Tryfon Sompolos
Small Scale Fishermen's Union
Greece

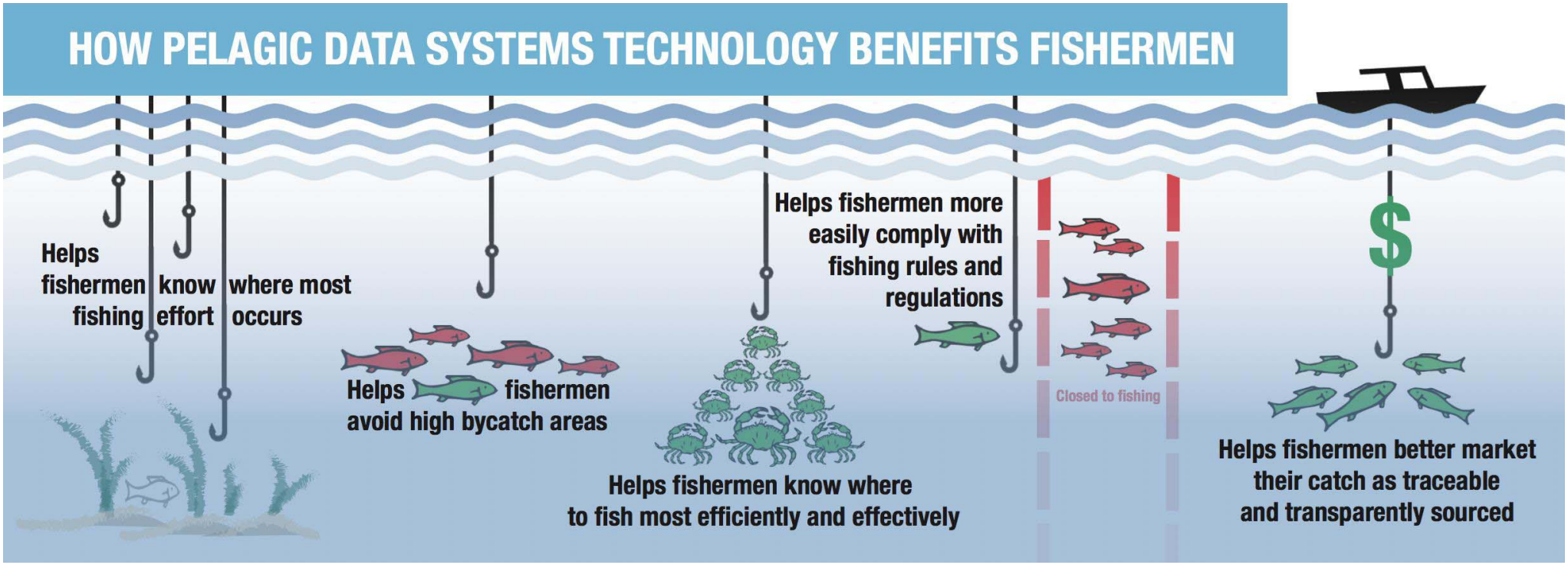
Spyros Kouvelis / Christina Deligianni
Pelagic Data Systems - Europe

Pelagic Data Systems Key features

- Ultra-light vessel tracking system
- Inexpensive, rugged sensors designed specifically for SSFs
- No requirements for power supply or maintenance of any kind
- Cannot be tampered with or removed/switched off
- Helps track fleet location, activity, catch methods, and vessel to vessel interactions
- Integrates with any existing traceability or analytics platform

Who are the users of Pelagic Data Systems? (input and output)

- Fishermen
- State regulation and control agencies
- Marine research & Policy-making

