

OIL AND WATER

How to Build the World's Largest
Known Dark Fleet and Get Away With It



About C4ADS

C4ADS (www.c4ads.org) is a 501(c)(3) nonprofit organization dedicated to data-driven analysis and evidence-based reporting of conflict and security issues worldwide. Our approach leverages nontraditional investigative techniques and emerging analytical technologies. We recognize the value of working on the ground, capturing local knowledge, and collecting original data to inform our analysis. At the same time, we employ cutting-edge technology to manage and analyze that data. The result is an innovative analytical approach to conflict prevention and mitigation.

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Executive Summary

By transporting Russian, Iranian, and Venezuelan crude oil to international buyers, the Dark Fleet fills the coffers of heavily sanctioned states that pose a threat to regional peace and security.¹ Western sanctioning bodies have typically focused on individual vessels and their illicit behavior, while the profiteers and opportunists who control the Dark Fleet continue to prosper. By using the systematic approach of beneficial ownership mapping, C4ADS analysts uncovered a single, China-based corporate network that appears to control a sub-fleet of over 50 supertankers—coined here the “Protean Fleet.” This fleet may account for up to 10% of the global Dark Fleet, which is estimated to number between 500 and 1,000 vessels.^{2 3 4}

The Protean Fleet epitomizes the flexible, ever-evolving nature of sanctions evasion at sea. The controlling ultimate beneficial ownership (UBO) network behind the fleet began acquiring ships in 2019 and immediately set them to work transporting crude from Iran and Venezuela to China. Having acquired at least 25 vessels by early 2022, the fleet was perfectly positioned to immediately begin transporting Russian crude following the onset of Western sanctions after Russia’s February 2022 invasion of Ukraine.⁵ This flexibility makes the Protean Fleet—and other sub-fleets like it—valuable tools for sanctioned governments, as they can theoretically be tapped by any country facing new sanctions.

To disguise the oil’s origins and insulate its beneficial owners from legal consequences, the Protean Fleet has used frequent dark voyages, ship-to-ship transfers, GNSS (Global Navigation Satellite System) manipulation, and sophisticated vessel identity-swapping techniques. As sanctions regimes target ships and shell companies, they risk playing a game of whack-a-mole with replaceable assets. While the U.S. Department of the Treasury’s Office of Foreign Assets Control (OFAC) has sanctioned 43 of the Protean Fleet’s 56 vessels as of May 2025, the controlling beneficial ownership of this network has not been previously reported. Using vessel ownership databases, corporate registry records, satellite imagery, flag registry documents, Automatic Identification System (AIS) transmissions, and leaked data, C4ADS found:

- Sophisticated oil exchanges between Protean Fleet tankers in the waters east of the Strait of Malacca have allowed at least 404,827,160 barrels of crude oil to move from sanctioned jurisdictions to the People’s Republic of China (PRC) and India since July 2019.⁶
- The likely beneficial owners of the Protean Fleet include elements of a PRC-based network previously sanctioned by OFAC in 2019 for smuggling Iranian oil.
- The UBO used its vessels as collateral for over US\$750 million worth of mortgages issued by three British Virgin Islands companies operated by three Swiss directors..
- Loopholes in maritime, financial, and corporate infrastructures allow for continued oil trade in defiance of western sanctions, including U.S. dollar-denominated mortgage loans that U.S.-based correspondent banks may have processed.

By outlining infrastructure loopholes—and measuring the cost of leaving them open—we make a case and recommendations for targeting this threat network more sustainably.

Historical Context

Heavily sanctioned states such as Russia, Iran, and Venezuela rely on revenue from crude oil sales to fund activities that threaten regional peace and security. According to the Oxford Institute for Energy Studies, the Russian state's oil and gas revenue reached US\$120.5 billion, or 30% of total state revenue in 2024, constituting the largest single source of funds.^{7 8} Iran's dependence is roughly equivalent, expected to account for US\$500.56 billion or 35.1% of the state's budget in 2025.⁹

Seizing upon these states' dependence on crude exports, the United States and its allies implemented oil-focused sanctions regimes designed to restrict these states' revenue and compel them to curtail their rogue activity abroad.

Iran

Sanctions on Iran commensurate with the “Maximum Pressure” campaign began in 2018 with the signing of Executive Orders (EO) 13846 and 13886 by the first Trump administration upon exiting the Joint Comprehensive Plan of Action.^{10 11} Given that oil revenue are also a sizable portion of the Iranian military and Islamic Revolutionary Guard Corps budgets, sanctions targeting those and other designated terrorist entities frequently embroil individuals, vessels, and companies facilitating and purchasing Iranian oil exports.^{12 13}

Venezuela

Since 2017, the United States has imposed an increasing slate of sanctions against Venezuela in reaction to the reported “increasing repression and corruption under President Nicolás Maduro.”¹⁴ This includes EO 13850, which singles out the Venezuelan oil sector. The United States sanctioned the Venezuelan state-owned oil company Petróleos de Venezuela, S.A. and its subsidiaries in January 2019, which collectively account for most Venezuelan oil exports.^{15 16} The United States has subsequently sanctioned over 50 individual vessels under Venezuela-related executive orders, primarily for involvement in the oil trade.¹⁷

Russia

Following Russia's invasion of Ukraine in February 2022, the United States responded differently than it had to Iran and Venezuela, in part due to the dependence of its European allies on Russian oil. Initially, the United States banned imports of Russian oil. In December 2022, the European Union (EU) and other G7 countries introduced a price cap of US\$60 per barrel on seaborne Russian oil.¹⁸ ¹⁹ This price cap was subsequently broadened to include all refined oil products sold by Russia to the sanctioning parties (G7, EU, and Australia).^{20 21} To enforce the cap, authorities have sanctioned entities that facilitate the maritime transport of Russian refined oil products above the capped price.²² Since then, the United States, the EU, and other allied nations have sanctioned numerous vessels and maritime companies for circumventing the price cap by transporting and selling Russian oil above the limit.^{23 24}

Despite consistent expansions and stiff penalties for violators, these sanctions regimes have failed to curb oil flows among these actors. Iran, Venezuela, and Russia all persist in smuggling oil to countries willing to buy it. The PRC alone reportedly purchased 45% of Russian crude oil exports between December 2022 and December 2023, 90% of Iranian crude in 2023 (up from 25% in 2017), and 68% of the oil exported by Venezuela in 2023.^{25 26 27}

Buyer states forcefully reject sanctions and criticism of their oil purchases. The foreign minister of India, which reportedly purchased 37% of Russian crude exports between December 2022 and January 2024, emphasized that India's purchase of Russian oil is "advantageous" and mutually beneficial for both countries, while the PRC's foreign ministry spokesperson commented that "China has always firmly opposed the lack of international law on the part of the United States [and] illegal unilateral sanctions."^{28 29 30}

The sharp decline in oil demand among sanction-abiding countries, coupled with unchanged production levels, led to the emergence of a parallel market for oil and gas that offered countries resisting sanctions the chance to purchase crude oil at below-market prices—assuming the oil could be delivered to buyers. The crude oil export infrastructure of these states—and, therefore, the revenue of their governments—is heavily dependent on the maritime sector. In 2023, 71.9% of Russian crude exports were transported by sea, and there is a near-100% Iranian and Venezuelan reliance on seaborne crude exports.^{31 32 33 34 35 36 37}

These factors—the torrent of oil-related sanctions levied since 2018, the dependence of sanctioned countries on maritime crude exports, and the unrelenting thirst of non-sanctioning, oil-consuming nations—combine to give rise to the "Dark Fleet," potentially the largest illicit fleet by tonnage the world has ever seen.³⁸

The opportunists and profiteers that comprise the Dark Fleet see high rewards from shipping and selling sanctioned oil. According to Lloyd's List interviews with industry sources, "even with a US\$20 per barrel discount to conventional oil, a cargo of [Russian] crude shipped on a Very Large Crude Carrier would be worth around US\$160m, with higher freight costs offering supercharged profits."³⁹

Vessels and owners often turn to illicit tactics to disguise their activity, beneficial owners, and cargo origins.⁴⁰ Dark Fleet vessels are known to frequently manipulate their AIS transmissions to hide their location or activities, a violation of the International Convention for the Safety of Life at Sea.⁴¹ AIS is designed to continuously and publicly transmit a vessel's identity, location, and other data to prevent at-sea collision. Manipulation of these signals increases the risk of safety incidents.⁴²

Meanwhile, Dark Fleet operators often obfuscate their identity using multiple layers of shell companies in different jurisdictions and avoid enforcement by switching flag registries.⁴³ Such corporate maneuvering makes it difficult for maritime regulators to identify which party is responsible for illicit, illegal, or otherwise unsafe activity.

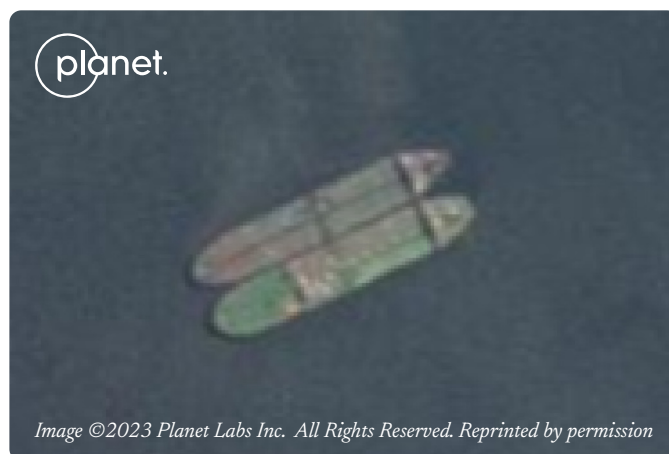
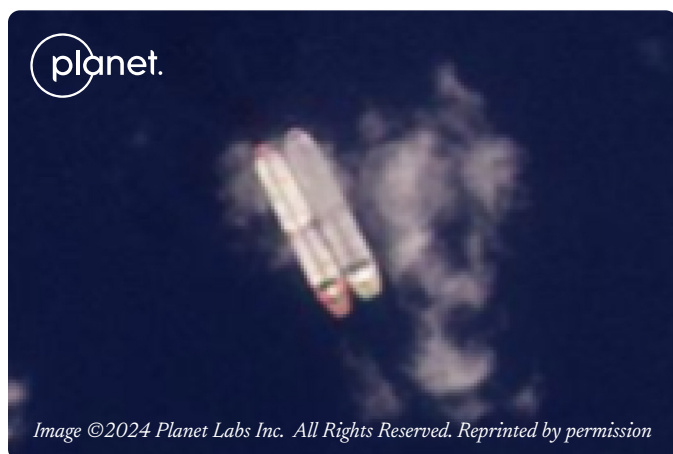
The Proteus Prototype

One archetypical example of a Dark Fleet vessel is the MONOCEROS, (as of December 2023, named JAYA; IMO 9410387), a tanker that has coordinated with other vessels to hide shipments of sanctioned oil and with an AIS history that shows signs of repeated manipulation.

