



**RHYTHM** 2017

Arrhythmias & Heart Failure  
New Insights & Technological Advances

**March 2-3**

**9<sup>th</sup> Congress Edition**  
Novotel PARIS Tour Eiffel



My approach for AT ablation with  
precision system

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## **Disclosure**

Speaker name:ALBENQUE

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I have the following potential conflicts of interest to report:

Consulting:ABBOTT and BIOSENCE WEBSTER



## ENSITE PRECISION™ CARDIAC MAPPING SYSTEM

**AUTOMATED.**  
**FLEXIBLE.**  
**PRECISE.**

Map the Most Complex Cases<sup>1,2</sup>

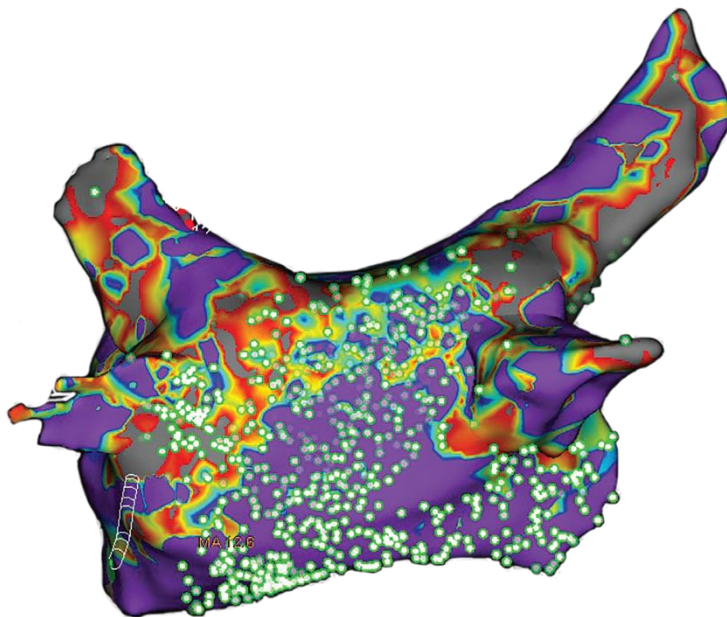


1. Pászák, L., Moon, G., Secher, F., Jala, P., Mahapatra, S., & Mansour, M. (2012). A novel tool for mapping multiple rhythms from a single mapping procedure. Poster abstract P649. *Circulation*, 127(Suppl 2), B112.
2. Pászák, L., Moon, G., Mahapatra, S., & Mansour, M. (2012, Nov). Rapid high density automated electroanatomical mapping using multiple catheter types. Poster presentation P087. *APHRS Scientific Sessions*, November 21, 2012, Melbourne.

# Enhanced Mapping in Atrial Cases

**Automated intracardiac cycle length – only include mapping points with cycle length of interest<sup>1,2</sup>**

**Use the TurboMap feature to quickly acquire maps of secondary atrial arrhythmias**



1. Ptaszek, L., Moon, B., Sacher, F., Jais, P., Mahapatra, S., & Mansour, M. (2015). *A novel tool for mapping multiple rhythms from a single mapping procedure.* Poster abstract P849. *Europace*, 17(Suppl 3), iii115.
2. Ptaszek, L., Moon, B., Mahapatra, S., & Mansour, M. (2015, Nov). *Rapid high density automated electroanatomical mapping using multiple chambers and catheter types.* Pending poster abstract. APHRS 2015, Melbourne.

# EnSite™ AutoMap Module – Primary User Interface updates

Built upon PROVEN mapping system used in over 150,000 human cases in over 2,000 clinical EP labs last year

The screenshot displays the EnSite AutoMap software interface. On the left, a vertical scale shows time intervals from 500 ms to -500 ms. A central map shows a catheter with colored points. A red box highlights a specific point on the map, with an arrow pointing to a circular inset showing a close-up of the catheter tip with a red flash. To the right, a list of mapping points is shown, including their LAT values. A red box highlights the 'Point collection criteria' settings, which include Score, CL Tolerance, Speed Limit, Distance, Signal-to-Noise, Force, and Enhanced Noise Rejection. A red box also highlights the 'AutoMap Threshold' settings, which include Score, CL Tolerance, Speed Limit, Distance, Signal-to-Noise, Force, and Enhanced Noise Rejection. A red box highlights the 'Point collection criteria' settings, which include Score, CL Tolerance, Speed Limit, Distance, Signal-to-Noise, Force, and Enhanced Noise Rejection.

Flashes at electrodes when mapping points are collected

If a point does not meet the criteria for collection a red flash will indicate which criteria were not met

Point collection criteria

Score 100  
CL 769ms  
Force 0g  
LAT -0ms

AutoMap Threshold

- Score: 90
- CL Tolerance: ± 25 ms
- Speed Limit: 10.0 mm/s
- Distance: 0.1 mm
- Signal-to-Noise: 5.0
- Force: 50 g
- Enhanced Noise Rejection:

1 selected / 63 used / 124 total

REF CS20 5-6 CL 770 ms

# AutoMap Threshold Settings

## Score Threshold

Only collect mapping points if the 12-Lead Surface Morphology is XX% similar or higher compared to original template beat

## CL Tolerance

Only collect mapping points if the intracardiac measured (CS, HIS, other) Cycle Length is within  $\pm$ XX ms of original template beat

## Speed Limit

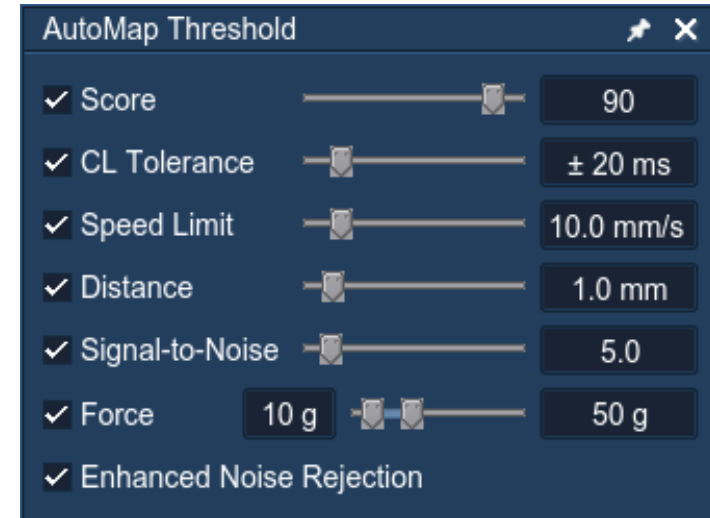
Only collect mapping points if the mapping catheter is moving less than XX.X mm/s

## Distance Threshold

Only collect mapping points if the 3D position of the electrode is X.X mm or more in distance from the previously collected mapping point

## Signal-to-Noise Threshold

Only collect mapping points if the Signal-to-Noise-Ratio is X.X or higher

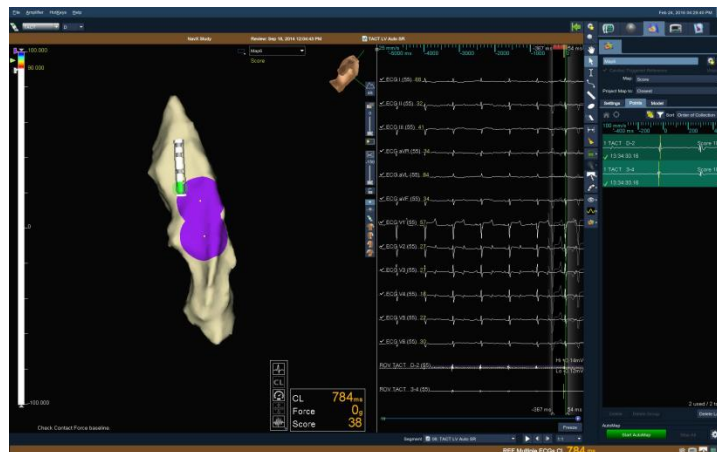


# AutoMap the LV – TurboMap at 10x's Real-time

TurboMap is a new Unique Feature to the EnSite Precision™ Mapping System (no other mapping system can do this)

## Powerful tool

- To quickly map multiple distinct surface morphologies in ventricular cases
- To quickly map multiple distinct cycle lengths in A-Tach cases
- As an insurance policy (quickly create a usable map in the case something goes wrong during original live mapping)
- May help to minimize operator-to-operator mapping variability
- To perform quick research (change any parameter and see what happens)

