



German Navy Fleet Tracker

2021 Annual Report

With a preface by **Captain Thorsten Bobzin**

Commander German Navy Aviation

Imprint

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Design of the report by Henrik Schilling

Edited by Henrik Schilling & Johannes Peters

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Stay in touch:

Web: www.kielseapowerseries.com | www.ispk.uni-kiel.de

Mail: hschilling@ispk.uni-kiel.com

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German Navy Fleet Tracker

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Preface

by Captain Thorsten Bobzin –

Commander Naval Aviation, German Navy



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„Thought is the wind, knowledge the sail, and mankind the vessel“ (August Hare)

2021 held some maritime eye-openers in store for a still land-centric thinking nation. We saw the accident of the Ever Given in the Suez Canal and its effects on world trade. We saw the first deployment of a German naval ship to the Indo-Pacific in many years, based on the newly formulated Indo-Pacific-Policy-Guidelines. The German commitment to underscore the pursuance of a rules based order with naval presence generated enormous interest within partner nations and the East Asian community. Less so in Germany itself and after initial effects subsided, we fell back into sea blindness.

The ISPK is committed to raise the curtains and make Germany's dependance on free maritime trade and open sea lines of communication visible. Adding to this and graphically depicting the Navy's role and commitment is the ISPK's fleet tracker. In its third year since conception it provides an easy-to-use tool making information on German Navy operations and deployments apparent to academia and a general audience beyond the security-policy bubble.

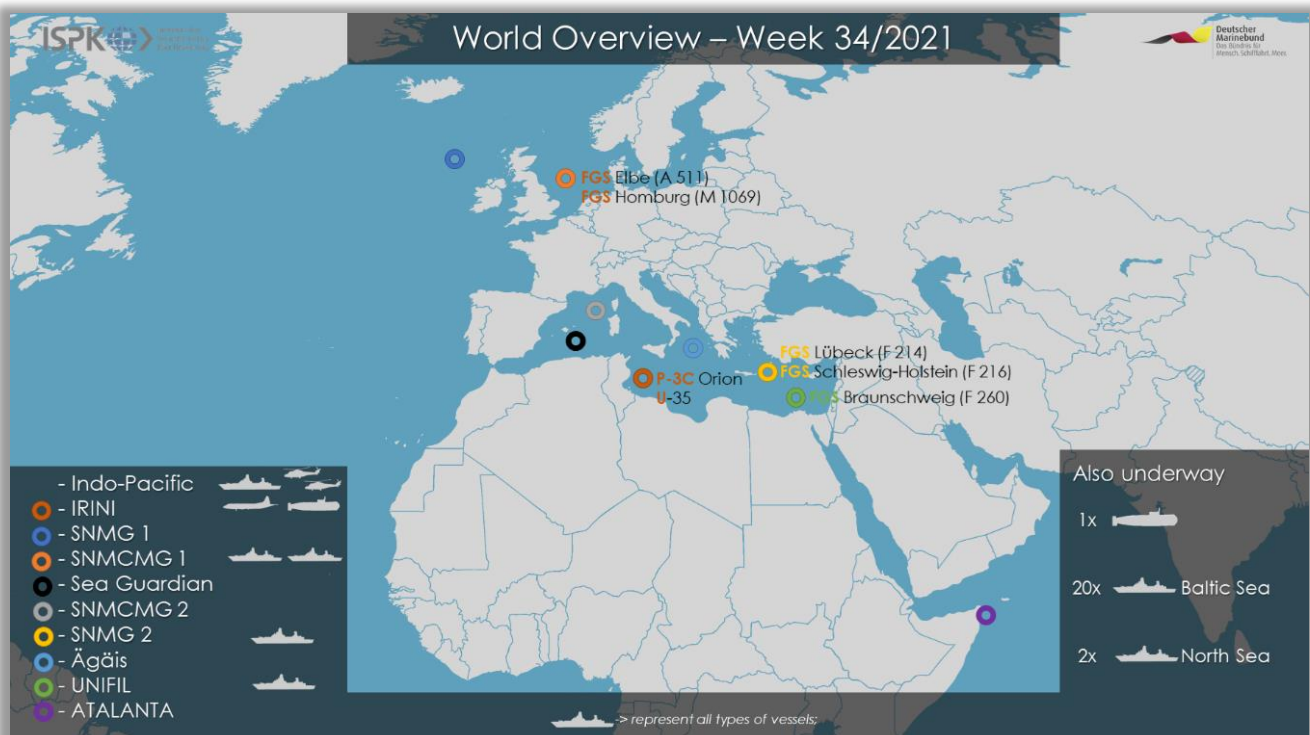
In analogy to August Hare's proverb the fleet tracker is the wind, blowing into the sail of maritime awareness of a land centric nation that in truth is ultimately dependent on the sea.

German Navy Fleet Tracker

The idea & what's new this year

The objective of the German Navy Fleet Tracker was to establish an open-source database about the involvement of the German Navy in national and international operations and exercises. Over time, it enabled us to provide a comprehensive overview of German naval operating areas, NATO, EU & UN maritime operations with German participation and major exercises of allies and partner nations. Crucial for the publication of such overviews, is the usage of unclassified data and areas of operation rather than precise position of the maritime assets. The German Navy Fleet Tracker is, as all work from ISPK's CMSS, about policy and strategy and not about operational or tactical details.

It is published weekly as a digital and interactive map that provides an overview of the current operations of every asset of the German Navy. Even more information can be extracted from the overview world-map when using the interactive regional maps displayed with a pulsating information-symbol over the respective region on the map.



Since the beginning of the project, nearly 100 world-maps have been created with five to seven different regional maps each. Besides our goal to display naval information to the public, we also made it our mission to preserve the open source, unclassified and non-commercial data in an archive. You can visit the archive at our Fleet Tracker website.



We have also changed the design of the Fleet Tracker over the past year to make it more accessible and modern. One of the bigger projects that began in late summer was the integration of an interactive map into the already existing map. That way it was possible to follow all the steps of the highly discussed Indo-Pacific deployment of the frigate Bayern which was the first deployment of its kind in the region for many years. The track of the frigate Bayern is linked to every World-map since its departure from Wilhelmshaven on the 02nd of August 2021.

By the way: You can enjoy the German Navy Fleet Tracker best if you enable a full screen mode on a tablet or computer. Especially for maps with a lot of information, like the Indo-Pacific deployment-map, this allows you to keep a good overview without overlapping several pieces of information.

Not only does the German Navy Fleet Tracker aim to increase the visibility and accessibility of the German Navy for people without access to the sea and therefore less access to the Navy. It also explains, the mission of the German Navy and thus contributes to a better understanding of the maritime domain, its importance and the naval assets protecting it.

ISPK experts are available via e-mail or telephone to discuss political and strategic details and implications in detail for those who are interested.

The German Navy Fleet Tracker is part of a cooperation between the Deutscher Marinebund, Germanys largest maritime interest group and the Institute for Security Policy at Kiel University that was launched in early 2020 to advance the understanding of German maritime dependence. The cooperation also serves to bridge the gap between maritime political science and naval history.



German Navy Fleet Tracker

Overview of the German Navy Fleet

The following list shows the assets of the German Navy in 2021. Many of these have been included in the German Navy Fleet Tracker 2021. Some smaller assets, like tugboats, are not included.

The German Navy commissioned another frigate of the Baden-Württemberg class (F 125), the Sachsen-Anhalt. One more F 125, the Rheinland-Pfalz is currently undergoing sea trials and shake-up cruises. The Navy has also continued to receive its new Sea Lion NH90 helicopters. Furthermore, the German parliament granted several procurement projects for the Navy. These include two new submarines Class U212 CD; three reconnaissance vessels, Class FDB424 replacing the three class 423 vessels Alster A50, Oste A52, Oker A53; two replenishment oiler class 707, replacing Spessart A1442 and Rhön 1443; two trial vessels and five P-8A Poseidon reconnaissance aircraft. Moreover, construction began on the fourth of five new Braunschweig-class corvettes.

The special vessel Bottsand Y1643, used to combat oil spills, was handed over to the Federal Waterways and Shipping Administration and will be under civilian usage.

2021 Fleet

FRIGATES	11 frigates in total	
F 122	FGS Lübeck	F 214
F 123	FGS Brandenburg	F 215
	FGS Schleswig-Holstein	F 216
	FGS Bayern	F 217
	FGS Mecklenburg-Vorpommern	F 218
F 124	FGS Sachsen	F 219
	FGS Hamburg	F 220

<i>F 125</i>	FGS Hessen	F 221
	FGS Baden-Württemberg	F 222
	FGS Nordrhein-Westfalen	F 223
	FGS Sachsen-Anhalt	F 224
CORVETTES	5 corvettes in total	
<i>K130</i>	FGS Braunschweig	F 260
	FGS Magdeburg	F 261
	FGS Erfurt	F 262
	FGS Oldenburg	F 263
	FGS Ludwigshafen am Rhein	F 264
SUBMARINES	6 submarines in total	
<i>212A</i>	U 31	S 181
	U 32	S 182
	U 33	S 183
	U 34	S 184
	U 35	S 185
	U 36	S 186
MINE COUNTERMEASURE	12 mine countermeasure vessels in total (drones not included)	
<i>332</i>	FGS Fulda	M 1058
	FGS Weilheim	M 1059
	FGS Sulzbach-Rosenberg	M 1062
	FGS Bad Bevensen	M 1063
	FGS Grömitz	M 1064
	FGS Dillingen	M 1065
	FGS Datteln	M 1068
	FGS Homburg	M 1069
<i>332B</i>	FGS Rottweil	M 1061
	FGS Bad Rappenau	M 1067
<i>351 (drones)</i>	Seehund 1 – Seehund 18	
<i>352</i>	FGS Pegnitz	M 1090
	FGS Siegburg	M 1098
LANDING CRAFT	1 landing craft in total	