The vessel's voyage path in December 2022 is an illustrative example of this pattern of behavior. Analysis of satellite imagery and AIS transmissions during that month indicate that the MONOCEROS closely coordinated with two accomplice vessels—the SCORPIUS (IMO 9264893) and the FIONA II (IMO 9262766)—to receive oil originally loaded in Iran from a fourth tanker, the FREYA (IMO 9180164). The vessels handed off their cargo through a series of ship-to-ship (STS) transfers conducted while the MONOCEROS' AIS went quiet (a gap in transmission often referred to as a "dark voyage").

On December 9, the MONOCEROS sailed into the waters east of the Strait of Malacca and experienced an AIS transmission gap as it completed a multiday STS transfer with the FREYA. AIS analysis indicates that the SCORPIUS and the FIONA II likely transmitted the MONOCEROS' AIS identity while loitering east of the Malacca Strait, potentially to simulate a consistent signal history.⁴⁴ Based on available AIS and satellite data, the MONOCEROS, SCORPIUS, FREYA, and FIONA II all appear to have repeatedly used this impersonation tactic, known as an “AIS handshake,” to disguise the flow of oil from sanctioned countries to the PRC.⁴⁵

Satellite Imagery of Protean Fleet STS in the Malacca Strait



A typical Protean fleet voyage will often see multiple “dark” ship-to-ship (STS) transfers in the Malacca Strait, which serve to launder the oil’s origin and obscure the participating vessels’ identities.

The MONOCEROS was sanctioned by OFAC in December 2024, alongside 20 other vessels and 15 companies accused of transporting Iranian oil in violation of U.S. sanctions.⁴⁶ These ships join at least 250 others sanctioned for transporting oil from Iran, and hundreds more for transporting oil from Russia.⁴⁷ Analysis of the MONOCEROS' corporate network and ownership data, however, yields two key insights: this network contains dozens more vessels and entities than have thus far been identified, and most of these belong to a single network controlling and benefiting from their activity.

While investigating the MONOCEROS, C4ADS found that the vessel shared behavior and ownership features not only with the SCORPIUS, FREYA, and FIONA II but also with a network of over 50 additional tankers. These ships primarily transfer fuel to each other through STS transfers, creating global supply chains from Russia, Iran, and Venezuela and manipulating or swapping their identities while doing so.⁴⁸ While ostensibly unaffiliated, mortgage documents, corporate records, and vessel ownership databases show that the companies and individuals that own and manage these ships share addresses, officer contact information, and financiers.^{49 50} The implications are significant: A single beneficiary network numbering over 50 tankers accounts for 5% to 10% of the global Dark Fleet, which authorities estimate at around 500 to 1000 vessels.^{51 52}

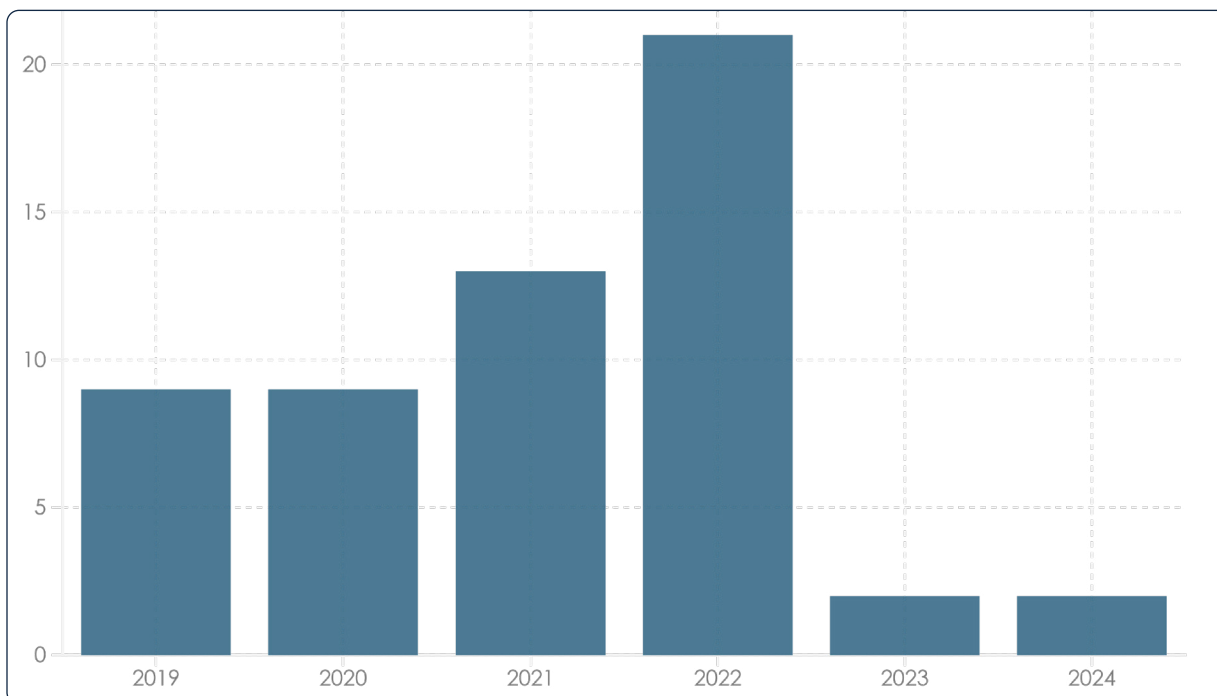
Methodology

C4ADS used publicly available records from flag registries, corporate registries, and vessel ownership databases to identify the companies and individuals linked to the MONOCEROS, its meeting partners, and its AIS handshake accomplices. Supplemented with English- and Chinese-language online media, social media, and leaked data, these sources revealed that 176 seemingly unconnected companies and directors linked to these vessels share common financiers and key identifiers. Ultimately, C4ADS uncovered an overarching ownership structure for 56 Dark Fleet tankers acquired between 2019 and 2024. By integrating several sources of maritime data, including AIS, port data, Windward Predictive Intelligence, Kpler, and satellite imagery from Airbus, Maxar, Planet Labs, and Sentinel Hub, C4ADS found that these vessels almost exclusively transported oil from sanctioned jurisdictions to China and India during their time controlled by this network, hereafter referred to as the Protean Network.

All of these ships:

- Are owned by companies incorporated in the Marshall Islands, Hong Kong, and the Cayman Islands and are directed by PRC nationals with little or no online footprints.
- Have mortgages, where available, issued by three British Virgin Islands (BVI) companies directed and represented by three Swiss nationals who share the same phone number and email address.
- Use sophisticated activity obfuscation techniques to conceal their transport of crude oil from Russia, Iran, and Venezuela to primarily China and India.
- Primarily meet and conduct AIS handshakes and STS transfers with other ships owned by companies that are ultimately linked to the same phone numbers, addresses, and emails via available mortgage documents.

Vessel Network Entry Dates by Year



IMO records and Panama naval titles indicate that most Protean vessels entered the fleet between 2019 and 2022, with a large increase of Protean vessels following Russia's full-scale invasion of Ukraine in early 2022.

