

# Ditching related Analysis Overview

(much more has been done but not presented)

Argiris Kamoulakos


January 2019

Property of the CAPTIO team

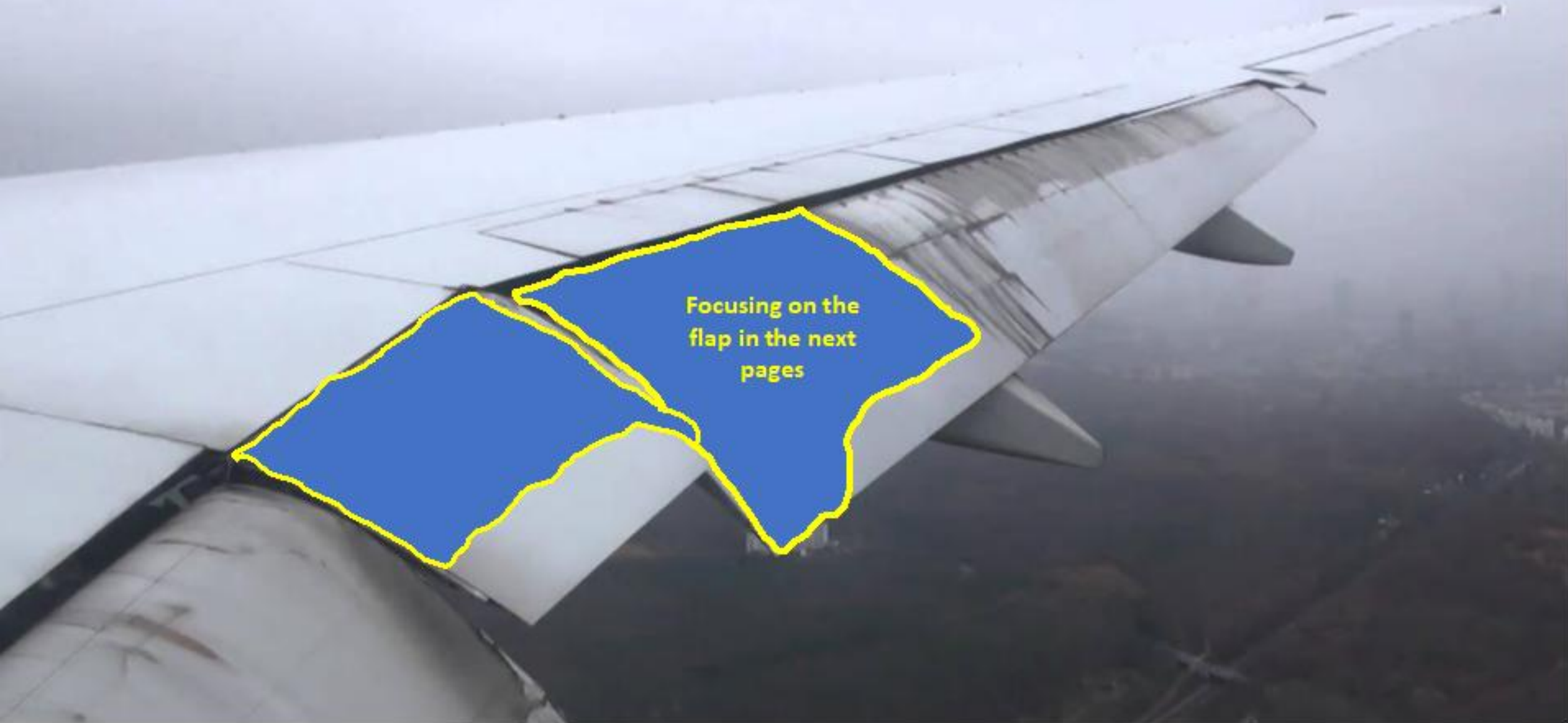
# Right Flaperon

(best described in the DGA report)

## SAFETY INVESTIGATION REPORT MH370 (9M-MRO)

Ref.	Date Found	Debris	Location	Remarks
Item 1	29 July 2015	 <p>Right Flaperon</p>	 <p>Saint-Denis, Réunion Island</p>	<ul style="list-style-type: none"><li>• <i>Confirmed</i> by French Judicial Authority belonging to MH370 on 03 September 2015</li><li>• Refer to <i>Appendix 1.12A-1</i> and <i>Appendix 1.12A-2</i></li></ul>

