

*Seychelles 3rd Tuna Conference  
December 8th, 2012 – Mahé, Seychelles*

## **Working to improve traceability of fisheries and to achieve substantial bycatch reduction in the IO**



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## Outline

- Adopting best practices: from science to management
- Non entangling FADs
- Reducing shark, rays & turtles incidental mortality
- The next steps

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## Adopting best practices: from science to management

- Principles of the sector's programs
  - Initiated by the sector
  - Starting from scientific research
  - Giving tools and objectives
  - Involving all fishermen
- A dynamics rather than single reactive finite actions
  - A proactive, progressive, practical & participating approach
- A mix between research and implementation
- Made possible because of
  - A shared concern for sustainability
  - A good cooperation with scientists
  - A follow up by ship-owners and Orthongel



## Adopting best practices: from science to management

- Issues encompassed in the Orthongel plan
  - FAD management
  - Reduction of incidental catch (including entanglements in FAD's nets)
  - Reduction of non commercialized catch (juveniles, 0-value bycatch, discards)
- Methodology
  - Identification of the possible technical solutions through a WG of scientists, captains and technicians of the ship-owners
  - Work in parallel with the MADE scientific program
  - Elaboration of guidelines
  - In real conditions testing, tuning and validating

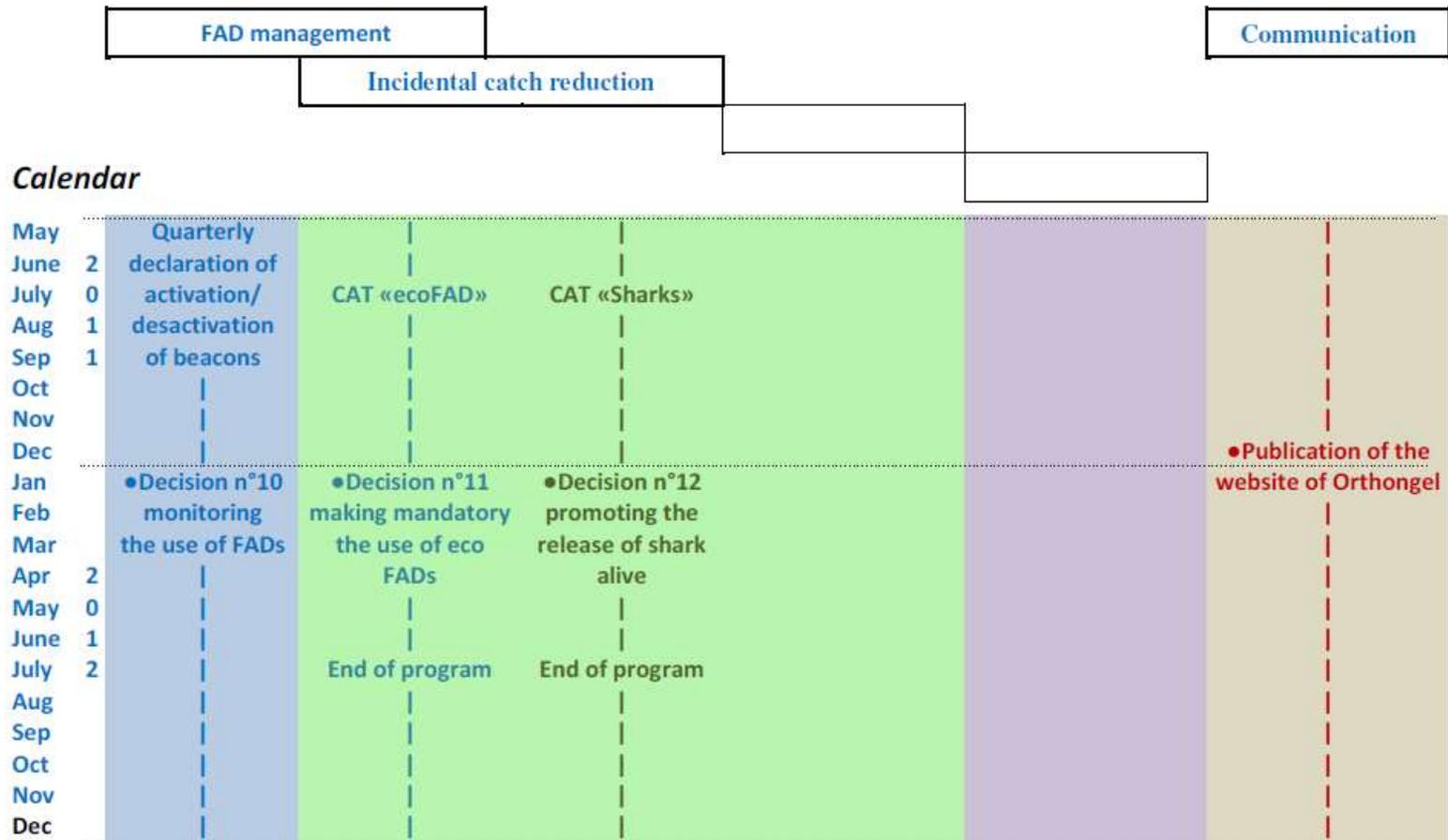
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# Adopting best practices: from science to management

