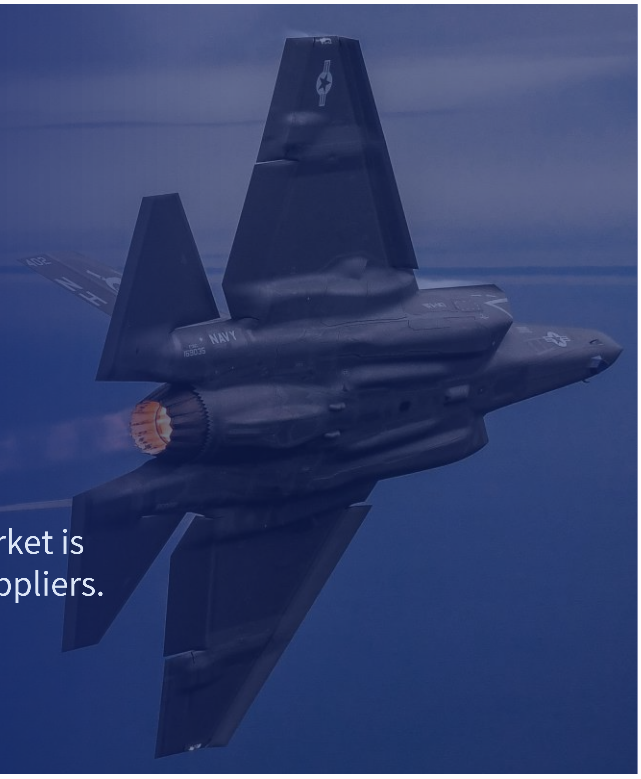
AEROSPACE & DEFENCE SUPPLY CHAINS

The Changing Dimensions of Defence



Five spectrums along which the defence market is broadening — and what each one asks of suppliers.

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Today's defence market looks markedly different than it did five years ago. Spending is at levels not seen since the Cold War, defence start-ups are attracting valuations in the billions, and new technologies are reaching the battlefield faster than procurement systems were built to absorb them [1,2,3].

For suppliers in the industry, those changes are not being felt evenly. To some suppliers, the market has shifted completely, with customers, competitors, timelines and requirements moving rapidly. Others are seeing strong demand, but from typical customers for regular products with business-as-usual contracting. At times, these companies seem to be operating in almost different worlds. Some might even see these differences between their own product lines or business units.

Both accounts are accurate, and they illustrate the complexity and variation in different aspects of the supply chain. The shifts that are underway are not reaching every part of the supply chain at the same pace, and some are not necessarily new.

A spectrum rather than a swing

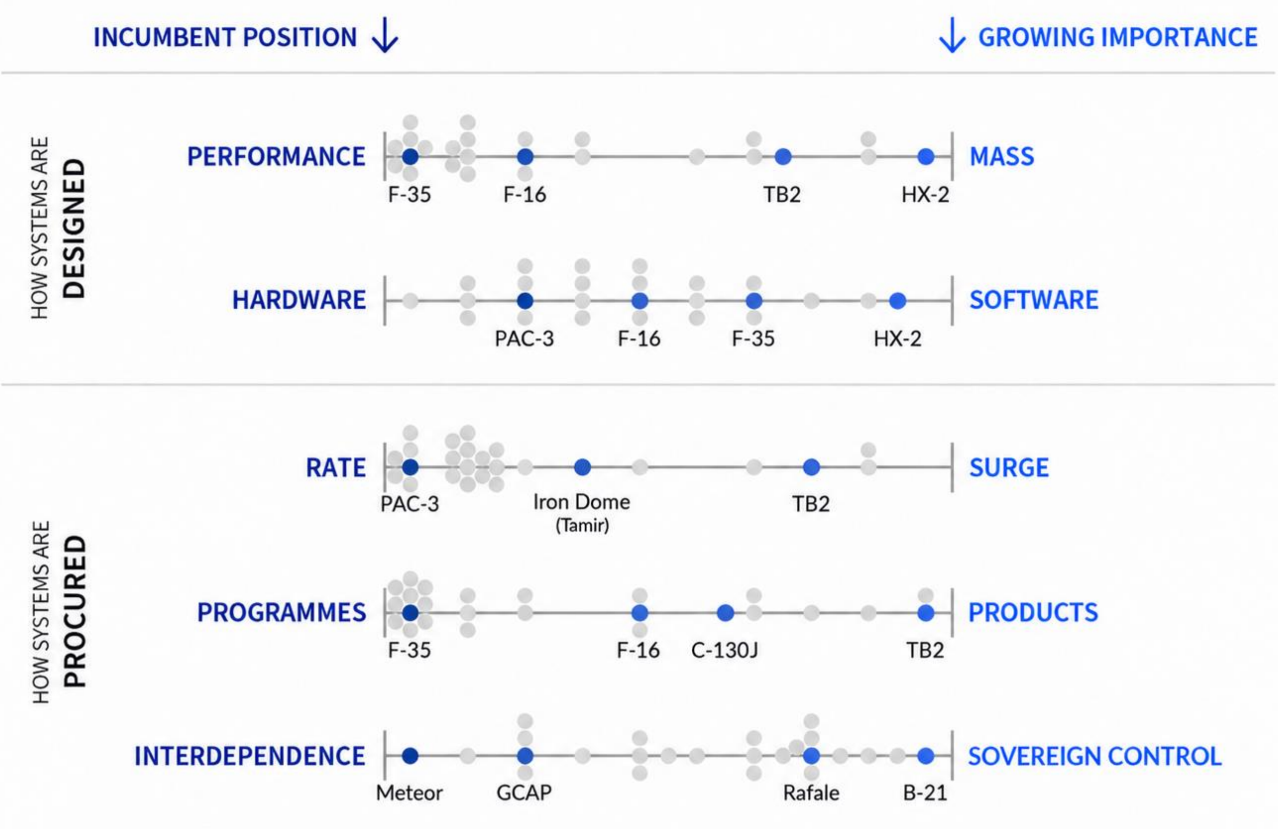
Across defence supply chains, we see two areas where the change is concentrated: how aerospace systems are designed, and how those systems are procured. Within those, five dimensions appear to be changing most.