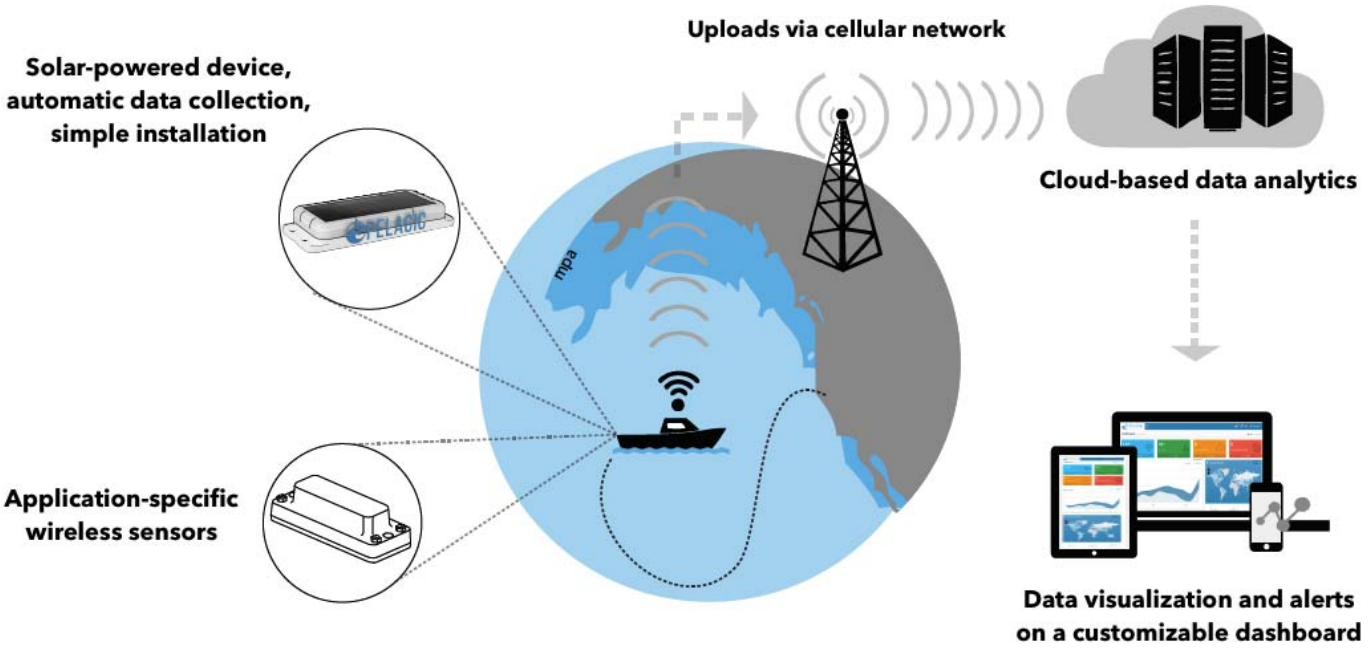


Why Fishermen use Pelagic Data Systems

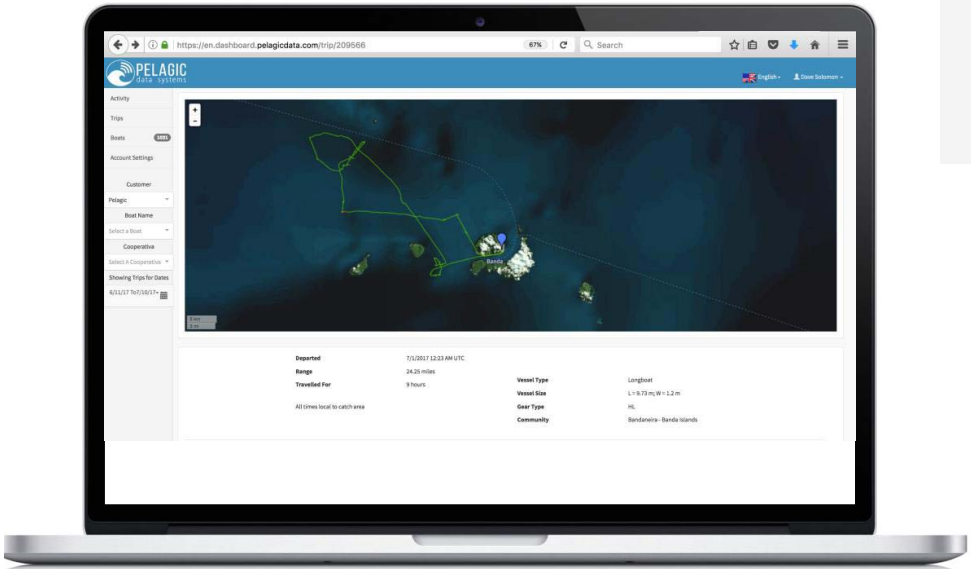
- Marketing opportunities
- Control of their own data
- Evidence in support of compliance
- Distributors, importers/ exporters, processors want traceability
- Silent and inexpensive insurance policy
- Top down regulation
- Government mandates
- Increasing value in fisheries through good management

