

JAK ŠEL ČAS S EP SYSTÉMEM ENSITE X™ - zkušenosti, tipy a vize

Jan Tesařík

Kardiocentrum Nemocnice České Budějovice, a.s.

XX. České a slovenské sympozium o arytmiích a kardiostimulaci

6. 11. 2023

Ostrava



DEKLARACE POTENCIONÁLNÍHO KONFLIKTU ZÁJMŮ

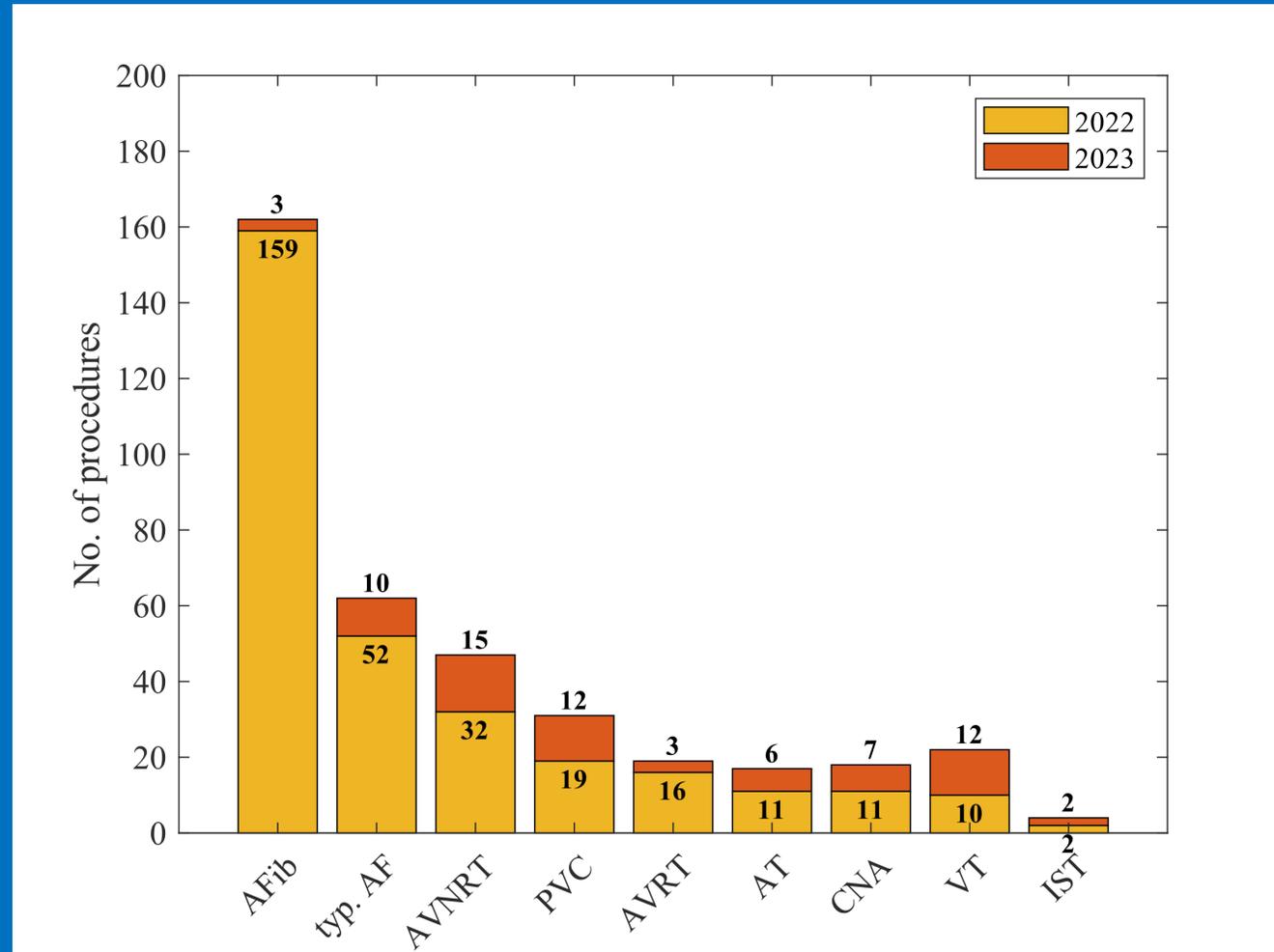
| | Nemám konflikt zájmů | Mám konflikt zájmů | Specifikace konfliktu (vyjmenujte subjekty, firmy či instituce, se kterými Vaše spolupráce může vést ke konfliktu zájmů) |
|--|----------------------|--------------------|--|
| Zaměstnanecký poměr | X | | |
| Vlastník / akcionář | X | | |
| Konzultant | X | | |
| Přednášková činnost | | X | Abbott |
| Člen poradních sborů (advisory boards) | X | | |
| Podpora výzkumu / granty | X | | |
| Jiné honoráře (např. za klinické studie či registry) | X | | |

EP LAB - Historie



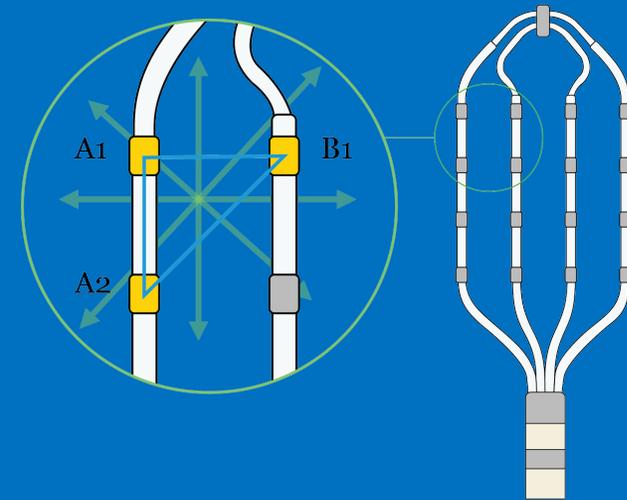
ENSITE X - Výkony

- 1. výkon 22. 1. 2022 - KES
- Ke konci srpna 2023 celkem 401 výkonů
 - **264 Voxel mode**
(AFib, KNA, AT, KES, KT)
 - **137 NavX mode**
(AVNRT, AVRT, typ. FLS)

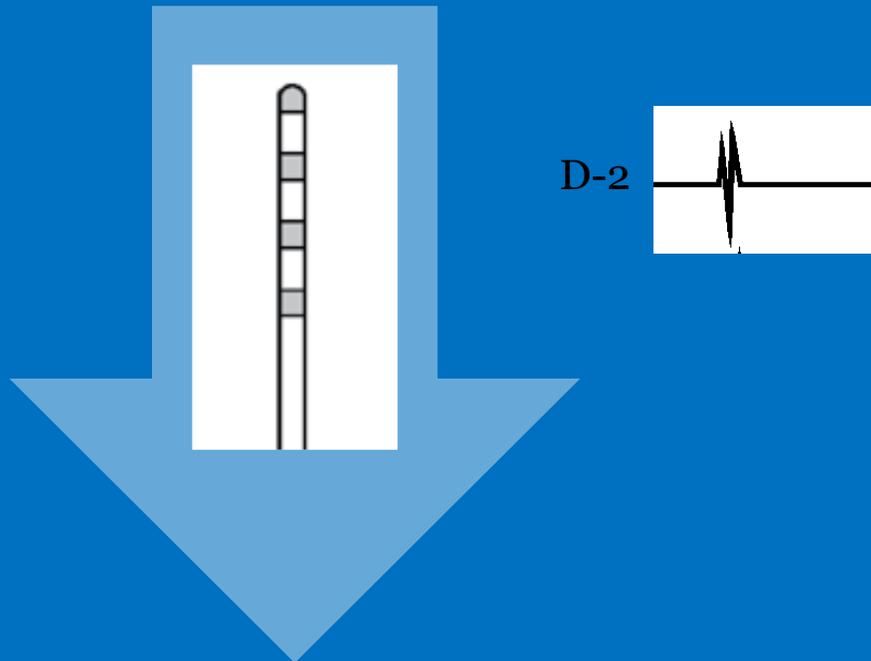


ENSITE X - Zkušenosti

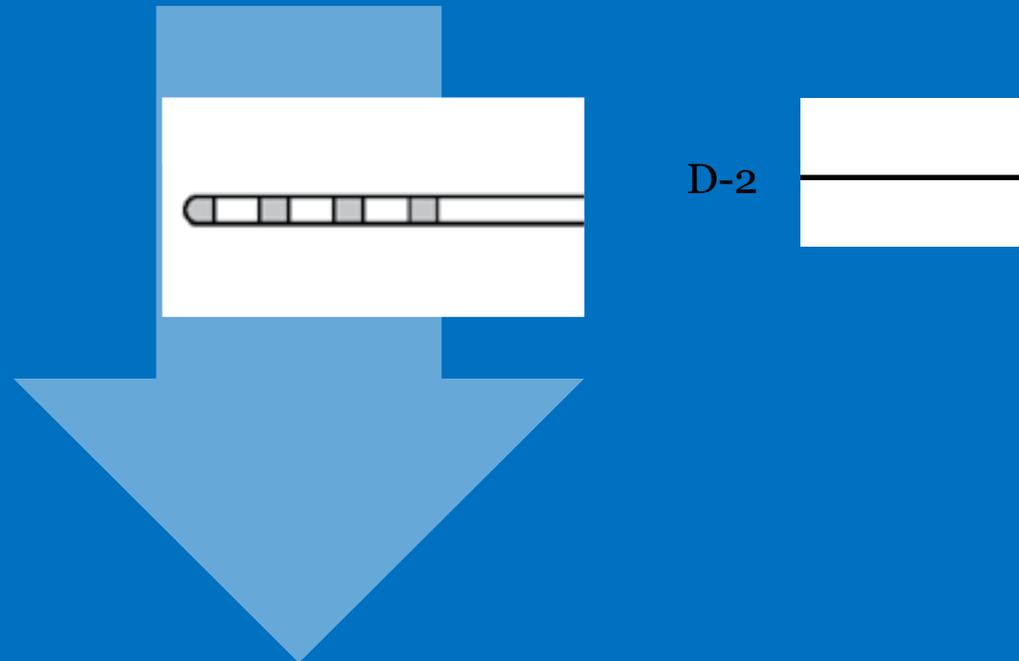
- Advisor™ HD grid + omnipolar mapping
- Bipolar blindness (orientace, směr, rychlost)