520	FGS Lachs (not included in 2021 statistics)	L 762
SUPPLY VESSELS	5 supply vessels in total	
702	FGS Berlin	A 1411
	FGS Frankfurt am Main	A 1412
	FGS Bonn	A 1413
704	FGS Spessart	A 1442
	FGS Rhön	A 1443
TENDER	6 tenders in total	
404	FGS Elbe	A 511
	FGS Mosel	A 512
	FGS Rhein	A 513
	FGS Werra	A 514
	FGS Main	A 515
	FGS Donau	A 516
TUGBOATS	10 tug boats in total	
660	FGS Warnow (not included in 2021 statistics)	Y 1659
720	FGS Fehmarn	A 1458
722	FGS Wangerooge	A 1451
	FGS Spiekeroog	A 1452
725A	FGS Vogelsand (not included in 2021 statistics)	Y 816
	FGS Nordstrand (not included in 2021 statistics)	Y 817
	FGS Langeness (not included in 2021 statistics)	Y 819
725B	FGS Lütje Hörn (not included in 2021 statistics)	Y 812
	FGS Knechtsand (not included in 2021 statistics)	Y 814
	FGS Scharhörn (not included in 2021 statistics)	Y 815
SPECIAL VESSELS	4 special vessels in total	
754	FGS Baltrum	A 1439
	FGS Juist	A 1440
738	FGS Bottsand (included until March 2021) ^{C/}	Y 1643
	FGS Eversand	Y 1644
RECONNAISSANCE	3 reconnaissance vessels in total	
423	FGS Alster	A 50

	FGS Oste	A 52
	FGS Oker	A 53
Training Ship	FGS Gorch Fock	A 62
BARGES	2 barges in total	
650	FGS Wische (not included in 2021 statistics)	Y 895
730	FGS Knurrhahn (not included in 2021 statistics)	Y 811
RESEARCH VESSELS^{C!}	1 research vessel in total	
751	FGS Planet (not included in 2021 statistics)	A 1437
TRIAL VESSELS^{C!}	4 trial vessels in total	
748	FGS Kronsort	Y 861
	FGS Helmsand	Y 862
	FGS Mittelgrund	Y 864
	FGS Breitgrund	Y 866
SECURING VESSELS	4 securing vessels in total	
905	FGS Todendorf	Y 835
	FGS Putlos	Y 836
	FGS Baumholder	Y 837
	FGS Münster	Y 839
AIRCRAFT		<i>Quantity</i>
<i>Patrol and anti-submarine</i>	Lockheed P-3C “Orion”	8
<i>Pollution control</i>	Dornier Do-228NG (not included in 2021 statistics)	2
<i>SAR</i>	Westland Mk. 41 “Sea King” (not included in 2021 statistics)	14
<i>Anti-submarine and h/c</i>	Westland Mk. .88A “Sea Lynx”	22
<i>SAR</i>	NH90 NTH “Sea Lion” (not included in 2021 statistics)	12

X^{C!}: Manned by a civilian crew.

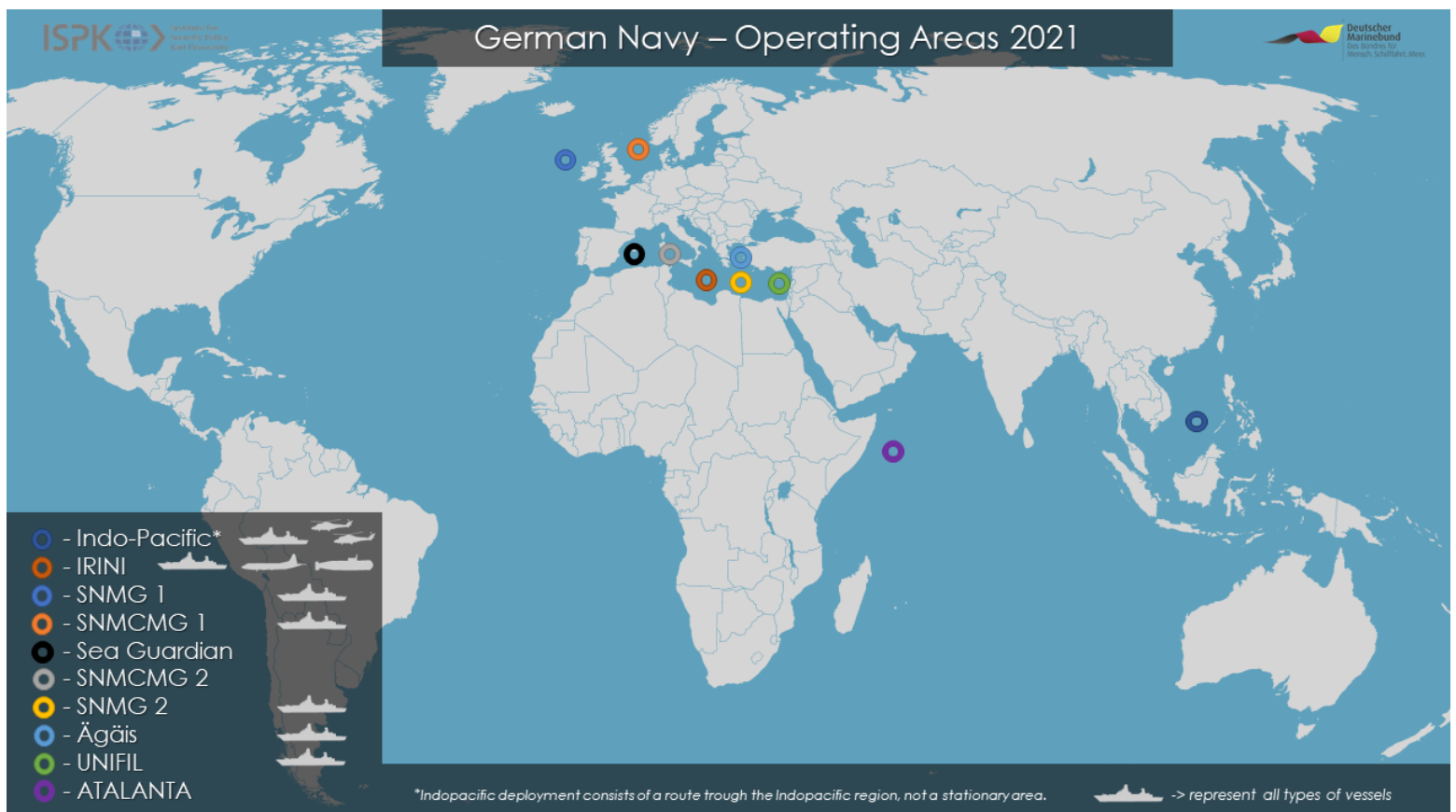
German Navy Fleet Tracker

Operating Areas



The German Navy operates in national and international waters, nearly exclusively in the Western hemisphere; an exception is the Indo-Pacific deployment of the frigate Bayern. Expeditionary operations under UN, EU, or NATO mandate require parliamentary approval. Training, exercises, and Standing NATO Maritime Group participation are exempted from this. The main operating areas of the German Navy can be found at the official website of the German Bundeswehr.

As displayed, the most common operating areas are the Baltic and North Sea, as well as the Mediterranean. Apart from these areas, the German Navy takes part in exercises and missions especially on Europe's Northern flank (the North Atlantic & the Norwegian Sea). More details about the missions and exercises conducted in 2021 can be found in the next chapter.





German Navy Fleet Tracker

Missions & Exercises

Most of the missions displayed at the chart on the last page, are long term missions, such as the participation in one of the four NATO Standing Maritime Groups. Apart from these long term deployments, the German Navy takes part in a variety of short term exercises with its allies around the world which can also be found in this chapter.

Missions

SNMG 1 & SNMG 2

The Standing NATO Maritime Groups 1 & 2 are part of the fast response teams of NATO. SNMG 1 is mostly operating in the North Sea and the Atlantic Ocean while SNMG 2 is operating in the Mediterranean Sea. SNMG 2 is also patrolling at the Aegean region from time to time. The German Navy has been participating at SNMG 1 for several weeks with the replenishment oiler Spessart A1442. In 2021, it was permanently participating in SNMG 2 and providing the command platform for NATO AEGEAN ACTIVITY using either a Brandenburg-class or a Bremen-class frigate, a tender or a replenishment oiler. The AEGEAN ACTIVITY is conducted by a task unit of the task group SNMG 2.

SNMCMG 1 & SNMCMG 2

The Standing NATO Mine Countermeasures Maritime Groups 1 & 2 are part of NATO's approach for mine warfare and the detection and removal of dumped ammunition and unexploded ordnance. The operating areas are similar to the ones above. The German Navy has been present at SNMCMG 1 for the entire year with at least one mine countermeasures (MSM) vessel at a time as well as an auxiliary vessel (tender Elbe A 511).

ATALANTA

EU NAVFOR ATALANTA launched as the first maritime operation of the European Union with the goal to protect the World Food Programme (WFP) at the Horn of Africa and secure the crucial waterways from piracy, in 2008. Permanent participants are Germany, France, Spain, Italy and the Netherlands. The German Navy terminated its involvement at ATALANTA in April after over ten years of providing support; in the last years especially with a P-3C reconnaissance aircraft. The frigate Bayern was deployed at ATALANTA during its transit to and from the Indo-Pacific.

IRINI

EUNAVFOR MED IRINI is a mission of the European Union to effectively monitor the UN arms embargo against Libya in the Mediterranean Sea. The German Navy has supported the mission since its launch in April of 2020. This year it was present with a P-3C Orion through most of the year. In addition a Berlin Class Supply vessel with two onboard helicopters and a submarine were present during several months of 2021 as well.

UNIFIL

The United Nations Interim Force in Lebanon is an observer mission since 1978, which was mostly land based. It changed in 2006 with a new UN Mandate per request from the Lebanese government, to support the Lebanese Navy. This includes securing the Lebanese coastline, preventing unauthorized entry into Lebanese water, and monitoring the territorial waters until the Lebanese Navy and Security Forces can fulfill these tasks by themselves. The German Navy has been present since its onset. In January 2021 the command of the UNIFILs Maritime Task Force passed on to Germany, which provided one corvette at all time.

Indo-Pacific

The Indo-Pacific Deployment of the German Navy is the first deployment of a German frigate, the FGS Bayern in this region for many years. The mission will be discussed to more detail in the next chapter.

Other missions

The German Navy routinely operates with various allies and in the national context in areas such as the Baltic Sea, the North Sea, and the North Atlantic. Some of these operations remain classified (such as submarines deployments) and are therefore beyond the scope of this report.