> THE FIVE DIMENSIONS
>
> 1. Systems designed around **mass versus performance**
> 2. Value dictated by **software versus hardware**
> 3. Production optimised for **surge versus rate**
> 4. Procurement led by **products versus programmes**
> 5. Supply chains characterised by **sovereign control versus interdependence**

For decades, each of these dimensions concentrated towards the incumbent side of the chart below. What has changed recently is a widening of possibilities; the market is not pendulum-swinging, but rather broadening into a spectrum. The incumbent position remains occupied, and in most cases remains the largest part of the market. Today, however, the other end of the spectrum is growing quickly and presenting new opportunities and risks for suppliers.

The widening envelope

The industry is broadening across several dimensions. Programme placements are illustrative.



25 platforms per spectrum. Grey dots are offset slightly where ratings overlap.

Platforms considered: A400M Atlas, AGM-158B JASSM-ER, APKWS II, B-21 Raider, Barracuda-500, Bayraktar TB2, C-130J Super Hercules, Eurofighter Typhoon, F-16 Block 70/72, F-35A Lightning II, GCAP / Tempest, GMLRS / ER-GMLRS, Gripen E/F, HACM, Helsing HX-2, KF-21 Boramae, Meteor, MQ-28 Ghost Bat, MQ-9B SkyGuardian / Protector RG1, MV-75 (FLRAA), PAC-3 MSE, Rafale F4, T-7A Red Hawk, Tamir (Iron Dome interceptor), YFQ-44A Fury (CCA Increment 1).

A combination of drivers

Russia's full-scale invasion of Ukraine has driven rapid changes in technology and warfighting approaches, alongside renewed defence funding worldwide. Innovation has also become harder to forecast. Whereas the step from a fifth- to a sixth-generation fighter was visible years ahead, the direction of drone and counter-drone development can change within months.

Geopolitical tension and the supply chain disruption of the pandemic years have produced a focus on local champions and security of supply. Budgets have also expanded faster than existing suppliers can convert them into delivered capability. These forces have created room for new entrants and attracted private capital funding.

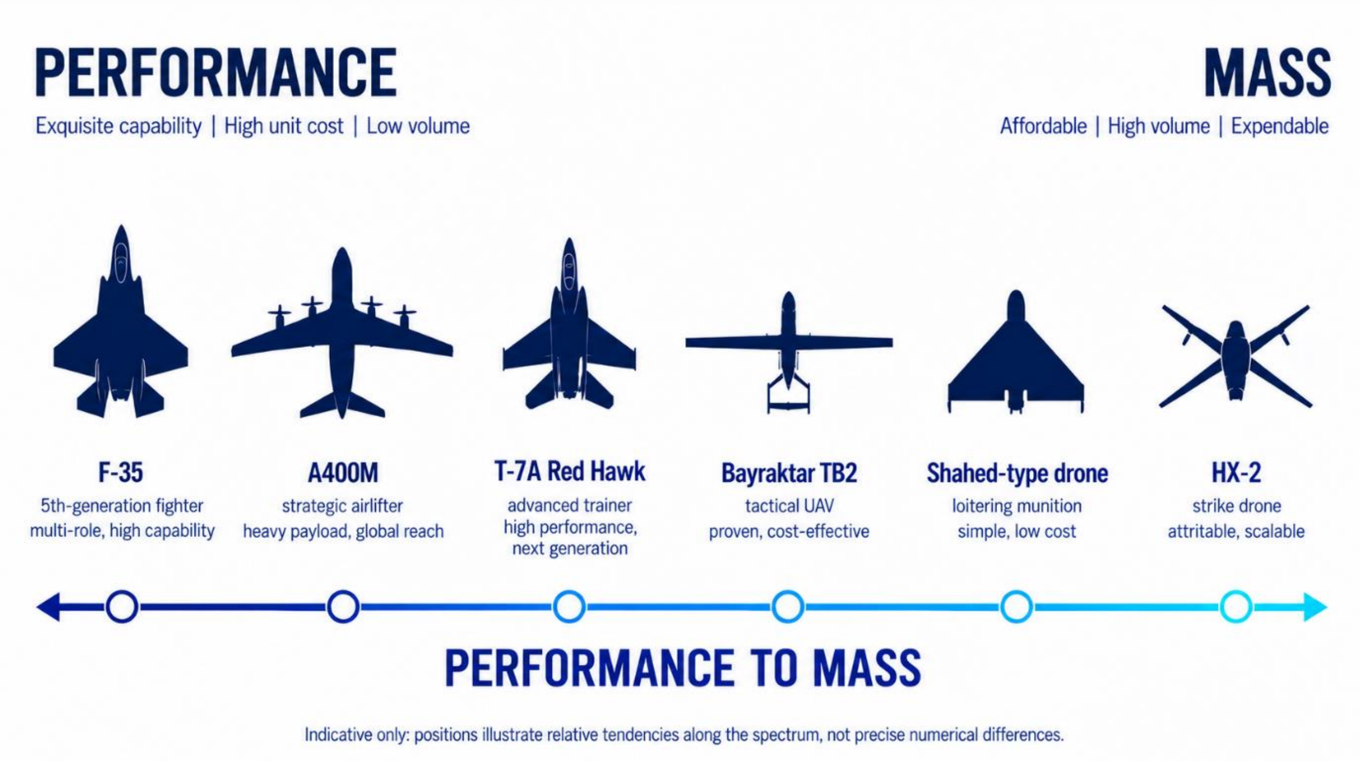
Many of those entrants have grown up in software, and bring short time-to-market and fail-fast approaches to hardware programmes. Originally focused on smaller systems, they are now competing for larger and more complex platforms.

