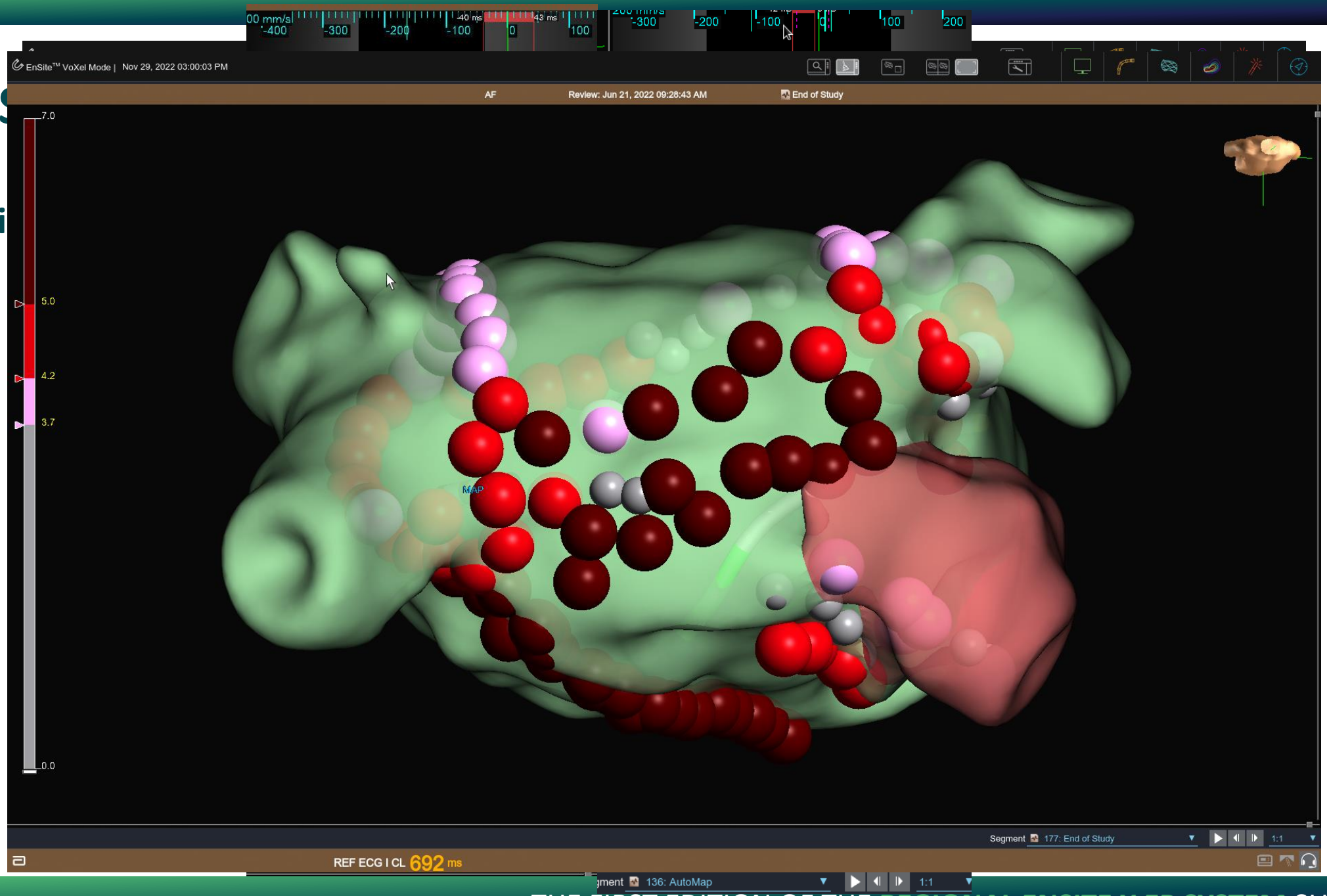
# ENSITE X EP SYSTEM - Experience

- **HD grid & Omnipolar mapping**
  - Ensite **LiveView**
  - PVI reconduction – **HD grid?**
  - Block line **gap** identification