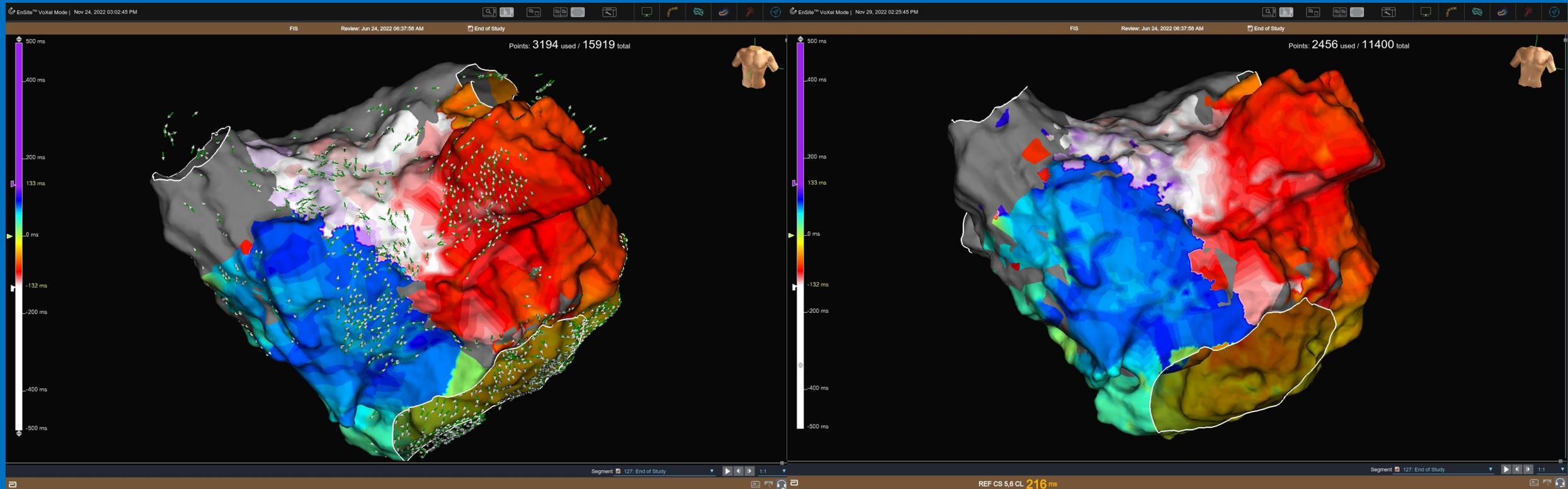
**ACTIVATION WAVEFRONT PARALLEL
TO THE ELECTRODE PAIR**



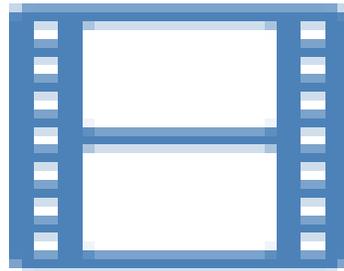
**ACTIVATION WAVEFRONT PERPENDICULAR
TO THE ELECTRODE PAIR**



ENSITE X - Zkušenosti

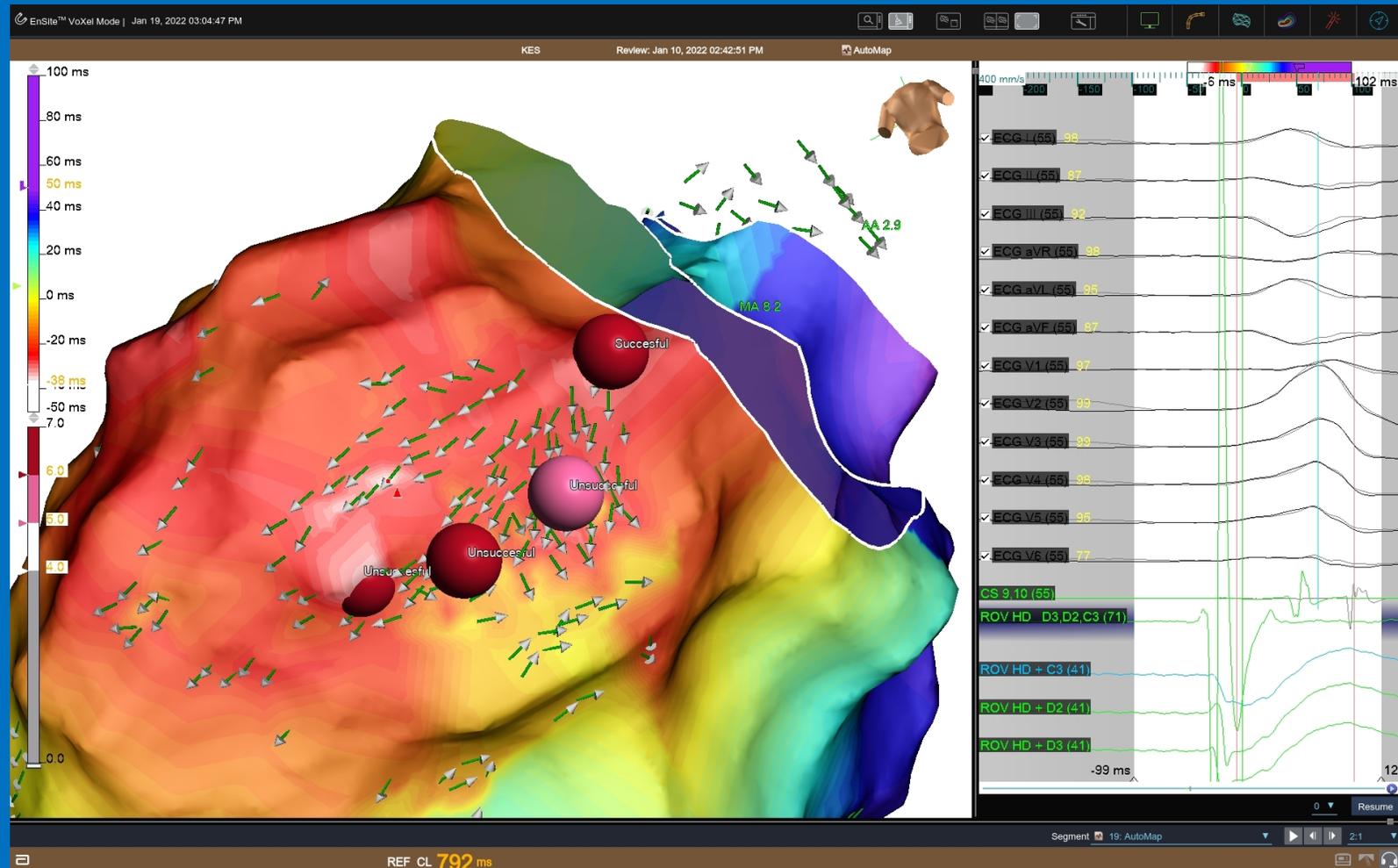


ENSITE X - Zkušenosti



ENSITE X - Zkušenosti

- Activation vectors
- OT certainty > 0,4
- Možnost měnit velikost ?



ENSITE X - Zkušnosti

- Algoritmy **First** a **Last** deflection
- **Sensitivity** threshold !!

The screenshot displays the ENSITE X software interface, specifically the Mapping tab. The interface is dark-themed and contains several control elements:

- Model** and **Mapping** tabs are visible at the top.
- Low-V ID**: Set to 0.065 mV with a slider.
- Fractionation Threshold**: Set to 3 with a slider.
- Map Display**: A dropdown menu showing "Reentrant Map" and "SparkleMap" (selected) with a value of 50.
- Interior Projection**: Set to 7 with a slider.
- Interpolation**: Set to 15 with a slider.
- Waves**: A dropdown menu set to "All".
- Unipole** and **Bipole**: Radio buttons, with "Unipole" selected.
- Surface Points** and **3D Points**: Checkboxes, both are checked.
- EnSite LiveView** and **Activation Vectors**: Checkboxes, both are unchecked.
- REF [CS 9,10]**, **REF2 [CS D,2]**, and **ROV [All All]**: Labels for reference and roving points.
- Source**: A dropdown menu set to "All".
- Detection**: A dropdown menu set to "First Deflection" with a yellow square icon.
- Sensitivity**: Set to 0.300 mV with a slider.

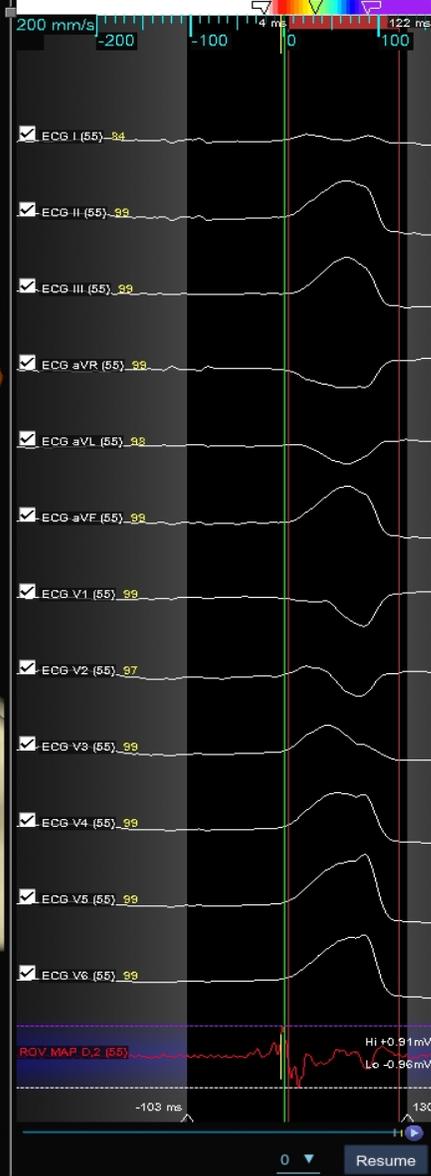
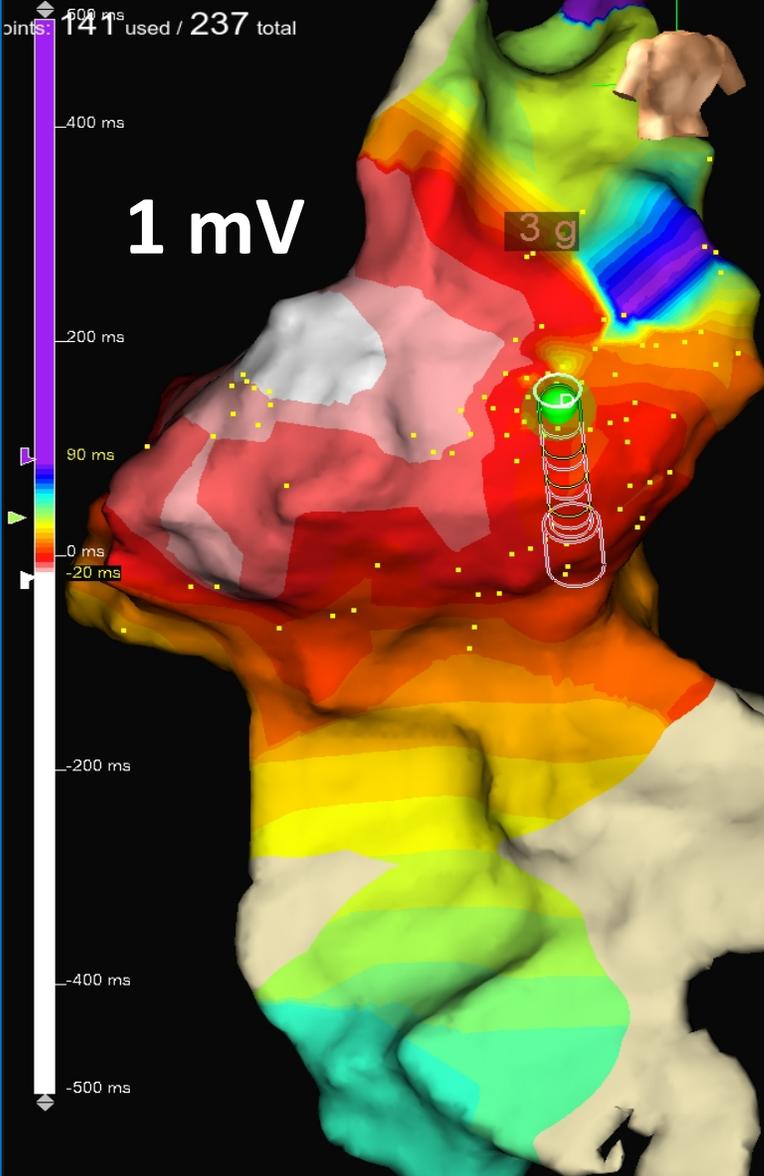
KES

Review: Dec 05, 2022 12:00:28 PM

AutoMap

Points: 141 used / 237 total

1 mV



Segment 21: AutoMap

REF CL 358 ms

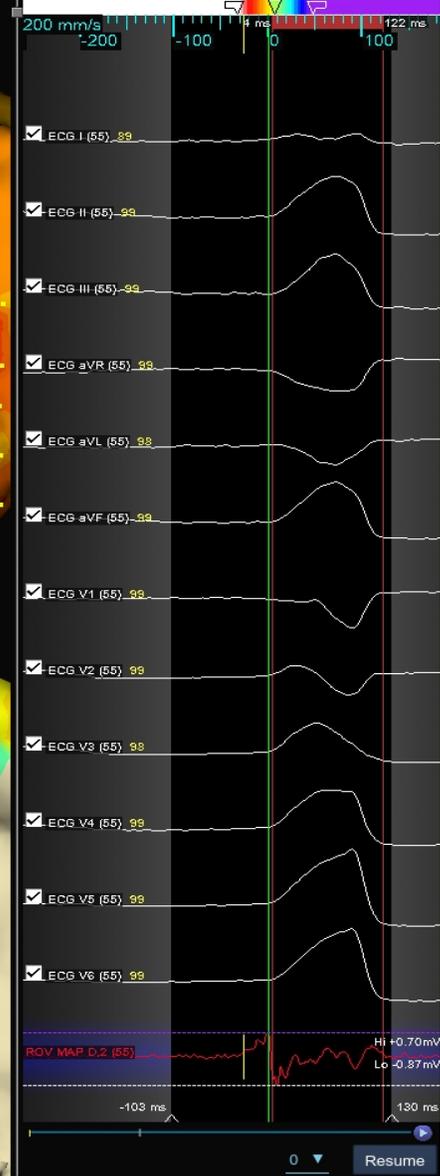
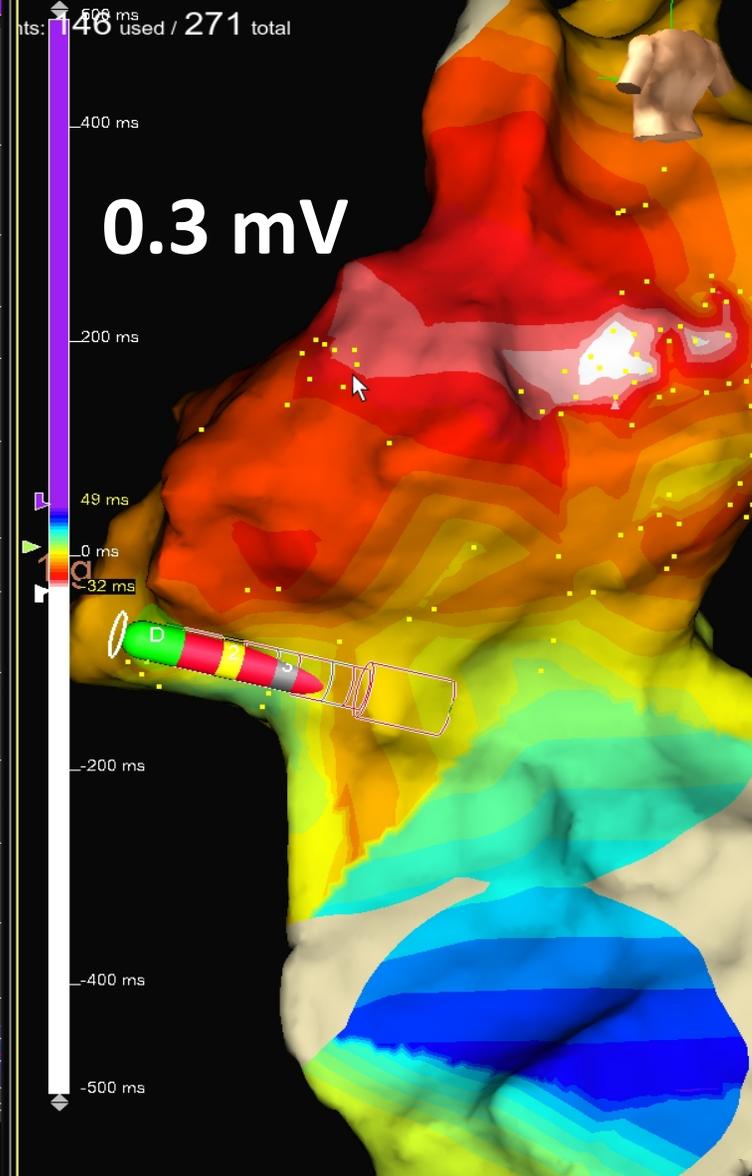
KES