SHIFT 1

Performance versus mass

The scale and complexity of recent conflicts has driven a marked shift towards mass, where the volume of an attack becomes the advantage rather than the performance of its individual elements. The aim is to overwhelm countermeasures, deplete stocks, and force the defender to spend a multi-million-dollar interceptor on a drone that cost thousands.

A tour of the stands at Farnborough Air Show 2026 in July might give the impression that mass is the central strategy for armed forces; yet the research shows that this is a broadening of strategies rather than a full-scale



shift. A paper by BCG with Vertical Research Partners separates exquisite systems (small numbers of high-performance platforms) from affordable mass (reusable, but cheap enough to risk losing) and expendable systems (designed for a single use). More than 90% of 2025 procurement across the US and Europe still went to the exquisite tier [4]. The other categories are growing far faster, but from a much smaller base.

Mass has a long history in warfare. During the Battle of Britain, for example, the Hawker Hurricane accounted for the majority of German aircraft destroyed. The aircraft was less advanced than the Spitfire, but considerably easier to build and repair. Their support helped optimise the force-level effectiveness, rather than relying on a few high-performance elements. More broadly, one could argue that these aircraft were optimised for their entire lifecycle, including production and sustainment, not just their performance on the battlefield.

Competing at the mass end of the spectrum brings a different set of constraints. Cost is often the binding constraint, but speed to market and the ability to scale are equally as important. The lower end also opens the market to new entrants. Where qualification demands are lighter and volumes are high, non-aerospace suppliers can compete on cost in ways an aerospace business built around low-rate, high-specification work cannot. Off-the-shelf components become viable where they would be prohibited on a crewed platform, and qualification capability is less of a barrier to entry than it has been previously.

> *“How do I tell a team that is used to optimising every component that they need to build something worse?”*