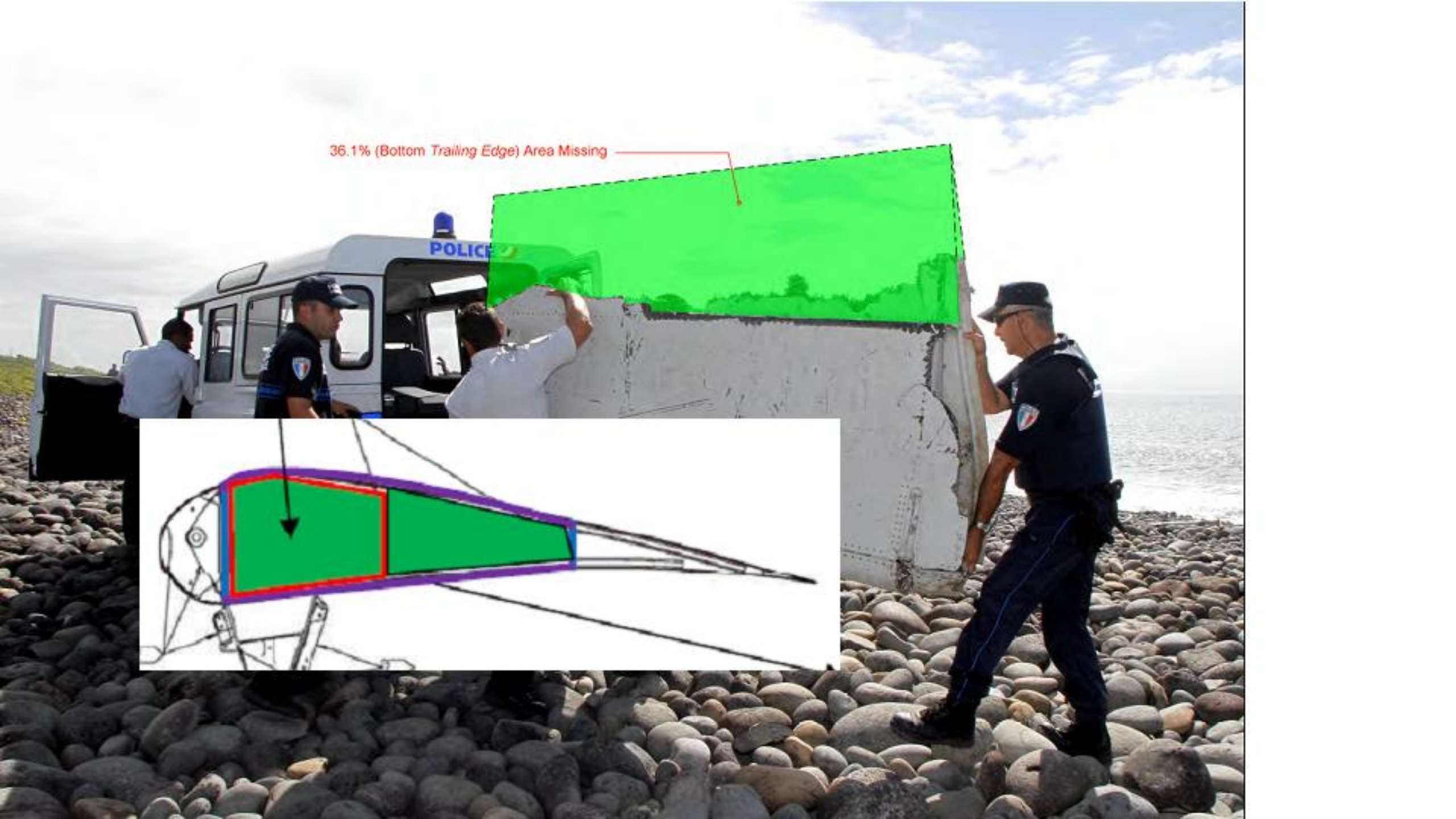
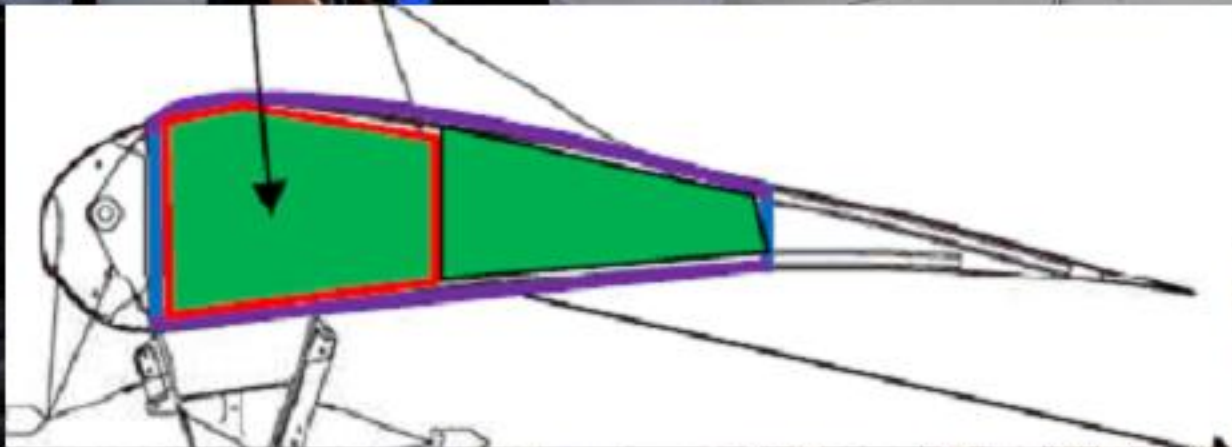
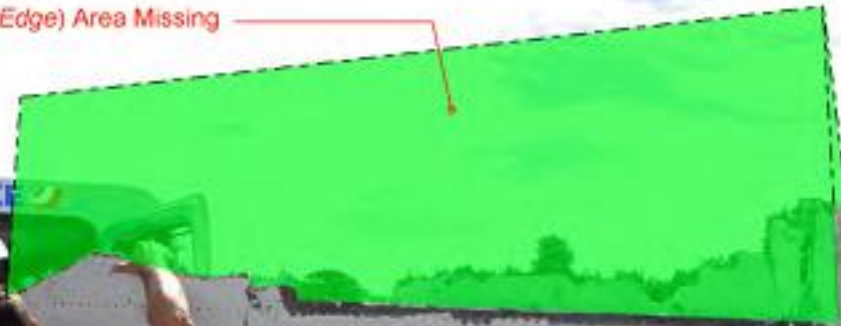
# Combined location of Flaperon and Flap Debris