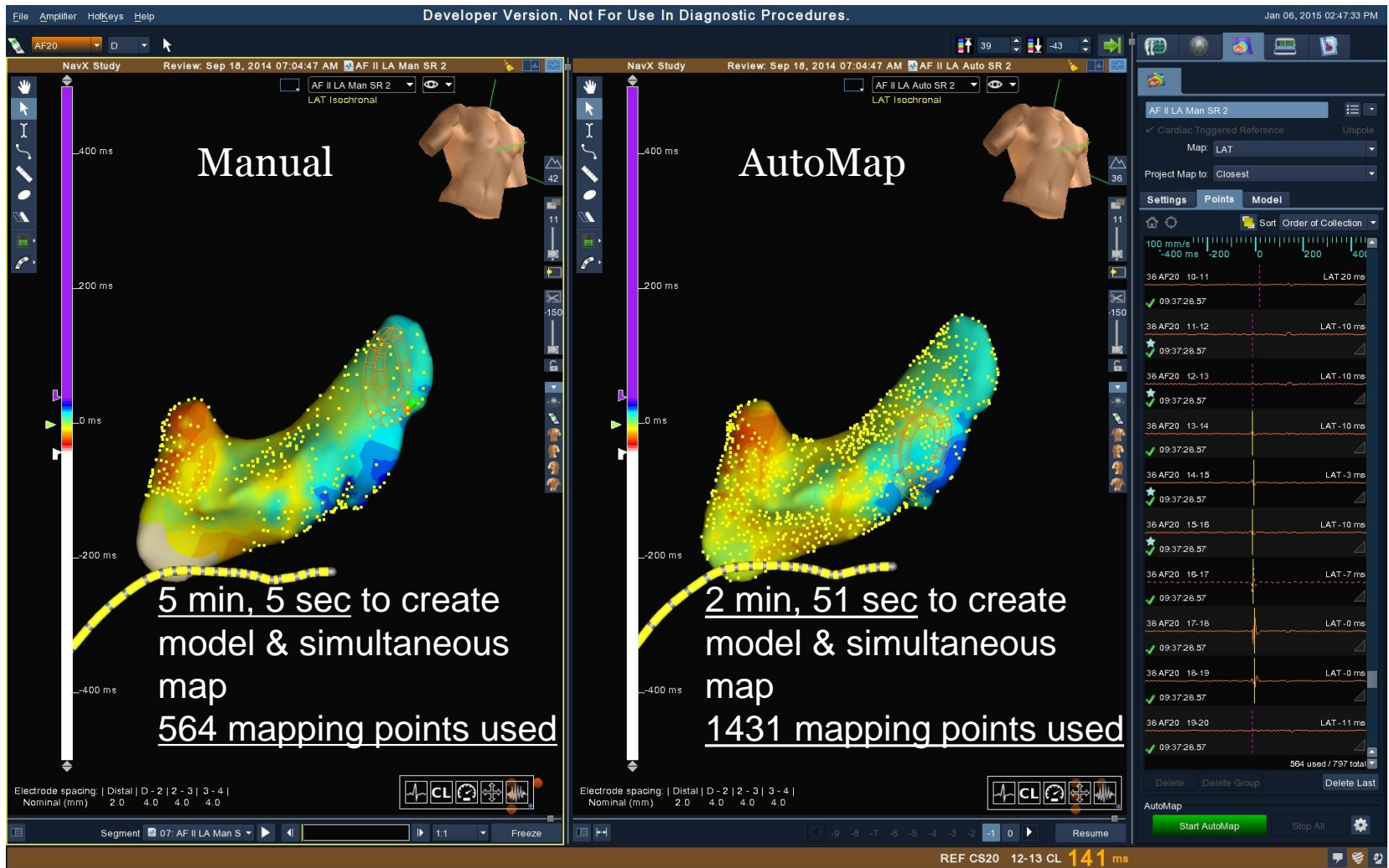


Pre-clinical swine intermittent ectopy

- The 00:04:11 live mapping data from the previous slide was recorded
- In only 30 seconds using new criteria, TurboMap provides 90 VT1 mapping points into a new VT1 map
  - This same concept could be employed for VT2, VT3, PVC1, PVC2, etc.
  - This same concept could also be employed for multiple distinct cycle length A-Tachs

# EnSite™ AutoMap Module – Manual vs AutoMap

Note similar results but much higher point density







DR J-PAUL ALBENQUE, CLINIQUE PASTEUR TOULOUSE

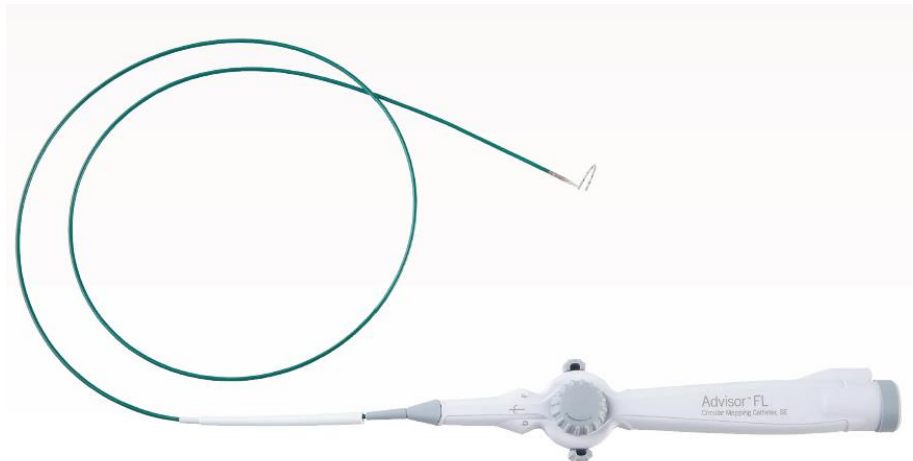
# Ensite Precision : Flutter gauche et TA (4<sup>ème</sup> procédure dans l'oreillette gauche)

Janvier | 2017

# Procédure de Janvier 2017 : matériel et équipement

## SYSTEME DE CARTOGRAPHIE ENSITE PRECISION

- Ensite Precision avec module magnétique
- Sonde de température oesophagienne SensiTherm
- Gaine transeptal SLO et aiguille BRK
- Inquiry quadripolaire
- Advisor FL, SE 20mm
- Tacticath

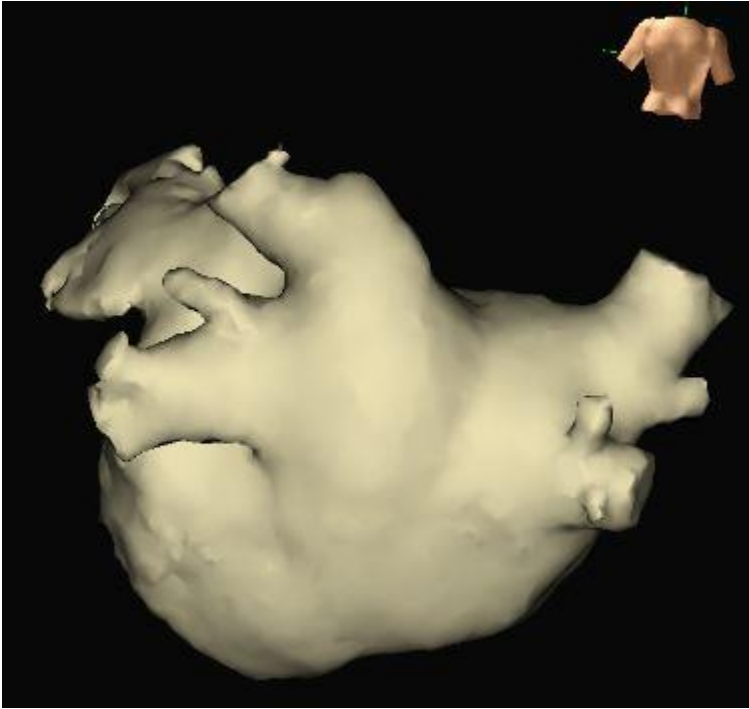
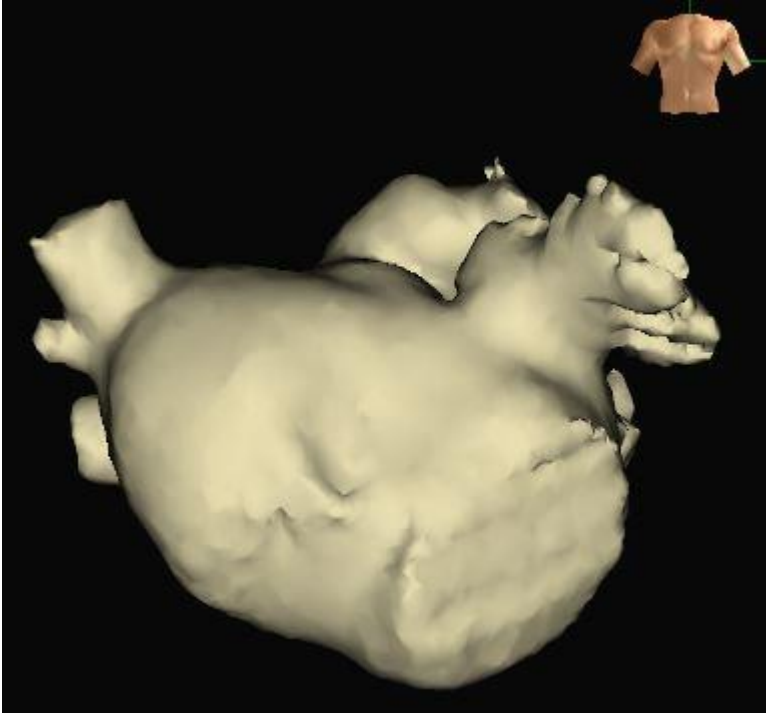