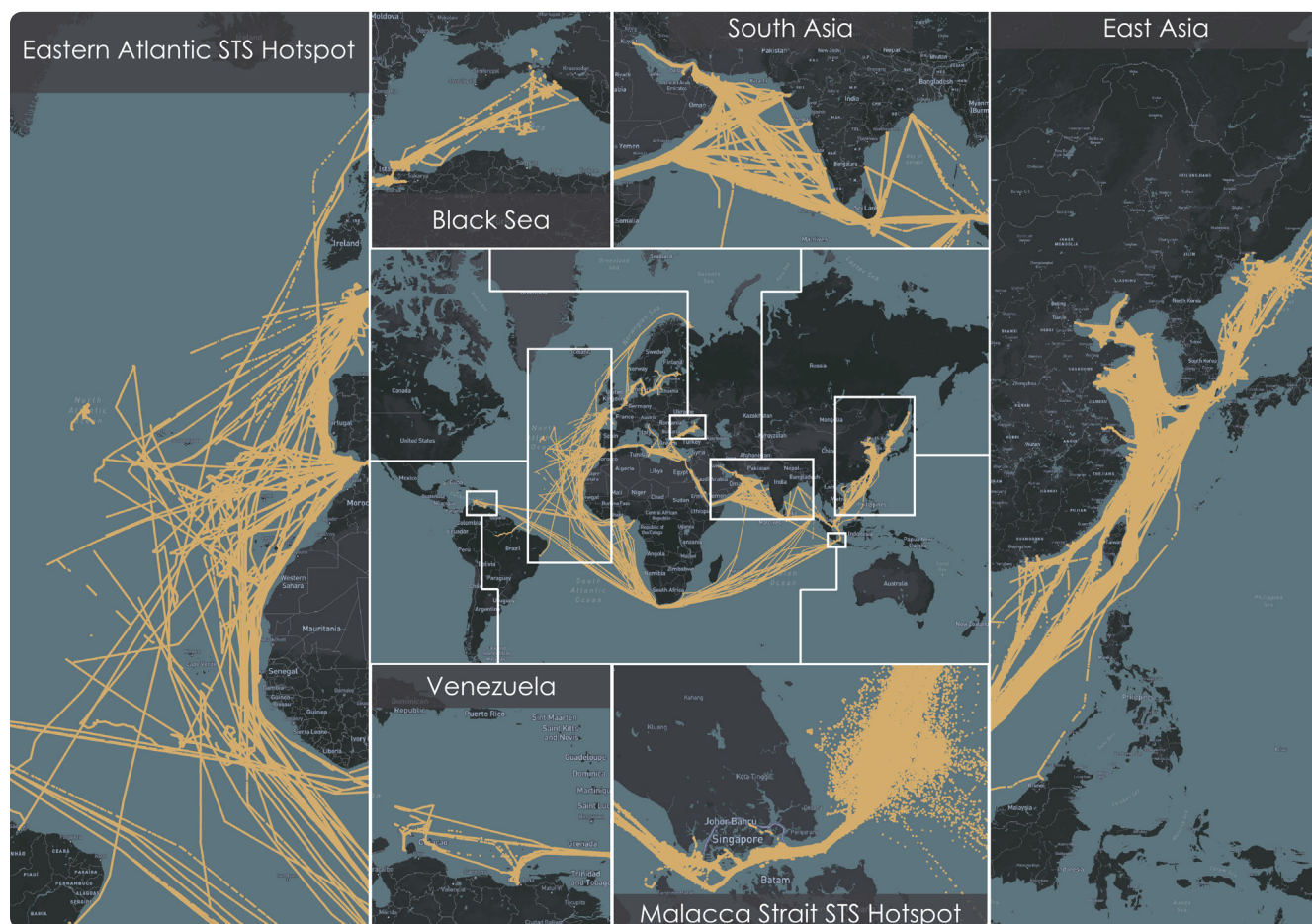
Scope and Limitations

C4ADS evaluated ownership, financial, and maritime data up to March 2025. C4ADS' risk criteria surfaced many vessels that conducted STS transfers with Protean Fleet vessels or received mortgages from one of the three BVI companies but did not fit the remaining risk criteria and, therefore, were not included in this publication. Analysts used conservative estimates of oil cargo volumes and corroborated information where possible but acknowledged that AIS and public reporting may be misrepresentative.

Illicit Fleet – Activity Risk Indicators

Since July 2019, the Protean Network appears to have moved hundreds of millions of barrels of sanctioned oil. Using Kpler data, C4ADS estimated that Protean Fleet vessels have transported at least 343,279,857 barrels of various types of crude oil from sanctioned jurisdictions to the PRC.^{53 54 55 56} Of these, 149,241,854 barrels originated from Russia (43.48%), 145,328,614 barrels originated from Iran (42.34%), and 48,709,389 barrels originated from Venezuela (14.19%).^{57 58} India, the second most frequent destination, received 61,547,303 barrels.^{59 60}

Vessel Voyages Map 2019-2025

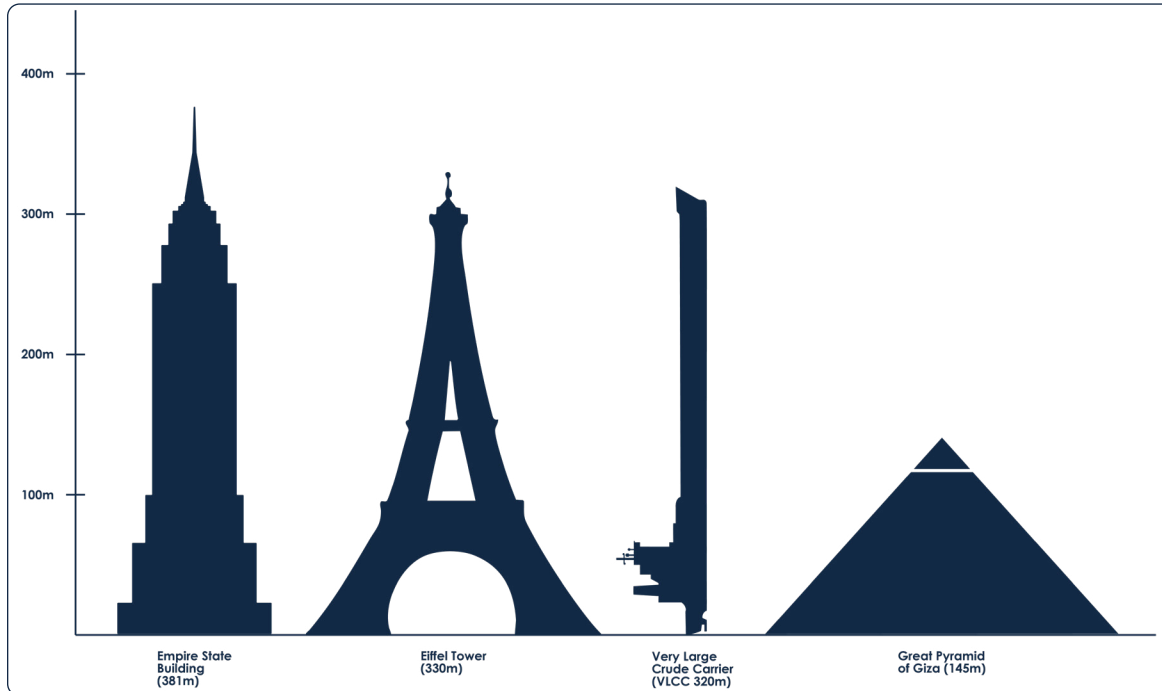


Voyages of Protean Fleet vessels during each vessel's time in-network, between June 2019 and April 2025.

With occasional variance, most Protean Fleet vessels use the same routes and obfuscation techniques, each of which constitutes a risk indicator for illicit oil smuggling. First, the oil cargos are loaded at ports in Venezuela, Russia, or Iran.⁶¹ In some cases, the oil is loaded directly by vessels within this fleet. In others, non-network tankers load the oil first, then transfer it to ships in the Protean Fleet.^{62 63}

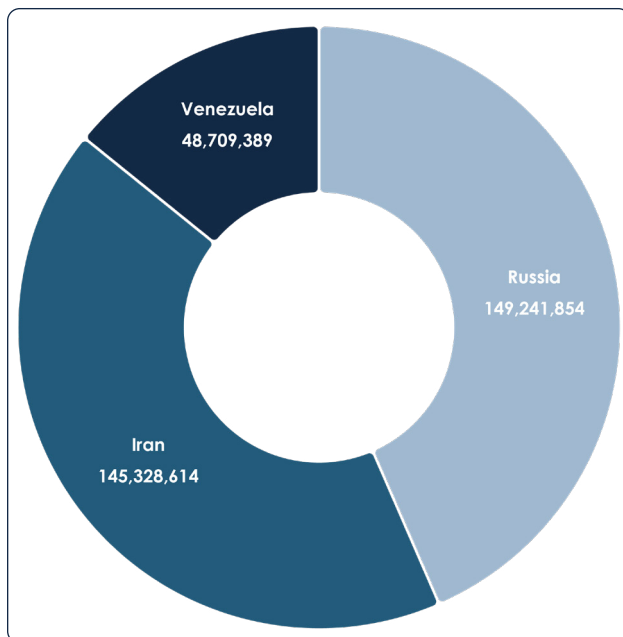
A typical pattern then usually occurs: the newly laden ships sail to the waters east of the Malacca Strait, where hundreds of ships sail, loiter, meet, and exchange cargo every day.^{64 65} This location is within Malaysia's exclusive economic zone, where Malaysia has less jurisdiction compared to its territorial waters. These waters see heavy traffic, and because the practice of licit STS transfers and at-sea vessel refueling or "bunkering" is a regular occurrence in the Malacca Strait, Protean Fleet transfers in this hotspot are difficult to monitor and beyond the current capacity of Malaysian law enforcement to verify as illicit.⁶⁶

Tanker Size Comparison



Very Large Crude Carriers (VLCCs) are the largest class of commercial crude oil tankers in production, each of which can transport over 2 million barrels of oil at once. 29 of the 56 ships in the Protean fleet are VLCCs.

Origin of Sanctioned Oil Transported by Protean Fleet Vessels to the PRC, 2019-2025

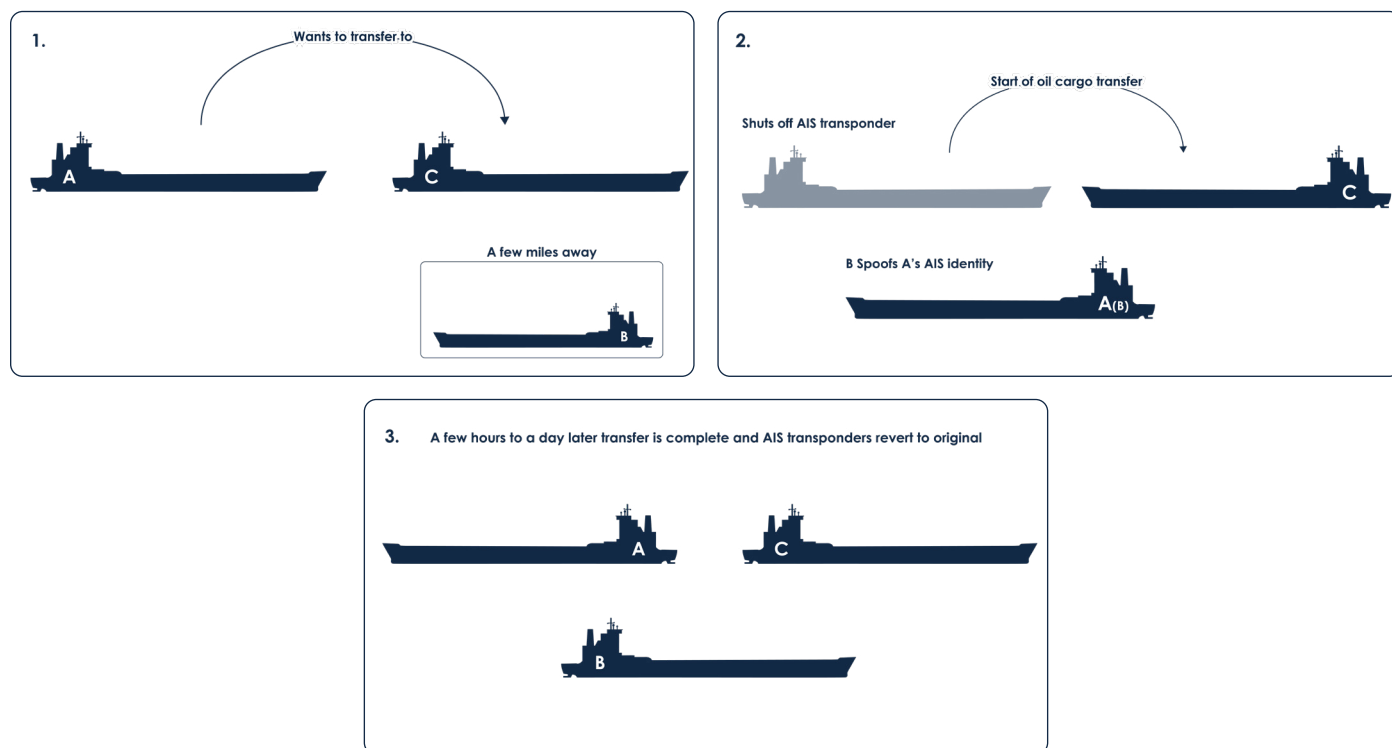


343,279,857 barrels of various types of crude oil from sanctioned jurisdictions was very likely transported to the PRC by the Protean fleet since July 2019. 43.5% of these barrels originated from Russia, 42.3% originated from Iran, and 14.2% originated from Venezuela.

