



35<sup>th</sup> European  
Cetacean  
Society conference  
10-12 April 2024



# Telenecropsy: preliminary results of the ACCOBAMS initiative for Morocco

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# Why am I here?

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Thanks to Jean-Marie Graïc and ACCOBAMS!

- 2011 : DMV
- 2012-2018 : Assistant in veterinary histopathology (Uliege)
- 2013 : Self-training in scientific photography
- 2015 : First pictures of a cetacean necropsy (fin whale, Gent (BE)
- 2015 – 2022 : Sporadic tries of telenecropsies (What's App & others)
- 2018 - Creation of One Health Photography
- 2020 – now : Collaboration with ACCOBAMS



Dr Etienne LEVY



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# Context

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ACCOBAMS ambition :

**To develop and harmonize surveillance networks in the Mediterranean area**

Thierry Jauniaux, DVM, PhD, Associate Professor, Diplomate of the European College of Zoological Medicine (Wildlife Population Health)

→ scientific expert - stranding training

Etienne Levy, DVM

→ technical expert – photo training – R&D

**Our proposition : Let's try scientific photography**



Dr. Etienne LEVY



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# What is scientific photography?

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**A rigorous, repeatable and reproducible photography**



Material and methods

Context

Scale

Real colors

Manual settings

Image quality

**You can calculate the depth of field**



GENT (Belgium) 2015-11-10



*Crassicauda boopis* in a fin whale (*Balaenoptera physalus*) ship-struck in the eastern North Atlantic Ocean Lempereur et al. (2017)