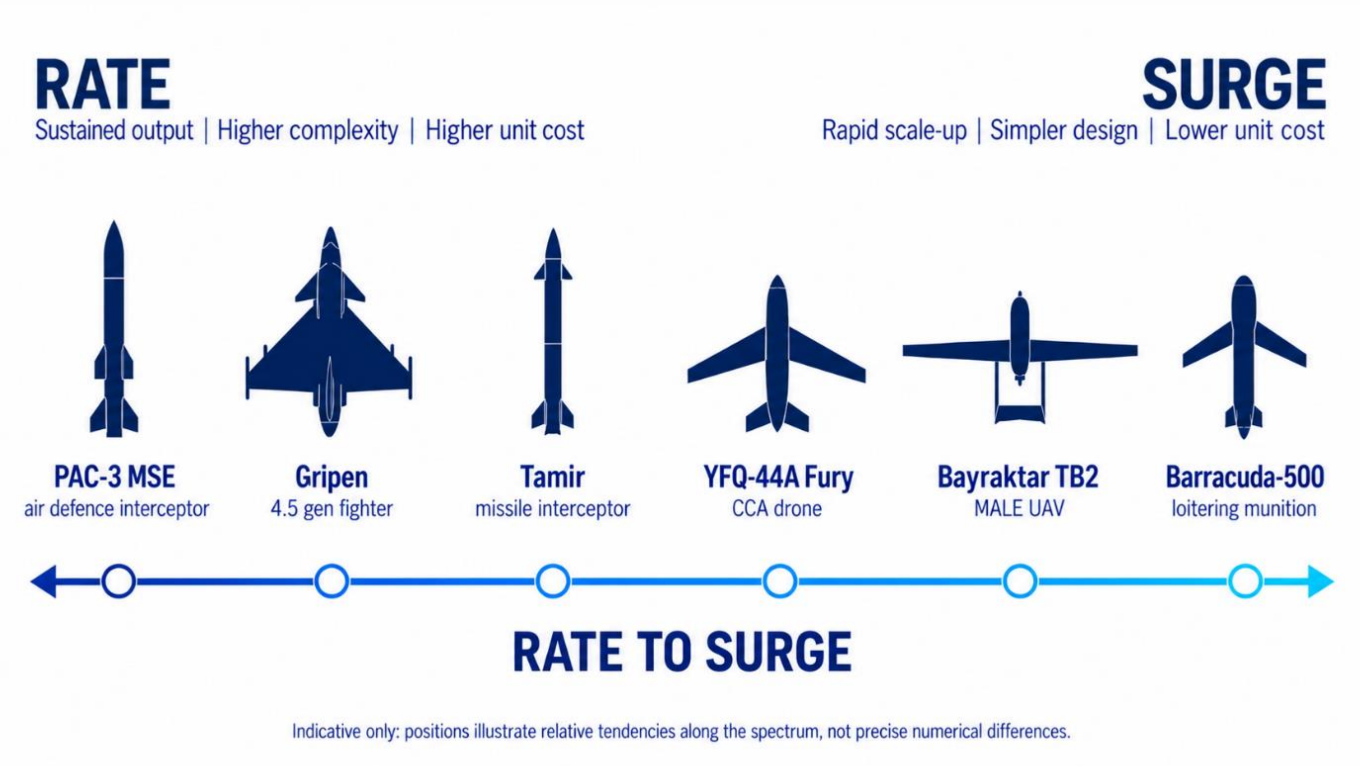
For traditional players, that is a serious challenge. Cost and speed have always mattered, but performance and requirements compliance have driven the engineering discussion. Some have put more effort into standardised or modularised products that can be produced at scale and adapted at a faster pace. Others have focused on integration, where the value is less in the components and more in how they operate together. Others still have consciously made decisions not to compete in this space, focusing instead on exquisite platforms that continue to drive strong demand.

SHIFT 2

Rate versus surge

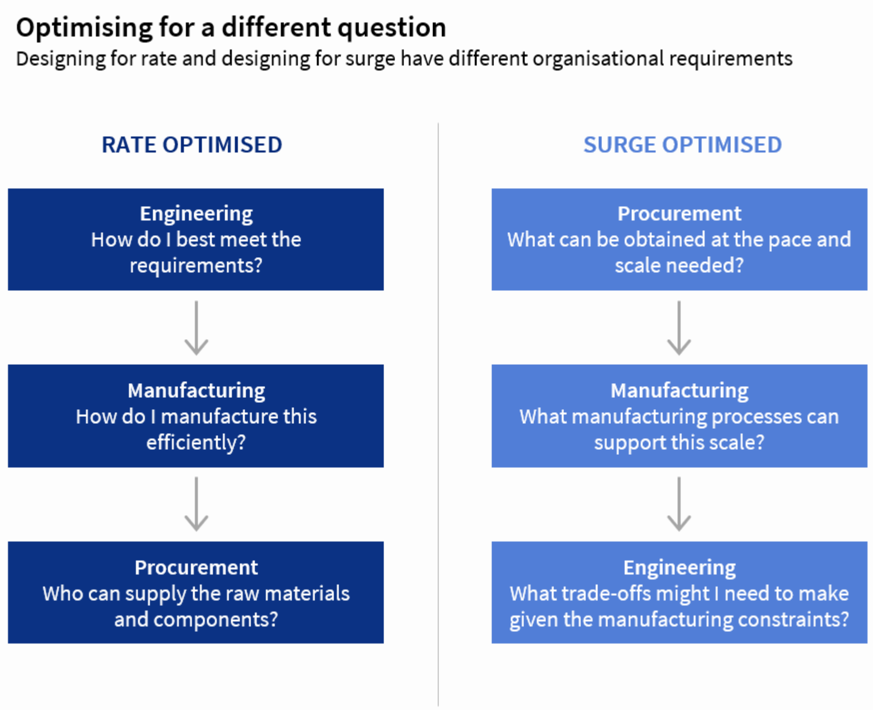
At the mass end of the spectrum, it is tempting to see the components as simply worse. It is more useful to see them as optimised against a different set of criteria. The Hurricane in the prior example featured a steel-tube-and-fabric rear fuselage. This was legacy technology, but it could be built by an existing workforce and with limited tooling. Battle damage could be patched overnight by riggers rather than sent away for structural repair. The optimisation occurred across a broader set of dimensions than in-service performance.

Today's conflicts have introduced one particular criteria that more traditional aerospace supply chains struggle to adapt to: the ability to surge. Aerospace has traditionally focused on rate (the sustained output of the supply chain) rather than elasticity. A focus on rate leads to lean inventory, single sources, high utilisation, little idle tooling. **Surge is the ability to ramp when demand jumps.**



Examples are numerous of several programmes facing the pressures of surge. Lockheed Martin has raised Patriot output by around 60% over two years and intends to go from roughly 500 units a year to 2,000 over the following seven [5]. As a result, the quadrupling output becomes a seven-year project. Much of the constraint, however, sits below final assembly with the most critical constraints often at the Tier 2 level.