In these waters, other Protean Fleet ships receive the oil cargoes, occasionally swap among themselves, and ultimately begin the final leg of the oil's journey to PRC ports. Transferring these oil cargoes can take as long as three days for Very Large Crude Carriers, one of the largest classes of commercial tankers available, which comprise 29 of the 56 Protean Fleet ships. These prolonged meetings elevate the risk of detection by authorities and the risk of exposing the oil's origin from sanctioned jurisdictions. Ships wishing to disguise such meetings commonly resort to turning off their AIS signals. However, turning their AIS signals off for too long could draw attention and heighten the risk of collisions with nearby ships, which could result in the ships losing their flags or insurance coverage. The "AIS handshake," or swapping of AIS identity between two or more ships, provides a solution by allowing a vessel's AIS identity to appear to continue transmitting innocuously while hiding the ship's true activities.⁶⁷

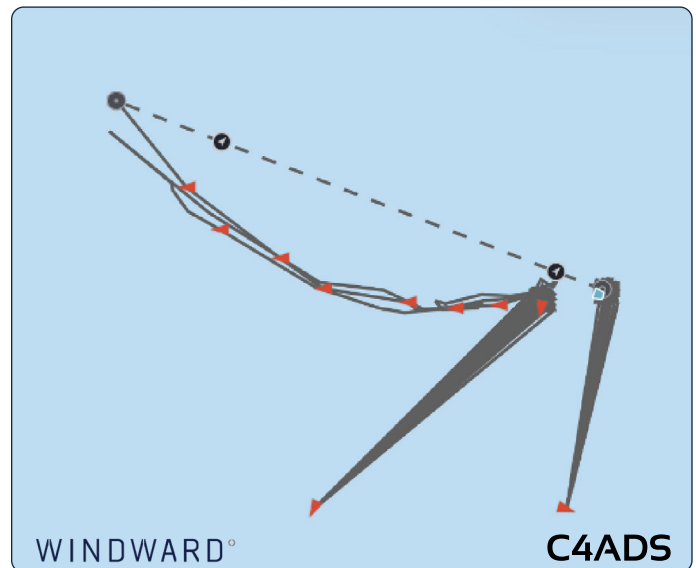
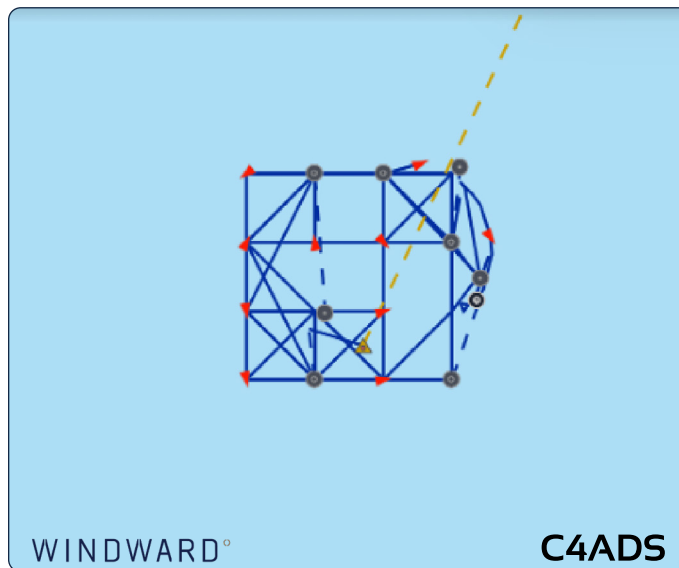
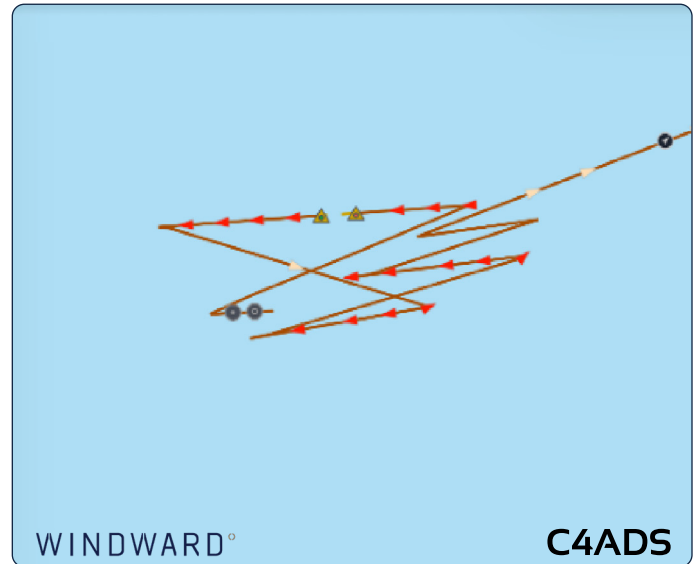
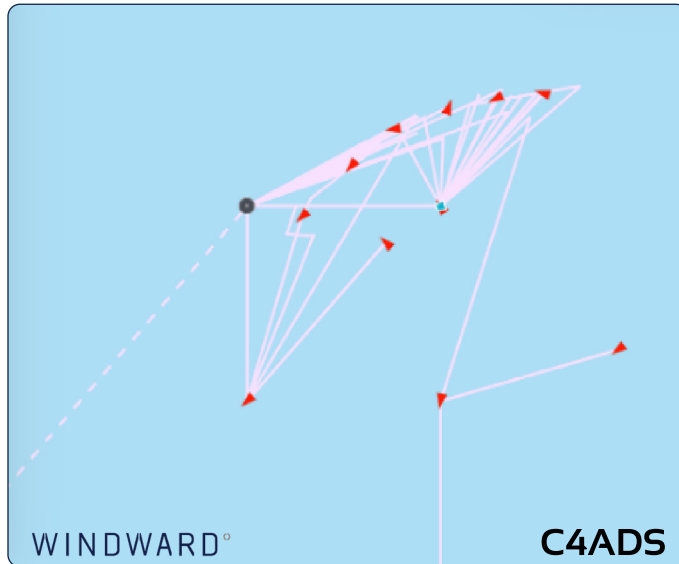
During an AIS handshake, Ship A, which wants to transfer an oil cargo to Ship C, will turn off its AIS transponder. A few miles away, Ship B will turn off its transponder and begin transmitting Ship A's identity a few hours later. Anywhere between a few hours to a day after that, Ship B will stop transmitting Ship A's identity and resume transmitting its own. This process creates the digital fiction that Ships A and B experience brief AIS transmission gaps of a few hours, but the gaps do not seem to last long enough to transfer oil or appear suspicious to AIS-watching observers.⁶⁸ After the STS transfer process is complete, Ship C continues its voyage full of crude oil from Ship A, and all ships resume transmitting their own identities. Conducting one AIS handshake requires a high degree of coordination, planning, and timing, let alone the dozens routinely undertaken by Protean Fleet vessels.

AIS Handshakes



Members of the Protean Fleet also appear to have used location “spoofing” to hide visits to ports in sanctioned jurisdictions and to obscure illicit STS transfers.⁶⁹ A “spoofed” ship transmits false location data. Hence, the transmitted location seen in AIS data—and crucially, on neighboring ships’ AIS displays—is different than the vessel’s actual location.⁷⁰ These falsified AIS tracks will often appear “unnatural.” The false transponder pings can occur at suspiciously regular time and distance intervals, the tracks are often implausibly straight, and the vessel may seem to make impossible movements such as extremely sharp turns or travel over land.⁷¹

AIS Location Spoofing Examples



Another common illicit tactic used by the Protean fleet is AIS location spoofing, which can appear to a viewer on AIS data provider platforms as unusual patterns inconsistent with normal ship activity. The AIS tracks of the ARTEMIS III, VESNA, ANSHUN II, and PROGRESS V appear unusual when viewed via Windward Predictive Intelligence's platform.