Exercises

Support Squadron SQUADEX

Units from the 3rd Mine Countermeasures Squadron, the Support Squadron and the 5th Naval Aviation Squadron conducted a SQUADEX Exercise. They are accompanied by mine divers of the sea battalion.

Dynamic Manta

Dynamic Manta is an annual submarine warfare exercise led by NATO which was conducted off the coast of Italy this year. A German P-3C Orion is participating and flying for IRINI at the same time. Five surface combat ships, five submarines and six patrol aircrafts from eight allied nations participated in the exercise which also trained together with the French Charles de Gaulle Carrier Strike Group.

Baltic Mine Countermeasures SQUADEX

The German led exercise was taking place in the Baltic Sea to enhance the cooperation between the multinational maritime forces. Four mine countermeasures vessels of the German Navy trained together with vessels of Denmark, Belgium, Latvia and Lithuania.

Missile Firing Exercise / ANDOYA

Annual exercise by the German Navy conducted in Norwegian waters in May. Besides the missile firing, the German Navy also practiced naval gunfire support. One Sachsen-class frigate, one tender, one patrol aircraft and units from the sea battalion of the German Navy formed a substantial task group together with units from the German Army.

Formidable Shield

Led by the U.S. Sixth Fleet, Formidable Shield is an exercise conducted by Naval Striking and Support Forces NATO (STRIKEFORNATO) to practice live firing of integrated air and missile defense system. Of the fifteen vessels and ten aircrafts, the German Navy participated with a Sachsen-class frigate and a replenishment oiler.

Steadfast Defender

Being NATO's flagship exercise in 2021, Steadfast Defender focused on collective defense based on the NATO Article 5 scenario. The majority was organized by the Joint Forces Command Norfolk. 11

NATO allies with 19 vessels, several aircraft and around 5.000 personnel participated in the exercise. The German Navy deployed a Brandenburg-class frigate.

BALTOPS 2021

The annual exercise organized by the U.S. Naval Forces Europe celebrated its 50th anniversary in June 2021. The Baltic Operation was held with 16 NATO Allies and 2 partner nations. In 2021 the operation added defense cyber tactics for the first time to the exercise, which was normally composed of air defence, anti - submarine warfare, amphibious operations, maritime interdiction, and mine countermeasure operations. The German Navy participated in BALTOPS 2021 with one maritime patrol aircraft, one Sachsen-class frigate, one Braunschweig-class corvette, one mine countermeasures vessel and one auxiliary vessel.

3 MINE WARFARE SQUADRON SQUADEX

Three mine countermeasures vessels were accompanied by a tender during the SQUADEX.

Northern Coasts

The annual exercise Northern Coast started on the 10th of September. Originally introduced by the German Navy in 2007, this year's exercise was led by the Swedish Navy and conducted in the Baltic Sea with 30 vessels, 10 airplanes and 2.000 personnel. This exercise aims to improve multinational naval interoperability and was executed by NATO and Partnership for Peace members. The German Navy participated with a Sachsen-class frigate and two mine countermeasures vessels.

FLOTEX

FLOTEX is a Norwegian exercise with the goal to increase warfare capability and anti-submarine warfare in Northern waters. Alongside with the Norwegian navy vessels, one French frigate, one Danish frigate and different NATO vessels participated in the exercise. Germany took part with one Baden-Württemberg-class frigate.

The image shows the stern of a large grey naval ship, the FGS Bayern, moving through the water. The ship's hull number '11' is visible. The background shows a coastline with some buildings and trees under a clear sky.

German Navy Fleet Tracker

Indo-Pacific Deployment

Johannes Peters, Head of the Center for Maritime Strategy and Security at the Institute for Security Policy at Kiel University

The fixing of the last moorings at the pier in Wilhelmshaven on February 18, 2022 marked the end of a 40.000nm journey for the frigate Bayern and its crew. Besides being a great adventure for the ship's crew creating lifetime memories, the 7-month Indo-Pacific deployment is a remarkable operational success for the Deutsche Marine as a whole. While sending a ship literally half across the globe for the first time in over twenty years, avoiding any major technical difficulties and setting up the necessary logistics and resupplies is no minor task in itself. Sticking to the schedule, maintaining the ships combat readiness and fulfilling every required task – from vip-attendance on-board receptions over numerous exercises with partner navies to reporting into multilateral operations, is an even greater challenge. Achieving all this against the backdrop of a global virus pandemic and managing to keep the crew COVID-free truly deserves a Bravo Zulu!

Despite being an operational success, the significance of FGS Bayern's voyage goes much further. In its Indo Pazifik Guidelines, published in September 2020, Germany emphasised its concerns about global supply chains and the security of its maritime trading routes. While not called a strategy by default, the guidelines were pretty close to a strategic document – at least to German standards. Underpinning the document with real-world politics by sending the Bayern to its Indo-Pacific deployment showed a remarkable consistency given the society's general reluctance to deploy military forces and the expression of a clear national interest.

Bayern's long route into the region led it across almost every maritime security hotspot of relevance for Germany. Offering plenty of opportunities to send signals to friends and potential foes alike: In the Mediterranean, she joined NATO's maritime security mission Sea Guardian – the mission carried out by the NATO standing maritime group. Further en route she reported into EU's counter-piracy operation Atalanta – the first EU led maritime security operation of the union. The region around the

Horn of Africa not only remains a maritime security hotspot, it also marks the beginning of out-of-area deployments for the Deutsche Marine with the successful evacuation of German peacekeepers from Somalia during Operation Southern Cross in 1994. Later, she joined the United Nations' maritime embargo of North Korea. These three examples illustrate the rich opportunities for strategic signalling the journey offered for Germany, generating itself as a reliable partner for the EU, NATO and UN alike.



Frigate Bayern (F 217) alongside littoral combat ship USS Tulsa (LCS 16) in the Philippine Sea. Picture by Petty Officer 3rd Class Andrew L, US Indo-Pacific Command

Besides re-assuring established allies, Germany sought to deepen and/or further expand its bilateral relations to Southeast Asian nations promoting the second tier of its approach to the region: Strengthening regional multilateralism and diversifying its regional partners. Port calls at Yokohama, Singapore, Mumbai and Ho Chi Minh City were the most prominent expressions – especially the latter sending a clear strategic signal towards China. As well as joining regional initiatives like the Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP).

The German Navy Fleet Tracker made it possible for everybody to follow the Bayern on her voyage since its departure from Wilhelmshaven on August 2, 2021. Now, this report offers the unique opportunity to step by step recap a deployment remarkable not only for the Deutsche Marine, but also for Germany's foreign and security policy as a whole.

Shortly, the German Navy Fleet Tracker team will publish a follow up paper, reconstructing the journey of the Bayern and discussing her actions along the way in detail.

German Navy Fleet Tracker

Monthly Data



In this chapter you will find the monthly data of German Navy assets' participation in missions and exercises. Be aware, that some of the assets may not have been deployed and exercises may not have been going on for a complete month.

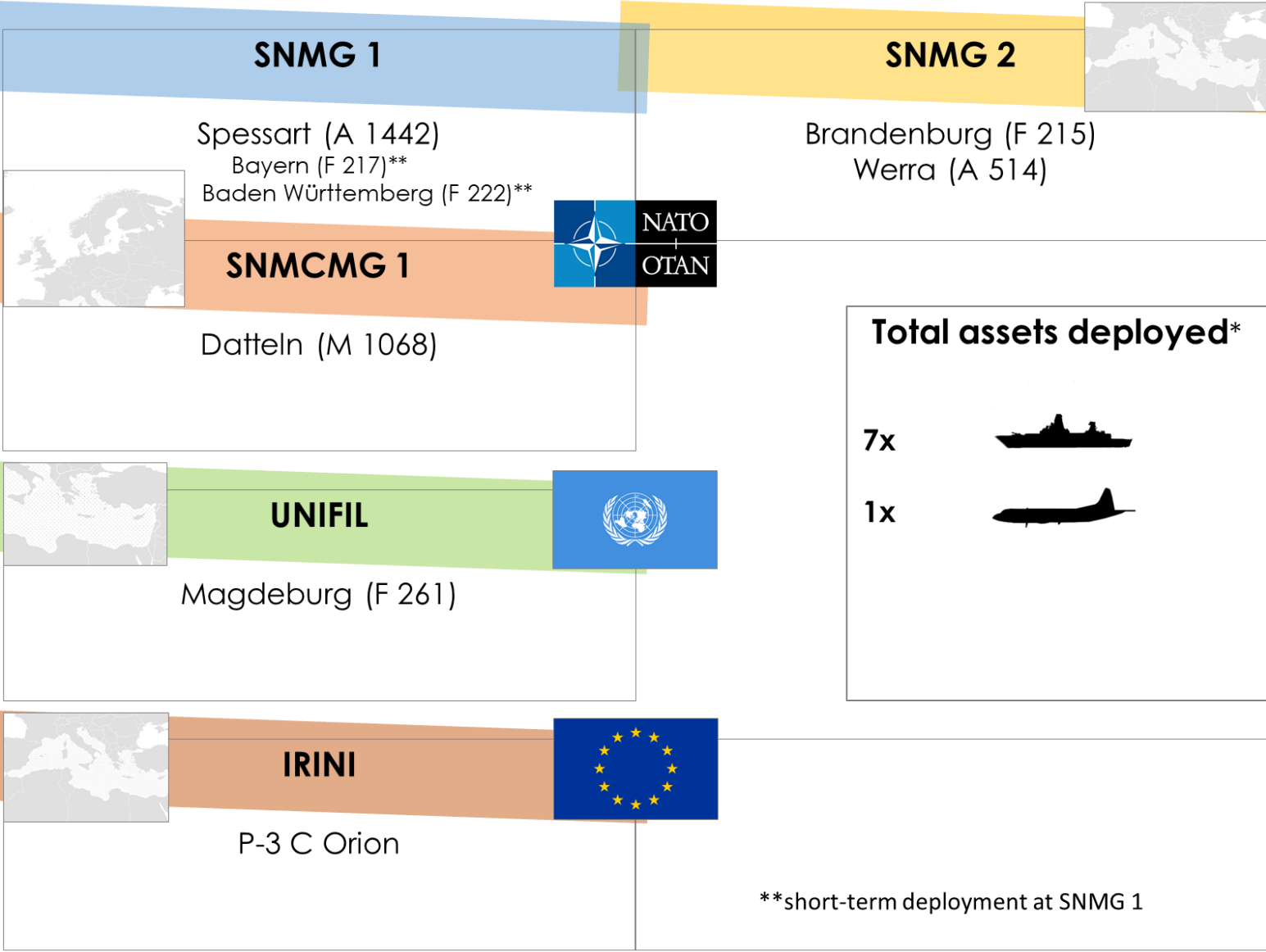
For more detailed information, check out the archive of the German Navy Fleet Tracker.