# ENS

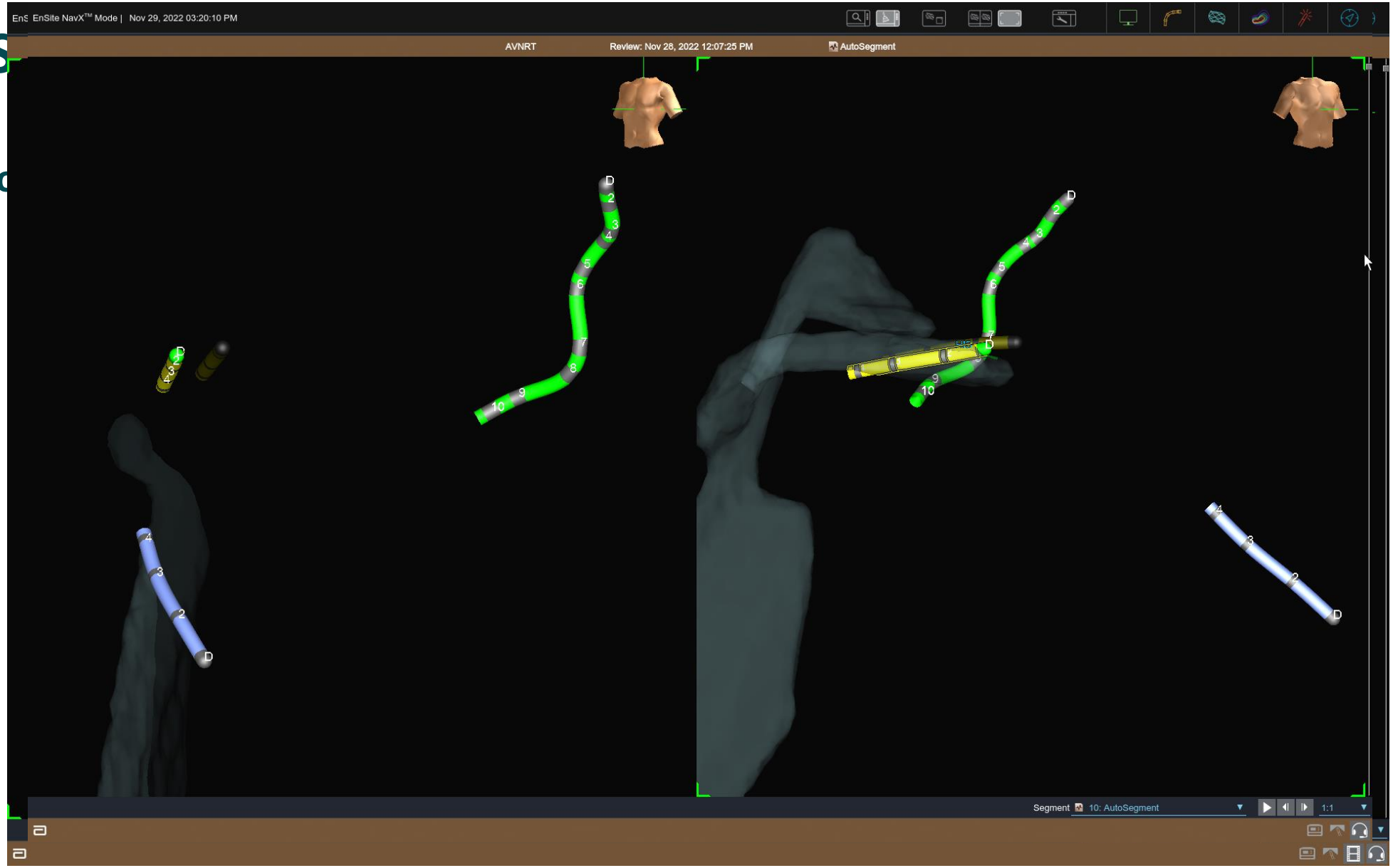
- AFi


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
136: AutoMap

5.0

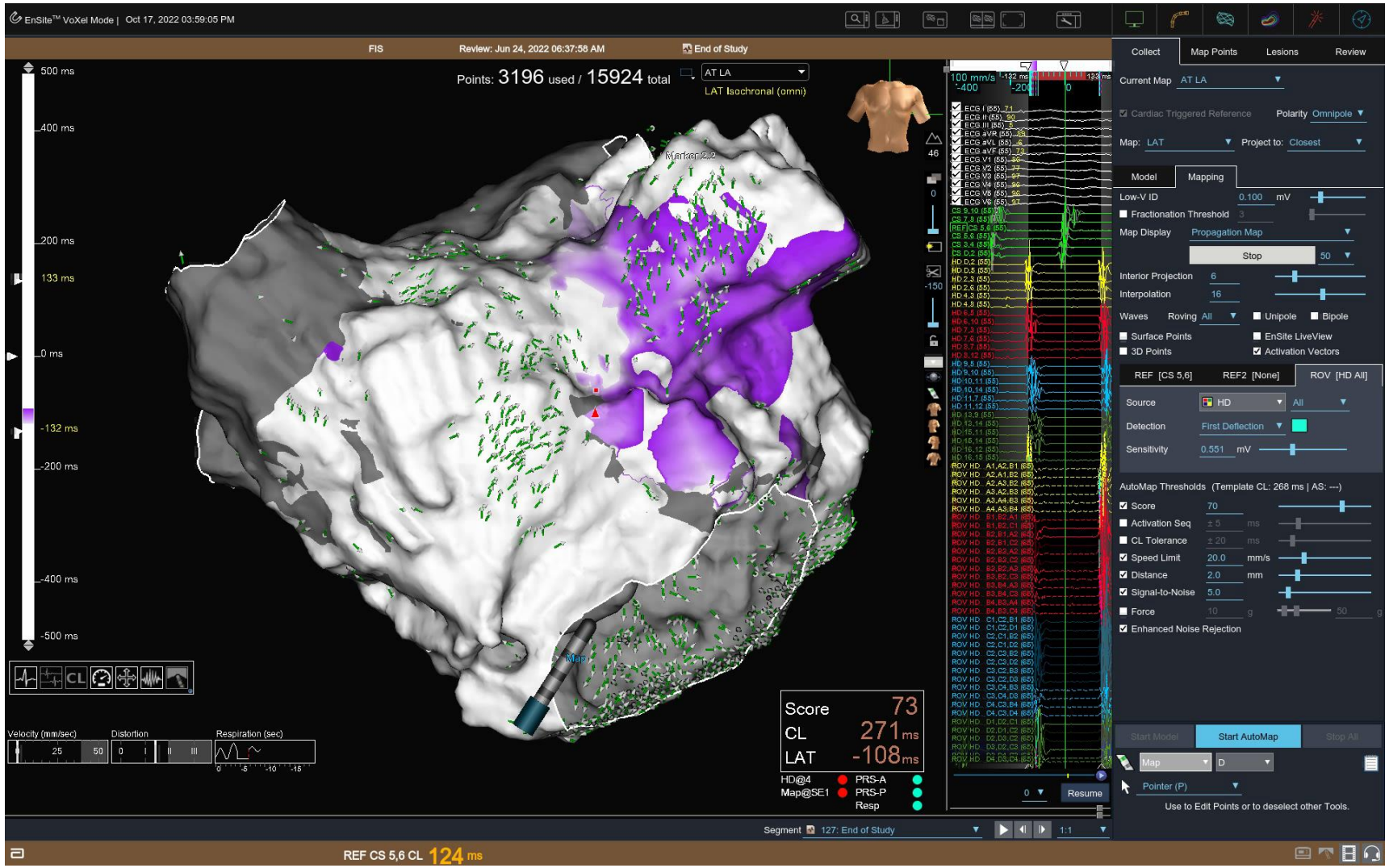
# ENS

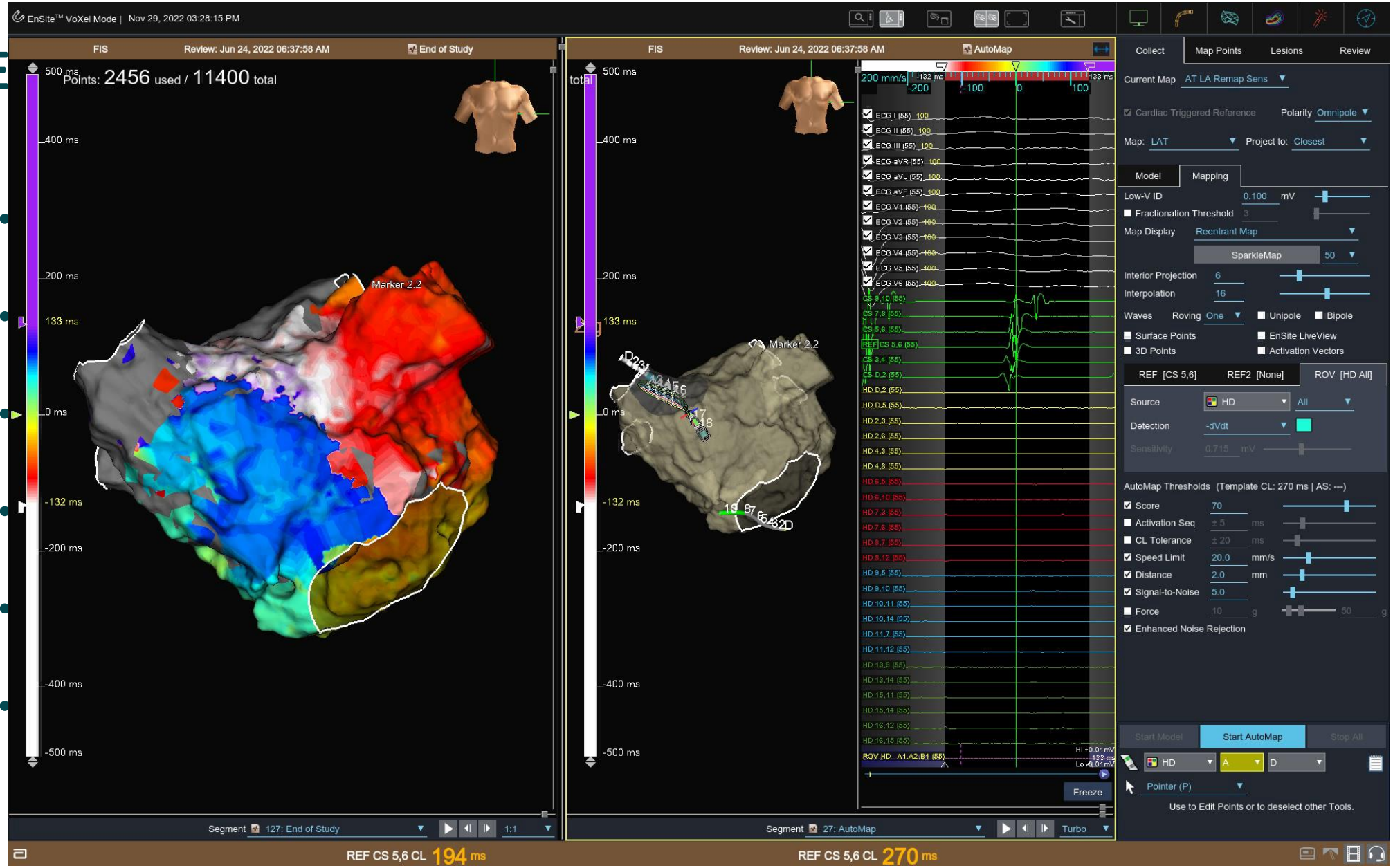
- Zero


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



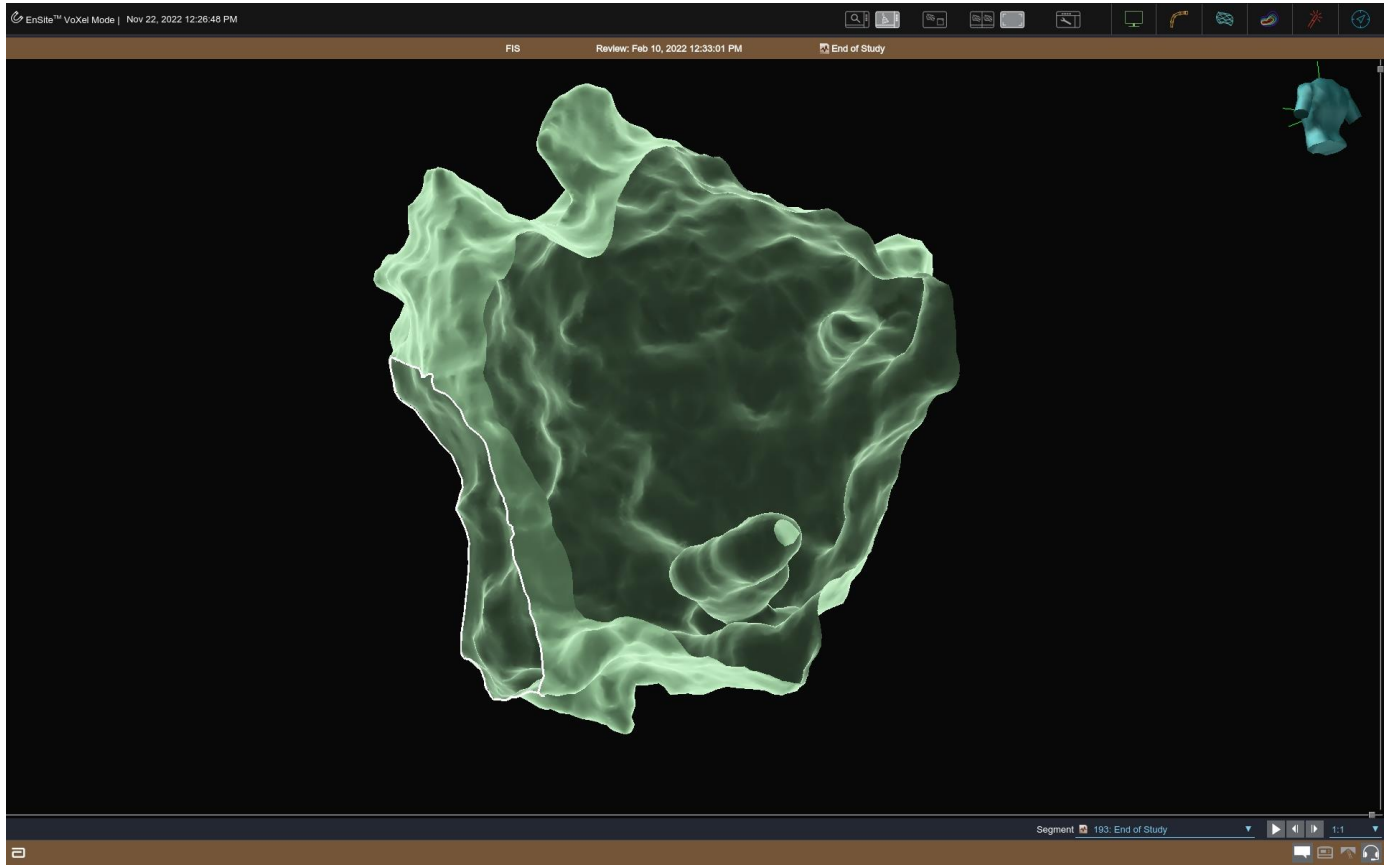

EnSite™ VoXel Mode | Nov 29, 2022 03:28:15 PM
FIS
Review: Jun 24, 2022 06:37:58 AM
End of Study
Points: 2456 used / 11400 total
Marker 2.2
Segment 127: End of Study
REF CS 5,6 CL 194 ms
AutoMap
Segment 27: AutoMap
REF CS 5,6 CL 270 ms
Freeze
Collect
Map Points
Lesions
Review
Current Map AT LA Remap Sens
Cardiac Triggered Reference
Polarity Omnipole
Map: LAT
Project to: Closest
Model
Mapping
Low-V ID 0.100 mV
Fractionation Threshold
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 X EP SYSTEM – We miss/suggest

- Option to resize the **Activation Vectors**
- Keyboard shortcut for **Delete Points**
- **Respiration gating** – stability during procedure, only in GA is respiration compensation stable **(v. 2?)**
- Option to work during **collecting respiration data** (12 s)
- Option to assign **Automarks** to Model, e. g. **AFib** in LA, **CTI** in RA