Section 2: The Network – Ownership Risk Indicators

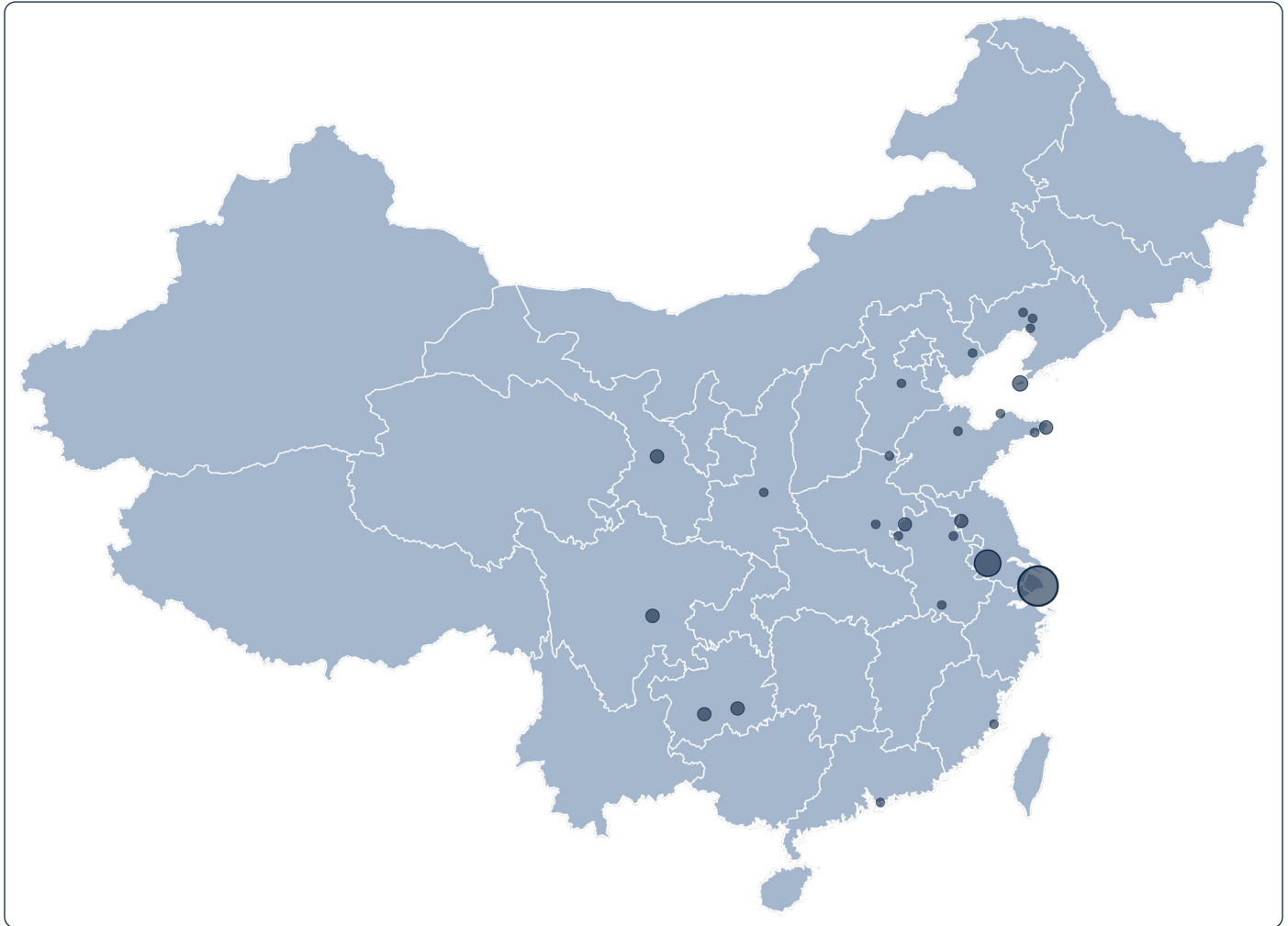
The Protean Fleet and its activities are likely controlled by a single, PRC-based ultimate beneficial owner. While other researchers, journalists, and government agencies have identified smaller subsections of the fleet, the full extent of this network has not been publicly reported. C4ADS’ analysis of both vessel and network activities surfaced at least 117 shell companies, 74 individuals, and 56 vessels that comprise and operate the Protean Fleet.^{72 73 74 75}

In addition to regularly engaging in high-risk behavior, such as dark activity and STS transfers in the Malacca hotspot, Protean Fleet vessels often share naming conventions and flag registries.

- Vessel names suggest a central directive for naming conventions. Names of both vessels and companies feature mythological figures (ISHTAR, MEROPE, SKADI) or Western female names, including the names of female public figures (THEA, LAUREN II, Beverly Thompson Ltd, Kat Dennings Ltd). Company names also often display a pattern of unusual single-word names with repeated letters, such as Derecctor Co Ltd, Sunne Co Ltd, Efferiie Co Ltd, Hightte Co Ltd, and Occee Co Ltd, among others.⁷⁶
- Fifty-two of the 56 vessels have passed through the Panama flag registry during their time in the Protean Fleet.⁷⁷ The ships usually entered the Panama registry when they were first acquired, starting in 2019, with 2019 to 2022 seeing the greatest number of acquisitions.

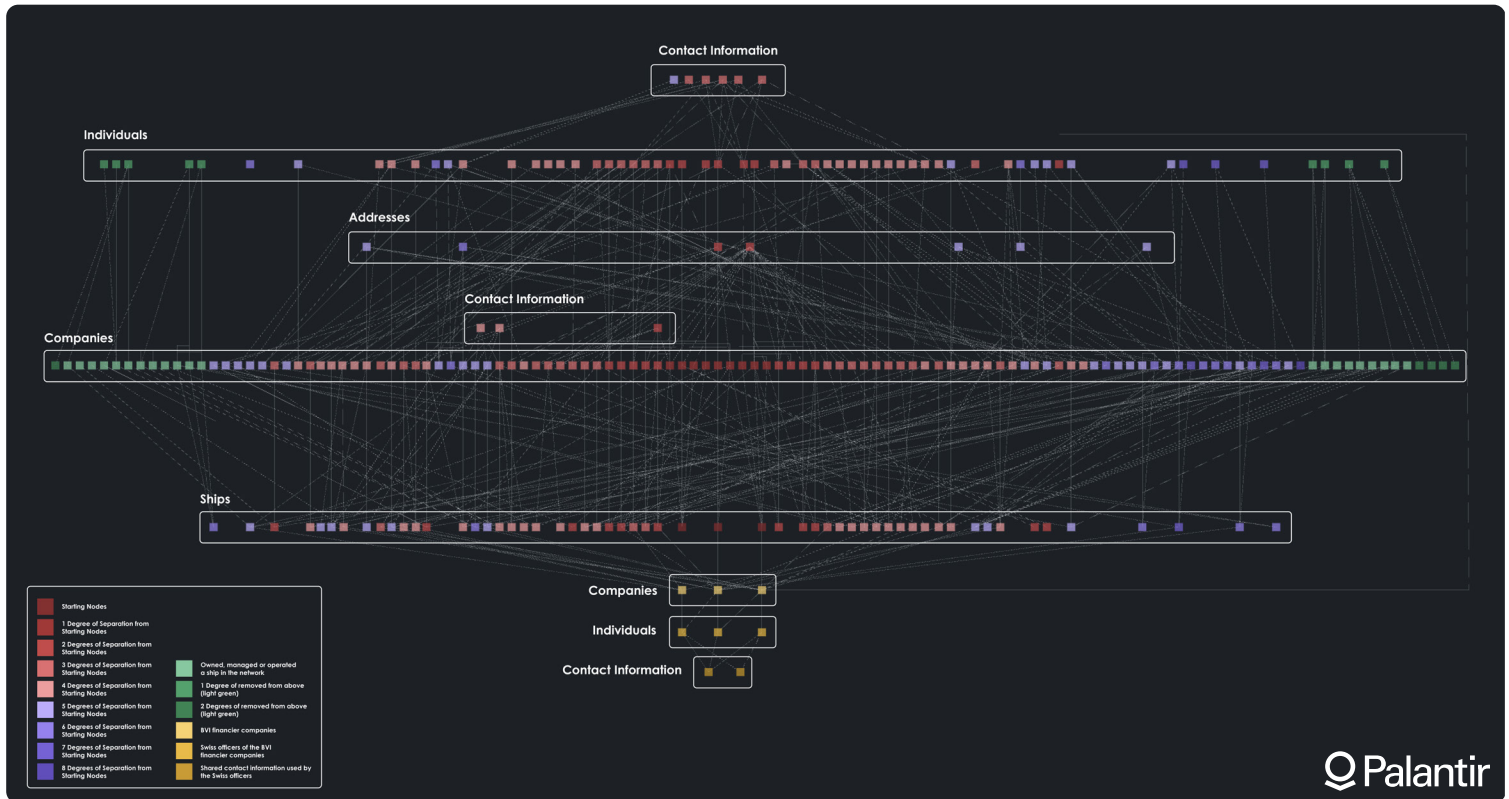
These vessels’ registered owners are incorporated in three jurisdictions with low business formation requirements—Hong Kong, the Marshall Islands, and the Cayman Islands—and all are directed by a single (or several consecutive) PRC national(s). These individuals’ addresses and ID numbers indicate they are from 10 different provinces, though a high proportion list addresses in Shanghai.^{78 79} Open-source searches surfaced little online presence for these individuals. On paper, each of these individuals owns one or more tankers worth tens of millions of dollars and together operate one of the largest collections of Dark Fleet vessels in the world. This contrasts with their apparent absence in publicly available data, suggesting these individuals’ identities may have been wittingly or unwittingly used as “proxy directors.”

Heatmap of Director Addresses

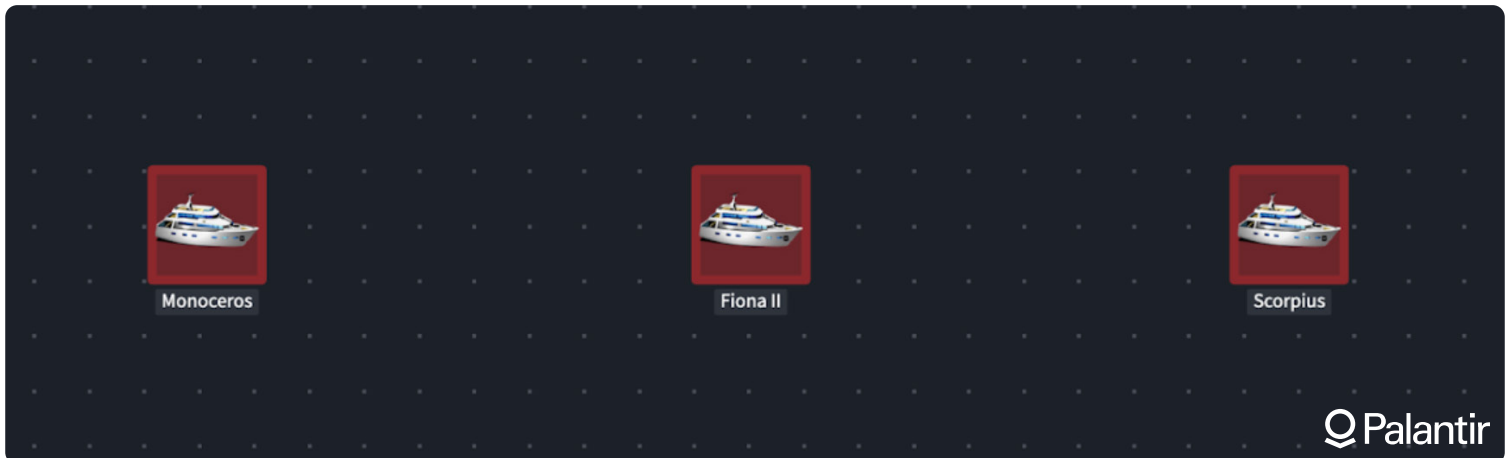


The personal addresses given by the PRC national directors of Protean shell companies span the mainland and Hong Kong.