Review: Dec 05, 2022 12:00:28 PM

AutoMap

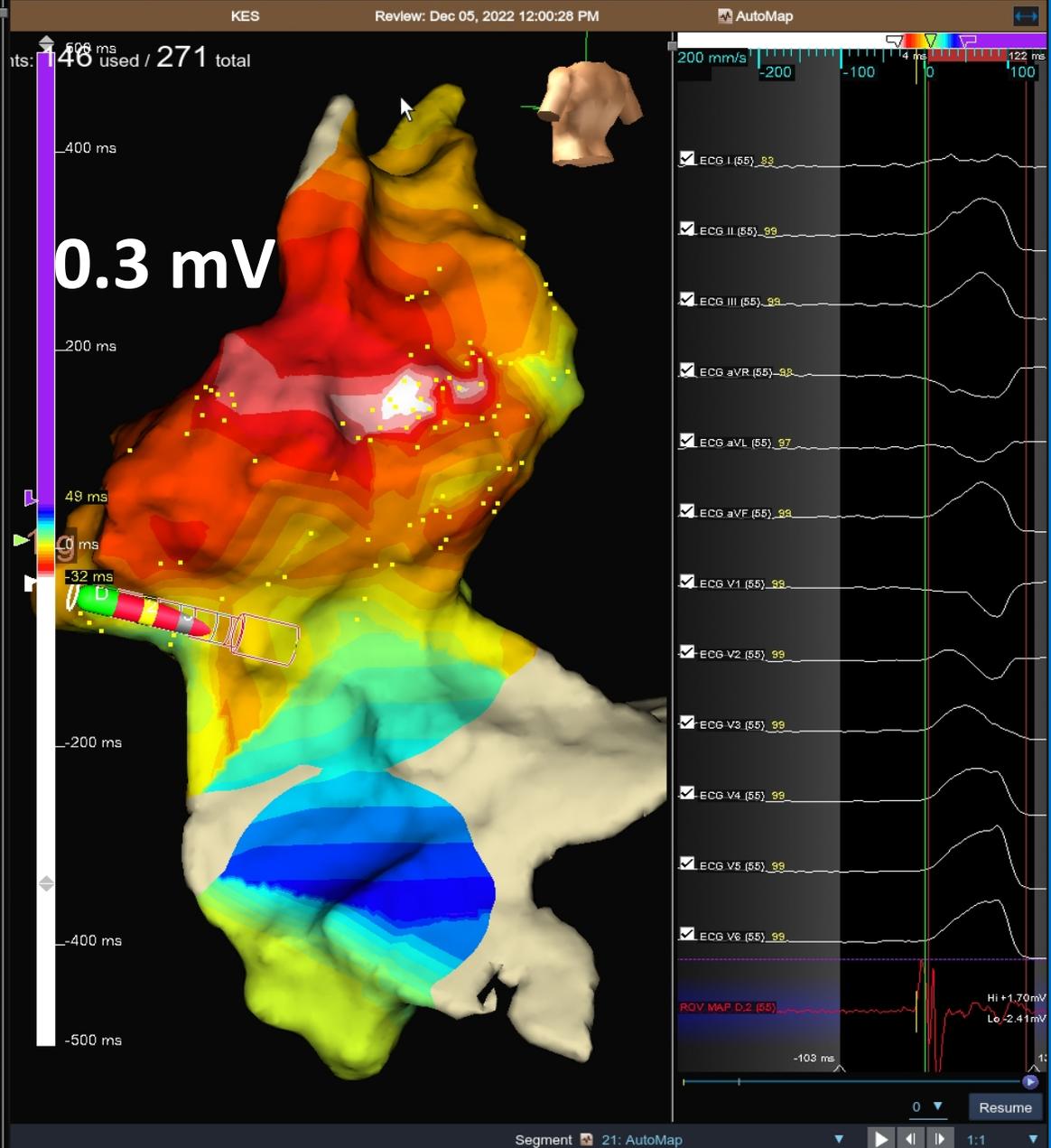
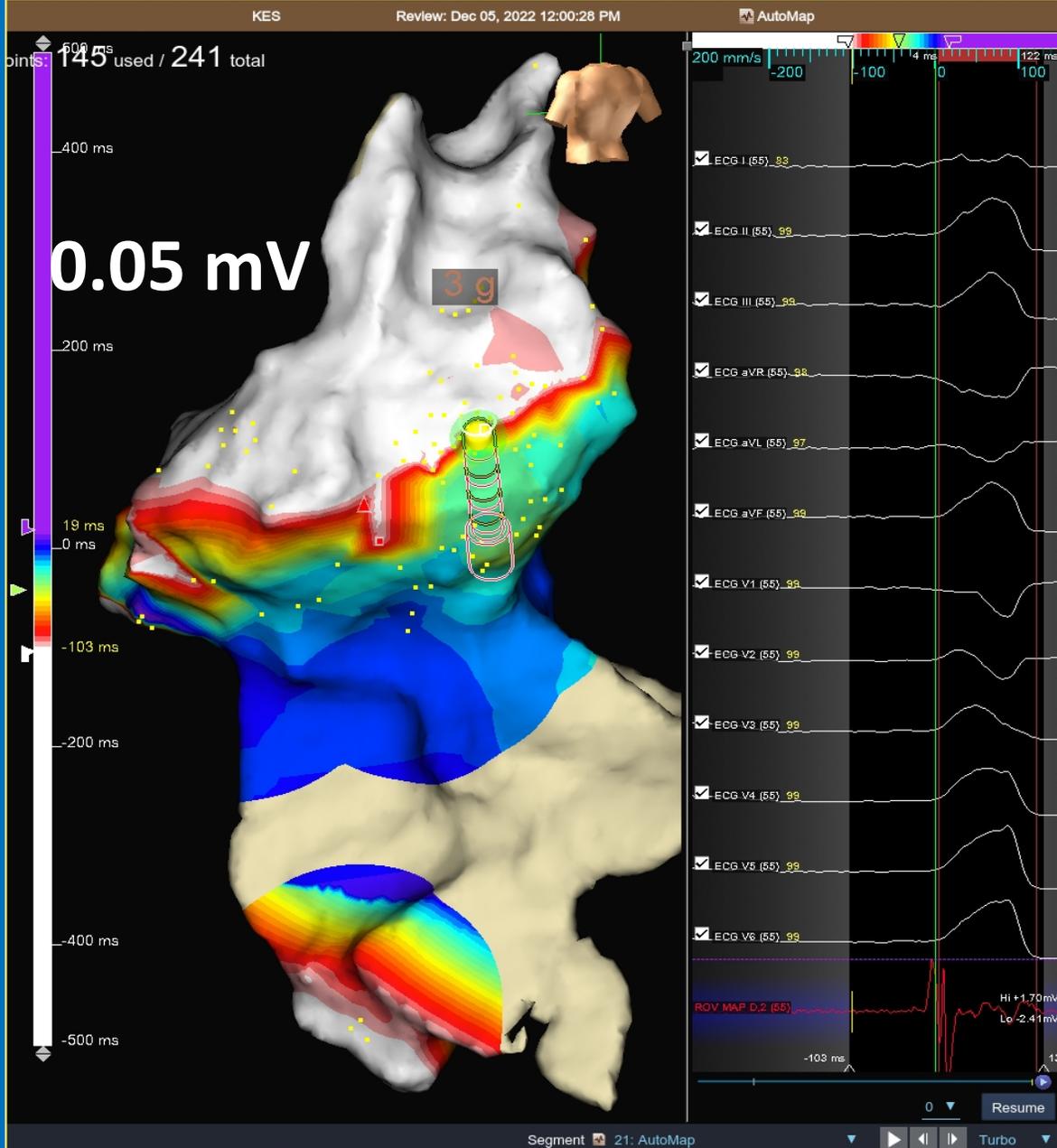
Points: 146 used / 271 total

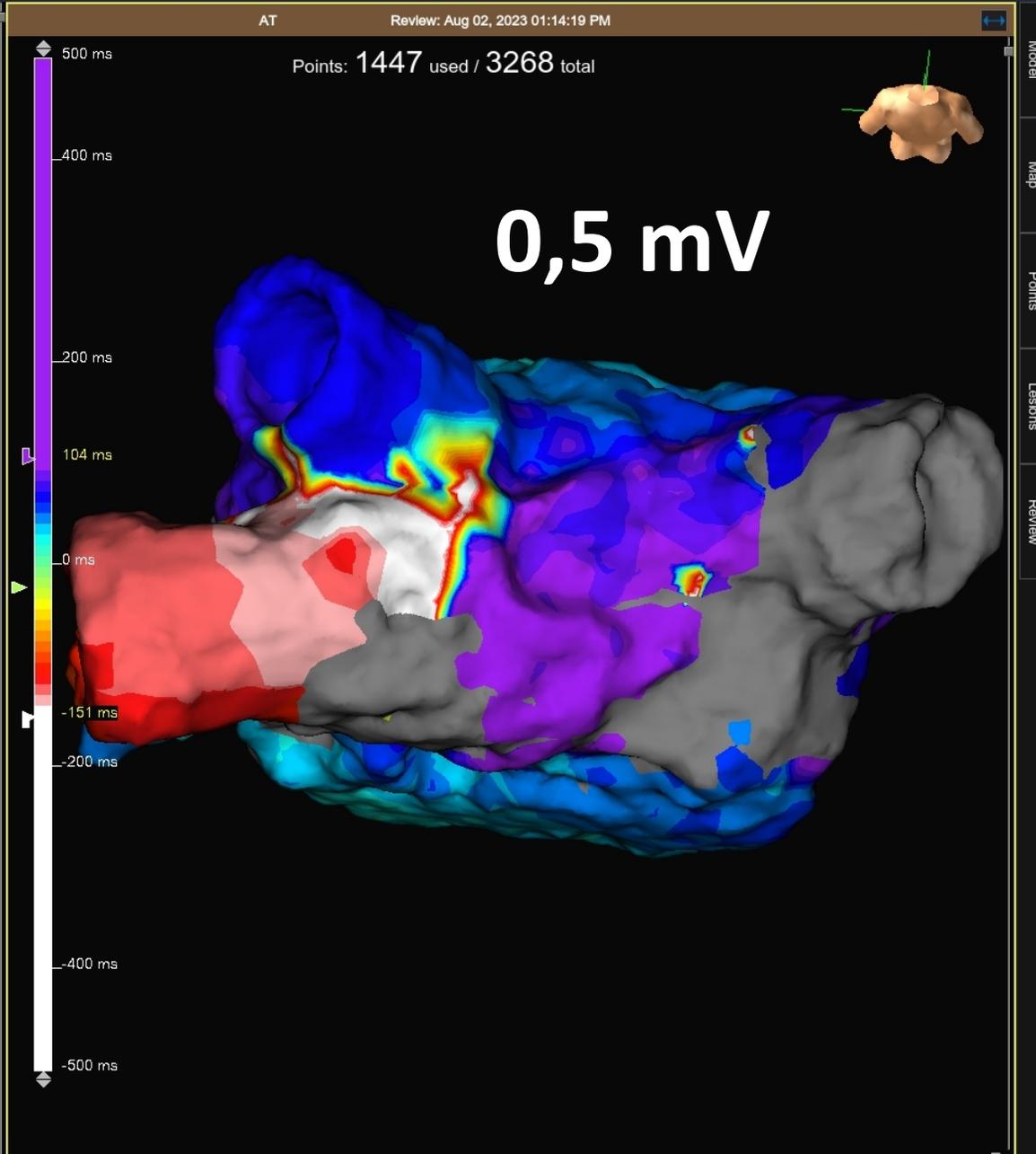
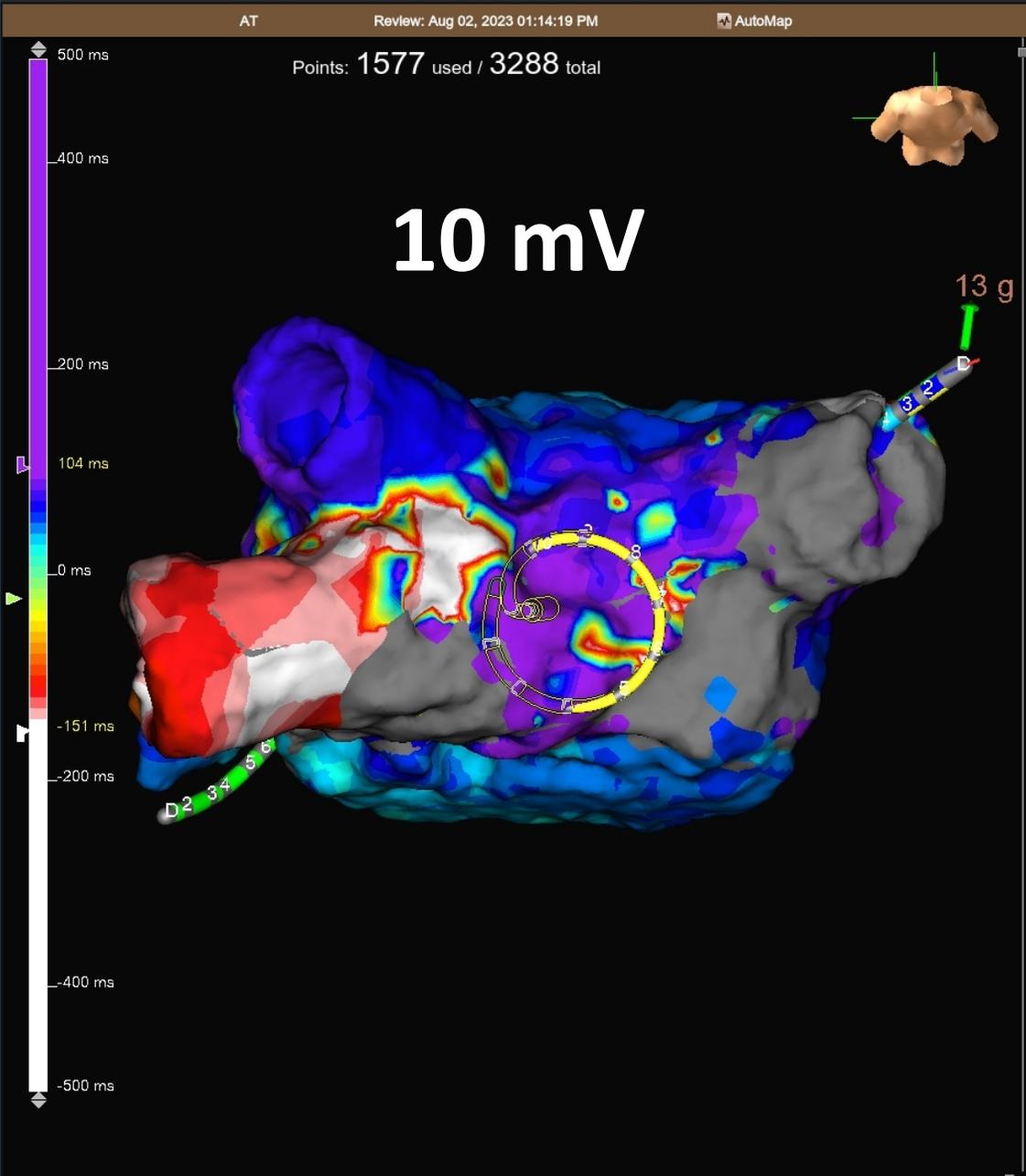
0.3 mV