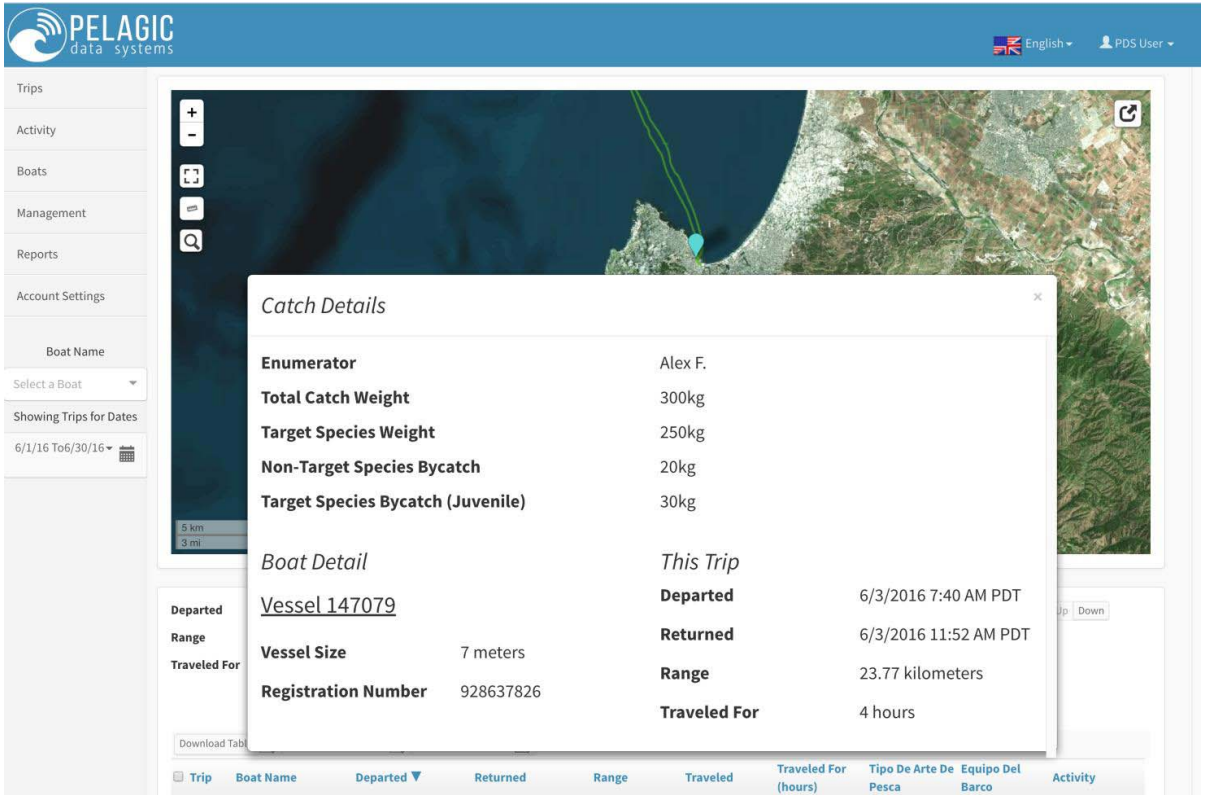
Technology Architecture

- The device is **always recording** location of the vessel (typically **600 locations per HOUR**), regardless of where the vessel is
- Cellular network is **not required** for the tracker to function properly– it simply stores the data until the boat returns to cellular coverage to upload to the cloud
- Data is **compressed and encrypted** prior to transmission to keep it secure and ensure that there's plenty of room to store data onboard the device
- Approx**. 1 year of data** can be stored before it needs to upload
- Database sends a **receipt confirmation** before the memory automatically resets
- Data goes to the cloud and **is accessed by all authorized users** through our secured data portal and/or our secured API



- The system can be **deployed immediately**
- Parameters are **controlled remotely** and do not need on-location technicians
- **IT support** is fully provided by Pelagic Data Systems to its users, through regional support teams and technical experts
- **Catch reporting** can be integrated through a wide variety of methods ranging from API to webform or paper records





- **Full language support**: already offered for 8 languages:
- *English, Spanish, French, Greek, Vietnamese, Thai, Tetum,* and *Arabic* and can easily add more
- **No need for training:** user interfaces are adapted to the user needs
- Provided online through **smartphone** and **PC** connection

- Highly cost effective: **€300 per device** and **€300 Euro/year for data service**
