

China's Strategic Deployment of Deep-Sea Mining:

Implications for U.S. Defense Presence in the Oceania Region

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01 Executive Summary

As attention is focused on securing U.S. defense critical mineral supply chains, deep-sea mining presents a critical new market for decoupling terrestrial supply chains from reliance on China (PRC). Yet, China has strategically launched efforts to lead the deep-sea mining market, secure supply chains, and undermine U.S. defense presence in the Pacific Oceania region which has critical implications for U.S. national security

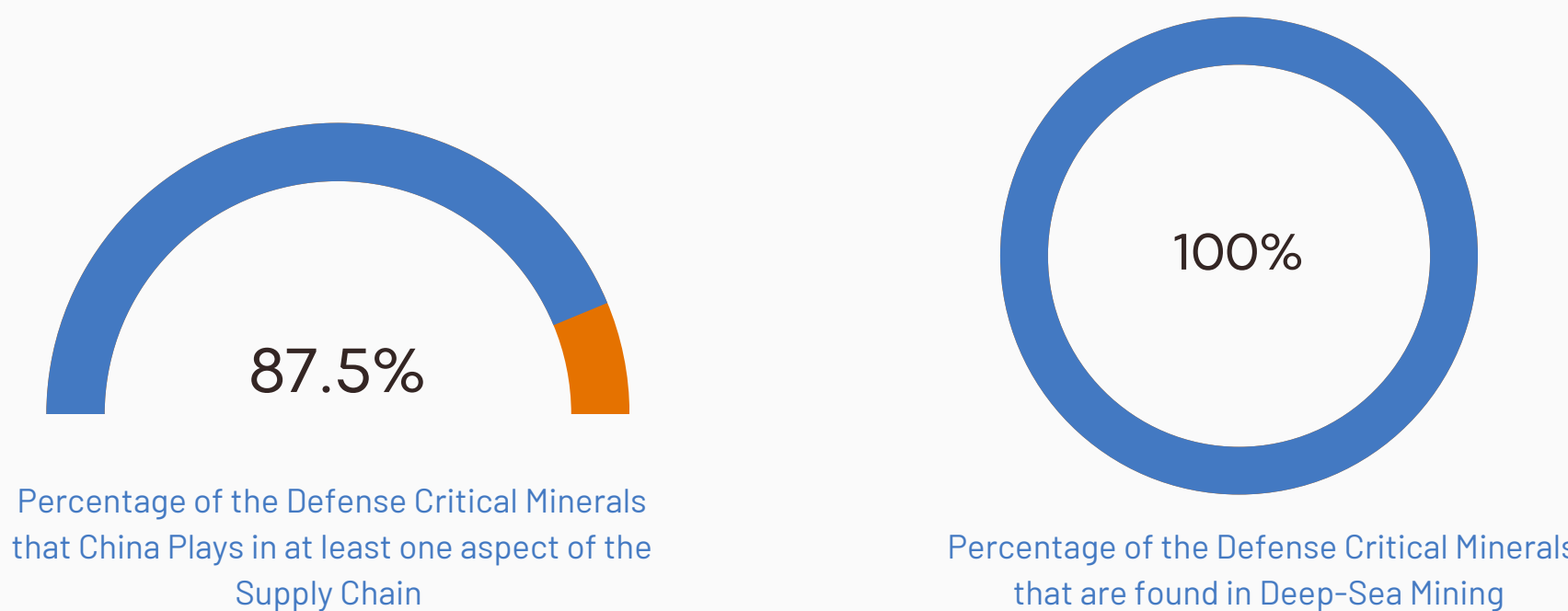
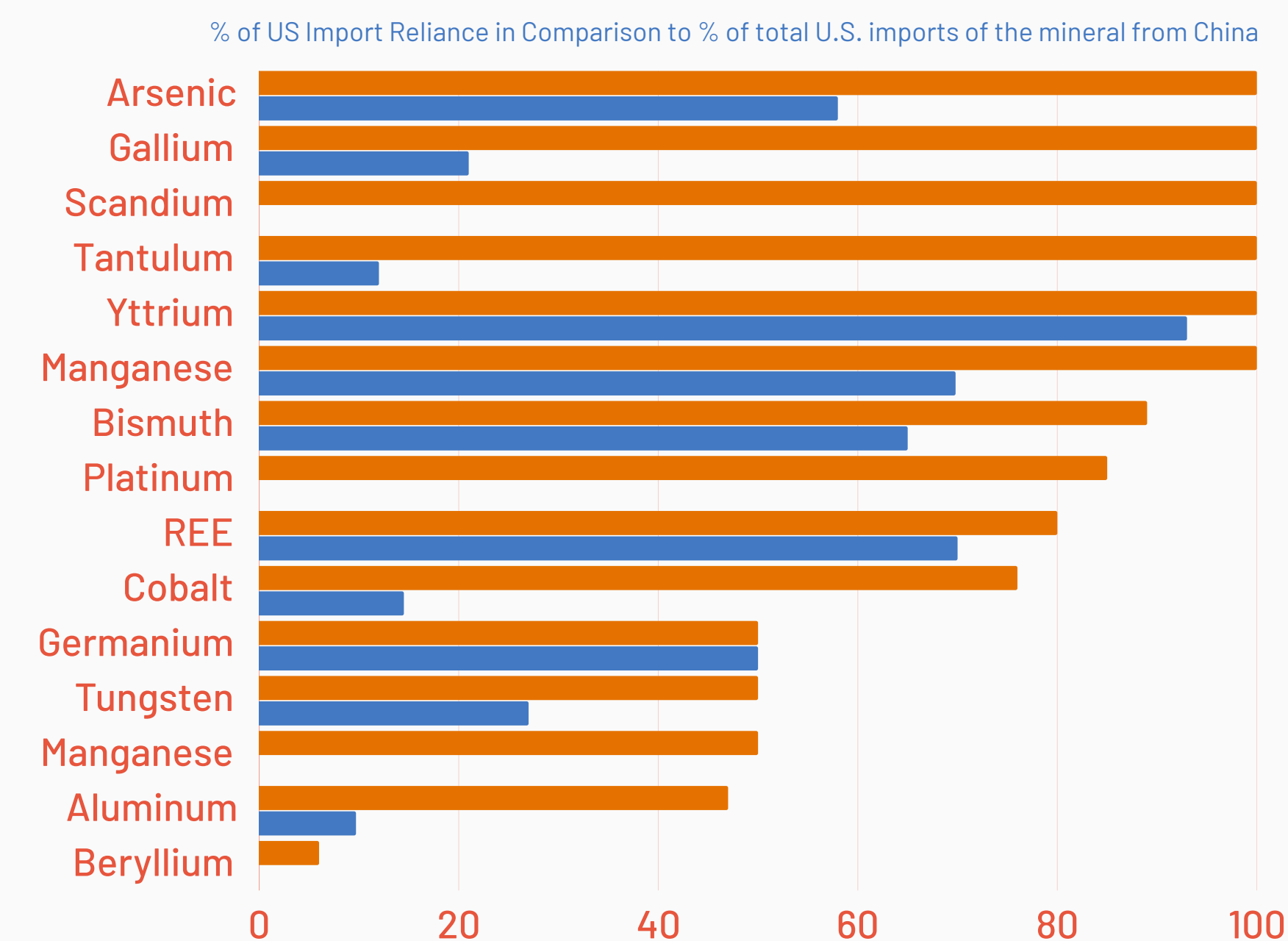
Key Research Questions:

- How has China employed dual-use technology and partnerships towards building up their deep-sea mining capabilities?
- Why is deep sea mining an emerging industry important to U.S. defense and a potential area of geopolitical competition?
- How is China's use of Deep-Sea mining a method of undermining U.S. defense presence and influence in Oceania?