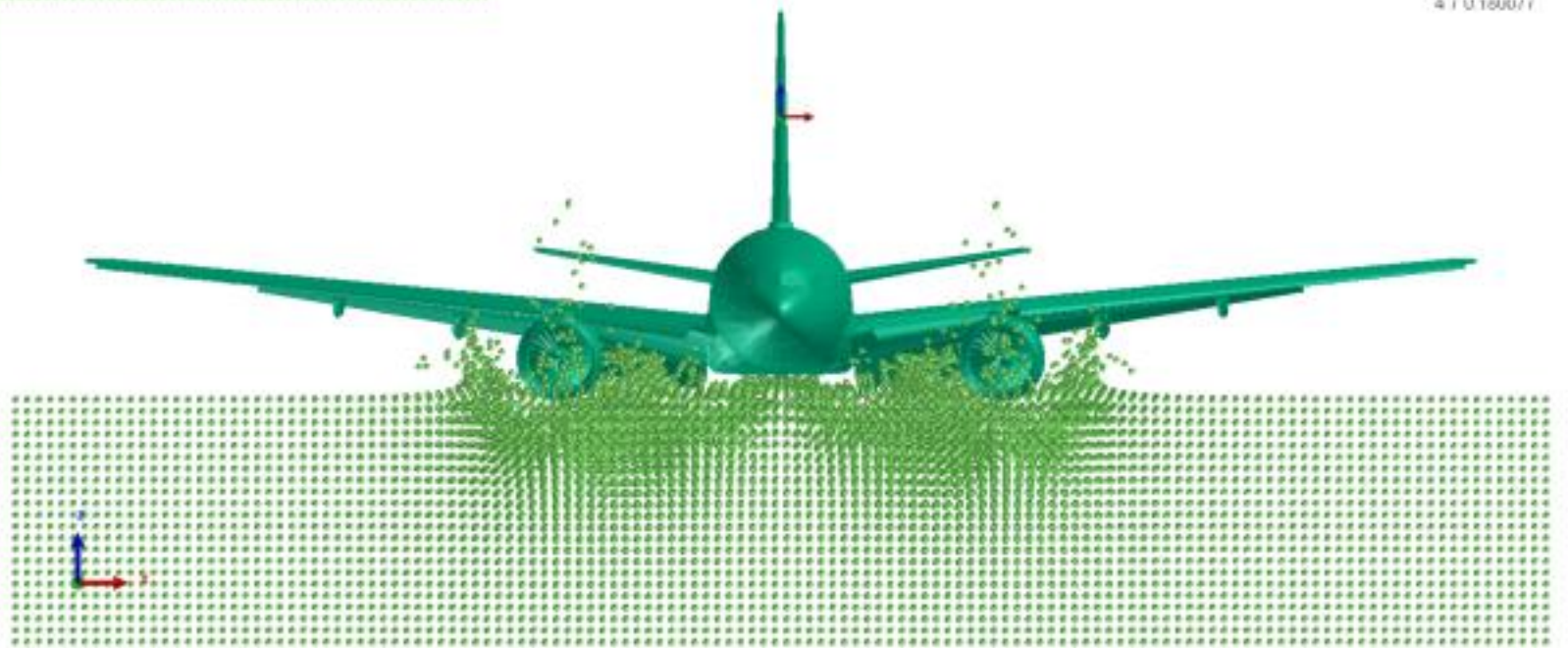
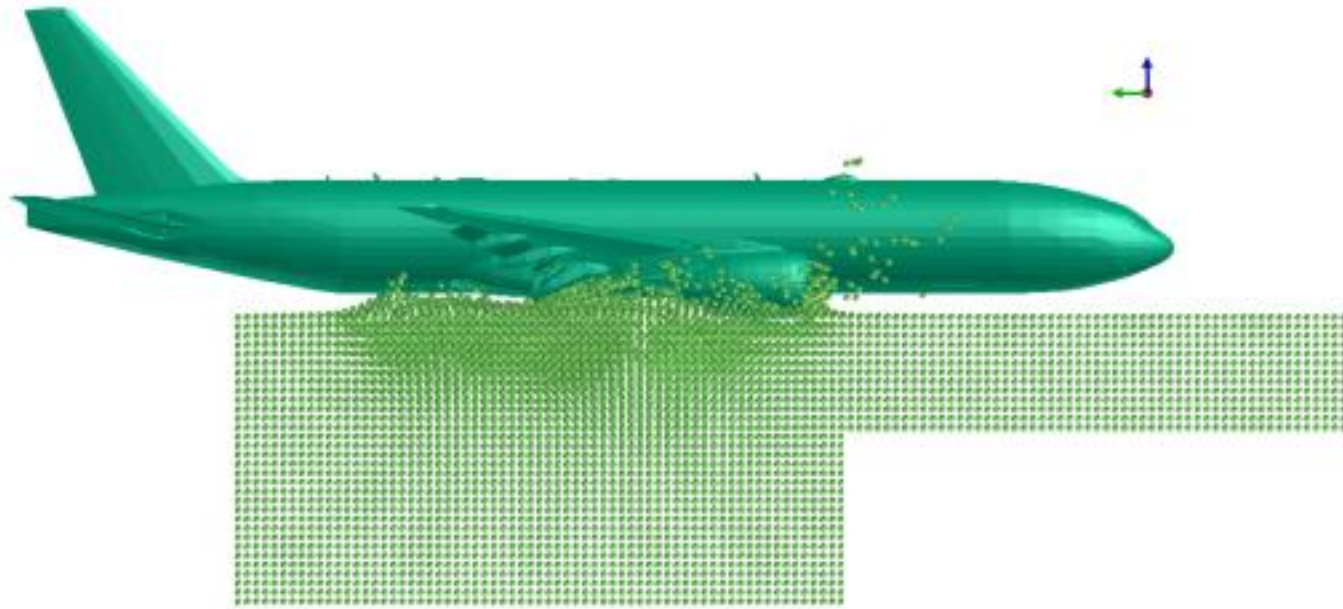
Focusing on the  
flap in the next  
pages