# Historique clinique

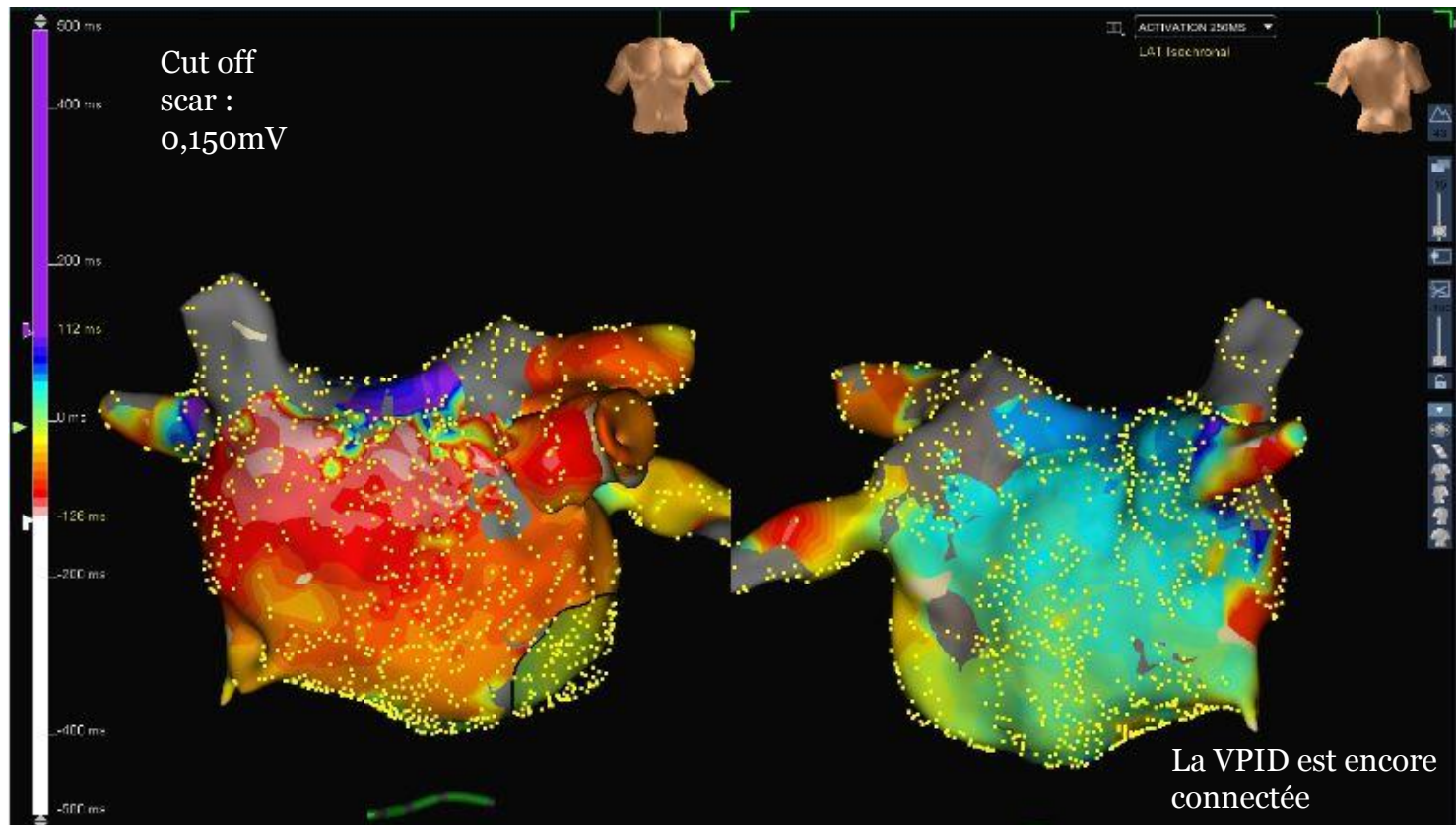
## HOMME DE 64 ans

- 105 kg
- Déjà 4 procédures d'ablation dans un autre centre :
  - Ablation du flutter droit
  - Cryo-ablation pour FA persistante
  - Ablations RF oreillette gauche : lignes toit et mitrale
- Nouvelle indication d'ablation pour une TA

# Scanner : OG à 200cc

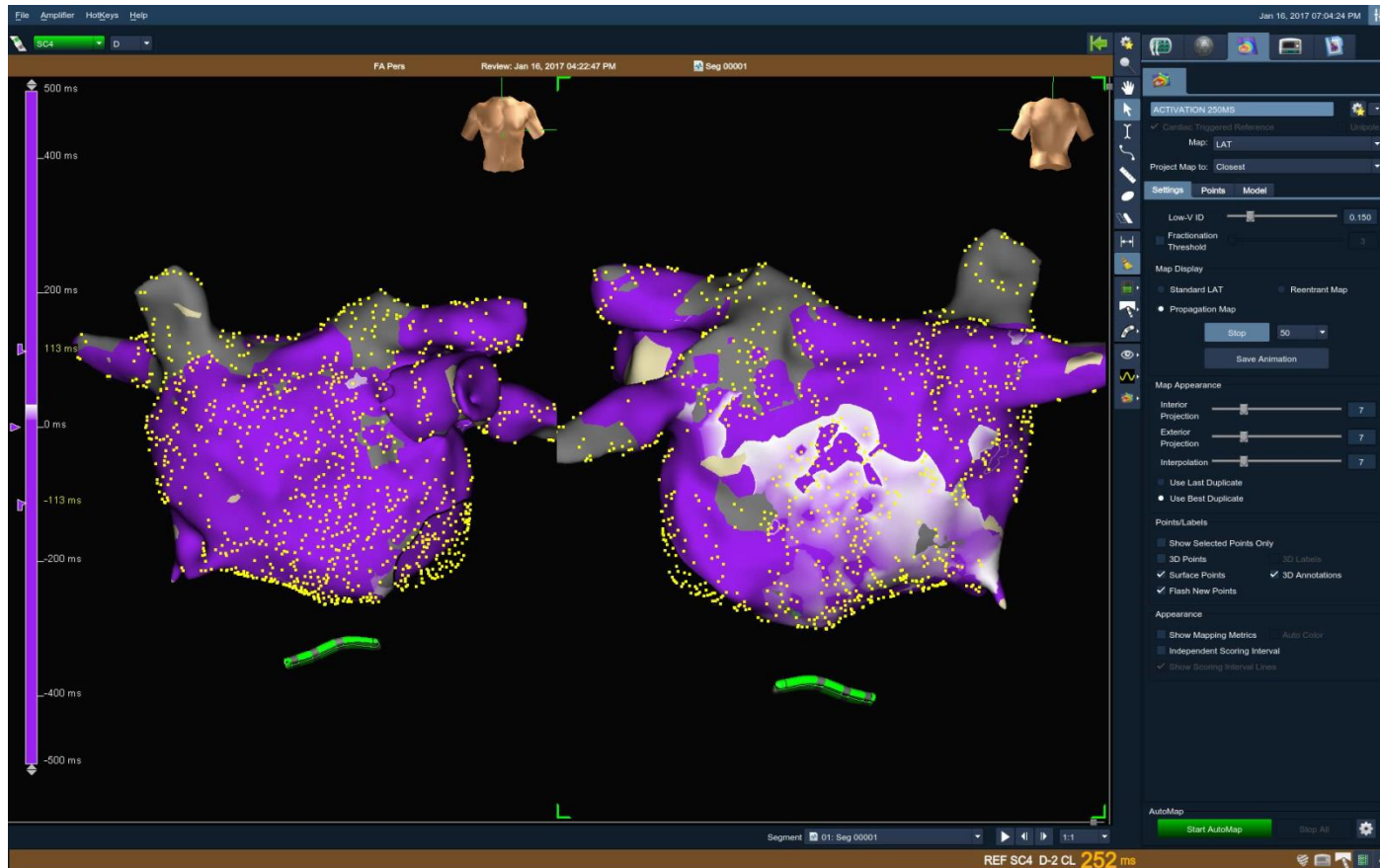


# Rythme sinusal en début de procédure, induction d'un flutter à 250ms



Fonctionnalité OneMap pour acquérir la géométrie et l'activation en même temps ;  
11 minutes de cartographie pour recueillir 4303 points (1767 utilisés)