- Where are we today?



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## Non entangling FADs



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## Non entangling FADs

- Terms of reference
  - Non-entangling
  - Resistant to sea conditions
  - Similar drift than traditional FADs
  - Similar yields when fishing
  - Similar furtiveness
  - Reduced additional cost
  - Quick and easy to built



## Non entangling FADs

- Protocol
  - Each vessel's crew was explained the objectives and given instructions to build pre-designed non-entangling FADs
  - Materials (black cloths, ropes) were distributed to each vessel
  - Crew were asked to document the non-entangling FADs they designed
  - Setting of any non-entangling FAD was reported on a specific form, as well as fishing
  - After each crew, forms were revised with the captains and a report prepared



## Non entangling FADs

- Raft cover:
  - 2 to 4 layers of thick black small-mesh (50 mm) netting tightly sewn together and heavily strained to prevent animals from getting between the netting.



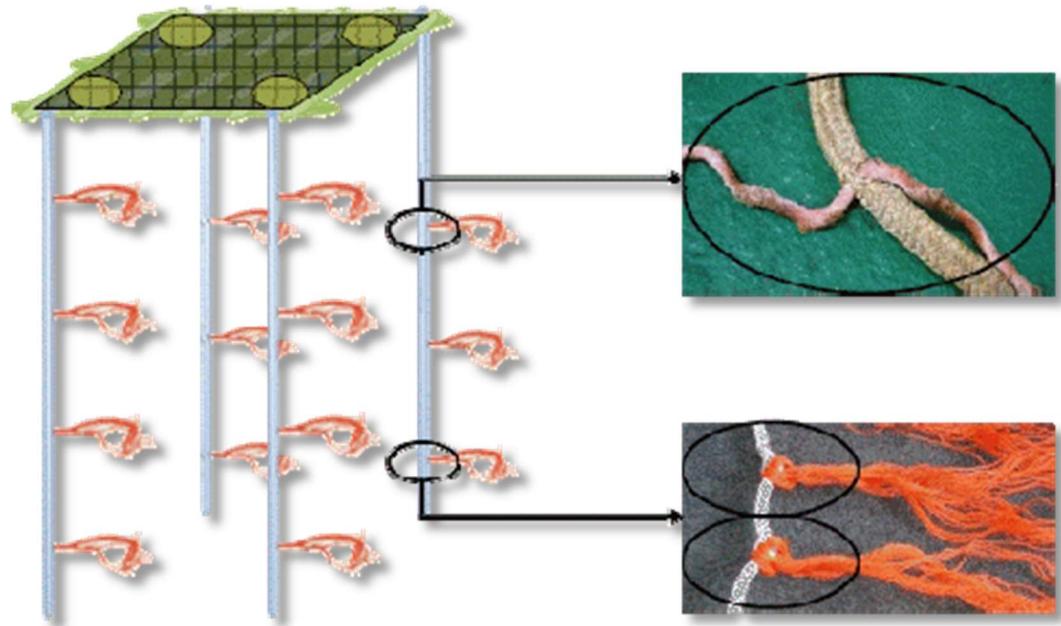
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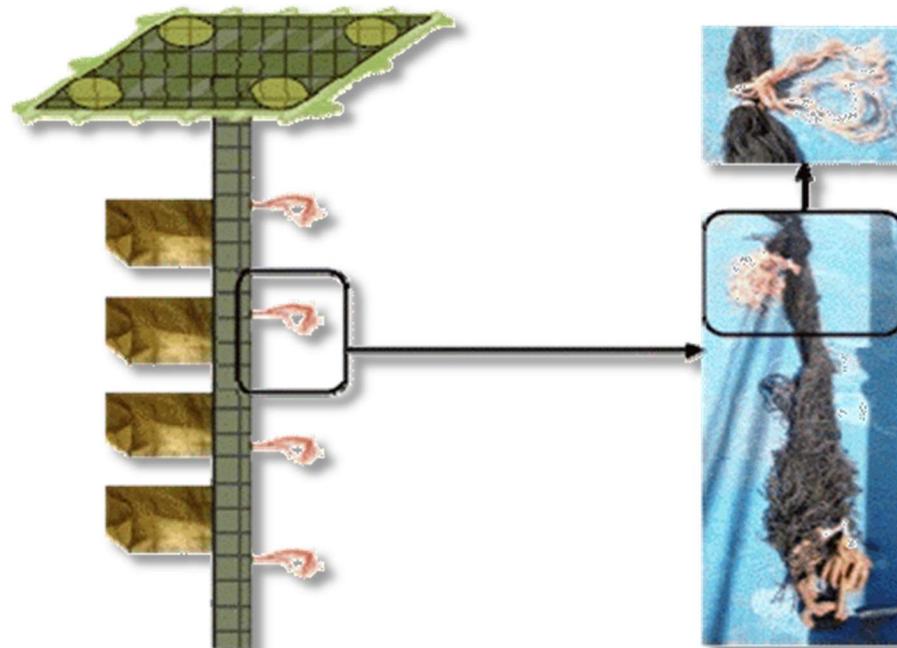
## Non entangling FADs