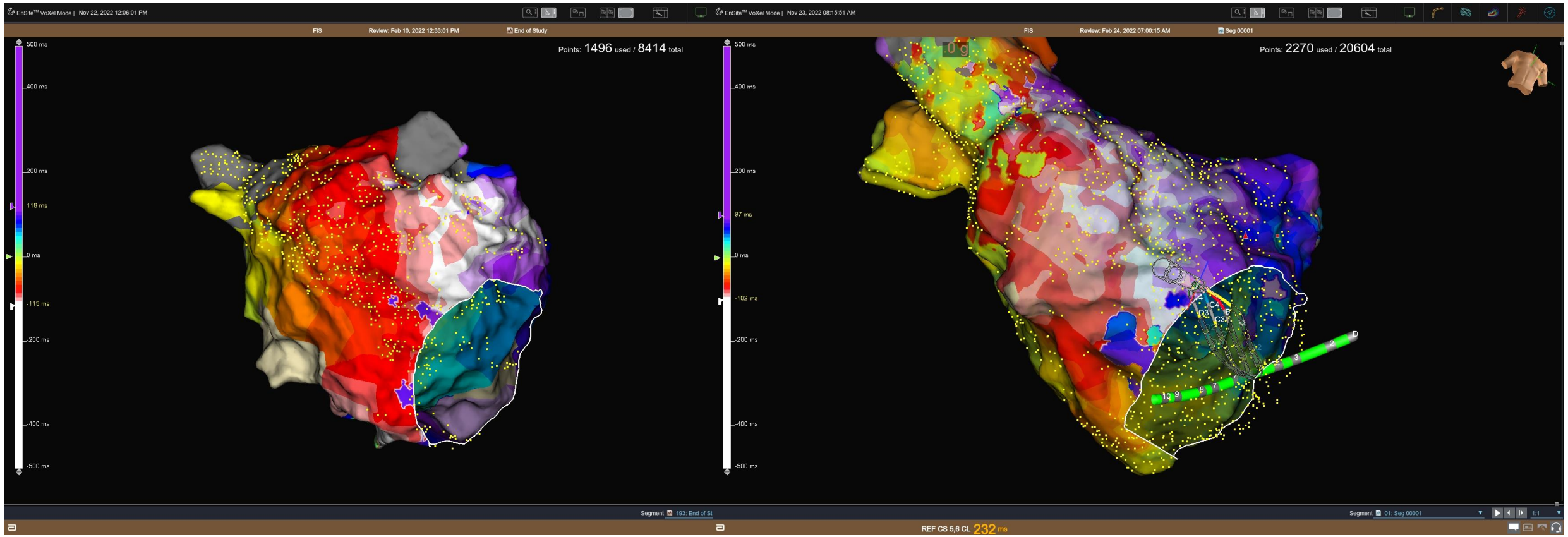
# ENSITE X EP SYSTEM – We miss/suggest

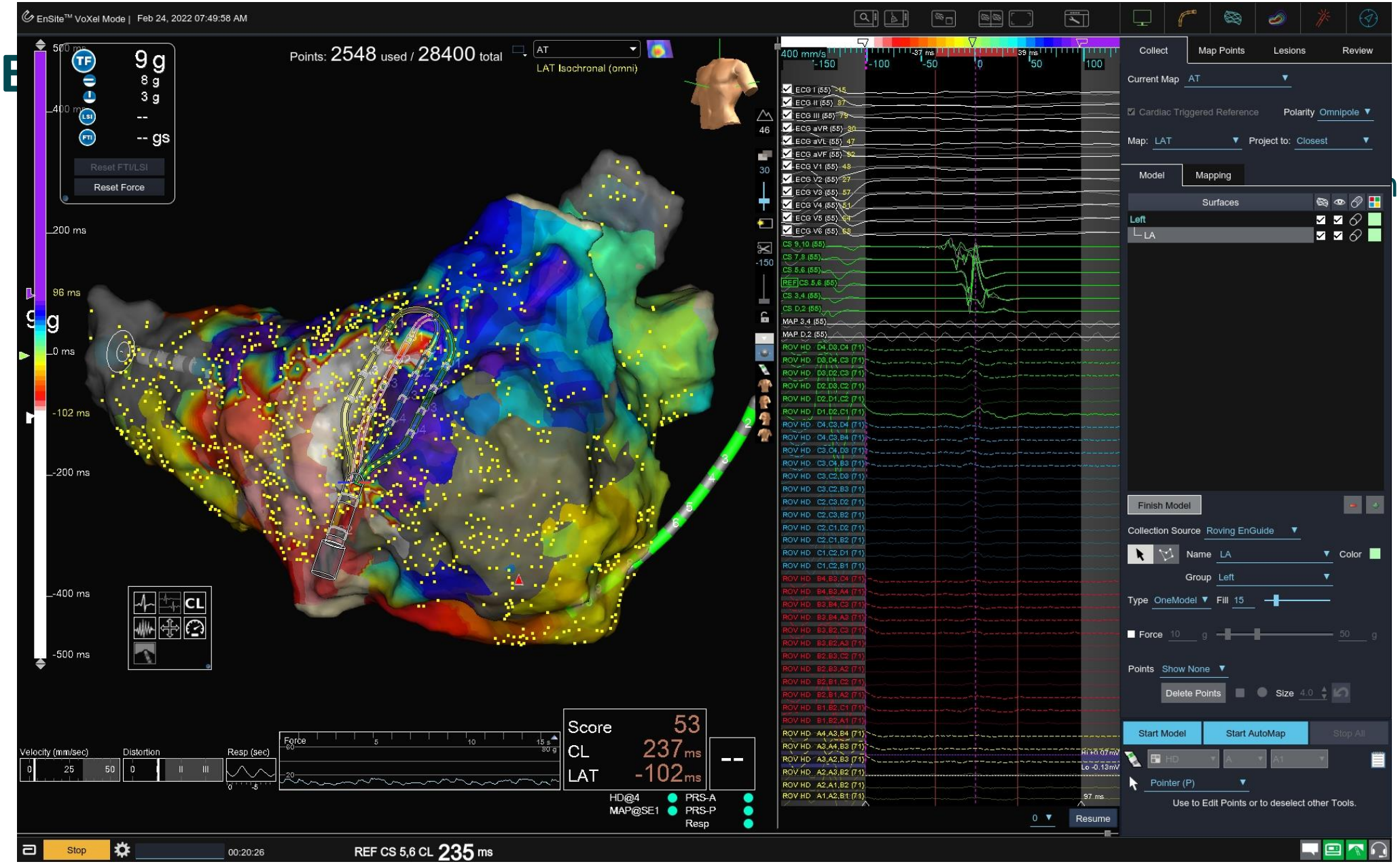
- Algorithm for elimiantion of inner geometry structures