These directors, as with all the directors in the Protean Network, were interconnected via the use of shared contact information listed on mortgage documents, corporate records, and International Maritime Organization (IMO) data, which is self-reported during the IMO vessel registration process.



Sample of Protean Network, Extending From MONOCEROS, FIONA, and SCORPIUS Vessels (“Proteus Prototype” Case Study)

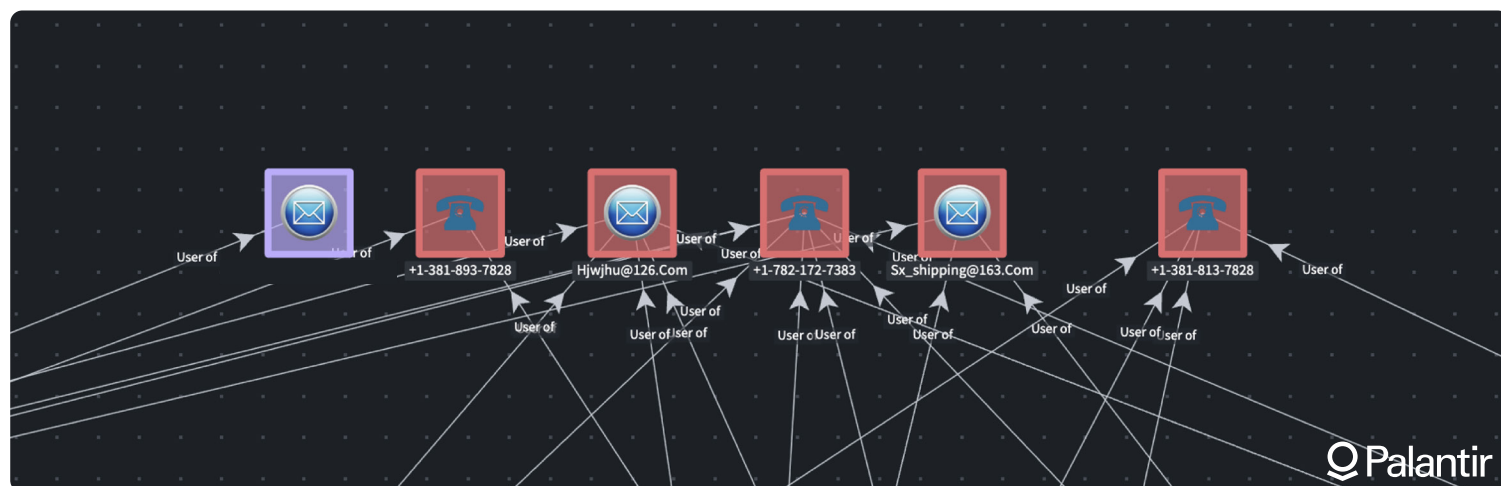


Source: S&P Global Maritime Intelligence Risk Suite (MIRS).

All available mortgage documents show a set of shared contact details for Protean shell companies and directors:⁸⁰

- Three emails.⁸¹
- Three phone numbers: (+86) 17821727383, (+86) 13818137828, and (+86) 13818937828.⁸²
 - One of these phone numbers, (+86) 13818137828, is repeatedly attributed to U.S.-sanctioned individual Li Yi (李奕) across three datasets held by C4ADS containing records from as early as 2008.^{83 84 85 86}

Concentration of Protean Network Connections Around Shared Contact Information



Source: Panama Maritime Authority.

In 2019, OFAC sanctioned Li Yi, four other individuals, and six PRC and Hong Kong companies for transporting Iranian petroleum.⁸⁷ The ties between Li Yi's smuggling network—which C4ADS has termed the “Kunlun Network,” after one of the network's sanctioned companies—and the present-day Protean Fleet are discussed in subsequent sections.^{88 89 90}

Mortgage documents submitted to the Panama flag registry show that 45 different Protean Network directors and companies share the same email addresses and phone numbers.^{91 92} In cases where an individual owned or directed more than one company, the directors sometimes used different identifiers across different company documents. For example, the same director of Idun Limited, Eunomia Limited, and Octans Dorne Limited is attributed to (+86) 17821727383, (+86) 13818137828, hjwjhu@126[.]com, and sx_shipping@163[.]com across three different mortgage documents.⁹³ The fact that these identifiers are used interchangeably suggests that these phone numbers and email addresses are all held by the same network.

Many of the shell companies also share addresses, one of which was the historic address of COSCO Shipping Tanker (Dalian) Co Ltd when OFAC sanctioned it in 2019. Twenty-four of the Protean Fleet's vessel management and operation companies, as well as one additional network officer, currently or previously listed addresses at the same Fuli Center office building in Dalian, China, despite being registered in Hong Kong.^{94 95} Three other vessel management/operation companies list an address at 577 or 575 Changjiang Street, Dalian.⁹⁶ Finally, three more companies list the same address at the West Connect office building in Singapore.⁹⁷

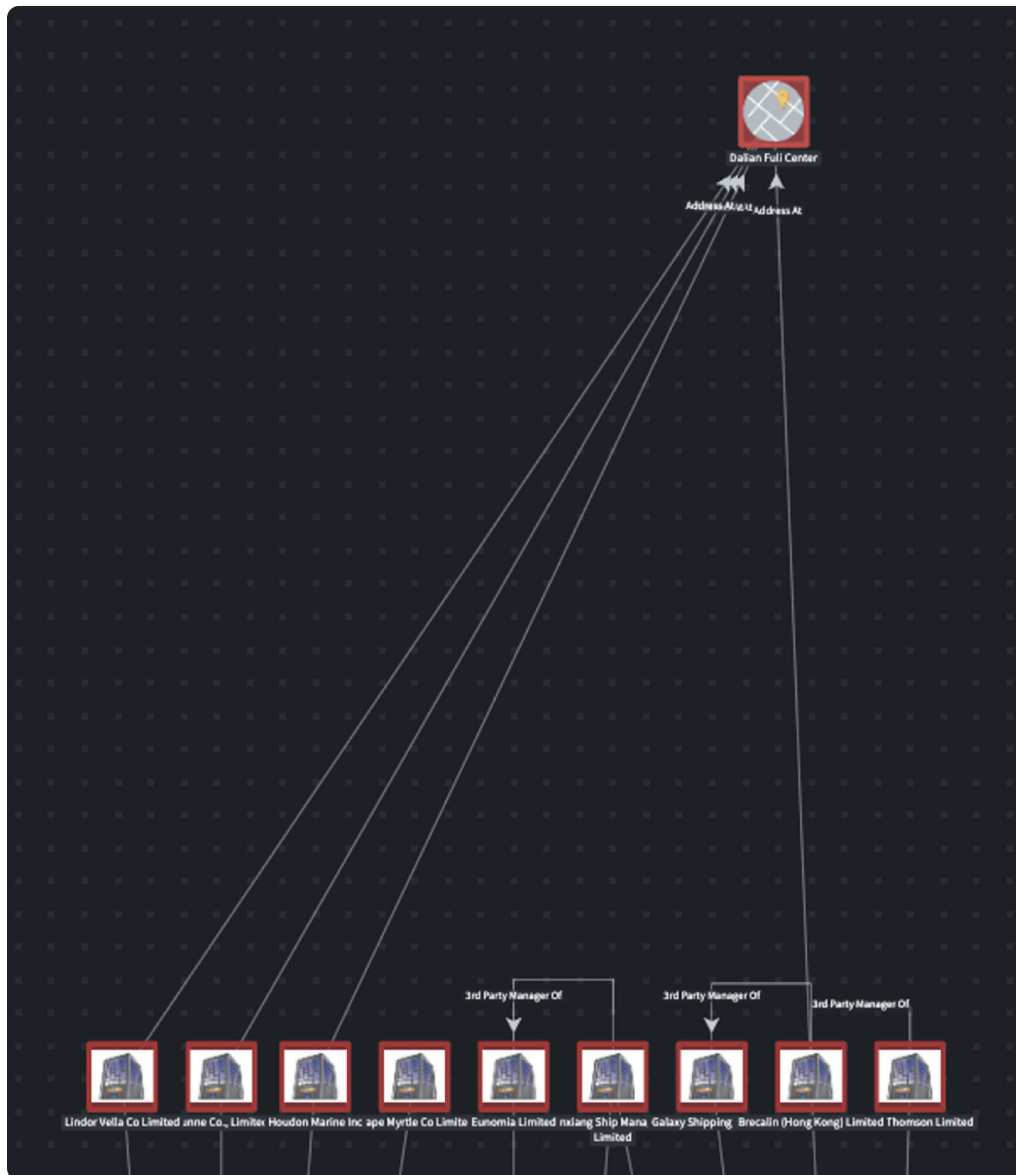
All these shared addresses are interlinked via combinations of directors' addresses, company addresses, and “care of” or “%” address notes. For example, Sealion Ship Management listed the Singaporean West Connect Building and 575 Changjiang Street in Dalian as its address.⁹⁸ Likewise, corporate documents stated that Blueshark Shipping had an address at the West Connect Building, but listed the address of its director at the Fuli Center.⁹⁹

From the Ashes of the Kunlun Network

The Protean Fleet was very likely established, at least in part, by remnants of the “Kunlun Network” after its sanctioning. These vessels and companies gained media attention and public U.S. government scrutiny for transporting Iranian oil in 2018 and 2019.^{100 101} Ultimately, OFAC sanctioned 11 Kunlun Network entities on September 25, 2019.^{102 103}

Several vessels in the Protean Fleet, such as the JUDY II and BARCAN III, were previously owned by

Concentration of Protean Network Connections Around Shared Registered Address



Source: S&P Global Maritime Intelligence Risk Suite (MIRS). Panama Maritime Authority. Hong Kong Company Registry. Third-party aggregate source of PRC Company Registry. Questnet, "Singaporean Corporate Registry Documentation."

companies that share directors and shareholders with Kunlun Holdings Co., Ltd., one of the sanctioned entities of the Kunlun Network.¹⁰⁴ Ownership history analysis shows at least four vessels previously owned and managed by companies within the Kunlun Network were transferred to the Protean Fleet shortly before or after OFAC's September 2019 sanctions announcement.^{105 106}

At least eight companies list the same phone number in their mortgage documents: (+86) 13818137828. All PRC phone numbers must be registered to an individual (often via a PRC national's ID number).¹⁰⁷ According to three different datasets held by C4ADS reflecting data collected in 2008, 2016, and 2025, this phone number is attributed to Li Yi's name and national ID number, which was identified and released by OFAC at the time of his sanctions designation.^{108 109 110} C4ADS was unable to determine whether Li Yi currently controls the phone number attributed to him.