- Type B: the ropes design
  - The underwater hanging structure is composed of 1 to 4 recycled weighted ropes. To increase the drift, salt bags and/or small unbraided sections of recycled ropes are attached to the ropes



## Non entangling FADs

- Type C: the twisted net design
  - The underwater hanging structure is composed of a single twisted and weighted net hanging from under the middle of the raft



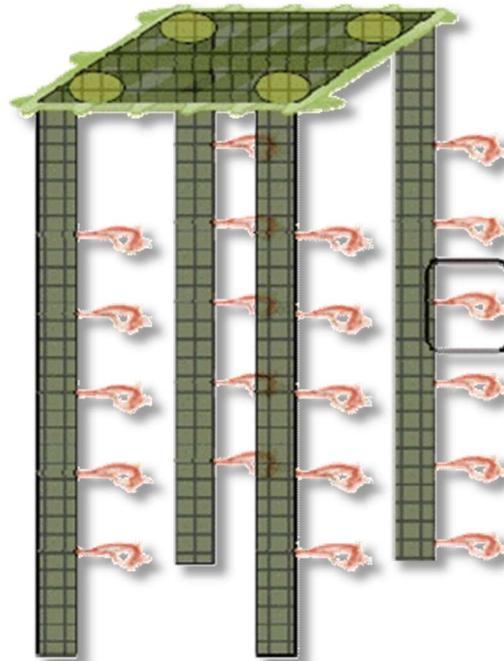
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## Non entangling FADs

- Type D: the 2 to 4-net strips design
  - The underwater hanging structure is composed of 2 to 4 twisted and weighted strips of net attached to each corner of the raft



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## Non entangling FADs

- Dimension of the experiment
  - More than 1200 non-entangling FADs seeded in the IO (since January 1st, 2012, vessels are not allowed to seed anything else but non-entangling FADs)
  - About 130 non-entangling FADs seeded in the AO (same resolution for the OA starting January 1st, 2013)



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## Non entangling FADs

- Results in terms of yields
  - 124 sets made on non-entangling FADs
  - 92% of the sets made on non-entangling FADs made on non-entangling FADs belonging to the fishing vessel.
  - Average time between the seeding and the first set made is between 4 weeks and 10 weeks

*Indicators of fishing efficiency of non-entangling and regular FADs*

<i>Parameters and indicators</i>	<i>Non-entangling FADs sets</i>	<i>2010-2011 log sets</i>	<i>2005-2010 log sets*</i>
Number of observations	124	-	11 832
Average catch per set	25.5 t	-	25.0 t
Number of observations used for Shapiro-Wilk test	67	1349	-
Average catch per set	25.0 t	25.2 t	
%age of sets of <10 t	22.6%	29,8%	25.2%
%age of sets of 10-50 t	62.9%	57,6%	60.6%
%age of sets of >50 t	14.5%	12,6%	14.2%

\* including null sets.