The need to surge raises an industrial and economic-policy question: who pays to hold capacity? Warm-base and surge contract structures are beginning to appear, paying suppliers to maintain tooling, trained staff and qualified sub-tiers against demand that may never come. Many of today's contracts, however, are still based around the ideas of rate and building this capability is likely to take time.



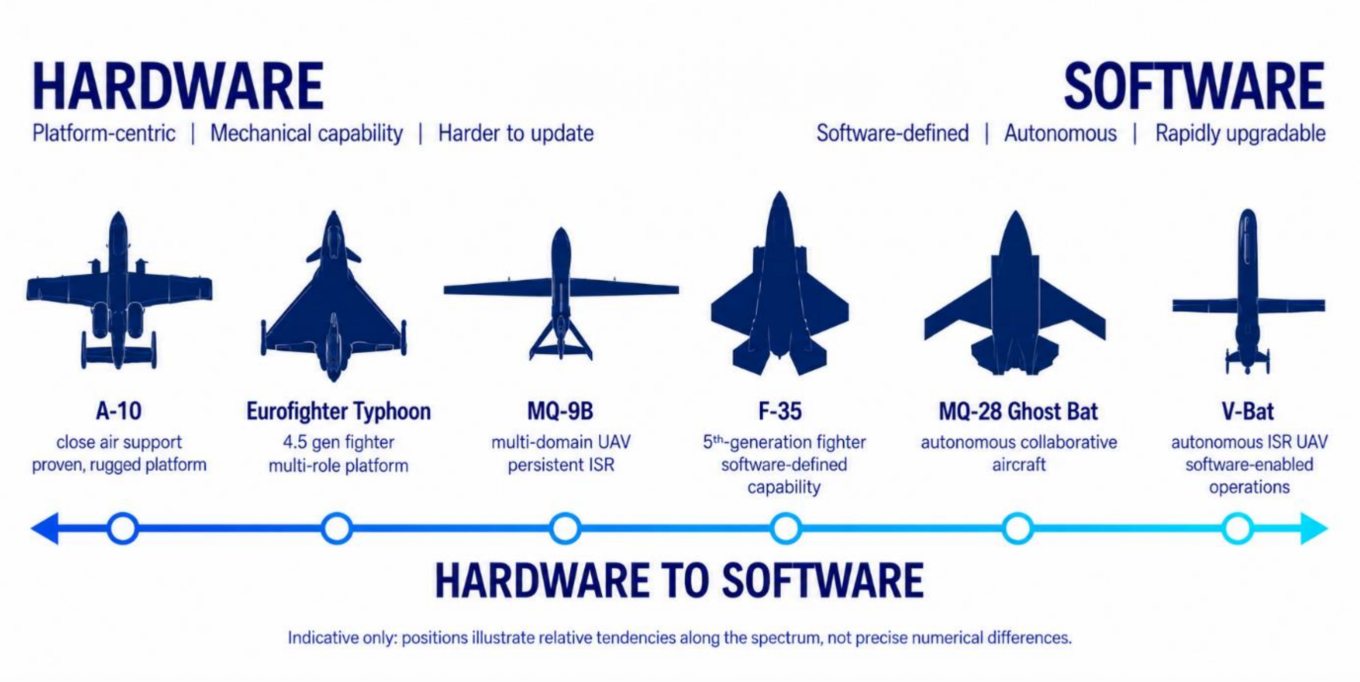
The challenge for suppliers is that many organisations are not designed around a surge requirement. Taking a highly simplified view, engineering leads the design process with a focus on meeting performance requirements. This design passes to manufacturing, who decides the best way to construct it, and procurement, who finds suppliers that can provide the raw materials. Surge inverts that sequence. What can be sourced at pace becomes the first question rather than the last, and manufacturing processes that can scale up and down begin to dictate what is feasible in the design. As a result, performance trade-offs are made within those limits rather than ahead of them. Aerospace organisations can shift to this thinking in moments of crisis, but it is rarer to see them operate in this manner as standard practice. In practice, these functions must operate concurrently, even in a rate-optimised environment; the challenge for suppliers is to design for producibility, substitutability and capacity from the start.

SHIFT 3

Hardware versus software

Software has always mattered in aerospace, but the operational value of the hardware is increasingly determined by its software. Later F-16 configurations carried around 500,000 lines of onboard code; the F-35 has more than eight million, four times the F-22. Moderately aged platforms are gaining a renewed lease of life through upgraded avionics and sensors, as with the ECRS Mk2 radar on Eurofighter Typhoon. Modelling under the System Architecture Virtual Integration initiative put software at roughly two-thirds of aircraft-system development cost as far back as 2010 [6], and projected it would keep climbing as physical parts counts stayed flat.

For suppliers, software offers a further avenue to differentiate, but also brings competition from an unfamiliar direction. Companies that grew up writing software arrive with time-to-market practices shaped by commercial development rather than aerospace procurement. Autonomy packages built by entrants are now flying on platforms they had no part in designing. And beyond autonomous systems, the use of AI in software development is helping companies move faster than they could before.