DOI: <https://doi.org/10.1017/pao.2017.10>





**SONY ILCE-7M2 24-70 F/4 56mm ISO 2000 1/100th F/10 Natural Light**





**SONY ILCE-7M2 24-70 F/4 69mm ISO 1600 1/100th F/10 Natural Light**



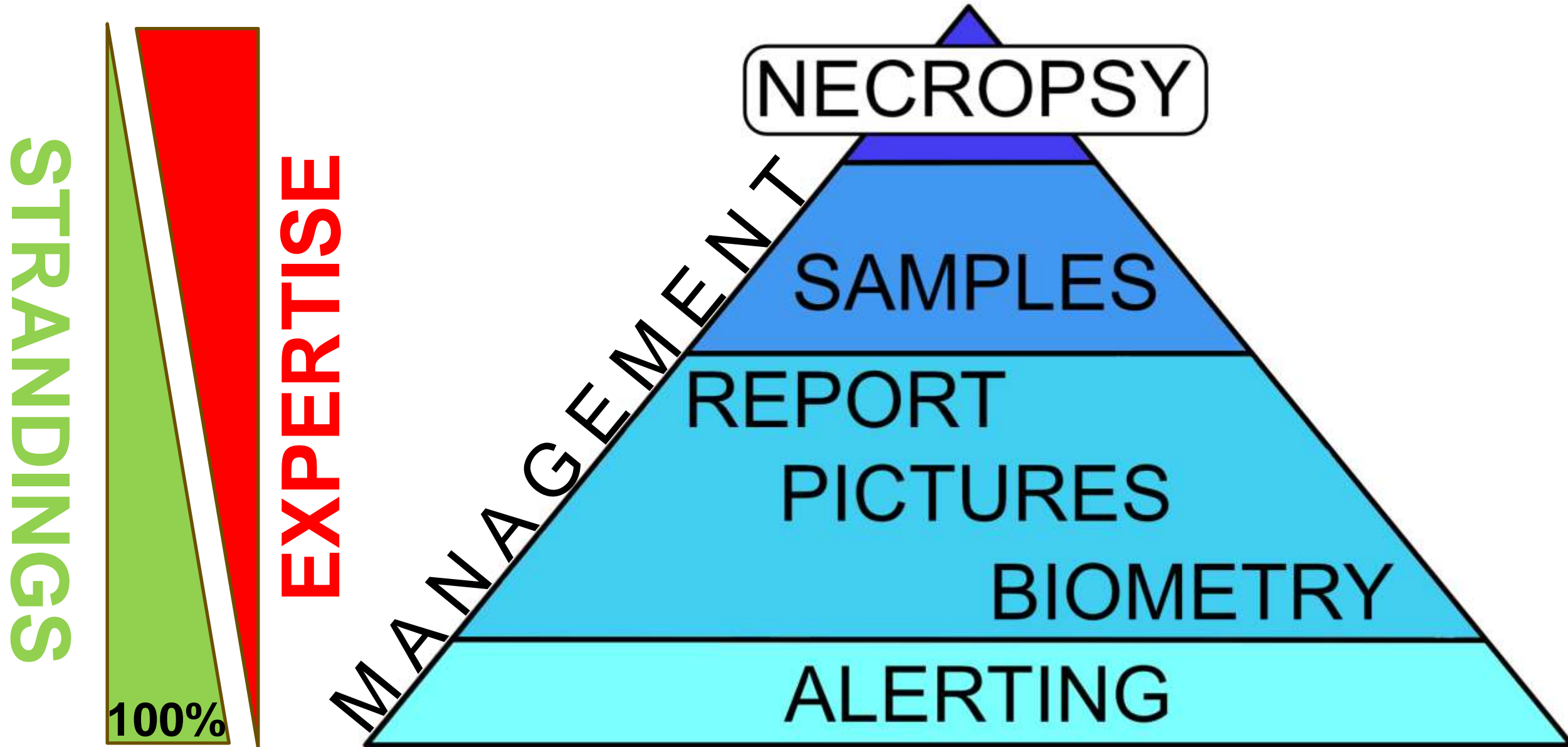


**PENTAX K-3 II 100mm macro F/2.8 ISO 400 1/180th F/7.1 Flash PENTAX AF160FC**



# The stranding network paradigm

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# From photography to telenecropsy

The PLAN : GO or NO GO

|                                      | PHOTOGRAPHY | VIDEO  | TELENECROPSY |
|--------------------------------------|-------------|--------|--------------|
| Theorical training (remote)          | YEAR 1      | YEAR 2 | YEAR 3       |
| Continuous training (remote)         | YEAR 1      | YEAR 2 | YEAR 3       |
| Practical training (Tanger, Morroco) | YEAR 1      | YEAR 2 | YEAR 3       |
| Continuous training (remote)         | YEAR 1      | YEAR 2 | YEAR 3       |