36.1% (Bottom *Trailing Edge*) Area Missing

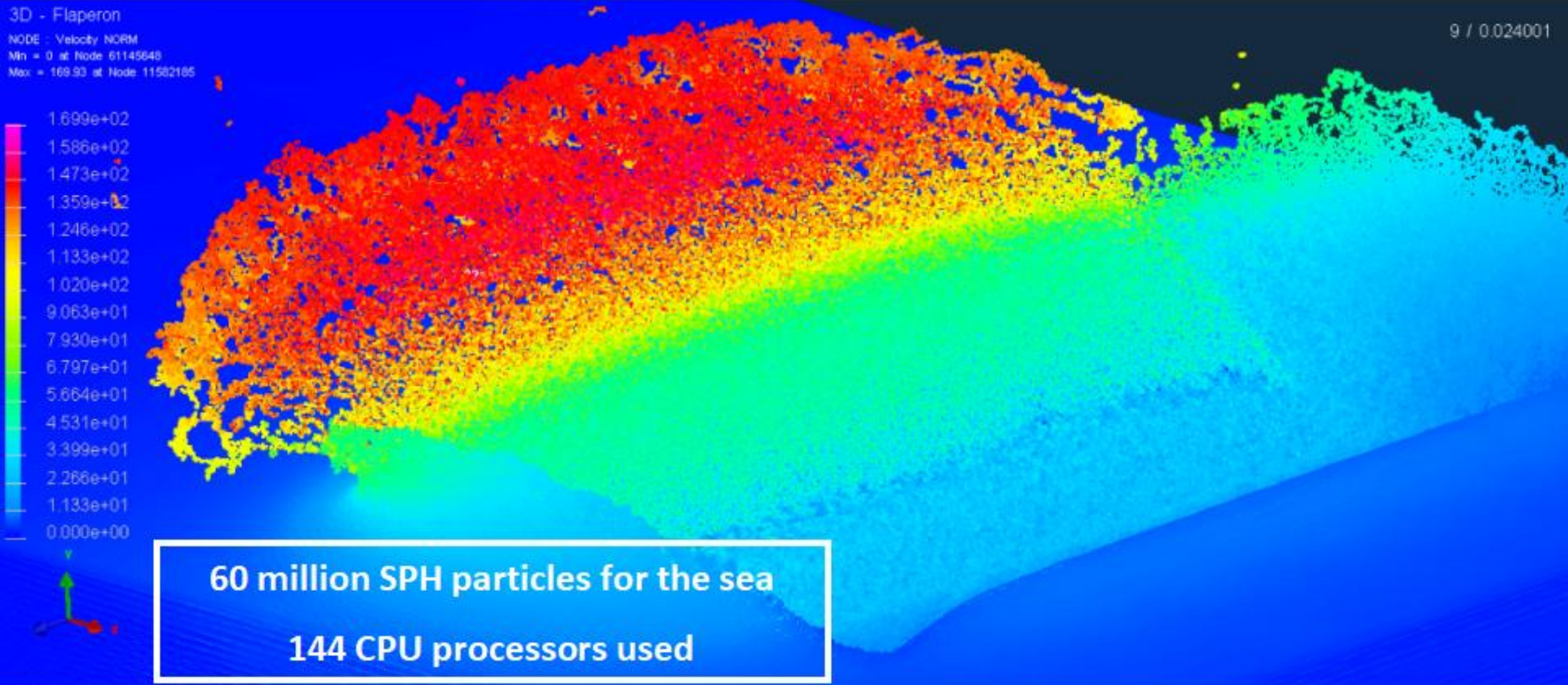


# Ditching simulation scenarios





# Full 3D ditching of the flaperon – 24 milliseconds into the impact

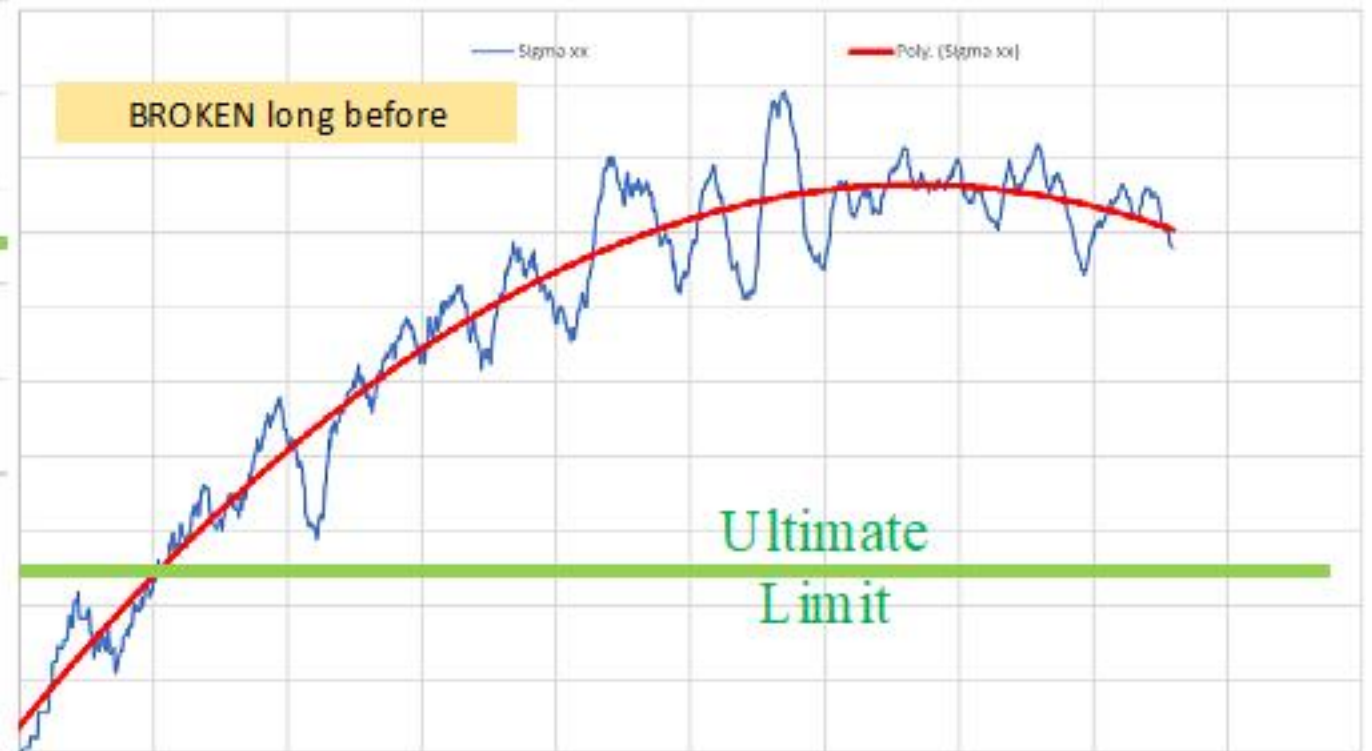


# Maximum tensile stress at the lower trailing edge skin at the 150mm spar Two different speed configurations

55 m/sec Horizontal speed and 10 m/sec Vertical speed



68.42 m/sec Horizontal speed and 2.54 m/sec Vertical speed



**Current research focuses on :**



# Left Outboard Flap



Item 10	10 May 2016	 <p data-bbox="784 882 1108 921">Left Outboard Flap</p>	 <p data-bbox="1363 902 1770 939">Ilot Bernache, Mauritius</p>	<ul data-bbox="1865 516 2356 692" style="list-style-type: none"><li>• This part is <i>confirmed</i> from MH370</li><li>• Refer to <i>Appendix 1.12H</i></li></ul>
---------	-------------	---	---	---

Table 1.12A - Items of Debris

## Left Outboard Flap

Clear perforation due to high speed impact


Most likely from lower surface

CFRP skin debonded from honeycomb core at the exit hole (upper surface)



# Right Outboard Flap

SAFETY INVESTIGATION REPORT  
MH370 (9M-MRO)

Ref.	Date Found	Debris	Location	Remarks
Item 19	20 June 2016	 <p>Right Outboard Flap</p>	 <p>Pemba Island, East of Tanzania</p>	<ul style="list-style-type: none"><li>• The part is <i>confirmed</i> from MH370</li><li>• Refer to <i>Appendix 1.120</i></li></ul>



Large cracks from bending due to overpressure upon  
the Lower surface

Hydrodynamic pressure from ditching ?

1

Lower surface

Trailing edge

Inboard

Side that "touches" the  
Flaperon