The following data is displayed in the corresponding colors that can be found in the classification on the World Map on page 8 and at the online maps of the Fleet Tracker.

MONTHLY DATA

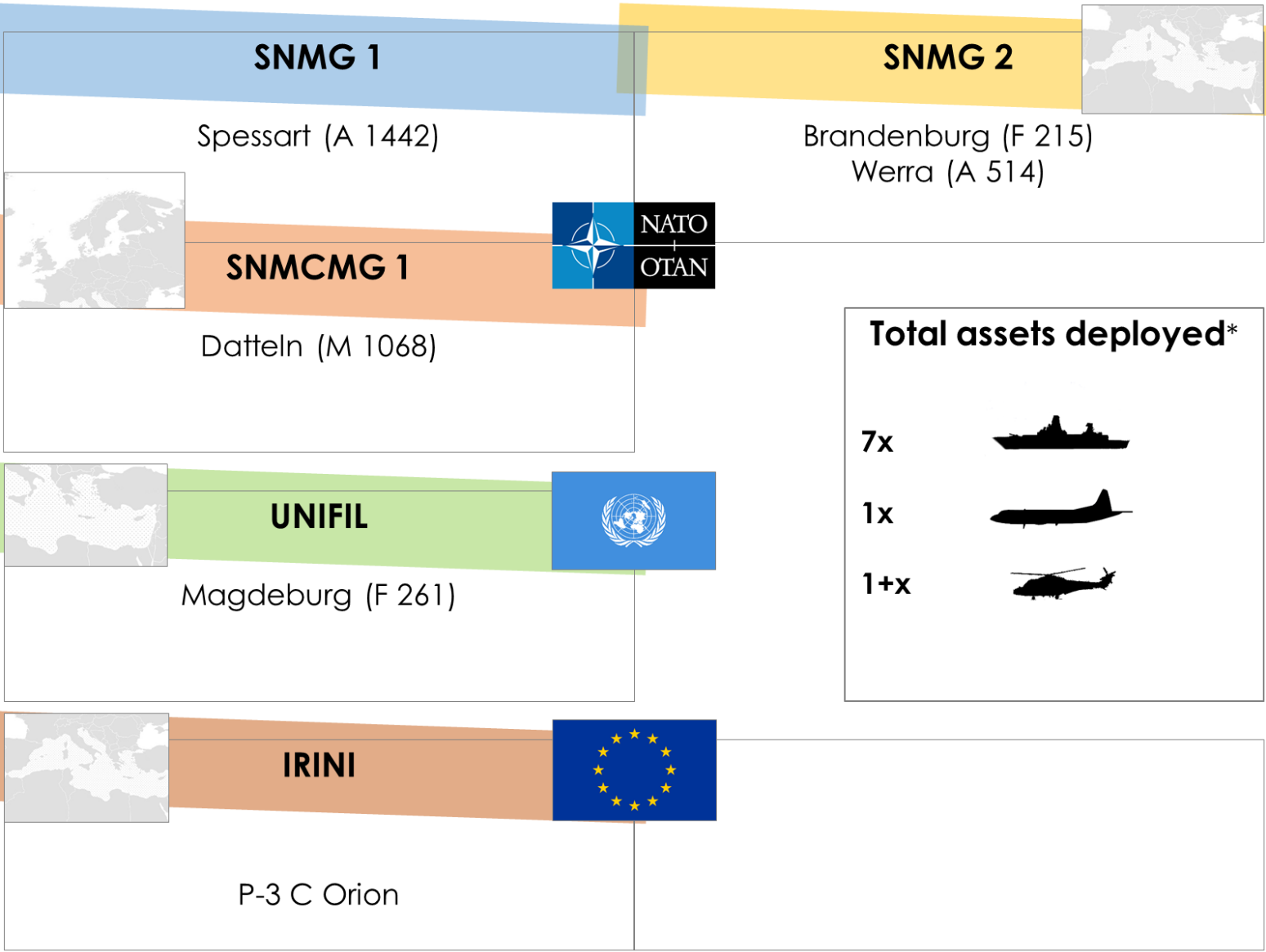
The German Navy is currently the smallest it has ever been. It has to fulfill a wide and differing range of tasks in different geographical locations from the High North over the Baltic and Mediterranean Seas, to the Atlantic Ocean and the Indo-Pacific Region. The performance of the German Navy under these circumstances is even more impressive considering the data displayed on the next pages. Up to 13 vessels of the German Navy plus two of its six patrol aircrafts and additional helicopters were conducting exercises or deployed in missions outside national waters during peak operation times in June. Including the vessels operating in national waters, a total number of 47 ships were underway during the month of November 2021. That is 4 vessels fewer in international deployments but nine more in national waters compared to last year. Altogether, 62 of the 66 vessels (drones not included) tracked this year have been underway and thereby made an important contribution to national and allied defense, the security of waterways and the international peace. While the following graphics only show assets deployed in international missions and exercises, you can find all the other vessels, planes and helicopters at the online pages of the German Navy Fleet Tracker at: www.kielseapowerseries.com or following the QR-code.





Other exercises/missions

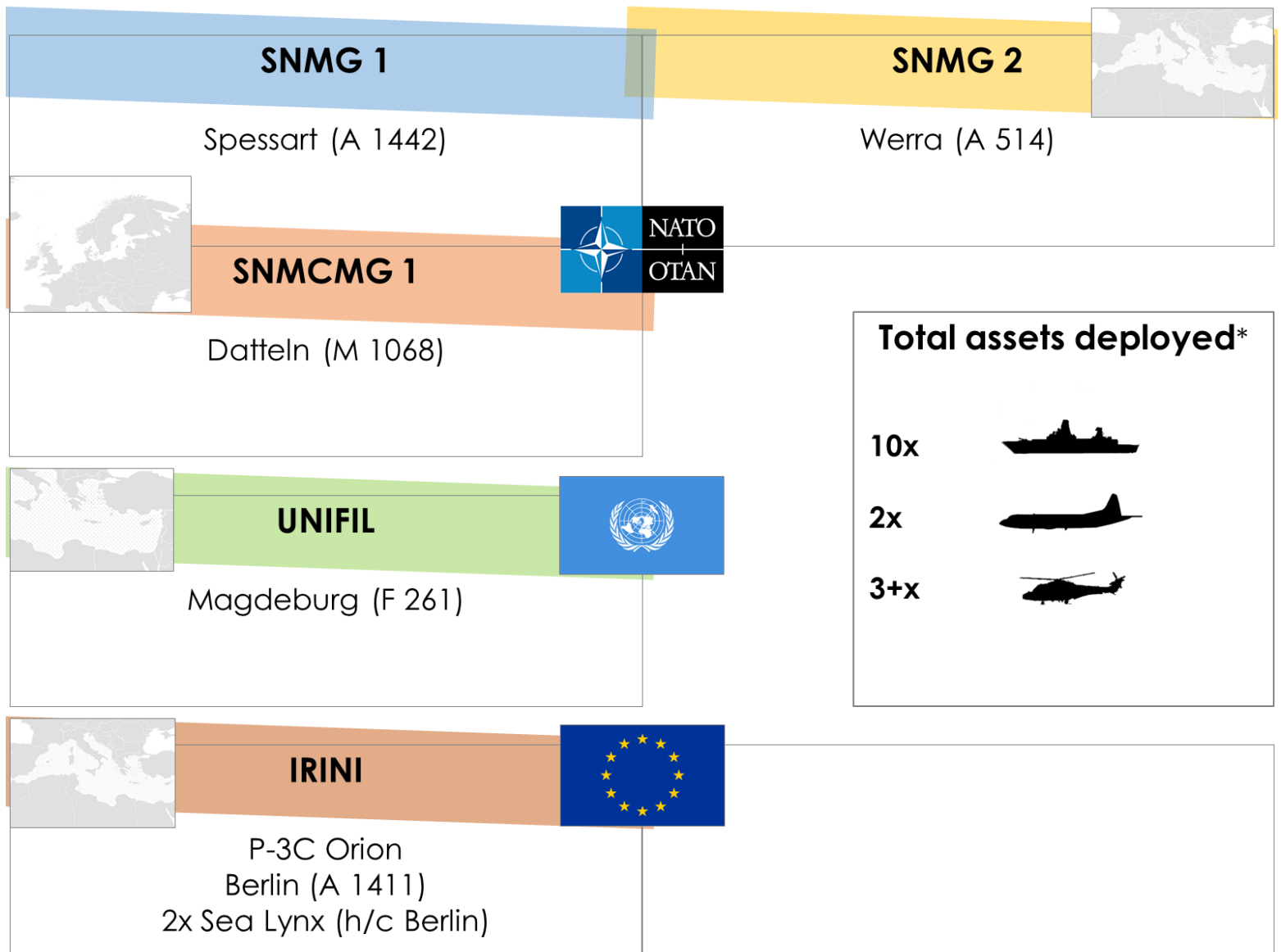
*only the assets in international missions or national/international exercises are displayed. Further assets are under way in national waters. **short-term deployment at SNMG 1



Other exercises/missions

SQUADEX
Elbe (A 511) – Sulzbach-Rosenberg (M 1062) – Helicopters of the 5th Naval Aviation Squadron

*only the assets in international missions or national/international exercises are displayed. Further assets are under way in national waters.



Other exercises/missions

SQUADEX

Elbe (A 511) – Sulzbach-Rosenberg (M 1062) – Helicopters of 5th Naval Av. Sq.