- Transmissions, data hosting, and basic data processing covered
- Dividing the continuous string of GPS locations into discrete trips for easier viewing
- No further (hidden) costs for maintenance and servicing

- Pelagic Data Systems is an independent start-up company
- Already invested more than $6M in the development of its technology
- Currently establishing EU-based service and assembly facilities
- Awarded the National Geographic Marine Protection Prize in 2018
- PDS will work with national and EU institutions and academia to further adapt its technology and services to national and EU needs, and to contribute to marine research and fisheries management

NATIONAL GEOGRAPHIC

Pelagic Data Systems - One of Three Companies to Win National Geographic Competition to Continue Work Protecting Global Fisheries

WINNERS RECEIVE $150,000 TO CONTINUE DEVELOPMENT OF INNOVATIVE SOLUTIONS AND TECHNOLOGIES THAT PROTECT AND SUSTAIN FISHERIES IN COASTAL COMMUNITIES

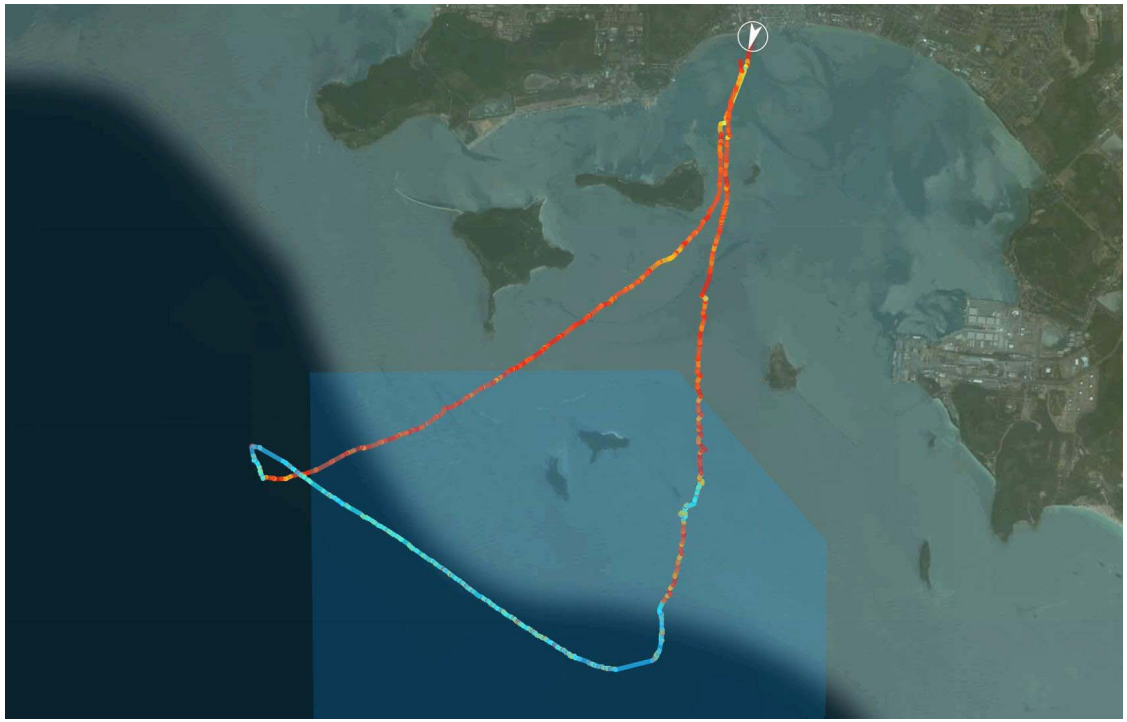
SAN FRANCISCO, CA (June 8, 2018)—To help celebrate World Oceans Day on June 8th, the National Geographic Society awarded Pelagic Data Systems (PDS) the Marine Protection Prize. From an impressive pool of 156 teams, that included some of the best and brightest proposals for using technology to better police critical ecosystems and economies, PDS was selected as one of three winners to be awarded $150,000, to implement a plan to protect the world's oceans and sustain its fisheries.