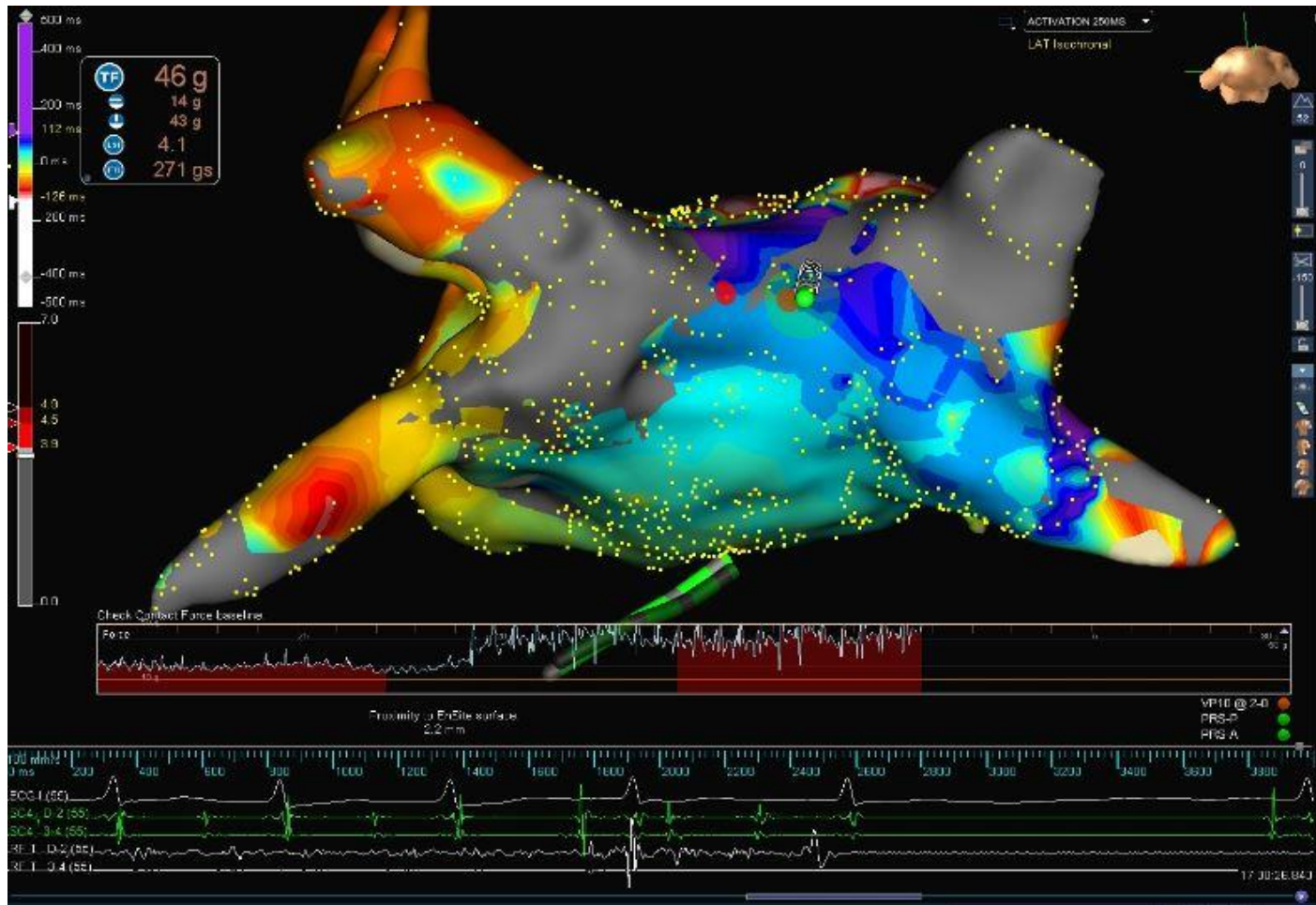
# Rythme sinusal en début de procédure, induction d'un flutter à 250ms



Flutter du toit

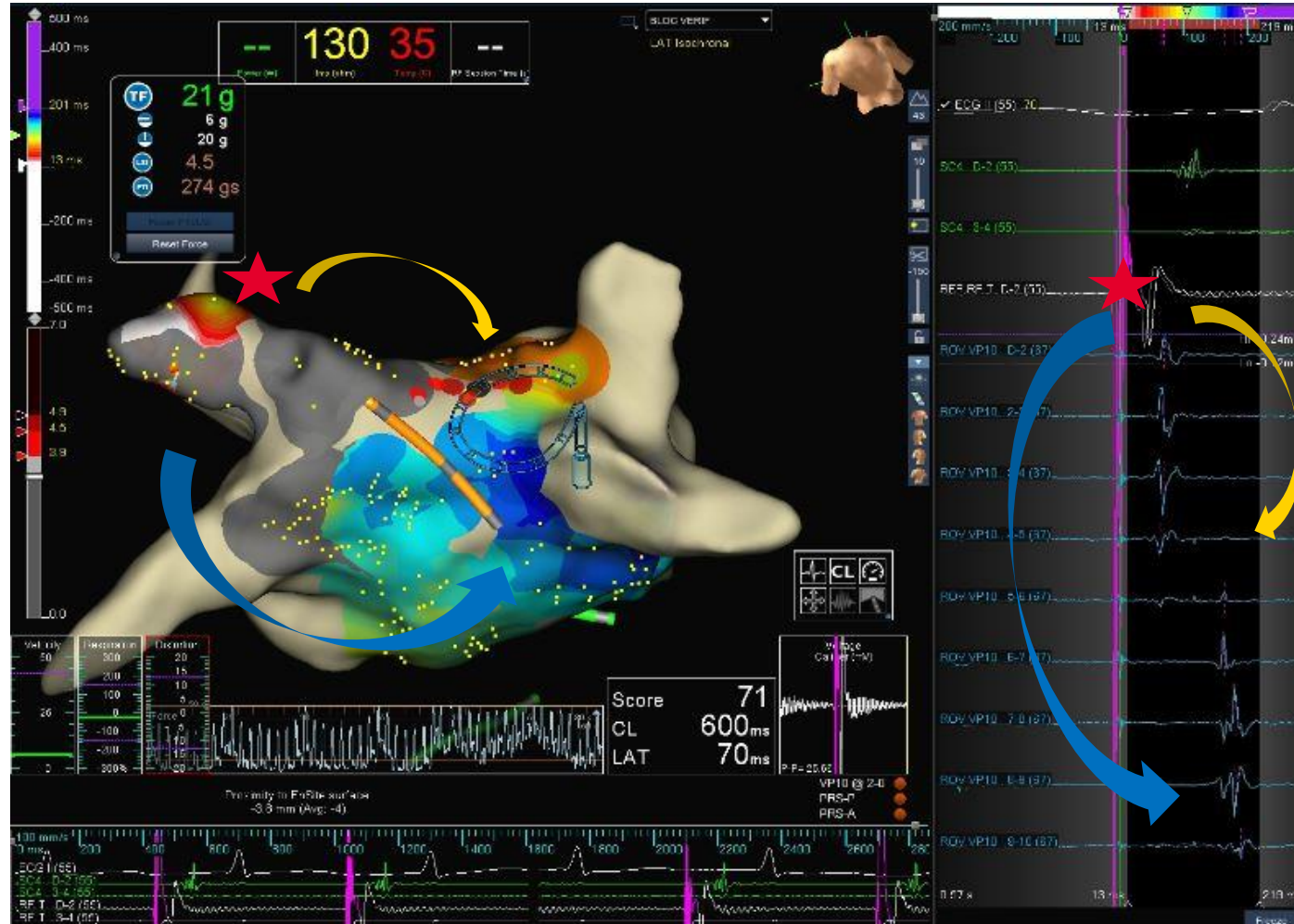
On constate également que la mitrale n'est pas bloquée

# Complément de la ligne du toit



Retour en rythme sinusal pendant l'ablation

# Vérification du bloc sur le toit – activation

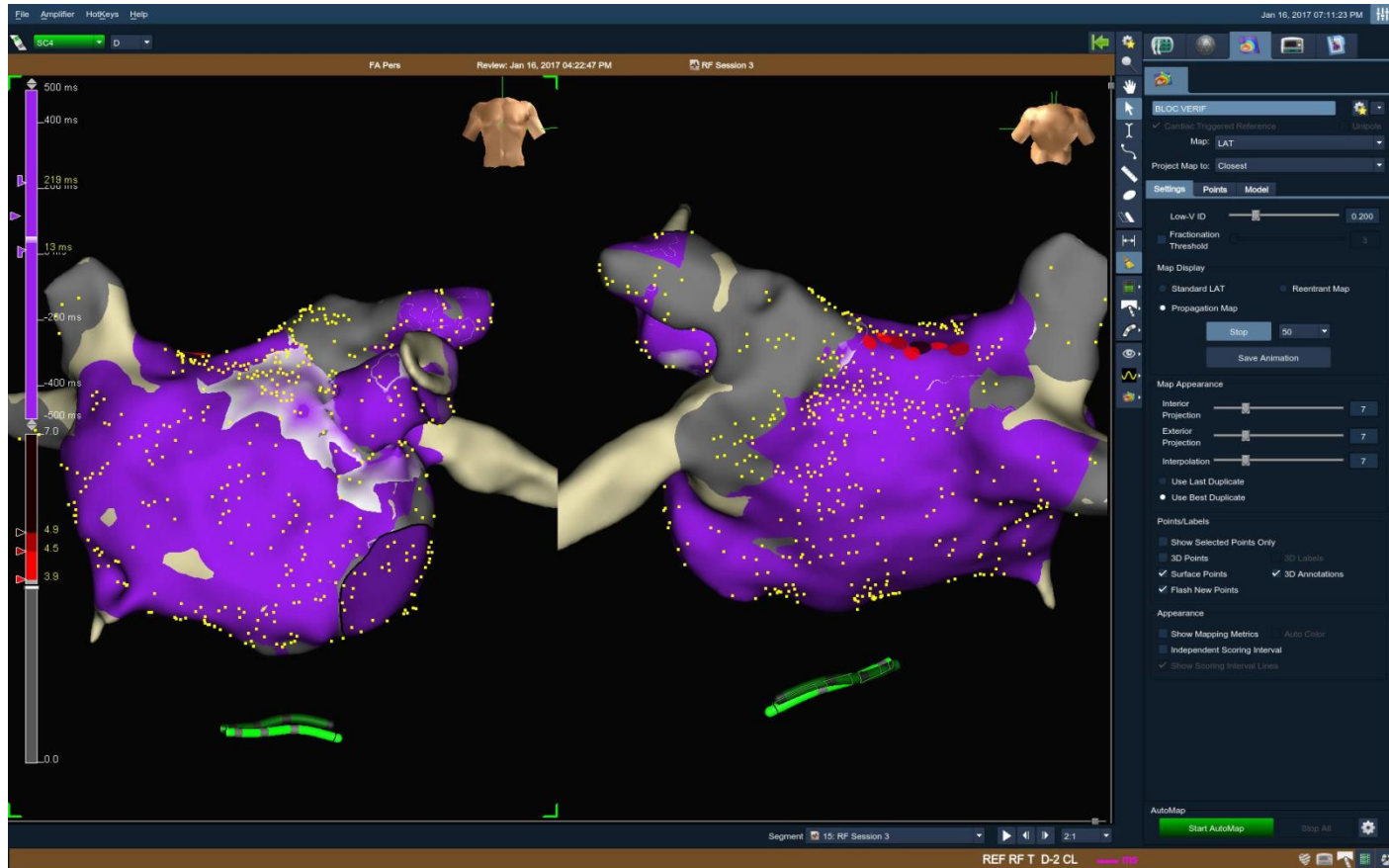


Gradient  
d'activation

Carte d'activation pour confirmer le bloc sur le toit :  
stimulation LAA avec la sonde d'ablation, recueil avec l'advisor :  
876 points utilisés / 1926