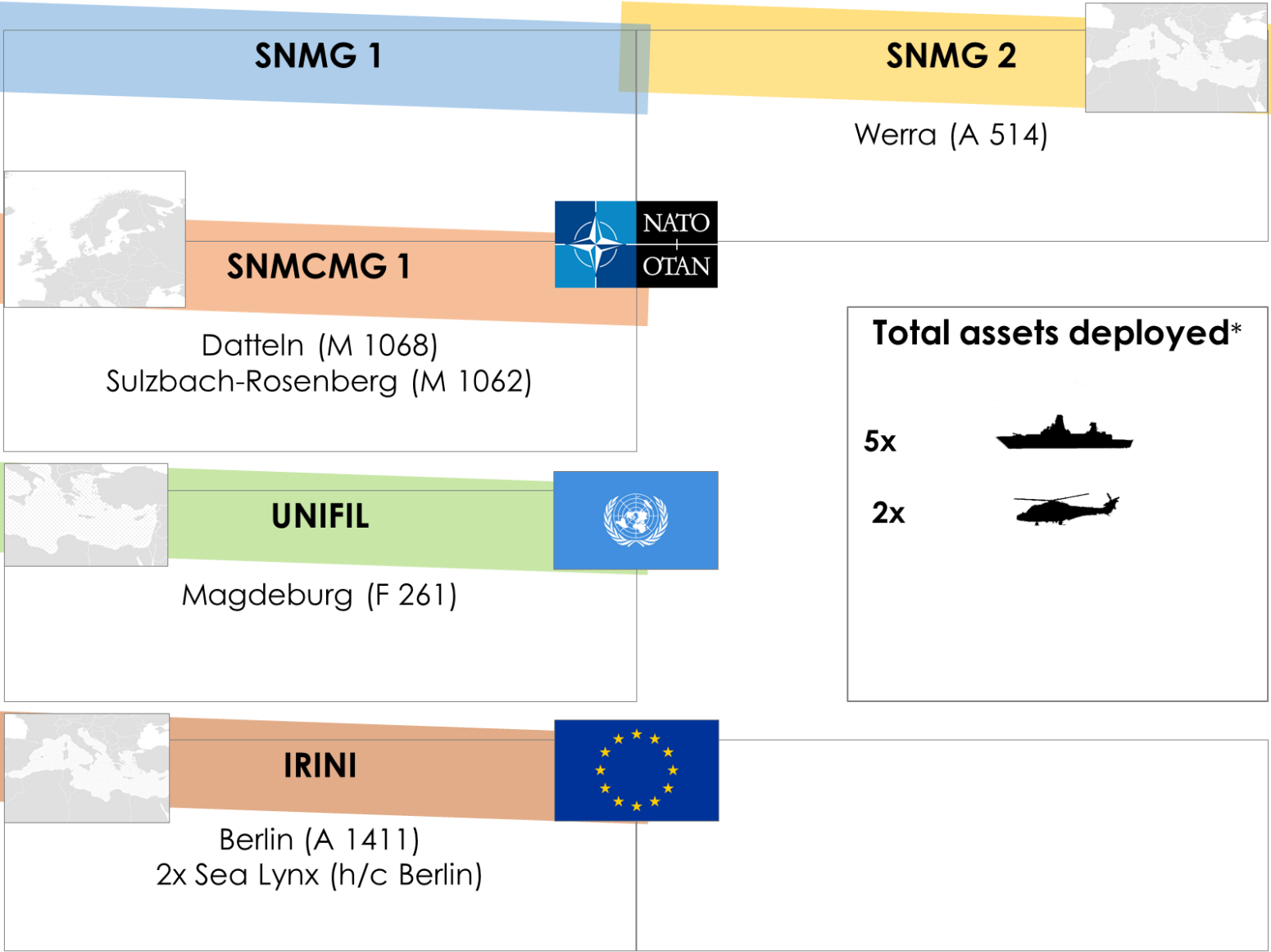
Dynamic Manta

P-3C Orion

BMCMSQX

Bad Rappenau (M 1067) – Elbe (A 511) – Fulda (M 1058) – Grömitz (M 1064)

*only the assets in international missions or national/international exercises are displayed. Further assets are under way in national waters.

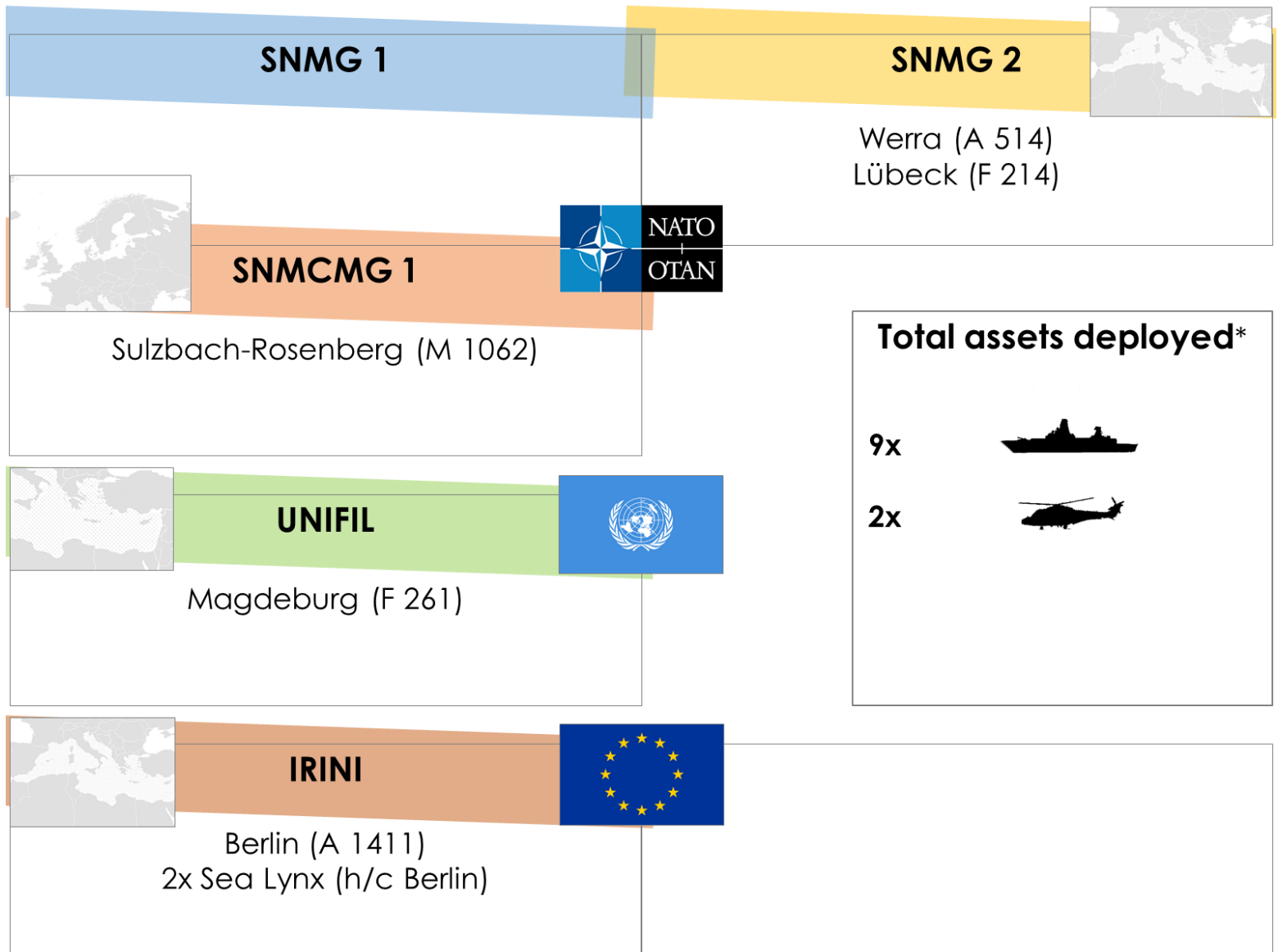


Other exercises/missions

*only the assets in international missions or national/international exercises are displayed. Further assets are under way in national waters.

May 2021

Weeks 18-21



Other exercises/missions

Andoya

Hamburg (F 220) – Main (A 515)

Formidable Shield

Hamburg (F 220) – Spessart (A 1442)

