Armament Industry European Research Group

BETWEEN LEGACY AND EMERGENCE: THE SPATIAL INTEGRATION OF NEW DEFENCE COMPANIES IN EUROPE'S HISTORICAL DEFENCE LANDSCAPE

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ABSTRACT

This ARES Group Policy Paper proposes a geographical analysis of "New Defence" companies. The paper focuses on manufacturers of drones (all domains), small satellite and launchers, and high-altitude platform stations. It explores the geographical distribution of new defence companies within the largest European arms-producing states, specifically looking at whether new entrants on the defence markets emerge in the same or different local ecosystems where historical defence companies are already located. The results show that, due to the lower barriers to entry for some of the new defence technology products, the emergence of new defence companies expands the industrial base beyond the traditional manufacturers and are more geographically scattered within Member States. Nonetheless, in some markets, path dependency and historical lock-in effects remain strong. The paper concludes with policy implications for national and EU defence industrial support instruments, highlighting the need to focus on regional policy instruments to best calibrate policy tools in support of new defence companies.

Keywords: New Defence | Defence Technological and Industrial Base | Industrial Policy | Regional clusters

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The European Commission released a 'defence industry transformation roadmap' in November 2025.[1] One of the roadmap's objectives is to foster the development and integration of 'New Defence' companies in the European Defence Technological and Industrial Base (EDTIB). This industrial strategy is another building block in Brussels' broader efforts to include emerging defence technology companies in the defence markets. For example, the 'Defence Omnibus' regulation proposal included the widening of civilian funding instruments such as Horizon Europe to dual-use applications and amendments to the 2009/81/EC defence procurements directive to facilitate the procurement of innovative technologies.[2] This mirrors similar efforts at the Member State level to better link with start-ups (such as the creation of the *Agence de l'Innovation de Défense* – AID in France)[3] or open research and innovation funds to defence applications (with the SPRIND breakthrough innovation agency in Germany).[4]

For these public policies to target new defence companies in the most efficient way, it is important to understand not only who these new players are, but also where they are located. This paper, relying on a unique dataset of 316 entities and their site location in Europe (EU Member States, Norway, UK), analyses the geographical distribution of new defence actors as of June 2025.[5] Even though the ambition was to be as comprehensive as possible, the dataset remains a representative sample, and a baseline for further research. This even more so given that new defence is a fast-moving environment which requires regular monitoring. Out of the full 316 companies, this paper uses data from 183 for the analysis of the geographical spread of new defence companies in 6 LoI states.

Understanding the geographical patterns of new defence sheds light on the ongoing redefinition of the boundaries of the EDTIB. This may assist public stakeholders in designing industrial policies, including at regional and local levels.

[1] European Commission, 'EU Defence Industry Transformation Roadmap: Unleashing Disruptive Innovation for Defence Readiness', 19 Nov. 2025, https://defence-industry-space.ec.europa.eu/document/download/513de692-d08c-40cc-80c3-cb6611ace178_en?filename=EU-Defence-Industry-Transformation-Roadmap.pdf.

[2] European Commission, 'Defence Readiness Omnibus. Simplification Proposal to Boost Industrial Readiness', https://defence-industry-space.ec.europa.eu/eu-defence-industry/defence-readiness-omnibus_en.

[3] France, Ministry of the Armed Forces, Defence Innovation Agency, http://www.defense.gouv.fr/aid.

[4] Germany, Federal Ministry of Defence, National Security and Defence Industry Strategy, Dec. 2024, https://www.bmvg.de/resource/blob/5873628/138fddf8112609dfdc3ea44a52ba9195/dl-national-security-and-defence-industry-strategy-data.pdf.

[5] We used an open-source methodology for data acquisition, with a focus on publicly accessible defence exhibition catalogues, defence industry associations, firms' websites, specialised press, venture capital and funding databases and, where accessible company registries. Location data were collected from company websites and/or their LinkedIn pages. We identified and listed all known European locations for the identified historical and emerging European defence companies.

To identify new defence companies, we selected key markets and capabilities where such firms were most likely to have emerged in Europe. These areas are:

1. Land robotics and unmanned ground vehicles (UGVs);
2. Naval surface and submarine autonomous vehicles (underwater unmanned vehicles [UUVs] and Unmanned Surface Vehicles [USVs]);
3. Small satellites and launchers (SSL);
4. High-altitude platform stations and airships (HAPS);
5. Unmanned aerial vehicles (UAVs) divided into two categories, small drones (<150kg maximum take-off weight) and
6. Tactical drones (>150kg maximum take-off weight) [6].

These markets are representative of new areas of, and modalities to conduct conflict, such as the deep ocean, seabed warfare, extra-atmospheric warfare or robotisation of the battlefield. These domains represent capability disruptions identified in more traditional areas such as land, air and naval combat, or at the margins of these areas. Such a presentation is inspired by a challenger/challenged approach that can be found in the study of start-ups, with disruptive innovation on the market.[7]

We defined historical and new defence firms as follows. In terms of disruptive technology, the timeline matters. While several historical defence companies now propose the disruptive technologies themselves, they were not the first movers in some instances and often were able to do so only after partnering with new defence companies or acquiring them. This observation led us to determine a key distinction: those companies that offer only the new types of platforms were more likely to qualify as new defence firms; whereas those companies that supply both legacy platforms (e.g. main battle tanks) and the new categories of weapon systems (e.g. UGVs) were more likely to be historical ones.

What are the geographical patterns of new defence activities in Europe, and what location factors can explain these patterns? Is there a link between the current patterns of new defence in Europe and historical defence clusters, or are there noticeable disruptions in these patterns?

The answers to these questions have important policy implications. If new defence companies emerge closer to civilian and dual-use technology centres, then governments who wish to develop these capabilities at the domestic (or European level) should focus on these areas.

[6] In so doing, we have followed the Jane's classification of UAVs.

[7] Reuven, N., & Shamir, E. (2025). The shift in technological dominance and the adaption of open innovation by the defence sector. *Defense & Security Analysis*, 1-24.

Whereas if new defence companies emerge close to historical defence manufacturing centres, then more traditional defence industrial policy instruments should be mobilised.

SPATIAL DISTRIBUTION OF NEW DEFENCE FIRMS IN THE SIX 'LETTER OF INTENT' COUNTRIES

To explore these research questions, we focus on the Letter of Intent (LOI) countries (France, Germany, Italy, Spain, Sweden, UK), as they account for 90% of defence production in Europe.[8] Although the emergence of new defence companies extents the EDTIB to more EU Member States, such as Croatia, Cyprus, Ireland, Latvia, and Lithuania, who did not have a large historical defence industrial sector, focusing on the LOI countries will allow to distinguish where patterns of co-location between new defence and historical defence companies are most likely to be observed.[9] Indeed, France, Germany, Italy, Spain, Sweden and the United Kingdom host some of the world's largest defence companies, such as BAE Systems (United Kingdom), Leonardo (Italy), Thales (France), Rheinmetall (Germany) or Saab (Sweden).[10]

For each country, we discuss the number of new defence firms' sites located in each country, and then deep dive on the six different markets mentioned in the introduction. For each case study, a table compares the number of European (domestic and other European nationalities) new defence and historical companies that have a local presence (regardless of the nationality of the company). A map further shows the geographical distribution site by site (i.e. a single company can have multiple sites in the same country). The analysis of the spatial distribution of historical and new defence companies across the six countries is based on the locations of their facilities rather than on their nationalities: all European companies in the sample that have an installation in the country analysed are represented on the map. For all tables and maps, the source is our own database of 316 companies: within the dataset, which other European companies had a presence in the 6 LoI countries, in addition to these countries' domestic firms. Extra-European entities (e.g. US) were not included in the analysis.