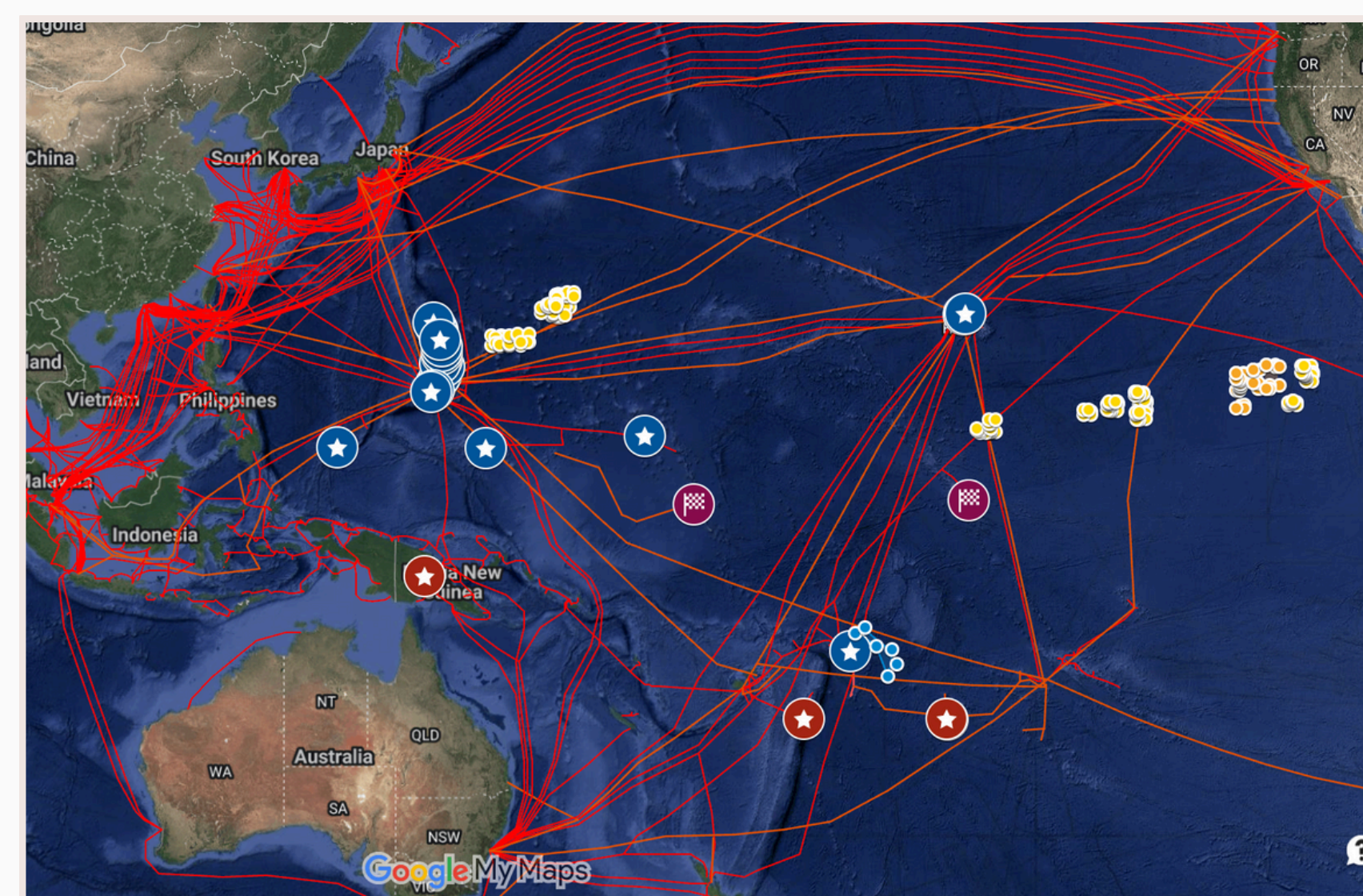
02 Background *Defense Critical Minerals*

Why are critical minerals important to the Defense Community and Industrial Base?