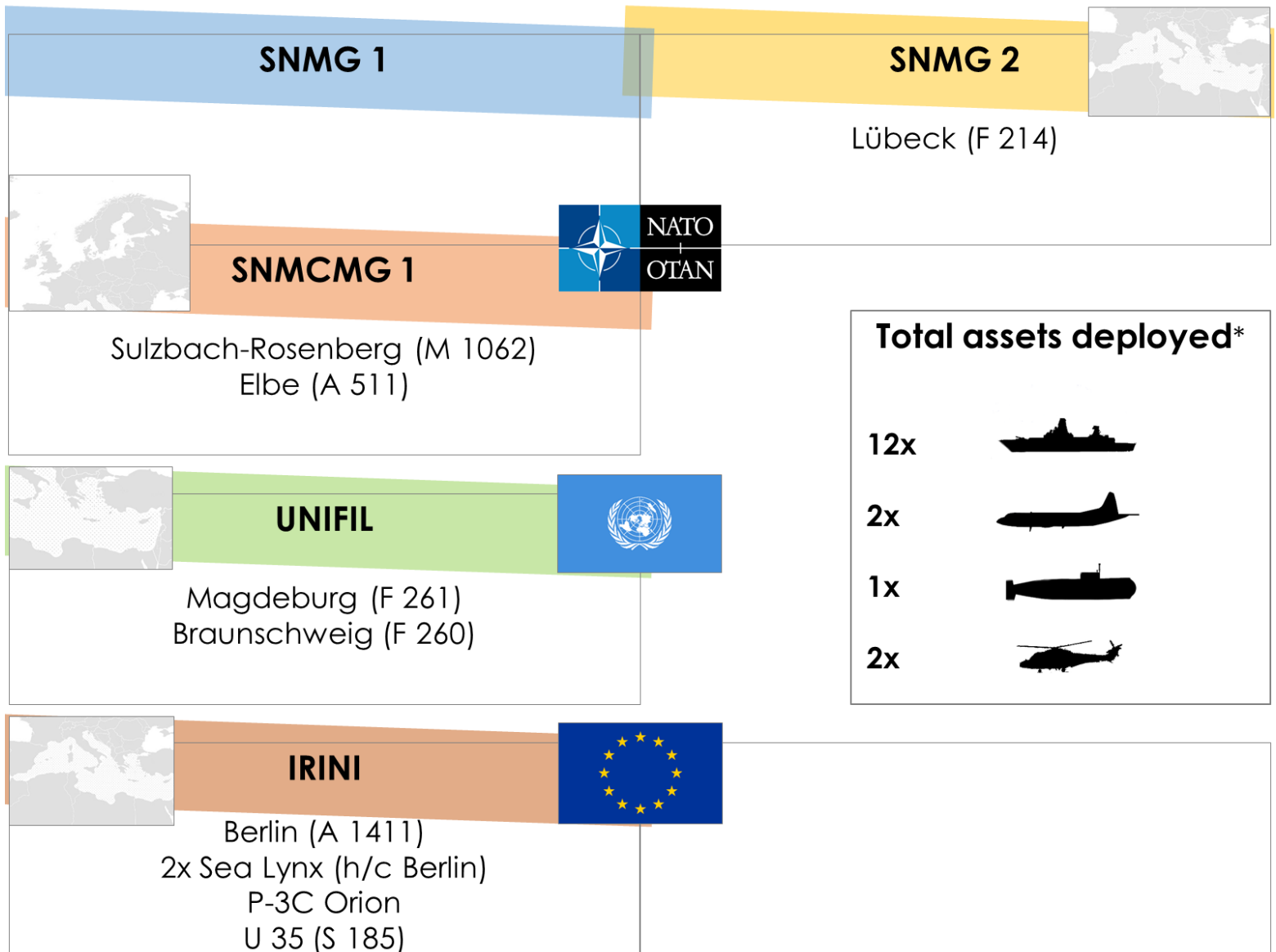
Steadfast Defender

Brandenburg (F 215)

*only the assets in international missions or national/international exercises are displayed. Further assets are under way in national waters.

June 2021

Weeks 22-25



Other exercises/missions

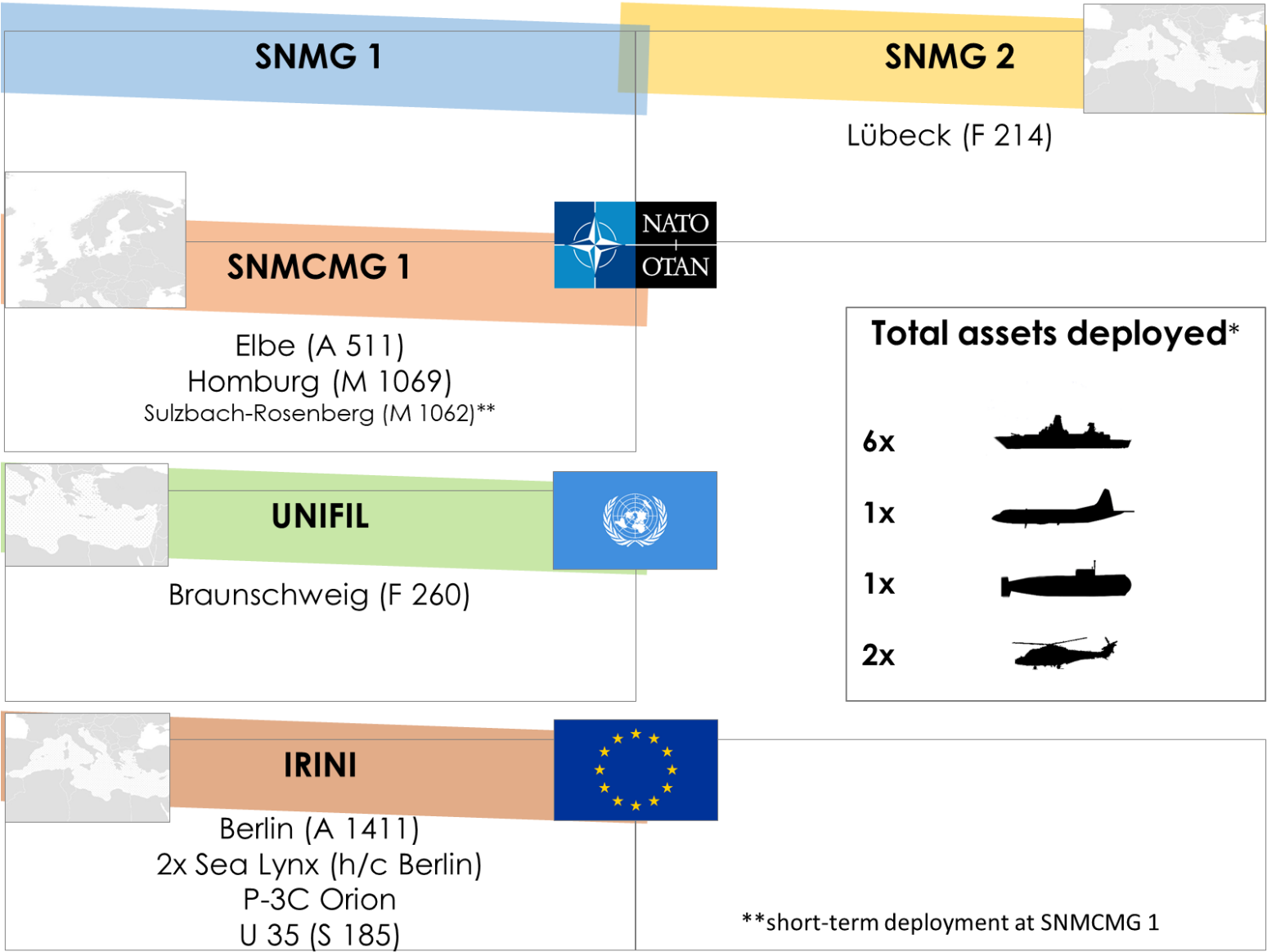
Formidable Shield

Hamburg (F 220) – Spessart (A 1442)

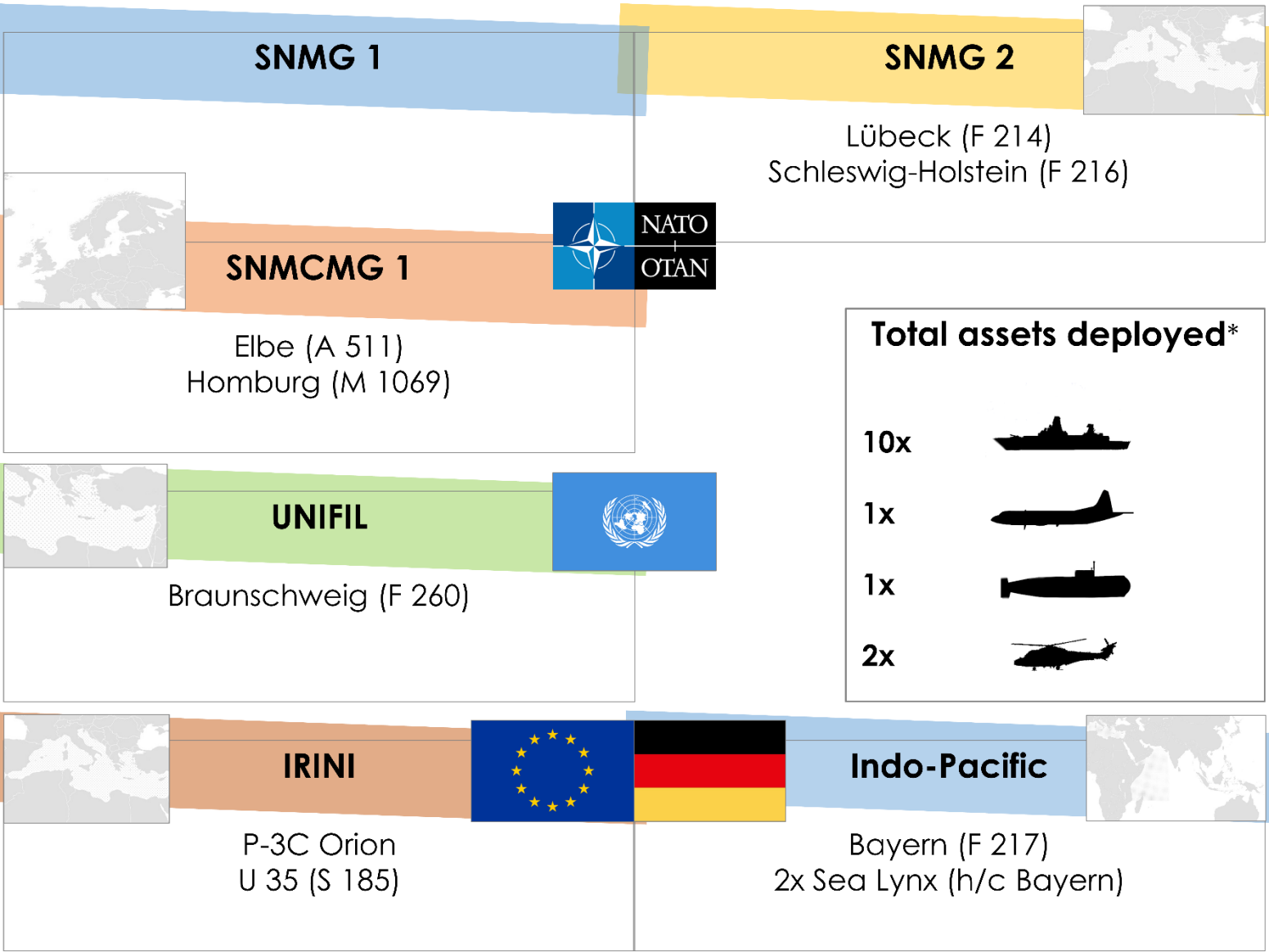
BALTOPS

Sachsen (F 219) – Helmsand (Y 862) – Ludwigshafen am Rhein (F 264) – Fulda (M 1058)
– P-3C Orion

*only the assets in international missions or national/international exercises are displayed. Further assets are under way in national waters.



*only the assets in international missions or national/international exercises are displayed. Further assets are under way in national waters.