The importance of software also raises the importance of openness. Interoperability has always mattered, but the volume of sensors and data, combined with the need for fast decision-making, has made it a policy requirement. Since 2016, US legislation has required major defence programmes to adopt a modular open systems approach with standard interfaces, so that components can be replaced and competed rather than locked to their original supplier.

Procurement strategies are following suit. The US Air Force's Collaborative Combat Aircraft programme treats the air vehicle and the mission autonomy as separate acquisitions, with a government-owned reference architecture intended to let software from different suppliers run across different aircraft.

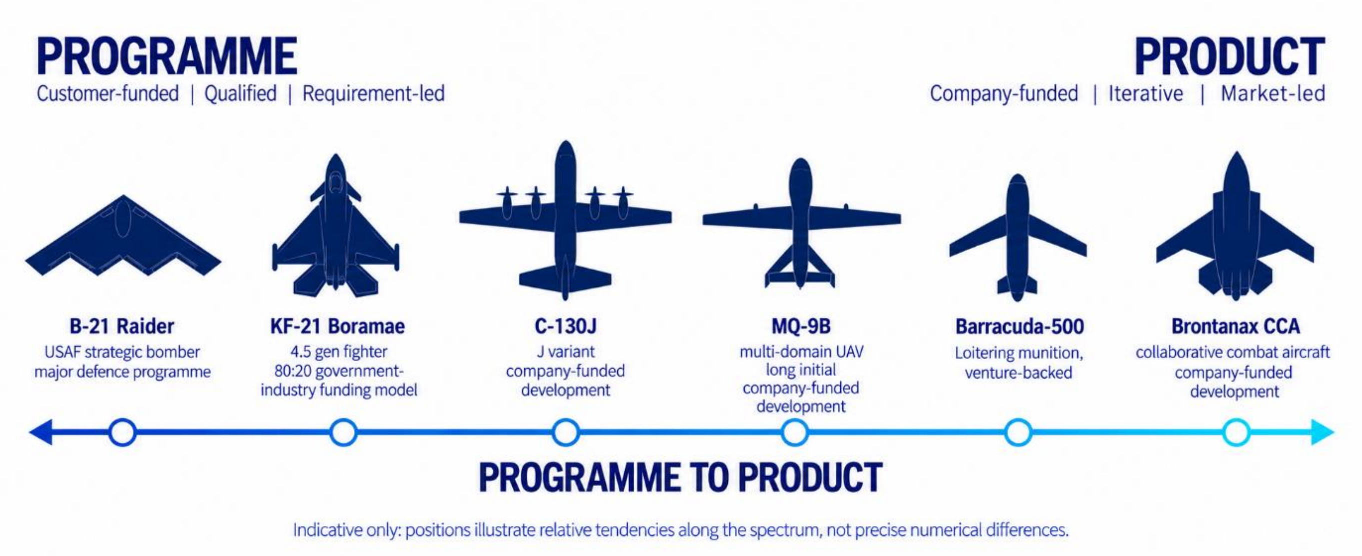
For the supply chain, this cuts both ways. Openness reduces a supplier's lock-in with a particular customer, but it also lowers the barrier to offering new or alternative products. A component that is straightforward to integrate becomes easier to select than one that constrains everything around it. For companies that are primarily hardware-focused that see encroachments from software, it raises a question of how and where to compete. Acquisitions have become relatively common in the sensors market, and we expect this to continue as suppliers seek to combine data from a variety of systems. For others, renewed focus on hardware combined with partnerships on software may be the best approach.

SHIFT 4

Programme versus product

For most exquisite systems, development is funded through a government programme. The customer sets the requirement, carries the development cost, and qualifies the supply chain against its own standards. This procurement structure shapes the requirements selected, pace of development, and incentives for the supply chain.

A growing number of entrants have inverted this. Rather than waiting for a programme, they identify an unmet need, design against it, and fund the development themselves, usually with venture backing. They make the requirement trade-offs, and they carry the risk that what they build is not what the customer eventually wants.



The model is older than it looks. For most of the industrial era, weapons were developed privately and sold to whichever government would buy. Companies such as Krupp, Schneider-Creusot and Vickers developed products ranging from field guns to warships. The government-funded development programme is closer to a post-WWII construction than a permanent feature of the industry.

The defining feature of this movement is the level of investment. Defence technology venture funding is at record levels, and several entrants now carry valuations that would have been implausible in this sector ten years ago. In Europe, defence has gone from a marginal share of venture activity before 2020 to a significant one, with European DSR (Defence, Security and Resilience) startups securing **$8.7 billion in 2025, a 55% YoY increase** driven by 'late-stage mega rounds' to develop, back and scale technologies that address the capability needs of European NATO nations [3].

At the same time, contract dollars remain concentrated among a small number of primes, while cost-plus contracting still accounts for a substantial and relatively stable share of defence spending. Yet we continue to see traditional players working in a 'product' mindset in certain areas, investing their own capital in new capabilities before a formal procurement contract exists.