They are used in numerous defense technologies such as night vision goggles, ammunition, LEDs, systems in tanks and helicopters, missile and GPS systems, armor, and hardening of metals. Additionally, the geopolitical complexities of mining, processing, and market-player dominance involves geopolitical competition and potential are to be impacted by conflict. This leads to heightened potential for the disruptions of mineral supply chains needed to manufacture key technologies which is a serious national security vulnerability for the U.S.



China and US assets in Oceania



Map of China's Strategic Deployment of Deep Sea Mining

China

- **Security Agreements:** Solomon Islands, Kiribati and Vanuatu
- **ISA Contract Areas:** Beijing-Pioneer Corporation, China Minmetals Corporation in Clarion-Clipperton Zone
- **Diplomatic Collaborations of Deep-Sea Mining:** Cook Islands Memorandum of Understanding; Identifying potential PICs for mining - Kiribati, Tonga, Papua New Guinea

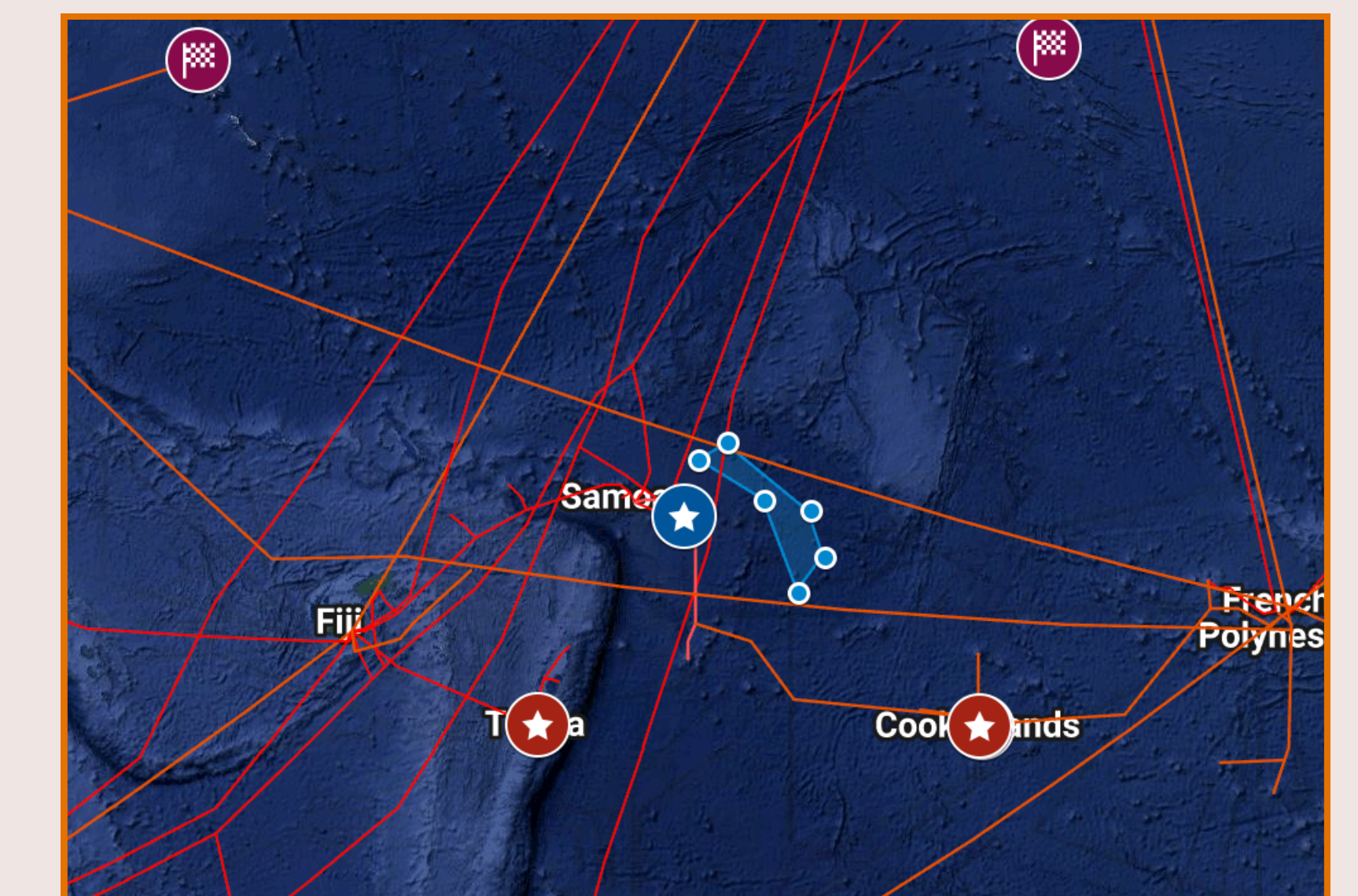
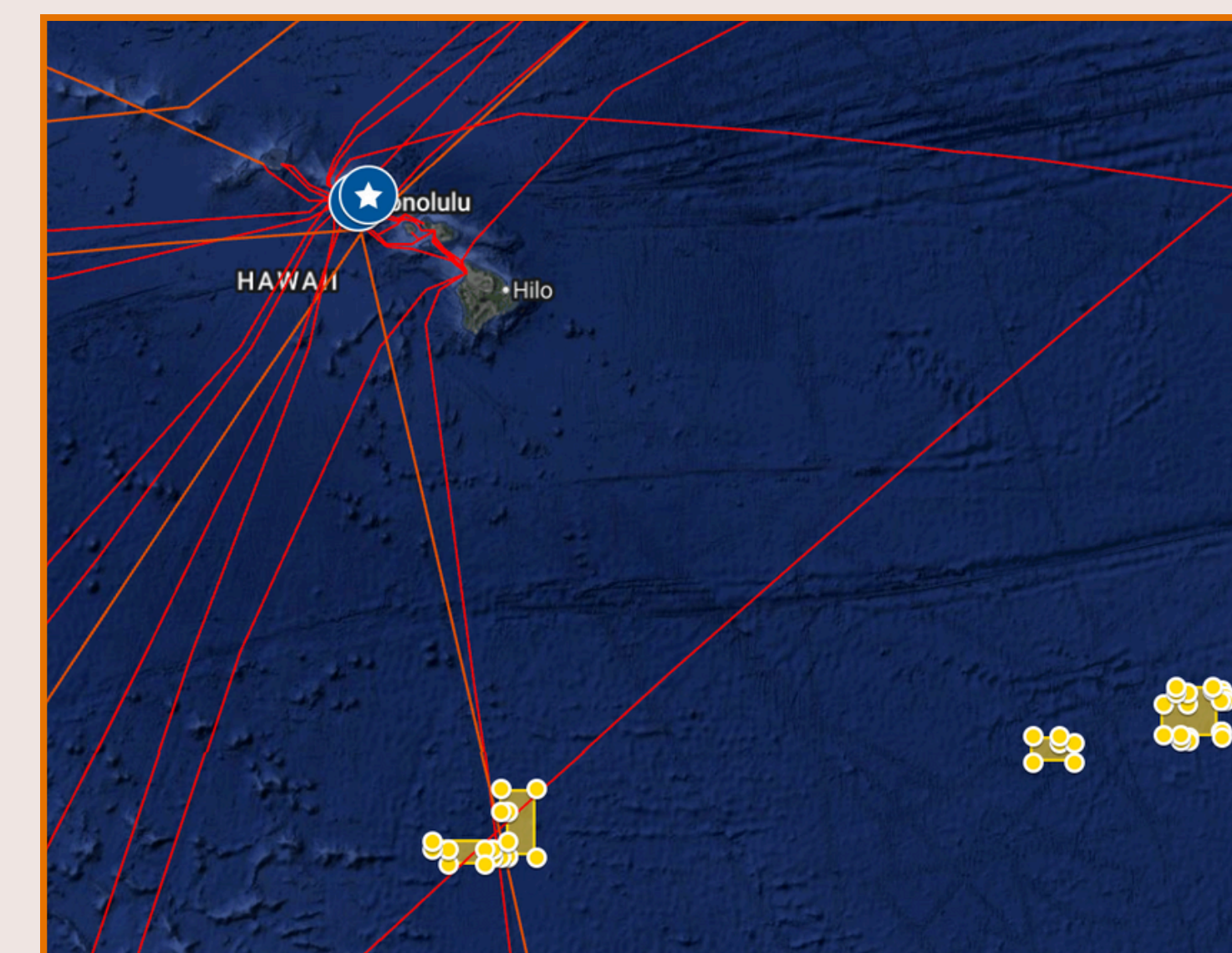
U.S.