Other exercises/missions

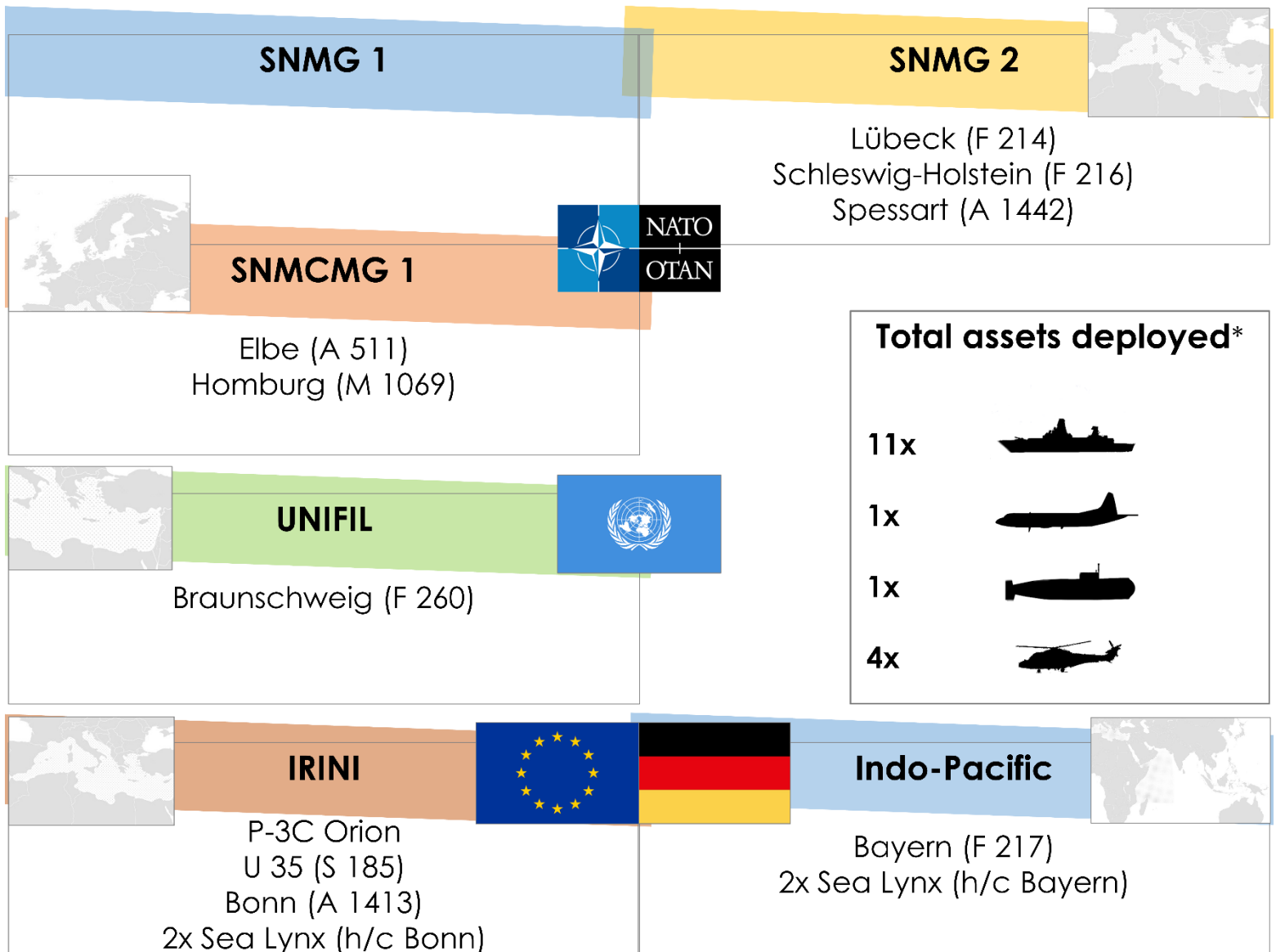
SQUADEX

Donau (A 516) – Fulda (M 1058) – Datteln (M 1068) – Sulzbach-Rosenberg (M 1062)

*only the assets in international missions or national/international exercises are displayed. Further assets are under way in national waters.

September 2021

Weeks 35-39

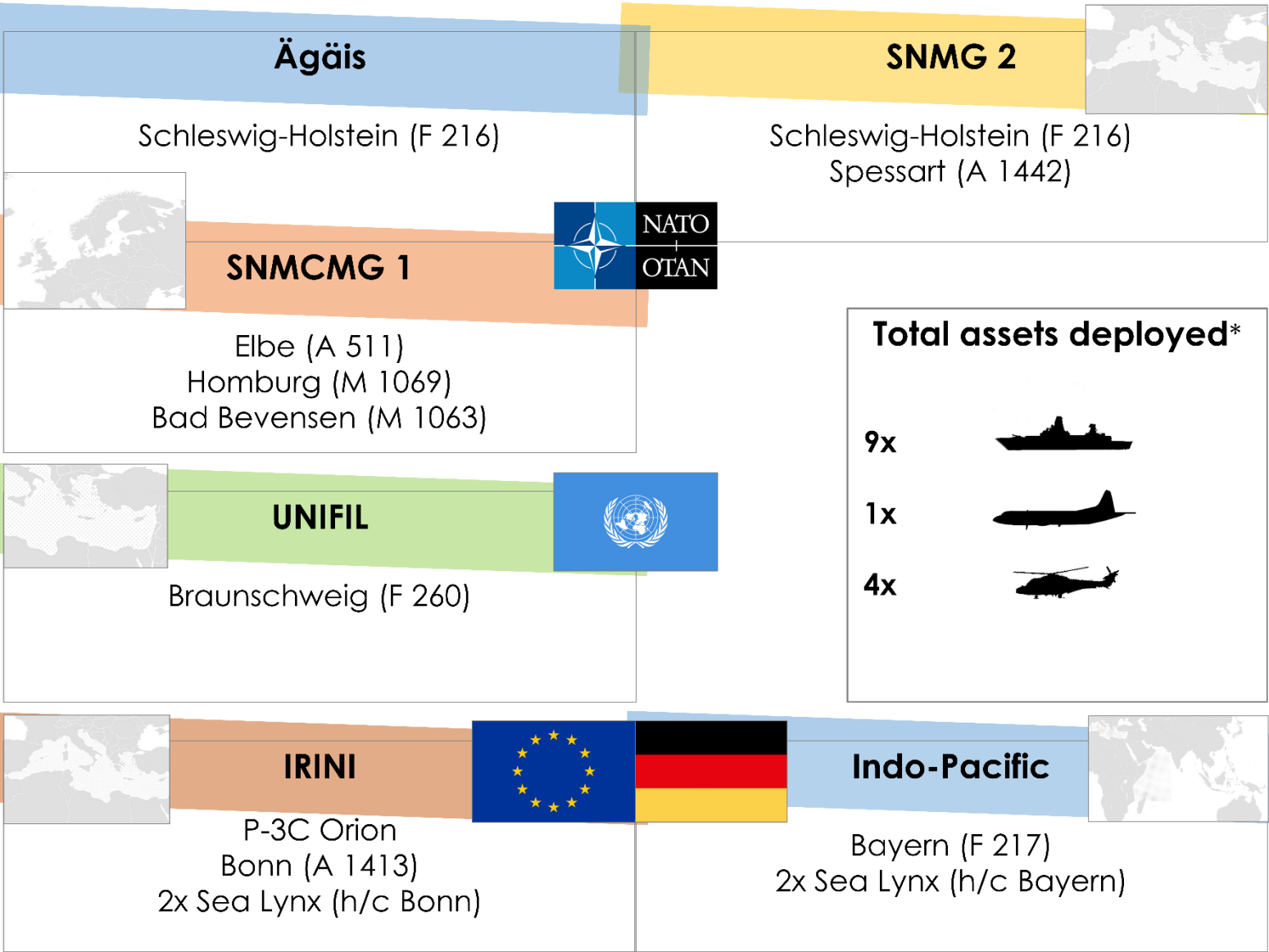


Other exercises/missions

Northern Coasts

Hamburg (F 220) – Sulzbach-Rosenberg (M 1062) – Weilheim (M 1059)

*only the assets in international missions or national/international exercises are displayed. Further assets are under way in national waters.