[8] SIPRI, 'The SIPRI Top 100 arms-producing and military services companies in the world, 2024' https://www.sipri.org/visualizations/2025/sipri-top-100-arms-producing-and-military-services-companies-world-2024. Within the European defence companies listed as the world's top 100, companies based in LoI countries, including Trans-European ones, accounted for more than 90% of the aggregated defence revenue of all 26 European entities. .

[9] For more discussion on the geographical extension of the EDTIB, see Droff, J., et. al., ' « New Defence » et politique industrielle de défense en Europe', *DEFENSE&Industrie*, Fondation pour la Recherche Stratégique, 2026.

[10] Scarazzato, L., et. al., 'The SIPRI Top 100 Arms-producing and military services companies, 2024', *SIPRI Factsheet*, Dec. 2025, https://www.sipri.org/sites/default/files/2025-11/fs_2512_top_100_2024.pdf

France

In France, we identified fourteen new defence companies in the naval-drone sector, in line with the strong momentum of the national naval industry, particularly in the drone market (see Table 1).[11] In the small-drone market, there are nineteen new defence firms whereas four companies operate in the tactical-drone sector. Overall, aerial drones account for almost half of the new defence firms in our sample, reflecting a new defence orientation of the country toward UAVs, regardless of their maximum payload or size. The SSL segment also shows a relatively large number of new defence companies, along with two firms in the HAPS sector. By contrast, we recorded only one company in the UGV segment.

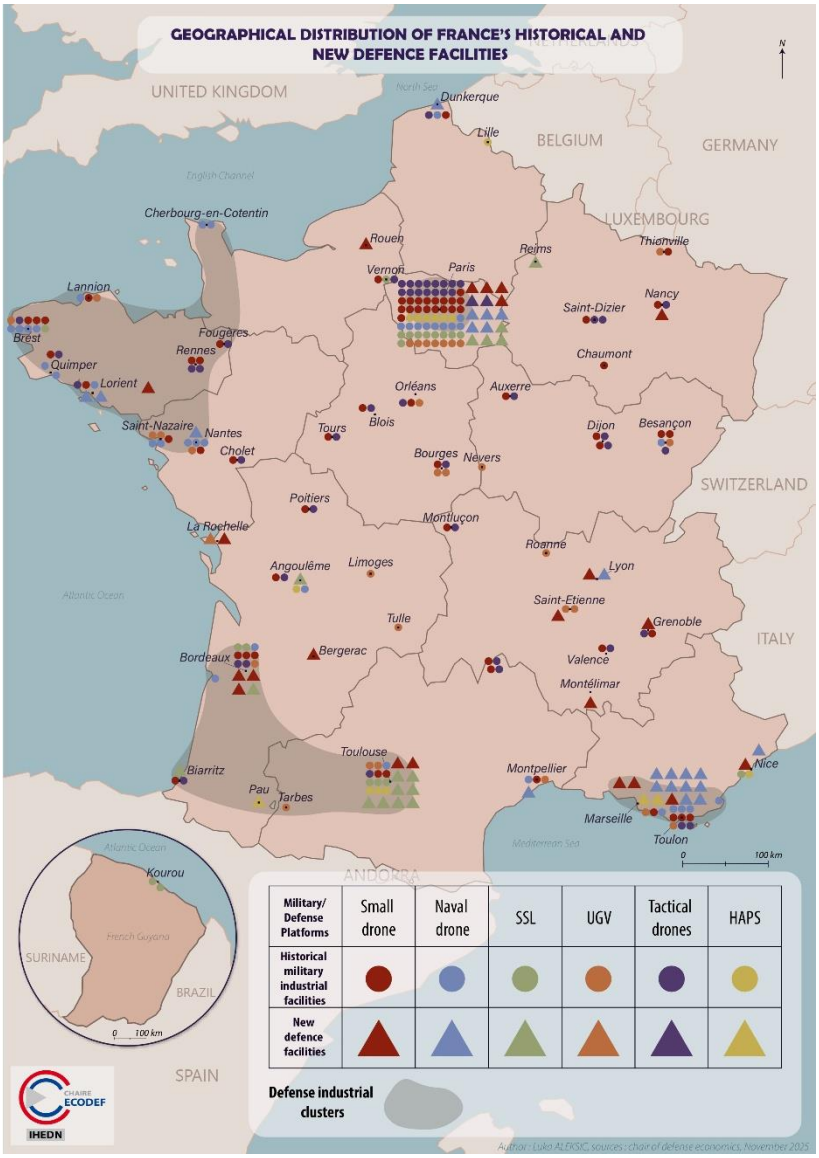
Table 1. New defence and historical firms in France

Market	Number of new defence firms	Number of historical defence firms	Number of defence firms
HAPS	2	3	5
Tactical drones	4	7	11
Naval drones	14	11	25
SSL	13	5	18
Small drones	19	11	30
UGVs	1	5	6

The French defence technology landscape exhibits both historical concentration and emerging clusters across multiple sectors, reflecting a combination of path dependency and new defence momentum.

[11] In 2024, the French shipbuilding industry confirmed its robustness, with a turnover of €15.9 billion, up 5.5% compared to 2023 after an increase of 13% in 2023 and 5% in 2022. This growth is positive in both the civil and defense sectors. ('Rapport d'activité annuel 2024-2025', GICAN, https://gican.asso.fr/wp-content/uploads/2025/06/2024-2025-Rapport_d_activites-GICAN-FINAL-WEB-1.pdf).

Figure 1. Geographical patterns of historical and new defence companies (France)



Naval drones show a high number of historical players and significant recent entry, with fourteen new defence firms concentrated in traditional naval defence regions: the South of France and Brittany. These regions are particularly conducive to the development of the sector, as they are relatively well equipped with testing and trial facilities.[12] Provence–Alpes–Côte d'Azur hosts six newcomers near established Naval Group sites, representing nearly 50% of new entrants. Paris is the third major cluster, while isolated firms appear in Lyon (Delair Marine) and Montpellier (Forsea Robotics), near Exail Robotics.

[12] ADEUPA (2025), La filière dronisation maritime dans Brest métropole, décembre 2024, p. 14. https://adeupa-brest.fr/nos-publications/la-filiere-dronisation-maritime-dans-brest-metropole.

Small drones display a more spatially dispersed pattern but maintain strong Paris-area concentration particularly among historical actors, but also five of nineteen new firms are based there. New players are largely in the south (twelve out of nineteen), with La Rochelle and Bordeaux forming a notable cluster supported by skilled labour and regional policies such as the Aerospace Valley competitiveness cluster. Secondary clusters include Auvergne–Rhône–Alpes. These host new companies (e.g. EOS, Hexadrone, Elistair), who leverage military maintenance activity and the aeronautics supply chain despite a limited historical presence in drone production.

Tactical drones are dominated by historical firms primarily in Paris, with new entrants forming a cluster in Toulouse (Windlair, Aura Aero), benefiting from the region's civil aeronautics specialisation, particularly Airbus and aerospace activities.