In mid-2019, the Kunlun Network, facing mounting public pressure and the threat of impending U.S. sanctions, transferred ownership of four vessels to newly incorporated shell companies.¹¹¹ Shortly afterward, Panama flag registry documents indicate the vessels were mortgaged for a total value of over US\$94 million.¹¹² These mortgages were extended not by a traditional financial institution but by an obscure, BVI-registered company with no online footprint.¹¹³

In the following years, this BVI-registered company and two others directed by a trio of linked Swiss nationals proceeded to issue mortgages worth three-quarters of a billion dollars to the constellation of companies that comprise the Protean Network to purchase what would become the Protean Fleet. Given Li Yi's phone number's repeated appearance on Protean Fleet mortgage documents and the shared mortgage network between the Kunlun and Protean Networks, it is likely that elements of the Kunlun Network established and continued to operate the Protean Network.

Section 3: Following the Money– Financial Risk Indicators

Vessel sale documents indicate the Protean Network companies spent over US\$1 billion purchasing 56 ships in just four years. Separate documents and interviews with involved parties indicate that 24 of the ships were used to secure over US\$750 million worth of mortgages to serve as collateral for commodities trades. According to at least 29 mortgage documents submitted to the Panamanian flag registry, three British Virgin Islands-incorporated companies secured these ships as collateral for outstanding cargoes.^{114 115 116 117 118 119}

1. Company 1 provided mortgages for 10 network vessels.¹²⁰
2. Company 2 provided mortgages for nine network vessels.¹²¹
3. Company 3 provided mortgages for six network vessels.¹²²

The three BVI companies have no online presence and are registered to the same post office box in a nondescript building in Road Town, BVI.¹²³ Similarly, all the mortgages attribute the same contact phone number and email address to the companies' directors.¹²⁴ However, unlike the ownership and management companies of the Protean Fleet Network, these companies' directors are Swiss nationals with public profiles operating out of Zug, Switzerland, a global hub for commodities trading. Some of these directors worked for decades in the oil industry—including as senior executives of European subsidiaries of a major Russian oil company—until as late as 2022. All the mortgage documents used the same Zug notaries.¹²⁵

Other directors also appear in documents submitted on behalf of these three companies, but only rarely. At least two other Swiss persons and an individual of unknown nationality have signed documents submitted to the Panama flag registry on behalf of one of the above companies as directors.¹²⁶

Upon reaching out for comment, C4ADS received a response from one former director who stated that s/he briefly served an administrative role for unnamed counterparties. S/he explained that the mortgages served security against promissory notes related to sales and purchase agreements, and sometimes against the purchase price stipulated in the sales and purchase agreements directly, a process in which the former director claimed s/he was not involved. This could have allowed the oil broker, which likely acted on behalf of Russian, Iranian, and Venezuelan interests, to claim the tanker or its value as collateral in the event of buyer default on payments owed.^{127 128 129 130}

The former director stated that the mortgages thus had an interest rate of 0%, as there was no money lent to the mortgager, and that the three BVI companies did not possess bank accounts.¹³¹ While mortgage documents reflect this, some of the mortgages signed by one of the other directors include interest rates of between 2-7%. The documents also show that the mortgage value was often a great deal more than the ship's purchase price. On average, these mortgages were 34.8% higher than the ship's listed sale price, excluding outliers.¹³² The former director stated that the mortgage value – to the best of her/his knowledge – related to the price of the underlying commodity trades and not the ship's value.

The former director stated that s/he had no knowledge of mortgaged vessels being used to transport from Iran, Russia, and Venezuela, claiming that s/he had only been shown two contracts: one for the sale of Malaysian light blend crude oil to be sold to a Chinese counterparty for a purchase price to be paid in yuan, and the second


for Iraqi Basra light crude oil, also to be sold to a Chinese counterparty. The former director also stated that KYC checks were carried out ahead of authorization of every mortgage, and that these checks did not raise any red flags. The former director suggested that they had been intentionally misled by the true beneficiaries behind the scheme but were unable to provide any additional information or documentation to C4ADS, citing their privacy obligations under Swiss law.¹³³

This narrative is consistent with C4ADS analysis that suggests a larger evasion infrastructure than can be documented with publicly available information. Analysis of the Panamanian registry shows that at least one of the aforementioned companies has also extended mortgages to other vessels with a history of oil smuggling activity. However, these vessels appear to belong to different networks, such as one with a nexus with Indian national directors and the UAE, suggesting service to multiple networks.¹³⁴ It also highlights how Western corporate and financial systems still (even if unwittingly) enable global evasion networks through innovative corporate structures by allowing oil buyers to offer their vessels as collateral for commodities trades in lieu of more traditional bank-issued letters of credit, which have stricter due diligence requirements.

Sample Mortgage Document

[F] NOMBRE
BARCIELA
CHAMBERS
ERICK
ANTONIO • ID
8-711-694

Firmado
digitalmente por [F]
NOMBRE BARCIELA
CHAMBERS ERICK
ANTONIO - ID
8-711-694
Fecha: 2022.11.17
16:34:31 -05'00'



REPÚBLICA DE PANAMÁ
PROVINCIA DE PANAMÁ

NOTARIA OCTAVA DEL CIRCUITO DE PANAMÁ
Lic. Erick Barciela Chambers 50 00
NOTARIO PÚBLICO OCTAVO

Edificio Plaza Obarrio
Planta Baja
Ave. Samuel Lewis
Urb. Obarrio

Tel.: (507) 264-6270
(507) 264-3676
Celular: (507) 6716-4392
E-mail: ebnotariooctava@gmail.com

COPIA 22,90 07 Noviembre 2022

ESCRITURA N° _____ DE _____ DE 20 _____

POR LA CUAL:

Por la cual se protocolizan los documentos
de CONTRATO DE PRIMERA HIPOTECA NAVAL sobre la nave
denominada ARCADIA V suscrito entre IDUN LIMITED como Deudor
Hipotecario, y [REDACTED] como
Acreedor Hipotecario

1 indirectamente sin el consentimiento expreso por escrito de cada parte, sin
 2 embargo, el Vendedor podrá ceder directa o indirectamente este Pagaré sin el
 3 consentimiento del Deudor si la cesión directa o indirecta es a favor de una
 4 empresa/entidad que está controlada por una participación mayoritaria, o un
 5 derecho de control, o la administración fiduciaria del beneficiario final del
 6 Vendedor. Este Pagaré puede modificarse mediante el consentimiento por escrito
 7 del Deudor y el Vendedor. -----

8 **3.3 Ley aplicable y solución de controversias.** Este pagaré se registrará e
 9 interpretará de acuerdo con la ley inglesa. Todas las disputas que puedan surgir
 10 de, en relación con o con respecto a este Pagaré, serán, si no resueltas
 11 amistosamente por las partes dentro de los 30 días a partir de la notificación de
 12 disputa por parte del Deudor o el Vendedor a la otra parte, serán resueltas
 13 mediante arbitraje de conformidad con las reglas de arbitraje de la Asociación de
 14 Árbitros Marítimos de Londres (LMAA por sus siglas en inglés), ante un árbitro
 15 único. El lugar del arbitraje será Londres. Sin perjuicio de lo anterior, las partes
 16 acuerdan someterse a la jurisdicción no exclusiva de los Tribunales de Londres
 17 para buscar medidas provisionales que incluyan desagravio en relación con las
 18 disposiciones o la ejecución de esta Hipoteca. -----

19 **3.4 Avisos.** Todos los Avisos requeridos en virtud del Pagaré se realizarán de la
 20 siguiente manera: -----

21 [Redacted]
 22 Atención: [Redacted]
 23 Trident Trust Company, (B.V.I.) Limited, Trident Chambers, P.O. Box 146, Road
 24 Town, Tortola, British Virgin Islands -----

25 Tel.: [Redacted]
 26 **PERON LIMITED.** -----

27 Atención: [Redacted]
 28 Trust Company Complex, Ajeltake Road, Ajeltake Island, Majuro, Islas Marshall, -
 29 Tel: +13818137828 -----

30 Email: hjwihu@126.com -----

At least 29 mortgages – submitted to the Panamanian Maritime Authority as part of the Protean Vessels' flag registration – show sets of identifiers shared across Protean shell companies and their directors, as well as their separate financiers. Source: Panamanian Maritime Authority.

Section 4: The Loopholes and Implications

The Protean Fleet, its owners, and its financiers operate by exploiting vulnerabilities in Western maritime and financial infrastructure. Although well-disguised and insulated by layers of shell companies and proxy directors, this network contains chokepoints that can be leveraged for law enforcement action. Implementing these actions could significantly raise the costs of doing business for evasion networks.

The Protean Fleet's ownership and financing networks use third-party trusts, secrecy jurisdictions for shell companies, and Swiss and local service providers to hide the true source of the network's funds. These tactics have historically supported international money laundering and global sanctions evasion and commonly continue to facilitate such illicit activities in the present day.¹³⁵

Specifically, Swiss law "enabl[es] lawyers to serve as non-financial intermediaries, who are not subject to anti-money laundering oversight requirements."¹³⁶ This allows Swiss lawyers to avoid know-your-customer or due diligence protocols when handling funds on behalf of their clients and can result in said lawyers tacitly providing services that support illicit activities.

In 2024, Switzerland's Federal Council approved most of the measures contained in the 14th EU sanctions package.¹³⁷ Specifically, Swiss "sanctions [were] imposed in relation to 27 ships involved in Russia's war against Ukraine, including vessels belonging to Russia's 'Dark Fleet' ... The measures include bans on providing services, including financial services, to such vessels or on acquiring or operating them."¹³⁸ Vessels in the Protean Fleet Network, like the AMBER 6, EMILY S, and HEIDI A, are currently under Swiss sanctions. Searches of the Panamanian flag registry currently do not show that they are mortgaged by any of the three BVI companies.¹³⁹ Regardless, vessels which have received a mortgage from the BVI companies, such as the CERES I, have since been sanctioned by OFAC for Iranian oil smuggling.¹⁴⁰ U.S. sanctions on these vessels, the companies' demonstrated connection to the Protean Fleet as a whole, and their provision of mortgages to ships that are currently assisting in Russian oil sanctions evasion could potentially place these companies and their associated entities at risk for Swiss, U.S., and other sanctions.