- The innovation crux is **accessibility** and **affordability** of high-resolution tracking for all vessels
  vs (traditionally) up to 6 locations per hour = 10 min poling relay (high res) for satellite VMS
- Our system collects **600 to 3600 times higher resolution** information than traditional VMS
- PDS **allows users to see what VMS would miss**: stops at secondary ports, type of fishing happening, vessels meeting at sea, etc.

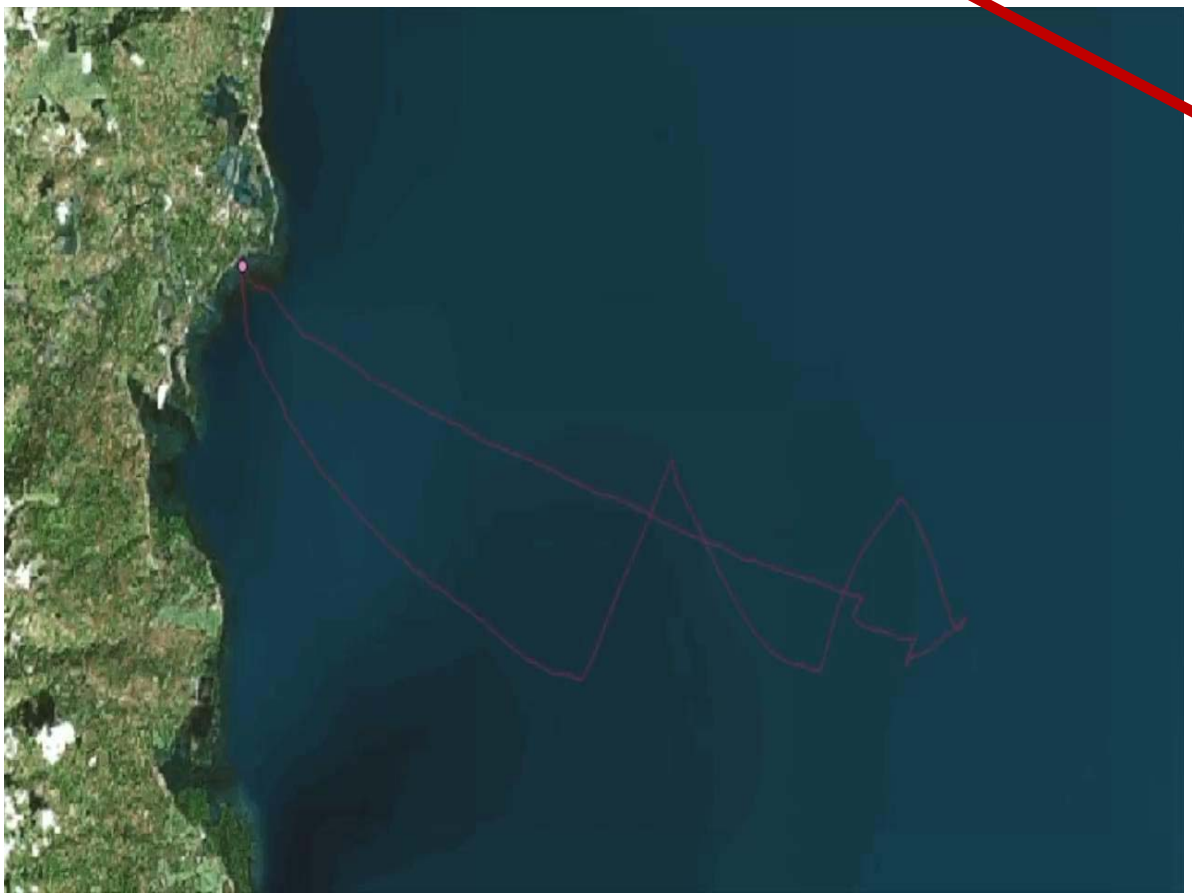
- Managers can receive **fully processed reports** and information based on **analysis of the large volume of data by algorithms** developed specifically for their needs