> *A start-up may use a development supplier, or simply buy hardware off the shelf, to reach a proof-of-concept milestone.* ***Whether that partner can scale to full rate or meet the security requirements of a defence supply chain is often beside the point at that stage***

Following the CCA uncertainty after the U.K. MoD cancelled its uncrewed drone initiative 'Mosquito' in 2022, for example, BAE continued to develop their own company-funded CCA programme, now known as Brontanax. The project has since been adopted as the operational concept demonstrator for the MoD's new CCA 'Storm Fighter' programme and is scheduled to fly for the first time in 2027 [8]. More broadly, of the 17 major CCAs reviewed, at least 10 began without a conventional government-funded aircraft-development programme. In the CCA market, developers are increasingly willing to assume significant development risk where they have identified a real, unfilled technological niche, before they receive a formal procurement contract.

Product as opposed to programmes has several implications for the supply chains. Government programmes tend to move more slowly than these internal teams. Competing in such a programme places strict requirements on which companies can participate in the supply chain, in development as well as production. By leading and funding development themselves, the new entrants cut through much of that and move considerably faster.

The result is markedly different procurement behaviour. A start-up may use a development supplier, or simply buy hardware off the shelf, to reach a proof-of-concept milestone. Whether that partner can scale to full rate or meet the security requirements of a defence supply chain is often beside the point at that stage; the objective is to get the concept to a level that interests a buyer. Production then becomes a different problem, and suppliers are often changed at that point in favour of more traditional players capable of meeting the standards of a defence programme.

CCAs reviewed include: X-BAT (Shield AI), FQ-42A (General Atomics), FQ-44A Fury (Anduril), MQ-28 Ghost Bat (Boeing Australia), XQ-58A Valkyrie (Kratos), Brontanax (BAE Systems), Vectis (Lockheed Martin), YFQ-48A Talon Blue (Northrop Grumman), Kızılelma (Baykar), CA-1 Europa (Helsing), Dominion ACP (Dominion Dynamics), U760 Ravenstorm (Airbus), Rafale F5 companion UCAV (Dassault Aviation), CATS Warrior (Hindustan Aeronautics Limited (HAL)), LOWUS (Korean Air), MUCCA (Korea Aerospace Industries (KAI)), ANKA III (Turkish Aerospace).

That places its own demands on suppliers. Pace often matters more than cost, and technology IP may not be the differentiator it is in a traditional programme: if IP locks a customer into a supplier that may struggle to scale, and this IP cannot be licensed in a way that lets them secure their own supply chain, the customer may simply design around it.

For some legacy providers, this means a wait-and-see approach may arguably be the right answer. They do not necessarily need to compete with small, fast-moving technology players, because they can reasonably expect production to bring the industry back towards the tried and tested. The strategy is not without risk. Many of these entrants are vertically integrating in critical areas precisely to avoid depending on traditional supply chains, and if that succeeds the return journey may not happen. Other start-ups may have good reason to help smaller technology players scale, if only to create a more competitive environment among their own customers.