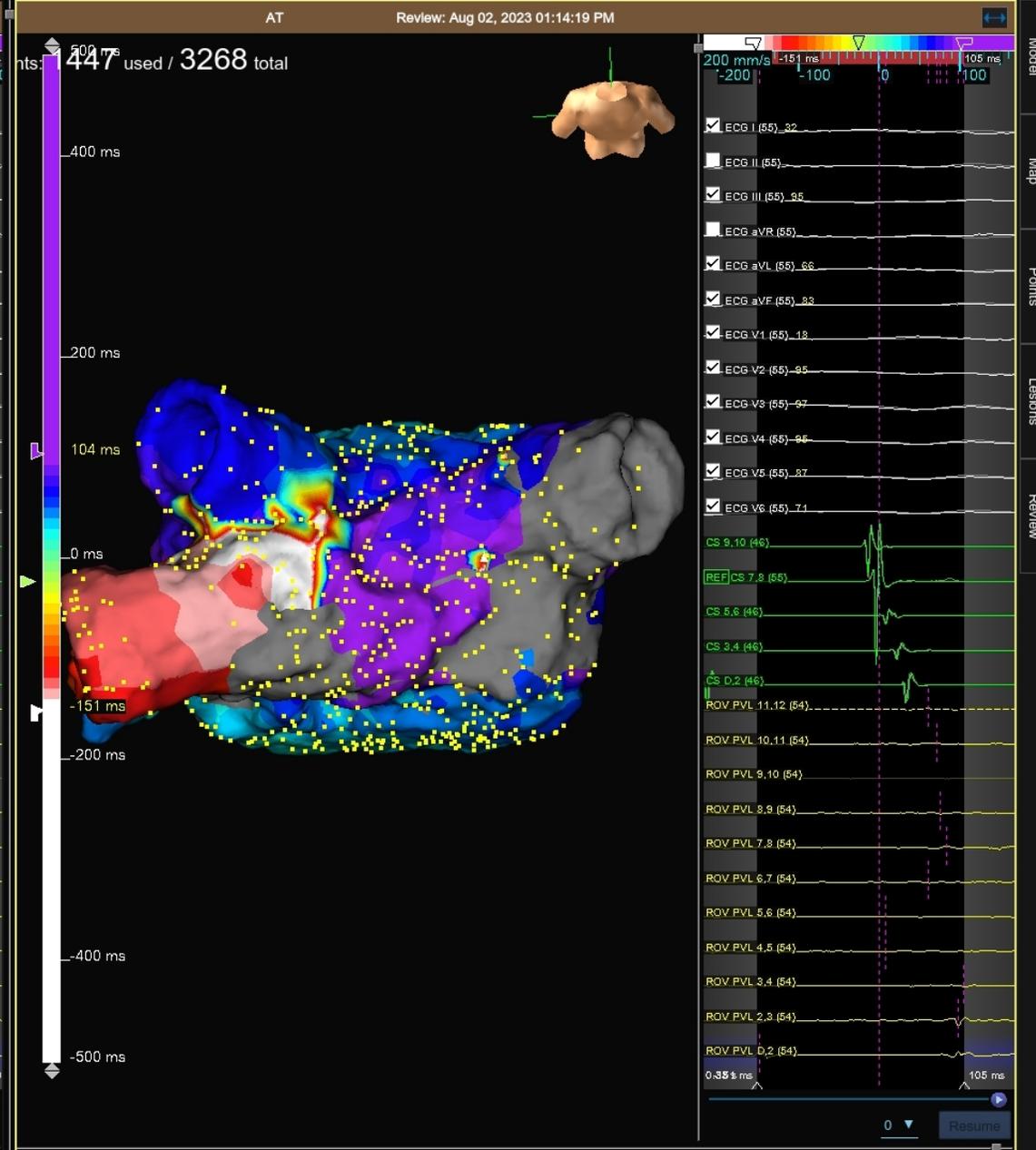
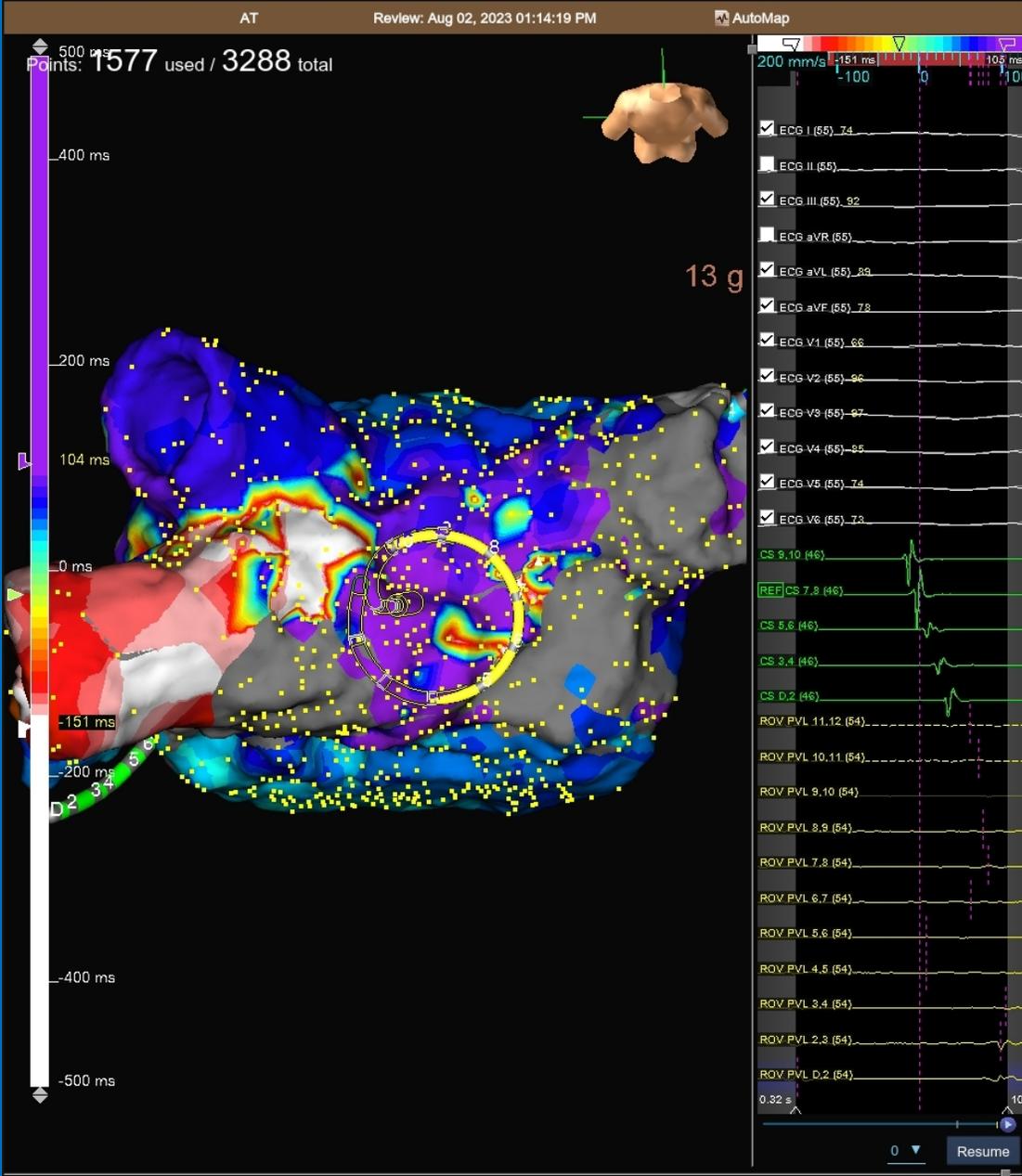
Segment 21: AutoMap

REF CL 393 ms





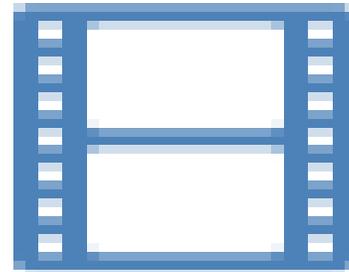
Model
Map
Points
Lesions
Review



Model
Map
Points
Lesions
Review

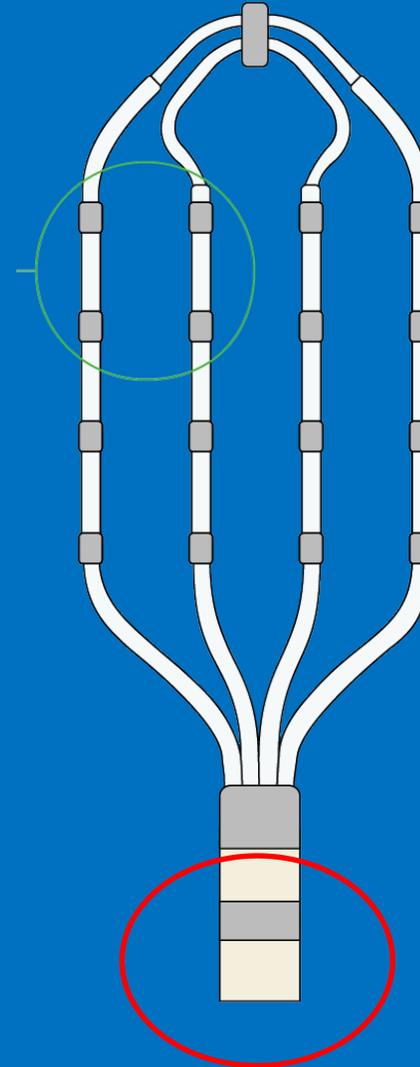
ENSITE X - Zkušenosti

- Ensite Live View

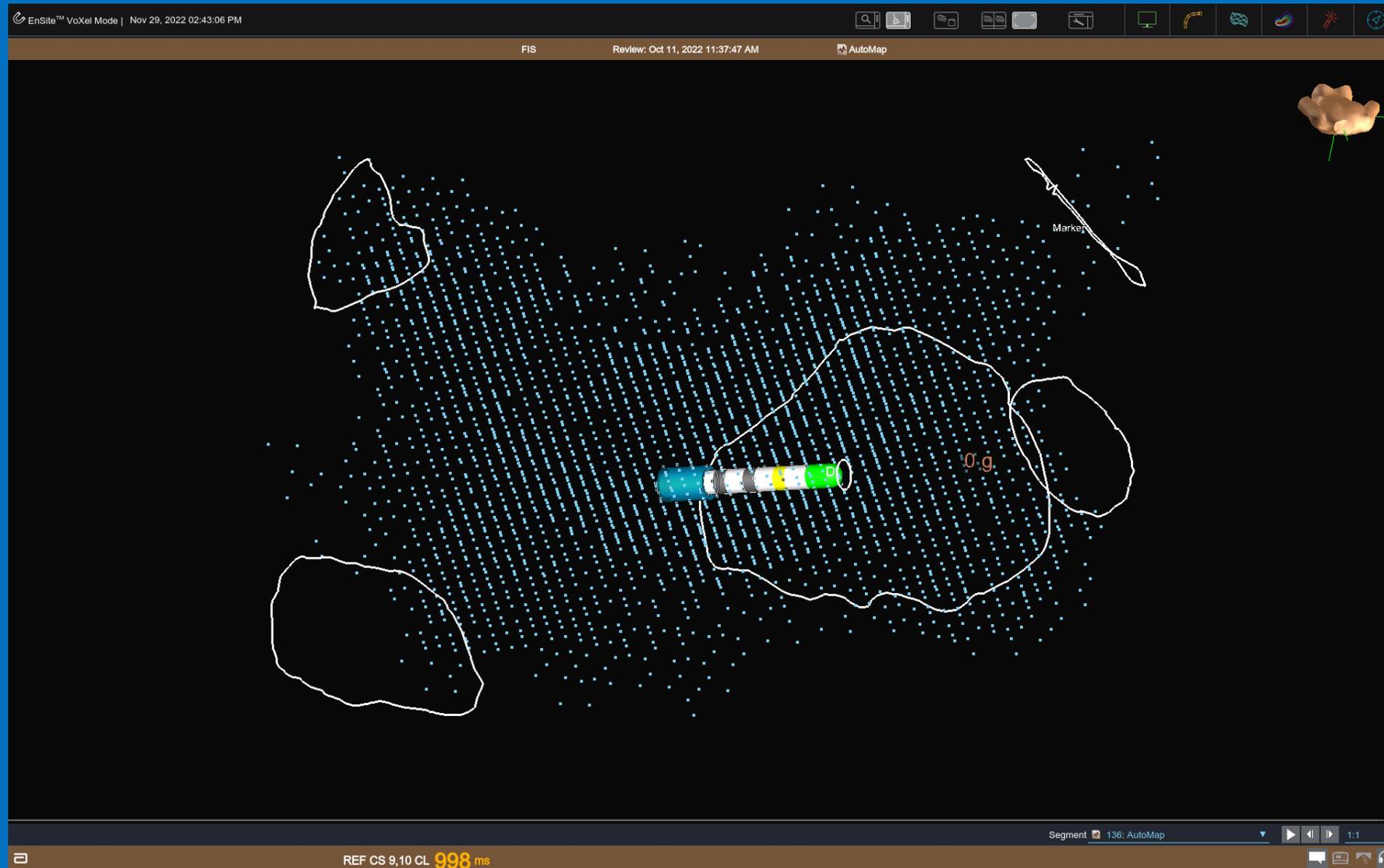


ENSITE X - Zkušenosti

- HD grid voxel collection
- Pouze **proximální část !!!!**
- HD grid vs. Penta/Octaray
- HD grid vs. Optrell™ ???