SSL exhibit a dual pattern: established, consolidated European players dominate certain markets, while new entrants drive innovation elsewhere. Paris hosts historical firms (Thales Alenia Space, Ariane Group) and four new defence companies (almost 50% of new SSL entrants). Other new entrants locate in non-traditional regions, including Satlantis near Biarritz, Hemeria in Angoulême, Latitude in Reims, Toulouse (U-Space, SpaceDreamS), and Bordeaux (HyPrSpace), reflecting a Bordeaux–Toulouse axis of military-aeronautical coherence.

HAPS have historical clusters in Paris and Toulouse, but new players locate outside these areas: Euro Airship in Pau and A-NSE in La Ciotat (near Marseille/Cannes), indicating emerging regional diversification.

UGVs remain dominated by historical firms with dispersed locations and Paris as a strong concentration. Only one new defence company, Shark Robotics, is identified in La Rochelle.

Overall, the French defence technology sector demonstrates a mix of historical clustering, path dependency, and selective emergence of new firms. New entrants often emerge near dual established industrial or aeronautics ecosystems, benefiting from skilled labour, regional policies, and strategic airspace or logistical advantages. Paris remains a key hub across sectors—consistent with previous work focusing on 'traditional defence' activities[13]—followed by southern France, while Toulouse, Bordeaux, and select peripheral cities could become increasingly important in shaping the country's new defence industrial landscape.

[13] De Penanros, R. and Serfati, C. (2000) 'Regional Conversion under Conditions of Defense Industry Centralization: The French Case'. *International Regional Science Review*, Vol. 23, No. 1, pp. 66–80 ; Droff, J. (2013) Le Facteur Spatial En Économie de La Défense: Application Au Maintien En Condition Opérationnelle (MCO) Des Matériels de Défense, Thèse de doctorat en sciences économiques, (Brest: Université de Bretagne Occidentale / ENSTA Bretagne).

Germany

Germany hosts ten new defence firms in the small drones sector and nine new defence firms in the SSL sector (ten including the HAPS sector), followed by seven new defence firms in the naval drone segment (Table 2). In the UGVs sector, Germany has a higher number of historical firms than new defence firms. Indeed, three major historical players are established in Germany: KNDS, Rheinmetall and Diehl Defence. This aligns with Germany's long-standing specialisation in land defence equipment.

Table 2. New defence and historical firms in Germany

Market	Number of new defence firms	Number of historical defence firms	Number of defence firms
HAPS	1	0	1
Tactical drones	2	5	7
Naval drones	7	6	13
SSL	9	3	12
Small drones	10	11	21
UGVs	3	8	11

Figure 2. Geographical patterns of historical and new defence companies (Germany)

The German **SSL market** is dominated by three major players – OHB System, Ariane Group and Airbus defence and space – alongside nine new defence companies. These companies are concentrated in a few metropolitan areas, Berlin, Bremen, Frankfurt am Main and Munich. New defence SSL firms are primarily located in major aerospace and high-technology hubs such as Munich and Berlin. For many years, Munich has been a central space hub, hosting several major companies (e.g., Airbus, MTU Aero Engines), research centres and universities, as well as major institutes of the German Aerospace Center.[14] By contrast, Berlin, has emerged as a key hub for 'new space' firms, playing a major role in innovation, services and

[14] Kunzmann, K.R., 'Military production and regional development in the Federal republic of Germany', in Breheny, M. J. (1988) *Defence expenditure and regional development*, Chap. 5 (NY: Mansell Pub.).

satellite/space data management rather than industrial manufacturing. It is also a major software centre and home to the Technical University of Berlin, which is reported to have more satellites in orbit than any other university worldwide.[15] Finally, one historical firm and one new firm are located close to the European Space Operations Centre (ESOC), the main mission control centre of the European Space Agency, in Darmstadt.

In the **HAPS segment**, only one company – a new defence firm – is identified in Germany, located in Stuttgart. No cluster has emerged so far, and the segment remains marginal compared with the SSL and small drones markets. However, this new defence firm is established in Stuttgart, a major defence industrial cluster, with a concentration of drones and UGVs-related activities.

In the **tactical drone market**, historical companies include Airbus Defence and Space, Leonardo, MBDA, Saab and Safran. Their main locations differ from those observed in the space sector. They are concentrated in Düsseldorf, Stuttgart, Munich, Hamburg and Berlin. Two new defence firms are identified, Destinus (a Swiss company) and Helsing AI, located in the Berlin and Munich areas, confirming that new entrants tend to establish themselves within existing industrial and high-tech ecosystems.

In the **naval drone segment**, historical actors are mainly concentrated in northern Germany, close to the North Sea and Baltic Sea coasts. New naval-drone firms, by contrast, are mostly located in large cities and high-technology centres such as Berlin and Munich.

In the **small drones** market, new defence firms are concentrated in both northern and southern Germany, with no presence in central Germany. A notable feature is the near absence of new defence firms in North Rhine–Westphalia, despite this region's historical importance for the defence industry[16]. This suggests a certain decoupling between legacy industrial defence centres and the geography of new defence small drones firms.

The **UGV market** is characterised by a strong presence of historical companies. Historical actors often operate from multiple sites across the country, including factories, offices and R&D centres, as illustrated by firms such as Diehl, Rheinmetall or even Fraunhofer-Gesellschaft Institutes. The three new defence UGV companies are in major cities, Berlin, Hannover and Stuttgart. Overall, the spatial distribution of UGV-related activities is more dispersed than in the other markets studied.

[15] Hubalkova, P., 'Berlin's Houston: Students at TU Berlin Develop Nanosatellites from Scratch', Wired, 18 Apr. 2024, https://www.wired.cz/clanky/berlin-s-houston-students-at-tu-berlin-develop-nanosatellites-from-scratch.
[16] For example, Rheinmetall's headquarters are in Düsseldorf, capital of this region.

Overall, Germany's emerging defence sector shows distinct spatial patterns across technologies. While Germany retains a dense and geographically dispersed base of historical defence manufacturing, new defence firms overwhelmingly emerge toward major urban innovation hubs such as Berlin and Munich, reflecting a shift toward software-driven, dual-use and space-related activities. The limited presence of new defence firms in traditional defence regions such as North Rhine–Westphalia suggests that industrial legacy alone is no longer sufficient to attract new entrants.