# Vérification du bloc sur le toit – propagation

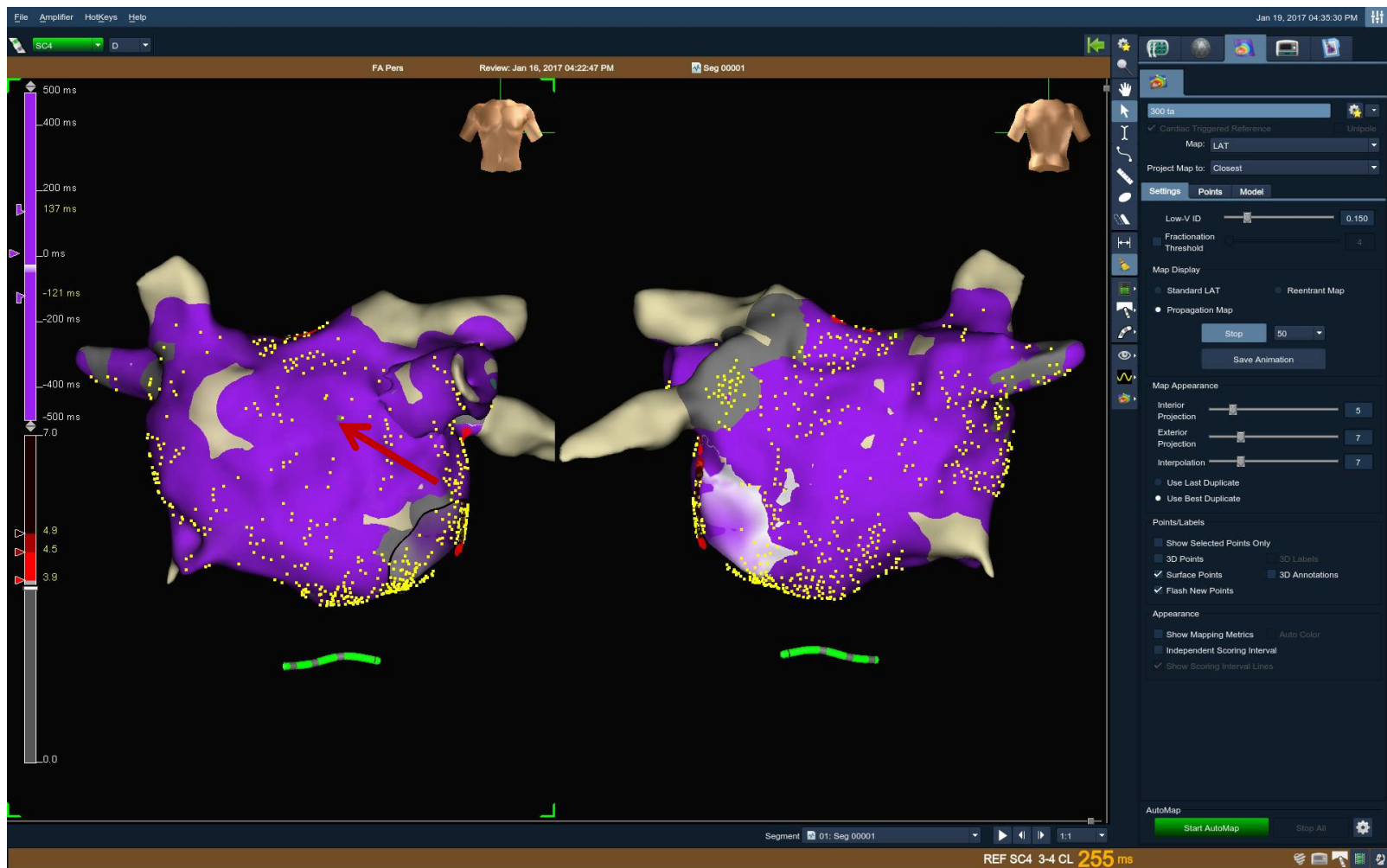


Le toit est bien bloqué ; confirmation que la mitrale n'est pas bloquée

# Induction d'une nouvelle tachycardie

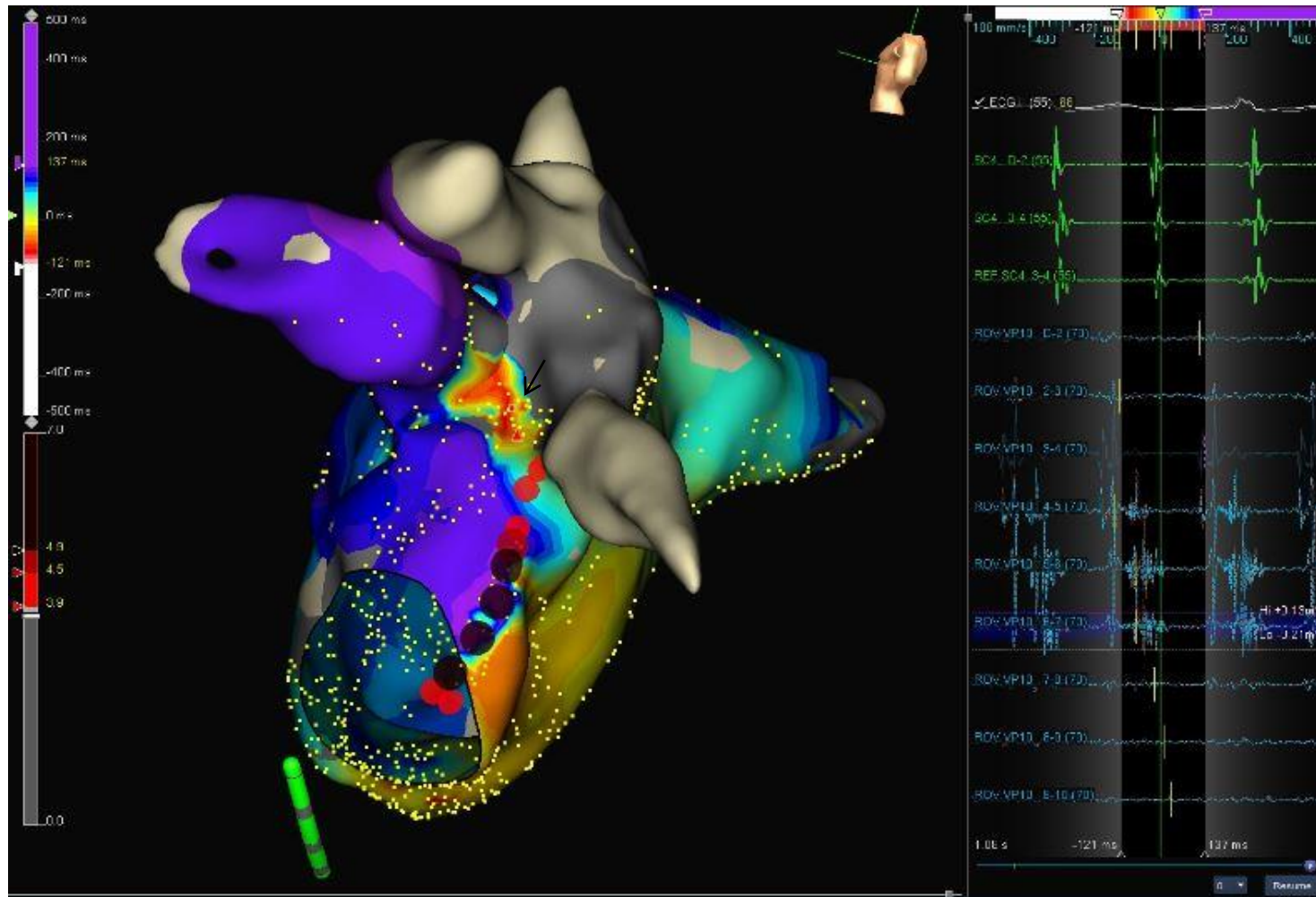
- On induit une tachy à 360 ms, qui se réduit avant que l'OG soit complètement mappée
- On en profite pour confirmer le bloc sur l'ICT
- On induit de nouveau une tachy qui s'arrête rapidement
  
- Comme le patient est encore partiellement inductible, qu'il serait préférable de ne pas avoir à réintervenir une 5<sup>ème</sup> fois dans l'OG, et que le bloc sur la mitrale n'est pas complet, décision est prise de compléter l'isthme mitral
  