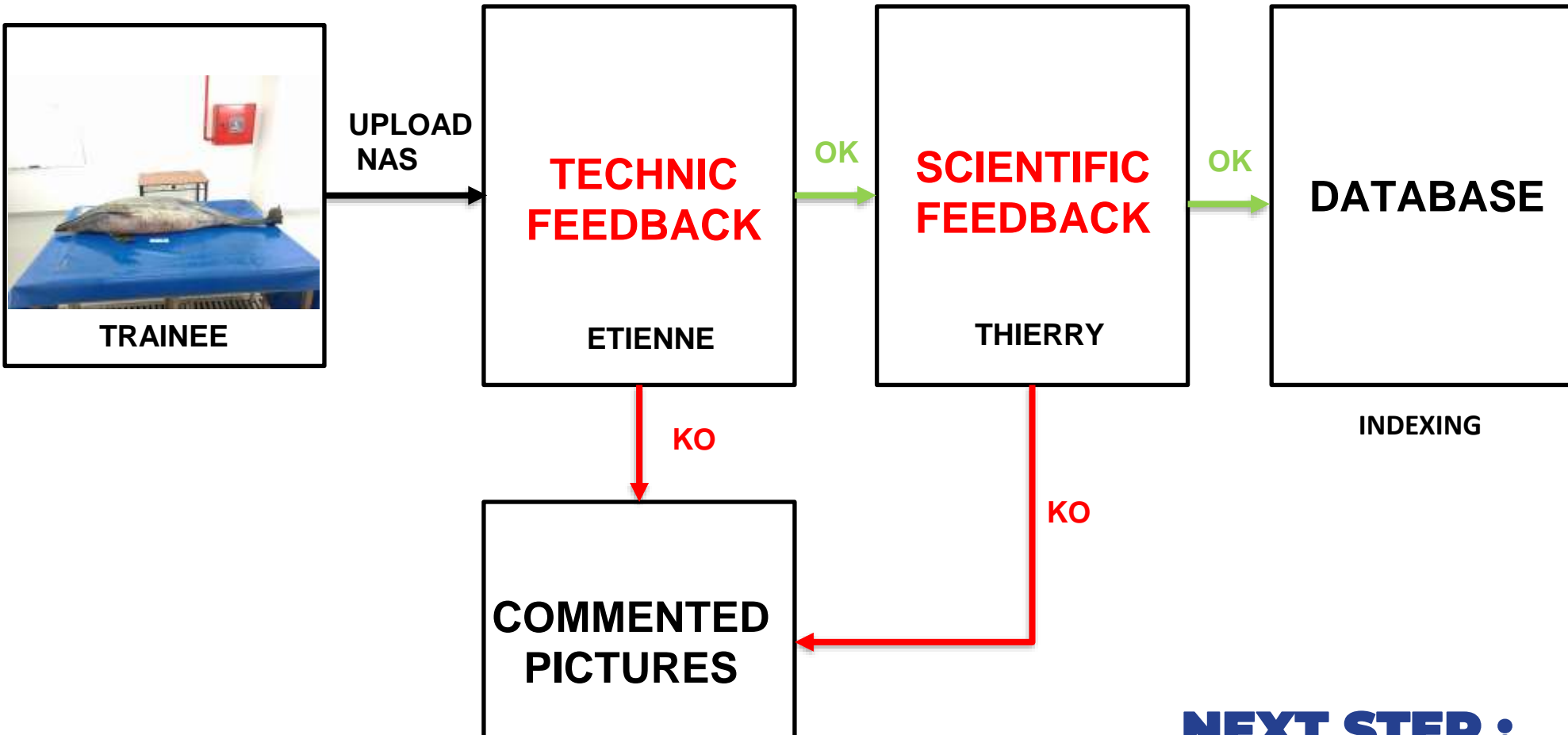


# From photography to telenecropsy

## THE REALITY

|   | PHOTOGRAPHY       | VIDEO | TELENECROPSY        |
|---|-------------------|-------|---------------------|
| <b>Theorical training</b> (remote) : 2 x 4 hours          | <b>APRIL 2023</b> |       |                     |
| Continuous training (remote) : 1 hour / month             | 2023-2024         |       |                     |
| <b>Practical training</b> (Liège, Belgium) : 1 day        | July 2023         |       |                     |
| <b>Practical training</b> (Tanger, Morocco) : 1 day       | September 2023    |       | Proof of concept    |
| <b>Practical training</b> (remote) : 1 day                | November 2023     |       | Field tests         |
| <b>Practical training</b> (Tanger, Morocco) : 2 days      | February 2024     |       |                     |
| <b>First telenecropsy on the field</b> (Kenitra, Morocco) |                   |       | <b>JANUARY 2024</b> |

# TRAINING STRATEGY



ADVICES ARE PROVIDED  
FOR IMPROVEMENT

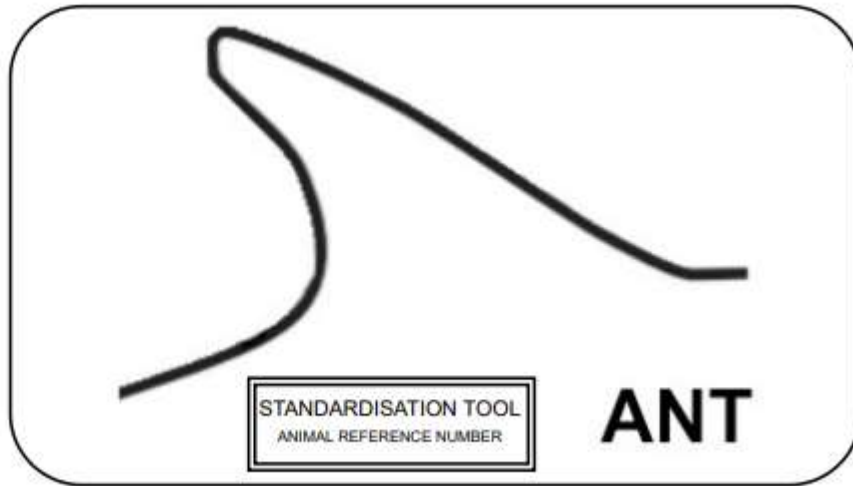
**NEXT STEP :  
DELEGATING THE FEEDBACK**



# RESULTS

**Picture 19**

dorsal fin  
right side



# RESULTS

<https://youtu.be/mMZNsCLZDkM>

First field telenecropsy

<https://youtu.be/CGvsIDnhAvg>

Telenecropsy proof of concept



# TOOLS DEVELOPED

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**Database :** Synology NAS

**Telenecropsy kit** and a **Discord server**

**Dedicated standardisation tool** with scale, white balance, exposition reference, animal reference and copyrights

Creation of a **PDF guideline** (High tech – Low tech) to achieve the standardisation for the whole area

## LESSONS LEARNED

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Network and softwares are the weakest point of the chain

**With training, cheap smartphones can take scientific pictures**

Live video is not the gold standard

The sound quality really matters (ANR – hardware/software)

The device that records (field operator) can be a cheap smartphone

The device that displays (expert) must be calibrated and professional grade

**Video and sound provide the guidance, scientific photography provides the data**

The field team must train together managing the whole stranding

**With a limited bandwidth, a live video is useless but a picture remains perfect**

# Major threats of the project

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- Dead cetaceans are needed for the trainings
- Feedback and training of local intervention teams must be delegated to ensure the sustainability of the project.



# PERSPECTIVES

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- Continuous training is still ongoing
- Developed tools are improved with ROX
- Another country can join the project
- Integration of the photographic database in NETCCOBAMS
- Proposal : the DOLFAKE project :
  - harmonize the training to obtain standardized data for the full ACCOBAMS area



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**THANK YOU!**



Mediterranean  
Action Plan  
Barcelona  
Convention



The Mediterranean  
Biodiversity  
Centre



Gouvernement Princier  
PRINCIPAUTÉ DE MONACO



GOVERNMENT OF MALTA  
MINISTRY FOR THE ENVIRONMENT,  
ENERGY AND ENTERPRISE



Institut National Des Sciences  
Et Technologies De La Mer



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