Italy

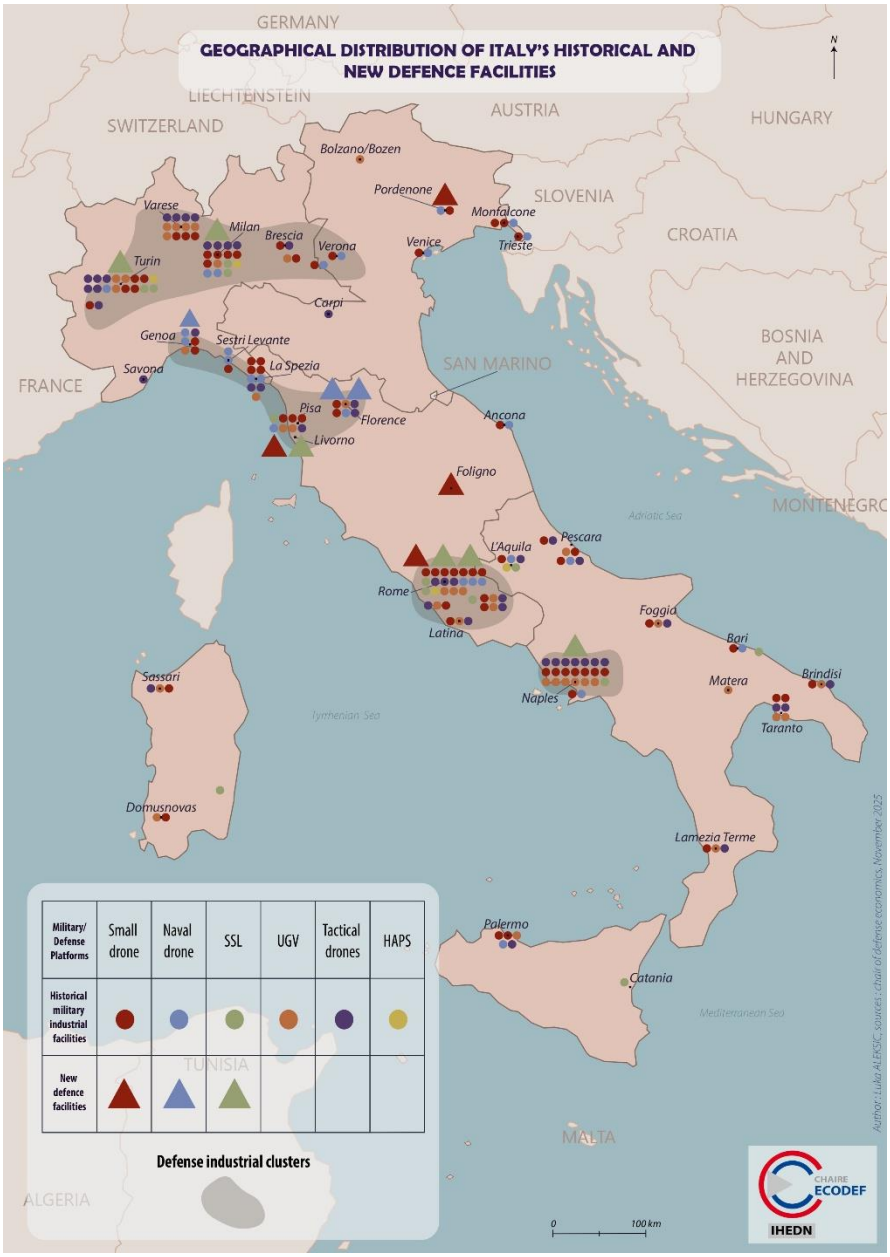
The Italian defence industrial landscape is structured around two major companies: Fincantieri and Leonardo.[17] They represent 60% of defence facilities around Italy (166 over 274 facilities) for all defence segments. New defence companies were active mainly in the small drones and SSL segments. The SSL segment is the most open to newcomers with five new companies compared to six historical firms. Despite low barriers to entry and new needs expressed by European armed forces, the small drones segment exhibits a relative low number of new defence companies (only three) compared to the number of historical defence firms. In the naval drones market, there are two new defence firms (for five historical firms). In the UGV market, there is no new defence firm (Table 3).

Table 3. New defence and historical firms in Italy

Market	Number of new defence firms	Number of historical defence firms	Number of defence firms
HAPS	0	1	1
Tactical drones	0	8	8
Naval drones	2	5	7
SSL	5	6	11
Small drones	3	12	15
UGVs	0	4	4

[17] Caruso, R. (2020), 'The Italian Defence Industry', in Hartley, K. and Belin, J. (editors) *The Economics of the Global Defence Industry*, Chap. 8, 180-193 (London: Routledge).

Figure 3. Geographical patterns of historical and new defence companies (Italy)



The **naval drones** market is principally structured around Fincantieri. Geographically speaking, its facilities are located between Genoa and la Spezia and between Venice and Trieste. Some facilities can be found around other major cities (Rome, Naples, Palermo, Bari). New entrants are mostly located around Genoa and Florence, within a large defence cluster in the Liguria and Tuscany regions.

A more geographically dispersed pattern is observed for the **small drones market**. Large industrial clusters emerge in Northern Italy (Piemonte, Lombardy and Tuscany regions) and

large cities in Southern Italy (Rome, Naples, some Apulia cities). For two defence firms, there is a colocation pattern of activities (Livorno and Rome). A new defence firm emerges in Pordenone (close to two facilities of historical firms and in-between the cluster Venice-Trieste). The last company is located in Foligno (Umbria region) with no close geographical connection to other defence industrial firms.

Only historical firms compose the **market of tactical drones** in Italy. They are mainly located in the defence aeronautics clusters structured in Lombardy (Milan, Varese, Brescia) region, around Rome and Naples, and to a lesser extent in the Apulia region. Some unique facilities are also dispersed around the country.

When it comes to **SSL,** Italy has a long tradition of spatial activities. Some have been consolidated around Thales Alenia Space, mainly around Rome and Torino. However, there are still other industrial facilities, mostly structured around Avio, Intalspazio and Sitael. Their location reflects a geographical dispersion around Torino, Pisa, Rome, Naples and Catana. These facilities are located inside large clusters. New defence firms emerge from these clusters: Argotec near Torino, NPC Spacemind in Pisa and Milan, Delta Space Leonis in Rome, EnduroSat in Naples.

There are only two Italian companies in the **UGV segment**, Iveco Defense Vehicles (IDV) and Leonardo. In 2026, Leonardo completed the acquisition of IDV, to consolidate the land system segment in Italy.[18] IDV facilities are located in Northern Italy, some near Bolzano and Modena that are remote from any cluster, but others located in clusters of the Po Valley.

Overall, only 25% of the Italian defence industrial base is constituted by new defence firms. This indicates that this market is relatively unopened to newcomers. The two largest segments in terms of new defence companies are SSL and small drones but historical firms outnumber newcomers. In general, we observe a strong co-location between historical firms and new defence firms. They are in large clusters structured around Fincantieri and Leonardo: Piemonte (Torino) Lombardy (Milan), Liguria (Genoa) and Tuscany (Florence) regions, and around large Southern Italy cities such as Rome and Naples. No new defence companies emerge from HAPS, tactical drones and UGV segments, despite numerous facilities of historical companies.

[18] Leonardo, 'Leonardo completes the acquisition of IVECO Group's Defence Business', 18 March 2026, https://www.leonardo.com/en/press-release-detail/-/detail/18-03-2026-leonardo-completes-the-acquisition-of-iveco-group-s-defence-business.