- **US Territories/ States:** Guam, American Samoa, Mariana Islands, Hawaii,
- **US Military Bases :** Hawaii, Guam
- **COFA:** Micronesia, Marshall Islands, Palau
- **Deep-Sea Mining:** Non-ISA signatory only able to mine in US EEZs and potentially collaboration for COFA PICs' EEZs
 - E.O. 14285 Allows U.S. Mining in ABNJ going against ISA regulations

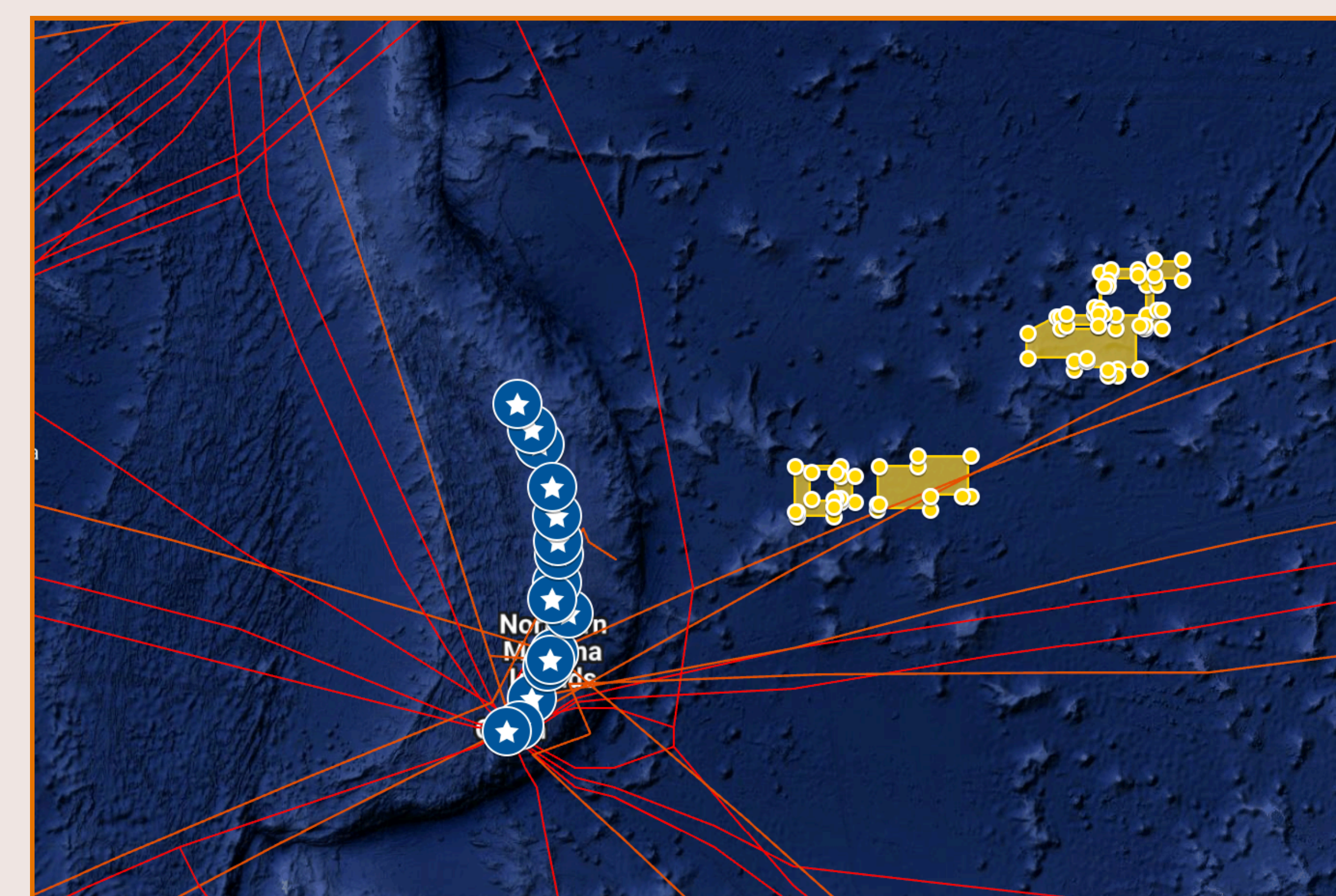
03 Implications for U.S. Security and Defense