ENSITE X - Zkušenosti



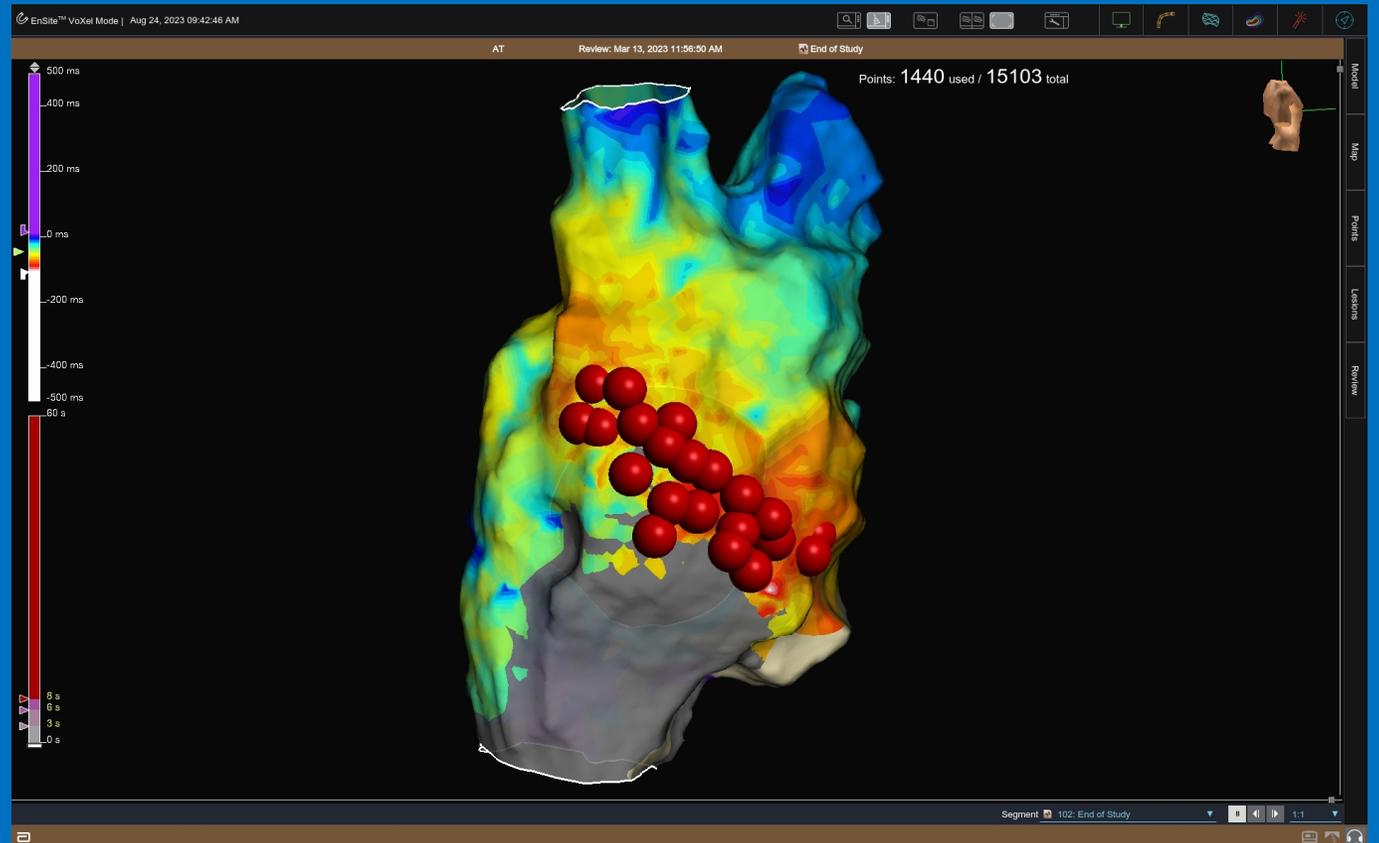
ENSITE X – Zkušenosti

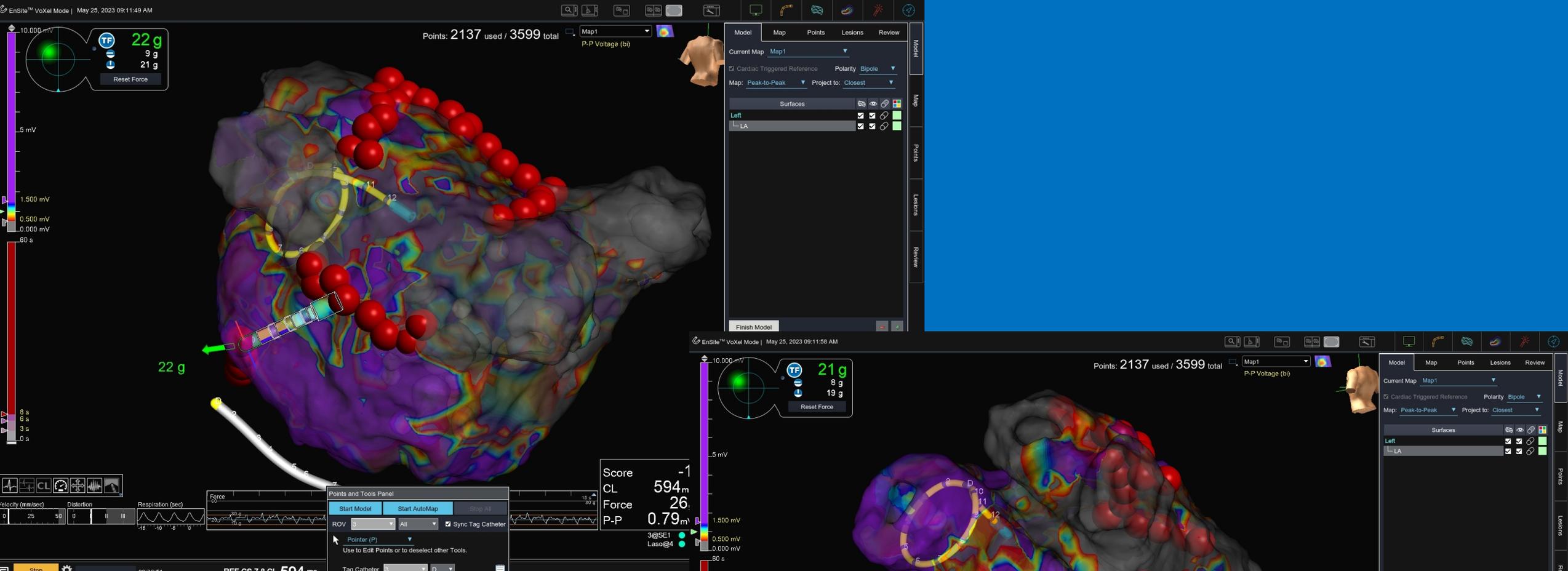
- **TactiFlex SE**
- Celkem 25 výkonů
- **Afib**
 - 1 PVI
 - 1 complex RFA (PVI, box, MI, CTI)
 - 4 redo RFA after PFA
- **AT**
 - 1 focal substrate in RA
 - 8 reentry in LA
 - 5 focal AT in LA
- **KES/KT**
 - 2 PVC's in LV
 - 6 VT's in LV



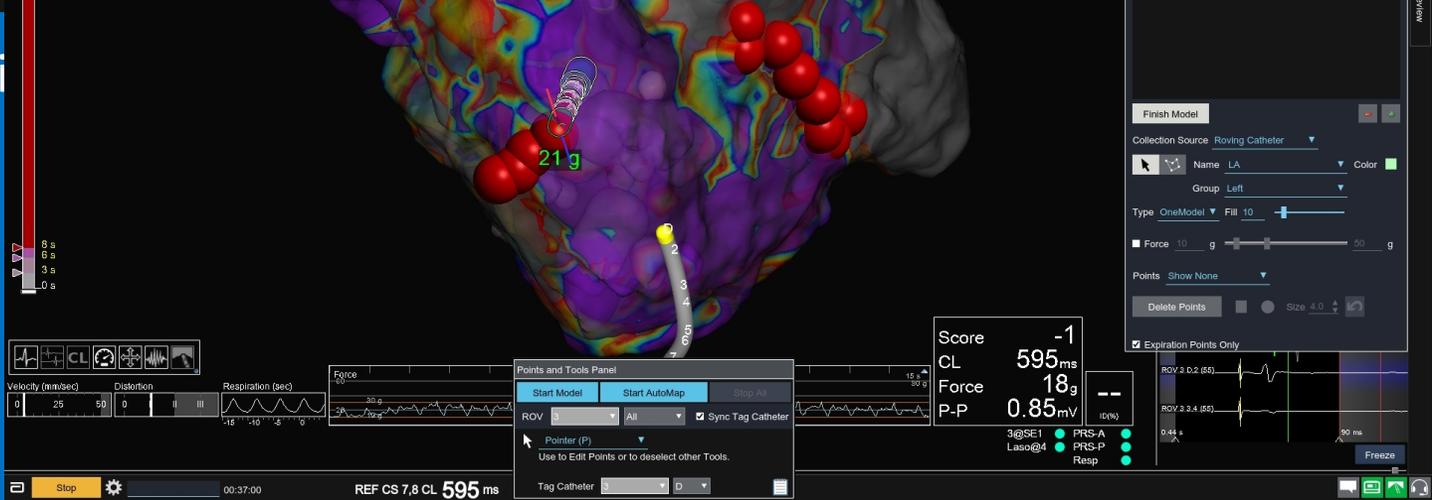
ENSITE X – Zkušební

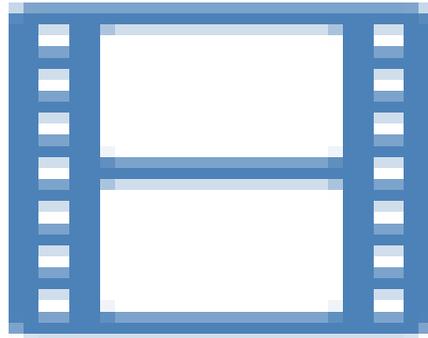
- **Power controlled ablate**
- **HPSD 50 W, 45 °C, 10 sec**
- **Cool flow – 2 and 13 ml/min**