- Puis une nouvelle TA est induite, à 300ms

# TA 300 ms



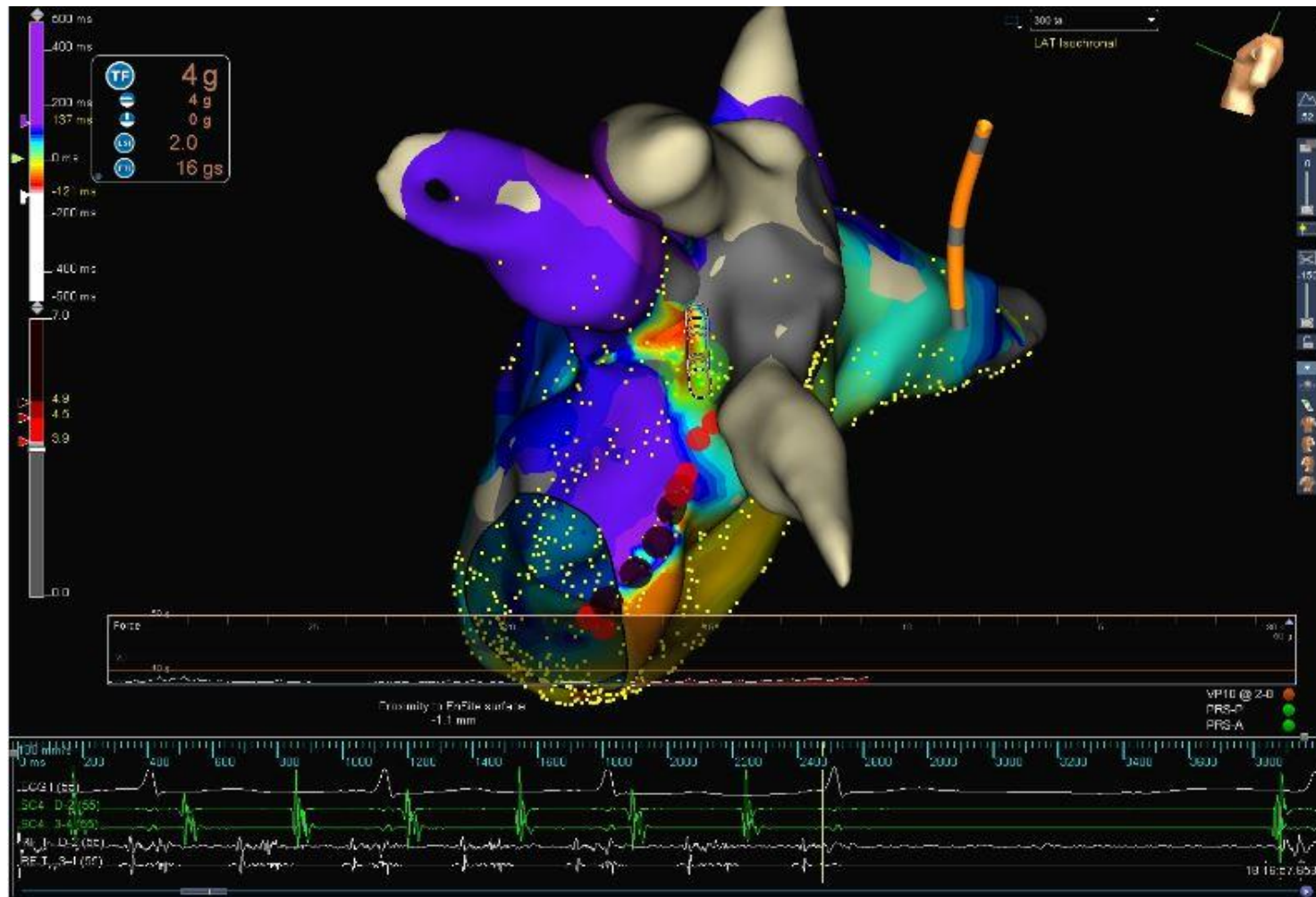
1035 points utilisés / 3028 en 6 minutes de collecte

# TA 300 ms



Potentiels très fragmentés sur la crête

# TA 300 ms



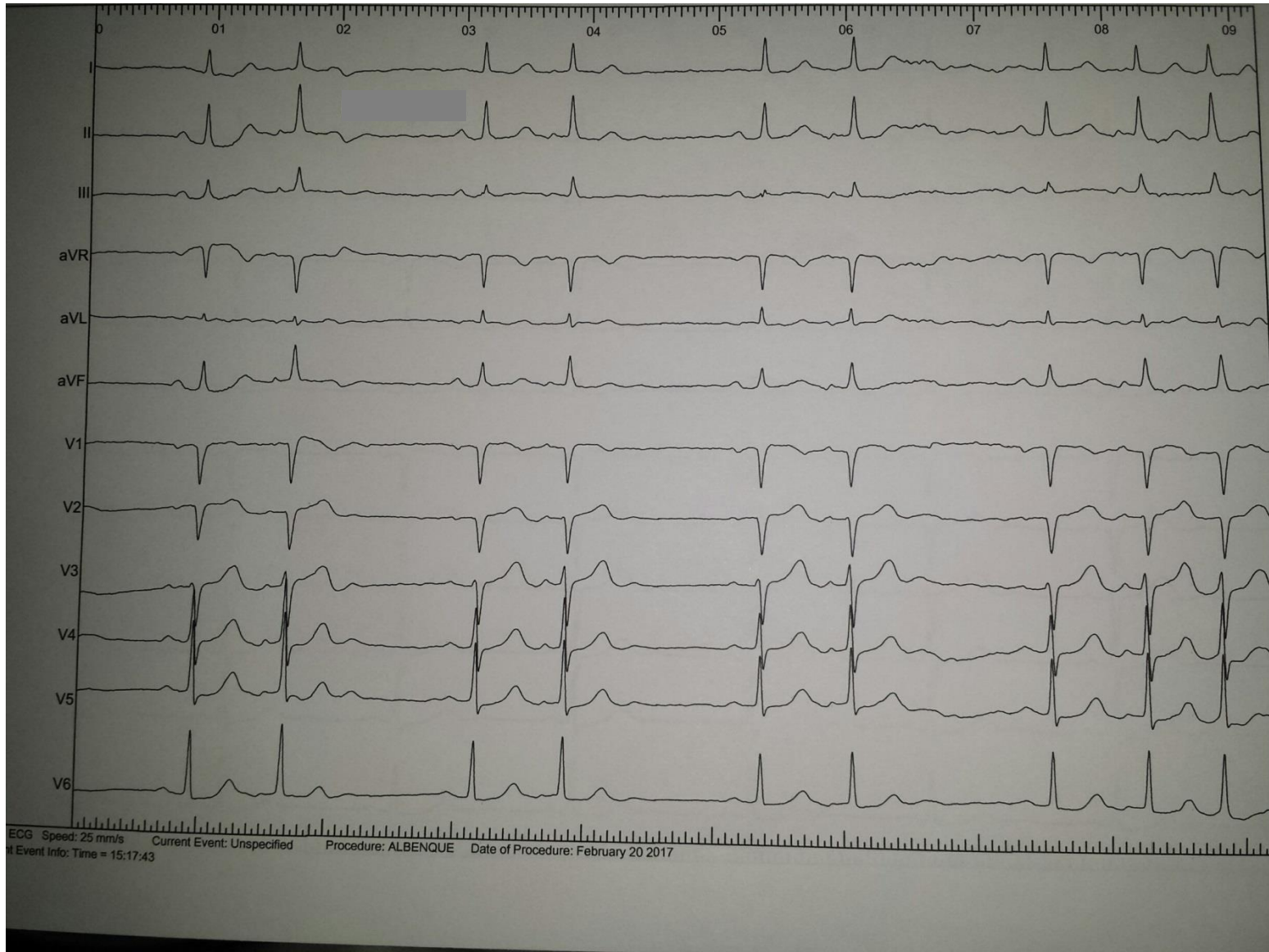
Arrêt per RF sur les potentiels fragmentés de la crête