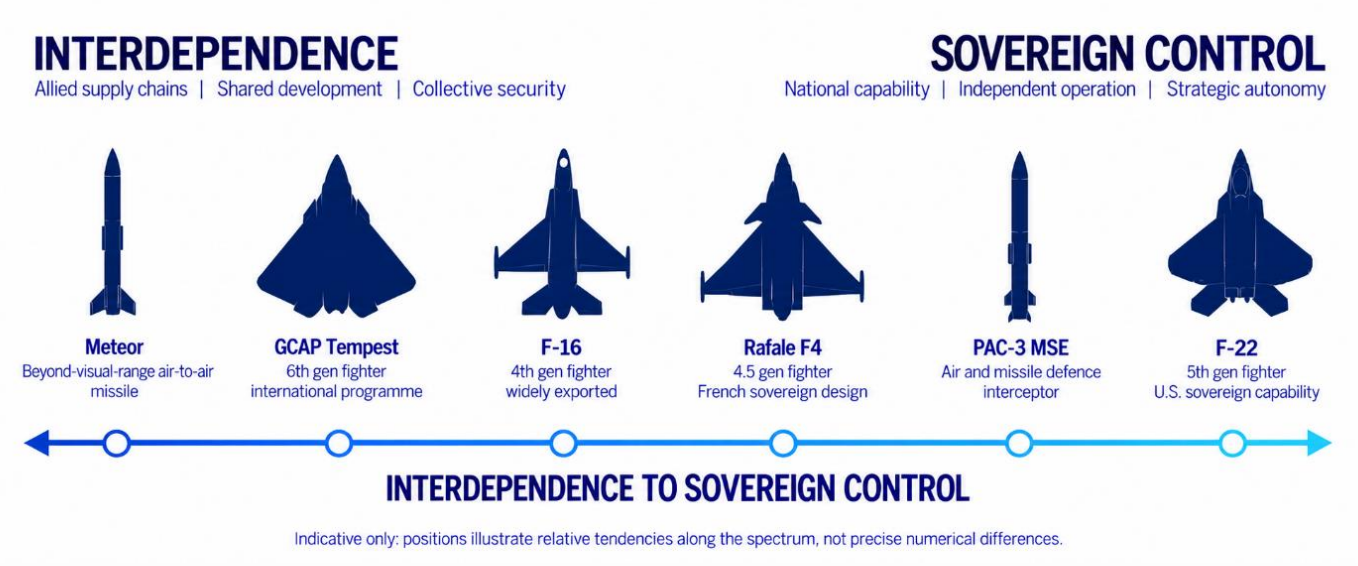
SHIFT 5

Sovereign control versus interdependence

Of the five shifts, this final one is perhaps the most contested and historically balanced. Sovereign control, not just of the asset but also the supply chain, design and critical resources, has become a priority for many countries. Geopolitical uncertainty has sharpened the focus on this dimension in many ways. In today's environment, the question depends not only on trust of my allies, but also my exposure if their supply chains became targets in a conflict.

This spectrum can also be difficult to define, as interdependence can have many layers. Some may define sovereign as within their own allies, others within a region, others still within their own borders.

In Europe this has moved well beyond rhetoric and into funding rules. Recent European instruments tie eligibility to domestic content thresholds and require that design authority sit under European jurisdiction [9], explicitly so that programmes are not exposed to an external veto over exports [10]. **ITAR-free status has moved from a marketing claim to a criterion that determines whether a product can be offered at all;** Honeywell's aerospace chief executive has described it as a prerequisite for winning European work. The pressure is most acute in precisely the areas where non-European suppliers have been strongest, particularly sensors.



The same logic is now reaching well beyond hardware. In July, Airbus contracted with the French provider Scaleway to move around seventy critical applications off a US-based cloud, as part of a wider effort to keep roughly 900 applications under European control. The stated driver is the reach of US law over data held by US-domiciled providers regardless of where it is stored [11].

For some suppliers this presents real opportunity if their geographical footprint can be used as an asset. Where local supply genuinely is not available (such as rare earths, carbon fibre, certain electronics) finding ways to design the dependency out has itself become a competitive advantage.

Implications for suppliers and investors

In Counterpoint's view, the tension among these dimensions is likely to remain for some time.

It can be tempting to classify either side as just ‘old versus new’ or ‘drone versus fighter’ — simplifications that transform this into a single dimension. While platforms tend to cluster on either side, we believe there will continue to be a mix of dimensions to defence systems. Defence portfolios are likely to remain systems of systems, a broad portfolio of technologies working together to meet an objective. That implies militaries will continue to need both exquisite systems and lower cost systems at the same time. Countries would gladly have sovereign control over their platforms, but supply chain realities mean that interdependencies will remain in several areas. And even the best software systems cannot replace hardware on the ground.

For an individual supplier, it can be difficult to know where to stand and how to respond. We would suggest working through it in three steps.

01 Establish which dimensions truly impact your business

Most companies are not experiencing all five shifts. Hardware well-suited to exquisite systems may be difficult to displace with attritable mass. A product profile may already be well balanced between hardware and software. A company operating largely within one country, with limited export exposure, may find the sovereignty question irrelevant. This is worth doing by product line rather than at company level, because it is common to be exposed on one line and untouched on another.

02 Assess where you can compete on either side of each spectrum

Strategies can look very different at each end. In some cases, a shift can present an opportunity: a manufacturing footprint that was a cost disadvantage may now be a qualification. In other cases, the decision to compete on the other side of the spectrum can have real organisational, product, and investment consequences.

03 Decide what changes as a result

Should the product line extend towards the lower end of the market, with a different set of optimisations? Are more agile teams needed to respond to faster-cycle programmes? Would investment or acquisition be a better route into a capability than building it? And how should programmes be assessed for whether they justify the investment of engineering time, given how many of them will not reach production?

For investors, these shifts also have considerable implications for the portfolio. Much of the venture capital has swung towards new entrants, operating in ways that allow them to challenge legacy defence contractors. Their tactics have allowed them to overcome considerable barriers to entry, but also invited several copycats and competition. Whereas the barriers to creating a next generation fighter were high, the barriers to creating next generation drone technology have been considerably lowered. Counterpoint believes a shake-out phase will eventually come for new entrants, but this period is likely to be delayed given the accelerating scale of defence budgets, the need for rearmament and degree of new technology that is entering the sector.

At the same time, it is important to consider the role of both incumbent players and exquisite systems. We believe not only that they are here to remain, but that the success of new entrants is also highly dependent on their ability to integrate and form partnerships with these players and their platforms. The most successful platforms of the future are the ones that can operate on a system of systems basis, sharing information and complementing the capabilities of other platforms.

The defence market is not being reinvented, and it is not carrying on as it was. Along five dimensions that were stable for decades, positions that did not previously exist have become viable and funded, while the established positions have largely held. The work is not to predict which end of each spectrum wins. It is to understand how to adapt to a world where both positions are viable.

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Counterpoint Market Intelligence provides research reports and bespoke consultancy for the aerospace and defence industries, with a particular emphasis on Tier 1 and Tier 2 suppliers. Our analysis is backed by rigorous modelling, industry discussions and the experience of our report authors.

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