- Samostatný propojovací kabel medzi

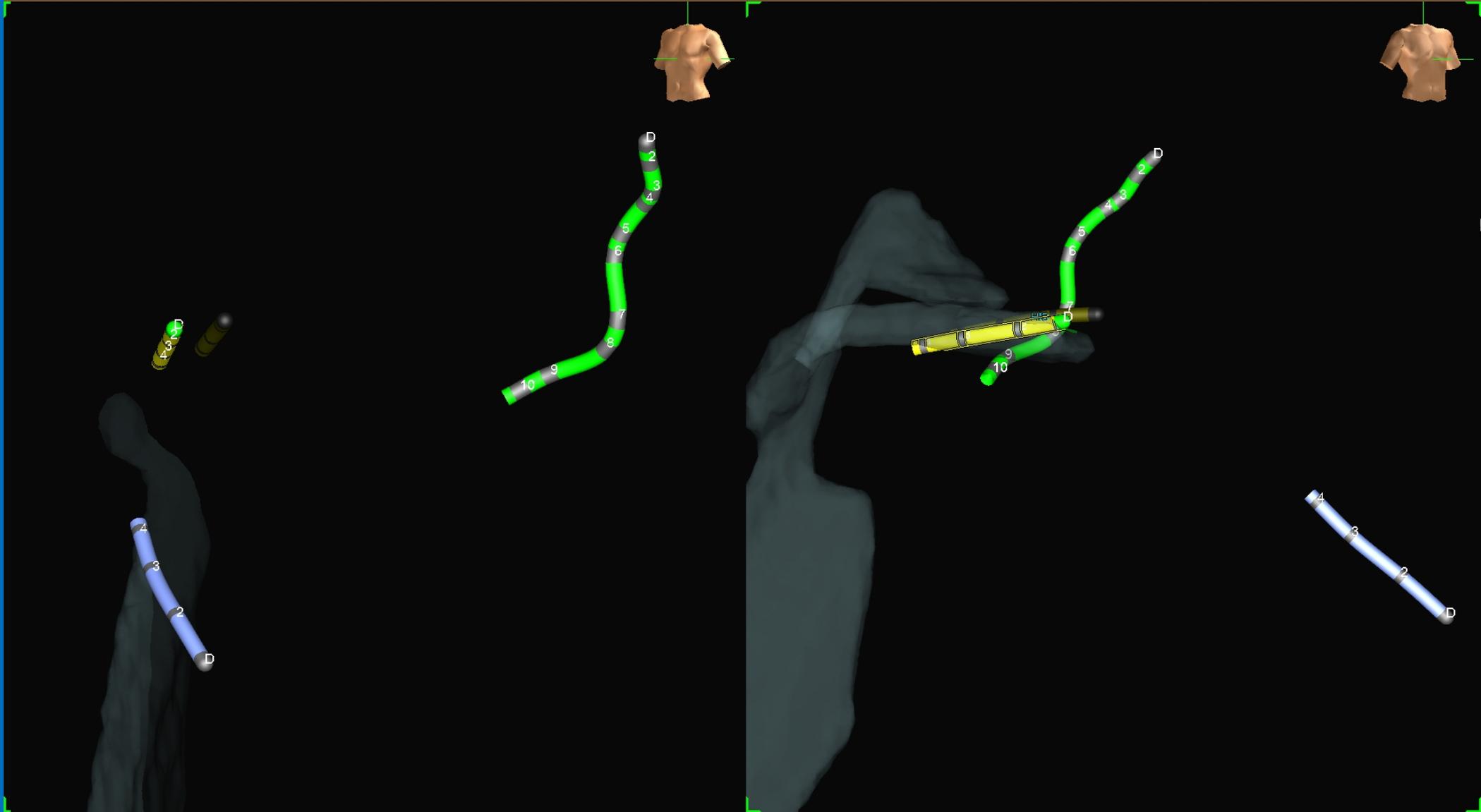




AVNRT

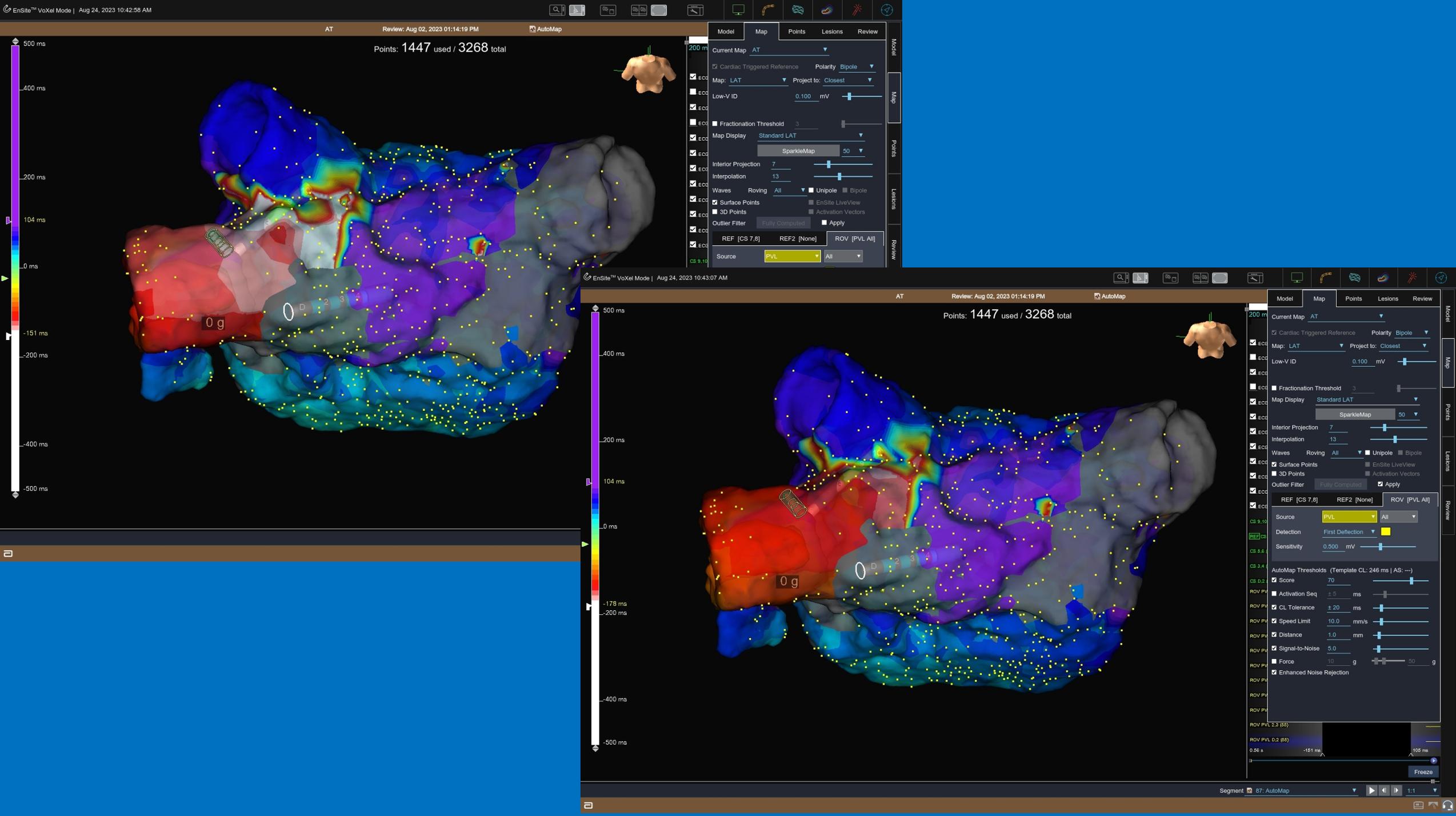
Review: Nov 28, 2022 12:07:25 PM

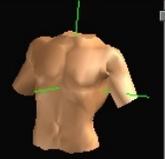
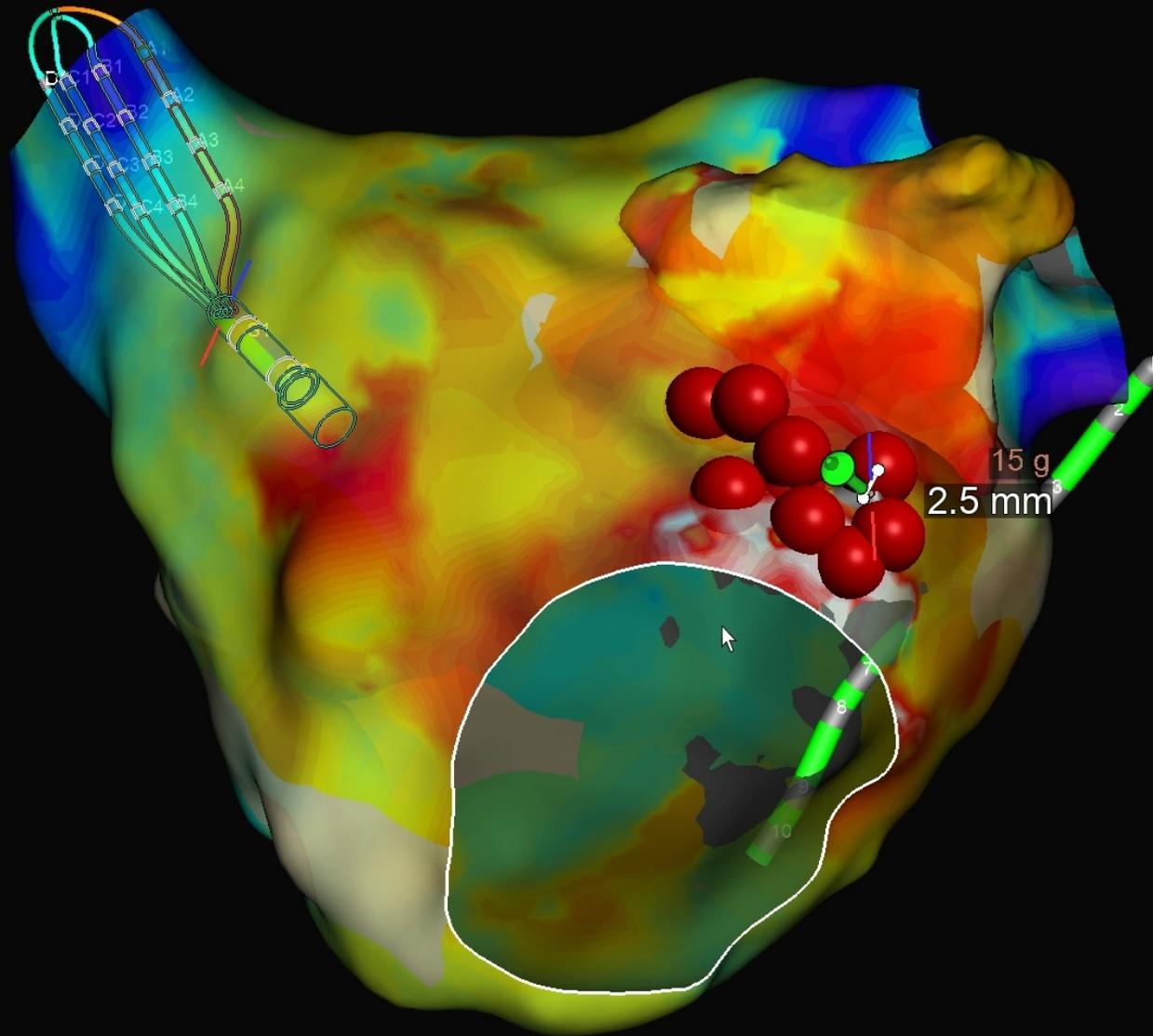
AutoSegment



ENSITE X – v.2

- Outlier filter
- Expiration point only
- Full screen

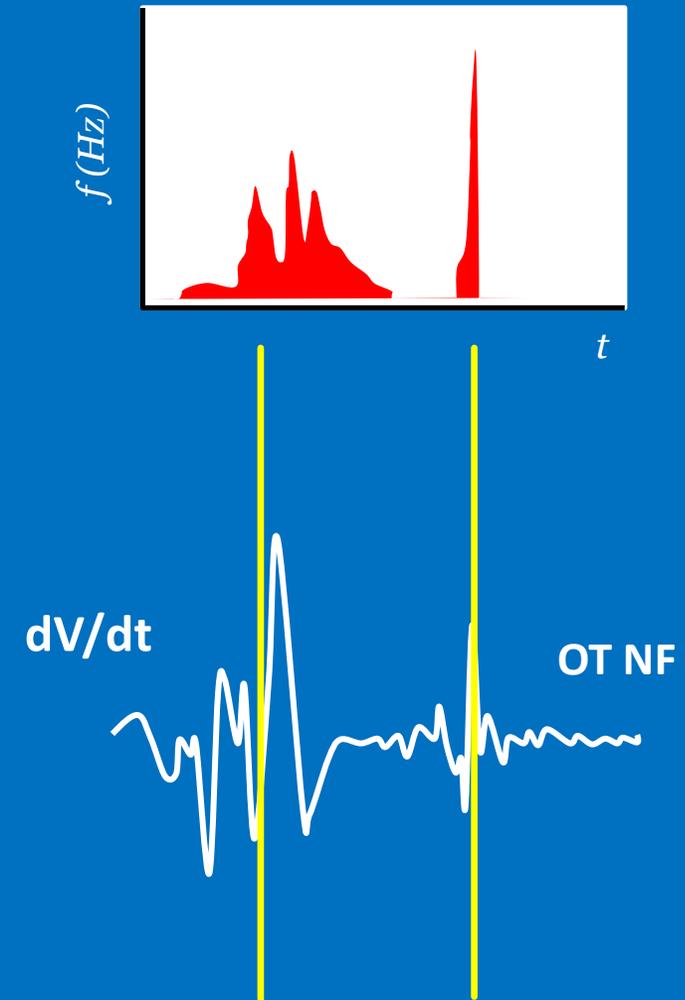




- Model
- Map
- Points
- Lesions
- Review

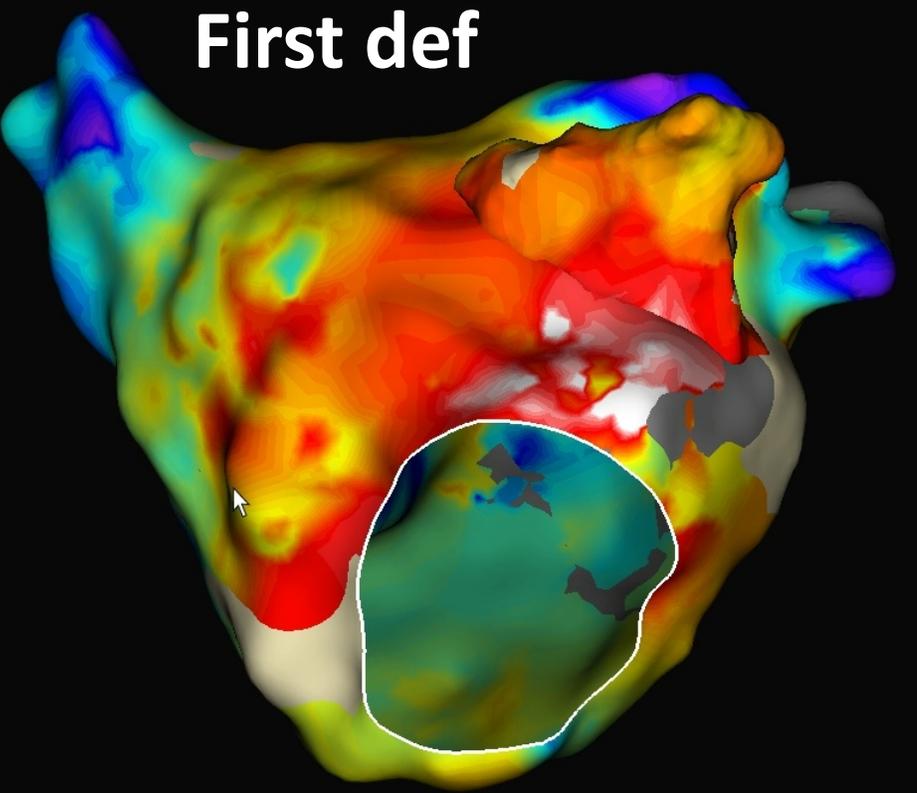
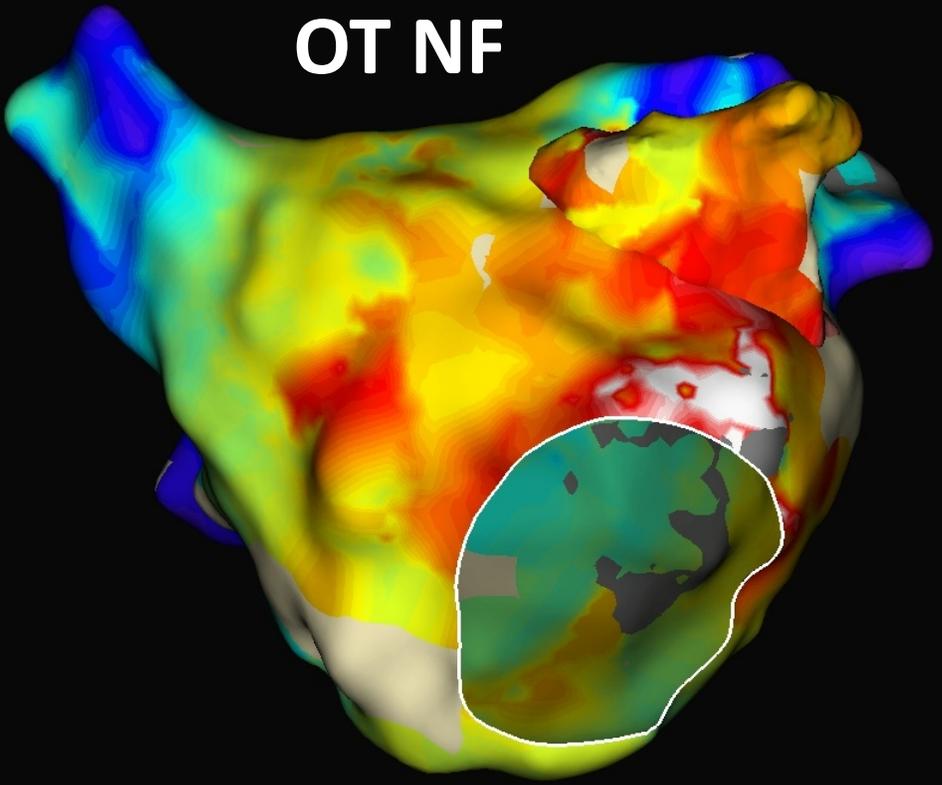
ENSITE X – OT NF

- **Near field vs. Far field** signál
- Vysoká frekvence – lokální původ signálu
- Nízká frekvence – far field/špatný kontakt
- Nejvyšší frekvence nezávisle na amplitudě
- Korelace nejvyšší frekvence a ostrosti signálu
- Emphasize map (peak freq **cutt off 250 Hz** ?)



AT Review: Oct 03, 2023 10:23:35 AM VoXel Seg 00001
Points: 2048 used / 10248 total

AT Review: Oct 03, 2023 10:23:35 AM
Points: 1175 used / 7240 total



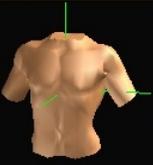
Model
Map
Points
Lesions
Review

AT

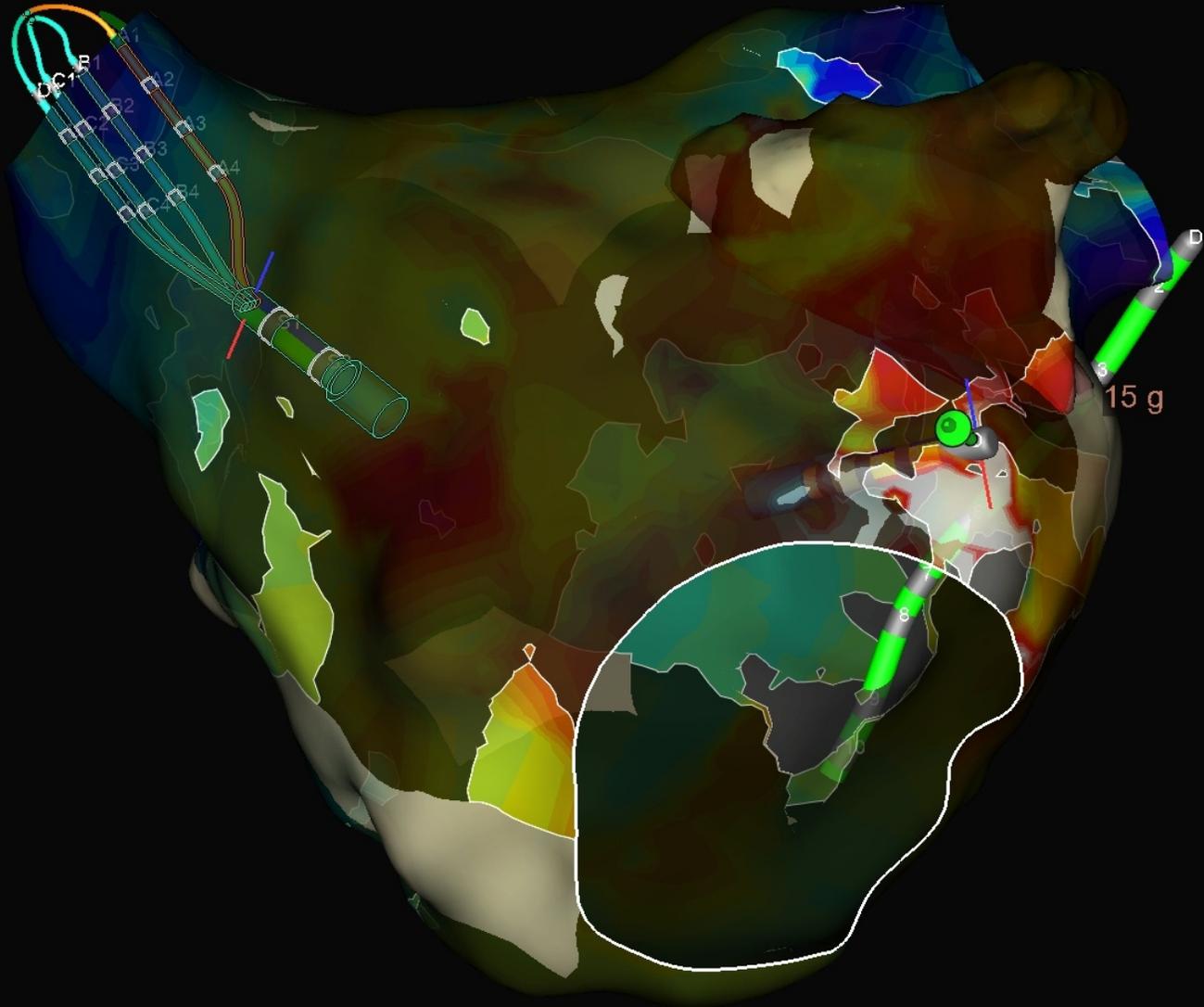
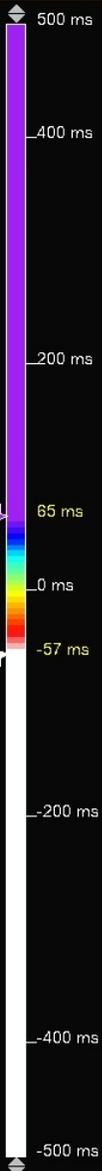
Review: Oct 03, 2023 10:23:35 AM