Spain

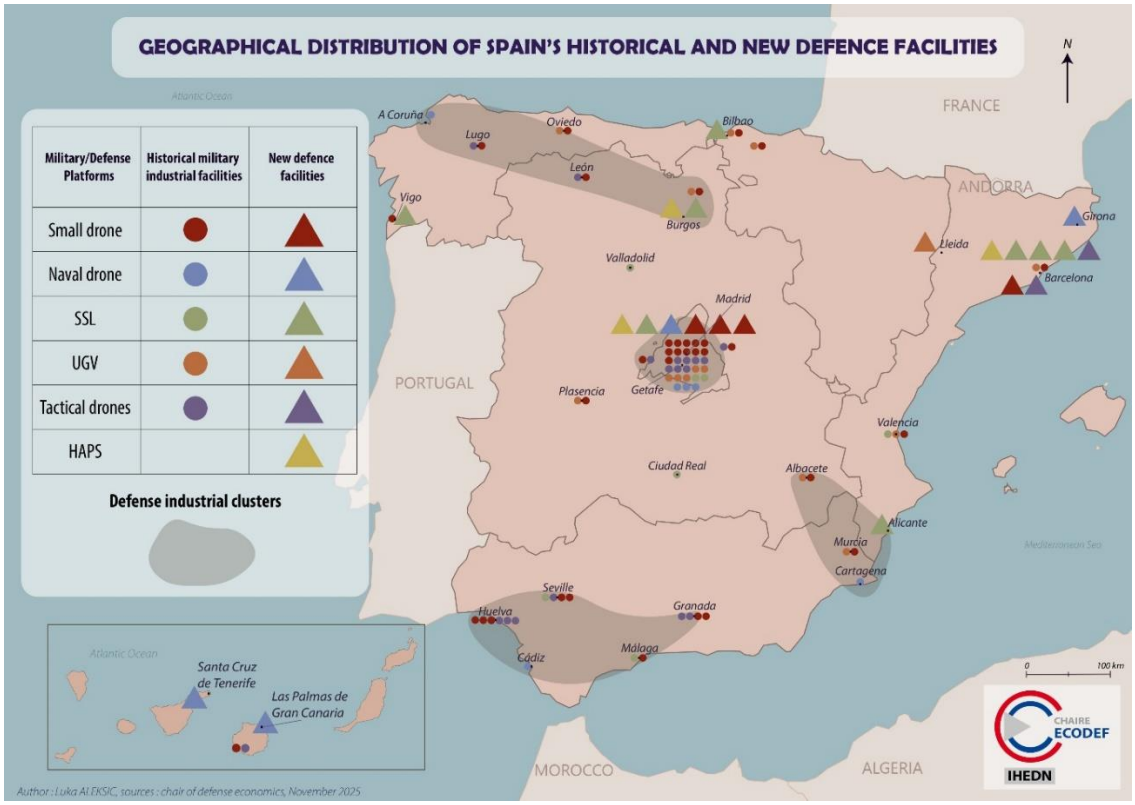
Spain hosts three new defence companies in the HAPS sector and an equal number of nine new defence firms in the SSL sector and the small drone sector. We identified six newcomers in the naval drones segment. Contrary to other countries, Spain hosts as many new defence firms in the UGV market as historical ones (Table 4).

Table 4. New defence and historical firms in Spain

Market	Number of new defence firms	Number of historical defence firms	Number of defence firms
HAPS	3	0	3
Tactical drones	1	4	5
Naval drones	6	4	10
SSL	9	3	12
Small drones	9	10	19
UGVs	3	3	6

Spain's defence technology landscape exhibits a strong historical specialization in naval and aerospace sectors, with new defence firms often locating independently of established clusters, reflecting a search for resources beyond traditional localization economies.

Figure 4. Geographical patterns of historical and new defence companies (Spain)



Naval drones highlight Spain's maritime tradition and coastal orientation. Historical firms, such as Navantia, are concentrated in the south (Andalucia and Murcia), while new entrants cluster near major cities like Madrid and Barcelona. Some new firms, such as SubSea Mechatronics, are strategically located in more remote areas like the Canary Islands, potentially benefiting from local resources. For Arquimea, the primary location remains Madrid, with a Research Center in the Canary Islands.

In the **UGV** segment**,** historical players are concentrated around Madrid. This is the case of, Sener, but also GDELS Spain (although as a US firm it is not included in our dataset). Newcomers are more dispersed: while Miriad Global is based in Madrid, Aunav, is based in Binéfar (Huesca), near Zaragoza, while Voltrac is located in Valencia.

Small drones exhibit moderate concentration around Madrid, a historical hub of high-tech and aeronautics R&D, hosting firms like Sener, Aertec Solutions (today part of Indra Sistemas), and Arquimea, among others. New players, however, are dispersed, with Aurea Avionics near Madrid and Singular Aircraft near Barcelona, but other UAS developers are active in other parts of the country as well. Indra for instance opened a kamikaze drone factory in Leon in January 2026.[19]

Tactical drones follow a similar pattern, with new defence activity represented only by Singular Aircraft near Barcelona and the historical company Airbus Defence & Space located in Getafe near Madrid.

SSL show a greater presence of new firms in northern Spain (Bilbao, Burgos) and around Barcelona, while Madrid and Valencia host one each, and the south remains dominated by historical players like Deimos (Indra Sistemas) and Airbus in Seville.

HAPS are exclusively served by new firms such as B2Space (Burgos) and Skydweller Aero (Madrid), indicating a preference for large urban centres rather than proximity to traditional aerospace hubs.

Overall, across sectors, there is no consistent co-location patterns between historical and new defence firms in Spain. Defence clusters remain structured by historical actors, while new entrants seem to prioritise access to human capital, high-quality infrastructure, dynamic labour markets, or specific regional assets. The notable exception is Aunav, which aligns with the Zaragoza regional defence-industrial cluster. Overall, Spain's emerging defence activities

[19] EP, 'Indra fabricará drones 'kamikaze' en León junto a la compañía emiratí Edge', *El País*, https://cincodias.elpais.com/companias/2026-01-13/indra-fabricara-drones-kamikaze-en-leon-junto-a-la-compania-emirati-edge.html.

reflect strategic location choices driven more by resource access than by traditional industrial agglomeration.

Sweden

Despite Sweden being one of Europe's largest arms manufacturing countries, and a member of the 2000 Letter of Intent/Farnborough Agreement, only few Swedish new defence companies were recorded in the dataset (Table 5). Against these new defence companies, the only Swedish historical player who is present in several markets under consideration was Saab (tactical drones, small drones, and naval drones). Other Nordic firms active in the market segments under consideration also have sites in Sweden, such as Kongsberg, Nammo and Patria.