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## Reducing shark, rays & turtles incidental mortality



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## Reducing shark, rays & turtles incidental mortality

- Terms of reference
  - Identifying the conditions faced by sharks, rays and turtles during the different phases of the fishing operations and catch processing
  - Testing tools & procedures for the release with 2 objectives
    - 1) Improve the health conditions of the released animal
    - 2) Improve the conditions of security of the crewmen



## Reducing shark, rays & turtles incidental mortality

- Terms of reference (followed)
  - Tagging individuals during the program to measure progress and validate the effectiveness of the live release



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## Reducing shark, rays & turtles incidental mortality

- Results
  - Good practices & tricks identified and documented (protocols, sketch & pictures)
  - Dedicated training of crews for each vessel



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## Reducing shark, rays & turtles incidental mortality

- Results : a guide largely distributed



French, English & Spanish versions of the guide available on our website

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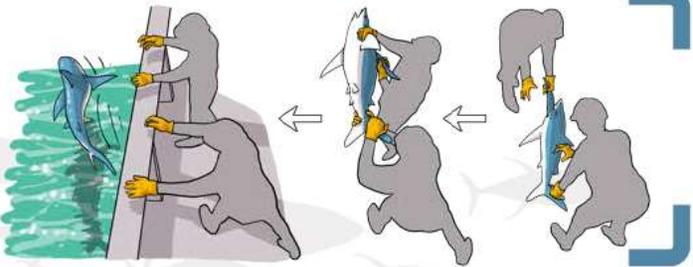
## Reducing shark, rays & turtles incidental mortality

- Results : insight of the guide

**MEDIUM PELAGIC SHARKS**

**HOW TO HANDLE AND RELEASE SHARKS**

- Medium sized fish can be handled by two persons : one crew member holds the dorsal fin and the pectoral fin, keeping well away from the head, and the second crew grabs the tail.



**If you are obliged to delay its release:**

- prevent the animal from battering itself on the deck and surrounding hard objects,
- place the animal in the shade and water it regularly,
- use a hose placed in the jaw with a moderate flow of water if you want to delay its release.

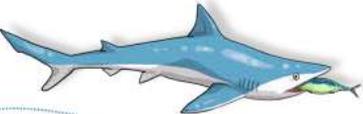
**HOW TO CALM DOWN A VIGOUROUS SHARK**

- Cover the shark's eyes with a piece of smooth, wet and dark cloth. Never press this against the eyes.



**HOW TO PREVENT SHARK BITES**

- A dead fish (skipjack) or a big stick placed between the jaws prevents it from biting and will allow it to be handled safely.



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## Reducing shark, rays & turtles incidental mortality

- Results : posters onboard and on land



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## The next steps



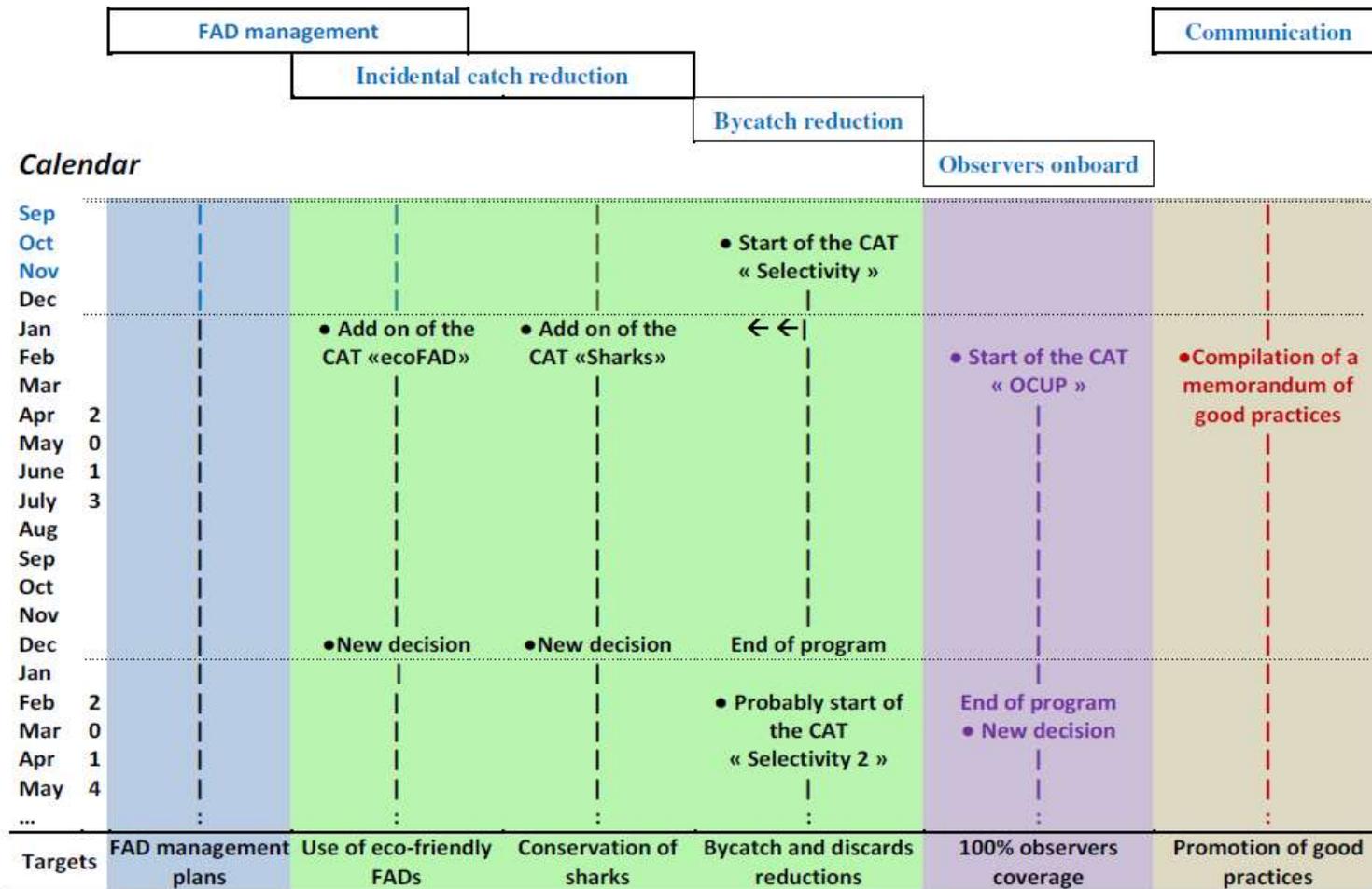
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## The next steps