VoXel RF Session 1

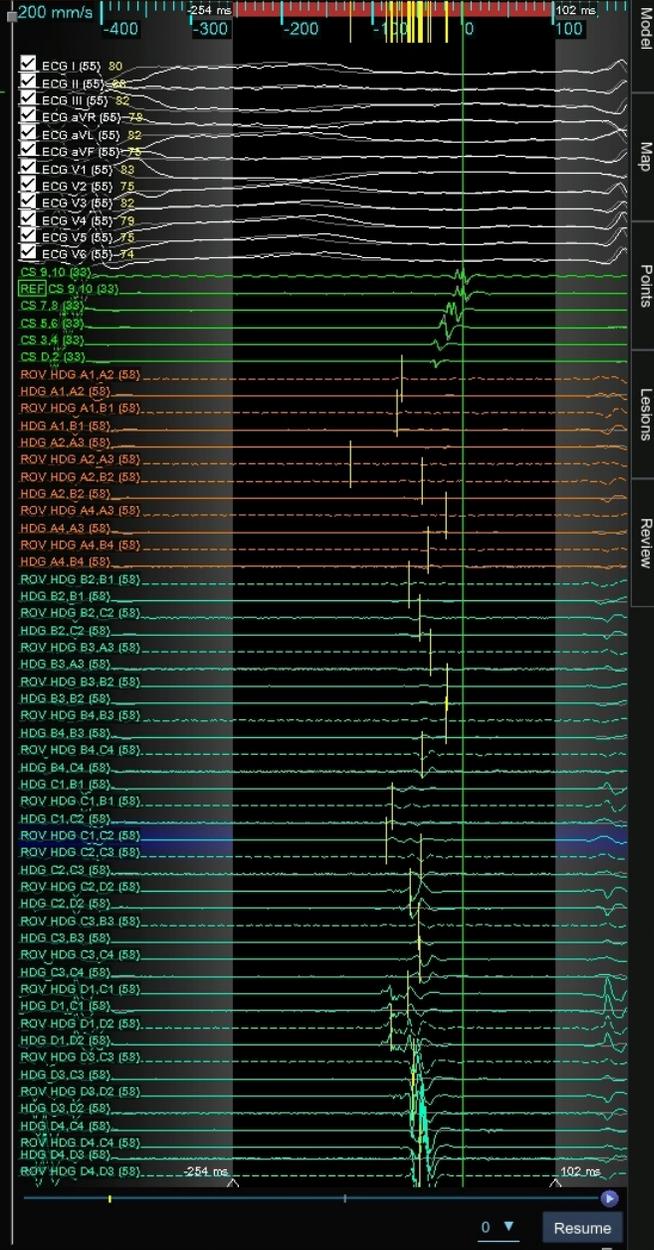
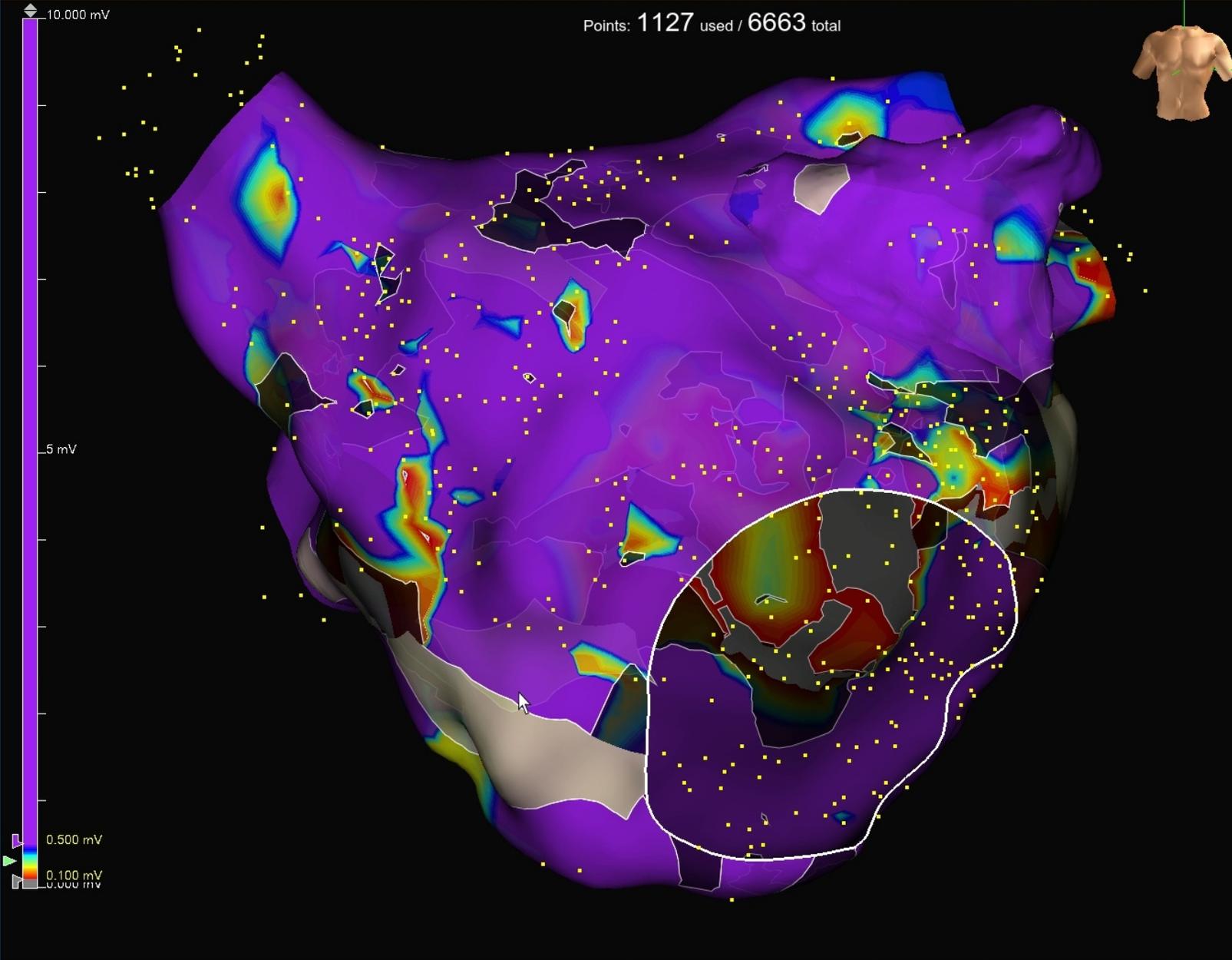
Points: 2048 used / 10248 total



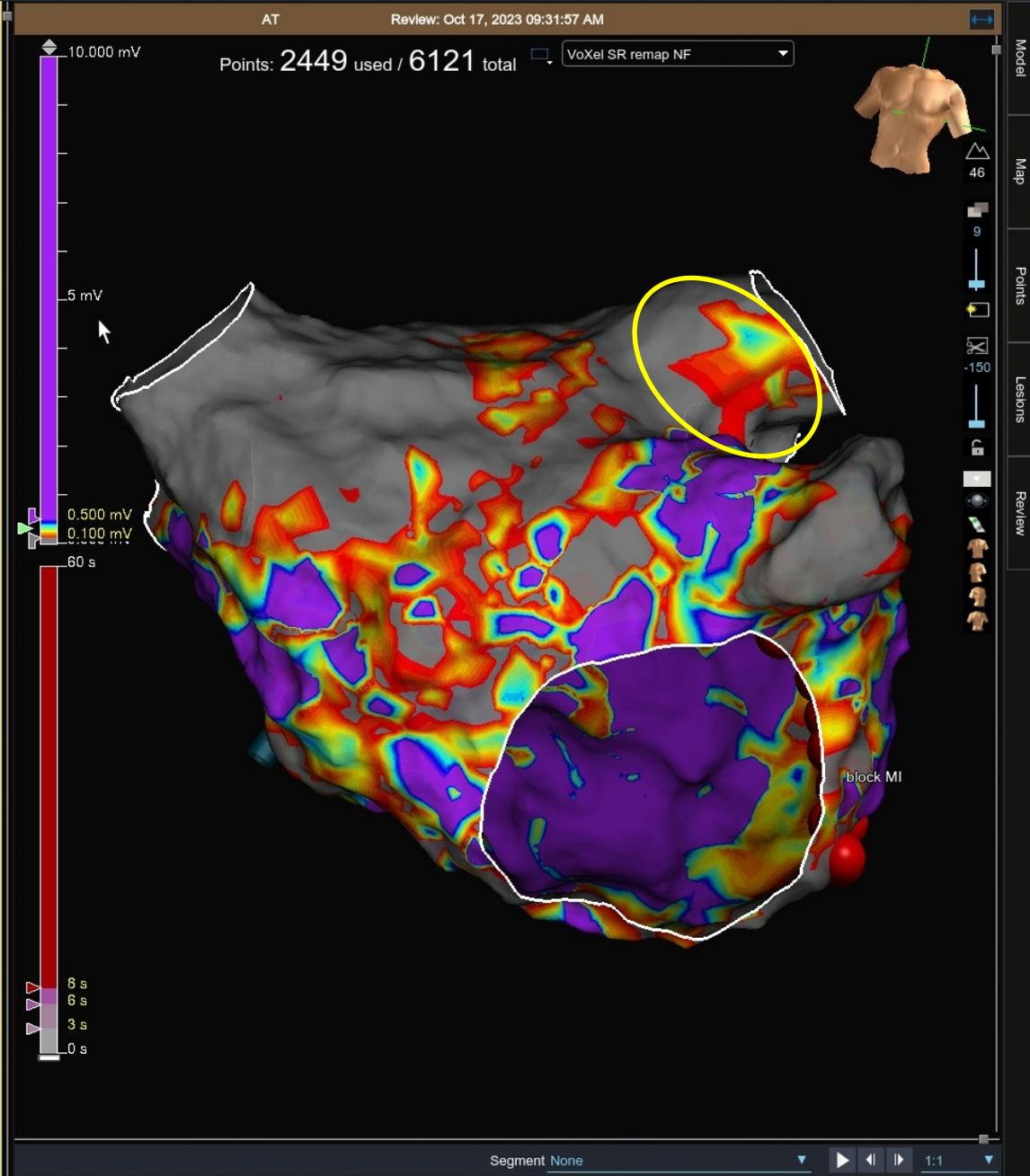
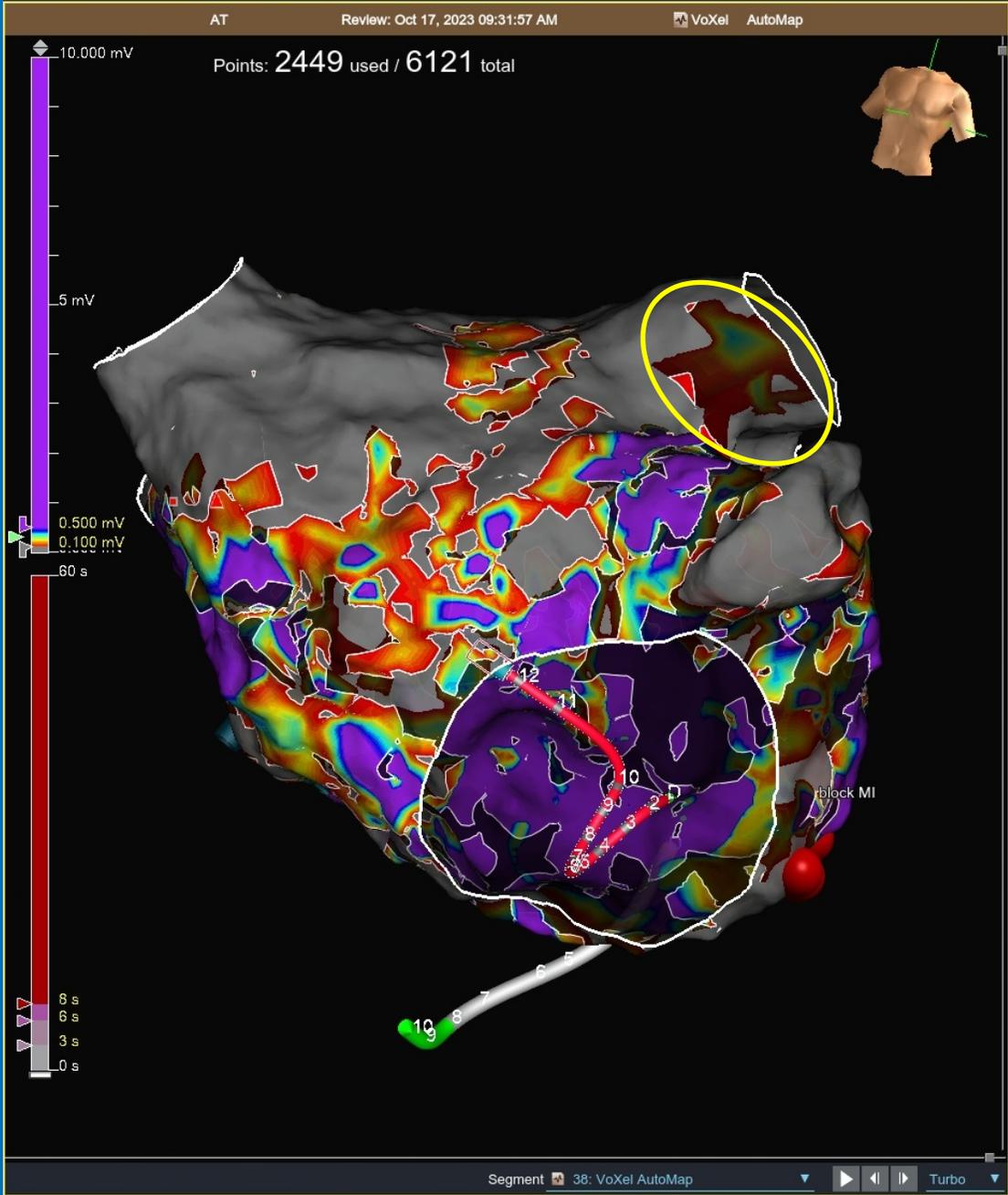
Model
Map
Points
Lesions
Review