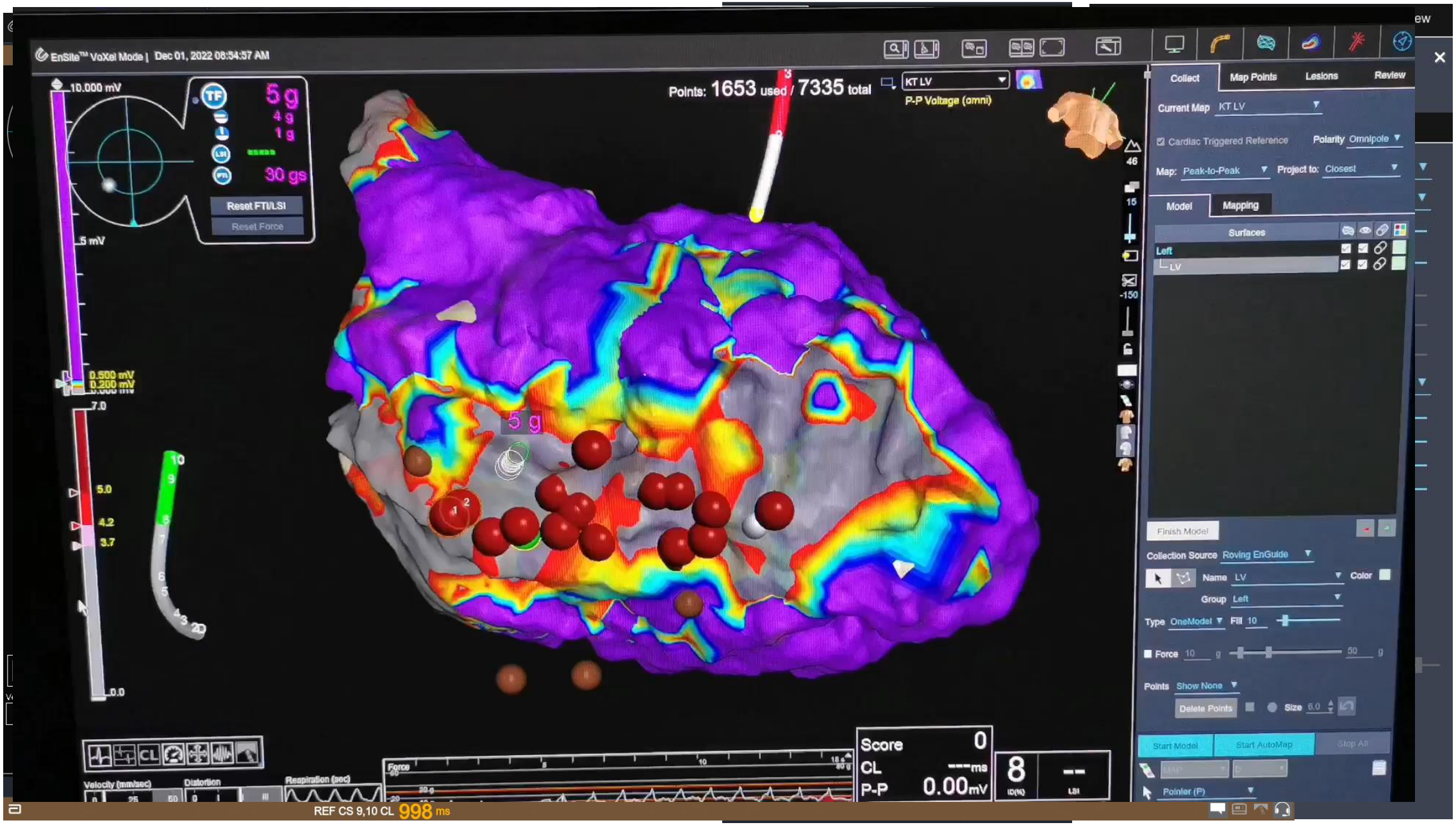


# ENSITE X EP SYSTEM – We miss/suggest

- Algorithm for elimination of so-called **lonely islands** of LAT points

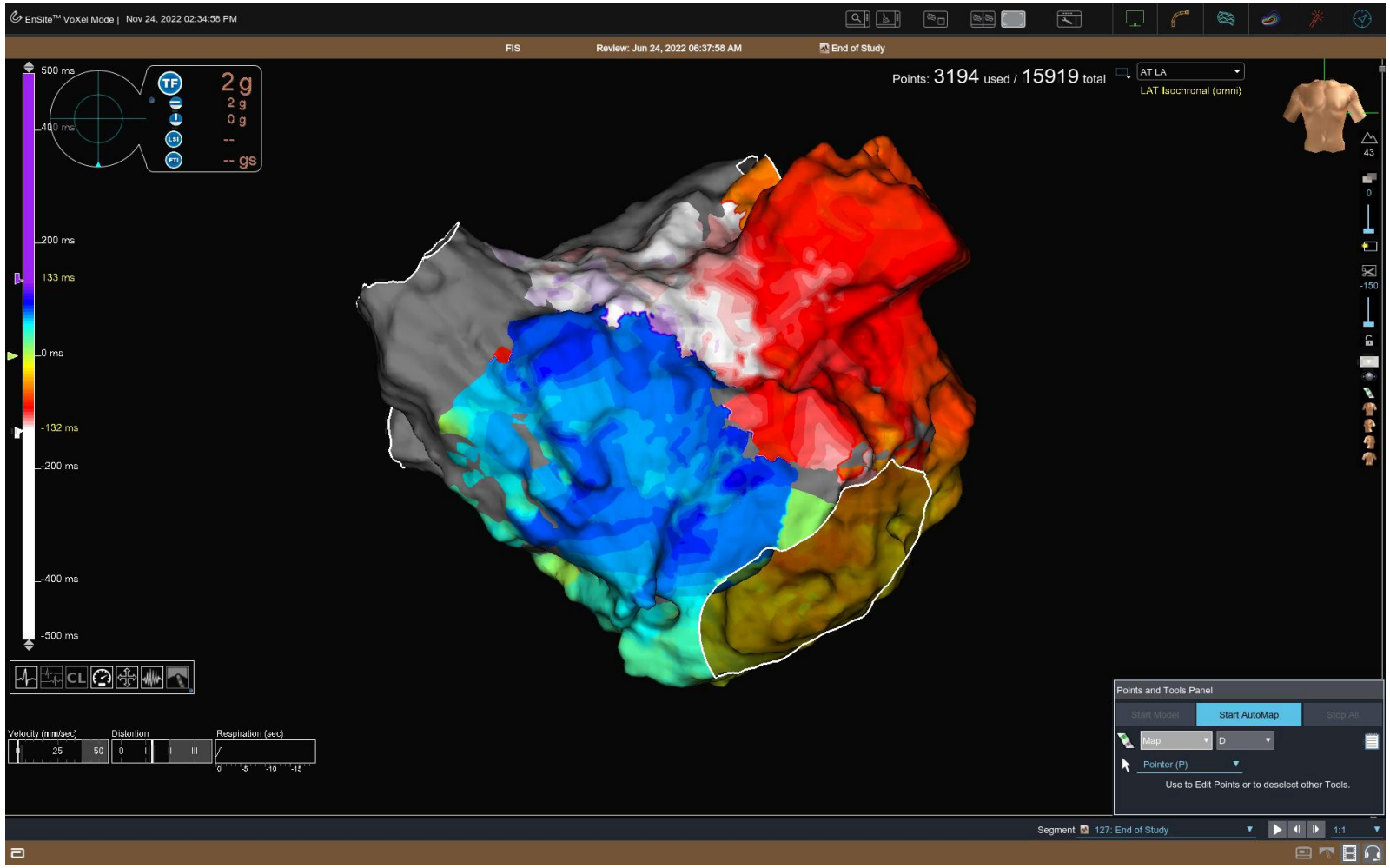



EnSite™ VoXel Mode | Feb 24, 2022 07:49:58 AM
Points: 2548 used / 28400 total
AT
LAT Isochronal (omni)
9 g
8 g
3 g
-- gs
Reset FTI/LSI
Reset Force
200 ms
96 ms
0 ms
-102 ms
-200 ms
-400 ms
-500 ms
Velocity (mm/sec)
Distortion
Resp (sec)
Force
Score 53
CL 237 ms
LAT -102 ms
HD@4
MAP@SE1
PRS-A
PRS-P
Resp
Stop
00:20:26
REF CS 5,6 CL 235 ms
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
Points Show None
Delete Points
Size
Start Model
Start AutoMap
Stop All
Pointer (P)
Use to Edit Points or to deselect other Tools.
Resume