  Example: GFCM - Lebanon

- It matters for:
  - management,
  - enforcement (holding up in court of law)
  - marketing/transparency
  - trust with consumers

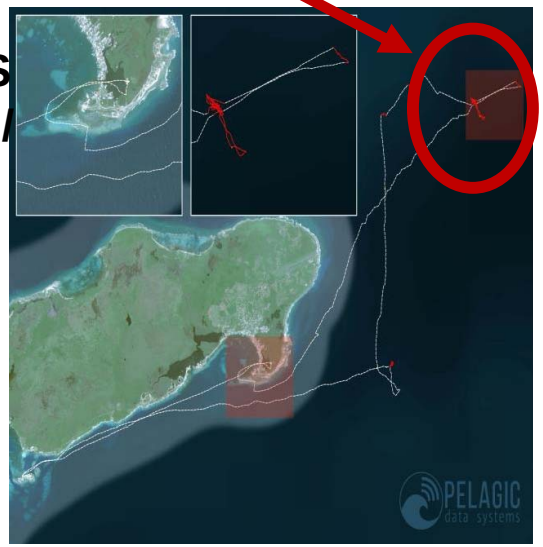


Finding Hidden Behavior with High-Density Data



Traditional VMS (1-6 locations/ hour)

Hi-res PDS VTS (~600 locations/ hour)



Example: Oil Spill effects on SSF

- Oil spill resulted from the sinking of a small bunker boat outside Piraeus Port on 12 Sept. 2017
- The **spill evolved over the next week** in the region

- Small Scale / Coastal fishermen **lost more than 80% of their market within a week** due to consumer scare
- Irrespective of where their fishing grounds were

- Had they installed a VMS system they **would have been able to prove where they had been fishing**

Oil Spill Evolution 12-17 Sept. 2017

Conclusions

- Hi-Resolution tracking is necessary for **managing** SSF and **protecting** fish stocks and Marine Protected Areas
- In order to introduce Hi-Res tracking to SSF, it must be **affordable** to fishermen (cost, installation, and operation)
- **Traceability**, **management** of their activity or **other incentives** that offer **financial benefit** to fishermen is key to VMS adoption by SSF fishermen
- Protection of **each fisherman's data is necessary**: encryption and access rights must be secured
- Fishermen need to have **access to their data**, so that they can use it as **a tool for their activity**
- Data analysis needs to be **flexible** and **adapted** to the needs of fishermen community and managing authorities
- Hi-Res data is key for **maritime research** by the academic community

Thank you!

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