- **PRC Expansion of Diplomatic Collaborations with PICs** - China is using research collaborations with PICs on deep-sea mining to expand defense and diplomatic partnerships. The emergence of mining sites and key critical partnerships in the Pacific are strategically poised near U.S. assets. This is aimed at countering U.S. presence and expanding China's influence in Oceania centered around defense critical minerals.
- **Dual-Use Deep Sea Mining Infrastructure** - China's research and survey vessels conducting mapping of Chinese ISA contract areas, due to navigation patterns, pose a serious threat of being dual-use technology surveilling U.S. military posture and interfering with civilian infrastructure.
- **PRC Competitive Advantage over Deep-Sea Mining** - Through emerging technologies and diplomatic partnerships China is positioning itself to gain global strategic control over the deep-sea mining industry. This is to secure PRC critical mineral supply chains and have the strategic control undercut the U.S. out of an emerging market critical to defense and U.S. National Security

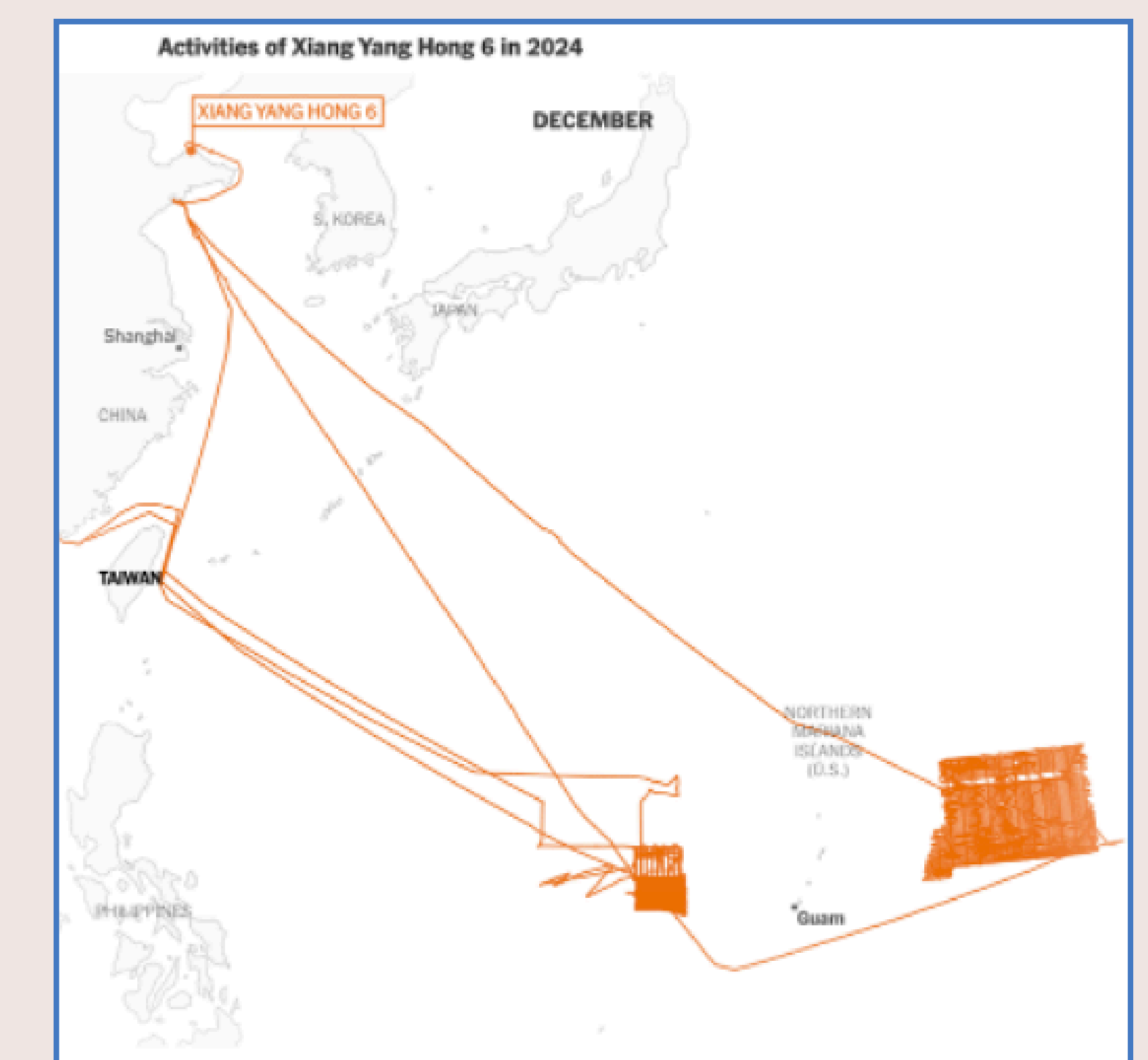
04 Analysis



- As seen by the map above on the left China has established ISA contract sites, as shown by the yellow shapes, in close proximity to U.S. assets such as Hawaii above where there is significant U.S. military presence. Through mapping the Chinese ISA contract sites, the correlation of sites and potential partnerships near U.S. assets was not the only trend that emerged. Many ISA contract sites have important undersea fiber optic cables running through their territories or in close proximity which brings up significant concerns of potential Chinese espionage or sabotage on these cables.