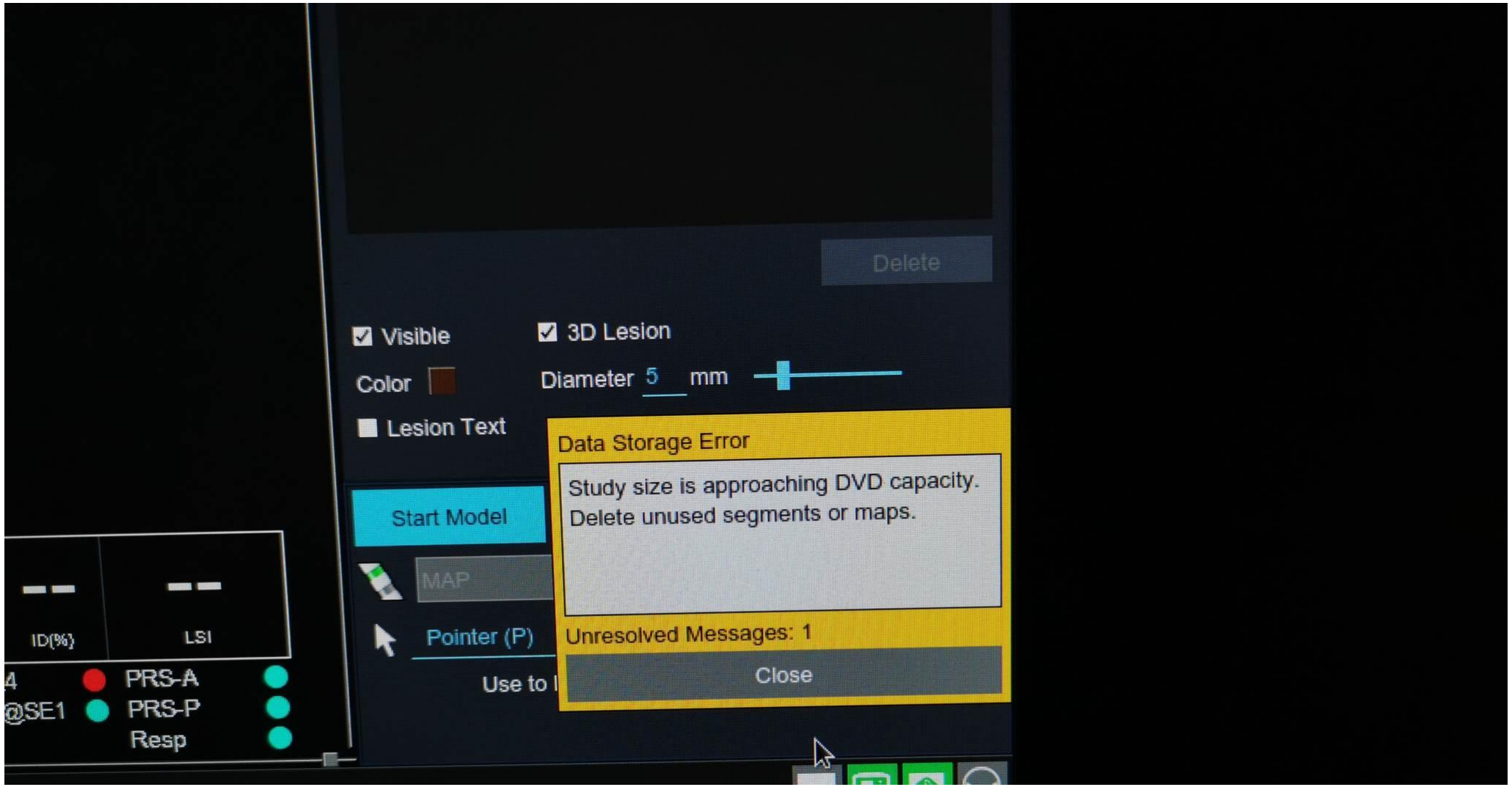

EnSite™ VoXel Mode | Dec 01, 2022 08:54:57 AM
Points: 1653 used / 7335 total
KT LV
P-P Voltage (omni)
10.000 mV
5 g
4 g
1 g
30 gs
Reset FTI/LSI
Reset Force
0.500 mV
0.200 mV
7.0
5.0
4.2
3.7
0.0
Collect
Map Points
Lesions
Review
Current Map KT LV
Cardiac Triggered Reference
Polarity Omnipole
Map: Peak-to-Peak
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)
Score 0
CL ---ms
P-P 0.00mV
8
--
Velocity (mm/sec)
Distortion
Respiration (sec)
Force
REF CS 9,10 CL 998 ms

# ENSITE X EP SYSTEM – Tips & Traps

- **Cropping** the geometry



# 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** | |
|---|---|---|---|---|
| | parox. AFib | perzist. AFib | parox. AFib | perzist. AFib |
| **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 | 2961* | 2390* |
| **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
  - Option to educate by **Turbo mapping** (different algorithms for anotation, different strategy for setting of „first point“ etc ……)

THANKS FOR
ATTENTION
and
DON'T ASK
ANY QUESTIONS
KeepCalmAndPosters.com