Table 5. New defence and historical firms in Sweden

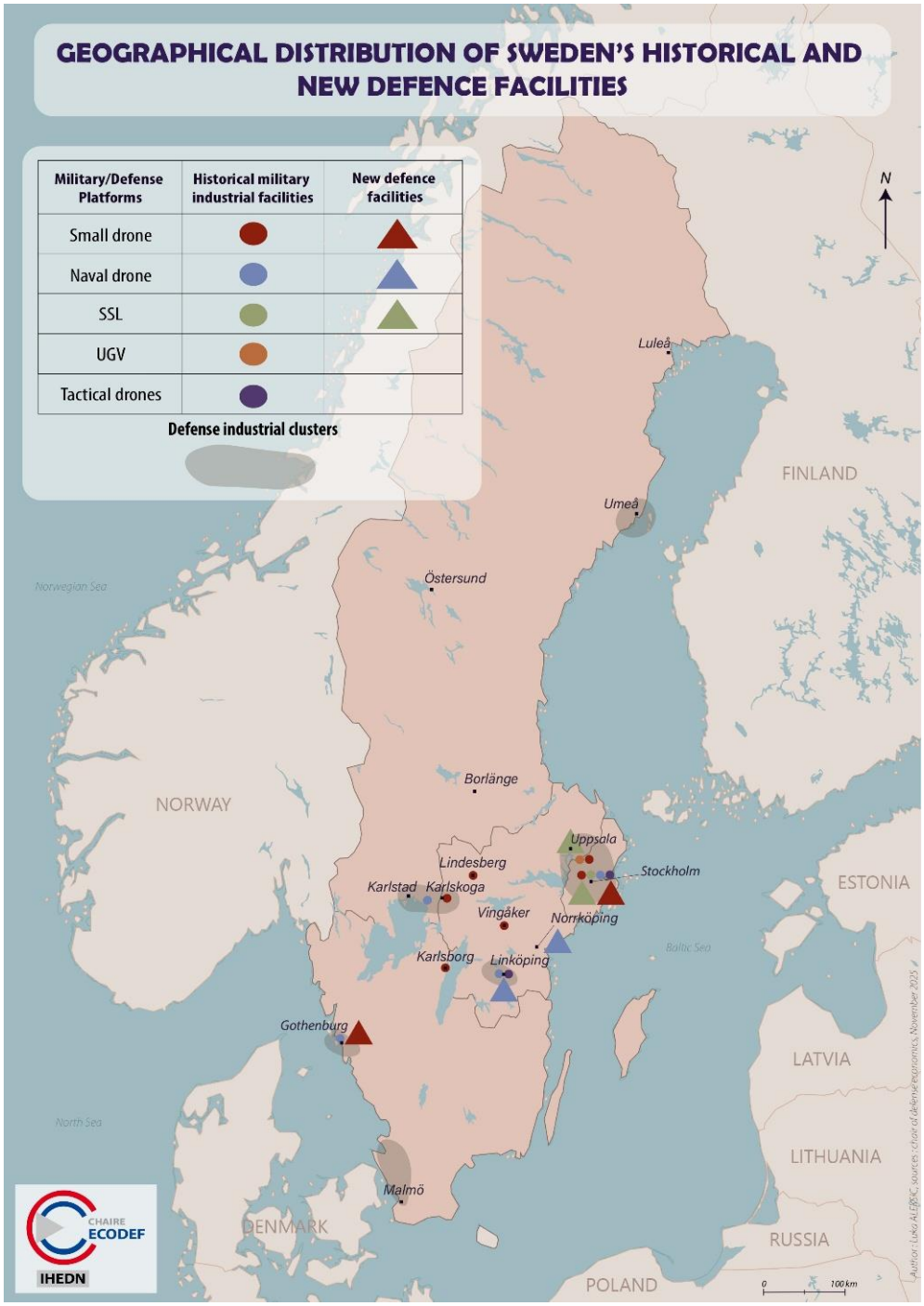
Market	Number of new defence firms	Number of historical defence firms	Number defence firms
HAPS	0	0	0
Tactical drones	0	1	0
Naval drones	2	2	4
SSL	2	2	4
Small drones	2	3	5
UGVs	0	1	1

Sweden's defence industry has historically been located around a few key sites, belonging mainly to Saab Group and BAE Systems.[20] Saab's presence is mainly situated in Linköping, which is the Swedish hub for aeronautics and avionics. Saab also has activities in Gothenburg notably for defence electronics such as sensors and radars, as well as Järfalla near Stockholm. This was inherited from the integration of Celsius AB activities, itself a successor to Bofors Electronics. Another part of Bofors focused on artillery and ammunition, in Karlskoga. These sites belong today to BAE Systems, who also acquired another key Swedish defence company, Hägglunds. The latter manufactures armoured vehicles and land systems in Örnsköldsvik in northern Sweden. In the south, the naval construction is today owned by Saab, previously Kockums: the design and engineering offices are in Malmö, while the shipyards are historically situated in Karlskrona since the 17th century. The historical DTIB is thus both spatially

[20] Coetzee, W.S. & Berndtsson, J. (2023), 'Understanding Sweden's security economy', *Defence & Security Analysis* 39(2), 171–190 ; Lundmark, M. (2022), 'The Evolution Towards the Partial Strategic Autonomy of Sweden's Essential Security Interests.' *Defence & Peace Economics* 33(4), 399-420.

concentrated and institutionally entrenched, since no new defence industrial regions emerged in the last 50 years, except for the defence electronics segment.[21]

Figure 5. Geographical patterns of historical and new defence companies (Sweden)



[21] Fredin, S., Miörner, J. & Jogmark, M. (2019), 'Developing and sustaining new regional industrial paths: investigating the role of 'outsiders' and factors shaping long-term trajectories', *Industry and Innovation* 26(7), 795–819.

However, the Swedish newcomers in our dataset are not clearly co-located with these historical entities. Instead, they are based in, or linked to, civilian technology regions.

In the **SSL** segment, AAC Clyde Space was established when ÅAC Microtec, a Swedish firm, acquired Clyde Space, a UK entity. The parent company ÅAC Microtec originated in Uppsala, one of Sweden's largest universities, and therefore is a hub for university-driven innovation. Hence, the company emerged from civil space R&D, not defence-industrial geography. The other three sites related to SSL are in Stockholm but belong to non-Swedish European companies, it is therefore likely that their Stockholm presence is a local lobbying office.

Regarding **small drones,** Airolit is located in the outskirts of Gothenburg, Sweden's second largest city. It is another innovation hub in Sweden, particularly strong in artificial intelligence. This is far from Saab's historical presence in Linköping, but close to its defence electronics activities. By contrast, for **tactical drones**, only Saab is present on this segment in Sweden.

The two Swedish new defence companies active in the **naval-drone segment**, Buvi Scandinavia and Ocean Modules, also sit clearly outside Sweden's historical naval-industrial geography centred on Karlskrona (shipbuilding) and Malmö (naval design). Buvi Scandinavia was founded in 2011 in the Nyköping area with no legacy naval-production footprint but with access to coastal waters useful for ROV testing. Ocean Modules, established in 2002, is located in Åtvidaberg. This is an inland municipality with no naval tradition. Its founders came from Sweden's older ROV and underwater-technology community (engineers previously active in Saab Bofors Underwater Systems), but chose Åtvidaberg for personal reasons.[22] These two examples show rather the importance of low barriers to entry in new defence markets, with the reliance on dual-use technologies and robotics, although in the case of Ocean Modules one of the founders had worked for Saab. These smaller companies do not require the industrial infrastructure of historical defence primes, which allows SMEs to emerge in different regions. Hence, they are far from the two historical firms present in this segment, Kongsberg and Saab.

Overall, no clear co-location pattern emerges in Sweden between its historical and new defence companies even though this result relies on a very limited sample of defence firms. Civilian innovation ecosystems and engineering skill seem to matter more than the defence industrial legacy for the emergence of new defence firms and technologies.

[22] 'Ocean Moduls i medvind', *Corren*, 22 Jan. 2005, https://www.corren.se/nyheter/atvidaberg/artikel/ocean-modules-i-medvind/l696v2wl.