# Clinical history

## 66 years old woman

- 164cm, 76 kg
- December 2016 : diagnostic of persistant
  
- Arterial Hypertension
- Antecedent of transient ischemic attack

# ECG POST PVI ISOLATION

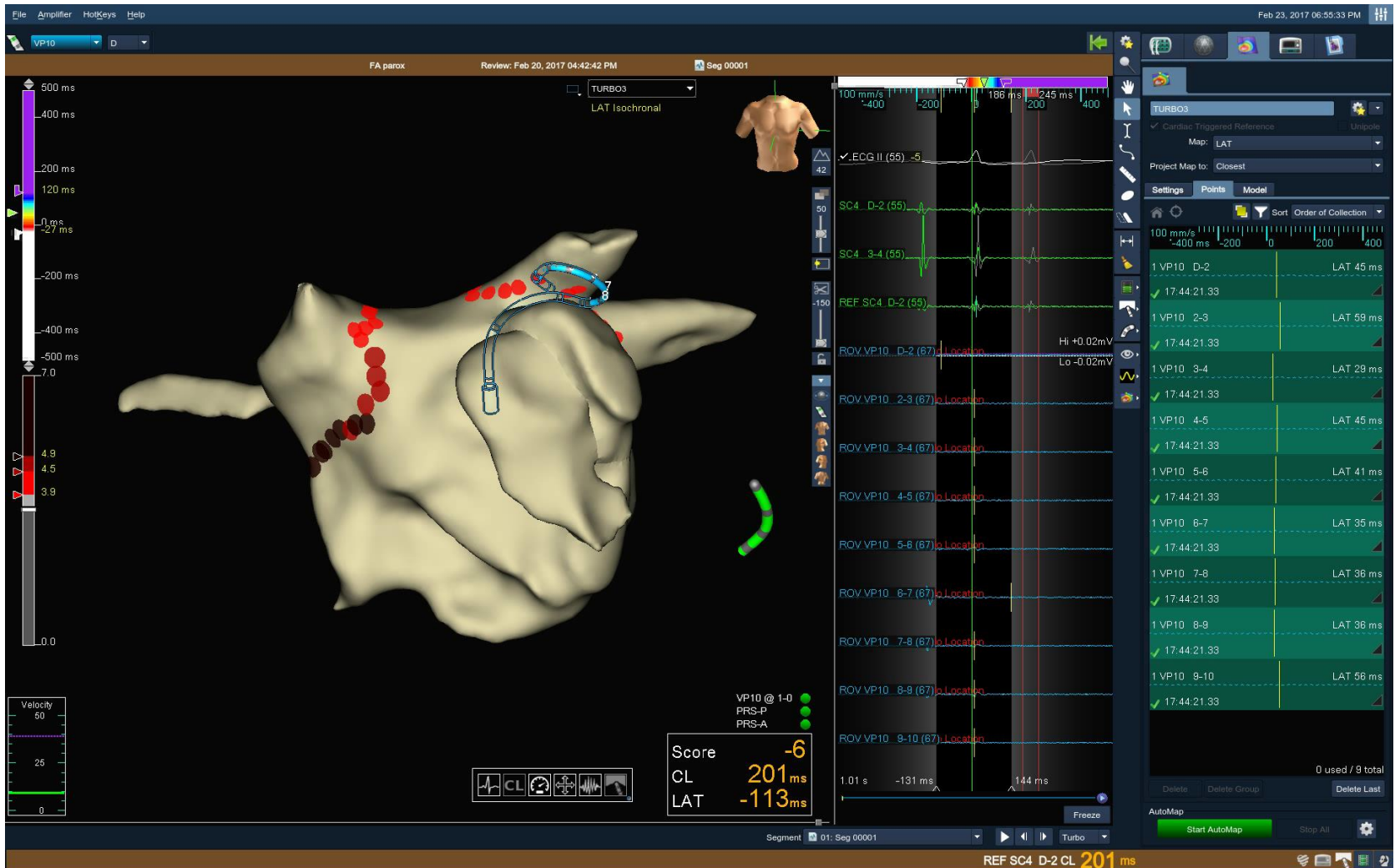


# PAC – mapping

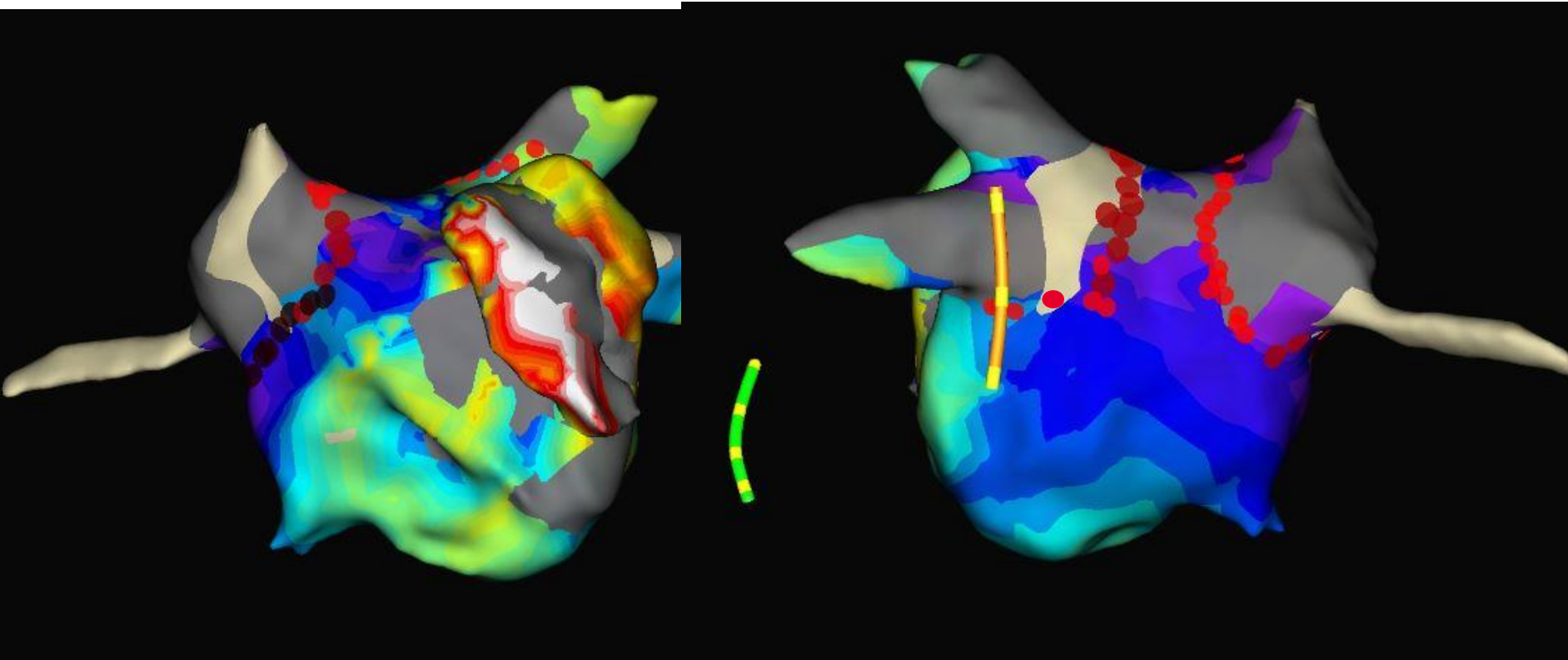
- 993 activation points acquired with Automap, in 15 minutes (10 minutes with circular catheter, and 5 with ablation catheter)
  - Automap filters to automatically add only relevant points to the map :
    - Score and cycle length : to collect only PAC points (no sinus beat, neither mechanical PACs)
    - Speed limit and signal-to-noise : to avoid noisy EGMs
    - Force : can be selected when using the tacticath catheter, to collect points « in contact » and avoid scar false-positive when far from the surface
- > 466 used points / 993 : filtered by distance from the surface, noise, etc.
- « First deflexion » annotation parameter



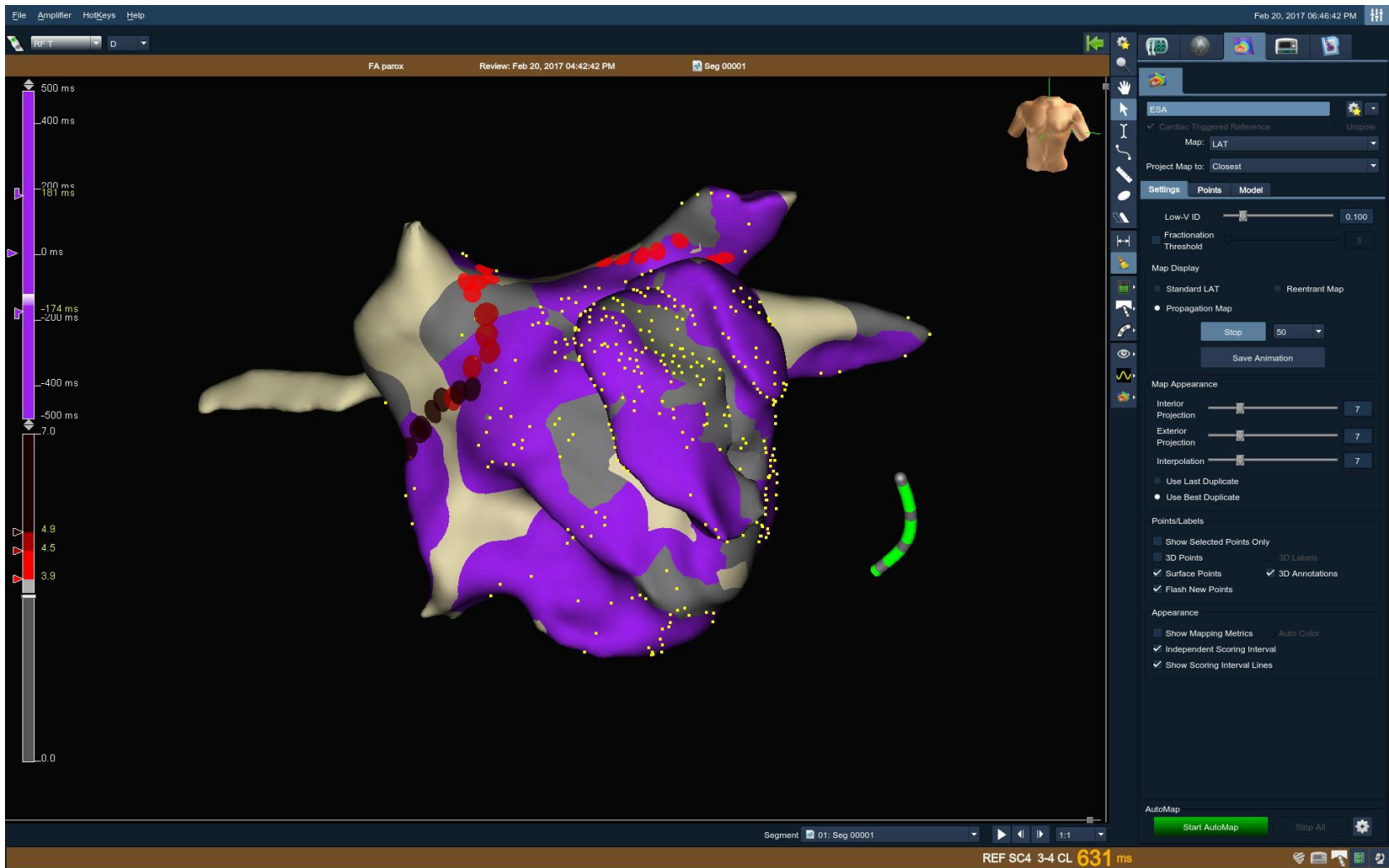
# PAC – mapping (recorded *a posteriori*, 10x speed)