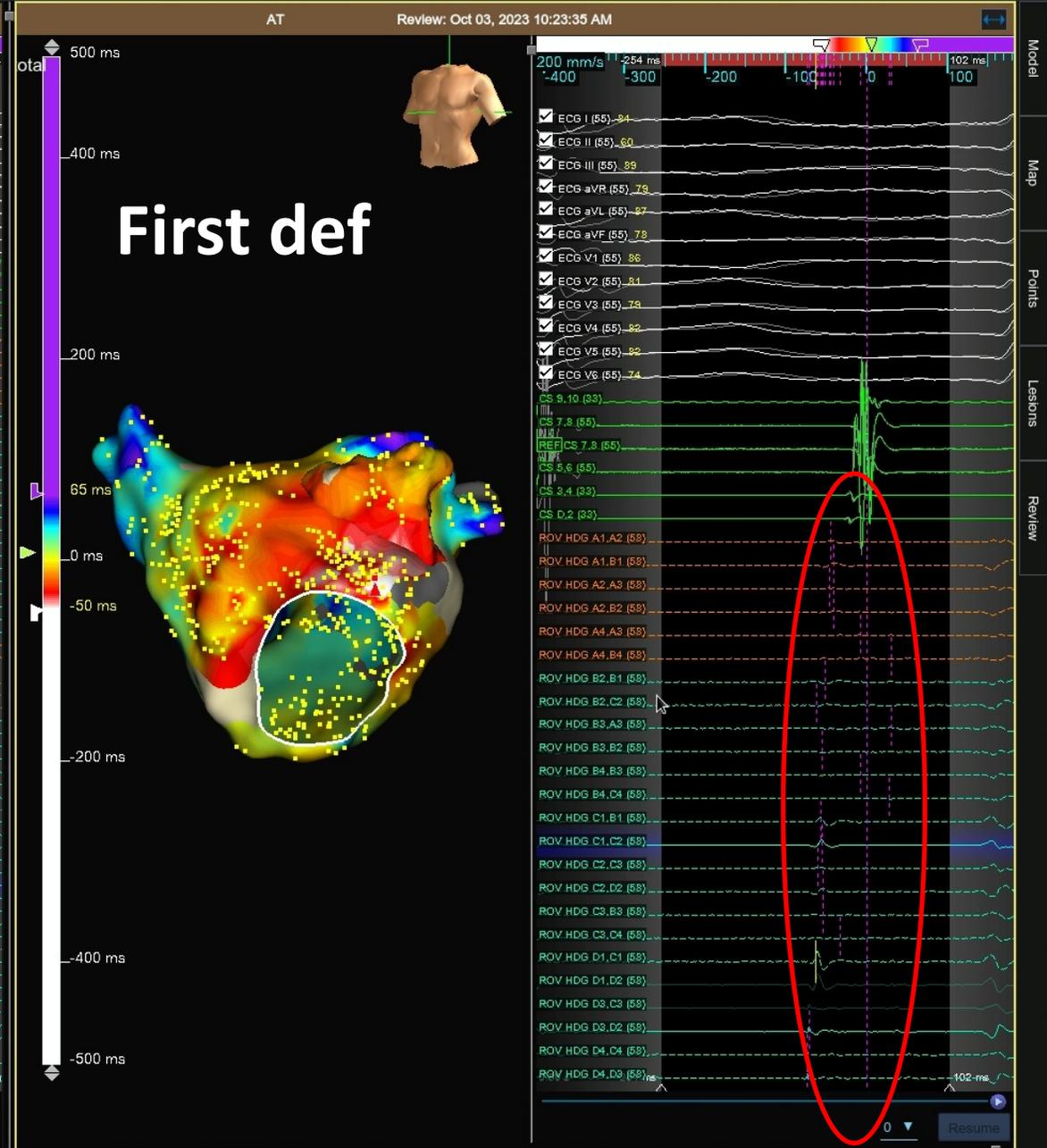
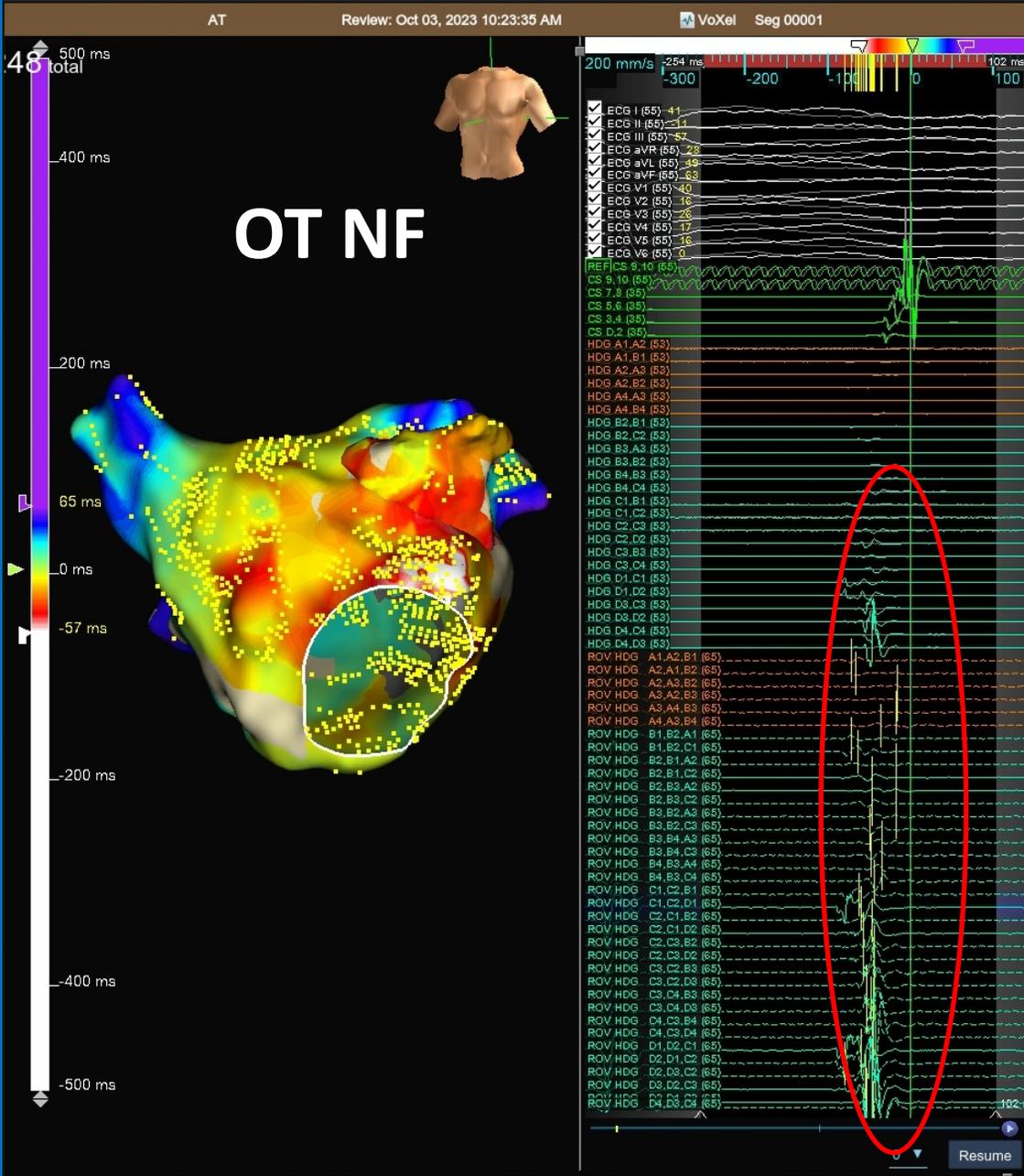


Points: 1127 used / 6663 total



Model
Map
Points
Lesions
Review

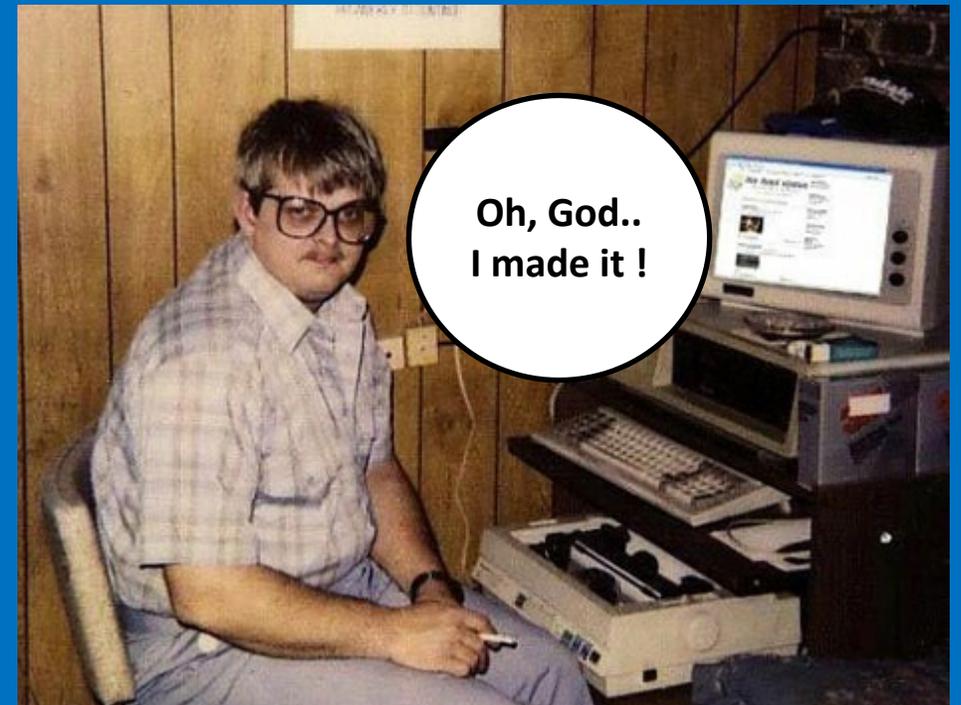




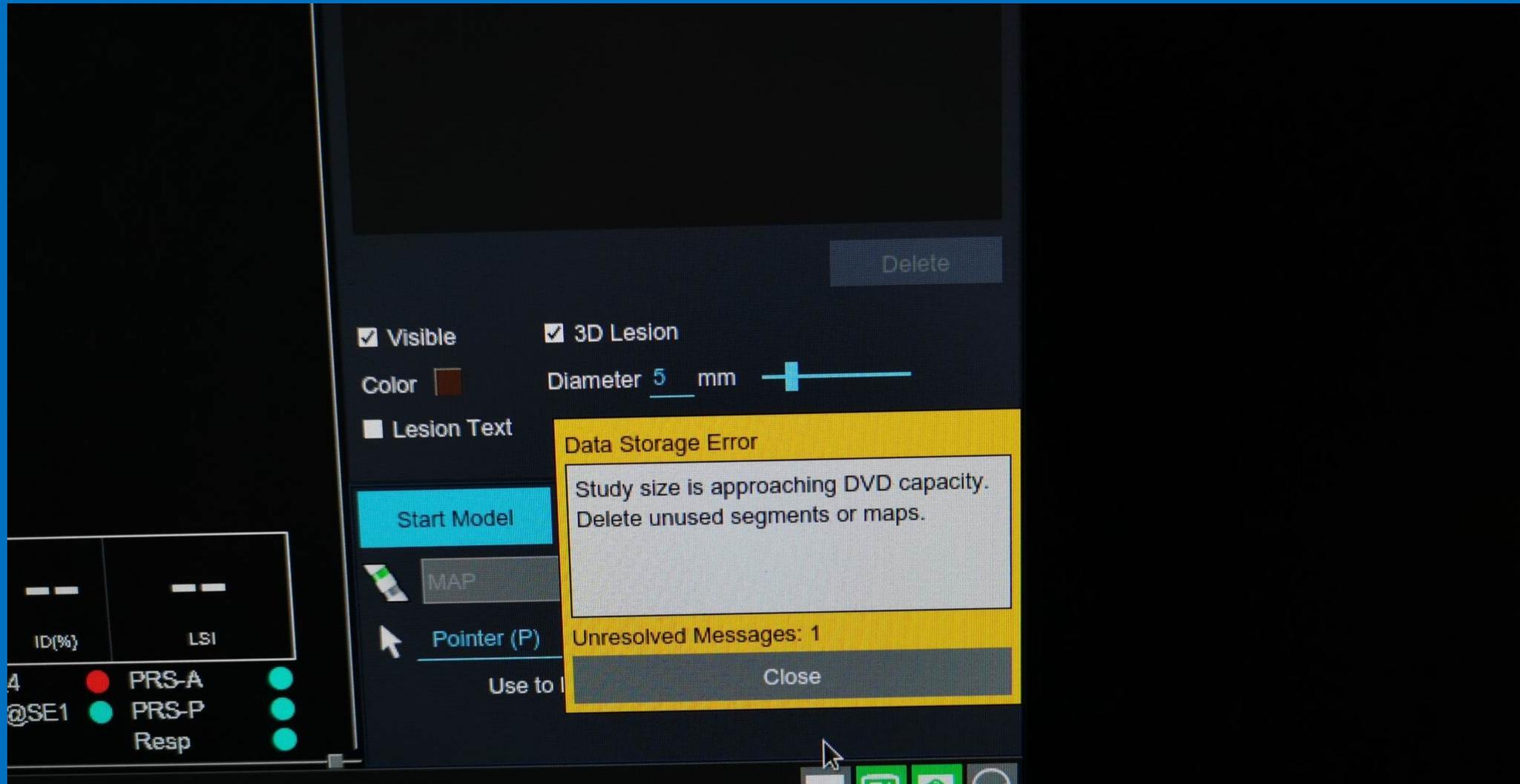
Model
Map
Points
Lesions
Review

ENSITE X – Diskuze

- Zapínání systému
 - Bootovací sekvence: PC – Zesilovač – Ampere – TactiSys – CoolFlow
 - Kabel k magnetic frame ?
 - Čas mezi zapnutím PC a zesilovačem



ENSITE X – 😊



ENSITE X – Vize do dalších verzí

- Vylepšení **Outlier filter**
- Možnost přiřadit ablační body k modelu
- Viditelnost markerů aj. nejenom ve **Finish model**
- Vylepšení **respirační kompenzace** – stabilní jen v CA
- Vylepšení stability **ON/OFF**
- Fialové **anotační markery** ?



**THANKS FOR
ATTENTION**

and

**DON'T ASK
ANY QUESTIONS**