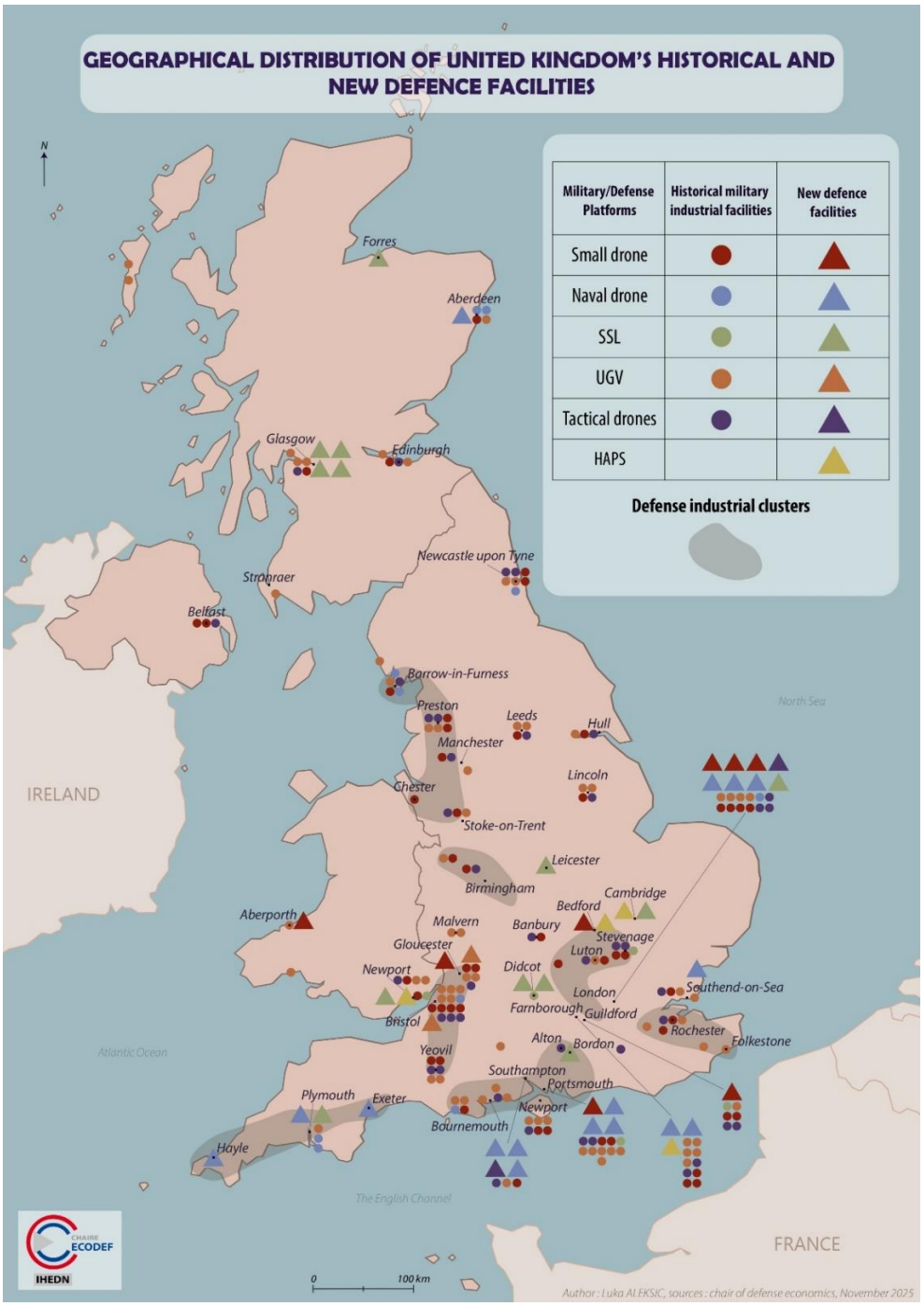
United Kingdom

Our dataset identified new defence companies with a presence in the United Kingdom in all six segments (Table 6). However, no historical companies were identified on the HAPS segment. There are nine new defence companies producing small drones against twelve historical firms; while in the naval drones market there are 13 new defence companies competing against nine historical producers. For UGVs, there are more historical players located in the United Kingdom (nine) than new defence ones (two).

Table 6. New defence and historical firms in the United Kingdom

Market	Number of new defence firms	Number of historical defence firms	Number defence firms
HAPS	4	0	4
Tactical drones	2	7	9
Naval drones	13	9	22
SSL	11	2	13
Small drones	9	12	6
UGVs	2	9	11

Figure 6. Geographical patterns of historical and new defence companies (UK)



The **HAPS** sector is entirely new defence-driven, there is no historical firm recorded in this market segment. Nonetheless, half of the HAPS new defence firms are embedded in historical clusters. Aalto HAPS is in Farnborough, an aerospace hub. This is unsurprising, given that Aalto HAPS is a spin-off subsidiary of Airbus. Also, Farnborough is where the British Army Balloon Factory was historically located. Hybrid Air Vehicles is established in Bedford, where Airship Industries, a manufacturer of modern non-rigid airships (blimps) used to be located. The other

two HAPS firms emerged in more novel locations. B2Space is in Newport (Wales) which did not have prior historical defence sites in a similar domain. Stratospheric platforms Ltd is in Cambridge, likely due to the proximity of innovation and research centres. Hence, although no historical HAPS firms exist, the geography of HAPS new defence companies is not entirely new.

Most newcomers producing **naval drones** are in the South of the UK, but few in the North even though Scotland is a historical hub for shipbuilding (with BAE System in Glasgow and Babcock in Rosyth) as well as Cumbria (BAE Systems at Barrow-in-Furness). However, some new defence naval companies do cluster around the Southampton / Portsmouth area, another major historical hub for British shipbuilding. At the same time, some other maritime new entrants are situated in non-historical areas for the naval sector, such as Cornwall (Uncrewed Survey Solutions, Acua Ocean and Hydro Surv), or Hampshire (Forcys) and Surrey (Planet Ocean Ltd). The latter two are close to the Royal Military Academy, however, which explains this choice of location. Overall, naval drones production extend the geography of naval industry beyond historical shipbuilding centres.

The **UGV market** is the less open to newcomers of all segments. Historical actors dominate the number of production sites. However, the two new defence firms, Agile Vehicle Technologies and UAVTek emerged in the 'Silicon Gorge' (in Bristol and Cheltenham, close to Gloucester), which is a region in the UK specialised in digital technologies.[23] Thus, although the segment remains dominated by legacy manufacturers, new entrants on the UGV market seem to have emerged closer to civilian/dual-use technology innovation centres.

On the **tactical drones segment**, there is no British new defence company, only non-British ones (Tekever and Helsing AI). BAE System otherwise dominates the segment. While Helsing AI has a site in London which is likely a representation office, Tekever, opened a R&D site on the Southampton Science Park.

The location of **small drones** new defence companies closely matches historical defence industry patterns. Both UK and non-UK entities are in London or in the Greater London area (Kent and Surrey). This reflects the strong concentration of aerospace industry in the Southeast of the country.[24] One exception is UAVE Ltd: the company has a site in Wales, which

[23] 'How The UK's South West Became A 'Deep Tech' Powerhouse', *Wired*, https://www.wired.com/sponsored/story/how-the-uks-south-west-became-a-deep-tech-powerhouse-hsbc-uk/; Jones, T., 'Bristol, the "Silicon Gorge" of the South West', *True Digital*, 28 Jan. 2024, https://truedigital.co.uk/our-insight/bristol-the-silicon-gorge-of-the-south-west/.

[24] United Kingdom Government, Industrial Strategy, Aerospace Sector Deal, 2018, https://assets.publishing.service.gov.uk/media/685bbd48c07c71e5a870979b/_Withdrawn__aerospace-sector-deal-printready.pdf (see map p.30).

hosts its head office, engineering workshop and pilot training centre. One potential explanation is that it is relatively close to Aberporth which hosts a UAV testing centre.

The **SSL segment** is, together with HAPS, the most new defence-oriented market in the UK. SSL firms established themselves notably within or near strong university areas such as London (Exobotics UK Ltd, AAC Clyde space), Cambridge (Exobotics again, Satlantis) or Oxford (Open Cosmos, Space Products and Innovation). The latter two notably are located near the Harwell Campus, which hosts the Harwell Space Cluster and a branch of the European Space Agency.[25] It is also close to the UK Space Agency. Another firm, Kleos Space, is in Leicester where there is another Space Park. 'Space City Leicester' is promoted as a major UK enterprise zone for space-related activity, part of the UK's 'space spine'.[26] Exobotics also has a presence in Cornwall, likely related to the Cornwall spaceport. There are no historical defence firms in this area. Finally, SSL companies are also quite present in Scotland. Scotland also hosts a space centre and represents the third largest region in the sector in the UK.[27] Overall, SSL companies are located near dual-use innovation centres either with an academic footprint or specialised on space.