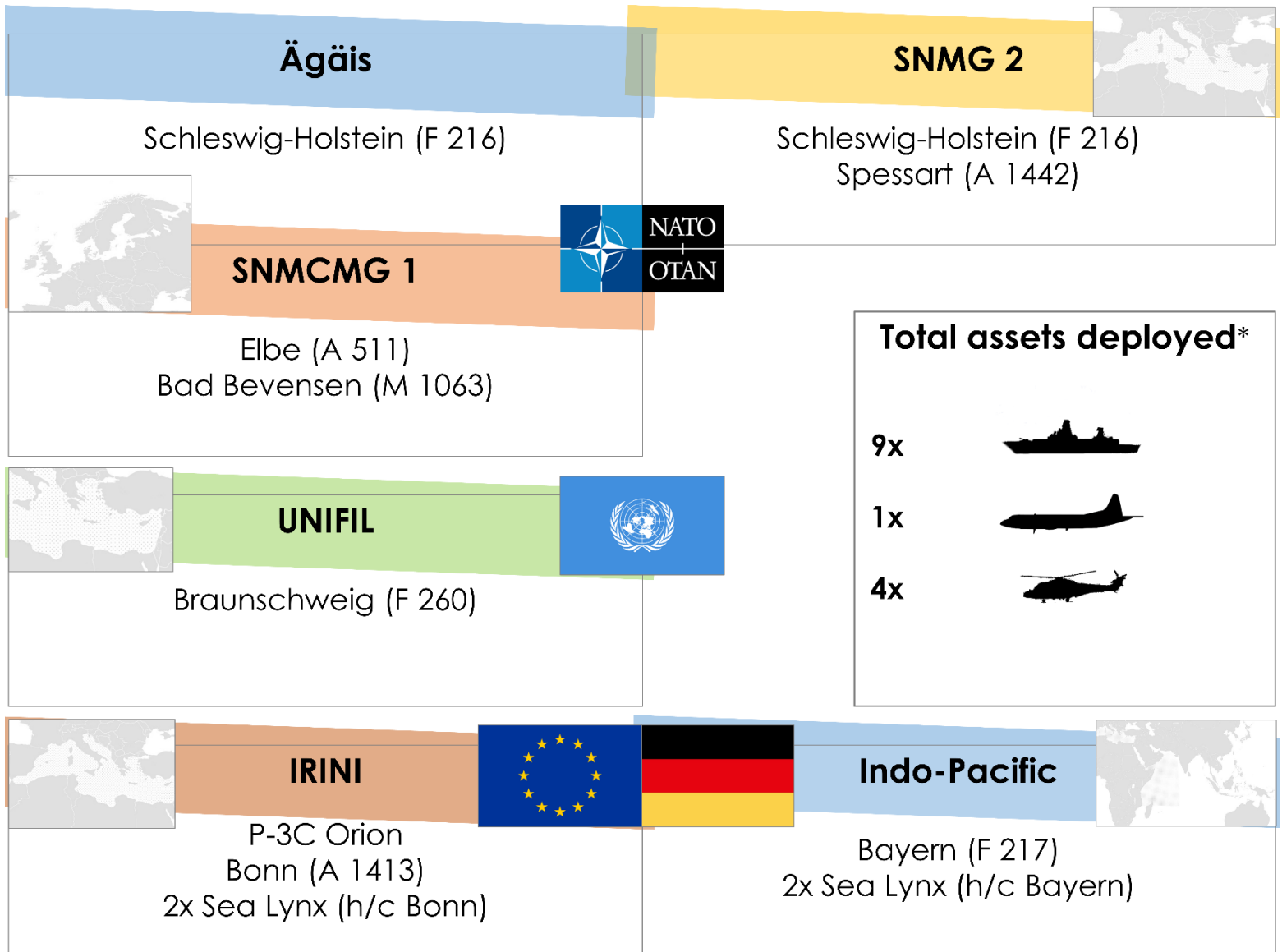


Other exercises/missions

*only the assets in international missions or national/international exercises are displayed. Further assets are under way in national waters.

November 2021

Weeks 44-47

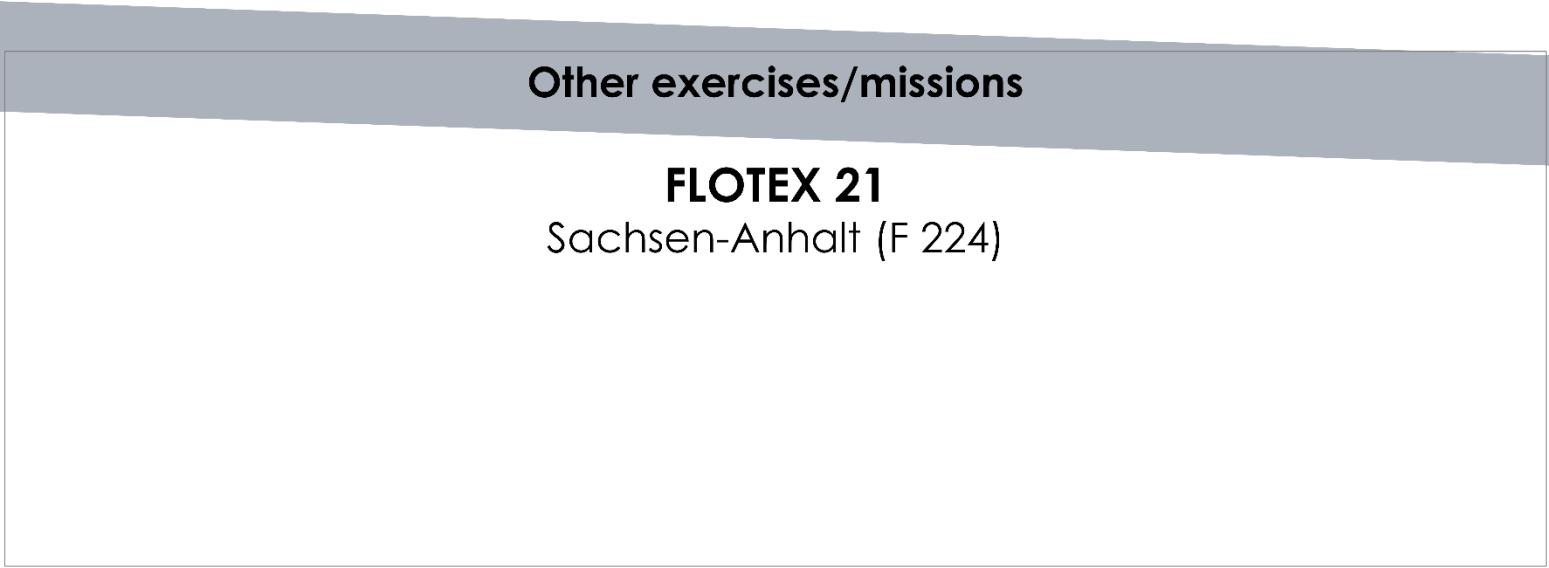
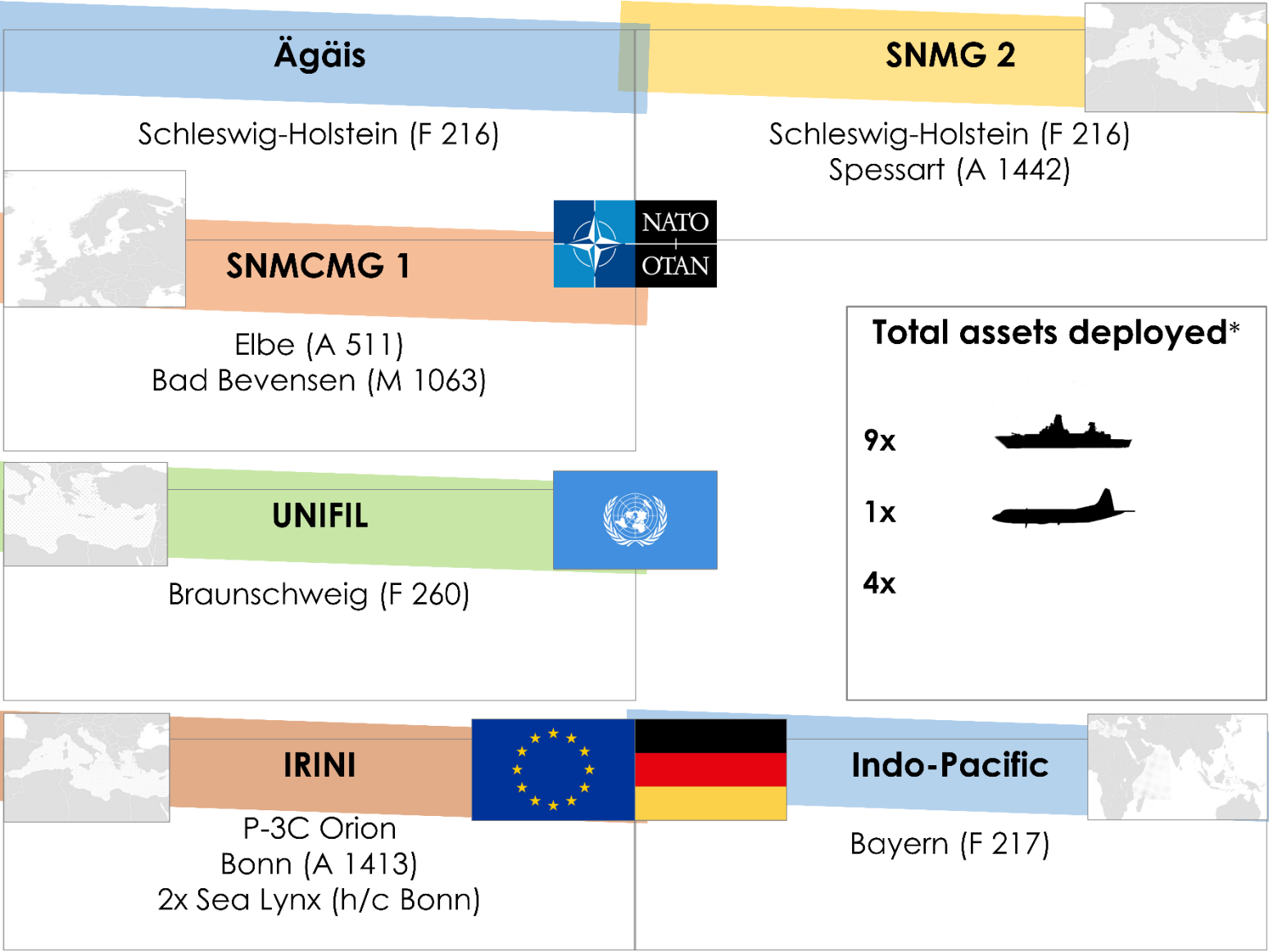


Other exercises/missions

FLOTEX 21

Sachsen-Anhalt (F 224)

*only the assets in international missions or national/international exercises are displayed. Further assets are under way in national waters.



*only the assets in international missions or national/international exercises are displayed. Further assets are under way in national waters.



German Navy Fleet Tracker

Sources

mc.nato.int/SNMG1; mc.nato.int/SNMG2; mc.nato.int/snmcmg1; mc.nato.int/snmcmg2
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Additionally, open source data is extracted from several social media or media platforms.

Using www.marinetraffic.com for the vessel tracking

Pictures on facebook/twitter/www.kielseapowerseries.com/annual GNFT report by Helwin Scharn

Pictures of the vessels by the authors named on the authors list at www.kielseapowerseries.com (All CC licences), NATO, EUNAVFOR

for more information and sources, contact us at www.kielseapowerseries.com



Main sources used for the Fleet Tracker data

<https://mc.nato.int/SNMG1>; <https://mc.nato.int/SNMG2>; <https://mc.nato.int/snmcmg1>; <https://mc.nato.int/snmcmg2>
https://www.operationirini.eu/media_category/assets; <https://www.bundeswehr.de/de/organisation/marine/>
Open source information on Twitter

Using [marinetraffic.com](https://www.marinetraffic.com) for the vessel tracking

Pictures on [facebook](https://www.facebook.com/kielseapowerseries)/[twitter](https://twitter.com/kielseapowerseries)/www.kielseapowerseries.com/annual GNFT report by Helwin Scharn

Pictures of the vessels by the authors named on the authors list at www.kielseapowerseries.com (All CC licences), NATO, EUNAVFOR

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