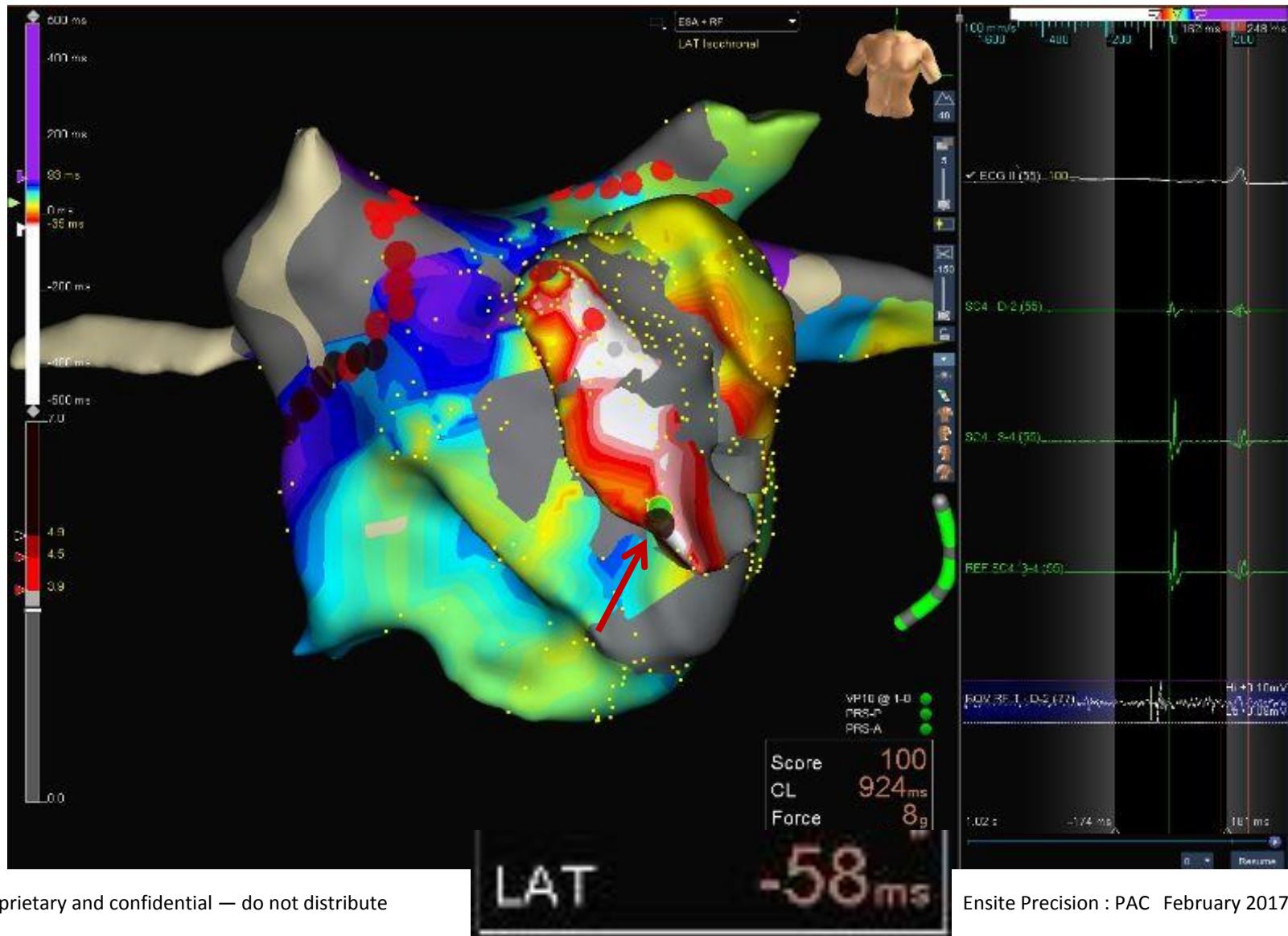
# PV isolation then PAC mapping



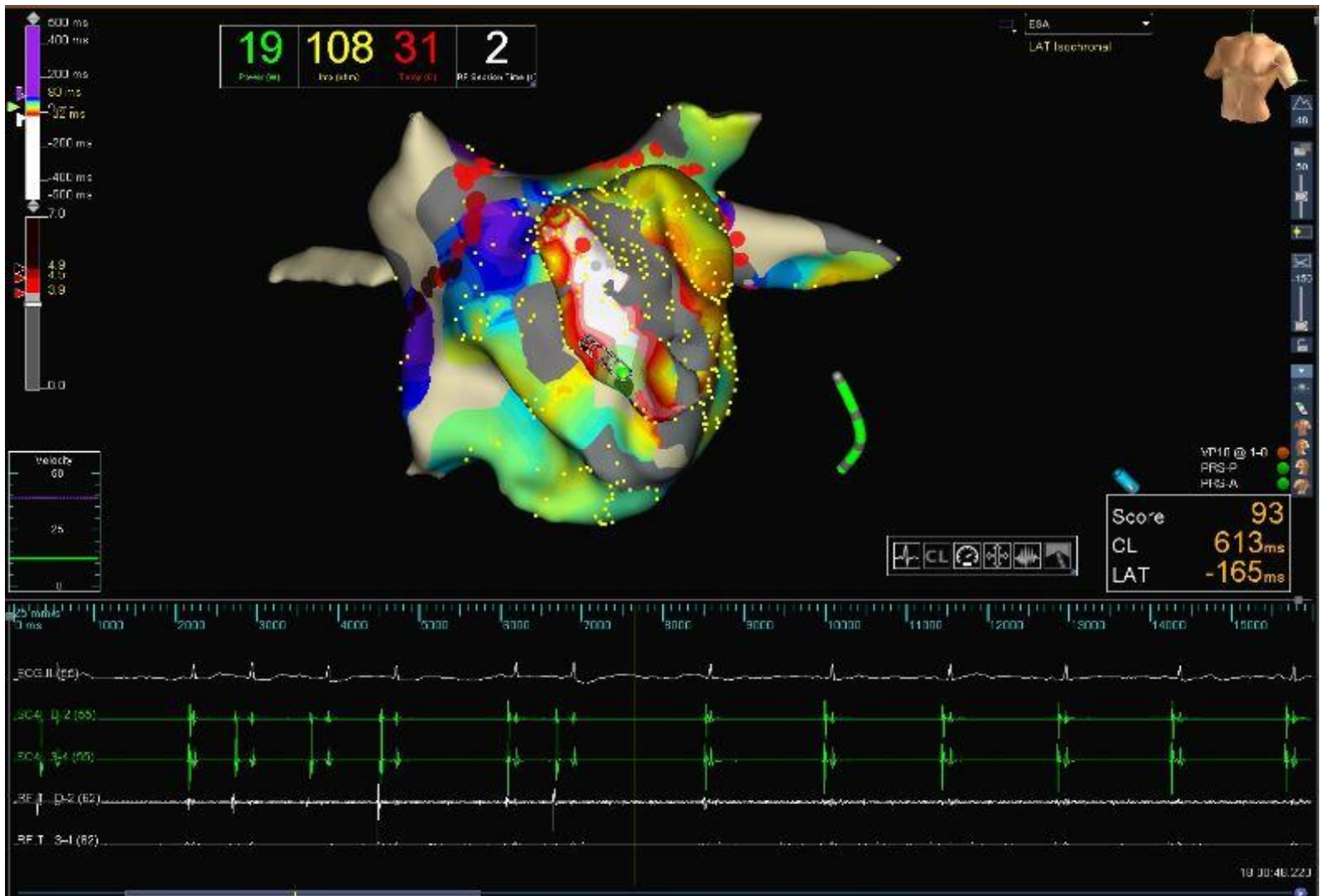
# PAC – propagation map



# *A posteriori* addition of activation point from the effective site



# PAC – ablation : end of PAC



# Precision mapping system

- Good anatomy thanks to magnetic Field scaling and points x 27
- Very fast anatomy and activation map, even with a simple deca catheter
- The maps are fast, clear and easy to read and interpret
- Filters for automatic map to avoid false points (AutoMap)
- RF Sessions are recorded and can be displayed at any time (EGMs and position of the catheters are stored)