The UK case study shows new defence firms emerge in a partially overlapping but distinct geography from historical firms. It suggests the importance of recognising the new geography of defence innovation, centred on urban high-tech regions, space hubs and peripheral areas. Technology has changed, but this observation echoes findings from the 1980s, when pockets of prosperity contrasted with the rest of the country.[28]

[25] UK Research and Innovation, 'Harwell campus space cluster', https://www.ukri.org/who-we-are/stfc/facilities/clusters/harwell-space-cluster/.
[26] Space City Leicester, https://space-city.co.uk/.
[27] UK Space Agency, Scottish space innovation secures UK Space Agency investment, 3 Dec. 2025, https://www.gov.uk/government/news/scottish-space-innovation-secures-uk-space-agency-investment
[28] Lovering J. (1988), "Islands of prosperity: the spatial impact of high-technology defence industry in Britain" in Breheny, M. J. (1988) *Defence expenditure and regional development*, Chap. 4 (NY: Mansell Pub.).

RECOMMENDATIONS: LEVERAGING REGIONAL TOOLS TO PROMOTE NEW DEFENCE

Comparing the six LOI countries, which account for most of Europe's historical defence industrial production, shows that new defence technologies tend to emerge along shared technological trajectories and market dynamics rather than along distinct national characteristics.

The **HAPS** segment displays a separate spatial distribution for new defence firms. In almost all countries, new defence players emerge in different locations than historical aerospace or space clusters. Although in the same domain, the **SSL** segment shows a double pattern for new defence companies. These emerge either close to historical aerospace or space hubs, or near civilian innovation hubs.

Small drones are overall more spatially dispersed given the larger number of companies active in this segment. Still, there are close co-location patterns between new defence and historical companies One exception to this pattern seems to be Germany.

The **tactical drones** market is even more closely linked to the historical defence industry, given that most companies active in this segment are incumbent ones. Where new entrants do emerge, they tend to locate near established aerospace hubs, likely to benefit from agglomeration economies associated with the aerospace industry and to reduce entry costs.

The picture for **naval drones** is more mixed. Some new defence companies do establish themselves close to the historical naval shipbuilding sites such as the south of France or of the UK. However, even in these two countries, a large part of the sample emerged in new geographies, sometimes not even close to a coastline. Their location appears less dependent on access to ports or waterways, than on access to talent, digital capabilities and innovation ecosystems.

The **UGV** market segment is dominated by historical players in all countries. However, for the few new entrants, they appear in different territories than their historical counterparts. They establish themselves either close to major cities (Germany) or in technological hubs (Spain, United Kingdom), signalling the importance of dual-use civilian technologies in this segment.

These results indicate that the geography of new defence is not entirely new. Two geographical patterns seem to coexist. Strong ties remain with historical industrial clusters. At the same time, new defence players still do expand the spatial footprint of the DTIB to new areas. Markets with low physical capital requirements and with dual-use customers (HAPS,

SSL, small drones, naval drones) favour geographical diversification and emergence outside defence hubs, whereas capital-intensive, more military oriented markets (UGVs, tactical drones) remain tied to long-standing industrial cores.

From a policymaking perspective, a clear pattern that emerges from these case studies is the importance of regional attractiveness policies. Some industrial clusters do play a role in favouring the emergence of new defence firms, such as the "Aerospace Valley" in the southwest of France, the National Underwater Centre in Italy[29] or the Harwell Space centre in the United Kingdom. This advocates for a greater role of regional/local authorities in the development of defence industrial policies, and notably when it comes to supporting the emergence of new defence technology players.

Regions that succeed in articulating an ambitious and coherent local strategy around defence can capture a genuine 'defence dividend'. Achieving this requires coordinated collective action among historical defence companies and their supply-chain, universities, research institutions, and local authorities. Regions can leverage defence investment as a catalyst to sustain industrialisation, prevent deindustrialisation, and promote the diffusion of innovation into civilian sectors (for instance with clusters).

Our findings show that in each of the six countries under consideration – and possibly all other European countries who host new defence companies – involving the regional level could enhance defence industrial policies given that regions hold economic development competences in most European countries. Because new defence companies are mainly small firms, very often they are better known by local stakeholders (e.g. local governing bodies but also defence forces) and not by central government.

While bottom-up initiatives deserve support, EU top-down tools to support industries at regional level exist and could be further activated. Our conclusions therefore call for better coordination between the various European regional and structural funds and the EU instruments put in place to support the EDTIB more specifically. With this in mind, the involvement of the European Committee of the Regions in the design of defence industrial policy instruments appears highly relevant as it could connect stakeholders from the multiple levels of governance at play: the EU, central governments and regional governments.

For example, the Interreg Europe programme, which is co-financed by the European Regional Development Fund (ERDF), does not explicitly focus on defence, some of its projects enhance

[29] Chirara Rossi, 'Al via il Polo nazionale della subacquea, tutti i dettagli', Start Mag, 12 Dec. 2023, https://www.startmag.it/innovazione/al-via-il-polo-nazionale-della-subacquea-tutti-i-dettagli/.

regional preparedness and crisis readiness.[30] For example, some projects have addressed skills and the labour market—particularly in cyber-security—while others have supported SMEs in the supply chains of dual-use industries such as aerospace. Given the duality observed in many new defence firms of our sample, the regional funds framework could be a relevant tool to support the (re)industrialisation of certain European regions or localities.

According to a DG DEFIS study mapping projects co-financed under the European Structural and Investment Funds in the 2014–2020 programming period, 972 defence-related and dual-use projects were supported, with an EU contribution of just over €1.0 billion. Funding was provided mainly through the ERDF (€814 million). Dual-use projects represented 58% of the identified projects (42% defence-related).[31]

A closer focus on regional policies and tools could be a point of attention in the implementation of the Commission's Defence Readiness Roadmap or if the Commission was to consider launching a second Defence Omnibus package. As part of the Readiness 2030 plan, drawing lessons or inspiration from the tools implemented at the European level during the 1990s so-called 'conversion process' [32] could contribute to develop and adjust today's policy tools. Beyond regional funds, further research could explore whether university funding/education funding (dual-use) or automotive transition programs could also be leveraged in support of new defence companies.

[30] Interreg Europe, 'Regional solutions for a modernised cohesion policy', 30 May 2025, https://www.interregeurope.eu/news-events/news/regional-solutions-for-modernised-cohesion-policy. Interreg is a set of funding programmes under the financed under the European Regional Development Fund, whose overarching objective is to strengthen economic, social and territorial cohesion in the European Union.

[31] European Commission, DG DEFIS, Study on the Contribution of the defence sector to regional development through ESIF, May 2021, https://defence-industry-space.ec.europa.eu/study-contribution-defence-sector-regional-development-through-european-structural-and-investment_en.

[32] European Commission (1992), 'The economic and social impact of reductions in defence spending and military forces in the regions of the Community', Economists Advisory Group, Luxembourg: Office for Official Publications of the European Communities, https://op.europa.eu/en/publication-detail/-/publication/7f8c6353-9469-4ef4-972f-468560a5b130/language-en.

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The Armament Industry European Research Group (Ares Group) is a high-level network of security and defence specialists across Europe. Its aim is to provide a forum to the European armament community, bringing together top defence industrial policy specialists, to encourage fresh strategic thinking in the field, develop innovative policy proposals and conduct studies for public and private actors.