- The map above on the right establishes a similar trend that has emerged where China has identified potential diplomatic partners, which are represented by the red stars for Deep-sea mining contracts. Alternatively, the cases of the Cook Islands and Kiribati, which are identified as the red flags, show diplomatic and defense partnerships that have been already established in close proximity to the U.S. territory of American Samoa, where the U.S. is currently looking towards establishing a deep-sea mining site in its EEZ.



Map of China's Strategic Deployment of Deep Sea Mining



Source: NYT Report on 2024 Xiang Yang Hong Movements

- A recent NYT article, tracked the 2024 movements of one of the ships in China's civilian research and survey fleets, Xiang Yang Hong 6. Through analyzing the map of its movements that was produced as seen on the right in comparison to the Map on the left of China's Strategic Deployment of Deep Sea Mining, there was a stark trend that has ensued. Xiang Yang Hong 6 was not only collecting research in and around areas of Chinese ISA contracts, highlighted by the yellow boxes on the left map and the orange box to the East of Guam (*note: Guam is the Southern most blue star in the island chain) and the Northern Mariana Islands which is Xiang Yang Hong 6's movements near the ISA contract areas. What is significant to note though is the orange box to the West of Guam. Where the Xiang Yang Hong 6 was surveying is in an area where there are no Chinese or partner ISA contracts present instead this area falls directly above the intersections of numerous deep sea fiber-optic cables, as shown through the red lines on the left map, including those owned by U.S. companies.