From the U.S. perspective, OFAC sanctioned two Swiss lawyers in 2024 for enabling Russian war materiel acquisition due to their provision of services such as shell company incorporation and serving as financial intermediaries for Russian clients.¹⁴¹ This move was the first time OFAC had ever sanctioned Swiss lawyers for work done on behalf of their Russian clients, and raises the possibility that other Swiss nationals supporting global sanctions evasion may be vulnerable to consequences.¹⁴²

In addition to its potential exploitation of Swiss legal loopholes, the Protean Fleet also exploits the Panamanian flag registry to give it the veneer of legitimacy. Of the 56 tankers identified as part of the fleet, all but four vessels passed through the Panamanian flag registry at some point in their in-network life cycle. This typically takes place at the beginning, with the sale of the vessel to a Protean Network shell company and the vessel's entry into the Panamanian flag registry under its new owner.¹⁴³

The Panamanian flag registry is the world's largest by ship count and has reasonably good due diligence and monitoring protocols.¹⁴⁴ However, the Protean Fleet's advanced obfuscation techniques, including AIS handshakes, GNSS spoofing, dark voyages, and STS transfers, allow its vessels to circumvent such due diligence protections and thus maintain the good reputation of flying a well-regarded flag, reducing scrutiny from other enforcement bodies like port officials.¹⁴⁵ By and large, reputable registries like the Panamanian registry are unwitting victims of Dark Fleet exploitation. Regardless, the repeated use of certain Panamanian consulates and recurring approvals from certain employees suggest a vulnerability that warrants further attention.¹⁴⁶

This network purchases and mortgages its vessels in U.S. dollars, and by doing so, exploits the U.S. financial system to engage in illicit activities.¹⁴⁷ Because international bank transactions are often routed through U.S.-based correspondent banks, the United States has jurisdictional claim over those transactions.¹⁴⁸ In 2017, OFAC found Singaporean-based TransTel liable for its use of U.S. dollar transactions to circumvent Iranian sanctions, in violation of the International Emergency Economic Powers Act and Iranian Transactions and Sanctions Regulations.¹⁴⁹ This was the first time OFAC had sanctioned a private foreign company (and not a financial institution) for U.S. dollar transactions that supported U.S.-sanctioned entities.¹⁵⁰ Within the Protean Fleet, a small minority of vessels whose mortgages were issued after 2021 include contract language that allows debt fulfillment in EU euros or UAE dirhams.¹⁵¹ This could signal the Protean Fleet's later wariness of US dollar-denominated debts, which could expose it to US jurisdiction.

The Protean Fleet also takes advantage of secrecy jurisdictions friendly to the creation of shell companies to conceal the network's true owners, such as the Marshall Islands and the Cayman Islands. Secrecy jurisdictions do not offer a public corporate registry and usually have a corporate services industry that provides third-party incorporation and corporate secretary services for foreign-based directors.¹⁵² This ecosystem, along with the ease of opening a shell company in Hong Kong (where the registry is accessible), allowed the establishment of a buyer shell company for each vessel (sometimes multiple shell companies) as well as three BVI-companies that issued the mortgages.¹⁵³ The network often used the same notaries and legal service providers based in Zug, Hong Kong, Bangkok, and Panama for mortgages and naval titles across the fleet.¹⁵⁴

Conclusion

A single sub-fleet of over 50 tankers has an outsized footprint among the global “Dark Fleet” that exports illicit oil from sanctioned regimes.¹⁵⁵ Analysis of vessel AIS paths during their time in the Protean Fleet shows they employed sophisticated coordination and identity obfuscation techniques to secretly ferry crude oil from Iran, Russia, and Venezuela to the PRC and India, primarily.¹⁵⁶

Because the Protean Fleet was operational by 2022, it could expand from Iranian and Venezuelan oil smuggling and begin transporting sanctioned Russian oil immediately. This makes the Protean Fleet an invaluable asset for sanctioned governments, as its assets and logistics chains can theoretically be tapped by newly-sanctioned countries.¹⁵⁷

Many opportunistic networks that sprang up and attempted to move Russian oil post-2022 were quickly caught because they had suspicious recent purchases of tankers and used rudimentary and easily detectable activity obfuscation techniques. However, the Protean Fleet’s careful, coordinated processes and its sprawling shell company network kept the network going, even after authorities identified individual vessels.

That this fleet has had 43 out of 56 of its vessels already sanctioned by OFAC and other sanctions-imposing bodies but is still largely operational speaks to the shortcomings of the activity-focused enforcement approach. To effectively slow the flow of illicit crude, authorities must adopt a more systematic approach and hold accountable the networks and financiers behind these vessels.¹⁵⁸

Recommendations

Below, we outline enforcement mechanisms and precedents that enable enhanced coordination between jurisdictions and regulatory bodies seeking to disrupt the Protean Fleet. They are followed by targeted action items for stakeholders who can implement immediate measures within their existing authority.

Build on UN Precedents for Multi-Jurisdictional Intelligence Coordination. Once there are reasonable grounds to believe a vessel is engaged in smuggling, a sanctions-enforcing state may share that evidence with shipping registries, maritime insurers, FIUs, port directors, coast guards, and navies in real time for immediate action, including requests for information, the issuance of subpoenas, requirements to file Suspicious Activity Reports, or requests to inspect a vessel and its cargo. Existing U.N. resolutions allow for inspecting vessels and cargo on the high seas with consent of the flag state, or in port with consent of the host nation, when such reasonable grounds exist. Enforcing states should consider encoding UNCLOS inspection authority in national legislation to allow for boarding of suspected dark fleet vessels in Exclusive Economic Zones.^{159 160 161 162}

Strengthen Seizure and Disposal Frameworks. Previous cases of international law enforcement action against smuggling have established precedents for states to seize and dispose of contraband and smuggling vessels.^{163 164 165}

The cost and inconvenience of disposing of smuggling vessels has historically disincentivized their seizure. Enforcing states must be prepared to assist cooperating ports by removing seized vessels and commencing legal proceedings to seize, forfeit, and dispose of both the vessel and cargo by auction or salvage.¹⁶⁶

To raise incentives to cooperating ports, enforcing states may offer to share revenue derived from auctioning off contraband and seized vessels with cooperating states.¹⁶⁷

Implementer	Recommendations
U.S. Department of the Treasury, U.S. Department of State, Federal Bureau of Investigation	<ul style="list-style-type: none">Investigate financial flows of this network (US\$ transactions within U.S. jurisdiction).
IMO, S&P Global	<ul style="list-style-type: none">Identify vessels engaging in C4ADS’ risk criteria and integrate those criteria into compliance screening.Facilitate the exchange of up-to-date information between stakeholders across jurisdictions.

Flag Registries, Classification Societies, Insurers, Port State Control Officers, and other maritime stakeholders

- De-flag, deny port entry, and revoke insurance and classification status for Protean Fleet vessels.
- Invest in voyage analysis capabilities to improve the detection of illicit activity.
- Maintain open and comprehensive access to relevant data.

Regulators and Financial Intelligence Units

- Employ an escalating sanctions strategy against key dark fleet enablers, including repair, bunkering, tug services, and oil refineries.

Chinese and Indian Authorities

- Open law enforcement investigations into the Protean Network's companies and vessels, which are breaking both international maritime law and domestic maritime safety and environmental laws.¹⁶⁸
- Appeal to customs administrations, oil buyers, ports, and refineries to reject oil cargos imported from vessels with a history of noncompliance with environmental and safety standards.¹⁶⁹

Switzerland, Panama, and Other Countries with Heightened Exposure to Sanctions Evasion Activity

- Ensure local financial services and maritime industries are not being co-opted by the sanctions-breaking ecosystem.

Appendix: Protean Fleet Vessels Table

Current Vessel Name	Relevant Historical Vessel Names	IMO	OFAC Sanctioned?
AQUARIUS II		9346873	No
LAUREN II		9258521	Yes
VESNA	OCEAN SAFARI	9233349	Yes
BERTHA	MONICA S	9292163	Yes
AMBER 6		9235713	Yes
OCTANS	JUDY II	9224295	Yes
ELIZA II		9418078	Yes
SAGITTA		9296822	Yes
MOCHA	BARCAN III; FACCA	9271951	No
HONG LU	DIMITRA II; ARCADIA V	9208215	Yes
CERES I		9229439	Yes
DAVINA	JESSICA D; SOLANA	9259367	Yes
OLINA	MINERVA M	9282479	Yes
FREDA		9402469	Yes
AQUILA II		9281152	Yes
JAYA	MONOCEROS	9410387	Yes
NORA	NIGH	9237539	Yes
SULLANA	STRIBOG; NESS	9180152	No
IMPALAS		9171448	Yes
MEROPE		9281891	Yes
FIONA II		9262766	Yes
APUS		9280885	Yes
CRIUS		9251274	Yes

HEIDI A		9321976	Yes
SONA	SEA GLORIA	9005053	No
TASCA	CRISTINA	9313149	Yes
PROGRESS V		9316701	Yes
NORD STAR		9323596	No
PHONIX	LUNA LAKE	9198317	Yes
BREEZE V		9259355	No
SCORPIUS		9264893	Yes
CRYSTAL ROSE		9292228	Yes
SKADI		9230971	Yes
AREIA	EMILY S	9321847	Yes
VOLANS		9422988	Yes
SERENE I	ALISHA	9197832	Yes
ROSALIN	NURKEZ	9253325	Yes
THALIA III		9259197	Yes
POREWIT		9302865	No
YURI	JENNIFER III	9235737	Yes
MIN HANG	AURIGA	9257137	Yes
VERONICA III	VERONICA	9326055	Yes
THEMIS		9264570	No
M SOPHIA		9289477	Yes
ARTEMIS III	AGLAIA	9102241	No
ANSHUN II		9253117	No
LEONA	CEPHEUS	9299721	Yes
FT ISLAND		9166675	Yes
NATALINA 7		9310147	Yes
CATALINA 7		9310159	Yes

LYRA		9314088	Yes
ITAUGUA	PERON	9102277	Yes
ISHTAR	FREYA	9180164	No
HULDA	THEA	9290309	No
CARINA	CARINA V	9240512	Yes
REGENCY	AURORA EXPRESS	9258363	No

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