- Projects for 2013-2014



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## The next steps

- The CAT “Selectivity”
  - Add-on of the CAT “eco FAD”: building eco FADs in land-based workshops to:
    - move towards eco-friendly FADs (without hanging nets)
    - guarantee that ecoFADs are eco-friendly all along their life-time
  - Add-on of the CAT “Sharks”: providing to all vessels selected standard tools to facilitate the release of sharks and rays alive
  - Identifying methods to be tested by the fleet to reduce bycatches



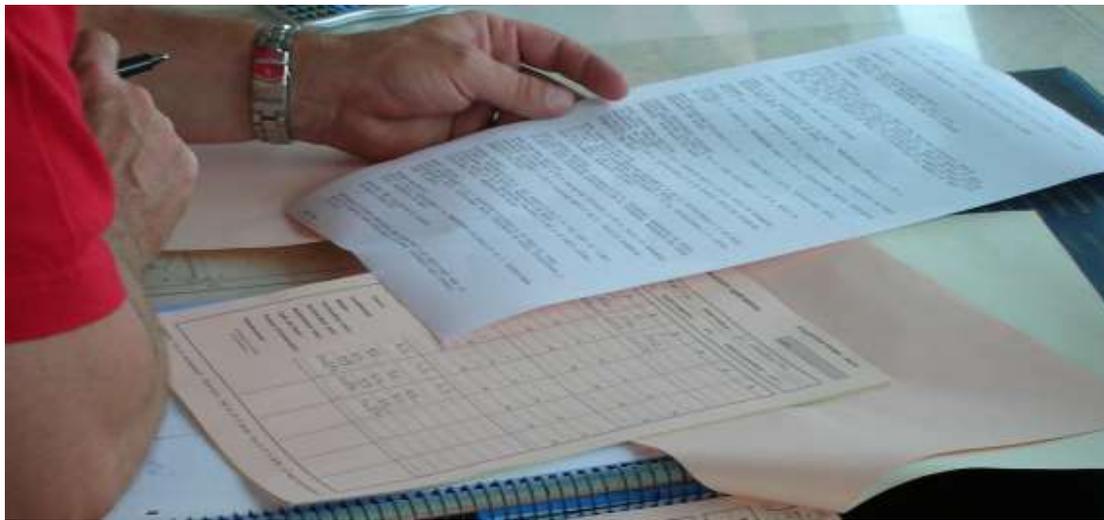
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## The next steps

- The CAT “UPCO”
  - Experimenting what could be a regional observer program
    - Having on each vessel a Unique Permanent & Common Observer
    - Training such observers to all objectives
    - Using a majority of national observers from countries with FPA
    - Establishing the “rules”



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Thank you for your attention



More information on [www.orthongel.fr](http://www.orthongel.fr)

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